New Jersey Coalition of Automotive Retailers
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June 15, 2020

Ms. Aida Camacho, Secretary
New Jersey Board of Public Utilities
44 South Clinton Avenue, 3rd Floor, Suite 314, CN 350,
Trenton, New Jersey 08625

Via electronic submission to board.secretary@bpu.nj.gov

RE: DOCKET #QO20050357: IN THE MATTER OF STRAW PROPOSAL ON ELECTRIC VEHICLE CHARGING INFRASTRUCTURE BUILD OUT

Dear Ms. Camacho:

Thank you for the opportunity to comment on **Docket # QO20050357: In The Matter Of Straw Proposal On Electric Vehicle Charging Infrastructure Build Out**. NJ CAR is the Statewide trade association that represents New Jersey's franchise new car and truck dealers, who offer 40 models with a plug, right now, and will be offering dozens of additional models from virtually every automaker over the next few years.

New Jersey new car dealers are the retail network that will be tasked with meeting the State's ambitious goal of selling more than 330,000 electric vehicles by 2025 and at least 2 million EVs by 2035. Just to put things in perspective, there are currently fewer than 40,000 plug-in vehicles registered in New Jersey. So, clearly, we have a long way to go and charging infrastructure is a major part of the strategy moving forward.

What is the best way to encourage the development of EV infrastructure and what role should the BPU and regulated public utilities play? The straw proposal seems to offer up a sensible approach, allowing public utilities to recover the cost of making DC Fast Charging sites ready, but leaving the installation and operation of DC Fast Chargers to Electric Vehicle Service Providers *(EVSPs)* and non-public utility entities. The straw proposal further contemplates a Provider of Last Resort role for public utilities, if EVSPs do not step up to build charging infrastructure in underserved communities.

On its face, this division of labor and responsibilities make sense. But the straw proposal fails to recognize or deal with a serious problem in the EV charging ecosystem, one that has been ignored for too long. The problem: not all DC Fast chargers are available to all EV drivers. Tesla has built and is operating a ***segregated charging network*** available to Tesla drivers, only, even as all other EVSPs have deployed ***universal charging*** infrastructure that accommodates all comers, including Tesla vehicles.

Tesla's plan is to build a vertically integrated monopoly that controls everything from the design and manufacture of EVs to distribution and sales, service, and even refueling. And it is certainly up to Tesla to decide how the company goes to market. But the BPU should not permit EDC ratepayer-funded Charger Ready investment to support a ***segregated Tesla***

charging network on the same basis as all other EVSP universal charging. Public utility support to make ready Tesla DC Fast chargers simply should NOT be part of the equation so long as Tesla chooses to maintain a ***segregated charging network***.

Fewer than half of the 40,000 vehicles with a plug registered in the State of New Jersey, today, wear the Tesla brand. Meanwhile, the sale of competing EV models is growing at 3-4 times the rate of Tesla sales in the Garden State. It is important, therefore, that the BPU straw proposal contemplate some mechanism to ensure that EDCs give priority to Charger Ready investment supporting EVSE infrastructure projects that serve ***all*** EV drivers, and discourage charger ready investment to help build out Tesla's ***segregated charging network***.

There is another obstacle to universal DC public fast charging, which the straw proposal acknowledges: ***demand charges***. We support the solution presented in the straw proposal, which would create a "set point" for demand charges. The immediate need for a demand charge solution is a function of low utilization, now, during the early stages of EV adoption. But, as more EVs are placed in service and utilization increases, the "set point" can be adjusted or eliminated altogether. A "set point" solution to the demand charge problem may be short lived, but, today, there is an urgent need to act quickly to ensure private capital will fall in behind the EDC make ready investments and potential investors will begin the build out of an extensive network of universal DC public fast chargers as soon as possible.

Thank you for your kind attention to our comments on the straw proposal and for the opportunity to participate as a stakeholder **In The Matter Of Straw Proposal On Electric Vehicle Charging Infrastructure Build Out.**

Sincerely,

James B. Appleton
President

JBA:md

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June 17, 2020

To: New Jersey Board of Public Utilities
From: Sal Risalvato, Executive Director, NJ Gasoline, Convenience Store, Automotive Association

Re: Docket No. QO20050357 – "In the matter of straw proposal on electric vehicles infrastructure build out"

Thank you for the opportunity to submit comments on this proposal. I am pleased to do so on behalf of many of the members of the existing motor fuel retail community. NJGCA represents nearly one thousand independent small businesses in the motor fuel retail, convenience store, and automotive repair communities. I believe that my members can and in fact must be a part of the clean energy transportation revolution that the Legislature, the Administration, and the State's new Energy Master Plan are focused on.

Over the last decade that I have been leading this association, I have consistently told my membership that they should not think of themselves as being in the gasoline or petroleum business; they are in the motor fuel business, and it just so happens that for right now (and for the last several decades) the only motor fuels demanded by the motoring public were petroleum products. I have instead asked my members to think of themselves as being in the "Transportation Energy Business".

One thing everyone should understand about the current motor fuel market is that oil companies play very little role anymore (for which small business owners are very grateful). With the exception of Speedway (all locations currently owned by refiner Marathon), the oil companies have divested themselves of virtually every fuel retailer in this and just about every other state. Every Shell, Exxon, BP, or other branded location you see is an independent operator, most often a small business owner who has signed up for a franchise agreement with one of the well-known oil company brands. Their desire is to sell products the consumer demands, and most operators have very little romantic attachment left for gasoline. Alternative fuels are safer, cleaner, more reliable, and easier to maintain than massive underground storage tanks filled with a potentially serious pollutant.

Overall, I would like to commend the BPU for this straw proposal and for the mostly fair balance it seeks to achieve in creating a marketplace for EV charging. The biggest concern that we have regarding the EV charging marketplace of the future is that it will be dominated by just a handful

of massive corporations, cutting thousands of small businesses out of the picture, or leaving the fate of their business up to the whims of huge corporations.

One factor that could severely limit a free and functioning EV charging market is the threat of Big Electric moving in and suffocating everyone else who could ever be interested in this market, perhaps even aided by direct help from the government. When thinking about the future of EV charging, we need to look at Big Electric the way we looked in the past at Big Oil. The electric utilities, more than any other corporation, are able to look at the capital investments in public charging stations as a small cost that does not need to be extracted from the people using the charging stations, but from the millions of households and businesses who are ratepayers. No genuinely private company can ever compete with this state-sponsored market advantage, and it could easily lead to an unnecessary monopoly that will ultimately hurt motorists through the higher prices and poorer services that monopolies always lead to. It amounts to a massive wealth transfer away from independent small businesses and households and towards massive corporations. Not only that, but the increase in electric rates will be paid by all ratepayers, including those businesses who are being undercut because of that exact rate increase.

No matter what, a huge portion of battery electric vehicle charging will be done at home. Big Electric will have that market cornered no matter what. The least that can be done is for the State to keep them away from the smaller public charging marketplace that could sustain and benefit hundreds of independent businesses.

We learned over a century ago about the dangers to the general public and the free market from total vertical integration, we should take steps not to repeat those same mistakes in this new marketplace we are trying to give birth to. I am heartened to see that this straw proposal largely keeps to these principles by restricting the role of utility companies to the work of constructing the fundamental infrastructure and wiring up to a location, but keeps them out of operating chargers except as a “last resort”.

It is extremely important though, that “last resort” in practice truly is the absolute last solution. Utility companies using the slightest of delays or inconveniences to justify their entrance into the charging market must not be allowed. More details should be developed and provided to clarify when exactly market conditions have created a scenario in which the last resort needs to be engaged. Other alternatives should have been actively pursued to bring about private sector engagement in an underserved area. Utility companies should not be able to just look at an area without public chargers and declare that they are needed to step in. The BPU should also consider creating some kind of process for the utility to withdraw from the market in a certain area once market conditions in that area are such that the private sector can fulfill the public’s needs.

The BPU must allow for the marketplace the greatest amount of flexibility, and not develop rules and regulations based entirely on one or two business models which may predominate currently, and in doing so foreclose the possibility of newer arrangements which could be developed and that would promote greater demand to install charging equipment. For example, the straw proposal talks about electric vehicle service equipment (EVSE) companies "installing, owning, maintaining and marketing" the equipment. While some EVSEs control every aspect of the charging marketing and pricing, other companies allow the site owner to have much more discretion over the equipment.

The more varied the business models surrounding EV chargers, the more likely a business is to install one. I know from conversations I have had with members of NJGCA, some would only be interested in EV charging if they do not have to pay any attention to the charger and just receive a monthly check from the company which installed it. But others want the oversight and control to market their charger and price accordingly, as they currently do with gasoline prices. We know from our experience over the years with oil companies that immense harm can come to an independent business when control over the pricing of their main product is left in the hands of a separate corporation.

Businesses should also have a good deal of freedom in pricing the charging services they are providing. They should be able to charge for the electricity that the motorist is consuming, and at a price that is determined by competitive market forces. Retail prices should be allowed to change frequently as the grid demands it. In the future we may see street signs advertising the current price for electricity, just as we currently drive by and see different prices for gasoline. Perhaps those prices may even change on the digital sign by the hour, in reaction to various strains on the grid and as ways to incentivize commuters to power up at times that are more affordable.

In order to maintain a competitive market, one idea that should be considered is to follow the example of gasoline regarding minimum pricing. It is illegal in this and many other states to sell gasoline at retail for less than the retailer paid for it. Without this law, big chains would sell their fuel at a loss until they drove the competition out of business, and then charge motorists whatever they want. These types of laws protected small business owners from big oil companies and may be needed in similar circumstances to protect small businesses from other behemoth retailers for transportation energy. Such a regulation would also help give small businesses the confidence to make the investment in a charger. Currently there is a risk that a major multinational corporation, like a Starbucks or Walmart or Costco, will decide to install a charger at their location, and use their massive market advantage to absorb the initial cost of the installation and perhaps even the cost of the charge itself, undermining the small business owner who is now totally unable to compete and to earn back their large initial investment.

Another concern we have relates to the process of mapping locations for where chargers and charger connectors will go. Any mapping should avoid getting too specific about the "ideal" locations for chargers. The locations should be set at broad geographic areas, not at specific sites or pieces of property.

The forces of the market over the last several decades have effectively chosen the best locations for motor vehicle refueling—the location of current gas stations. When looking for locations to install battery chargers, especially fast chargers, I encourage everyone to look at the businesses where motorists are already comfortable pulling in for a quick refill. Often they have a lot of open paved space where vehicles could be charged, and whoever is partnering up with the location will generally be able to work with an independent small business owner, rather than just a massive corporate chain. Furthermore, if there are to be any subsidies for the installation of charging equipment, then they should be targeted at small businesses; not only does that ensure that the money will only go to those who have a real need for them, but it also keeps down the cost to the State and/or ratepayer.

As the Board continues to work on implementing the Energy Master Plan and legislation promoting EV development, I ask that you continue to involve this association. I am happy to work constructively to ensure the best fueling infrastructure possible. Our association's motto is that we serve the small businesses that serve the motorist, and we look forward to continuing to serve them for a long time to come.

Sincerely,

Sal Risalvato
Executive Director
NJ Gasoline, C-Store, Automotive Association

Clean Energy Ventures

June 16, 2020

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

Re: Docket # QO20050357: IN THE MATTER OF STRAW PROPOSAL ON ELECTRIC VEHICLE INFRASTRUCTURE BUILD OUT

Dear Ms. Camacho-Welch:

NJR Clean Energy Ventures Corporation (CEV) welcomes the opportunity to provide comments in support of an electric vehicle (EV) ecosystem in New Jersey.

CEV is the largest owner-operator of grid-connected solar generation in New Jersey. With approximately $1 billion of capital invested in solar projects, CEV has supported more than 5,900 local jobs to install more than 300 megawatts (MW) of residential and commercial solar capacity. The energy produced annually can power up to 100,000 light duty electric vehicles with clean, emissions-free energy.

We have significant experience developing and installing solar projects in urban, suburban and rural locations as well as on rooftops, parking lots, landfills, schools and corporate settings. As such, we understand the issues of interconnection with the distribution network, land use regulation, safety and security of generation assets and ensuring safety of the surrounding population.

From this position and experience of renewable energy leadership in New Jersey, CEV submits for consideration in this proceeding that **market-based, 100 percent emission-free charging solutions are readily available to deploy – without the need for additional public or ratepayer subsidies as contemplated in this proposal.**

- By utilizing clean energy resources – many of which have been cultivated with public incentive structures on their own terms – to support onsite charging, a new generation of charging stations can be readily deployed, today, in locations with high volumes of vehicles including workplaces, campuses and mobile fleets, using fully proven and bankable technologies. This would advance the State's primary policy goal of ensuring adequate infrastructure to support rapid EV adoption where and when needed.

And, unlike grid connected infrastructure, by utilizing renewable resources and storage, this type of EV ecosystem is 100 percent emissions free. Approaches within this straw proposal, respectfully, would result in this type of market-driven, demand-based innovation being sidelined in favor of approaches at greater rate- or tax-payer risk and expense.

- **This type of rapid charging infrastructure deployment can be undertaken without the need for additional public subsidies and without an extensive and costly build out of utility infrastructure**, which would add additional burdens on New Jersey ratepayers. We believe the build out of the EV ecosystem is a priority that can and should have little to no impact on ratepayers. It is from this perspective that we offer recommendations for the Board's consideration.

Our comments revolve around several key elements of the straw proposal, and conclude with important lessons and the latest research taken from California – one of the largest EV markets in the world – and the State of California's approach and experience in cultivating the EV market and charging infrastructure, which has not been embedded in ratepayer costs .

1. **Shared Responsibility model, where the "beneficiary-pays" doctrine is removed and rate-based funding of charger ready investments**

The Shared Responsibility model coupled with removing the "beneficiary-pays" doctrine could result in significant underutilized investment by both the Electric Distribution Company EDC and the Electric Vehicle Supply Equipment (EVSE) developer, thereby burdening ratepayers. Under this model, EVSE providers will not be motivated to prioritize location investments and innovate with new technology and new business models to optimize economic performance.

The shared responsibility model proposed provides limited accountability to ensure that everything possible is done to reduce costs and optimize utilization of existing infrastructure. The unintended consequence of this model is encouraging EDCs to make investments in charger locations that underperform, while risks are shouldered by ratepayers. Private capital operating within competitive markets and under a level playing field, is better suited to advance this public policy goal.

The model as described in the straw proposal appears to assume that all new charging locations will be best served by a new distribution network interconnection. There is no consideration of the adoption of technologies that would allow existing interconnections to be utilized for solar, energy storage or smart/adaptive charge management techniques, which could avoid the need for new, large and expensive interconnections.

At the very least, **EDCs should be required to consider alternatives to costly interconnections before making a new service determination.** In a model where the developer is responsible for interconnection costs, these alternatives and options would be considered as part of its normal course of optimizing project economics.

To better promote the use of existing assets, **EDCs should be required to publish and regularly update distribution maps that indicate power availability for use by the EVSE developer community.** This would allow EVSEs to determine the most cost-effective way to deploy capital, whether through existing infrastructure or new interconnections and service, to be paid for by the EVSE.

Another option would be for EDCs to provide a cost to compare to the marketplace. The cost to compare is the price EVSE developers need to compensate the EDC for installation of make ready service and represents the competitive cost against which an EVSE developer can evaluate alternatives. It would include make ready costs and energy and demand charges for common kilo-volt-ampere (kVA) configurations. This concept is based on the beneficiary-pays doctrine, is fully self-funding and may result is savings for both time and money to develop EV infrastructure.

To date, EVSE developers have deployed 791 public Level 2 chargers and 437 public DC fast charging stations (DCFC) at least 50 kW. Tesla, for example, has deployed approximately 200 DCFC along New Jersey's travel corridors that could be opened to the public. **This demonstrates that the current goals of 1,000 Level 2 public chargers and 400 DCFC at 150kW are achievable within the current regulatory model and without additional subsidies.**

CEV, through its market research, has identified significant potential for chargers in locations with high volumes of daily commuters including workplaces and campuses. With workplace charging coupled with home charging systems and increasing battery capacity, we believe consumer concern over range anxiety will gradually subside, with the market best suited to optimize the mix of charging locations, technologies and service offerings.

2. Rate structures that do not fully cover all associated energy and distribution costs

Setting a target price for energy used by charging facilities as detailed in the straw proposal may result in favorable costs for the EVSE operator; however, unless that rate fully covers the cost of make ready, the energy and demand costs, **the subsidization will heavily burden ratepayers and suppress competitive innovation, creating a monopoly service where none existed before, and where it is not merely unnecessary, but actually works against the public good.**

Rate structures that incentivize the installation of energy storage, making the best use of off-peak energy, must also be implemented. Continuing the use of non-coincident billing would serve as a disincentive to install storage because a peak can never truly be avoided, only peak smoothing. Without appropriate market price signals, consumers have no incentive to adjust usage behaviors and embrace storage technology, which will be an important component of achieving a transition to 100 percent clean energy by 2050; however, less than full recovery of appropriate charges would cause additional cost burdens to ratepayers without reaping any benefit.

3. **Committing to populate "Community Locations[1]" or "Equity Areas[2]" with EVSE infrastructure where other options may provide greater emissions reductions for lower cost.**

CEV fully supports the principle of equity in the State's clean energy transition; however, socializing the cost of EV infrastructure will have a negative impact on the most economically vulnerable residents of New Jersey without a countervailing benefit. Placing EV infrastructure in Community Locations and Equity Areas provides benefits that are less accessible to residents in those areas who must still help shoulder its costs, particularly in geographies with low population density or where residents do not own cars. As reported during the June 3 stakeholder meeting, 11.6 percent of New Jersey households, or 350,000 households, have no vehicle.[3] As an example, Katherina Miguel of Isles, Inc. shared that 30 percent of households in Trenton are car-free.

In other words, those less likely to realize the benefits of charging infrastructure will be asked to carry its costs, including those families who can least afford it. Other solutions would be more cost-effective in these areas and do more to reduce emissions and improve air quality. Public transportation fleets such as NJ Transit have budgets and plans that can and should over time shift funds from operating to capital budgets to secure and fuel their fleets, not requiring additional electric ratepayer funding. Shared ride fleets can be expected to make use of charging solutions that can be developed to operate at high utilization rates from inception, which would mitigate the need for any ratepayer support.

What remains important is that all segments of EV users, including those using public transport, shared ride services or those who own an EV, receive a compelling benefit, whether economic, environmental or social.

California's EV Buildout Experience Provides Insight and Lessons Learned for NJ

Since 2011, the year that the Nissan Leaf was introduced, California has increased its annual plug-in electric vehicles sales nearly 200 percent. In just eight years, the volume of new electric vehicles on the road went from 7,000 to nearly 600,000, with 150,000 purchased in 2019 alone.[4]

The state has supported EV adoption through end-user rebates, grants and financing programs. Those programs have been successful driving adoption of EVs in the light-duty market with little to no impact on California's ratepayers. Drivers made decisions on the vehicle that they wanted to purchase and developers made decisions on where to place chargers to best serve customers.

[1] "Community Location" means a charging location that is not a Travel Corridor location, and that is established in a town center, commercial area, retail center, or near concentrations of multi-family dwellings, to provide vehicle charging services to local plug-in electric vehicle drivers near where they live and work.
[2] "Equity Areas" refer to low-income, urban, environmental justice, and/or rural communities.
[3] www.nationalequityaccess.org
[4] California New Car Dealer Association, California Auto Outlook™

The state has subscribed to the "beneficiary-pays" model[5] doctrine with respect to EVSE interconnection costs over this period.

Currently, California utilities are submitting proposals for EVSE investments that have not yet been approved. The delays are due largely to the high cost associated with the proposals when compared to the development costs incurred to date for make ready investments by the development community. While it is possible that California will support utility rate base treatment for make ready costs, it is not the case at this time.

Worthy of note in California is that EVSE developers are deploying tactics and technology that allow them to utilize existing infrastructure to minimize the requirement for new and expensive network upgrades while managing potential price spikes from demand charges. These techniques include physical and digital charge management solutions such as:

- **Smart charging** that allows the developer to modulate the demand to manage the demand charges associated with the charge device;
- **Adaptive charging** that allows large groups of chargers, such as campus, municipal, hospital and airport installations, where dwell time enables charging on an individual as-needed basis, saving demand and associated infrastructure;
- **Storage**, either integrated into the charger or remote, to allow for large demand spikes to be met with no impact on the grid allowing existing infrastructure to be used with no new upgrades or associated expense.

Range Anxiety Rarely an Issue for Today's EV Buyers

California has seen a reduction in home charging which has given way to workplace and destination charging in the last two years, according to research from the University of California San Diego (UCSD). The data that they collect has identified a significant reduction in home charging in favor of workplace charging as the vehicle range increased from 80 miles per charge to more than 200 miles per charge. Byron Washom, Director of Strategic Energy Initiatives at the UCSD, noted that the need to charge every day has been removed. Washom described a change over time with respect to the EV charging patterns of the 1,330 EVs that charge on campus regularly.

This trend has been supported by an increase in the size of the batteries, with yields ranges from 160 miles to nearly 400 miles per charge in typical light duty vehicles (see Figure 1). The average range of representative EV cars including the Nissan Leaf, Ford Focus Electric and new entrants Kia Soul EV and Volkswagen Golf, has doubled since 2011 from 80 miles to 161 miles. Tesla now offers EV options that offer range in excess of 330 miles.

[5] BPU docket # QO20050357: IN THE MATTER OF STRAW PROPOSAL ON ELECTRIC VEHICLE INFRASTRUCTURE BUILD OUT: where the entity creating the need for the upgrades (here, presumably the EVSE Infrastructure Company) pays for the upgrade costs, consistent with the Board's regulations on extensions of utility service in N.J.A.C. 14:3-8 et seq.

Figure 1: EV Passenger Cars Range

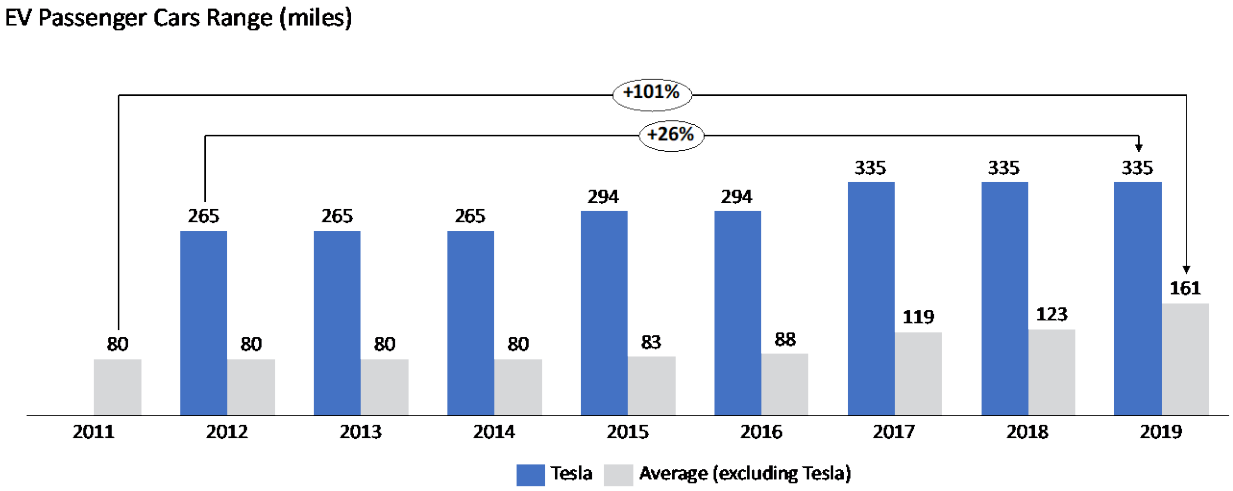

Figure 1: https://www.greencarreports.com/news/1126873_survey-owning-an-electric-car-will-cure-range-anxiety-other-concerns-about-evs

The straw proposal references "that addressing range anxiety is 'high priority' in the State of New Jersey;" however, research indicates range anxiety is rarely a major issue for today's EV owners[6].

Developers Focusing on Charge Rates

Globally, we are witnessing the change in industry focus from battery size to charge rate. Data collected at UCSD reflects drivers show preference for faster charge rates.[7] Not long ago the non-Tesla charge rate was commonly 50 kW and New Jersey hosts nearly 450 DCFC chargers. Today, Electrify America is installing 350 kW chargers in the market on the expectation that auto manufacturers will soon upgrade onboard chargers to accept those rates of charge. While this may or may not occur, it is clear the common DCFC charge rate for new equipment is at least 150 kW. Five-year obsolescence of a charger is a matter that must be dealt with by an EVSE developer; however, five-plus year obsolescence of EDC make-ready infrastructure incurs needless costs upon all New Jersey residents.

Driver habits and technology will evolve over time. CEV encourages the Board not to rush to solutions in an industry with rapidly changing technology. The largest risk to ratepayers in a Shared Responsibility model is make-ready investments that would be obsolete in a matter of years.

Conclusion

The State Legislature and the BPU should be commended for their commitment to a cleaner and more resilient energy economy. CEV believes EV infrastructure investments can be cost-effective

[6] https://www.greencarreports.com/news/1126873_survey-owning-an-electric-car-will-cure-range-anxiety-other-concerns-about-evs

[7] https://www.youtube.com/watch?v=EyRKHdGgDEM (Minute 15:47)

today without additional subsidies or negative ratepayer impact; however, there are thoughtful policy decisions that must be made to support the growth of New Jersey's EV ecosystem.

We would look forward to an opportunity to further discuss our thoughts on this straw proposal.

Sincerely,

DocuSigned by:
Mark F. Valori
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Mark F. Valori
Vice President – NJR Clean Energy Ventures

Cc: Larry Barth, Director of Corporate Strategy
Chris Savastano, Managing Director of Development
Katie Feery, Manager of Corporate Strategy

Engineers Labor-Employer Cooperative
The Labor-Management Fund of Operating Engineers Local 825
65 Springfield Avenue, 2nd Floor, Springfield, NJ 07081

June 17, 2020

Joseph L. Fiordaliso
President
Board of Public Utilities
44 South Clinton Ave, 3rd Floor, Suite 314
Trenton, New Jersey 08625-0350

Subject: EV Infrastructure Ecosystem

All New Jersey residents deserve access to clean, reliable and affordable energy and a safe environment for this generation and all that come after. In order to meet our EV charging infrastructure goals, New Jersey's energy portfolio must contain more diversity than wind and solar because reliability is crucial to meet the demand EV's will put on the electric grid. The currently simply ignores all reliability factors. Concurrently, we must be cognizant of the post COVID-19 economic conditions facing our residents as current policy provides tax and fair-share payment holidays for electrical vehicle owners as they do not pay sales tax, do not pay into the transportation trust fund for maintenance and roadway repairs, and owners receive a tax benefit. Regressive policies such as EV tax amnesty place an undue burden on the very low-income and environmental justice communities these policies are striving to help.

We support investments in all types of energy infrastructure that expands capacity, reduces emissions, increases reliability and lowers costs for residents and businesses as these are the principles that our organization respectfully requests consideration for in expanding our State's EV Infrastructure.

The Engineers Labor-Employer Cooperative is a labor-management trust that represents the combined interests of the nearly 7,200 members of International Union of Operating Engineers Local 825, and the signatory union contractors who employ them. As a multi-state organization, ELEC focuses on promoting economic development and advocating for investments in infrastructure -- not only to provide work opportunities but to ensure that our members, contractors and their families, have the quality of life they deserve as residents of New Jersey.

IUOE and contractors invest millions annually, host and operate two state-of-the-art training campuses and are making significant advancements and investments in STEM higher education for our members to keep up with equipment technology, software and hardware, internal computers, GPS and other advanced features, which will be required to build the energy of the future. As we plan the energy mix of the future, it is critical to keep in mind that organizations

like ours have already begun putting the pieces in place to ensure our membership is up-to-date and ready to work.

In order to achieve the EV goals outlined in the Energy Master Plan, New Jersey requires a diverse and reliable energy portfolio as well as more affordability to the end user. Installation of EV charging infrastructure must be done strategically with smart investments that provide value for the taxpayer, ratepayers and incentivize utilities to innovate and invest private sector capital into EV infrastructure that benefits the public.

For New Jersey to become a leader in EV's, our state must invest in energy storage, transmission systems, and other measures that will improve and modernize the energy grids for the challenges that are facing today, as well as in the post COVID-19 economy, before we can handle the energy load these vehicles will have on the grid.

Today, consumers still suffer from "range anxiety" with electric vehicles. Although adding charging stations along routes will help to mitigate this anxiety, charging is not instant and requires time, leaving consumers waiting at a location until their vehicle has been "fueled". Even with the introduction of direct current fast charging (DCFC), there are still problems that exist with rapid charging. Studies have shown rapid charging can have a damaging effect on EV batteries. According to a recent study by the University of California-Riverside, fast charging adversely impacts the lifespan of lithium-ion batteries, further reducing their capacity beyond their estimated 10-year life cycle. This may also make these batteries obsolete for their second phase of life, as usage for energy storage on the grid. In addition, rapid charging will cause high loads on the grid during peak traffic hours and load times, increasing variability and uncertainty in areas where the grid is already vulnerable.

Current maps of EV registrations in New Jersey shows most EV's are registered in locations directly outside of metro areas and where median incomes are higher. Those that will benefit from the charging stations will be those that can afford this new technology while our already struggling residents will be picking up the tab through higher rates.

It is important to note that the economic impact of the COVID-19 pandemic will have a costly impact on New Jersey's residents and our state budget for years to come. Upgrading to EV's and residential upgrades associated with home charging, even with the incentives offered to purchase these vehicles, will not be an affordable option for families in New Jersey. With pre COVID-19 stats showing nearly 37% of NJ residents not being able to afford basic needs like housing, childcare, food, or healthcare, it is likely in a post-COVID-19 world, that percentage is much higher. Many New Jersey residents will not have the necessary resources to upgrade to an electric vehicle. In fact, the Rocky Mountain Institute's own EV-Grid Integration report shows

the installation costs alone are astronomical: “costs for charging infrastructure components ranged from $2,500 up to $7,210 for a Level 2 commercial charger and from $20,000 up to $35,800 for a 50-kilowatt DC fast charger.” None of these costs take into account the additional electric generation that will be required to power these chargers.

In addition to the infrastructure costs that we know about (RMI also reported that ‘EV soft costs are very hard to quantify and almost entirely undocumented’), we must also take total cost into account. Currently there are 30,000 EVs in NJ, which results in over $5 million for the Transportation Trust Fund to repair roads and bridges that is not being collected. If we extrapolate to 330,000 EVs, that leaves a gap of more than $55 million to the TTF not being collected.

Electric vehicles are also exempt from the paying sales tax (6.625%). Of the 30,000 EVs currently registered in NJ, assume that the average price is $55,000. That is $3,643.75 per car that isn’t paying the sales tax. At 30,000 cars that’s $109 million in sales tax revenue that has been forgone already at a time when NJ is proposing to borrow over $14 Billion just to pay our bills. If we play this scenario out, $695 million in sales tax revenue by 2025 or $139 million per year this committee will have to generate elsewhere to offset the loss. The numbers just don’t add up well for NJ residents and taxpayers.

Thus, we must allow EV infrastructure investments and upgrades to happen organically. Although we applaud the lofty goals of reaching 330,00 EV vehicles on the road by 2025 and 3 million by 2035, our long term financial recovery will prevent consumers from investing in these vehicles and the EV infrastructure that is being labeled as critical today, will be underutilized tomorrow.

Public private partnerships are the most efficient way for our State to meet their EV infrastructure goals. Encouraging private investment will reduce the financial impact these costly upgrades would have on the state budget.

Conclusion

In order to build New Jersey’s EV infrastructure while reducing the cost on the state and our most vulnerable residents, we must utilize private investments and build this infrastructure gradually in order to reduce the financial impact on our residents and businesses.

Thank you for the opportunity to submit these comments.

Via electronic submission to board.secretary@bpu.nj.gov

June 17, 2020

TO: Aida Camacho, Secretary
New Jersey Board of Public Utilities
44 South Clinton Avenue, 3rd Floor, Suite 314, CN 350,
Trenton, New Jersey 08625

FROM: EVgo
Carine Dumit
Director, Market Development & Public Policy – East
Carine.dumit@evo.com

RE: Request for Comments - New Jersey Electric Vehicle Infrastructure Ecosystem 2020 Straw Proposal

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Secretary Camacho:

Enclosed please find comments submitted on behalf of EVgo, pursuant to the notice released by the Board of Public Utilities regarding the New Jersey Electric Vehicle Infrastructure Ecosystem 2020 Straw Proposal.

Thank You.

Carine Dumit

Carine Dumit, EVgo
Director, Market Development & Public Policy – East

I. Introduction

EVgo commends Governor Murphy, the New Jersey legislature, and the Board of Public Utilities (BPU) for their efforts in accelerating New Jersey's advancement in clean transportation technologies and solidifying New Jersey as a national leader in the deployment of clean transportation. The Electric Vehicle (EV) charging industry continues to make progress in building out the EV charging infrastructure in the U.S., and companies like EVgo welcome the opportunity to work closely with all stakeholders to continue to expand on those efforts to enable mass adoption of EVs.

EVgo appreciates this opportunity to participate in BPU's process and continue to engage on this topic. We thank Staff for their hard work in developing the Straw Proposal[1] and are pleased to provide these comments on as a follow on to the online technical conference convened on June 3rd 2020[2].

EVgo operates America's largest public electric vehicle fast charging network, with more than 800 direct current fast charging (DCFC) locations located in 34 states and 66 metro markets nationwide. Fast charging is crucial to enabling electrification for drivers without reliable access to charging at home or in the workplace, residents of multi-unit dwellings who rely on public charging for the majority of their charging needs[3], drivers utilizing key transit corridors, as well as light duty vehicle (LDV) fleets, including car and rideshare applications. Today, more than 100 million Americans live within a 15-minute drive of an EVgo chargers and roughly three quarters of New Jersey residents live within a 20-minute drive of one of EVgo's approximately 46 New Jersey fast chargers. EVgo recently completed energization of several DCFC locations on the New Jersey Turnpike and Garden State Parkway in collaboration with PSE&G[4] and looks forward to further expansion across New Jersey.

EVgo is pleased to see Staff proposing, in its Straw, a multi-pronged approach that encompasses the entire "ecosystem" addressing infrastructure costs, underlying structural barriers such as rate design as well as soft costs, in a shared-responsibility model, to achieve New Jersey's Transportation Electrification objectives in a cost-effective manner.[5]

Below, EVgo shares its comments and feedback on the Straw Proposal's elements.

II. The "Shared Responsibility" Busines Model for Ownership, Maintenance and Advertising of EV infrastructure– Section A

The Straw proposal recommends a "shared responsibility" model where Electric Distribution Companies (EDCs) will "invest in (and earn on) the wiring backbone infrastructure necessary to enable a robust EV ecosystem, whiles the private sector owns, operates, and advertises the EVSE (Electric Vehicle Service Equipment)" making locations where EVSE is to be sited "Charger Ready". Essentially, staff is proposing that EDCs invest in and recover the cost of "make-ready" infrastructure.

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[1] New Jersey Electric Vehicles Infrastructure Ecosystem 2020 Straw Proposal. Docket #QO20050357: in the matter of Straw Proposal on electric vehicle infrastructure buildout.

[2] EVgo participated in the online technical conference and presented at the third panel, on how to design and integrate EV charging into the rate structure

[3] See https://theicct.org/sites/default/files/publications/US_charging_Gap_20190124.pdf

[4] See https://www.psegpoweringprogress.com/electric-vehicles/

[5] Plug-in Vehicle Act requirement for at least 400 public DCFC by December 31, 2025. S-2252 (P.L. 2019, c. 362; C.48:25-1 et seq); New Jersey Energy Master Plan, see https://www.nj.gov/governor/news/news/562020/approved/20200127a.shtml

In fact, one area where consensus exists on the role of utilities is on make-ready. EDCs investing in the conduit and other electrical infrastructure leading up to the charger is a logical role and a "win-win" allowing an EDC to focus on its core competency, enable more load for it to serve, reduce capital costs for third-party charging companies, and increase private investment. Utility "make ready" programs bring rate-based distribution upgrades and branch line extensions into the utility scope, while leaving dispenser ownership, marketing, customer service, and network operation in the hands of experienced private operators. The result leverages utilities' strengths in infrastructure buildout with the scale, learning and efficiencies that private developers have built over thousands of installs and hundreds of thousands of satisfied customers.

Make-ready infrastructure investments also avoid potential issues with ownership such as the utility's ability to set public pricing at rates too low for the private market to compete, which may discourage competition, or through overbuild, to effectively "consume" the usage that, in early years, electric vehicle service providers (EVSP) rely upon to evaluate the business case of a potential EVSE investment.

Make-ready infrastructure programs maximize private sector investments by significantly improving economics to cover behind-the-meter investments. This helps keep costs low for ratepayers while catalyzing private sector investment and considering competitive market concerns.

III. Process for Making a Location Charger Ready - Section B

Under this Straw Proposal, the EDCs will have primary responsibility for making locations "Charger Ready". EDCs would make a location Charger Ready "upon request from an EVSE Infrastructure Company or a state, local, or municipal entity, with priority given to sites recommended as part of the EV Mapping Effort". In addition, the Straw proposal would institute guidelines that appear to incentivize EDCs' efforts to expedite development timelines. Specifically, the EDCs "would have twelve (12) months from the date of the request to make a site Charger Ready. Staff anticipates that any delay greater than 12 months would result in reduced EDC earnings on that portion of the Charger Ready infrastructure".

EVgo appreciates this effort to reduce development timelines (and therefore costs), an important element of DCFC (and EVSE) economics. Given the work involved in making a site Charger Ready is within the EDCs' core competencies, EVgo believes that a reasonable timeframe of no longer than 6 months could be more fitting, without disrupting internal EDC processes and timelines, and agree that dis-incentivizing timelines of longer than 12 months as is proposed in the Straw is appropriate.

In addition, EVgo also commends Staff for allowing EDCs, as part of the Shared Responsibility model, to seek cost recovery for the development of hosting capacity maps. Capacity maps from utilities are key to streamline EV charging development. This is an area in which the EDCs have significant experience in, and ability to drive the expansion of charging infrastructure. Providing this data upfront to EVSPs will enable better resource and time allocation during the development process. When EVSPs have the necessary means to investigate utility service themselves, utility engineering teams can focus their time accelerating construction and commissioning rather than responding to volumes of site assessment requests.

Reducing these soft-costs barriers can indeed have dramatic effects on the timing of beneficial electrification. They represent threshold, catalytic, and highly efficient uses of funds and should be treated as rate-based investments on par with capital equipment.

On the flip side, EVgo cautions against employing mapping efforts specifically to direct third party EVSE deployment and/or prioritize make-ready for non-utility owned EVSE stations. Electric vehicle service providers already have sophisticated demand-prediction models, and often existing charger host relationships. Funders can both speed their program's implementation and obtain more "used and useful" sites by allowing the DCFC developers to identify and contract with specific site hosts with flexibility to meet broader program objectives.

Further, given EVgo's sophisticated mapping software, as well as its own proprietary usage data from over 800 locations across the United States, EVgo is well-equipped to direct siting of its own chargers. EVgo's business model is based on the utilization of the charger, meaning that its interests are aligned with the customer, and EVgo will site in the areas of the state that have the highest consumer demand and will be best utilized, avoiding the risks of stranded assets.

EVgo has noticed that mapping efforts by state agencies, though well-intentioned, often miss the mark on where demand is the highest, as state agencies lack such charger utilization data and experiences that EVSPs have built over years. As such, EVgo recommends that the EV Mapping Effort[6] be informative rather than prescriptive. To date, EVgo has yet to participate in any make-ready program with prescriptive location requirements set forth through mapping and notes that efforts to prescribe locations by state agencies have resulted in low participation in programs. In fact, New Hampshire's recent light duty charging solicitation under the Volkswagen Settlement resulted in no qualifying proposals. This was largely attributed to a program that was over-designed, overly prescriptive in its inclusion of specified charger siting location, equipment choice, and other program elements.

IV. **Ensuring Equitable Distribution of EVSE – Section C**

The Straw Proposal seeks to address an important element of transportation electrification, that of equity and equitable distribution of the benefits of transportation electrification.

In its Straw Proposal, BPU Staff call for the Straw to "ensure equitable geographic diversity, particularly with respect to ensuring a viable EV Ecosystem in low-income, urban, environmental justice communities, or rural communities, referred to collectively as 'Equity Areas,' or along designated evacuation routes" and further states that "Staff is cognizant of the socio-economic and demographic challenges associated with ensuring equitable delivery of EV charging to all New Jersey drivers"[7].

EVgo strongly supports these objectives and continues to work to advance and advocate for greater equity in transportation electrification. In fact, EVgo notes its strong record of deploying EV charging in traditionally underserved communities and notes that 40% of EVgo deployments in California are in low income areas[8]. That is because density, not a community's income level, is a more likely indicator of "hard to reach" and where utility intervention may therefore be most appropriate. Dense, urban populations of all income levels can support competitive DCFC investment[9], as apartment dwellers as well as rideshare and carshare drivers are often high mileage drivers who frequently need public

[6] "EV Mapping Effort" refers to the effort to map existing and proposed EV Ecosystem investments, under the lead of the Department of Environmental Protection ("DEP"), in conjunction with the Board and other Agencies.

[7] New Jersey Electric Vehicles Infrastructure Ecosystem 2020 Straw Proposal, p. 11

[8] EVgo, Progress Report to California Public Utilities Commission Electric Vehicle Charging Station Project (2019), p.3

[9] A recent report from California Energy Commission found no correlation between income level and DCFC deployment: SB 1000 Electric Vehicle Charging Infrastructure Deployment Assessment. Presentation - CEC SB 1000 Workshop, on 6/4/2020. Docket Number 20-TRAN-02.

charging to enable them to take advantage of the benefit of electric vehicles. For these reasons, EVgo has largely focused on deploying charging in metro markets where EV drivers are more unlikely to have access to home charging. Nationally, EVgo's network sees its highest use in metro areas given the likelihood of both multifamily residents charging, but also rideshare electrification, which necessitates more fast charging for EV drivers who may charge once or even twice per day. Rideshare electrification will necessitate a wider build-out of DCFC in urban areas to ensure widespread access and availability for both rideshare and personal use drivers, while also promoting economic development.

In contrast, rural or ex-urban areas with more dispersed demand and prevalent home charging may lag in private investment. This is an area where EDCs may step in to fill the gap. As such, the BPU may want to explore utility-ownership of EVSE in hard-to-reach areas, specifically rural and areas of low population density, where the private market may have a more challenging time deploying given lower battery electric vehicle deployments.

If designed correctly, the make-ready model could also be an important first step for addressing equity concerns. EVgo believes equitable outcomes can be achieved through effective program design that prioritizes these communities in proposals or site applications. For example, in California, Pacific Gas & Electric was allocated $22.4MM for a make-ready DCFC program. The program has a goal to support 234 DCFC and has a stated requirement for a percentage of deployments to occur in disadvantaged communities. Similarly, this program provides site hosts in disadvantaged communities – typically the customer of record on the charger's electricity bill – a rebate toward the cost of the DCFC in addition to the make-ready investment by the utility. Ultimately, EV growth and therefore increased EV penetration on the electric grid will create downward pressure on rates for all customers, allowing for the benefits of electrification to have broad reach.

V. Rate Design Reforms Designed to Encourage Adoption of Electric Vehicles - Section D

EVgo commends Staff for underscoring the importance of rate design as a complementary element to utility make-ready infrastructure investments:

"by allowing the EDCs to build on (and earn on) the Charger Ready infrastructure, combined with effective rate design reform, the total cost outlay for EVSE Infrastructure Companies is reduced and improve the likelihood of a robust market response[10]."

EVgo could not agree more with that statement.

Section D of the Straw Proposal discusses the rate reforms that are necessary to encourage the adoption of EVs. With respect to the rates for commercial EV (CEV) charging, the Straw Proposal correctly focuses on the critical barrier that demand charges represent to establishing CEV rates that allow EVs to charge at costs that are competitive with liquid fuels. A DC fast charger may draw at or close to its nameplate demand each month, even when the total monthly energy dispensed is very low. Standard commercial rates with significant demand charges can thus result in prohibitively high effective energy costs per kWh dispensed –costs that are significantly higher per mile than gasoline or diesel. These rate structures distort incentives in ways that hinder EV adoption. In markets where demand charges are high, DCFC

[10] New Jersey Electric Vehicles Infrastructure Ecosystem 2020 Straw Proposal, p. 8

operators are always better off building relatively smaller networks, even at high EV penetration levels. Consumers are likewise incented to delay EV purchases, as public DCFC chargers are few and often occupied.

We agree that the demand charge issue is particularly acute during the initial years of EV deployment, when many stations experience low utilization. However, longer-term rate reform is still needed to support critical DCFC network development and promote a satisfactory customer experience. In turn, when demand charges are low, it is incumbent on EVSPs to respond to higher EV penetration levels (and higher utilization levels) by building new stations to alleviate congestion.

BPU Staff has requested feedback on the best means to reduce the demand charge barrier and suggests two possible approaches. The first is to provide subsidies on operating costs to the extent that a DCFC station's per kWh bill exceeds a certain "set point" that would be based on the estimated costs of competing liquid fuels such as gasoline or diesel. The set point would be benchmarked such that commercial EV charging remains competitive with these liquid fuels on a per-mile traveled basis.

The second alternative would be to allow a CEV customer to elect to waive a percentage of the station's demand charges for the first 5 years of its operations, with the ability to seek a 5-year extension of this waiver in the case of stations whose usage remains below 25% of the hours in a month. The Straw Proposal also focuses on the development of time-of-use (TOU) rates so that stations have an incentive to encourage customers to charge their EVs at times when the electric grid can readily accommodate the increased demand.

EVgo strongly favors the second option – the demand charge waiver – for the following reasons:

First, the "set point" subsidy will be difficult to establish and administer, would increase the volatility and uncertainty in station revenues, and will be difficult to translate as EVSPs provide pricing to customers. Converting a charging rate in dollar per kWh into the dollar per gallon of a liquid fuel requires assumptions about the efficiencies of both (1) the EVs that use the station and (2) the alternative liquid-fueled vehicles that the station's customers would otherwise drive.

Benchmarking the charging rate to liquid fuels also will require an accepted, transparent, widely available index of local fuel costs. Rules would be needed for the updating process, as well as utility and commission staff time for calculating, administering, and reviewing the indexed rebates. The prices for gasoline and diesel are influenced strongly by the world oil market and can change significantly and unexpectedly in a short period of time. The steep drop in gasoline and diesel prices resulting from the current COVID-19 pandemic is a good example of an unexpected price drop; recent history also provides examples of major price spikes as a result of natural disasters and political turmoil impacting oil markets. As a result, an electric rate benchmarked to fossil fuel prices could result in volatile and uncertain revenues for station owners. Electric rates tend to be more stable than gasoline or diesel prices, and the advantage of this stability could be lost.

One experience worth highlighting is New York's state-wide DCFC per-plug incentive opened in early 2019, emphasizes that a subsidy is not a true substitute for the rate reform necessary to grow infrastructure deployments in a sustainable way. While well-intentioned, New York's per-plug incentive

program programmatic complexities and onerous data reporting requirements has resulted in only fewer than 10 successful applicants[11].

Second, there are significant advantages to the demand charge waiver. The waiver addresses the demand charge barrier directly. Reducing demand charges will lower the per unit cost of charging, . This is essential to removing or lowering the demand charge barrier that is most acute in the early years of EV adoption. Perhaps most important, a waiver applicable for an approximately 5 to 10-year period with a potential phase in later years provides a significant degree of long-term certainty in the rate structure applicable to charging stations. This allows station developers to plan for investments in new stations with more certainty in their cost structure. EVgo emphasizes that the waiver should be designed such that the resulting rate is competitive with liquid fuels even at relatively low station utilizations, but the rate should not be indexed to liquid fuel prices to avoid the problems discussed above with the "set point" subsidy.

Southern California Edison (SCE) received approval from the California Public Utilities Commission in May 2018 for a suite of new commercial EV charging rates that became available in early 2019[12]. SCE's new commercial EV rate schedules are all-volumetric TOU rates. A key feature of the new SCE rates is a five-year holiday from all demand charges, with the expectation that EV penetration will be higher after the holiday, rendering demand charges less important. This rate is cost-based. The costs that would have been collected in demand charges are moved to the TOU volumetric rates. In years six to ten, most of the demand charges from SCE's applicable standard commercial rates will be phased back into the EV rates, with corresponding reductions in the TOU volumetric rates. This may create longer term uncertainty for investments given the 8-10 year+ useful life of a charger, but in general is still a best practice for an EV rate. Table 1 compares SCE's new EV-8 rate to its TOU-GS-2 rates that apply to other medium commercial customers of similar size.

Table 1: SCE's EV-8 Rate, compared to TOU-GS-2[13]

Rate Element	Season	TOU Period	EV-8	TOU-GS-2	
				Option D	Option E
Customer ($/meter/month)	All	n/a	$133.31	$133.31	$133.31
Demand ($/kW-month)	Summer	On-peak	None for Years 1-5	$30.01	$4.40
		All hours		$11.46	$7.96
	Winter	Mid-peak		$7.64	$0.85
		All hours		$11.46	$7.96
Energy ($/kWh)	Summer	On-peak	$0.52	$0.13	$0.53
		Mid-peak	$0.28	$0.12	$0.19
		Off-peak	$0.14	$0.09	$0.13
	Winter	Mid-peak	$0.32	$0.11	$0.17
		Off-peak	$0.14	$0.10	$0.10
		Super-off-peak	$0.10	$0.07	$0.09

[11] Case No. 18-E-0138: Proceeding on Motion of the Commission Regarding Electric Vehicle Supply Equipment and Infrastructure, New York, Joint Comments of EVgo, ChargePoint, and CALSTART

[12] See CPUC Decision 18-05-040, Ordering Paragraph 45, and SCE Advice Letter 3853-E (filed August 29, 2018) to implement the new commercial EV rates approved in that order.

[13] See Appendix A

Is important that the BPU considers several rate design principles when evaluating rate design proposals especially in the context of the state's transportation electrification policy objectives. As EVgo describes it a recent white paper[14], EVgo submits that rates should:

- **Be cost based.** Rates optimized for EVs should be cost-based and do not need to be subsidized. Rates should reflect the utility's underlying time-varying marginal costs, to encourage charging at costs that accurately reflect grid conditions. Recovery of marginal costs to serve, without costs associated with existing infrastructure or unrelated utility programs, may best meet policy goals to promote transportation electrification and fuel switching incentives. This will allow EV drivers to realize the fuel cost savings that are a primary motivator of EV purchases, and, by encouraging higher EV penetration, will increase the incremental electric revenues that benefit all ratepayers.

  In fact, the California commission recognized that CEV customers generally provide new, incremental, growing loads to which costs have yet to be allocated. As a result, in the Commission's words, "any revenue collected from the new class [of CEV loads] beyond the marginal cost to serve them is an overcollection."[15]

- **Minimize demand charges and maximize the use of TOU volumetric rates, particularly when utilization of the charging infrastructure is low.** This does not create a cost shift if TOU rates are cost-based and represent incremental revenues. Emphasizing accurate TOU rates over demand charges ensures that operators of DC fast chargers focus on encouraging their customers to charge at times that provide the most system benefits, rather than trying to minimize demand charges.

- **Provide options.** When devising rate structures, it is important for EV charging operators to have the option and ability to switch to a standard commercial rate schedule. Providing rate options will give operators more tools to adapt their pricing to both customer preferences and system needs, as their load factor and diurnal profile change. Additionally, charging is not a one-size-fits-all application. Rural, standalone, low usage, high capacity chargers have different economics and cost causation than urban or suburban ones served on the host power of a large retailer.

- **Not punish early movers**. EVgo strongly urges the BPU to consider the importance of preserving the existing EVSE/DCFC infrastructure base by ensuring that new rates and tariff structures intended to expand charging infrastructure are applicable to EVSEs universally – meaning existing and new deployments. In anticipation of significant increases in demand, private providers have already installed thousands of charging stations nationwide. Hundreds of stations will approach their end of life of the original charging equipment in the next five years, and/or were built with "future proofing" enabling significant expansion.

Another approach to rate design EVgo urges the BPU to consider is to examine technology-neutral low load factor tariffs. Several EDCs have opted to leverage existing rates designed to industry specific load shapes, and many Commissions already have rates in place designed to accommodate "spiky" loads

[14] "Best Practices for Electric Vehicle Market Transformation (2019)", EVgo. https://www.evgo.com/whitepapers
[15] CPUC Decision No. 19-10-055, at p. 44.

similar to those of DCFCs– for example, agricultural uses – where rate designs intended for commercial use had disproportionate impacts on off-peak users. Simply maintaining DCFC eligibility for "Low Load Factor" or "Pivot Irrigation" rates can be a simple, effective adaptation. Such tariffs are currently made available to low-load factor commercial and industrial customers in Dominion's territory in Virginia[16], and Madison Gas and Electric, in Wisconsin[17].

Table 2 below provides a summary of different rate reforms adopted by several EDCs to support transportation electrification efforts. More than 14 states have adopted across the country, not counting technology-neutral rates.

Table 2. Exemplary EV-friendly rates – Commercial EV and technology-neutral low load factor rates, as adopted.

Utility	Exemplar Rates
Southern California Edison, CA	TOU – EV – 8 - **All volumetric TOU rates for first 5 years**, with demand charges **phased back in years 6-10** - TOU volumetric energy charges increased to recover costs
Eversource, CT	EV Rate Rider Pilot (EVRRP) - **Demand charges** of the applicable commercial rates are **converted to** an **equivalent $/kWh** charge for all kWh utilized by the DCFC customer during each billing period
SDG&E, CA	TOU – M (Interim Rate) - While the EV rate is finalized, sites can temporarily switch onto this rate with a $2.50/kW demand charge and the 40 kW demand cap waived
Dominion, VA	GS – 2 (Non-Demand) - **Low usage sites** (<200 kWh per kW) qualify for this **non-demand general service rate**
Madison Gas & Electric, WI	**Low Load Factor Provision** – Commercial customers on rate schedules Cg-4, Cg-2, or Cg-2A; annual electric load factor <15%. On-Peak **Demand Reduction of 50%**
DTE Energy, MI	GS – D3 - The 1000 kW demand cap for this non-demand general service rate is waived for DCFCs through June 1, 2024

Finally, it is apparent that the significant low-hanging fruit to transportation electrification efforts is in ensuring electricity rates accurately reflect the local and system-wide benefits and costs EV charging brings to the grid and to the community at large. Relief from demand charge, technology neutral low load factor rates, and other rationalization of commercial EV tariffs will be necessary to reduce "effective kWh" pricing to levels that recognize the value of beneficial load.

It will be challenging for EV infrastructure to truly scale in New Jersey without rate reform, which is why public service commissions across the country are either reviewing or have approved commercial EV rates or technology neutral low load factor rates. Electric vehicle service providers like EVgo prioritize investments largely based on rate design, and in this way, rate design can be the most important factor for driving infrastructure deployments in a given utility territory.

[16] Virginia Electric and Power Company, Schedule GS-2: Intermediate General Service. Filed 05-20-19

[17] Madison Gas & Electric, Low Load Factor Provision available to commercial customers on rate schedules Cg-4, Cg-2, or Cg-2A with an annual electric load factor less than 15 percent. https://www.mge.com/customer-service/for-businesses/electric-rates/low-load-factor-provision#:~:text=Low%20Load%20Factor%20Provision,factor%20less%20than%2015%20percent.

VI. Conclusion

In closing, EVgo once again thanks the BPU for its leadership on transportation electrification, and staff for their hard work in moving this vision forward. The BPU has a unique opportunity before it to catalyze private sector and rate-payer funding in a cost-effective and meaningful way and enable these efforts. A wide array of stakeholders will have key roles to play and will be critical to supporting near and medium-term deployment of the public fast charging infrastructure needed for effective transportation electrification, the benefits of which will be far-reaching. EVgo looks forward to continuing our collaboration with all stakeholders to further support this important initiative and advance a new era of clean transportation in New Jersey.

Appendix A.

Additional notes on Table 1 - SCE's EV-8 Rate, compared to TOU-GS-2

- EV-8 is applicable to commercial EV charging customers with maximum loads between 20 kW and 500 kW. TOU-GS-2 applies to commercial customers with loads between 20 and 200 kW.
- Option D is the default rate for TOU-GS-3 customers. Option E is an optional rate available to all TOU-GS-2 customers.
- The following table shows SCE's TOU periods:

Season	***TOU Period***	***Hours***
Summer	*On-peak*	*4p to 9p weekdays*
	Mid-peak	*4p to 9p weekends*
	Off-peak	*All other hours*
Winter	*Mid-peak*	*4p to 9p all days*
	Off-peak	*9p to 8a all days*
	Super-off-peak	*8a to 4p all days*

June 17, 2020

VIA ELECTRONIC FILING

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

Re: Comments in Docket # QO20050357 In the Matter of Straw Proposal On Electric Vehicle Infrastructure Build Out

Dear Secretary Camacho-Welch:

Tesla, Inc. ("Tesla") thanks the New Jersey Board of Public Utilities ("BPU" or "Board") and Board Staff for developing a Straw Proposal regarding the build out of electric vehicle infrastructure in New Jersey and for the opportunity to provide comments. New Jersey has been leader in transportation electrification through its adoption of a goal of having 330,000 electric vehicles ("EV") on the road by 2025, and most recently with the passage of Senate Bill 2252 which sets ambitious EV charging targets for the next five years. The Straw Proposal is a useful guide about the role different entities, and in particularly electric distribution companies ("EDCs"), can play in order to achieve these goals.

With the 2025 ZEV and charging infrastructure goals rapidly approaching, it is imperative that the Straw Proposal set EDCs on a course to develop electric transportation programs that are as economically efficient as possible and that compliment actions taken by independent Electric Vehicle Service Equipment ("EVSE") Infrastructure Companies. In particular, programs developed as part of this process should avoid overly prescriptive requirements that may impede continued innovation in EVSE technology or impede deployments by EVSE Infrastructure Companies.

This can be achieved by providing additional guidance for the "shared responsibility" model to streamline the deployment of make-ready infrastructure by EDCs, and leveraging existing tariffs, utility processes and EVSE Infrastructure Companies' deployment strategies so as not to create delays or unintended cost increases. With the EV industry and charging technology still in its relatively early stages and rapidly innovating, we recommend modifying several aspects of the Straw Proposal to provide participants with greater flexibility in order to maximize New Jersey's charging deployments and societal benefits.

Our recommendations include:

- Develop two distinct tracks as part of Charger Ready programs. The first being a track that is focused on investments that occur on the utility's side of the meter by modifying existing EDC tariffs and is integrated into the EDC's service request process. This track would waive all, or a portion, of contribution in aid of construction ("CIAC") fees. The second track is a program for make-ready investments on the customer side of the meter.
- Applications for Charger Ready investments should require firm development commitments from EVSE Infrastructure Companies and site hosts in order to be eligible.
- Provide additional guidance about commercial EV charging rate designs, including that they be made available to all separately metered commercial EV charging accounts, and that the rates provide some level of long-term certainty.
- Extend eligibility for the Charger Ready model to other electric transportation use cases, including medium- and heavy-duty fleets, transit fleets and taxi and ride-share fleets.

The remainder of our comments expounds on the recommendations above, and provide feedback on topics raised in the Straw Proposal.

About Tesla

Tesla's mission is to accelerate the world's transition to sustainable energy through the deployment of electric vehicles and sustainable energy products, including battery storage and solar energy systems. Globally, Tesla has produced more than 1 million all-electric vehicles. Tesla's vehicle line-up includes the Model S sedan, Model X crossover vehicle, Model 3 sedan, and our newest offering, the Model Y crossover vehicle. The vehicles have all-electric range of up to 402 miles per charge, and industry leading efficiency, performance, and safety ratings. Tesla is also planning to launch a Roadster sports car, a Cybertruck pickup, and a Class 8 heavy-duty vehicle, the Tesla Semi.

In support of these vehicles and our customers, Tesla has uniquely made substantial investments in developing, owning and operating a direct current fast charging ("DCFC") network, The Supercharger Network, to provide drivers with quick and convenient access to charging. There are currently more than 1,900 Supercharger locations and 17,000 Supercharger stalls globally. In New Jersey, there are 25 Supercharger locations and a total of 222 Supercharger stalls. Supercharger equipment is manufactured at Tesla's Gigafactory in Buffalo, NY.

Tesla also has an extensive Level 2 "Destination Charging" network with chargers located at hotels, restaurants and shopping centers around the world. Destination Chargers operate on 208/240 volt, alternating current circuits and can provide about 25 to 50 miles of range per hour. There are more than 27,000 Destination Chargers globally. There are currently 53 Destination Charging locations and a total of 122 chargers in New Jersey. Unlike the Supercharger network, Tesla does not own Destination

Chargers. Instead, Tesla works with businesses and property owners to install the charging equipment, and the site host owns the equipment and pays for electricity while Tesla markets the chargers to drivers. Use of Destination Chargers is free. Tesla also works with businesses to deploy banks of Tesla Wall Connectors, Tesla's Level 2 charging product, at workplaces and multi-unit dwellings. The Tesla Wall Connector is available for purchase from Tesla's website.

Creating a seamless and convenient charging experience is key to enabling mass market EV adoption because it ensures people do not need to compromise to drive electric. Since the Tesla Supercharger network's initial development in 2012, Tesla has gathered valuable experience about the challenges and barriers to deploying, owning and operating DCFC infrastructure. At the same time, Tesla continues to innovate on how to provide a reliable network with a seamless customer experience. Last year, Tesla launched its V3 Supercharger capable of operating up to 250 kW and providing up to 75 miles of range in as little as 5 minutes. The new V3 hardware along with other software and vehicle updates are expected to cut charging time in half relative to the previous Supercharger hardware.

Clarifying and Streamlining the Charger Ready Approach

The Straw Proposal outlines a "Shared Responsibility" approach in which EDCs invest in the wiring and backbone infrastructure necessary to enable the deployment of EVSE, while non-EDC companies shoulder the bulk of the investment and operation of the charging equipment and networks. The approach is similar to the way EDCs have deployed infrastructure for decades that establish service connections at parcels so that customers can develop their own businesses or services. Board Staff rightly points out that the "Shared Responsibility" model would put less ratepayer money at risk, and that the approach more closely aligns with the experience and expertise of EDCs of deploying backbone infrastructure, while relying on the private sector to site, maintain, market and operate EVSE since that is their area of expertise.

Under the Straw Proposal, EDCs would perform any upgrades on the utility-side of the meter necessary to accommodate charging station infrastructure. That role is critical for EVSE deployments and appropriate since it is consistent with existing line extension policies. To further encourage EVSE deployment, the Board should seek to focus on and clarify two tracks for the Charger Ready approach. The first approach is for front of the meter ("FOM") infrastructure investments, and the second is behind-the-meter ("BTM") or customer-side investments.

For FOM investments, the Board and EDCs should consider modifying the revenue test calculations in their line extension policies for all new commercial and residential EV service requests. Doing so would serve two primary purposes. The first is to provide some charging accounts with relief if they are expected to have a relatively low load factor in the early years. Modifying the revenue test would help some accounts avoid a potentially large upfront payment for the service connection, while preserving

the revenue test ensures that the connection will be paid over time. The second purpose is to streamline the program by leveraging the existing service request process and tariffs rather than standing up a new Charger Ready program which may be administratively burdensome and lead to delays.

Since line extensions are addressed in utility tariffs, the program can be developed relatively quickly by directing utilities to update tariff sheets with new allowances for commercial EV charging accounts without other technology, process, or program requirements. Support for a customer's EV charging deployment would come in the form of waiving all, or a portion, of CIAC fees. Budgets and cost-containment mechanisms for this track can be designed in different ways, including setting a per site or stall allowance for upgrades on the utility side of the meter, or extending the revenue test to ten or more years. This approach was recently approved by the Florida Public Service Commission, and has also been proposed by three investor-owned utilities in California.[1] Given the importance of EVSE to enable EV adoption, the first track should build off the tried-and-true non-discriminatory service connection process and be available to all commercial and residential EVSE service requests, rather than imposing arbitrary eligibility requirements.

The BTM aspect of the Charger Ready approach can be used to further encourage EVSE deployments, but care should be taken to ensure that program designs are not administratively burdensome, do not lead to unnecessary costs or investments, and do not impede the site development processes used by EVSE Infrastructure Companies. In particular, the Straw Proposal envisions that EDCs will be primarily responsible for making a site Charger Ready when ratepayer funds are utilized, and that EDCs would have twelve months to develop sites before an earnings reduction penalty is applied. Board Staff should reconsider the approach of solely relying on EDCs to make sites Charger Ready. EVSE Infrastructure Companies typically work with site hosts to design the layout of stations on the customer side of the meter. Under the Straw Proposal, it appears that utilities would be tasked with playing a greater role in designing station layouts. Moreover, twelve months is far too long of development timeline, especially since 2025 deployment goals are rapidly approaching and EDCs would be authorized to own and operate charging stations if EVSE infrastructure companies do not promptly deploy stations. Charger Ready programs should provide a rebate or Charger Ready allowance option that allows EVSE Infrastructure Companies to build the Charger Ready equipment themselves and seek reimbursement from the EDCs for the Charger Ready work.

[1] The Florida Public Service Commission recently approved a utility-side of the meter make-ready program for Tampa Electric Company that utilized a 10-year revenue generation test when calculating an applicant's CIAC. *See* Order NO. PSC-2020-0108-PAA-EI issued April 16, 2020. *See also:* San Diego Gas & Electric Company's Reply Comments on the Transportation Electrification Framework Overview, Investor-Owned Utility Transportation Electrification Plan Development, IOU Roles, and Near-Term Investment Priorities. California Public Utilities Commission case R. 18-12-006. April 27, 2020. Pages 17-18. *See also*: Pacific Gas & Electric's Reply Comments on Draft Transportation Electrification Framework. California Public Utilities Commission case R. 18-12-006. April 27, 2020. Page 9. *See also:* Southern California Edison's Reply Comments on Administrative Law Judge's Ruling Adding Staff Proposal For a Draft Transportation Electrification Framework. California Public Utilities Commission case R. 18-12-006. April 27, 2020. Pages 7-8.

Finally, it appears that the Charger Ready program would permit entities to request sites be Charger Ready without having a firm commitment to actually deploying charging stations. That approach could lead to several unintended consequences including a "land grab" situation for site hosts that foreclose opportunities for other interested site hosts in the area, sub-optimal charging experiences for customers, and ultimately put ratepayer funds at risk of being stranded at Charger Ready sites that are not developed with charging stations. The application process for Charger Ready programs should require firm commitments for development from EVSE Infrastructure Companies and the site hosts in order to be eligible.

Commercial EV Rate Design

Utility rate reform will be critical if New Jersey is to meet its EV and public charging station goals. Rate reform should be viewed as a foundational action complementary to all future programs because rates signal to customers the best times for them to charge. Non-coincident demand charges can lead to effective rates for commercial charging accounts being substantially higher than the commercial class average rates because of relatively low load factors for charging accounts. Since utility costs are the majority of the total lifetime costs of building and operating charging stations, high effective rates will discourage investment.

The Straw Proposal highlights the challenges existing rate designs can pose to charging stations, and offers several potential alternative designs. The first is a "set point" method which would ensure that effective rates do not exceed a specific price. There are several examples of rates in use around the country that can be used as models for New Jersey. In particular, Dominion in Virginia has a mechanism in their Intermediate General Service rate that automatically bills the account a volumetric rate if the load factor is below approximately 25%.[2] The volumetric rate is slightly above the commercial class average. If the customer's load factor exceeds 25% in a particular month, it is billed on a demand basis and the effective rate at 25% is on par with what they would pay on the volumetric track, and declines as their load factor increases.

The "set point" approach can be effective so long as the set-point is based on something within the Board or EDCs control, such as average commercial class rates. Basing set-points on factors exogenous to the electric sector would be inappropriate, overly complicated and administratively burdensome. For example, basing the set-point on the retail gasoline price equivalent would require a variety of assumptions including the efficiency of gasoline vehicles, efficiency of electric vehicles, and would require constant modification as gasoline prices change daily. Moreover, there's a critical flaw in

[2] *See* Virginia Electric and Power Company's (Dominion) Schedule GS-2, available from: https://www.dominionenergy.com/library/domcom/media/home-and-small-business/rates-and-regulation/business-rates/virginia/schedule-gs2.pdf?la=en&modified=20190401150615

a retail gasoline set point because retail electricity prices are not an appropriate comparison to retail gasoline prices because they do not reflect the fixed, overhead and maintenance costs of building and operating charging stations.

The Straw Proposal also suggests that time-limited waivers of demand charges can be offered to help operators get through low utilization in early years of deployments. Short-term incentive rates should be avoided because they do not provide sufficient certainty for investments in charging infrastructure or commercial fleet vehicles. There is a common view that short-term waivers will only be necessary for a few years until utilization of stations increases to the point where non-coincident demand charges are less of an issue for charging operators. That is true to a point, but it is not a given that many stations will reach that point. In particular, it will be difficult for public charging stations to achieve high enough load factors across the entire network, especially if the 2025 charging station goal is met but there aren't enough EVs sold to support consistent utilization of stations. Commercial class average rates typically occur within the 35-45% load factor range depending on the utility. To achieve that, charging stations would essentially need to be completely occupied from 7:00 A.M. to 10:00 P.M. every day.[3] While technically possible, it is unlikely, and an undesirable outcome for EVSE Infrastructure Companies and EV drivers because congested stations can lead to delays and bad customer experiences that can hurt EV adoption. To avoid bad customer experiences, additional station or charging network capacity would need to be added to relieve congestion.

The Board and EDCs should consider set-point methods similar to Dominion's, or optional rates that send more precise time signals including coincident demand charges or time-of-use volumetric rates. It is also important to note that conventional cost-of-service ratemaking and electric vehicle rates are not mutually exclusive. Multiple utilities and commissions around the country have developed revenue neutral rate designs that reduce costs for charging operators because of the beneficial load profiles stations have.[4] Finally, rates developed as part of EDC electric transportation plans should offer all commercial EV charging accounts access to the same rate, regardless of their location, use case or other characteristics. Doing so would ensure all entities are on equal footing and are getting the same price signals about the best time to charge.

Extending the Straw Proposal to Medium- and Heavy-Duty Vehicles

The Straw Proposal, as proposed, appears limited to light duty applications. For New Jersey to meet its ambitious climate, air quality, environmental justice, and EV goals, the program should be expanded

[3] Vehicles do no charge at full capacity during a session because of a variety of factors including the vehicle's state of charge, battery temperature, ambient temperature and other factors.
[4] *See* NV Energy Electric Vehicle Commercial Charging Rider Time-of-Use schedule as part of Nevada PUC Docket Numbers 20-03024 and 20-03025. *See* Eversource Energy Connecticut EV Rate Rader in Docket No. 17-10-46RE01. *See* PG&E Commercial Electric Vehicle Rate in California PUC Application 18-11-003. *See* Xcel Colorado S-EV Rate Tariff, Colorado PUC Proceeding No. 19AL-0209E.

to include medium and heavy-duty vehicle ("MD/HD") applications. Emissions from diesel buses and trucks are concentrated in disadvantaged communities and cause adverse public health outcomes including high rates of asthma and lung disease. Expediting the electrification of these sectors is vitally important for improving air quality and public health in disadvantaged communities.

In the last five years, the commercial maturation of electric buses and trucks has been significant with commercially available models now available from numerous manufacturers across an assortment of vehicle applications. Since the announcement of the Semi, Tesla has been engaged with truck fleets across the country. These fleets are oftentimes making purchasing decisions based on total cost of ownership which includes getting charging infrastructure in place to allow them to operate their trucks effectively. Building out charging infrastructure for a fleet is a potentially complicated and expensive proposition and can be a significant impediment to electrification for most operators. It is critical that New Jersey prioritize utility support for these efforts through Charger Ready programs, in order for these fleets to begin planning their transition to electric vehicles in the near term.

While MD/HD vehicles have unique charging needs compared to light duty non-fleet vehicles, there is not a huge deviation when it comes to service connection issues when compared to other EV charging use cases. For instance, the power levels needed for the charging infrastructure for a mid-size fleet of vehicles can be similar to a large DCFC charging location. In both cases, the utility would provide the same essential Charger Ready services on the utility and customer side of the meter – there would be no difference from a utility build out perspective. The planning horizon, however, may be longer for MD/HD fleets with high-power charging making it even more important to include them in the Charger Ready program from the start. From a program administration perspective, it would be fairly straightforward to expand eligibility in this program to include medium and heavy-duty charging infrastructure.

Conclusion

Tesla appreciates the Board and Board Staff's work to develop the Straw Proposal, and for the opportunity to provide recommendations and feedback. It is crucial that New Jersey rapidly accelerate charging deployments and EV adoption in order to achieve its climate and ZEV targets. The Charger Ready approach has the potential to lead to a meaningful increase in charging deployments. Streamlining and simplifying the program requirements by leveraging existing utility tariffs and line extension processes will provide applicants with flexibility and ensure ratepayer benefits of the program are maximized, while developing alternative commercial rates will encourage additional investments in charging infrastructure and EVs.

Respectfully submitted,

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June 15, 2020

Hon. Aida Camacho-Welsh, Secretary
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RE: Docket # QO20050357: IN THE MATTER OF STRAW PROPOSAL ON ELECTRIC VEHICLE INFRASTRUCTURE BUILD OUT

Dear Secretary Camacho-Welsh,

ZappyRide appreciates the opportunity to provide comments related to New Jersey's electric vehicle (EV) and electric vehicle charging station (EVSE) programs.

ZappyRide is a leading provider of software and data solutions dedicated to increasing EV adoption. We work with electric utilities, automakers, auto dealers, EVSE manufacturers, leading non-profits, and government entities to deploy solutions supporting EV awareness, education and adoption. We operate nationwide, and have engaged well over half a million consumers along their EV journey.

As practitioners in the Outreach and Education space, we are keen on offering our experience to New Jersey stakeholders in their efforts to meet the State's goals for EV adoption. In particular, our present comments focus on the importance of EV Outreach and Education, and the role of Electric Distribution Companies (EDCs) in these efforts.

Our position can be summarized as follows:

- **New Jersey needs sustained EV outreach and education** to meet Governor Murphy's goals and avoid under-utilization of charging assets.
- **Electric Distribution Companies are the State's most powerful ally in EV outreach and education,** given their existing customer relationships, brand attributes and natural synergies.
- **Ratepayer funding is the most effective approach** to achieve the required outreach and education efforts, and succeed at the state level.

New Jersey Needs Sustained EV Outreach and Education

Awareness of electric vehicles is still low in the United States[1]. A majority of car owners cannot correctly name a single battery EV model. In New Jersey, the quantitative picture is unclear, but anecdotal evidence as sales numbers suggests low awareness as well.

As noted in the Straw Proposal, N.J.S.A. 48:25-1 et seq. calls for at least 330,000 EVs on New Jersey roads by December 31, 2025 and at least 2 million EVs by December 31, 2035. As of December 2019, there are 30,017 EVs registered in New Jersey; therefore, meeting the state's 2025 goal represents a 11x growth over 5 years.

The first step in achieving this ambitious growth is making New Jersey residents aware of their electric transportation options.

Despite recent examples of high-visibility advertising[2], automakers are generally reluctant to promote EVs with a level of effort much above expected sales. This cautious approach can be understood as prudent stewardship of the automakers' own interests, given the cost of advertising and the uncertainty of outcomes in the nascent EV market. As a result, we cannot reasonably expect automakers to bear all the burden of EV outreach and education.

[1] "EV Options Have Increased but Public Awareness Not So Much", Government Technology, Feb 14, 2020, https://www.govtech.com/fs/transportation/EV-Options-Have-Increased-but-Public-Awareness-Not-So-Much.html

[2] "Superbowl Ads Hyped Electric Cars. But Will Anyone Buy Them?", New York Times, Feb 2, 2020, https://www.nytimes.com/interactive/2020/02/02/climate/super-bowl-ads-electric-car-hummer.html

To some extent, New Jersey has been the recipient of cross-state awareness campaigns, such as Electrify America's campaigns at a national level. So far, however, no comprehensive state-level EV awareness strategy has been formulated, nor statewide EV awareness efforts undertaken.

In summary, it is crucial that EV awareness in New Jersey radically increases in order to meet the goal of 330,000 vehicles on the road by 2025. In other words, the infrastructure called for by the Straw Proposal may result in underutilized charging assets if EV awareness is not properly addressed.

EDCs are the State's Most Powerful Ally in EV Outreach and Education

In this context, EDCs could play a pivotal role in bridging the EV awareness gap, and, if properly enabled, could be the State's most powerful ally.

First and foremost, EDCs have pre-existing relationships with every single residential customer in the state. While traditional EV awareness efforts tend to spend resources on reaching that customer (say, with online advertisements) and creating that initial connection, utilities already have multiple outreach channels available to transmit EV-related information to end customers, at a low cost.

These customer relationships also come with deep customer understanding. As utility staff engages with customers on EV-related matters, they also gain an understanding of these customers' needs and pain points, and eventually formulate better messaging around EVs.

Moreover, utilities are also reliable brands that consumers trust. While traditional EV awareness efforts need to first establish credibility in order to gain the customer's attention, the utility is already seen as the trusted advisor on energy matters, EVs being an extension of that expertise.

Finally, promoting the growth of EVs fits well with utilities' existing capabilities and EV-related efforts. Utilities already engage customers on subjects such as home charging and rates. Adding general EV outreach to these efforts only contributes to making the messaging more coherent and customer-centric. In our experience, as an added bonus, EV outreach and education also tends to increase customer satisfaction ratings.

A utility-centered approach to EV outreach and education has already been employed with great success outside of New Jersey. In California, under CPUC guidance, investor-owned utilities

have engaged hundreds of thousands of potential EV buyers, resulting in large increases of claimed EV incentives and EV purchases. Outside of California, outreach from utilities such as Austin Energy, Duquesne Light Company, DTE Energy, Xcel Energy and others have also resulted in substantial growth in EV awareness.

In summary, we suggest leveraging EDCs' customer relationships, trusted brands, and natural synergies to boost EV awareness in New Jersey – ensuring that utilities, as the State's most powerful in EV Outreach and Education, are fully engaged.

Ratepayer Funding is the Most Effective Approach

While we believe fiscal prudency and low rates are crucial, we also contend that ratepayer funding will be essential to fully leverage the utilities' capabilities and meet the State's 2025 goals.

In the current context, we believe that leaving EV outreach efforts to the private market or utility shareholder funding would be ineffective for the following reasons:

- **Unclear impact on shareholder return**. The private market mobilizes shareholder resources to achieve shareholder return, but in the case of EV outreach, such returns are indirect at best.
- **Lack of certainty and accountability.** Independent utility action may or may not occur, and may take time beyond the 2025 horizon. In contrast, mandated action using ratepayer funds can be engaged swiftly and carry accountability measures to ensure effectiveness and coordination across parties.

For these reasons, we believe that the market will not advance the State's agenda and goals of its own accord; in that respect, we are currently witnessing a market failure.

In summary, we believe that strong State leadership that equips the EDC with the guidance and funding needed will be crucial in boosting EV awareness, and in turn meeting the state's goals.

As we find the Straw Proposal lacking in this respect, we strongly urge the Board to issue guidelines for EDCs to propose additional programs, including outreach and education efforts, that will increase the likelihood that the state reaches its goals for EV and charging infrastructure deployment.

Sincerely,

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June 17, 2020

Via Email
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RE: Docket Number QO20050357: In the Matter Of Straw Proposal On Electric Vehicle Infrastructure Build Out

Dear Ms. Camacho-Welch:

Pursuant to the New Jersey Board of Public Utilities ("BPU" or the "Board") Notice issued May 18, 2020 in the above-captioned docket, Public Service Electric and Gas Company ("PSE&G" or the "Company") provides its comments on the Straw Proposal On Electric Vehicle Infrastructure Build Out ("Straw Proposal" or the "Proposal") presented by the Board's Staff ("Staff").

I. Introduction

In its Straw Proposal, the Board has taken steps to address the State's important transportation electrification goals set forth in the 2019 New Jersey Energy Master Plan, Pathway to 2050 ("EMP"). The state's ambitious targets for rapid deployment of electric vehicles ("EVs"), electric vehicle charging infrastructure (referred to in the Proposal as "Charger Ready" infrastructure), and Electric Vehicle Service Equipment ("EVSE") in the next five years are also set forth in the recently-enacted Plug In Vehicle Act ("PIV Act")[1] and are codified in the public utility law.[2] Achieving these mandates and delivering the vitally important environmental, health, and economic benefits proven to flow from electrification of transportation will be challenging, and will require an extraordinarily rapid implementation pace, collaboration, and participation across public and private sectors, including the active participation of public utilities.

[1] L.2019, c. 362.

[2] *N.J.S.A.* § 48:25-1-11.

PSE&G welcomes the opportunity to engage with Staff in the Board's consideration of issues related to the EV ecosystem. PSE&G submits in its comments below that: (1) parallel consideration of PSE&G's pending Clean Energy Future – Electric Vehicles/Energy Storage ("CEF-EVES") case, (Docket No. EO18101111), will support, and should be supported by, this policy proceeding; (2) to meet the goals of the PIV Act, the State's utilities must play a critical, proactive role and must receive cost recovery and a fair return on their EV investments; (3) the Straw Proposal as drafted unduly limits the utilities' roles to Make Ready investments and providers of last resort, and ignores other approaches that have proven more effective; and (4) the Straw Proposal, while properly recognizing the importance of EV infrastructure for light-duty vehicles, ignores infrastructure and assets needed to ensure that the benefits of electrification are brought to all segments of the transportation sector, including buses and public transportation, and that the environmental and health benefits of electrification are shared equitably by all public utility customers. The Company also provides additional recommendations related to other aspects of the Straw Proposal including rate design and proposed minimum filing requirements.

II. Consideration Of PSE&G's Pending CEF-EVES Proposal Should Complement This Proceeding

PSE&G has long recognized the customer and community benefits of EV and EVSE deployment, and accordingly, in 2018 filed for Board approval of the CEF-EVES Program. That filing includes four EV sub-programs: Residential Smart Charging, Level 2 Mixed Use Charging, Public DC Fast Charging, and a Vehicle Innovation Program that addresses bussing and public transportation. These investments would remove barriers to rapid deployment of EV charging infrastructure throughout the Company's service territory, including sectors that otherwise would be underserved by the private development market.

The Straw Proposal states that this stakeholder proceeding will proceed in parallel with the CEF-EVES case in an attempt to more quickly develop an EV ecosystem. PSE&G agrees that both matters should proceed without delay. In the CEF-EVES matter, in addition to BPU Staff, Rate Counsel, and PSE&G, there is a diverse group of intervenors and participants who will provide input on PSE&G's proposal.[3] With regard to any "minimum filing requirements" under consideration here, to the extent Board Staff requires additional information related to the CEF-EVES petition, such as a list of charger-ready investments made to date, the avenue to make these requests at this time is through proper discovery in that docket. In this way, PSE&G's filing can provide facts and evidence to support consideration of the issues raised in the Straw Proposal. The procedural schedule in PSE&G's docket aligns reasonably well with the Straw Proposal's goal of implementing new EDC proposals around April of 2021. Resolution of PSE&G's petition will develop the structure

[3] This group includes: environmental advocacy groups; developers, manufacturers, and operators of EV charging and EV network infrastructure and software; a design and construction firm with extensive experience in electric vehicle charging infrastructure; a major school bus manufacturer; a large electric user customer advocacy group; third party energy suppliers; suppliers of energy solutions; an EV charger manufacturer; an EV industry trade association/advocacy group; and other New Jersey Electric Distribution Companies ("EDCs").

to support EV ecosystem deployment over large areas of New Jersey, and will accelerate approval and implementation of other EV proposals.

III. Utilities Should Have A Critical Role In The Development Of The EV Ecosystem, And Their Investment Is Required If The State Is To Meet Its Vehicle Electrification Goals

New Jersey's EDCs are uniquely positioned to help deliver the benefits of the electrification of transportation to their customers. As properly recognized in the Straw Proposal, EVSE and the EV ecosystem are an extension of the electric distribution grid.[4] As Phil Jones of the Alliance for Transportation pointed out at the June 3 discussion convened by Board Staff to consider these precise issues (the "June 3 Webinar"), EVSE is an electric distribution asset that is part of the "grid of the future," comparable to utility poles, street lights, or transformers.[5] PSE&G in particular has extensive experience supporting the state's move toward an alternative vehicle future. In 2014, PSE&G implemented an EV employee incentive program, which features over 45 chargers at company locations. Similarly, in 2015, PSE&G launched a pilot program that provided 145 chargers to 23 New Jersey hospitals, colleges and businesses. While the Straw Proposal assumes that EDCs "have no particular expertise in siting, maintaining, marketing or operating EVSE,"[6] the fact is that EDC core competencies include siting, design, and build-out of electric infrastructure, and that PSE&G in particular has developed expertise in the management of large, customer facing programs, including demand response, energy efficiency and solar loan programs. The CEF-EVES proposal is entirely consistent with these other PSE&G efforts to implement New Jersey's energy policy initiatives.

To meet the PIV Act goals for EV adoption, the charging infrastructure in New Jersey needs to be increased substantially versus the current level, and while development of other funding mechanisms is laudable and absolutely required, it is not a viable substitute for the utility investment needed to actually reach the PIV Act goals.[7] Other public funding sources such as the Societal Benefits Charge ("SBC") may be subject to appropriation for other purposes such as state budget balancing, whereas utility programs can reliably fund EV programs in years where there might be other pressing state budgetary needs. Moreover, utility customers pay annually the actual costs of programs funded through the SBC whereas utility programs more equitably spread costs paid by utility customers over time through amortization, mitigating the customer bill impacts of these

[4] Straw Proposal at 7 ("In many ways, making a particular location Charger Ready looks like an extension of the distribution system and mimics the utility's ownership of meters on customer-owned land.").

[5] See comments of panelist Phil Jones of Alliance for Transportation.

[6] Straw Proposal at 8.

[7] See the comments of Adam Benshoff of the Edison Electric Institute (who stated that New Jersey's charging infrastructure must be increased 30- to 40-fold to meet the PIV goals) and Scott Fisher of EV charging solutions provider Greenlots.

programs. Utility programs should be available *in concert with* programs funded through SBC and any available other sources, to ensure that a sufficient suite of programs are quickly put into place to change customer behaviors toward adoption of EVs. Otherwise, there is significant risk that electrification of transportation goals will not be achieved.

As Mr. Fisher noted at the June 3 Webinar, "[e]very state with a meaningful [vehicle] electrification strategy has a meaningful role for utilities," citing California, Ohio, Florida, Georgia, and Iowa. In California, for example, after five years of implementation with robust participation by its EDCs, the state today has the largest percentage of EVs per light duty vehicle ("LDV") in the country (1.9%) and over 18,000 chargers available, and Southern California Edison is currently acting as owner/operator of charging in multi-unit dwellings.[8] To put New Jersey's EV goals into perspective, the state is requiring approximately 5% of EVs per LDV by 2035 and 35% by 2040.[9] It is unclear how New Jersey could hope to meet these goals using a model that sidelines EDC programs and/or limits cost recovery.

EDCs can help jump-start New Jersey's nascent EV market while consumer protections are ensured through the Board's regulation of utility activity and the utilities' ability to implement clearly stated public policy.[10] PSE&G urges Staff and the Board to recognize utilities' other unique advantages, including their established customer relationships and trusted brand; their ability to provide on-bill repayment to customers; utilities' access to and understanding of customer usage data, which can be used to support better rate design that will further incent the transition to EVs; and utilities' expertise and experience in running customer-facing programs, such as PSE&G's successful energy efficiency programs.

There has been no significant progress to date in the development of EV charging infrastructure in New Jersey, which continues to rank lowest in the density of public chargers relative to population among states participating in California's Zero Emissions Vehicle partnership. The NJDEP's AFV Report demonstrates that EV registration growth rate in New Jersey declined from 2018 to 2019, and is not likely to increase in 2020 in light of current circumstances. In the face of this stagnation, it is unquestionable that utility investments, not limited to Make Ready work, are essential to the equitable deployment and development of the EV ecosystem in New Jersey.

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[8] Data obtained April 22, 2020 from United States Department of Energy, Alternative Fuels Data Center, available at https://www.afdc.energy.gov/data_download.

[9] See the PIV Act goals, NJDEP database of registration information, and The Alternative Fuel Vehicle (AFV) report, which can be downloaded from https://www.drivegreen.nj.gov/dg-electric-vehicles-basics.htm

[10] See Comments of Phil Jones of the Alliance for Transportation Electrification at the June 3 Webinar. See also the comments of Mr. Krauthamer of EV Advisors, who noted that reliability is in the utility's DNA.

IV. The Shared Responsibility Model Set Forth In The Straw Proposal Unduly Restricts Utility Activity and Inappropriately Limits Cost Recovery

PSE&G supports the general concept of a "shared responsibility model" where there is participation by private investors and utilities; however, the model in the Straw Proposal is too narrowly drawn and prescriptive. Under the Straw Proposal, EDCs would be responsible for and would own the wiring and backbone infrastructure necessary to enable charger-ready locations, and would also have "the ability to own and operate Electric Vehicle Service Equipment ("EVSE") in specified circumstances."[11] But this would unduly limit the utility's role. The Straw Proposal essentially relegates EDCs to performing upgrades on the utility-side of the meter, wiring potential charging sites only in response to third party requests, or providing last resort development of EVSE until a sunset date of 2025.[12] This approach does not take into account the actual state of the market in New Jersey, where private investment has failed to emerge.

PSE&G's CEF-EVES proposal sets forth a broader role for the EDC. In addition to enabling numerous charger-ready locations and owning/operating EVSE as a provider of last resort, PSE&G's CEF-EVES would provide a broad suite of incentives to encourage, but not compete with, private development of EVSE infrastructure across all sectors – residential smart charging, multi-family, public charging, as well as school bussing and public transportation. PSE&G encourages Staff to broaden its view of the role utility investment should play to include various types of incentives that EDCs could provide. Staff's questions around utilities owning chargers as a provider of last resort are important, but concern only one aspect of PSE&G's proposal, and only one limited way that utilities can help the state reach its EV charging infrastructure goals.[13] PSE&G's belief is that there is not a one-size-fits-all approach for utility EV programming, or specifically-defined roles EDCs should play.

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[11] Straw Proposal, at 2.

[12] Straw Proposal at 8, 12. The EDC's role under the Straw Proposal would be limited to: performing upgrades on utility side of the meter to accommodate EV infrastructure; wiring locations "upon request" by an EVSE Infrastructure Company or a state, local, or municipal entity; developing hosting maps in conjunction with the DEP's EV Mapping Efforts; or "Last Resort" functions to ensure equitable distribution of EVSE. Straw Proposal at 7. Additionally, even in the last resort function "EDC ownership of new EVSE would sunset December 31, 2025, unless extended by the Board after a market analysis." Straw Proposal at 12.

[13] With regard to the "trigger point" at which utilities would be permitted to enter, or be required to step away from their provider of last resort, or "POLR" roles, PSE&G agrees with those participants at the June 3 Webinar, including Mr. Jones and Mr. Krauthamer, who noted that it is far too early to focus on this issue, and that with PIVs representing less than 1% of LDVs in New Jersey and with only 31,000 PIVs in the State at this time, focus on this issue would distract from the state's EV goals. There should be no designated "sunset" of the utility role at this stage. PSE&G is not aware of any other states that have included a sunset for utility involvement.

In addition, the Straw Proposal states that cost recovery should not be available for EDC work for EVSE unless it is publicly available or is available to serve a multi-unit dwelling.[14] The Proposal also expressly requires any usage of contributions from all customers for Make Ready infrastructure to be subject to a number of criteria, including assurances that any private EVSE Infrastructure Company keeps its chargers operating and open to the public. This is far too narrow an approach to this broad policy question, would not allow utilities to provide EV charging incentives for residential and many multi-family applications, and excludes consideration of economic benefits of transportation electrification to non-EV owning customers.[15] In addition to the emissions benefits of electrification for all New Jersey citizens, investments in public charging infrastructure can help the state's economy recover from the suffering inflicted by the COVID-19 pandemic. PSE&G's CEF-EVES program will create over 650 direct clean tech jobs in New Jersey and advance Governor Murphy's JobsNJ program.

The Straw Proposal also suggests that EDC cost recovery be limited with respect to providing EVSE services, stating that only "administrative costs" of providing last resort services should be recovered. While it is unclear precisely what is meant by "administrative costs," utilities must be allowed to recover and earn a fair return on all EV investment, as they would for all other prudent infrastructure investment, in order to be incented to provide these services. Placing limitations on cost recovery will send a signal to EDCs to limit their participation in development of the EV ecosystem at this critical stage when utilities are needed the most.[16] Moreover, cost recovery for EDC EV programs is more properly considered in approval petition proceedings, based on the specific programs proposed, the supporting information presented in support of those programs, and other facts established through discovery and formal due process.

Rather than attempting to define specific roles for the EDC and set cost limitations that create reverse incentives to reduce EDC participation in the development of EV ecosystem, the Straw Proposal instead should set forth a broad framework under which the Board could consider additional programs to support the development of the EV ecosystem. The PIV Act expressly enables the Board to do so.[17] Under the PIV Act there is a very short time period in which the Board must act to accomplish mandated goals. Fortunately, two of the four EDCs in New Jersey already have fully-developed EDC proposals before the Board. Rather than placing specific demarcations between the

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[14] Straw Proposal at 7.

[15] Straw Proposal at 11.

[16] As Scott Fisher of Greenlots pointed out at the June 3 Webinar, by focusing only on a "charger ready strategy" for utilities focused only on light duty vehicles ("LDVs"), the Straw Proposal appears to be "solving for the wrong problem," and ignores the "need for a broad set of regulatory solutions," rather than following the best practices being followed in other states. As panelist Phil Jones of Alliance for Transportation Electrification noted, the utility should have "optionality to design programs" subject to Board review and supervision.

[17] *N.J.S.A.* 48:25-3(b) ("the [B]oard may, pursuant to [the PIV Act] and any other existing statutory authority, adopt policies and programs to accomplish the goals established pursuant to this section").

roles of different stakeholders, PSE&G encourages the Board to establish a broad set of guidelines and avoid an overly prescriptive framework that would hamstring the EDCs' inclination and ability to offer a broad range of supporting programs, and ultimately would jeopardize the Board's ability to achieve statutorily-mandated EV goals.

V. The Straw Proposal's Focus On Light Duty Vehicles Inappropriately Ignores Other Important Segments Of The Transportation Sector That Are Particularly Significant To Low- and Middle-Income and Other Traditionally Disadvantaged Utility Customers

The Straw Proposal, while properly recognizing the importance of EV infrastructure for light-duty vehicles, ignores infrastructure and assets needed to ensure that the benefits of electrification are brought to all segments of the transportation sector, including buses and public transportation, and that the environmental and health benefits of electrification are shared equitably by all public utility customers. There was significant support at the June 3 Webinar for expanded attention on public transportation and bussing. Most of the panelists supported deliberate actions to serve traditionally disadvantaged communities, and multiple panelists believe this must involve significant focus on electrification of public transportation, fleet, and bussing sectors, as well as other modalities, with community outreach as the key.[18] PSE&G agrees with these commenters.

PSE&G submits that to achieve equity in delivering the wide-ranging environmental, health, and economic benefits to all customers within their service territories, utilities should be encouraged to collaborate with the public transportation sector and invest in utility-run programs and incentives to address these sectors. PSE&G's CEF-EVES proposal includes a "Vehicle Innovation" sub-program aimed at doing just that. The program provides specific incentives for electric school busses and associated charging infrastructure. It also includes a more open-ended proposal to devote funds to solicitations for high-impact, customized electrification projects for customers with non-standard medium and heavy-duty vehicle electrification needs. This program is intended to target and fund collaborations with the public transportation sector, including electric busing, ports, airports and transit authorities. The program is intentionally designed to allow flexibility in determining specific projects, and PSE&G looks forward to working with the State's public transportation sector to determine how best to deploy these funds. PSE&G recommends that the Straw Proposal include high-level guidance that encourages these types of creative, public sector offerings by EDCs.

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[18] For example, Jennifer Bosco, staff attorney at the National Consumer Law Center, stated that EDC programs should support public transit, school buses, and multi-family housing in low income areas, in order to ensure that the benefits of EV flow more equitably to a younger demographic and people of color. Doug O'Malley of Environment NJ touted the health and equity benefits of electric buses, citing a Columbia University study of the New York City MTA's rollout of electric buses in New York that showed a 98% reduction in PM2.5 as well as O&M cost savings. Mr. O'Malley recommends establishing strong collaboration with utilities early on, and encourages EDC proposals for charging infrastructure for school bus fleets and bus transit fleets. Elizabeth Stein of the Environmental Defense Fund cited the significant barriers to electrification of buses and fleet vehicles, including initial purchase price, cost to install charging infrastructure, and product unavailability.

Standing alone among the panelists on June 3, Rate Counsel claimed that electrification of school buses is a transportation issue, and should not be under consideration by the Board. Rate Counsel asserted that State efforts to incent the transition to electric vehicles will only benefit the owners of those vehicles, rather than the communities in which charging infrastructure is located. Rate Counsel also asserted (Panel 3) that socializing the cost of EV chargers among all utility customers should not be an option, as only EV drivers should bear these costs.

Rate Counsel is incorrect. In fact, all utility customers benefit from the electrification of transportation. The PIV Act, which includes specific goals for the electrification of public transportation, is placed under the authority of the BPU, and codified in the *public utility*, not transportation, statutes. The PIV Act declares that "vehicle electrification offers a wide range of benefits," citing improved air quality and reduced greenhouse gas emissions, and the law states generally that "it is in the public interest to establish goals for the increased use of [EVs] in the State[.]"[19] Regarding the broad benefits to customers and communities in which utilities operate, PSE&G's CEF-EVES proposal seeks to place Level 2 and DC Fast chargers in a manner that will benefit all drivers, including those in multi-family buildings who have historically been precluded from taking part in this transition. The Straw Proposal should be modified to encourage similar programming.

In contrast to Rate Counsel's position that utility customers should not be asked to participate in electrification of transportation at this time in light of Covid-19's general economic impacts, multiple panelists stressed the importance of factoring environmental and health costs and benefits into the economics of EV infrastructure build out. Their comments emphasized disproportionate Covid-19 impacts in communities that experience environmental injustice – largely due to transportation emissions.[20] Multiple panelists view electrification of transportation as a means to protect against significant, chronic, and sometimes fatal health conditions in these

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[19] *N.J.S.A.*. 48:25-1, *et. seq*. Mandated goals include that by December 31, 2021, at least 10 percent of the new bus purchases made by the New Jersey Transit Corporation shall be zero emission busses, and the percentage shall increase to 50 percent by December of 2026 and 100 percent by December of 2032, and low-income, urban, or environmental justice communities are to be prioritized; and that by December 31, 2020 the Board is to establish goals for vehicle electrification and infrastructure development that address medium duty and heavy duty on-road diesel vehicles and associated charging infrastructure.

[20] Jennifer Bosco of the National Consumer Law Center noted that COVID-19 presents a new stressor for low income households, but notes that if done right, the EV ecosystem presents potential benefits for low income households including downward pressure on rates, lower transportation costs, environmental benefits (cleaner air), and more reliable public transportation. Doug O'Malley of Environmental New Jersey emphasized the monetary benefits of electrification of transportation such as the costs of air pollution, heath costs and the inequitable results in COVID-19 outcomes. Mr. O'Malley stressed that these economic factors should be part of the equation when evaluating the costs of EV ecosystem deployment. Terry Travis of EV Noire noted that air pollution is a systemic, holistic problem, that there is extensive data on pollutions' impacts to the body and that people of color live with approximately 60% more air pollution. Mr. Travis pointed out that while early adopters of EV tend to be in higher income brackets, equity means removing barriers to adoption and addressing the issue through a multi-modal approach (not just light duty, but more comprehensively).

communities, and PSE&G agrees Covid-19 impacts should be considered through this lens.[21] The PIV Act already made the determination that the benefits of transportation electrification warrant socialization of EV infrastructure costs among the State's utility customers by codifying all of the EV goals into the public utility law. State policy and law regarding air emissions and electrification generally, the PIV Act's ambitious timeline, and now Covid-19 dictate that the Board should take any and all steps it can, and use any and all resources at its disposal – including public utility initiative, resources, and expertise – to meet these goals.

VI. Additional Recommendations On The Straw Proposal

A. General Principles

While reserving our right to supplement these comments in the future, PSE&G offers the following comments on general principles.

Any guidelines the Board puts forth on the EV ecosystem should be high-level, and should not prescribe specific cost recovery mechanisms or program features. EDCs should instead be encouraged to propose a broad array of programs and challenged to demonstrate the benefits of those proposals during the Board's approval processes. Additionally, any guidelines the Board puts forth regarding EV ecosystem development should include development of programs that address all sectors, including bussing and public transportation sectors.

B. Specific Minimum Filing Requirements

As is stated above, PSE&G does not believe that minimum filing requirements in the Straw Proposal should apply retroactively to its pending CEF-EVES petition. Regarding the specific items proposed as potential "minimum filing requirements," since some of these issues are already being considered in existing EDC EV filings, and their outcomes will guide the other two EDCs in developing their own EV programs, the value of establishing minimum filing requirements at this time is limited. Moreover, exceedingly prescriptive filing requirements would, in effect, pre-judge issues that are best decided during proceedings to review either existing or yet-to-be filed individual EDC proposals.

For example, the Straw Proposal states that EDC proposals should cite specific statutory authority for rate recovery proposals. Statutory authority for EDC EV programs is an issue currently being considered in PSE&G's CEF-EVES petition proceeding, and is an issue that has been

[21] Mr. Travis (see above) noted that this is a "literal matter of life and death" to communities experiencing environmental injustice, and Kate Miguel of Isles opined that we should not delay work on EV ecosystem because of COVID-19, but rather we should prioritize this work *because* of COVID-19, noting the average cost of healthcare treatments to families disproportionality impacted by asthma is $3600 annually. Ms. Miguel stated her belief that relegating utilities to provider of last resort status at this time would be "irresponsible."

extensively briefed by multiple parties in that proceeding. The disposition of the statutory authority issue in the CEF-EVES case will determine how other EDCs may move forward with EV programming.

The proposed minimum filing requirement that EDC filings not be "duplicative" of other state-run EV programming could stifle creativity and ingenuity in design for EDC programing. For example, the PIV Act allows the Board to establish an incentive program for in-home chargers with an incentive cap of $500 per person.[22] As EDCs and stakeholders evaluate the progress of in-home charger adoption, if price is a significant barrier and the maximum in-home charger incentive the Board may offer of $500 seems insufficient to change customer behaviors, EDCs could propose an additional monetary incentive to further close the cost gap, or could propose an incentive geared toward charger installation rather than charger purchase. A "non-duplicative" filing requirement, however, might discourage an EDC from even recommending these types of offerings at the outset. There is no requirement in the PIV Act for non-duplicative programs. Rather, the PIV Act grants the Board broad discretion to approve "other programs" to help achieve the mandated goals therein.[23] The Board should avoid minimum filing requirements that might discourage a broad range of proposals that can subsequently be evaluated. As an alternative to this "minimum filing requirement," the guideline could direct EDCs to design their programs to complement and operate in conjunction with state-run programming, and to the extent that some EDC-proposed elements are similar to state offerings, the EDC should include information with the petition demonstrating the benefit of the additional offerings toward meeting the PIV Act goals.

The Straw Proposal also seeks comment on whether there should be a minimum filing requirement with respect to integration of Advanced Metering Infrastructure ("AMI") and EVSE. PSE&G does not recommend such a minimum filing requirement. The key to managed charging capabilities is smart charging, not AMI. The core benefit from the deployment of a smart charger versus a non-communicating charger is the ability to undertake managed charging, whereby the customer is incented to charge their EV during certain times to remove unnecessary stress on the grid. To implement the off-peak rebates and monitor vehicle charging behavior a smart charger is required. AMI meters are not a replacement for smart chargers.

AMI when paired with smart chargers can enable Vehicle-to-Grid ("V2G") charging and other innovative load management programs in the future. At this time, full AMI deployment in New Jersey is several years away. PSE&G is currently the only EDC that has filed a proposal for AMI deployment that is still pending approval. While the Board has directed the other EDCs to file AMI proposals by the end of this summer, there are not sufficient benefits to coordinated AMI/EVSE deployment that warrant any further delay in EVSE deployment.

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[22] *N.J.S.A.* 48:25-6.

[23] *N.J.S.A.* 48:25-3(b).

C. Beneficiary Pays and the Main Extension Rules

The Straw Proposal requests comment on whether EVSE installations should be treated under a more traditional "beneficiary-pays" model where the entity creating the need for the upgrades, such as an EVSE infrastructure developer, pays for the upgrade costs, consistent with the Board's regulations on extensions of utility service, or whether, "given the need for rapid deployment of the EV Ecosystem, coupled with the human health and environmental benefits of moving toward an electrified transportation sector, other measures should be implemented."[24]

Board Staff is correct to question the traditional model as it relates to EVSE installations. The enactment of the PIV Act and the goals set forth in the EMP make clear that the need for rapid deployment of the EV ecosystem require an alternative approach, and the PIV Act grants the Board broad discretion to determine the correct approach to meet the goals set forth therein. While it is not clear what is meant in the Straw Proposal by its reference to "the earnings test" in this context, the Board's main extension regulations can result in a significant cost burden on the entity creating the need for upgrades, depending on the type of installation and location on the system. The benefits of EVSE as part of the EV ecosystem are not recognized under this model, because all utility customers benefit from electrification of transportation, and individual EVSE installations are necessary to deliver these system-wide benefits.[25] Application of a beneficiary pays model would only perpetuate the chicken-and-egg problem that the PIV Act attempts to solve – that customers will not purchase EVs unless there is sufficient charging available, but because of high costs to install EVSE, the private market will not develop EVSE due to low penetration of EV ownership currently. Thus, PSE&G supports the Straw Proposal's recommendation that EDCs recover *all* costs associated with distribution system upgrades and Make Ready work through rate recovery mechanisms proposed by the EDCs, subject to Board review and approval.

D. Rate Design

PSE&G agrees that certain utility rate structures are acting as barriers to mass deployment of EV infrastructure, but there is not a single solution to address these issues. EDCs have different rate structures embedded in their tariffs and different financial and operating structures that may result in different types of barriers impacting EV deployment. Thus, the Board should be flexible in allowing EDCs to propose rate provisions specific to each EDC's proposals.

For example, PSE&G has proposed an effective strategy in the CEF-EVES program to offer rate provisions to remove barriers and encourage EV adoption. The program:

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[24] Straw Proposal at 9.

[25] Consideration of how to manage traditional concerns over "free rider" issues will increasingly become relevant for new and different types of assets that may be part of the utility of the future, such as off-shore wind.

- offers residential and small commercial customers an off-peak rebate to encourage off-peak charging. PSE&G's program would also allow residential customers flexibility to opt for PSE&G's existing time of use ("TOU") rate, the Residential Load Management ("RLM") rate, that has low off-peak rates to encourage off-peak charging.
- offers a demand charge rebate to the direct current fast charging ("DCFC") market to combat the high cost of electricity when station utilization is low.

PSE&G's CEF-EVES filing sets forth a "set point" approach that offers a rebate above a set point for the average billed rate ($/kWh), which can be based upon parity to petroleum fuel costs or a rate deemed acceptable to encourage EVSE investment, particularly in DCFC stations. This approach effectively mitigates the impact of demand charges that would otherwise create a disincentive during the early, low-usage stage of EV ecosystem deployment. This rebate will moderate itself because it declines as the station utilization increases and, therefore, is the most appropriate way for PSE&G to encourage investment by the private market in the short term. The same mechanism will serve to maintain the appropriate rate for cost causation in the long term because demand charges, once utilization increases, send the correct cost signals to align peak demands with cost causation for distribution system delivery, transmission, and generation capacity costs of DCFC stations.

As for Rate Counsel's suggestion that all EV-related costs go into an EV-specific rate, this would only serve to perpetuate the existing and substantial barriers to EV adoption. As stated above, the approach Rate Counsel suggests ignores the very real benefits that all utility customers derive from electrification of infrastructure, regardless of who is driving the EVs.

Rate design to remove barriers to EV adoption should vary depending on the programs proposed and the rate and financial structure of each EDC. The Board should encourage EDCs to develop proposals to address financial barriers, but should not adopt rigid or formulaic approaches.

E. Make Ready Process and Timing

At the outset, the Straw Proposal attempts to coin a new term, "Charger Ready" for work that it acknowledges is synonymous with the term "Make Ready." Make Ready is a broadly accepted and widely used industry term. Use of "Charger Ready" could be confusing. PSE&G encourages the Board to revert to "Make Ready" in future discussions and documents to avoid confusion. The Straw Proposal also seems to define too narrowly this work, indicating that the utility role should be limited to utility side of the meter upgrades or "wiring" only upon request of third parties. PSE&G recommends that the Straw Proposal should clarify that Make Ready investment by utilities extends beyond the meter to the "charger stub." Utility investment of this type is not unusual, as this same model applies to other applications such as net-metered solar facilities.

Additionally, PSE&G urges reconsideration of the Make Ready process outlined in the Straw Proposal.[26] First, as stated above, utilities should not be relegated to a reactive role in Make Ready

[26] Straw Proposal at 10-11.

development, or limited to Make Ready work in general. Second, the timing of the process for the Company to complete Make Ready work may vary considerably based on the circumstances of each proposed location. For instance, some locations may have circuits that are overloaded and will require different types of utility-side upgrades. Additionally, some of the required equipment typical for EVSE installations, such as pad-mounted transformers, require purchase lead times of six to eight months on average. Local, county, state, and federal permitting processes can be lengthy, particularly in locations with railroad or highway crossings or wetlands. PSE&G does not recommend that the Straw Proposal require a twelve-month deadline for this work.

F. Mapping

PSE&G supports the concept that EDCs should work with the DEP to identify where to prioritize EVSE and on ensuring compliance with the PIV Act's directives regarding public charging. It is unclear what the Straw Proposal means in stating that EDCs should be tasked with "develop[ing] hosting maps" and that EDCs should be permitted to recover costs for "mapping exercises." Considering the short time for reaching the PIV Act goals, formal mapping projects are not necessarily the best use of time and resources. Formal mapping could pose challenges, as EDCs have different engineering and planning processes and systems. PSE&G's current capabilities for real-time data are limited to the station breaker, which will not have site-specific accuracy. For example, an area may have adequate capacity but may require a lengthy circuit extension for charger interconnection. A more efficient allocation of resources is to perform localized distribution system analysis as charging sites are refined to yield accurate identification of system capacity or limitations. PSE&G recommends that collaboration on location of infrastructure should be an iterative process related to individual EDC's EV program proposals.

VII. Conclusion

PSE&G thanks the Board and Staff for its actions to advance EV ecosystem development. PSE&G encourages the Board to take full advantage of the robust support in these endeavors that PSE&G and other EDCs are willing and able to offer, and looks forward to continued collaboration with Board Staff and other public and private stakeholders toward reaching a cleaner energy future for New Jersey's utility customers.

Very truly yours,

Matthew M. Weissman

New Jersey Electric Vehicle Infrastructure Ecosystem 2020 Straw Proposal

June 17, 2020

Joe Rulli
(848) 221-6775

In reviewing the current locations of NJ vehicle charging stations, it appears most of the stations are located on the eastern and western borders of the state. I am recommending new stations must be added to accommodate cross-state east/west routes. For example, the intersection of Routes 70 and 539 in Manchester would be a perfect location for huge number NJ shore to Pennsylvania commuters that pass through this intersection. This location is at the edge of residential areas before commuters enter large areas of pine barons. This location could serve as the last area to "fill up" before the commute to Pennsylvania.

Thank you for considering my proposal in this matter.

Jersey Central Power & Light
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June 17, 2020

VIA ELECTRONIC MAIL

Aida Camacho-Welch, Secretary
New Jersey Board of Public Utilities
44 South Clinton Avenue
3rd Floor, Suite 314
P.O. Box 350
Trenton, New Jersey 08625-0350
board.secretary@bpu.nj.gov

Re: In the Matter of Straw Proposal on Electric Vehicle Infrastructure Build Out Docket No. QO20050357

Dear Secretary Camacho-Welch:

Jersey Central Power & Light Company ("JCP&L" or the "Company") is pleased to submit comments on the Board of Public Utilities' ("Board" or "BPU") Straw Proposal on Electric Vehicle ("EV") Infrastructure Build Out ("Straw Proposal"). As recognized within the Energy Master Plan and through the recent adoption of Senate Bill 2252, accelerated EV adoption is a key clean energy objective for New Jersey. The transportation sector represents 42% of all net greenhouse gas emissions in the state.[1] Accordingly, widespread adoption of EVs would have a transformative impact on New Jersey's air quality.[2]

Utility involvement in the development of EV charging infrastructure is crucial to encourage widespread EV adoption in New Jersey. Although New Jersey committed to deploying 330,000 EVs by 2025,[3] as of June 2019, there were only 26,000 EVs registered throughout the state.[4] One of the main barriers to EV adoption is range anxiety, *i.e.*, if the public does not observe public charging infrastructure in their day-to-day travel, they are discouraged from purchasing EVs based on the legitimate concern that they may be unable to charge their vehicle away from their home. Due to this low penetration of EVs, a shortage of public charging infrastructure exists because private EV service equipment ("EVSE") infrastructure companies will not install chargers where there is no demand for charging. This dynamic creates a "chicken or the egg" problem.

[1] 2019 New Jersey Energy Master Plan Pathway to 2050 ("EMP"), p. 59.
[2] *See id.*
[3] *See* Multistate Zero-Emission Vehicle Programs Memorandum of Understanding, available at https://www.zevstates.us.
[4] EMP, p. 63.

Without more EVs in the state, the competitive market will not install more public charging infrastructure, but without public charging infrastructure, residents will not purchase new EVs. New Jersey must build the charging infrastructure necessary to overcome this range anxiety barrier to achieve its clean energy goals and reduce greenhouse gas emissions from the transportation sector.

Electric utilities solve this "chicken or the egg" problem. Where utilities develop and own public charging infrastructure, a baseline level of public charging infrastructure is established, which will, in turn, reduce range anxiety for residents and increase EV purchases. Once there are more in-state EV drivers, the competitive market for EV charging infrastructure will expand.[5] This important role that electric utilities can play in jumpstarting EV adoption has been recognized by numerous commissions throughout the country.[6]

In its Straw Proposal, the Board recognizes the importance of electric utility involvement in the development of public charging infrastructure. In the following comments, JCP&L addresses each of the components within the Board's Straw Proposal and responds to certain questions posed by the Board. JCP&L is looking forward to working with the Board and other stakeholders to develop a comprehensive EV infrastructure buildout program that facilitates electrification throughout the state.

Shared Responsibility Model

In the Straw Proposal, the Board proposes a "shared responsibility" model for electric utility charging infrastructure programs. In this model, the utility would develop all backbone wiring and distribution infrastructure, including any necessary distribution system upgrades, *i.e.*, "make ready" work, needed to support EV chargers at public and multifamily sites throughout its territory. Where a private EVSE infrastructure company is interested in installing a charger at one of those sites, that private company would be charged with installing, owning, and operating the charger moving forward. Alternatively, where private EVSE infrastructure companies have no interest in a site, the utility would be responsible for installing, owning, and operating the charger at that location. All costs associated with making these sites "charger ready" would be recoverable by utilities via a rider recovery mechanism.

The Company supports the shared responsibility model subject to certain key changes highlighted below. Primarily, electric utilities should have a more central ownership role of public charging infrastructure. As part of their December filings, electric utilities should be permitted to propose a certain percentage of public chargers that would be owned and operated by utilities. Permitting utility ownership of public charging infrastructure at the time of program launch would ensure the most accelerated deployment of public charging infrastructure. In the Straw Proposal,

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[5] See Electric Vehicles: Key Trends, Issues, and Considerations for State Regulators, National Association of Regulatory Utility Commissioners (October 2019).

[6] *Electric Transportation Biannual State Regulatory Update*, Edison Electric Institute (May 31, 2019), available at https://www.eei.org/issuesandpolicy/electrictransportation/Documents/FINAL_ET%20Biannual%20State%20Regulatory%20Update_May%202019.pdf.

the Board correctly recognizes the importance of utility ownership of public chargers, particularly in equity areas, to ensure all New Jersey residents have access to local public charging infrastructure. Additional benefits of public charging infrastructure, which are extremely important for equity areas, include mobility, job creation, and reduced health care costs. The Board should seek to make this public charging infrastructure available to New Jersey residents as soon as possible to achieve its clean energy and public policy goals.

Program Timeline

In the Straw Proposal, the Board correctly recognizes the urgency associated with public charging infrastructure deployment. JCP&L supports the Board's recommendation for an expedited timeline in which utility filings are submitted in December 2020 followed by an accelerated Board approval process that allows for program launch in April 2021. New Jersey committed to deploying 330,000 EVs by 2025. In order to have any realistic opportunity to meet that objective, utility charging infrastructure programs must be launched within the next year. Wherever possible, the rules associated with these utility programs should reflect this urgency. Allowing utility ownership of a certain percentage of public charging infrastructure at the time of program launch is the way to accomplish this objective. In addition, after identifying circuits where potential public chargers could be installed that would be available to private EVSE infrastructure companies, utilities should only be required to wait for a defined and limited period of time to obtain a commitment from private EVSE infrastructure companies before utilities could choose to unilaterally move forward with a utility-owned charger along those circuits as well. JCP&L suggests a period of 60 days after opening the application period proposed below for private EVSE infrastructure companies to make a commitment to install a charger on a circuit. If no interest is expressed by private companies within 60 days, then the utility should be permitted to begin installing public charging infrastructure at those locations.

A longer application timeline, in which utilities are simply waiting for private companies to express an interest in necessary public charging locations, would be contrary to New Jersey's public policy goals. The Board's top priority should be installing public chargers on an expedited basis in order to meet its commitment of 330,000 EVs by 2025. Electric utilities are well-positioned to own and operate public chargers and should be permitted to begin installing, owning, and operating public chargers as soon as this program launches in April 2021. JCP&L's affiliate, The Potomac Edison Company ("Potomac Edison"), is already owning and operating public charging infrastructure in Maryland, and the Company intends to rely on that experience to launch its own charging network in New Jersey. Deploying these chargers expeditiously must be a cornerstone of these programs, which means utilities must have a central and early role in the installation, ownership, and operation of chargers.

Cost Recovery

In the Straw Proposal, the Board recognizes that rider recovery is appropriate for this program. Rider recovery via the Company's Societal Benefits Charge seemingly would be appropriate due to the recognized environmental and societal benefits provided by electrification

and the use of cleaner, more efficient technologies.[7] The Board should permit full and timely rider recovery for all costs associated with utility programs, including, among other things, all make ready work, distribution infrastructure upgrade costs, operation and maintenance ("O&M") costs associated with developing and implementing these programs, the capital and O&M costs associated with utility-owned chargers, consumer education, rebates, and rate discounts. Cost recovery should include a return on and of all capital investments. Revenues received from the use of the utility-owned chargers would be credited back to the rider as an offset of program costs.

Where the Board is seeking to encourage utilities to launch a new program on an expedited basis, rider recovery is the appropriate cost recovery mechanism because it facilitates prompt action. While cost causation principles may support recovering the cost of the make ready infrastructure directly from the charging station owner or the site owner, it is unlikely that the state would accomplish its clean energy goals in the transportation sector without proactive steps to address EV charging infrastructure and range anxiety. Rider recovery also provides the Board with transparency regarding utility spending when the utility files for annual reconciliation of the rider.

Any delay or uncertainty associated with cost recovery may discourage utilities from deploying public chargers and related distribution infrastructure. Although JCP&L strongly supports electrification of the transportation sector, it cannot move forward with the installation of new distribution infrastructure or a utility-owned charger if it lacks clarity regarding its ability to recover those costs. A few elements within the Straw Proposal raise concerns in this regard. First, the Straw Proposal discusses an earnings test that would be applied to evaluate whether a utility may recover its program costs. The Straw Proposal does not explain what factors would be included in the test or how the test would be applied. JCP&L disagrees with such an approach. An earnings test is not appropriate as the investments are required to advance state policy goals and this test would contribute to additional uncertainty during the program. Before installing new infrastructure, JCP&L would spend time trying to evaluate if it would meet a future undefined earnings test, which would inevitably contribute to additional delays throughout the process. Instead, if the Board approves a utility's EV infrastructure buildout program, the utility should be permitted full and timely rider recovery for all costs associated with that program without a subsequent Board review of that spending. In other words, if the utility follows the framework outlined in its BPU-approved program, cost recovery should be certain.[8]

Second, the Straw Proposal discusses a few different program costs that may not be rider recoverable, such as the capital costs associated with utility-owned chargers, the distribution infrastructure costs related to multifamily chargers installed at assigned parking spaces, and where a utility's make ready work is not completed within 12 months. Again, creating exceptions to rider recovery does not promote timely or widespread installation of public and multifamily chargers.

[7] Rider recovery is permissible pursuant to N.J.S.A. 48:3-98.1.

[8] To the extent the Board determines that an earnings test will be applied, JCP&L recommends using the earnings test provided under the Infrastructure Investment & Recovery Program (commonly referred to as "IIP"). The evaluation of reasonableness and prudency of costs could take place in a subsequent rate case, as is also the case with the IIP programs.

If there is no interest from private EVSE infrastructure companies to install chargers at a location, presumably these locations have investment risk related to market conditions or usage/revenue projections. As such, the Company should be able to recover the capital investment of the charger through a rider mechanism in the same manner as the backbone and make ready wiring for the chargers. The Board should adopt program rules that encourage expedited deployment of utility-owned chargers at the location to help New Jersey reach its goal of 330,000 EVs by 2025. Moreover, potential EV users who live in that location deserve equitable access to public charging infrastructure. Revenues from the utility-owned chargers would offset the rider costs.

In addition, if the Board believes that multifamily chargers at assigned parking spaces should be included within utility programs, then all utility costs associated with these installations must be rider recoverable. Finally, the Company expects that it will be able to meet a 12-month installation deadline for make ready work; however, the Company should not be penalized in its cost recovery where unforeseeable delays, such as local zoning and permitting issues, weather, pandemic-related, or communication delays, prevent JCP&L from meeting this deadline. If the BPU's intention is to ensure the utilities are completing the requested work in a timely and efficient manner, JCP&L recommends the BPU consider regular status reporting as an alternative to an established time period for construction.

To the extent the Board is concerned about bill impact, based on the experience of JCP&L's affiliate, Potomac Edison, in Maryland, an EV infrastructure buildout program may be adopted without significant cost to customers. In January 2018, Potomac Edison joined the other investor-owned electric utilities in Maryland to submit a joint petition for implementation of a statewide electric vehicle portfolio, which was deemed the second largest utility charging infrastructure program in the country including approximately 24,000 EV chargers.[9] Even with the size of the proposed program, the maximum projected monthly residential bill impacts ranged between $0.25 and $0.42 among all the utilities.

Program Framework

The Company anticipates using the next six months to work internally and with the Board and other stakeholders to develop the mechanics of a utility EV infrastructure buildout program. For example, the Company needs additional time to evaluate the proposed number of public and multifamily chargers that would be included in its program, develop the mapping tools, adopt application requirements, conduct a request-for-proposal ("RFP") for the utility-owned component of the program, and obtain input from private EVSE infrastructure companies, local government authorities, and other stakeholders. However, the Company has a few overarching recommendations regarding the program framework at this time.

As part of its December filing, the Company would provide a recommendation regarding the number of Level 2 and DC Fast chargers that would be included in the program, and the

[9] Merchant, Emma, *Maryland Could Soon Have the Second-Largest EV Charging Network in the US*, Green Tech Media (Jan. 26, 2018), available at https://www.greentechmedia.com/articles/read/maryland-second-largest-ev-charging-network.

percentage of chargers that would be owned by utilities versus private EVSE infrastructure companies. The Company is exploring whether it can develop an EV charger load hosting map for its service territory to determine where the distribution grid can manage the installation of public and multifamily chargers. JCP&L does not have the capability to prepare maps reflecting specific lot information; however, the maps may be able to present load hosting data on a circuit level. All costs associated with this mapping effort should be rider recoverable.

When the Company's program launches on April 1, 2021, the Company would begin the process of installing its assigned percentage of public chargers. At the same time, private EVSE infrastructure companies would be asked to submit applications to install chargers. This application period would close on May 31, 2021. For those locations where private EVSE infrastructure companies do not express any interest within the 60-day application period, the Company would have the right to move forward with installing a utility-owned charger at that location.

Once the charger sites are assigned to either private companies or JCP&L, a charger installation schedule would be adopted to ensure deployment occurs on an expedited basis. JCP&L expects that the installation of chargers will need to be staggered over a multiyear period, particularly if a private EVSE infrastructure company ends up with many different sites in a utility program.

The Company generally agrees with an initial program timeline of five years (2021 to 2025) but recommends that the Board permit the program to extend if New Jersey has not met its EV penetration goal of 330,000 EVs by 2025. This extension should also apply to a utility's ability to own and operate public charging infrastructure. In general, the Company encourages flexibility throughout the deployment of utilities' buildout programs, allowing utilities to make modifications to their programs where necessary to encourage faster charger installation and EV adoption.

Utility Chargers and Make Ready Work

Learning from the experience of its affiliate Potomac Edison, the Company is already prepared to install, own, and operate public chargers. The Company anticipates issuing an RFP to identify its network and equipment vendors. The chargers would be equipped with charging ports that allow for accessibility from the greatest number of EV models, currently the SAE J-1772 and CHAdeMO ports. The Company expects to use a single network vendor for all of its public and multifamily chargers and would charge Board-approved fees at these chargers. The metrology of the charger would be used to charge individual EV users, and JCP&L would review the accuracy of that metrology based on the monthly readings at its interval meters. All costs associated with installing, owning, and operating these chargers must be rider recoverable.

At sites where private EVSE infrastructure companies will be installing, owning, and operating chargers, the Company should be compensated for all costs associated with preparing the site for the installation of the charger. This work includes, but is not limited to, all wiring, conduit, distribution infrastructure extension and upgrades, transformers, service panels, junction

boxes, etc. In addition, the 12-month timeline for a utility's make ready work should not begin until the private EVSE infrastructure company has obtained all necessary property rights and receives authorization from the site host that construction may begin.

Private EVSE Infrastructure Companies

The Company recommends a few modifications to the performance requirements for private EVSE infrastructure companies in the Straw Proposal. First, private EVSE infrastructure companies should not need 12 months (with two optional six-month extensions) to install a public charger. Based on the experience of the Company's affiliate in Maryland, the make ready work is significantly more time consuming than the delivery and installation of the charger itself. At most, private EVSE infrastructure companies should be permitted six months to install and begin operating the charger after a site is charger ready.

Additional clarification is also needed regarding the ownership and control of private charging sites. Once a private company chooses an area for a public or multifamily charger, that company will need to negotiate with potential third-party site hosts of the charger, if applicable. Although the utility may be able to identify the circuits where chargers may be installed, it is the responsibility of the private EVSE infrastructure company to identify the specific lot for the charger and obtain property rights for that location. While the utility would be responsible to maintain the distribution infrastructure at that location moving forward, the utility should not be responsible for managing charger availability at that site. The utility would have no ownership or operational control of the charger. If the private EVSE infrastructure company ceases operating at that location at some point in the future, it should be up to the site host to find a replacement charger operator and equipment or engage the utility to become the replacement owner/operator.

The Company also disagrees with the requirement for utility monitoring of private EVSE infrastructure companies' performance. Other than confirming installation of the charger, utilities will not have any information regarding the charger operation. Private EVSE infrastructure companies have no current regulatory obligation to report any information to utilities or the Board. However, the Company would support that, as a program participation requirement, private EVSE infrastructure companies agree to provide charging metrics and charger metrology information, *e.g.*, time and duration of charging, to the Board and utilities.

To the extent a private EVSE infrastructure company fails to install a charger within the required period, JCP&L would notify that company that it is no longer eligible to install a charger at that location. Subsequently, the Company would either install a utility-owned charger at the location or seek new applications from other private EVSE infrastructure companies for that site and provide an additional 60-day application response timeframe.

Rate Design

The Company is open to evaluating new rate design offerings for EV chargers subject to the following conditions. If JCP&L is directed to create a new rate schedule for multifamily

dwelling chargers to allow rate parity with single family dwelling chargers, the discount provided on the applicable commercial schedule should be recoverable via the EV program's rider recovery mechanism. Similarly, if public chargers are authorized to receive a demand charge credit, that credit amount must be recoverable via rider. The Company understands the Board's interest in developing these new rate structures to promote important policy objectives, but JCP&L must continue to be compensated for all of its costs.

Regarding the Straw Proposal's recommended time-of-use tariff rate offering, JCP&L would apply this tariff rate offering to the generation or supply component of the bill only. Generation charges vary by time and are therefore the appropriate subject of a time-of-use offering. This time-of-use rate would be notional, based on a historical average differential between on and off-peak values, and all costs associated with the offering should be recovered via the proposed rider.

In addition, the appropriate tariff rate offering to EV owners/site hosts would depend on the location of the charger and potential users. A time-of-use EV tariff rate offering to EV owners/site hosts for public chargers likely would be structured differently from residential or multifamily chargers. The time-of-use EV tariff rate offering may need to rely on the metrology of the charger itself rather than the electric meter as charging supply is not the same as site electric usage.

For a residential customer, the time-of-use rate should be based on the metrology of the charger to encourage customers to charge at off-peak times. If the only time-of-use rate available is based on a customer's home electric meter, the impact of on-peak versus off-peak charging will not be as clear to a customer because the electric usage for the whole house is also included in the on-peak/off-peak calculation. To the extent the Board seeks to include a residential component within these programs, the Company recommends initially offering an off-peak credit program to residential customers, which is an off-bill payment customers would receive when the majority of their charging occurs off-peak (*i.e.*, credit applied to each off-peak kWh, in excess of on-peak kWh, for EV charging). The off-peak credit program would be available to customers with Level 2 chargers installed at their residence which JCP&L is able to qualify for the program for purposes of gathering charging interval data. JCP&L's affiliate, Potomac Edison, offers a similar program in Maryland. To help customers become more comfortable with the time-of-use concept, there is no penalty if the customer charges during more on-peak than off-peak hours.

For public and multifamily chargers accessible to multiple EV users, the only way the Board can ensure an EV user would benefit from a time-of-use rate is if the utility owned and operated the charger. Because the Board does not have any jurisdiction over the public charging rates of private EVSE infrastructure companies, there would be no way to ensure these companies are charging EV drivers different rates based on their time of charging. The Company is open to developing a time-of-use rate for these locations if the Board is aware that only the charger owner will be charged this rate. If the charger can be separately metered, the Company expects that either an interval meter, or once available, a smart meter would be used for billing purposes at these

multifamily or public chargers. These credits for residential customers would also be recovered through a rider.

Utility Partnerships with Municipalities, Schools, and Transportation Authorities

The Company is very interested in exploring partnership opportunities for electrification with local entities and transportation authorities. If the Board authorizes the inclusion of school bus electrification as part of utility programs, JCP&L would reach out to its municipalities and school districts to assess interest and discuss program components. When Potomac Edison discussed its EV charging program with municipalities, some municipalities expressed significant interest in a utility-owned EV charging network because it did not require additional resources from the municipality in order to operate. They also appreciated that the charging rate was established by the utility and approved by the Maryland Public Service Commission. As a result, the Board should permit utility ownership of chargers that are used to serve municipalities, schools, and transportation authorities.

JCP&L will need additional information from these entities to determine the estimated costs associated with electrifying these sites. Although JCP&L may be able to discern the location of airports, seaports, and bus and rail terminals in its service territory based on their standard industrial classification codes, the Company does not have sufficient information to provide cost estimates or distribution infrastructure designs for these sites. JCP&L would need to conduct site visits and receive equipment and peak load addition information from the customer in order to determine this information. Accordingly, the Company recommends a customer-driven process for electrification of these sites. The timing associated with developing these planning estimates is currently unknown, because it would entirely depend on when the customer reaches out for an estimate, as well as the specific electrification design, necessary distribution infrastructure upgrades, and required customer equipment upgrades. Additionally, economic recovery of customer operations and budget constraints due to the COVID-19 pandemic will vary by customer.

JCP&L appreciates the opportunity to provide these comments on the Straw Proposal and looks forward to working with the Board and other stakeholders as it prepares its EV infrastructure buildout program filing.

Best regards,

Lauren Lepkoski
Teresa Harrold
Jersey Central Power & Light Company

June 17, 2020

VIA ELECTRONIC FILING

Enervee Comments on "NJ Electric Vehicle Infrastructure Ecosystem 2020 Straw Proposal"

Enervee appreciates this opportunity to provide comments on the New Jersey Board of Public Utilities (NJBPU) New Jersey Electric Vehicle Infrastructure Ecosystem 2020 Straw Proposal (Straw Proposal,) and we applaud New Jersey's efforts to accelerate electric vehicle (EV) adoption by developing a comprehensive EV ecosystem.

Enervee is a software-as-a-service company that empowers consumers to make better energy-related buying decisions – and nudges them to choose the most energy efficient consumer products. Enervee pioneered the use of Choice Engines in the energy industry, and we're at the forefront of using new data, energy and consumer data and analytics, software technology and behavioral insights – coupled with state-of-the-art digital marketing – to transform how utilities engage their customers and how all of us shop. With the belief that transparent markets work better for consumers, Enervee seeks to eliminate market barriers to billions of efficient purchases annually. Utilities across the US use Enervee's suite of applications and services to engage consumers, save energy and transform markets. A link to Enervee's blog is found in the footnote below that provides an overview of the Enervee "Cars" Choice Engine Marketplace, and the consumer research that underpins the Enervee approach[1]. Enervee's comments today focus on the important role that consumer awareness and education play in EV adoption and utilization of the charging infrastructure that utilities support.

As noted by Advanced Energy Economy (AEE) in *EVs 101: A Regulatory Plan for America's Electric Transportation Future*, "the evolution of transportation will depend to a large extent on the choices of consumers"[2]. This may seem self-evident, but the consumer perspective can easily get lost in the

[1] https://blog.enervee.com/from-2-to-36-in-under-60-seconds-a8c76762d5c0
Link to an AEE webinar on the topic of what utilities have learned about driving EV purchases: https://blog.enervee.com/what-utilities-have-learned-about-driving-ev-purchases-c8fb14503313
[2] https://info.aee.net/advanced-energy-policy-brief-ev-101

high-stakes discussions surrounding EV charging infrastructure – what's needed where and when, who should provide it, and how to pay for it. But when it comes to cars, consumers are king – and the overwhelming majority believe that their energy provider should help them understand the benefits of EVs over conventional vehicles[3]. That's something regulators should capitalize on as they prepare to grow the market for EVs.

AEE's EV issue brief underscores the importance of improving market transparency and developing data-driven customer engagement programs that leverage behavioral insights to stimulate consumer demand for EVs. Although consumers desire key attributes provided by EVs – in particular, saving money on fuel costs and reducing environmental impacts – the vast majority of people remain completely unaware of the existence of EVs[4].

The relatively brief time that electric vehicles have been available in the mass market, a shortage of automobile manufacturer marketing, unavailability of EV models in specific markets, and a lack of market transparency in terms of the relative operational efficiency and emissions of vehicles across fuel and engine types are some of the reasons cited by AEE for lack of consumer awareness. Conversely, when consumers are armed with a simple and credible way to choose vehicle models that are zero-emission, inexpensive to operate, and do not cost more to purchase, 84% say they would be likely (45% extremely likely) to opt for an electric over a conventional car model[5].

The Enervee team has tackled these challenges head on, by introducing the Enervee Score for Cars and embedding it in a powerful cloud-based vehicle Choice Engine available to consumers via their utilities. Spanning internal combustion engine (ICE), hybrid and plug-in electric vehicles, the zero-to-100 Enervee Score allows consumers to readily compare individual models on their relative efficiency – without having to think too hard about it.

It will be vital to have a robust consumer education and awareness program in place in order to achieve Governor Murphy's stated goal of having 330,000 electric vehicles on New Jersey's roads by 2025. Enervee believes it would be consistent with the shared responsibility model articulated in the Straw Proposal for regulators to encourage utilities to use their unique relationship with customers as an unbiased and trusted advisor to improve access to EV information. We also believe that a comprehensive education and marketing program is critical in achieving New Jersey's

[3] https://www.fortnightly.com/fortnightly/2018/02-0/utilities-passion-and-hard-work-ev-future
[4] https://blog.enervee.com/driving-electric-vehicle-awareness-envy-and-purchases-b552fd35ff11
[5] https://blog.enervee.com/revving-up-the-ev-market-8c90d21610f0

commitment in the Straw Proposal that all communities within the State of New Jersey have equitable access to the EV Ecosystem. It's worth noting that there is substantial relevant experience with this type of customer outreach and engagement in utility energy efficiency and EV programs in other jurisdictions.

Utilities are critical partners in helping car buyers understand the benefits of EVs and make informed purchasing decisions – considering tariffs, solar and home charger options. According to Lisa Wood, VP of Customer Solutions for the Edison Electric Institute, the role of investor-owned utilities is "to help to create a level playing field for EVs". People already have a contractual relationship with their energy provider, and the overwhelming majority (69%) believe that their energy provider should do more to help them understand the benefits of EVs over conventional vehicles. And EV manufacturers agree. General Motors' former director of advanced commercialization policy, Britta Gross, said: "It's critical that all utilities are fully involved and directly engaged in growing the EV market"[6].

In addition, utilities are uniquely placed to provide information on the complex web of considerations that come into play with respect to EVs. Consumers need not only to understand the EV options available in the auto market, but also need information about:

- Charging options available for buyers and information on electrical installation options in residential situations,
- Public charging station locations,
- EV-specific rate options and demand response programs,
- Potential Financial incentives, and
- The benefits of EVs.

We strongly recommend that the NJBPU direct utilities to integrate the vehicle and EV charger categories into the statewide utility marketplace (ordered in the recently approved NJBPU Comprehensive Energy Efficiency Program). This will provide consumers with a seamless experience across all consumer products, from appliances to home chargers and vehicles. A decision-based online marketplace for vehicles would allow customers to compare vehicles across engine and fuel types with respect to their efficiency and personalized total cost of ownership[7].

[6] https://www.fortnightly.com/fortnightly/2018/02-0/car-manufacturers-are-moving-fast

[7] For an example, see Con Edison's Cars Choice Engine (https://cars.coned.com/), embedded in their broader online marketplace featuring the EV charger category (https://marketplace.coned.com/).

This will improve market transparency and empower all car shoppers to explore EV options and choose EVs on their merits, including those who would not qualify for potential EV incentives.

Enervee appreciates the opportunity to provide comments on the EV Straw Proposal and we look forward to working with you on potential EV marketplace and EV related consumer education and awareness programs going forward.

Sincerely,

Jon Gordon, Director Regulatory Affairs
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860.462.9158

On behalf of the 100 member companies of the Chemistry Council of New Jersey (CCNJ), representing a $25.5 billion state industry that provides more than 44,000 high-paying jobs, we would like to submit the following comments on the Board of Public Utilities New Jersey Electric Vehicles Infrastructure Ecosystem 2020 Straw Proposal.

I think it imperative to begin by saying that CCNJ is not opposed to Electric Vehicles, or a reasonable program that creates a framework to allow the free market to incentivize infrastructure for these vehicles.

We are, however, concerned of the impact that this program could have on the already exorbitant energy prices our member companies pay. Furthermore, the proposal has not established a fully transparent program and does not properly address the means necessary to protect New Jersey ratepayers from unnecessary rate increases.

Energy is a crucial component of our industry's cost structure, and higher energy prices have a detrimental impact on both jobs and the bottom line of our member companies. New Jersey's industrial energy rates are some of the highest in the nation, 45% above the national average and they continue to rise. The state's energy policies are of critical importance to our members, as is evident by our membership having unanimously ranked energy costs as one of the top issues of concern facing their companies in New Jersey for eleven consecutive years.

There is little doubt that the financial impact caused by the COVID-19 pandemic has yet to be fully realized. This pandemic has and will continue to impact New Jersey, our country, and the world in ways we can still only imagine. In these uncertain times, it is important we consider how these endeavors, while noble, may impact the State's residents and greater business community. Now more than ever we must be cautious as we proceed and try to consider the actual impact on our state and not be driven solely by the desire to "charge" ahead.

CCNJ is on record having expressed concern regarding the legislation that provided the BPU the statutory authority to establish a comprehensive Electric Vehicle Ecosystem. We can appreciate the BPU's effort to try and meet the aggressive goals that have been established in the legislation by the endeavors outlined in the Straw Proposal. While we appreciate the proposal's consideration of ways to mitigate the potential impact on New Jersey's ratepayers; there is serious concern that the final determination will exclude the safeguards necessary to ensure ratepayer protection and representation.

We have outlined some of our concerns below and provided some additional thoughts regarding the BPU's Straw Proposal.

Minimizing the Ratepayer Impact

According to the Straw Proposal, a "shared responsibility" model is designed to promote appropriate roles for both utility companies (EDC) and private investors. The intent obviously is to ensure that EDC's play an important role but as we understand it, the goal is to promote private investment and ownership as the primary means to establish this new infrastructure.

The final BPU decision must be clear on the the intent to prioritize private investment and reduce the ratepayer impact and responsibility for construction of this infrastructure. Unfortunately, there are key components under this section that would allow, and in some cases encourage, greater EDC's involvement and this perhaps could hinder the private investment BPU hoped to achieve.

Allowing utilities to begin to make certain locations charger ready and determine which sites may be best to develop, essentially means ratepayers would be funding a stream of locations that may go on to be profitable for the private investment company or/and or the utility company. Specifically, why should ratepayers pay for locations to be "charger ready" when that location will then be sold or leased and used by a private company or municipal entity for the sale and distribution of something they intend to profit on. More importantly, why would a private company, or municipality for that matter, provide the cost to upgrade a specific site when they may wait and use a location that has been made charger-ready using ratepayer funding?

CCNJ understands that building an EV infrastructure is part of State's larger clean energy goals, however, that does not mean that cost should be covered by the citizens and businesses of the State through the rate making process. We also understand that given today's fiscal climate, private companies may be hesitant to make the investment and by providing charger ready locations, the BPU may help spur that investment. If this is the case, the Board should consider a potential return to the ratepayer for this investment.

BPU could create a system whereby ratepayers may provide the upfront cost for upgrading or making a location charger ready, but those costs should be returned to ratepayers as the charging stations become profitable at that location. Ratepayer returns could be worked into the determined electricity price for that charging station. The price could be a fixed number, set by the board, to ensure fair competition throughout the service territories. On the local level or in downtowns and main streets, there could be greater encouragement for partnerships between local chambers of commerce or business groups to develop charging sites. In these cases, the local business owners themselves may have their upfront cost returned.

It is crucial for the Board to address and ensure proper steps are taken to truly implement private investments before any ratepayer funded efforts. If the BPU and the utilities are sincere in their desire to help save ratepayers money, all considerations should be made before moving to ratepayer funded locations. The final program needs to be completely transparent concerning roles of EDC's and the private companies involved in the development of this program and the Board should have the discretion necessary to ensure that these parties are working in good faith to protect the State's ratepayers.

Monitoring the Role of EDC's

The proposal makes clear that the BPU believes that EDC's should have a major role to play and there is a need to glean their expertise and experience in the development of the new infrastructure. We understand, and it makes sense that EDC's must have a role in anything that looks to utilize the electric grid. This is particularly true to implement potential upgrades that may be necessary to accommodate the EV infrastructure or the potential increase in demand due to the growth of this new network of charging stations.

In addition to the upgrades mentioned above, the proposal would also allow EDC's to recover costs from ratepayers on a number of items, including making stations charger ready, (which we have already addressed), the development of hosting maps in conjunction with the mapping effort, and costs associated with being the "Last Resort" in order to ensure there is equitable distribution of charging stations throughout the State.

CCNJ believes that it would be important that any final decision from the Board must ensure that there are proper safeguards in place to protect New Jersey ratepayers. We do not believe that it would be beneficial to allow EDC's to have discretion with ratepayer money. These safeguards should be clear and precise and the final BPU authority must ensure their ability to oversee this program and properly regulate EDC's as may be necessary.

Pertaining to the mapping, while the provisions in the proposal specifically mentions a desire to avoid lengthy and costly distribution upgrades, CCNJ has some concerns regarding this provision. EDC's own considerable assets, including land throughout the State. What is to the prevent the EDC's from leaning toward these locations, where they are then able to sell or lease these properties to private companies for a charging station location. While the utilities want to have any upgrades, to that land, paid for by ratepayers, they would be able to profit through the sale or lease of that improved location. Will ratepayers see a return on their investment under these circumstances?

Additionally, there is an effort in this proposal to ensure equitable geographic diversity, including low-income, urban, and rural communities. CCNJ understands and agrees with the BPU that it is important that all areas throughout the state must be served for a true statewide commitment. However, the proposal states that *"If the market is not delivering EV services to a particular Equity Area, within a given timeframe, the EDC's would be eligible to act in lieu of an EVSE Infrastructure Company, meaning that it could directly own and operate the EVSE."*

This language is concerning to the CCNJ as the proposal is not clear about what would constitute a "given timeframe." During testimony to discuss the Straw Proposal there seems to be a real desire by the EDCs to make this date sooner than later. CCNJ believes that the board must give the market a fair opportunity to move toward these "Equity Areas" and providing an arbitrary date, may not provide that opportunity. We urge the BPU to use discretion here and ensure that all steps are taken to first provide for the marketplace to establish a location in these areas. CCNJ does not believe a fixed time frame is beneficial in trying to accomplish the goal of increased private investment.

CCNJ acknowledges that if gaps persist, the utility may be permitted to develop own and operate a location. If this is the case, it must be clear that any profits made, be it by the sale of electricity, or the lease or sale of established EVSE, be returned directly to the ratepayers of that utility. The proposal states that utilities can seek a rate case for the reimbursement of any expenses tied to a "Last Resort" function. Therefore, any future profits from that location must go back to the same ratepayers that funded its creation. CCNJ believes that all profits should be considered, EDC's must not be able to use ratepayer funds to then earn future profits on an infrastructure they had little to no risk in developing.

Additional Suggestions

The Board has been charged with the task of moving New Jersey toward the development of an EV infrastructure. The growth of this sector will play a major role in the State's overall energy goals. CCNJ would like to take this opportunity to share some additional insights that may help improve the programs overall success, while working to help new jersey business community.

The original legislation and corresponding proposal specially mentioned incentivizing electric vehicles purchases, home charging equipment and the expansion of charging infrastructure at multi-family dwellings and overnight lodging establishments. However, there was no mention of other New Jersey businesses that may host large numbers of employees and visitors during a normal business day.

CCNJ has been on record requesting the State to incentivize companies that choose to construct EV charging stations on their location. Not only would this provide that service to their employees, but in some cases, the means to allow for public use. These companies provide millions of the dollars to the Societal Benefit Charge, only to see that fund raided to plug budgetary gaps in the general fund. This could be the

ideal opportunity to utilize portions from that fund to provide companies with incentives to assist in building up EV infrastructure.

Secondly, not too long ago, New Jersey decided to increase the gas tax. In that moment, the state went from having one of the lowest to one of highest gas taxes in the country. The purpose of the tax was to provide much needed revenue to the Transportation Trust Fund. However, gas receipts continuing to decline and with fuel efficiency standards continuing upward, the increase of EV's into the marketplace will continue to impact gas tax revenue for the trust fund.

Electric Vehicles will use the same roads and bridges as other motor vehicles. Yet they will not be paying that same gas tax that helps to ensure those roads and bridges remain in good condition. There needs to be consideration of user fee or charge for EV users that will go toward the Transportation Trust Fund. While this may not be a popular idea, we believe that this would create equity between those that continue to drive gasoline powered automobiles and EV's. The BPU and the State must address this disparity as this program moves forward.

Finally, the program must look to create a fully transparent system. Information and decisions must be visible and easy to understand how and why a specific determination was made. If the BPU is not careful, the ratepayers that will assume most of the risk and that is not a "shared responsibility." We urge the BPU to use caution and careful consideration, utilize the expertise of New Jersey's business community and resist the pressure from the utility companies that promotes a system most beneficial to one side.

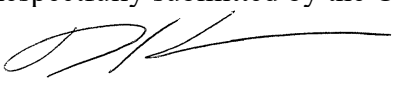
Conclusion

The Chemistry Council of New Jersey commends the BPU for working diligently to establish the goals of the legislation, while simultaneously navigating New Jersey's complex energy sector. CCNJ supports a the "shared responsibility" model that promotes a fair and balanced approach toward development of EV infrastructure and urges the BPU to consider the full impact on New Jersey's ratepayers as it works to ensure the final decision is actually fair and balanced.

We ask that the BPU continue to consider that our member companies compete with facilities within their own organization. If the cost of doing business in New Jersey is too high, it would be easy for a company to shift that work to another facility. We caution the BPU to ensure that a realistic program is put forth that will be sensitive to the electricity rates consumers will ultimately pay. This program has the potential to make New Jersey a leader in this emerging marketplace, however, it could also hinder future economic growth, in business sectors we are hoping to attract, if we do not properly consider the overall impact of the final program.

The Chemistry Council of New Jersey hopes that the BPU's final determination does not select winners and losers regarding the development of this program. Allow the private sector to invest, provide the necessary time and incentives to encourage private sector engagement and create the ability for New Jersey's ratepayers to earn a return on their investments. Thank your time and consideration in this matter.

Respectfully submitted by the Chemistry Council of New Jersey.



Dennis Hart
Executive Director

Exclusive Incenting of Plug-in Electric Vehicle Purchase is a Less Effective and Costly Strategy for Minimizing the CO_2 Emissions Caused by NJ Light Duty Vehicle Travel

(Version 1.3.1)

by
Dr. Dan Udovic, P.E. [1]
[2] [3]

ABSTRACT

The NJ Board of Public Utilities has recently approved a $30M per year rebate program that encourages NJ light duty vehicle drivers to purchase and grid-charge higher cost **Plug-in** Hybrid ICE/Electric[4] and All-Electric vehicles at utility ratepayer expense. No incentives are provided, however, to encourage the purchase of lower cost **non-Plug-in** Hybrid ICE/Electric vehicles that achieve equivalent CO_2 emission reduction at less public cost per vehicle, when used by average NJ drivers [5].

I am a Physicist and active NJ Professional Engineer, specializing in Energy, Power, Communication, and Control Systems with 40 years of experience in advanced technology product development and system integration. I have a B.S. degree in Engineering Physics, and M.S. and Ph.D. degrees in Electrical Engineering.

The techno-economic analysis I present in the Appendix supports my claim that incenting the purchase and grid-charging of **Plug-in** electric vehicles has much higher societal cost than incenting the purchase of **non-Plug-in** Hybrid ICE/Electric vehicles. This conclusion assumes that the State's goal is to achieve the highest and fastest reduction of the CO_2 emissions caused by **all** light duty vehicle travel within the state.

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[4] ICE => Internal Combustion Engine
[5] See `https://nj.gov/governor/news/news/562020/approved/20200117b.shtml`

This is especially true, considering that

1. Large **ratepayer-funded incentives** are being paid to NJ residents who purchase a **Plug-in** Electric vehicle, **independent of the number of miles they actually drive each year**[6], while

2. **No federal or NJ incentive** exists to encourage the purchase of a **non-Plug-in** Hybrid ICE/Electric vehicle despite it having a comparable CO_2 footprint as its Plug-in EV counterparts, when driven by average NJ drivers (who statistically drive 13,476 miles per year).

3. Properly incenting higher volume purchase of more affordable Hybrid ICE/Electric vehicles enables a more rapid retirement of existing lower fuel economy ICE vehicles, thereby minimizing the cumulative CO_2 emissions caused by **ALL** NJ light duty vehicle travel over the upcoming years.

4. Incenting **non-Plug-in Hybrid ICE/Electric** vehicle purchase using NJ Societal Benefit funds is justified because **it enables the State to meet its 2030 clean energy goals at least utility ratepayer cost** without having to upgrade regional electric grid infrastructure to deliver major new electric capacity otherwise needed to replace the transport energy now provided by gasoline.

   These non-Plug-in Hybrid ICE/Electric vehicles can be fueled with domestically-sourced E10 gasoline, causing no greater CO_2 emissions/mile than NJ grid-charged Plug-in EVs, when used by the average NJ driver. These same Hybrid ICE/Electric (and **Hybrid Fuel Cell/Electric vehicles**) can consume carbon neutral fuels, when available in the near future, **causing no global warming**, no matter how many miles traveled daily.

   This allows both EDCs (Electric Distribution Companies) and grid power providers to focus on

   > reducing the CO_2 emissions caused by **present heating, cooling, and appliance** electric demand,

   rather than

   > incenting new demand for Plug-in EVs without any restrictions on the use of fossil fuel power plants.

5. **Hybrid ICE/Electric** and **Hybrid Fuel Cell/Electric** technologies are more viable than Battery All-Electric technology for meeting the **light and heavy transport** needs of New Jersey, while reducing the net CO_2 emissions caused by this travel (at much lower ratepayer and truck owner cost).

[6] The average miles one drives in an existing low fuel economy ICE vehicle versus driving the same miles in a replacement electric vehicle determines the expected societal benefit (i.e., averted CO_2 emissions) of substitute travel in the lower CO_2 emissions/mile electric vehicle.

Executive Summary

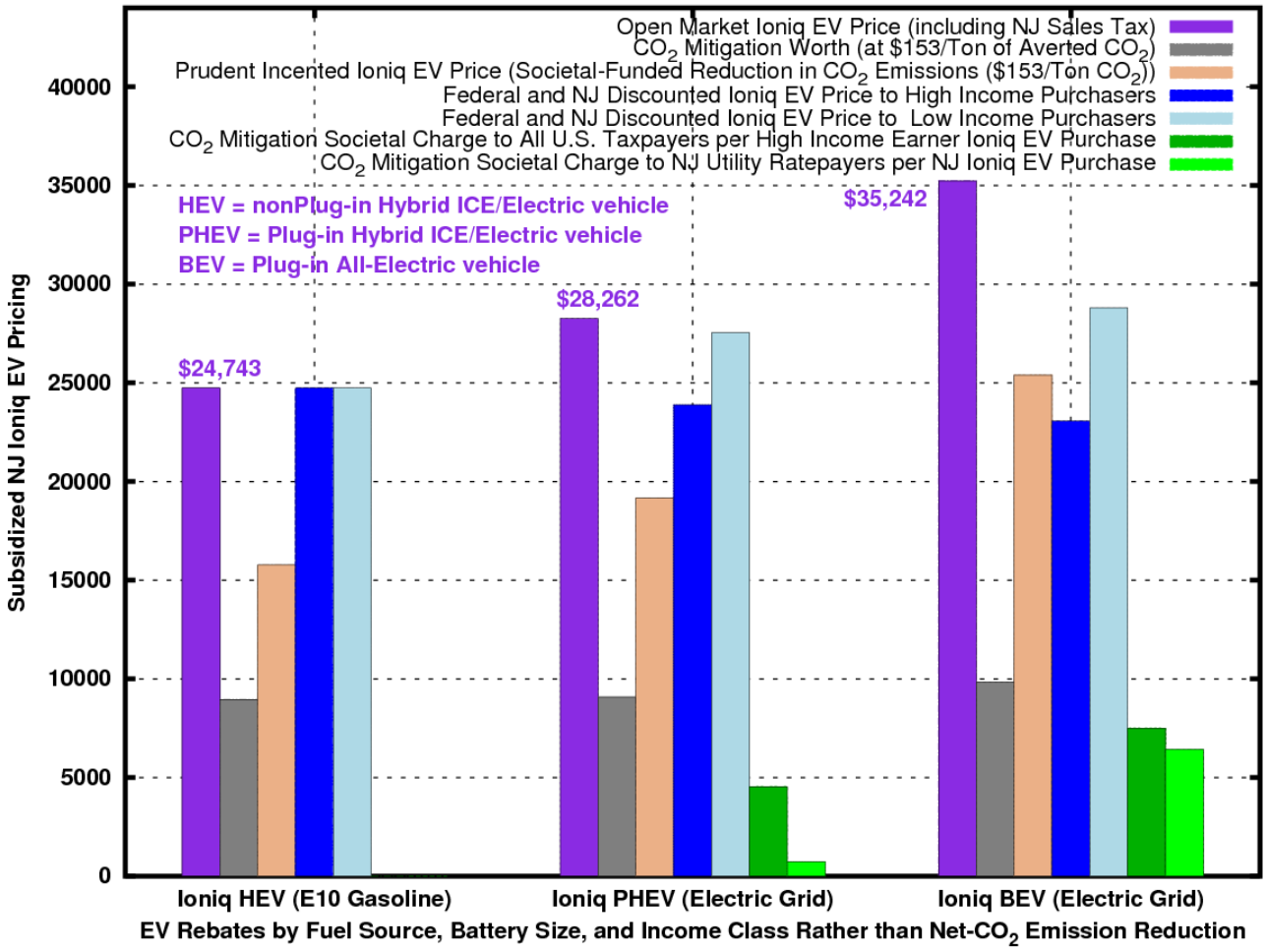


Figure 1: Current Government Incentives for Three Example NJ 2020 Ioniq Electric Vehicle Purchases

Figure 1 is derived from data contained in Table 1 below.

All results are based upon

1. Hyundai Ioniq Electric vehicles being driven by average NJ drivers (i.e., 202,000 miles) over a 15 year period as replacements for their existing 20 MPG E10 gasoline-fueled reference vehicles.

Ioniq Electric [Vehicle Type, Real Cost, Fuel Mix, Battery Capacity]	[Income Bracket, **Final Vehicle Cost** (after Incentives)]	15 Year Societal Cost @ ($153/Ton CO_2)	Federal Tax Credit	NJ Incentives	[Gov't Incentive, **Resultant Averted CO_2 Tax Rate**, Prudent Incentive (@$153/$CO_2$ Ton), **Incentive Disparity**]
Hybrid (ICE/Electric), **$24,743** E10 Gasoline, **1.56 Kw-hrs**	[High Income, **$24,650**]	$4,716, (30.8 tons CO_2)	$0	$0	[$0, **$0/Ton of Averted CO_2**, $8,960, **$8,960 too little**]
Hybrid (ICE/Electric), **$24,743** E10 Gasoline, **1.56 Kw-hrs**	[Low Income, **$24,650**]	$4,716, (30.8 tons CO_2)	$0	$0	[$0, **$0/Ton of Averted CO_2**, $8,960, **$8,960 too little**]
Plug-in Hybrid (ICE/Electric), **$28,262** Grid-electric + E10 Gasoline, **8.9 Kw-hrs**	[High Income, **$22,623**]	$4,595, (29.9 tons CO_2)	$4,543	$725	[$5,268, **$89/Ton of Averted CO_2**, $9,081, **$3,813 too little**]
Plug-in Hybrid (ICE/Electric), **$28,262** Grid-electric + E10 Gasoline, **8.9 Kw-hrs**	[Low Income **$27,431**]	$4,595, (29.9 tons CO_2)	$0	$725	[$725, **$12/Ton of Averted CO_2**, $9,081, **$8,356 too little**]
Plug-in All-Electric, **$35,242**, Grid-electric, **38.3 Kw-hrs**	[High Income, **$21.295**]	$3,840, (25.0 tons CO_2)	$7,500	$2,189 + $4,250 = $6,439	[$13,939, **$216/Ton of Averted CO_2**, $9,836, **$4,103 too much**]
Plug-in All-Electric, **$35,242**, Grid-electric, **38.3 Kw-hrs**	[Low Income, **$28,795**]	$3,840, (25.0 tons CO_2)	$0	$2,189 + $4,250 = $6,439	[$6,439, **$100/Ton of Averted CO_2**, $9,836, **$3,397 too little**]

Table 1: Current EV Incentives Are a Function of Battery Size, Grid Connection, and Income Level Rather than the CO_2 Mitigation Achieved by Competing Vehicle Technology/Fuel Candidates

2. Hyundai Ioniq Plug-in Hybrid and All-Electric vehicles being recharged using the NJ regional electric grid[7].

The Federal-posted EPA fuel economies for these three types of model year 2020 Hyundai Ioniq Electric vehicles can be viewed at

`https://www.fueleconomy.gov/feg/Find.do?action=sbs&id=42243&id=42290&id=42273`

Comparing gray bar heights in Figure 1 for the Ioniq Electric vehicle types listed shows that each averts nearly the same amount of expected CO_2 emission societal damage ($\approx$ **$9,000**) should a 20 MPG gasoline-fueled ICE vehicle be replaced.

Examining all dark and bright green bar heights in Figure 1 show that no incentive exists to encourage NJ drivers to purchase a **non-Plug-in** Ioniq Hybrid/Electric vehicle despite its expected equivalent CO_2 reduction performance and $3,519 and $10,497 cheaper costs (MSRP + sales tax) compared to its Ioniq Plug-in Hybrid ICE/Electric and All-Electric counterparts.

Comparing the dark blue versus light blue bar heights associated with each of the three electric vehicle types demonstrates that the chief benefactors of the joint "**Federal + NJ State Plug-in Only Electric Vehicle Incentive**" are NJ's high income earners, who receive $4,543 and $7,500 more than NJ low income earners [8] towards purchasing an Ioniq Plug-in Hybrid or All-Electric vehicle, respectively.

This is despite the fact that

> **The societal benefit** (i.e., averted CO_2-emissions) **achieved by competing electric vehicles is independent of the income class of the vehicle owner** (for the same miles driven).

Table 1 contains a detailed breakdown of the data used to generate Figure 1. The last column of this table provides the following information:

1. the total societal charge paid by U.S. taxpayers and NJ utility ratepayers per vehicle to purchasers of NJ Hyundai Electric vehicles.
2. the effective "averted CO_2" tax rate that NJ taxpayers and utility ratepayers pay due to these Government incentives,
3. the expected societal benefit (i.e., averted CO_2 damage (@ $153/Ton CO_2)) to accrue from driving these vehicles rather than a reference 20 MPG gasoline vehicle, and

[7] See `https://inets.org/jcpl2019Mix.jpg` and `https://inets.org/jcpl2019Emissions.jpg`.

[8] A low income NJ resident is defined here to be a NJ federal taxpayer whose federal tax liability is zero after personal standard or itemized deductions. A high income NJ resident is defined to be a NJ taxpayer whose federal tax liability, after personal standard or itemized deductions, is at least $7500 for the current year.

4. Government's under (**blue-highlighted**) or over (**red-highlighted**) incenting of EV purchase, based upon a prudent \$153/Ton (averted CO_2 emission) incentive level[9] .

Ioniq Electric Vehicle Type	Average Fuel Mix	15 Year Societal Cost (\$153/Ton CO_2)	Federal Tax Credit	NJ Incentives	[Total Gov't Incentive, **Averted CO_2 Valued** @\$153/Ton]
Plug-in Hybrid (ICE/Electric)	Clean Energy (Solar) + E10 Gasoline	\$1,640	\$4,543	\$725	[\$5,268, **\$12,036**]
Plug-in Battery All Electric	NJ Electric Grid @ (.89 lbs CO_2/Kw-hr)	\$3,840	\$7,500	\$2,189 + \$4,250 = \$6,439	[\$13,939, **\$9,836**]
Plug-in Hybrid (ICE/Electric)	NJ Electric Grid @ (.89 lbs CO_2/Kw-hr) + E10 Gasoline	\$4,595	\$4,543	\$725	[\$5,268, **\$9,081**]
Hybrid (ICE/Electric)	E10 Gasoline (17.7 lbs CO_2/Gallon)	\$4,716	\$0	\$0	[\$0, **\$8,960**]
Plug-in Hybrid (ICE/Electric)	Coal Electric Grid @ (2.10 lbs CO_2/Kw-hr) + E10 Gasoline	\$8,612	\$4,543	\$725	[\$5,268, **\$5,064**]
ICEV@20 MPG	E10 Gasoline	\$13,676	\$0	\$0	[\$0, **\$0**]

Table 2: The Societal Payback from Government-Legislated Plug-in EV Purchase Incentives Depends Heavily upon EV Charging Station Average Fuel Mix

[9] **\$153/Short Ton (CO_2)** is the U.S. Goverment Interagency Working Group's prudent estimate of the present cost of future (2035) CO_2 emissions, given the latest evidence of the increasing probability of extremely damaging ecosystem events caused by escalating atmospheric CO_2 levels.

Column 3 of Table 2 lists the expected societal damage (@ \$153/ton of CO_2 emissions) due to 15 years of average NJ driving (i.e., 202,000 miles) in each of three competing Ioniq electric vehicle types (compared to a reference 20 MPG ICE vehicle), when the new electric capacity required to periodically recharge the Plug-in EV's traction battery is obtained according to three possible future grid fuel mix scenarios:

1. New electric capacity is provided by either autonomous or grid-tied **clean energy power systems** (0 lbs. CO_2 per Mw-hr) emission intensity,
2. New electric capacity continues to be delivered over the electric grid at the **EDC's current emission intensity** (890 lbs. CO_2 per Mw-hr),
3. New electric capacity is delivered over the electric grid using available out-of-state underutilized **coal power plants** (2100 lbs. CO_2 per Mw-hr) emission intensity, or

Comparing Column 3 values in Table 2 illustrates that the Societal benefit payback from a Plug-in Electric vehicle's use is highly dependent upon the CO_2 emission intensity of the energy mix regularly used to charge its traction batteries.

For example, an Ioniq Plug-in Hybrid ICE/Electric vehicle **if regularly charged using grid electricity from a coal power plant** (See the table row containing the gray Fuel Mix cell), is expected to produce \$3896 more CO_2 damage (@ \$153/Ton CO_2) on average over a 15 year lifetime, when compared to using the competing lower cost gasoline-fueled Ioniq Hybrid ICE/Electric vehicle.

On the other hand, the same Ioniq Plug-in Hybrid ICE/Electric vehicle **if regularly charged using clean energy harvested fron on-site solar panels** (See table row containing the green Fuel Mix cell), is expected to produce \$3076 less CO_2 damage (@ \$153/Ton CO_2) on average over a 15 year lifetime, when compared to using the competing lower cost gasoline-fueled Ioniq Hybrid ICE/Electric vehicle.

Lastly, the same Ioniq Plug-in Hybrid ICE/Electric vehicle **if regularly charged using electricity delivered over NJ's present electric grid** (See table row containing the white Fuel Mix cell), is expected cause near identical amounts of CO_2 damage (**\$4,595** versus **\$4,716**) on average over a 15 year lifetime, when compared to using the competing lower cost gasoline-fueled Ioniq Hybrid ICE/Electric vehicle.

Consequently, I urge that utility ratepayers not be charged for the building and operation of grid infrastructure and public EV charging stations whose **new electric grid demand** is either fully or partially met using CO_2 emitting power plants.

RECOMMENDATIONS

The Board of Public Utilities will shortly finalize NJ's 2020 EV Purchase Incentive Program. I urge the Board to take this opportunity to

1. **reapportion Societal Benefit fund use so as to balance out the Federal Tax Credit to EV purchasers that rewards high income and excludes low income earners**. Doing so will result in a combined "Federal + NJ State EV Purchase Incentive" that is based upon expected CO_2 emission reduction, rather than EV buyer income class,

2. **reallocate Societal Benefit funds based upon the achievable CO_2 mitigation of each available electric vehicle technology+fuel source**, rather than incenting only those EV types that promote regional electric grid expansion, and

3. **incent average NJ drivers** to replace their existing ICE vehicles with the **most affordable** Electric vehicles on the market (i.e., **E10 gasoline-fueled Hybrid ICE/Electric vehicles**). Achieving this will most rapidly reduce light duty vehicle CO_2 emissions in New Jersey over the coming 10 years, and at least utility ratepayer cost.

APPENDIX: TECHNO-ECONOMIC ANALYSIS

1 "Averted CO_2" Incentive Cost Metric

If an important use of the Societal Benefit funds collected from all NJ utility ratepayers is to minimize the CO_2 emissions caused by energy consumption within the State, then comparison of the cost vs. benefit of **the expected CO_2 reductions from competing proposed clean energy incentives** should be the metric applied for deciding which possible incentive to adopt.

The statistical metric to be minimized in this analysis is

The Incentive Cost per Ton of Expected "Averted CO_2 Emissions"

that induces a NJ resident to replace his existing heating, cooling, transport, or power system with a system that causes less CO_2 emissions and minimzes the resident's **personal** cost of doing such.

When evaluated using this metric, certain clean energy system candidates will exhibit inferior societal benefit for the incentive required, and consequently should not be heavily-funded by NJ ratepayers.

2 Relevant Facts

1. The average U.S. driver travels

   13,476 miles/year = 365 days x 36.9 miles/day[10]

   in his vehicle. The average NJ driver travels slightly less.

2. U.S. drivers typically keep their cars for 13-17 years before scrapping[11].

3. JCP&L's current charge for NJ residential class grid electricity is $0.15/Kw-hr.

4. The power plant CO_2 emissions caused per unit of NJ electric by JCP&L is .443 tons/Mw-hr.

5. The current NJ cost of E10 regular gasoline is $2.40/gallon.

6. The fossil CO_2 emissions per gallon of E10 gasoline combustion is 17.7 lbs.

7. One Gasoline Gallon Equivalent (GGe) of energy is 33.4 Kw-hrs.

[10] See `https://www.metromile.com/blog/2018-year-review/`.
[11] See `https://berla.co/average-us-vehicle-lifespan/`

3 Opportunity to Accurately Compare Three Electric Vehicle Technologies

Estimating the relative societal value of competing electric vehicle technologies/fueling choices is more accurate when such comparisons are made using competing implementations from the same manufacturer, for the same car model.

Three competing Hyundai Ioniq electric vehicle offerings provide such an opportunity:

1. the 2020 Hybrid ICE/Electric Ioniq Vehicle (**$23,200**),
2. the 2020 Plug-in Hybrid ICE/Electric Ioniq Vehicle (**$26,500**), and
3. the 2020 All-Electric Ioniq Vehicle (**$33,045**),

The EPA-measured fuel economies for these three vehicles can be viewed at[12]

`https://www.fueleconomy.gov/feg/Find.do?action=sbs&id=42243&id=42290&id=42273`

[12]Once at this site, If you further select the “Energy and Environment" tab, you will be presented with a comparison of the projected CO_2 emissions of the three Ioniq electric vehicle models, for the case where the plug-in vehicles are charged only with clean electricity (i.e., 0 lbs CO_2/Kw-hr), rather than electricity from New Jersey’s electric grid (i.e., 0.89 lbs CO_2/kw-hr). This analysis calculates and discusses the real CO_2 footprint of these plug-in EVs when charged by the NJ electric grid without restriction on the use of fossil fuel power plants.

4 CO_2 Emissions Due to Electric Grid Charging of Plug-in EVs

Jersey Central Power & Light is the second largest Electric Distribution Company (EDC) in the State[13].

Figure 2 is Jersey Central Power & Light's declaration of the **average fuel mix** used to produce the electricity delivered to its NJ residential customers between June 1, 2018 and May 30, 2019

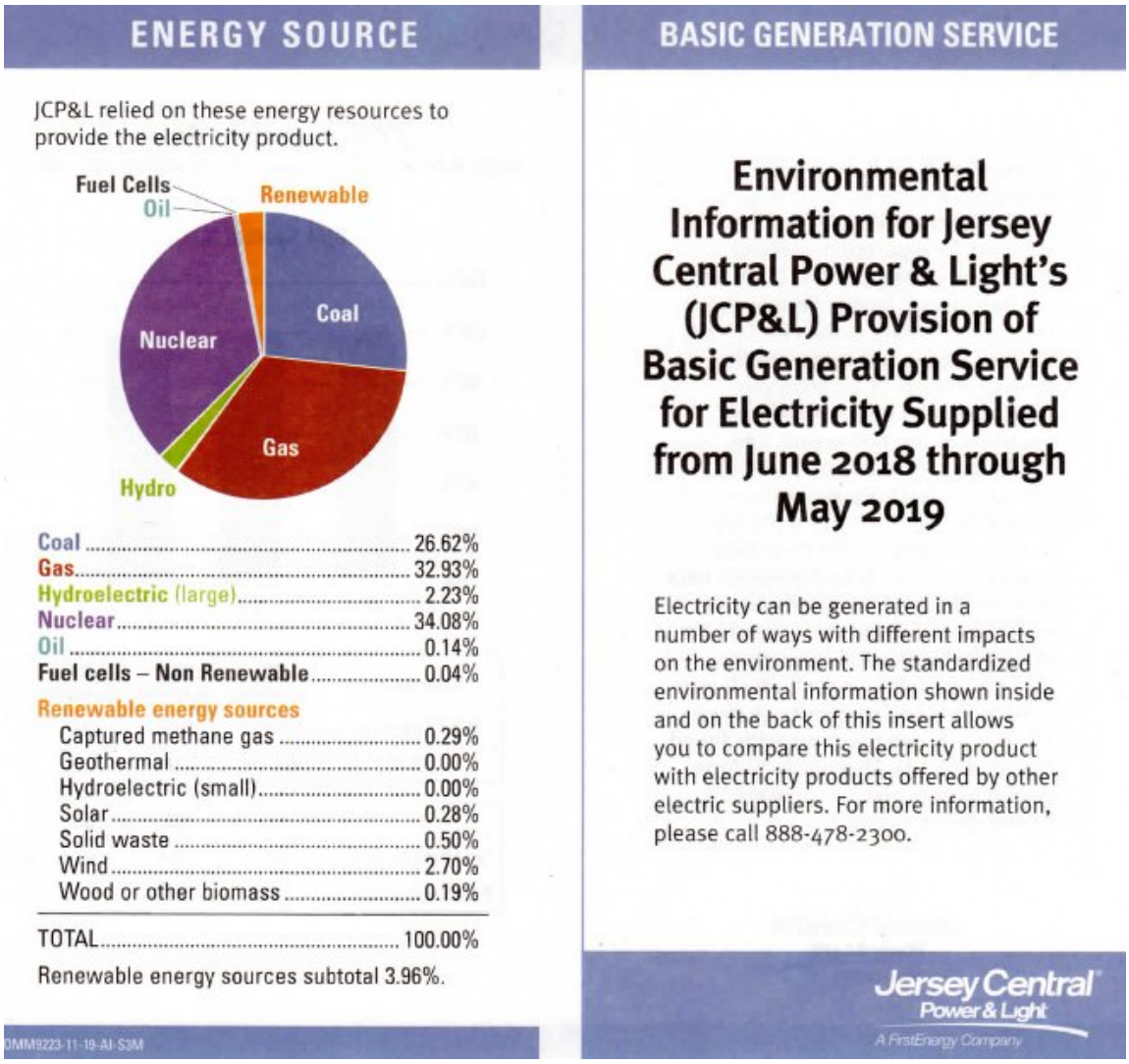
The figure reveals these power plant statistics for the electricity delivered to NJ customers:

59.7% was produced by **CO_2-emitting** fossil fuel power plants,

34.1% was produced by **carbon-free** nuclear power plants, and

6.2% was produced by **carbon-free** (2.2% hydroelectric) renewable energy sources.

[13] See
https://njcleanenergy.com/main/public-reports-and-library/links/electric-utilities-territory-map



ENERGY SOURCE

JCP&L relied on these energy resources to provide the electricity product.

Coal	26.62%
Gas	32.93%
Hydroelectric (large)	2.23%
Nuclear	34.08%
Oil	0.14%
Fuel cells – Non Renewable	0.04%
Renewable energy sources	
Captured methane gas	0.29%
Geothermal	0.00%
Hydroelectric (small)	0.00%
Solar	0.28%
Solid waste	0.50%
Wind	2.70%
Wood or other biomass	0.19%
TOTAL	100.00%

Renewable energy sources subtotal 3.96%.

DMM9223-11-19-AI-S3M

BASIC GENERATION SERVICE

Environmental Information for Jersey Central Power & Light's (JCP&L) Provision of Basic Generation Service for Electricity Supplied from June 2018 through May 2019

Electricity can be generated in a number of ways with different impacts on the environment. The standardized environmental information shown inside and on the back of this insert allows you to compare this electricity product with electricity products offered by other electric suppliers. For more information, please call 888-478-2300.

Jersey Central Power & Light
A FirstEnergy Company

Figure 2: JCP&L Fuel Mix for Producing NJ Ratepayer Electricity (June 2018 thru May, 2019)

Figure 3 is Jersey Central Power & Light's companion declaration of the **CO_2 emissions** associated with the production and delivery of this electricity to its NJ customers.

This JCP&L chart reveals that

886 lbs = .443 tons of CO_2

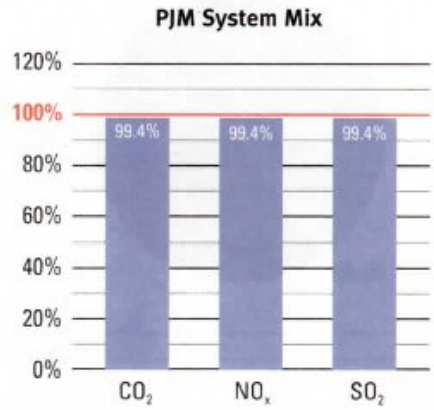
was emitted per Mw-hr of NJ grid electric distribution during that time.

AIR EMISSIONS RATES

Pursuant to N.J.A.C. 14:8-3:1(b)2, air emission rates for CO_2, NO_x, and SO_2 associated with the fuel mix must be reported in units of pound per megawatt-hour (lb/MWh). The Benchmark Energy Source and emission rate data is the PJM System Mix for EY 2019 and represent the average amount of air pollution associated with the generation of electricity in the PJM region. The PJM System Mix average emission rate for all electricity generation in the PJM Region can be used for comparison when a NJ TPS or BGS Provider supplies actual emission data for a product making an affirmative environmental claim that exceeds the NJ Renewable Portfolio Standards. CO_2 is a "greenhouse gas" which may contribute to global climate change. NO_x and SO_2 react to form acids found in acid rain. NO_x also reacts to form ground level ozone, an unhealthful component of "smog."

Jersey Central Power & Light
A FirstEnergy Company

JCP&L Emissions Rates
(expressed as a percentage of PJM emissions rates)



Data Source	CO_2 (lb/MWh)	NO_x (lb/MWh)	SO_2 (lb/MWh)
PJM System Mix	891.012	0.491	0.659
JCP&L	885.716	0.488	0.655

	CO_2	NO_x	SO_2
% of PJM Emissions	99.4	99.4	99.4
PJM Benchmark (%)	100.0	100.0	100.0

Figure 3: JCP&L's Corresponding Grid Electric Emission Intensity Declaration

5 2020 Ioniq Plug-in Hybrid ICE/Electric vehicle ($26,500)

The Hyundai Ioniq Plug-in Hybrid ICE/Electric vehicle is equipped with an 8.9 Kw-hr lithium-ion battery capable of powering 29 miles of all-electric vehicle travel. [14]

At $25 per mile of all-electric range, NJ State will pay each NJ purchaser of this vehicle

$725

from public State funds as an incentive to purchase[15].

The average U.S. driver travels

36.9 miles per day[16]

in his vehicle, while the average NJ driver travels slightly less.

Electric vehicles (both hybrid and all-electric) are designed to protect traction batteries from complete discharge. Assuming that EV traction batteries are normally not allowed to deplete more than 80% of their full capacities, the effective daily all-electric travel range of the Ioniq Plug-in Hybrid ICE/Electric vehicle is realistically

25.4 miles/day[17].

based upon 119 MPGe all-electric fuel economy.

The remaining

11.5 miles/day

of average NJ driver daily travel is fueled by gasoline using (hybrid ICE/electric) power at 52 MPG fuel economy.

If the Ioniq Plug-in Hybrid vehicle owner recharges his EV traction battery nightly using grid electricity, he is expected to consume

43.3 Mw-hrs[18]

[14]The actual range of this Ioniq vehicle is 630 miles when powered by both available battery and gasoline energy
[15]per NJ State Legislation S-2252 (P.L.2019, c.362)
[16]36.9 miles/day = (13,476 miles/year)/(365 days/year)
[17]25.4 miles = 119 MPGe x (.8 x 8.9 Kw-hr/(33.4 Kw-hr/Gge))
[18]43.3 Mw-hrs = 15 yrs x 365 days/yr x (.8 x 8.9 Kw-hrs per day/.9 efficiency)

of grid electricity over the vehicle's expected 202,000 mile, 15 year lifetime.

At $0.15/Kw-hr current residential electricity rate, this is expected to cost the driver

$1.19/day .

During this same 15 year period,

1211 gallons (i.e., .221 gallons/day) of E10 gasoline[19]

will be burnt to power the EV during the same 202,000 miles of expected travel.

At an average NJ pump price of

$2.40/gallon (E10 regular gasoline),

this equates to an additional

$0.53/day gasoline cost,

yielding a combined total fuel cost of

$1.72/day

The CO_2 emissions caused by grid electric charging of the Ioniq vehicle over its estimated 15 year, 202,000 mile lifespan is

19.2 CO_2 tons[20] = 43.3 Mw-hrs x .443 tons/Mw-hr,

while another

10.7 CO_2 tons of emissions[21]

is emitted while combusting on-board gasoline.

Consequently, the total lifetime CO_2 emissions from traveling 202,000 miles in NJ using this Plug-in Hybrid ICE/Electric vehicle is expected to be

29.9 CO_2 tons

[19] 1211 gallons = 15 yrs*(365 days/yr)*(11.5 miles/day)/52 MPG

[20] These CO_2 emissions occur at the power plants producing the electricity to charge the EV, but not at the EV.

[21] 10.7 CO_2 tons = 1211 gallons x (17.7 CO_2 lbs/gallon)/(2000 lbs/ton).

6 2020 Ioniq Hybrid ICE/Electric vehicle ($23,200)

The Ioniq Hybrid contains a 1.56 Kw-hr lithium-ion battery capable of powering 5 miles of all-electric travel via its battery + electric motor drive train.

At $25/mile State rebate per mile of all-electric range, **NJ State should pay**

$125

to NJ residents who purchase this Hybrid ICE/Electric vehicle, **but does not**. Both NJ State and the Federal government fails to incent the hybrid ICE/Electric vehicle's

1. harvesting and transforming of clean vehicle kinetic energy into traction battery chemical energy by means of regenerative deceleration and braking, and
2. the use of this harvested clean energy to power the electric drive motor.

The Ioniq Hybrid has EPA-rated 58 MPG fuel economy and 655 mile travel range between refills.

If this vehicle is purchased and used by the average NJ driver, he will drive 202,000 miles over an expected 15 year lifetime, and consume

3,483 gallons[22]

of E10 gasoline, at an expected fuel cost of

$1.53/day[23]

and 15 year lifetime ICE CO_2 emissions of

30.8 CO_2 tons[24]

compared to

$1.72/day fuel cost, and 29.9 CO_2 tons of emissions[25]

of equidistance travel in the grid-charged Ioniq Plug-in Hybrid vehicle.

[22] 3,483 gallons = 202,000 miles/58 MPG.

[23] $1.53/day = (36.9 miles/58 MPG) x $2.40/gallon

[24] 30.8 CO_2 tons = (17.7 lbs/gallon) x 3,483 gallons / (2000 lbs/ton)

[25] 19.2 tons of these CO_2 emissions do not occur at car, but rather at the fossil fuel power plants that participated in plug-in EV charging.

7 2020 Ioniq All-Electric vehicle ($33,045)

The All-Electric version (BEV) of the Hyundai Ioniq is equipped with a 38.3 Kw-hr lithium-ion battery pack that can power 170 miles of electric travel.

At $25 State rebate per mile of all-electric range, a NJ resident who purchases this vehicle will receive

$4250

from the State.

This car's traction battery will be recharged at least once every 136 miles[26] of vehicle travel. If purchased and used by the average NJ driver, the BEV need only be recharged once every three days in order to keep its traction battery from discharging more than 65% of its capacity.

However, if this average NJ driver has the ability to recharge his BEV at home, he need only top off its battery with 10.3 Kw-hrs (28% of its capacity) nightly, requiring much less frequent use of public DC Fast charging stations now legislated for construction[27].

If the average NJ driver purchases and uses his Ioniq all-electric Ioniq vehicle over its estimated 15 year useful lifetime, he will have driven 202,000 miles powered by battery chemical energy.

At 133 MPGge fuel economy,

1519 GGe[28]

of battery-stored chemical energy is needed to drive these miles.

Assuming that on-site charging of the traction battery occurs at 90% efficiency,

56.4 Mw-hrs[29]

of on-site electricity is cumulatively required to provide this chemical energy over the vehicle's 15 year lifetime.

If the traction battery is charged only using clean energy sources,

[26] 136 miles = .8 x 170 miles

[27] On January 17, 2020, Governor Murphy signed S-2252 into law (N.J.S.A. 48:25-1), which establishes a Statewide public plug-in electric vehicle charging system. The bill directs a working group of the Board of Public Utilities, the Department of Environmental Protection, the Department of Transportation, the New Jersey Transit Corporation, the New Jersey Turnpike Authority, the South Jersey Transportation Authority, and the Department of Community Affairs to develop a Statewide plan for installing at least 400 public DC fast chargers and 1000 Level Two publicly-accessible chargers across New Jersey by December 31, 2025.

[28] 1519 GGe = 202,000 miles/133 MPGe

[29] 56.4 Mw-hrs = 1519 GGe x ((33.4 Kw-hrs/GGe)/.9)

no CO_2 emissions

will occur.

If the traction battery is charged instead using the NJ regional electric grid (at current CO_2 emission intensity),

25.0 CO_2 tons[30]

of emissions will occur at the fossil fuel power plants providing portions of this electricity.

The daily cost of the grid electric energy needed to recharge the Ioniq BEV's traction battery @13,476 miles/year vehicle travel is

$1.55/day[31]

[30] 25.0 CO_2 tons = (.443 CO_2 tons/Mw-hr) x 56.4 Mw-hrs

CHARGEVC
BETTER TRAVEL, STRONGER GRID.

Via electronic submission to board.secretary@bpu.nj.gov

June 17, 2020

TO: Aida Camacho, Secretary
New Jersey Board of Public Utilities
44 South Clinton Avenue, 3rd Floor, Suite 314, CN 350,
Trenton, New Jersey 08625

FROM: Pamela Frank, CEO
On behalf of ChargEVC
417 Denison Street
Highland Park, New Jersey 08648

RE: Request for Comments - New Jersey Electric Vehicle Infrastructure Ecosystem 2020 Straw Proposal

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Secretary Camacho:

Enclosed please find the comments submitted on behalf of ChargEVC, pursuant to the notice released by the Board of Public Utilities regarding the New Jersey Electric Vehicle Infrastructure Ecosystem 2020 Straw Proposal, dated June 17, 2020.

Thank You.

CHARGEVC
BETTER TRAVEL, STRONGER GRID.

INTRODUCTION & BACKGROUND

ChargEVC is a not for profit coalition of automotive retailers, utilities, technology companies, power generators, power retailers, local governments, environmental, community, equity and labor advocates and manufactures. The coalition's work focuses on accelerating the transition to electrically fueled transportation in New Jersey. Based on research and analysis, including input from its members with expertise in the diverse segments relevant to market development, ChargEVC develops and advocates for program and policies that will accelerate market development.

The coalition was formed in 2016 in response to technological progress that makes the electric vehicle (EV) market one of the most advanced clean transportation technologies available capable of delivering broad and significant benefits to all the people in New Jersey. We also understand that a focused and coordinated state effort working in partnership with the private sector, can create momentum to achieve significant progress on state goals, leveraging public investment to create the much-needed economic stimulus for New Jersey.

ChargEVC worked hard over the last two years to achieve passage of the comprehensive EV law. Enacted in January this year, it includes specific infrastructure goals.

The New Jersey EV Infrastructure Ecosystem Straw Proposal ("EVESP") released by the Board of Public Utilities in May is likely to influence the development of the EV infrastructure market.

We offer the following comments on the EVESP and as always, look forward to remaining a collaborative partner in the development of this market.

GENERAL COMMENTS

This is different: We applaud the Board of Public Utilities' ("BPU") attempt to get its arms around the EV market with the EVESP. EV technology and the charging infrastructure that will support it is different in many important ways from other technology innovations that have come before the BPU. First, shifting to electricity for fuel is the largest new load since the invention of the grid. Second, in some cases we may have the ability to use the batteries in EVs to not only store electricity that can be used for driving but for also as a load management tool, especially as that technology matures over time. Third, unlike more traditional loads, we can encourage beneficial siting and use of charging stations to avoid harm and optimize benefits to grid.

This is complex: The EVESP describes an ecosystem for EV infrastructure. The concept of an "ecosystem" is useful in looking at EV market development broadly. Currently, however,

it should be recognized that the scope of the EVESP is not as comprehensive as it needs to be and is heavily focused on public charging. Public charging is critically important, but so are other charging segments that merit detailed treatment in the policy framework.

A full understanding of the EV ecosystem needs to include a) all entities involved in infrastructure development including providers of both charging station equipment and operating software, site hosts, owners and operators (who are often private investors); and b) all charging segments with an understanding about what each segment will require. The preferences of the private sector will need to be considered for each segment and in some instances, each use case when developing utility electric transportation plans.

Further, the investments in vehicles and infrastructure in all segments of the EV landscape, including residential, commercial, and fleet development, will be necessary to achieve the goals set forth by the EV law, and to ensure that New Jersey's infrastructure is prepared for the EV industry to grow at an exponential rate in the coming years. The policy framework should address the infrastructure developments that encourage EV adoption, but also those investments that help mitigate potential grid impact to avoid unnecessary costs.

We are at the beginning: We are in the very early stages of market development and therefore a broad and flexible approach to policy development will bring the most effective EV policy to New Jersey. The more flexibility, the better positioned we are to make the necessary changes and adjustments as we learn over time. In addition, at this early stage there is considerable urgency – meeting the 2025 EV adoption goals (and beyond) will require mobilizing every available market participant, not imposing restrictions that limit the aggressive build-out needed.

COMMENTS

Residential Managed Charging

The EVESP touches on residential managed charging. This is an important and complex topic that needs to be addressed by the BPU.

Managed charging requires both a technology component (such as a smart charger or other "charging management" solution), along with the economic incentive that motivates the necessary change in customer behavior.

The EVESP should include a recognition of the many benefits of investment in managed charging, and the potential harm to all ratepayers of not incorporating managed charging. While advanced managed charging solutions represent an upfront investment at the outset, this investment will defer and reduce grid reinforcement and prevent increased capacity and transmission costs. The need for managed charging is important, irrespective of exactly who or how those services are provided.

The current BPU definition of managed charging focuses on the technology component and assumes a model where any type of charger (including a charger not capable of communication) is used in conjunction with AMI (advanced metering infrastructure), and loosely coupled with time of day (TOD) tariffs.

There are other approaches to managed charging that should be considered, especially since this approach may prove costly and limit the ability to deploy more advanced smart charging functions as the market scales up.

The EVESP should reflect the need for an advanced managed charging framework and encourage detailed communication between utilities and chargers. Regardless of whether the utilities or the private sector provide managed charging – which encompasses both incentive structures and technology options – the utility should have access to transaction data required for policy analysis and impact planning.

AMI is one way to enhance managed charging. More advanced solutions, through the use of smart chargers, should also be included. Smart chargers will facilitate more active charge coordination platforms that allow for intelligent charge coordination and charge spreading over time at reduced power levels.

In addition, as part of providing managed charging, all residential charging technologies should be supported by the appropriate TOD tariffs.

Residential Charging Incentive

The EVESP proposal acknowledges the BPU's intent to implement a residential charging program through the Clean Energy Program ("CEP"). We note, as a matter of law, discretionary authority was provided in the statute for the BPU to use Clean Energy Program funds to provide a residential charging incentive – the BPU *may* provide such an incentive but is not required to. The question of whether or not such funds SHOULD be used for a residential charging program incentive has not been put to stakeholders. As a matter of process, that question should be put to stakeholders for input.

This is especially important given that the EVESP acknowledges the utilities have included incentives for residential smart chargers in filings now before the BPU. We agree that programs should not generally speaking be duplicative but should not discourage EDCs from proposing complementary programs in the same areas as state run programs that could be evaluated during approval processes. We also think that there are other higher priority uses for CEP funds then subsidizing residential smart chargers.

Further, given the need for tight integration of TOD rates and other incentives the utilities can offer, and in consideration of the small sales window that exists when customers consider EVSE needs, deployment of residential charging technology solutions should be tightly coupled with utility rate-related incentive programs.

In any residential smart charging inventive program, there are a number of vital elements that must be included:

- Only smart chargers should be incentivized;
- The customer must enroll in a managed charging program that motivates moving charging off-peak;
- There must be communication and transaction data shared with the utility, whether the managed charging program is provided by the utility or another party.

Multi-Family Residential Charging

A significant proportion of New Jersey's population lives in multi-unit dwellings ("MUDs"), so it is important that there is meaningful development in this segment. The nearly complete absence of routing charging infrastructure in multi-family settings is restricting adoption of EVs by these New Jersey residents. Supporting the multi-family segment is not only a matter of equity, but also necessary to attain the State's vehicle adoption goals.

The EVESP raises concerns about rate-equity in the MUD segment, and we agree that is a reasonable objective. However, before rate-equity is addressed, the BPU must address the primary barrier to MUD charging, which is the availability of chargers. The primary focus

for MUD charging should be increasing installation of Level 2 chargers in MUD developments, increasing DC Fast Charging ("DCFC") that is accessible to MUD residents, and developing workplace charging to ensure the multi-family population has access to routine charging. Ensuring the availability of charging for multi-family EV drivers is a necessary first step before cost equity can be considered.

We understand from other markets the complexity in siting EVSE in MUD communities. It is not just a question of providing incentives. Building owners are faced with numerous operational challenges that cannot be solved through incentives. Therefore, the goal should be to create charging options for this population. Whether it's a nearby DCFC, workplace charging or a charger at the MUD location, we need to create a number of options for drivers that live in these settings. Ensuring equitable access to charging infrastructure is a priority, but it is also a very hard problem that merits more complete treatment in the EVESP.

Utility Role

The EVESP has a narrow a vision for the utilities. Utility involvement is limited primarily to public make-ready, rate design for public infrastructure, and to a limited degree rate design for single and multi-family residential infrastructure.

Make-ready is important and avoids potential issues with ownership such as the EDC's ability to set its public pricing at rates too low for the private market to compete, which could undercut competition. Providing the make-ready is a natural role for the utility and is one of the most effective ways for catalyzing private investment in public charging infrastructure – especially when coupled with rate-designs that address the demand charging impacts which are barriers for private sector investment during initial phases of low utilization.

Public make-ready, rate design for public infrastructure, and rate design are all important elements of market development. However, as discussed in the General Comments section at the start of these comments, utility support is needed in other areas when we consider different charging segments, use cases, fleets, workplace, and medium/heavy-duty applications to ensure development of needed EV infrastructure. Additionally, in hard to reach rural areas or other areas of low population density, the private market may have a more challenging time deploying given lower electric vehicle deployments.

Most importantly, the most optimal role for the utility will depend on a *combination* of tools, such as providing make-ready, rate-design, and (in appropriate cases) owning and operating the infrastructure. If properly designed, this portfolio of market development

programs will not displace private investment, it will attract and leverage private investment. The EVESP is incomplete in its consideration of the range of tools that can be offered in multiple segments, frequently in combination with each other, and in most cases in a form that complements private investment.

Understanding the complexity of this ecosystem, utility involvement in infrastructure development should not be limited to a "last resort". Indeed, as noted above utility involvement can take a range of forms, and in many cases is done in conjunction with, not instead of, private investment. Equity areas are a legitimate place for utilities to invest. However, there are many areas where utilities need to make those same market-leading investments that are NOT in an equity area, for instance, ensuring reliability (i.e. if a competitive supplier can't maintain public service metrics). Also, the utility might be needed to ensure geographic density – filling in the charging deserts per the requirement in the law. One example of this is mentioned in the EVESP where it is recognized that "rural areas" might be included in "equity areas", presumably because their utilization might be lower. It should be recognized that it is not only the local drivers that need this facility it is also all other drivers passing through this location that need the facility.

Given the 2025 timeline of the EV law's infrastructure goals, development of charging infrastructure (of all types) is an *urgent need,* and we need to be proactive to ensure we have geographic coverage throughout the state and that charging deserts are eliminated – such as the rural area example mentioned above.

Last, as alluded to in the General Comments section above, the EVESP's definition of an "EV Infrastructure Company" only accurately describes a relative handful of EV charging companies that own and operate their own network of charging stations. A majority of companies in the EV infrastructure space do not own and operate their own charging stations, but rather provide the hardware and/or software platform to customers who then own the stations. A broader and more accurate definition of an EV infrastructure company therefore conveys greater value in utility ownership and operation of charging stations as a catalyst to grow the private market.

Defining Equity

Market failure should be broadly defined by the BPU in conjunction with other state agencies to reflect intersection of, health, poverty and pollution. It is not enough to define equity as a failure to meet the needs of the electric vehicle market. Providing for different electrically powered modalities to get access food, work, recreation and health services can solve a major market failure of our existing transportation system.

Further, opportunities to enhance sites that spur economic development in economically depressed areas should be addressed in programs (i.e. charging infrastructure in parking lots of urban churches/social service organizations).

With regard to air pollution, light duty fleets, accounting for 9% of vehicles in New Jersey contribute in a corresponding way to emissions in the state. Conversion of fleets is an efficient way to address inequitable burdens of air quality in the state while helping us get to our goals.

Last, any benefit-cost analysis should include a full societal cost test that reflects the wide range of benefits and costs associated with electrification – including the externalized benefits that are not directly economized, such as cleaner air and environmental value.

Rate Design

Given the 2025 timeline in the EV law, it is crucial to address rate design at the onset, so efforts to develop the EV charging infrastructure and attract private investment are not undermined.

Key barriers in the market are related to rate design, and rate solutions that are optimized for EVs is one of the highest impact ways to develop the market. In no order of priority:

- There is no incentive for residential off-peak charging;
- There are significant commercial barriers to the development of charging infrastructure in many commercial segments due to demand charges, especially during early phase periods where utilization may be lower, including public DCFC (which are especially harmful since public DCFC supports multiple segments), multi-family, fleet, and workplace applications;
- Utilities, with policy support from the BPU, must address fundamental rate design issues. Consideration of rate design beyond just public charging is necessary. Simple "fixed fee" designs are likely not optimal across all locations and over time and could increase ratepayer burden unnecessarily. As we have stated in the general comments, we will need flexible and adaptive approaches that ensure each application gets only the incentive needed, so as to minimize ratepayer burden;
- Concerns about ensuring MUDs pay the same as private residential is merited, but as mentioned in the prior section, the key market issue to be solved first is ensuring access to charges – there is a widespread lack of charger installations in that segment;
- Any consideration of rate design must balance solving economic problems for the market, but must also ensure full and timely cost recovery by the utility;

- Recognize that rate design is a valuable and high impact first step to addressing market barriers which can be amplified significantly when paired with appropriate charging technology solutions.

Make-Ready

The EVESP puts forth a comprehensive plan for "make-ready" in which utilities are primarily responsible for preparing locations with make-ready EV infrastructure for public charging. They would do so at the request of an EVSE company or local entity. The utilities would also be responsible for mapping to identify what locations should be prioritized with make-ready infrastructure.

We agree that utilities should be primarily responsible for the build out of make-ready infrastructure improvements for public charging, but the EVESP would benefit from clarifying that this make-ready support should be available to other segments as well (potentially including multi-family, workplace, fleet, and others).

Utilities responsible for "make-ready" allows the utilities to focus on core competencies while attracting and leveraging private sector investments while also considering competitive market concerns. In most segments, this make-ready support will have the greatest impact when it is *combined with* rate design innovations that meet EV charging needs.

The EVESP says that utilities will see a return on the make-ready investment from sales of equipment and services to public. Since the "Charger Ready" infrastructure represents an extended edge to, with associated impacts on, the distribution system, those investments should be recovered consistent with typical long-life distribution investment recovery.

Utility build out of make-ready will make for a robust market stimulus and will be a leading force – a catalyst – in EV market development.

Consistent with prior comments regarding a benefit-cost analysis, the BPU, in its evaluation of filings, should incorporate economic, public health, environmental and other costs and benefits of this significant investment with ratepayers.

Public Charging

The EV law sets the goals of at least 1,000 Level 2 Chargers and at least 400 DC Fast Chargers in at least 200 locations by 2025. The straw proposal recommends that the private market be primarily responsible for charger installation, and for the utilities to intervene where the market fails to meet the goals of the EV law. We have addressed in the previous

section on the utilities role that there are legitimate reasons for the utility to intervene other than market failure on meeting goals. These public charging goals cannot be met without utility solutions such as make-ready *and* rate design, as needed to address significant economic barriers to private investment.

The EVESP frequently contemplates an "either/or" perspective on market participant roles, when in fact – consistent with the "share responsibility" concept – key investments, especially in public charging, are most optimal when supported by joint investment by the utility and private capital. Utility support for make-ready, combined with an optimized rate design, is augmented by private investment to make the needed public charging infrastructure possible.

The EV law sets a slim timeframe to achieve geographic density of EV chargers, since charging infrastructure leads to EV adoption. The BPU should put forward a flexible plan that allows for us to achieve statewide coverage well before the 2025 goal.

The EV Law specifies a distinction between corridor and community DCFC charging infrastructure. The BPU should address this distinction in their deliberations on public charging. A corridor location is located along a highly traveled roadway, and a community location is located in a town center, such as a commercial area or near a multi-unit residential dwelling. These distinctions were made in the law to ensure that there is geographic coverage of DCFC in New Jersey. The EVESP overall would benefit from more explicit alignment with key provisions in the EV law, especially regarding public charging infrastructure and other key segments like multi-family.

Demand Charge for DCFC

The BPU acknowledges the market barriers created by demand charges for public DCFC given the current low utilization rates, and the EVESP reveals a good understanding of the issue. This is one of the top market development priorities for the industry and providing a demand charge solution in a form that can be supported by the utilities is the most constructive path forward. As the grid evolves over time, with more distributed energy resources and storage, there are larger and more complex issues regarding rate design that will need to be addressed. However, today there is an urgent need to act quickly to address this particular barrier, to ensure private capital will leverage the public's make ready investments and we can commence construction on public DCFC projects as soon as possible.

Addressing this market barrier will invite the private capital desired and a policy framework that applies statewide would be a strong and efficient market signal, recognizing that actual numbers would likely vary slightly for each utility to account for differences in tariffs.

The need to address and enable a demand charge solution is critical at this early stage we are in with respect to market development. With more electric vehicles on the road, and the corresponding increase in utilization, there will be an opportunity to evaluate success or remaining barriers over time. A positive customer experience will be an important consideration in success.

Specialized Applications (Ports, Buses, etc.) and New Jersey Transit

The ACE and PSE&G filings both propose investment in specialized EV infrastructure, such as ports, bus depots, and school buses.

In particular, the EV law has particular goals related to zero emission buses for New Jersey Transit (NJT). NJT just published its 10 Year Strategic Plan and 5 Year Capital Plan and the timelines on acquisition of electric buses does not meet the timelines mandated in the law. We understand from other jurisdictions where EV buses have been adopted, there is a lag time to build the charging infrastructure to support these vehicles. While we do not want to delay the existing utility filings, the EVESP should recognize the infrastructure needs for electrifying NJT buses.

Workplace/Fleet Infrastructure

Workplace and fleet EV segments are missing entirely from the ecosystem laid out in the straw proposal. These segments are a significant part of the EV adoption goals set by the state.

The BPU should outline a policy for workplace and fleets. Specifically, BPU needs to address EVSE utility and/or private ownership/operation and rate design implications. For example, avoiding demand charge impacts for fleet chargers, if unresolved, will limit fleet electrification by commercial entities. Treatment of these crucial segments would be consistent with the EVESP's aspirations to establish a comprehensive policy framework.

Medium/Heavy Duty Infrastructure

Utility involvement will be critical in the medium/heavy duty segments. The straw proposal should acknowledge that there must be policy action that leverages EDCs to meet the goals of these segments since the state will be setting goals later this year.

Additional Comments

The EVESP straw proposal does not cover the following related and intertwined topics with the EV development ecosystem; and although not yet ready for widespread market adoption, the BPU should consider pilot projects to test these innovations:

- Vehicle-To-Grid
- Benefits of Resiliency and Load Optimization

The EVESP contemplates using the DEP mapping beyond what it may be useful for. The DEP simply documents where existing public chargers exist and indicates locations that may be preferred based on criteria such as local traffic levels and the availability of amenities. These maps don't take into account other significant factors, such as gap-filling priorities (i.e. where charging is needed to eliminate charging deserts), demand from nearby commercial centers and MUD residents, or equity considerations.

The EVESP should only invoke the DEP maps to the extent they are helpful in illustrate current compliance levels and some factors of siting, but not as an exhaustive inventory of the many factors that play into site selection or prioritization of utility investment.

Given the complexity of the EV Ecosystem with its many stakeholders, and the fact that we are at the beginning of market development, this EVESP should not aim to be too prescriptive – addressing every charging segment, and every use case, technology, operator, battery type, etc. We understand the spirit of the EVESP was to reach consensus in a few areas in order to move market development expeditiously. The law requires we move with urgency. We also understand and want to underscore that any areas of consensus reached would not limit a utility from filing programs beyond those areas of consensus. We think given urgency and the early stage of market development, New Jersey is best served by an EVESP framework that provides for flexibility and leaves room for optimization and innovation.

EV Market Development in the Time of Covid-19

Last, the infrastructure development required to support EV adoption represents a unique opportunity for shovel ready projects that can help New Jersey's RESTART efforts as it

faces the what is likely some of the most urgent economic pressures in its' history. Building charging infrastructure state-wide will create "green jobs" and a much-needed economic stimulus. In light of the extraordinary circumstances, while we were preparing to move aggressively before Covid-19 in order to reach our state goals, these times call for bold moves - a doubling down of these efforts.

As always, we are available to discuss these comments in more details. Thank you for the opportunity to participate as a stakeholder.

STATE OF NEW JERSEY
BEFORE THE BOARD OF PUBLIC UTILITIES

IN THE MATTER OF STRAW PROPOSAL ON ELECTRIC VEHICLE INFRASTRUCTURE BUILD OUT	)	**Docket No. QO20050357**

COMMENTS OF THE ALLIANCE FOR TRANSPORTATION ELECTRIFICATION (ATE) ON STRAW PROPOSAL ON ELECTRIC VEHICLE INFRASTRUCTURE BUILD OUT

Introduction

Range anxiety for current and future electric vehicle (EV) drivers remains by most surveys the major obstacle to faster EV adoption in all states of the country. Vehicle manufacturers are poised in the near future to offer a slew of electrified vehicles across multiple drivetrains and vehicle types including SUVs and light trucks, and overall projections for New Jersey and the Mid-Atlantic states are positive. The Alliance is quite optimistic about the prospects for transportation electrification (TE) in New Jersey because of the sheer number of vehicles, the amount of traffic, high gasoline costs, low air quality, and time spend in traffic.

We recognize the challenging economic climate today, but we believe this is only a short-term pause in the trajectory toward much higher rates of electrification in the near and medium future in New Jersey. But without dramatic action, including turnkey charging solutions from Electric Distribution Companies (EDCs), today's severe shortage of charging infrastructure in New Jersey will prevent the state from achieving its ambitious transportation electrification goals as well as its overall climate goals. We urge the Board to take an approach more aggressive than outlined in the Straw Proposal, and also to approve expeditiously the TE plans currently pending.

Unless the Board adopts an "all hands on deck" approach, the best case scenario is that

the state's infrastructure gap will continue as customers purchase electric vehicles and cannot find convenient places to charge; a more likely outcome is that the lack of convenient and ubiquitous charging will discourage customers from buying EVs at all. Due to the lack of adequate infrastructure as a result, the State's ambitious goals in both policy and legislation (S. 2252) of 330,000 light-duty vehicles registered by 2025 and 2 million by 2035 will likely fall by the wayside and, accordingly, the state's climate and clean air goals will not be achieved.

ATE believes that, in these still early days of the electric vehicle industry, it is essential for EDCs to offer, alongside the private sector, creative and economic solutions. The Straw Proposal centered on Make Ready is a good start, yet it can be improved by:

- Being less prescriptive;
- Allowing EDCs (in conjunction with the market) to make calculated business decisions in an evolving industry without the risk of post hoc review;
- Allowing a portfolio approach to kick start all segments of the market (under the "market transformation" concept) including EDC ownership of EV service/charging equipment (EVSE) in this nascent stage; and
- Addressing medium and heavy-duty vehicle electrification.

We believe that utility investments in such infrastructure (defined as make-ready investments on both sides of the meter, including ownership and operation of EVSE) should be considered as part of distribution grid assets and should be regarded as a core utility function as this grid transformation occurs. The framework for investments contemplated in the Straw Proposal is substantial, and utility ownership of EVSE that is not subject to undue constraints will provide a solid foundation upon which utilities, non-utility service providers, and others in New Jersey can build a future of equitable access of all to cleaner air and zero-emission vehicles.

Background

The Alliance for Transportation Electrification (ATE) is a 501(c)(6) non-profit corporation; we engage with policymakers at the State and local government level across America to remove barriers to EV adoption and to encourage a collaborative and open approach to accelerate the deployment of EV charging infrastructure, support an appropriate utility role by complementing the private market, and promote interoperability and open standards in all parts of the EV charging ecosystem. Our members include about 50 organizations including many utilities, automobile and bus manufacturers, EV charging infrastructure providers and network operators, and related trade associations.

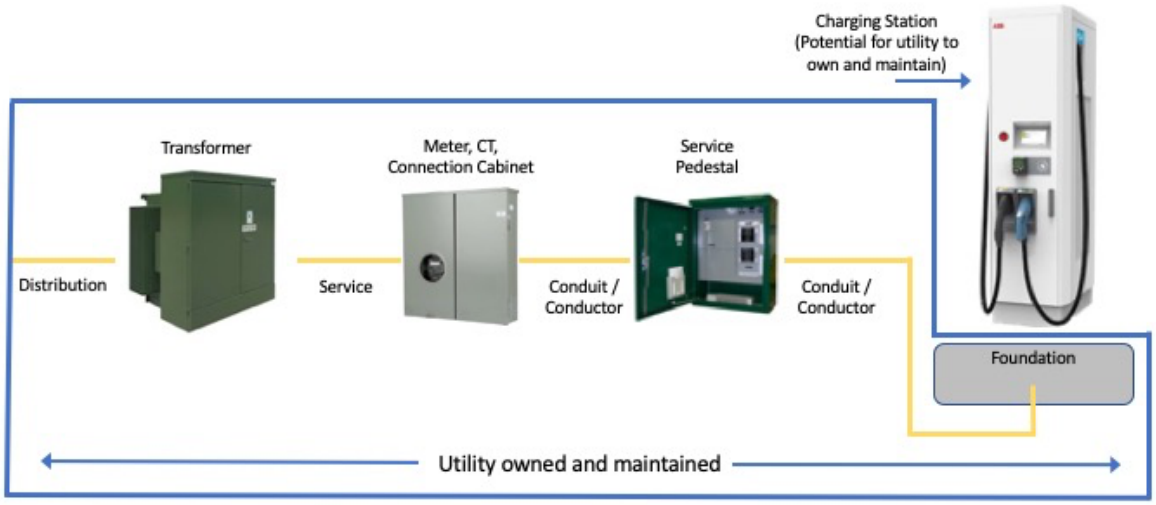
Our goals are to engage with state commissions and other agencies to remove barriers to EV adoption by encouraging a collaborative and open approach to accelerate the deployment of EV charging infrastructure, support an appropriate utility role by complementing the private market, and promote interoperability and open standards in all parts of the EV charging ecosystem.

Discussion

"Charger Ready," where EDCs can do the work necessary to make a parking spot ready for EVSE, including on private property, is an excellent start, and is necessary although insufficient to meet the state's goals. While the "Shared Responsibility" approach is logical in theory, in practice the evidence is clear that private capital alone is insufficient to address New Jersey's overall and significant needs. Providing utilities the option to offer a 100 percent turn-key solution works elsewhere and will enhance the likelihood of achieving New Jersey's goals.

The Straw Proposal, at 7, envisions an ecosystem in which the infrastructure leading up to, but not including, the EVSE is owned and operated by EDCs as "an extension of EDC

responsibility" on which the EDCs will earn a return. We agree that EDCs should be authorized to own and operate Charger Ready infrastructure, and we further believe that utility ownership and operation should be extended, at the customer's option, to include the EVSE as well, as illustrated below.



States around the nation have grappled for years with the appropriate role of utilities in a wide range of contexts, and indeed there is no one size fits all. In several cases, states have allowed the utility to own and operate EVSE as means to accelerate market transformation, while at the same time supporting and complementing a private market. It should be apparent to all that the need for infrastructure here in New Jersey is urgent and this shortage necessitates an "all of the above" approach, including a portfolio of options developed by the EDC that includes a variety of roles for EVSE infrastructure firms including as partners and vendors.

The Straw Proposal's discussion of the "Shared Responsibility" business model for ownership, maintenance, and advertising of EV infrastructure, recommends against utility ownership of infrastructure beyond the Make Ready in all but the fewest cases. We believe that this recommendation to broadly exclude utilities from owning and operating misses a prime

opportunity to facilitate robust and reliable infrastructure for the benefit both of the distribution grid and customers. Indeed, foreclosing the option of the EDCs to participate fully in the early development of the market will lower "competition" with the EVSE infrastructure firms to the detriment of the consumer welfare and the public interest. The Alliance fundamentally believes in a "hybrid approach" to market development in these nascent stages including both the EDCs and the non-utility providers, recognizing that the overall market size is substantial and will grow even more significantly in the near future.

New Jersey clearly has established, through policy and law, the priority of reducing greenhouse gas emissions and promoting transportation electrification; the Board possesses the clear authority to take whatever measures it deems necessary; the goals here are ambitious and the Board's approach must reflect the opportunity to not let the past get in the way of the future.

Any TE framework should be in furtherance of New Jersey reaching its ambitious goals. We note that unlike in many other states, where responsibility or even the imperativeness of TE may be debatable, that is most certainly not the case in New Jersey especially given the recent passage of S. 2252, "An Act concerning the use of plug-in vehicles." For that reason, the Board should not take anything off the table. We urge the Board to take a long-term view as it does with other critical infrastructure and assets being deployed in the electric grid in New Jersey. We encourage the Board to consider all ownership models because the time required for site development, financing, interconnection with the EDCs, and ultimate payback are not short at this early stage of market development.

There is an extreme lack of charging infrastructure in New Jersey. And this is not 2012, when the question of whether the private sector would step in sufficiently was an open question. California had the benefit of addressing this issue long ago, when the California Public Utilities

Commission (CPUC) expressed the crowding out concern and prohibited the state's utilities from investing in EVSE. Following several years of wholly inadequate activity by the private sector, even in the country's most successful EV market, the CPUC in 2014 completely reversed its position[1] and now has about one billion dollars of utility investments in TE infrastructure approved, with several large cases still pending and under review. Yet even California continues to experience a shortage of infrastructure.

The need for EDC investment is more critical now than ever given the financial devastation facing private landlords due to the pandemic. Specifically, many tenants are not paying rent, and this is starving landlords of the financial resources required to maintain and improve their properties. The result is that landlords are conserving what little cash they have, if any, and investing primarily in basic repairs and maintenance that are essential to the continued operation of their facilities. Whatever happens with the pandemic, it will be a long time before commercial landlords resume discretionary spending.

If the theory behind a make ready framework is to leverage private capital with EDC funding, that leverage has evaporated. And with the exception of Electrify America and Tesla, plus recipients of Volkswagen Appendix D funding, little to no private capital is being broadly invested at scale due to the nascency of the EV market. We recognize that 100% support by EDCs may result in fewer overall installations because the investment per location will increase slightly, but we believe that the product will be more reliable, provide better value to consumers, and will result in far more infrastructure overall.

There is simply little to no appetite in the private sector to invest in putting steel in the

[1] Decision 14-12-079, Rulemaking 13-11-007, Application of San Diego Gas & Elec. Co. (U902E) for Approval of its Electric Vehicle-Grid Integration Pilot Program (Dec. 18, 2014).

ground today, but the need for infrastructure is great. Others agree, even in markets considered to be hotbeds of EVs and EV charging. For example, in a California Public Utilities Commission proceeding on transportation electrification, San Diego Gas & Electric recently quoted Greenlots (which is making the same case in other states such as North Carolina) to make the following points:[2]

- "[T]he private market alone cannot provide and is not providing an equitable and adequate level of attention to and investment in charging infrastructure to support drivers and EV purchasing decisions;"
- A "competitive market in the deployment of public charging infrastructure is aspirational, and is unlikely to arise prior to the adoption of a critical mass of electric vehicles" because "fundamental economics simply don't support sufficient private investment to adequately grow the infrastructure market to support current and future drivers and their adoption decisions . . . in the absence of a sufficiently large number of consumers;" and
- "A significant amount of [the] limited private market development is likely supported by public funds, and in some cases is a product of legal settlements."

We concur with this assessment of the overall state of the current capital markets and its appetite for additional funding of third-party investments in charging infrastructure, especially during this recession and Covid-19 pandemic.

Customers want choices and protections, and those should include the traditional private sector as well as innovative offerings from EDCs.

We further urge the Board to consider the broader issues of consumer preferences, and

[2] Opening Comments by San Diego Gas & Electric Company, Rulemaking 18-12-006 (March 6, 2020) at 8-9 (http://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M328/K765/328765800.PDF).

that some consumers and host sites may want the utility to assist with the installation and operation of such equipment including repairs and ensuring adequate uptime. This is precisely what happened in Minnesota, where Xcel last year introduced its Residential EV Pilot Service[3] under which Xcel provides, installs, and maintains smart Level 2 chargers; customers have the option of paying for the installation up front or over time on their electric bill, and energy (renewable or standard) is offered at a substantial discount during off-peak hours ($0.04/kWh vs $0.17-$0.21/kWh on-peak). Three quarters of participants opted to pay for the charger over time, a benefit that is virtually unheard of in the private sector. The offering was nearly fully subscribed within two days, and ultimately proved to be so popular that the waiting list exceeds the number of authorized participants by a factor of 3 to 1 despite the fact that all of these customers could, if they chose, purchase an EVSE on-line or from a big box retailer and hire an electrician. According to Xcel's annual report on EV charging,[4] enrollees saved an average of $2,196 in upfront costs and $12.45 per month or $149.40 per year in energy costs. We believe this model would be highly successful in New Jersey for all types of EV charging, including not only for DC fast at retail and along corridors, but also for Level 2 in single family homes, workplaces, and multifamily communities.

Also, a consumer may wish to switch from one network operator to another during the life of such EVSE if he or she is dissatisfied with the service or cost of the existing provider. If properly designed with a pre-qualified list of hardware providers following an RFI or RFP, a

[3] Rate Codes A80, A81 (https://www.xcelenergy.com/staticfiles/xn/Regulatory%20&%20Resource%20Planning/Minnesota/Me_Section_5.pdf).
[4] Xcel Energy, Compliance Filing, Residential Electric Vehicle Charging Tariff (June 1, 2020) (https://www.edockets.state.mn.us/EFiling/edockets/searchDocuments.do?method=showPoup&documentId={004B7572-0000-C89B-8D21-87DA93D2C7B7}&documentTitle=20206-163660-05&userType=public).

utility role that includes ownership of EVSE will provide consumers with more choice from a trusted source of information on electricity and the distribution grid.

Simply put, a more robust role, including utility ownership as an option (with the burden of proof to demonstrate cost-effective investments and Board oversight), will provide the following advantages: avoiding vendor lock-in, allowing the utility to demonstrate new approaches perhaps with a vendor on a turnkey basis, and achieving scale more quickly in meeting the estimated demand.

Limiting EDCs to the role of Provider of Last Resort (POLR) is premature; moreover, the need for infrastructure statewide is such that EDCs should be permitted to offer complete service in all areas.

The Straw Proposal sets up a framework (at 11-12) in which EDCs would own and operate EVSE only in locations referred to as "Equity Areas." We have seen this concept elsewhere, including most recently in New York in the DPS Staff proposal. Yet we suggest this is not a simple undertaking because the term has a wide range of meanings based on the community generally and also based on individuals within the community. We certainly agree with the position that diversity is important in transportation electrification, including in areas of economic need as well as communities of color, DACs (disadvantaged communities), and rural communities. Accordingly, we support EDC ownership and operation of EVSE in such locations, but we would be remiss if we did not point out the fact that nearly the entire state today lacks an adequate amount of EV infrastructure across all geographies and use cases.

The Straw Proposal defines the trigger for EDC ownership of EVSE (at 11) as markets "not sufficiently mature to build EVSE on a purely merchant basis." We believe this is a false dichotomy between the EDCs and the EV infrastructure companies, since significant market

gaps or failures exist across all of New Jersey. As for the theory that EDC-provided make-ready will, by itself, entice sufficient private investment, there is insufficient evidence to prove this hypothesis.

New Jersey currently has fewer than 19,000 fully electric vehicles and not even 12,000 plug-in hybrids, for a total of barely 30,000 vehicles that are electrified at all (not even one-tenth of the Governor's goal for 2025). While this number is unfortunately extremely low, it actually can be compared to the very low number of non-proprietary EV charging stations. According to the U.S. Department of Energy Alternative Fuels Data Center, today there are merely 103 CCS direct current (DC) fast charging plugs[5] at 53 locations, and 67 CHAdeMO DC fast charging plugs[6] at 45 locations. Maryland, by contrast, which is home to a third fewer people than New Jersey, has approximately double the public DC fast charging infrastructure, with 180 CCS plugs at 92 locations and 168 CHAdeMO plugs at 94 locations. While infrastructure in both mid-Atlantic states remains scarce, it is clear that New Jersey faces a significant challenge to build out its EV infrastructure to meet market demands.

Given that charging infrastructure must be in place before customers will purchase EVs, which by definition means the market for EV charging will be nascent and the business case will be poor at the outset, there is no reason to expect that the private sector will be acting any time soon even with make-ready funding. Costs such as operating a network, call centers, technicians, and maintenance are not trivial in the early days while the market develops but such costs are a prerequisite for the market to develop. To the extent the Board seeks comment on a sunset date,

[5] CCS is the DC fast charging format for nearly all fully electric vehicles other than Tesla and Nissan.
[6] CHAdeMO is the format that is used primarily by Nissan and Mitsubishi (although Mitsubishi today offers only a plug-in hybrid), and generally may be used by Tesla with an adapter.

it is altogether premature to be having that discussion at all, let alone to consider setting one as close as 2025. Instead, we urge the Board to allow a much more robust role for the EDCs over at least the next five or ten years, recognizing that it has the authority to re-assess with the EDCs and stakeholders at that time and adjust market terms and the role of the EDC when the market is more mature.

EDCs can ensure successful EVSE deployment while supporting the private sector; moreover, responsible stewardship of ratepayer resources dictates ongoing involvement with all aspects of the network including the EVSE.

As stated in our introduction, we believe that the make-ready investment approach outlined in the Straw Proposal provides a good foundation for further development, but this model will not be a panacea for the long-term needs of New Jersey. New Jersey will continue to experience a deficit of charging due to longstanding reluctance by the private market to step in and deploy infrastructure, as evidenced by the very small number of developers (particularly for DCFC) and the overall inadequate number of plugs (both DCFC and Level 2).

Instead, the Board should consider a more robust role for EDCs, including an ownership model with a turnkey approach with qualified vendors, as being an important accelerator of EV charging infrastructure in the state. It is important to keep in mind that, in the case of EV charging, at lease, EDC ownership does not generally displace the private sector.

- With regard to hardware, EDCs do not build their own EV chargers, they buy from the same suppliers as any other developer.
- With regard to software, EDCs elsewhere partner with an existing platform, typically either through co-branding or under a white label arrangement.
- Of the existing networks, most have been known to partner in some fashion with EDCs.

- Even in design, engineering, and construction, EDCs typically support the local economy because they hire local vendors and labor (union labor, in many cases). EDC control of a project from end-to-end therefore is likely to benefit the local economy and ensure a streamlined process.
- Once stations are operational, we have every reason to believe that EDCs will establish prices for charging that reflect current market conditions in New Jersey and ensure price competitiveness with other charging service providers as well as relative to traditional petroleum fuels.

Moreover, if ratepayer funds are invested, logic dictates that the EDC retain the opportunity to be involved with the resulting infrastructure to ensure continuous and reliable utilization. Other jurisdictions have discovered that EV charging stations that were built in the last decade, often with government grants and incentives, are not well maintained and experience poor uptime and availability. Obviously, there can be reliability issues with all the various business models and charging infrastructure. But especially with ratepayer funding for these investments, the utility would retain the primary responsibility for maintaining this distribution infrastructure, subject to the oversight and accountability of the Board.

At the very least, the Board possesses the ability to require customers utilizing make-ready infrastructure to adhere to pro-competitive policies such as avoiding vendors who seek to lock in customers to hardware with no real-world ability to change service providers.

OCPP (Open Charge Point Protocol) should be required for all EVSE connected to EDC-funded infrastructure.

We are aware of reluctance by some stakeholders to support EDC ownership of EVSE. While we urge the Board to recognize that EVSE is considerably different from other energy

products because EVSE is expensive and complicated and therefore highly suitable for deployment by EDCs, even if the Board does not agree with the ownership question, the Board should require the EDCs to require certain conditions for open design and architecture in RFPs with potential vendors who will bid on the hardware to be connected to the make-ready investments.

Insisting on basic and unobjectionable principles such as open standards and interoperability is the type of basic consumer protection that the Board was created to provide. Examples of best practices include requiring customers who benefit from a utility make-ready to be required to install hardware and software that is compliant with prevailing standards such as OCPP (which enables EVSE to be ported from one service provider to another) and Open Charge Point Interface (OCPI, which enables customers on one network to use chargers of another network). As the global technology company Siemens articulated recently in a New York Public Service Commission proceeding, interoperability produces three beneficial results: (1) lower costs to customers; (2) lowered risk of stranded assets; and (3) customer choice and avoided vendor lock-in.[7]

By way of brief background, OCPP is a protocol, or a language, by which charging hardware communicates to the network operator. When both hardware and software are compliant with OCPP, they speak the same language; this means that any OCPP charger can talk with any OCPP network. In the absence of an open protocol for communications, however the customer or host site may be locked in to a single vendor if OCPP is not required or if

[7] New York Electric Vehicle Supply Equipment and Infrastructure Technical Conference and EV Readiness Working Group (Docket No. 18-E-0138) (April 7, 2020). Presentation of Chris King, SVP of Policy and Regulatory Affairs, Siemens eMobility, at 9 (http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={369DBCAC-E362-4061-A7DC-786DBFE3D9FE}).

contractual restrictions are put in place.

Consistent with our pro-open standards position above, we point out that there are significant market participants who do not adhere to open standards in practice. We also observe that there are relatively few market participants today, and the firm with the dominant market share is able to unreasonably restrict new competitors, mostly by locking its existing non-OCPP hardware (much of which was paid for with federal, state, local, or utility funds) to its own network. The Board should be aware of these realities in the nascent and development charging market among network management systems, and insist on only OCPP certified hardware and software in connection with future deployments. We acknowledge that Commissions do not have the authority and expertise to set standards for hardware and software in the EV ecosystem, and they are best left to professional bodies and associations (such as IEC, IEEE, SAE, and several others). At the same time, we urge the Board to use its authority to require EDCs to consider fully interoperability and emerging protocols and standards as utility RFPs are issued to vendors, recognizing that ratepayer funds are being expended in the public interest.

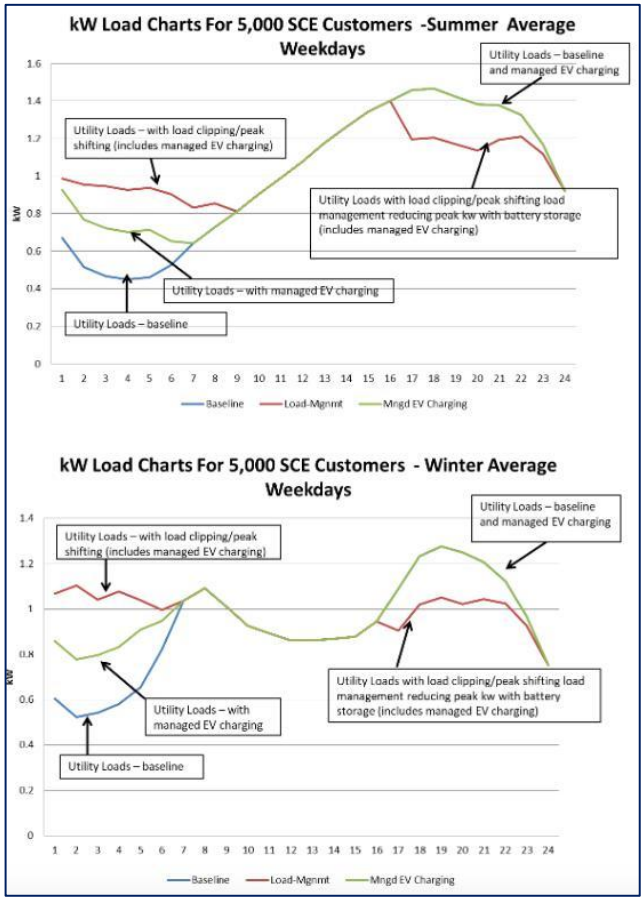
To be clear, it is ATE's firm position that hardware that is connected to make-ready infrastructure be officially certified by a recognized independent third party as compliant with the then-prevailing version of OCPP (testing procedures are described on the webpage of the Open Charge Alliance, www.openchargealliance.org). Moreover, customers must possess the contractual right to direct any participating network operator to turn over control of chargers to another service provider. Only these provisions will protect customers, by allowing them to choose from a range of private network providers.

EDC control of EVSE adds value by utilizing EVs as distributed energy resources.

One study of Southern California Edison (SCE) customers[8] found that EV batteries used as a "virtual power plant" can shift the entire residential peak load to nighttime hours by using energy stored in batteries during the day and managing charging at night with EV market penetration of only 10 percent. Moreover, annual net savings were $560/EV customer.

Smoothing the EDC's load reduces all customers' costs because peaks require additional power plants to be dispatched; when plants are dispatched only during peaks, the annual cost must be covered during a relatively small number of hours, which results in higher electricity prices for everyone.

The finding that a small EV market share can completely clip the residential peak (see charts at right) and save participants $560/year even after paying for overnight charging has long been suspected but the study provides credible evidence. This important study highlights savings that help lower the overall total cost of owning an EV. Meanwhile, for non-EV customers, lowering the system peak reduces the cost of electricity and supports the case for utilities investing in EV charging infrastructure.



[8] Available at http://www.maisy.com/SCE_EV_Virtual_Power_Plant.pdf.

Board Staff seeks comment (at 9) on the subject of cost recovery. Based on our experiences in many states across the country, we advise the Board that cost recovery should be viewed through the lens that EV charging is different from traditional investments; therefore, the Board should consider the broad based benefits that EV charging infrastructure delivers to the entire state, including participants and nonparticipants, and take a flexible approach erring on the side of not second-guessing investments that are made in good faith.

At this early stage of market development, a traditional detailed cost-benefit analysis (CBA) should not be a requisite for program development and approval by the Board, particularly for early-stage pilot programs. Instead, the Board should, over time and through a stakeholder process, start to assess the appropriate CBA to utilize as transportation electrification achieves greater scale in New Jersey in accordance with S. 2252 and its climate goals. Each of the traditional CBA tests has some positive aspects but also substantial limitations when it comes to measuring the costs and benefits of TE. Regardless of which model is adopted, as with other aspects of TE implementation the Board should not be overly prescriptive in specifying which CBA should be used by an EDC in this early stage of development.

We suggest that the Board consider the framework proposed by EPRI in its proposal to create a new solution – a cross between a Total Resource Cost (TRC) and Societal Cost Test (the latter of which takes into account the environmental externalities, among others). This new approach is called the Total Value Test (TVT), which was published in August 2019.[9]

The Total Value Test refines current analytical approaches to evaluating cost-effectiveness of demand-side programs and expands their application to include any type of electrification initiative, in any economic sector. The Total Value Test takes a broad view of the

[9] Available at https://www.epri.com/#/pages/product/3002017017/?lang=en-US.

potential costs and benefits of electrification, which is necessary given its cross-sector impacts. The Total Value Test was developed based on best practices for evaluating the cost-effectiveness of demand-side programs, a review of the literature critiquing those methods, and interviews with 15 experts on electrification and cost-effectiveness frameworks.

Key considerations when applying the Total Value Test include:

- Developing defensible methods for quantifying "non-energy" costs and benefits.
- Accounting for the ability of the proposed electrification initiatives to satisfy established policy objectives.
- Defining the "boundary" of the test in a meaningful way (for example, does it take a utility-specific view, a state-level view, or a broader perspective?).

A report on the Total Value Test conducted by The Brattle Group includes 26 different categories of potential costs and benefits and includes case studies that highlight practical applications of the Total Value Test..

Rapid growth is expected in the medium and heavy-duty vehicle sectors; because electrifying these fleets will play an outsized role in decreasing pollution, immediate engagement is essential because the market responds to incentives.

The transportation sector is the largest source of greenhouse gas (GHG) emissions in the United States, emitting more pollutants than even the power sector (the transportation sector is accounting for a growing percentage of all GHG emissions primarily because the power sector is reducing GHG through actions such as retiring coal plants and running cleaner gas plants). In recognition of this new reality, local communities and governments are increasingly focused on reducing GHG emissions from trucking because of the attendant benefits for local air quality.

According an analysis conducted by Atlas Public Policy,[10] though, the cost competitiveness of procuring electric vehicles was determined primarily by the presence of two key elements: low cost charging and vehicle incentives. EV procurements which did not include these elements were almost categorically non-competitive in the scenarios analyzed.

The Alliance believes there was an emerging consensus expressed at the workshop and in various stakeholder comments that the Straw Proposal should be extended beyond the light-duty vehicle market to the rapidly growing and technologically dynamic medium and heavy duty markets. We urge the Board to act as quickly as possible in this area because demand for electric trucks and buses (both transit and school) exceeds supply, so they are going to the cities and states where the costs and challenges are lowest. New Jersey has the potential to be a significant hub for electric trucks and buses due to the state's population, industrial and logistics base, and proximity to key markets.

We understand that the Board does not regulate transit agencies such as New Jersey Transit (NJT) or the trucking and logistics sectors, but it is the regulated EDCs that will soon be providing the fuel for the transportation sector. For example, New Jersey Transit recently published a Strategic Plan (NJT 2030),[11] which explains that NJ Transit is currently developing a roadmap towards electrification and will, within the next two years, create an electrification master plan to detail the stages of fully deploying battery electric buses. NJ Transit has already conducted preliminary studies of bus garage electrification and is preparing to deploy a pilot. Furthermore, the statutory goals in S. 2252 for electrification of NJT buses are clear, starting

[10] Assessing Financial Barriers to Adoption of Electric Trucks (Feb. 2020) (https://atlaspolicy.com/wp-content/uploads/2020/02/Assessing-Financial-Barriers-to-Adoption-of-Electric-Trucks.pdf).
[11] NJT 2030: A 10-Year Strategic Plan (June 2020) at 57-58. Full report available at https://njtplans.com/downloads/strategic-plan/NJT_2030-A_10-YearStrategicPlan.pdf.

with 10 percent in 2024 to full electrification to be achieved in 2032. While these may appears to be aspirational in nature, they are written in to the statute and will require substantial upgrades to the existing infrastructure and significant coordination with the EDCs, vendors, neighborhoods, and local governments to achieve these goals.

This and efforts by others are the start of a major transformation in both transportation and power, and the Board and EDCs rightfully should be leading the conversation. Competition for attracting these companies and jobs, however, will be strong, so we urge the Board to act quickly along with other state agencies to create supportive regulatory and policy measures for the entire state.

Education and Outreach Activities (E&O) are essential for widespread transportation electrification, and EDCs have a vital role to play along with other stakeholders.

Education and outreach are essential in this time that is as complicated as confusing as it is transformative and beneficial. Customers, for the most part, generally know very little about EVs or EV charging. Not surprisingly, most national surveys indicate that the fundamental lack of consumer awareness about basic "EV 101" information such as vehicle types, plug standards, and location of charging stations (even in advanced states like California) is one of the largest barriers to greater EV adoption.

As with certain other aspects of the Straw Proposal, the subject of education and outreach has been covered in other states. We encourage the Board to give EDCs wide latitude in both the approach and the content of performing this important service and allow for recovery of the costs. While issues such as distributed energy resources and how EV charging affects the grid are important to energy wonks, most customers are just now learning where the starting line is. They need to learn the direct benefits *to them* of owning an EV, as well as the benefits to the

environment. One might think that automakers should shoulder this responsibility, but to date their success in this area has proven to be mixed, at best. EDCs and their customers, on the other hand, along with every creature that breathes air and suffers from atrocities such as PM2.5 in the EDC's service territory, stand to benefit from transportation electrification.

The Alliance believes that the utilities are well positioned to carry out a robust E&O function by their extensive relationships with their customers and serving as an "energy advisor" on other advanced energy services and programs. Accordingly, we urge the Board to allow the EDCs to propose reasonable budgets to be funded out of rates in order to allow them to engage in this outreach activities, such as organizing ride-and-drive events, enhancing web portals that provide timely information on EVs and charging, and other activities. We trust that customers are smart and well informed and will use these web portals and utility-provided information, along with other sources of information from auto dealers, EV web sites, and auto OEMs in order to make informed decisions.

Next Steps and Conclusion

We appreciate the considerable effort that Staff has made in developing the Straw Proposal. The Alliance looks forward to continued collaboration among all stakeholders to advance transportation electrification and help New Jersey achieve its climate and transportation electrification goals. While the Straw Proposal is a good starting point, we believe that some significant changes need to be made before final approval by the Board that should be focused on some of the following key outcomes:

1. The Board should adhere to its timetable for the submittal of TE Plans by the EDCs to the Board by the end of December 2020, with the submittal of program designs in the following April. At the same time, the Board should review under current (pre-Straw

Proposal) guidelines the pending proposals for EV infrastructure from the two EDCs and rule on them expeditiously in parallel fashion. They differ from the Straw Proposal, but valuable learnings can be gleaned by allowing them to proceed.

2. EDCs should be permitted to offer customers the option for the EDC to own EVSE along with the make-ready on the customer side of the meter together with the utility side of the meter as set forth in the definition of "charger ready"
3. All EV charging hardware and all charging network platforms connected to EDC-funded make-ready must be compliant with the prevailing version of OCPP (currently ver. 1.6);
4. The Board should encourage and approve EDC investments in furtherance of electrifying medium and heavy-duty vehicles;
5. The Board should allow EDCs to invest in robust education and outreach for purposes of making customers aware of the benefits they will enjoy from driving electric vehicles;
6. The Board should design a regulatory review process that allows some flexibility and iterative design so that the EDCs, EV infrastructure firms, and others can review the progress and state of the market in regular stages, while still maintaining adherence to regulatory principles and the public policy and statutory goals of New Jersey.

Dated June 17, 2020

Respectfully submitted,

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Fleet **I**nfrastructure **V**ision for **E**V **R**echarging (The FIVER) *for NJ*

Rapid Post-Pandemic Engagement of NJ's Skilled Workforce into the Electric Fleet Transformation

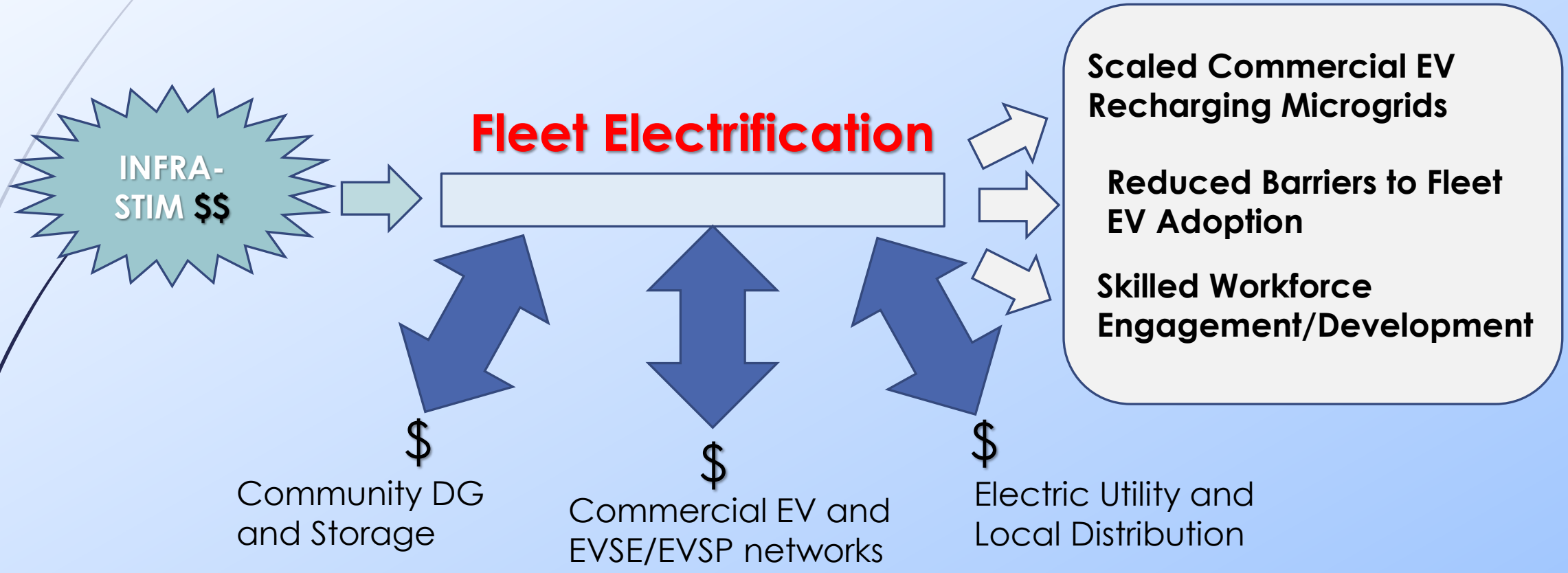
1

- Put **$5M** of federal funding to work by the start of 2021, attracting equivalent matching private capital.
- Put **5 %** of pandemic-displaced union workers back to work by EOY21
- Enable the initial conversion of **5**00 fleet vehicles to electric drive
- Create **5** initial microgrid-based prototype fast charging facilities

Paul Heitmann, President Businovation, LLC May 17th, 2020

The **FIVER** Focus

Drive an *actionable* energy jobs creation program with **coherence and focus** on the highest yielding** recovery and stimulus opportunity available to our post-pandemic NJ economy



** based on # of full time jobs created versus traditional electric utility programs

Go With the Flow, BUT ***GO FAST***

Align the focus to already started initiatives in transportation and energy that bring synergistic and scalable cross-benefit solutions, and get people engaged quickly.

- NJ had **already been making great strides** in both electric transportation and energy policy reformation through initiatives such as the Energy Master Plan, TC-DER Microgrid Program, TREC Evolution (need name), and EV Bill (need name)
- The coronavirus pandemic has painfully exposed the many **brittle** facets of our legacy-driven centralized, extractive, and wasteful industrial **business models** that clearly need reform. Now is the window of opportunity and the political will to back it.
- Electric Utilities sought rate basing investment for EV Infrastructure but have recently been rebuffed in favor of market driven solutions. Utilities derive additional revenue from EV load growth and have rate basing paths with this.
- Virtually all manufacturers of commercial vehicles have launched programs to build electric versions. This emerging sector includes transit, school, and shuttle *buses*; heavy, medium and light duty *trucks*; passenger *cars* (i.e., taxis)
- The Board and Advisory – People and roles – facilitate a rapid alignment of goals and reduction of collaboration barriers.

Realize ***IMMEDIATE*** Benefit

Develop a tactical action plan for the **NJ R**eopening and **R**ecovery **A**dvisory **C**ouncil on efficient capture and maximum leverage of stimulus money coming for our economic restart.

- Government funding would accelerate the build out of the charging infrastructure required to electrify fleets while remaining coherent to grid modernization and decentralization efforts currently underway. Put simply, a substantial investment in commercial fleet recharging infrastructure now would achieve the following important goals that strongly align with New Jersey's primary and urgent initiatives:
- Immediately engage a largely idled "remote" workforce of utilities, governments, and transit agencies into valuable planning activities that apply off the shelf technologies for shovel ready projects improving the operational competitiveness of multiple industry segments.
- Fast track these largely outdoor essential construction projects to receive focused and expedited site preparation, utility interconnection, and equipment ordering. START WORKING!
- Build workstreams that are highly immune to potential future lockdowns driven by a second or third wave of the COVID-19 epidemic. Start workforce training and certification programs.
- Remove (or at least reduce) the "chicken and egg" barrier to starting on electric drive transformation decisions by fleet owners and managers.
- Show significant progress toward decarbonizing the transportation segment (Strategic Goal #1 from the Energy Master Plan)
- Build highly distributed islands of community energy resilience in preparation for future public emergencies.(ie Sandy II, Cyber-attack, or COVID-22)
- Open productive and fair paths for utility business model transformation that engages broader community risk and reward options, and reduces wealth extraction through shareholder profit draw.

Motivating ***CHALLENGES***

- Pandemic response has decimated the US economy and created a **Jobs Emergency** and exposed the desperate need for coordinated leadership
- Slow pace of financing for distributed grid edge infrastructure including DERs, electric vehicle charging infrastructure, on-site building management systems and 'smart' assets, devices, appliances
- **Energy** (and **Transportation**) are two highly politically scrutinized industries, innovation and disruption is constrained by incumbent interests
- New market entrants face high costs and high barriers to entry
- The pace of electrification, access and efficiency/productivity needs to accelerate to meet climate change targets
- Customers today cannot 'decarbonize' their transportation fuel without tight collaboration from the electricity sector and long delays on grid upgrade and interconnection.

The ***PLAYERS*** at the Table

- **Utilities**

Utilities have historically been stable job creators for NJ, but do not proactively drive any disruptive innovation that would upset the often conflicting balance of maximizing shareholder payout and driving more efficient or market driven energy system solutions.

- **Unions**

Good union jobs have been the foundation for the economic stability of NJ middle class for decades, and these have been gradually displaced as our manufacturing and service sector has faced international and regional competitive pressure. Skills and trade education and advancement opportunities have also been limited.

- **Universities**

Universities have become change agents that can effectively collect, model, and analyze data revealing significant trends, and best practice solutions to emerging threats and opportunities.

- **EV/EVSE Manufacturers**

This area is important to assure that the latest trends in vehicles and recharging interconnection standards are reflected so that developed solutions and recommended practices and policy change do not depart from practical implementation.

- **Industry Associations**

TBD

- **Energy Solution Consulting**

Consultants bring expertise from a variety of technical fields as well as regional jurisdictions that can introduce shared learning opportunity. These also represent a potentially independent facilitator role to ensure balanced input and timely delivery of work product for the group.

June 17, 2020

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

Submitted via email: board.secretary@bpu.nj.gov

RE: Straw Proposal on Electric Vehicle Infrastructure Build Out Docket No. QO20050357

Dear Ms. Camacho-Welch:

Greenlots respectfully submits these comments to the New Jersey Board of Public Utilities (the "Board" or "BPU") on the New Jersey Electric Vehicles Infrastructure Ecosystem 2020 Straw Proposal ("Straw Proposal").[1] Greenlots commends the Board for putting forward the Straw Proposal as a thoughtful starting point to advance the regulatory conversation about transportation electrification ("TE"). As part of a broader, statewide strategy to electrify transportation, this Straw Proposal will contribute to a cleaner, healthier, safer and more efficient future for New Jersey.

Our comments below are bifurcated into two sections. The first section discusses several high-level principles that are foundational to Greenlots' perspectives on electrification and inform our comments in the second section. Those comments offer more specific feedback to the Straw Proposal. In summary, Greenlots' comments are as follows:

- Guiding principles
    - Utilities are critically important to attain EV goals.
    - Consideration of the ACE and PSE&G filings should proceed apace.
    - Utilities have a key role to play as a market transformer.
- Straw Proposal-Specific Feedback
    - Make-ready investment is an important tool but should be one of several utility investment approaches.
    - Utility ownership is essential to overcome market barriers and accelerate electrification.
    - Leverage software to manage charging.
    - Broaden the proposal's focus to address more market segments.

[1] *In the Matter of Straw Proposal on Electric Vehicle Infrastructure Build Out ("Straw Proposal Docket")*, Docket No. QO20050357, New Jersey Electric Vehicles Infrastructure Ecosystem 2020 Straw Proposal ("Straw Proposal"), (May 18, 2020).

- Other considerations

About Greenlots

Greenlots is a leading provider of electric vehicle ("EV") charging software and services committed to accelerating transportation electrification across New Jersey, and is a wholly-owned subsidiary of Shell New Energies. The Greenlots network supports a significant percentage of the DC fast charging infrastructure in North America and a growing percentage of the Level 2 infrastructure. Greenlots' smart charging solutions are built around an open standards-based focus on future-proofing while helping site hosts, utilities, and grid operators manage dynamic electric vehicle charging loads and respond to local and system conditions.

Greenlots is committed to growing the EV market in New Jersey and adding value to EV charging through software. We are an active member of ChargEVC, the New Jersey-based not-for-profit trade and research organization whose mission is to promote EV use, and we are an intervenor in the two pending EV-related filings by Atlantic City Electric ("ACE") and Public Service Electric & Gas ("PSE&G") currently before the Board. We appreciate the Board's attention to these important policy and regulatory considerations to accelerate EV adoption and achieve the state's electrification goals.

Comments Section I: Guiding Principles

Utilities are Critically Important to Attain EV Goals

Greenlots worked alongside other stakeholders to inform the legislative process that led to the enactment of S.2252, the Plug-In EV Act ("EV Law") earlier this year, and commends New Jersey for its bold commitments to electrify transportation and reduce emissions. Some of its specific requirements include:

- Public charging: 400 DC fast chargers at 200 locations, and 1,000 Level 2 chargers by 2025 including a multi-family requirement.
- EVs: A statutory commitment to at least 330,000 light-duty EVs by the end of 2025 (up from 23,000 today); at least 2 million EVs by end of 2035; and EVs comprising 85% of registered vehicles by 2040.
- State fleets: electrification commitments of at least 25% of nonemergency light-duty vehicles by the end of 2025, and 100% by 2035.
- NJ Transit: electric transit bus procurement requirements of 10% by 2024, increasing to 50% by 2026 and 100% by 2032.

Greenlots and the Board share a common purpose to achieve these goals, which, when achieved, will move New Jersey forward in tackling climate change-inducing emissions, improving air quality and increasing good paying, local jobs. These goals are bold but achievable,

so long as the state establishes the right policy framework that leverages the necessary stakeholders and resources to make it happen.

Policy development is not simply an academic exercise; context is crucial to identify the right approach. For this Straw Proposal, that context is New Jersey's statutory commitments which should provide the foundation for any eventual EV infrastructure policy framework the Board adopts. The Straw Proposal's approach, therefore, will be well served to focus first and foremost on how the BPU and its regulated utilities can help New Jersey meet its electrification goals. Without clearly connecting this effort to the North Star of the EV Law's statutory commitments, the end result of this effort will likely result in the state falling short of meeting those commitments.

Indeed, while concepts outlined in the proposal offer thoughtful prompts for public review, it is fundamentally too narrow in the role it envisions for the state's electric distribution companies ("EDCs") and is too limited in how it addresses the variety of customer segments and charging applications needed to achieve the state's goals. Instead, as Greenlots addresses further in these comments, the Straw Proposal should look to leverage the capability of its EDCs to accelerate electrification across a variety of use cases and geographies. EDCs are uniquely positioned to support all aspects of the market and to deploy a variety of incentive approaches, from make-ready to rebates to ownership and operation.

Consideration of the ACE and PSE&G Filings Should Proceed Apace

Greenlots understands that the Board intends for this Straw Proposal docket to establish a broad TE regulatory framework to meet its statutory obligations under S.2252 and help streamline consideration of individual EV-related filings by reducing the need to relitigate similar policy approaches each time. Greenlots also appreciates that the Board's intent is for the Straw Proposal to "proceed in parallel" to the ACE and PSE&G pending EV proceedings.[2]

Greenlots commends the Board for envisioning a process that won't impede consideration of the two filings or unduly impact what gets approved. If this Straw Proposal docket moves forward as intended and allows those two proceedings to continue in accordance with their established procedural schedules, it will indeed likely serve a beneficial purpose to enhance the efficiency and effectiveness of both stakeholder participation and the Board's consideration in those and future EV proceedings. On the other hand, if this Straw Proposal ends up delaying either the ACE or PSE&G dockets and stretching their resolution well into 2021, it will put the state's electrification timetables that much further out of reach.

[2] *Straw Proposal docket,* Straw Proposal at 3.

In order to avoid such an outcome, we recommend that the Board establish a clear "effective date" for the Straw Proposal that will neither hinder nor delay any pending applications filed prior to the Straw Proposal's publication on May 18, 2020.

Role of Utility as Market Transformer

In most every EV-related proceeding across the country, regardless of whether the utility is proposing rate design, customer rebates or full utility installation and ownership of charging stations, the discussion invariably turns to the appropriate role of the utility and its investments. On this pivotal topic, Greenlots agrees with the inclusive and flexible role and responsibility defined by the Washington Utilities and Transportation Commission ("UTC") in its seminal Policy Statement of the utility as a market transformer.[4] This view is so salient because it is firmly rooted in a clear understanding of the state of the EV market today as an emerging technology. In its report, the UTC wrote:

> "Market transformation is the process of getting these new products to a wider audience, removing market barriers, and exploiting opportunities to make the new market mainstream. For energy efficiency technologies, this is done through programs promoting the product and voluntary efficiency standards. The ultimate goal of market transformation is for the product to become accepted by the general public and adopted into codes and standards.
>
> The challenge facing the expansion of EVs is similar to the challenge facing energy efficiency technologies before market transformation…there are three main barriers to additional adoption of EVs: price, range and charging availability, and low consumer awareness. *Charging availability and consumer awareness, in particular, are barriers that electric utilities are naturally positioned to address.*" (emphasis added)[5]

Indeed, when thinking about the right role for the utility in a broader market context, it is necessary to differentiate between a mature, profitable private market and a nascent, largely pre-profit market that is still in the "emerging technology" stage described by the UTC. Regulatory guiderails that may be appropriate and warranted for a mature market may be unnecessary and in fact detrimental for a nascent market. New Jersey's market, which the Straw Proposal recognizes as "in the early days of EV adoption," cannot realistically be viewed as competitive, if by 'competitive' one means 'profitable.'[6] Despite the enormous value that TE writ

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[4] *In the Matter of Amending and Adopting Rules in WAC 480-100 Rulemaking to Consider Policy Issues Related to the Implementation of RCW 80.28.360, Electric Vehicle Supply Equipment ("Washington UTC Rulemaking")*, Washington UTC Docket No. UE-160799, Policy and Interpretive Statement Concerning Commission Regulation of Electric Vehicle Charging Services ("Policy and Interpretive Statement"), (June 14, 2017).
[5] *Ibid* at 29-30.
[6] *Straw Proposal docket,* Straw Proposal at 12.

large offers to the grid and ratepayers, as a stand-alone commercial enterprise it remains generally unprofitable to deploy, own and operate EV infrastructure and charging stations today.

In other words, while private EV charging companies do indeed compete in New Jersey, they are doing so in the context of a pre-profit market landscape. Greenlots addressed this notion of a competitive market in a somewhat similar Commission-led review of EV charging services in Ohio. As Greenlots noted in that docket before the Public Utilities Commission of Ohio ("PUCO"):

> "Currently, competition exists in a largely pre-profit market, but that competition is largely competition for market share, competition to offer leading technology and services, and competition for site hosts and locations. It is not competition in the sense that EV charging companies are competing for a share of the net profits. In this current EV charging ecosystem there are very few profitable actors: installers, some value-added resellers (VARs), some consultants, and – notably – regulated, investor-owned utilities following regulatory approval, precisely because they can earn a reasonable and just rate of return on their investment."[7]

Put simply, the appropriate utility role in a nascent, emerging market may look very different than an appropriate utility role in a mature market. Far from harming the EV charging market in New Jersey, Greenlots firmly believes that utility investment in charging—including ownership of charging stations—will increase EV adoption. This will in turn will increase demand for charging stations and services, thereby supporting the growth and maturation of the private competitive market. In this way, utilities can fulfill their role as market transformers, as envisioned by the Washington UTC.

Greenlots also notes that there is a prevalent and inaccurate view of the market that competition can only take place at the retail level, where naturally-occurring market opportunities are limited. In fact, the wholesale-level competition that results from utility procurement, which provides a significant motivated buyer to a market that generally otherwise lacks this, represents the purest form of competition in today's market, based on product features, price, service, etc., allowing big and small players to participate with a leveled playing field. Additionally, wholesale-level competition that results from utility procurement is significantly more powerful in driving down program and charger costs, as equipment is being bought in bulk rather than via one-by-one individual retail transactions. A focus only on the retail market historically has led to less sophisticated purchasing and planning decisions by customers with little technical knowledge or meaningful negotiating leverage. While utilities do have negotiating leverage – especially if purchasing in bulk – utilities also should be committed to the success of the market, and therefore may place higher value on EV charging products and services than other types of buyers.

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[7] *In the Matter of the Commission's Investigation into Electric Vehicle Charging Service in this State*, PUCO Case No. 20-434-EL-COI, Reply Comments of Greenlots (April 7, 2020) at 2-3.

Accordingly, the Straw Proposal should encourage utility filings to show how they support a diversity of business models, with multiple ownership structures, and how these programs support wholesale procurement and competition, going beyond retail-only focused programs for drivers and suppliers. Different market segments will be better aligned with different program designs and structures, so utilities should be encouraged to also show how their portfolio of programs is also diversified in this regard. This programmatic diversification will encourage broader competition and innovation amongst suppliers for different opportunities under these utility programs.

Further, it is inaccurate to think about the private EV charging infrastructure market as comprised solely of companies that own and operate their own networks of charging stations, a notion suggested by the Straw Proposal's definition of an "EVSE Infrastructure Company." Greenlots addressed the breadth of the EV charging industry in our motions to intervene in the ACE and PSE&G EV filings:

> "…companies within the broader EV charging industry…have differentiated business models and product offerings, and different market perspectives… A small number of charging companies have a business model in which they own and operate their own network of charging stations and provide charging to the end-use driver. In contrast, Greenlots' business model is largely one in which the company sells its products and services to a client that owns charging stations, who, in turn provides charging to the end-user – the driver."[8]

Indeed, only a small handful of EV charging companies are network owner/operators themselves. The majority of companies sell their EV charging products and services to end users—including, notably, utilities.

Comments Section II: Straw Proposal-Specific Feedback

Make-Ready Should Be One of Several Utility Investment Approaches

As noted above, utility investment is beneficial to help kick-start the private EV charging market during this early stage. Moreover, to support the state's electrification goals, utility programs will need to support broad EV infrastructure build-out across geographies and market segments. Greenlots respectfully suggests that it would be a mistake both to limit what utility investment is

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[8] *In the Matter of Petition of ACE Company for Approval of a Voluntary Program for Plug-In Vehicle Charging ("ACE EV filing")*, Docket No. EO18020190, Greenlots' Motion to Intervene (March 13, 2020) at 3; *In the Matter of Petition of PSE&G for Approval of its Clean Energy Future-Electric Vehicle and Energy Storage (CEF-EVES) Program on a Regulated Basis ("PSE&G EV filing")*, Docket No. EO18101111, Greenlots' Motion to Intervene (March 13, 2020) at 3.

allowable and to limit what customer segments and charging applications the utility offerings can address.

The Straw Proposal identifies one primary focus for utility investment: make-ready (referred to throughout the Straw Proposal as 'charger ready.') Greenlots believes that make-ready investments have become an expectation of utility service and represent the minimum for utility investment because it is often required to accommodate new EV load. Indeed, in much the same way that utilities must serve new commercial or residential load while maintaining the reliability and resilience of the modern distribution grid, utilities also have a responsibility to maintain the same reliability and resilience while serving this new EV load. For this reason, make-ready investments should not be viewed as a *program* but as a *core utility functionality*.

As a foundation, Greenlots urges the Board to adopt a mechanism that would offer predictable support to customers interested in deploying or hosting EV charging infrastructure. As Greenlots noted in comments before the New York Public Service Commission:

> "Make-ready investments are a basic foundational requirement for the expansion of EV infrastructure but are not in and of themselves sufficient to develop a sustainable market. While make-ready investments can facilitate the deployment of charging infrastructure in locations that are lower cost, higher utilization, and have a willing and interested site host, many locations will not meet these conditions and will nonetheless be critical for building a sufficient and equitable minimum network of electric vehicle charging. These locations should be addressed through carefully designed programs.
>
> Adopting a mechanism wherein make-ready investments are treated as a core functionality, rate-based in a similar manner to other utility investments required to serve load, would allow discussions of mechanisms to spur infrastructure deployment to move beyond this necessary investment and focus instead on features of *program design* that ensure equity in access to and benefits from transportation electrification. Such a mechanism would support the development of a private market in a more rapid manner, providing assurance that basic funding will be provided and will not be subject to regulatory delays or program budget constraints. It would also level the playing field between participants in necessary additional utility infrastructure programs and customers not able or interested to participate these programs, improve certainty for independent market participants, and provide a foundation upon which other utility or state programs can unlock the build out of transportation electrification infrastructure."[9]

The experience of two California utilities—San Diego Gas & Electric ("SDG&E") and Southern California Edison ("SCE")—illustrates the challenges inherent in a make-ready-only approach,

[9] *In the Matter of the Motion of the Commission Regarding EV Supply Equipment and Infrastructure*, NY PSC Case 18-E-0138, Comments of Greenlots (April 27, 2020) at 3.

particularly as it relates to the challenge of charging access in multi-unit dwellings ("MUDs"). An early pilot, SDG&E's Power Your Drive Pilot focused on MUDs and workplaces.[10] The utility targeted these two location-types due to low deployment of EV charging facilities and the relatively long periods of parking time that could be expected. The pilot was designed to allow SDG&E to refine managed charging strategies that shifted load toward periods of high solar generation and more favorable distribution system conditions and also accelerate EV adoption in the SDG&E service area.

Two design features were critical for SDG&E to effectively deploy infrastructure during the four-year pilot. First, the pilot was designed around a turnkey utility provision and ownership of infrastructure. SDG&E provided site hosts with no-cost or very low participation fee charging equipment and installation, while site hosts provided the charging site location and appropriate parking. Importantly, SDG&E owned the EV charging infrastructure. Second, the pilot included aggressive education and outreach to property owners. SDG&E worked with community-based organizations and consultant Navigant to assist with education and outreach.

In approving the pilot, the California Public Utilities Commission required that between 40% and 60% of all site installations and charging stations were to be deployed at MUDs. While the utility came up just shy of meeting that target, it ultimately was able to deploy 39% of sites at MUDs.

The relative success of SDG&E in reaching MUDs stands in contrast to a pilot offered by SCE over approximately the same time period. SCE's Charge Ready pilot used a make-ready approach in which SCE owned and maintained the supporting electrical infrastructure while customer participants owned and operated the charging station and were responsible for related operating costs.[11] SCE provided rebates to site owners to cover 50% of "base costs" for MUDs in non-disadvantaged communities and 100% of the base costs in disadvantaged communities. The pilot resulted in only about 3% of sites located in MUDs.[12] Learning from this experience, SCE filed for approval of its Charge Ready 2 program in June 2018 and included a new turnkey program design for MUDs in which SCE proposed to own and operate the charging

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[10] *In the Matter of Application of San Diego Gas & Electric Company for Approval of its Electric Vehicle-Grid Integration Pilot Program*, California PUC Application No. 14-04-014, Decision Regarding Underlying Vehicle Grid Integration Application and Motion to Adopt Settlement Agreement (January 28, 2016).
[11] *In the Matter of Application of Southern California Edison Company for Approval of its Charge Ready and Market Education Programs*, California PUC Application No. A-14-10-014.
[12] *Ibid.,* SCE Charge Ready Quarterly Report Q1 2019

infrastructure. SCE noted that this "new solution [will] address the unique challenges faced by MUDs and public entities."[13]

Utility Ownership is Essential to Overcome Market Barriers and Accelerate Electrification

As Greenlots noted above, New Jersey's EDCs have a critical role to play as market transformers in this nascent stage of EV adoption. When it comes to defining what that role should be, the Straw Proposal takes a narrow approach that limits utility ownership and operation of charging stations only to scenarios of a Provider of Last Resort ("POLR"). Prohibiting broader utility ownership and operation of charging infrastructure and instead taking a wait-and-see approach, as the Straw Proposal calls for, would stifle deployment of charging stations, slow down EV adoption and would put the state's goals further out of reach.

The lack of charging infrastructure, and publicly accessible charging in particular, is one of the most significant and enduring barriers to increased EV adoption.[14] This is especially true in New Jersey, a state which Governor Murphy acknowledged was 49th in EV infrastructure.[15] Because EV charging infrastructure is existentially necessary to enable EV adoption, Greenlots advocates for a regulatory environment that allows for all market participants—including both private EV charging companies and regulated EDCs—to develop this critically important backbone of EV charging infrastructure.

A number of challenges conspire to make it difficult to deploy charging stations in certain use cases. Some common examples include the challenging economics of operating public fast charging stations amidst low EV utilization; the difficulty of identifying both suitable locations in proximity to power and the site hosts willing to accommodate charging stations; and the difficulty of gaining association approval for multifamily apartment or condominium installation; just to name a few. EDCs are uniquely positioned to help break the market through these barriers by leveraging a range of investment approaches that should include ownership and operation of the charging stations. As noted earlier, it is precisely because regulated EDCs are able to recover costs and earn a reasonable return on their investment that utility-owned charging stations are an effective tool to overcome many of these present-day market barriers.

Moreover, even after charging stations are installed, the nature of the assets, being a natural extension of existing utility infrastructure, with similar hardware, features and capabilities fits very well within the core competencies and capabilities of utilities. This is particularly true with

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[13] *In the Matter of Application of Southern California Edison Company for Approval of Charge Ready 2 Infrastructure and Market Education Programs*, California PUC Application No. 18-06-015.

[14] International Council on Clean Transportation, Emerging Best Practices for Electric Vehicle Infrastructure (Oct. 4, 2017) at iv. Available at: https://theicct.org/publications/emerging-best-practices-electric-vehicle-charging-infrastructure.

[15] WHYY.org, "New Jersey Turnpike, Parkway Atlantic City Expressway to increase tolls" (May 27, 2020). Available at: https://whyy.org/articles/n-j-turnpike-parkway-atlantic-city-expressway-to-increase-tolls/.

respect to ownership and maintenance of widely-dispersed, long-lived electricity-dispensing and metering equipment, and ensuring the safety and reliability of those assets. Having existing qualified field personnel allows for this, while purchasing economics to lower costs and having relevant system, business process, software and customer service expertise and capabilities further aligns naturally with the demands of successful EV charging infrastructure deployment. Utilities are also well positioned to support the hiring and training of field support personnel and other key roles necessary to execute the electrification of transportation.

Leverage Software to Manage Charging

EV charging represents a new and growing source of load on the grid. At scale, this additional load can enable electric utilities to spread out their significant system costs across a larger volume of electricity sold. In that respect, EV adoption creates the potential for downward pressure on rates for all ratepayers, not just EV drivers. These potential savings, however, depend heavily on how and when EVs charge. If EVs charge during periods of peak demand, or exceed the local power capacity of a circuit or feeder, that new load can require costly but largely avoidable upgrades. On the other hand, if charging occurs when demand is lower and when supply is plentiful and cheaper, EV charging can enable greater optimization of electricity on the grid and better integration of intermittent and variable sources of energy such as renewables.

The Straw Proposal offers two primary mechanisms to promote managed charging. The first mechanism is to require that EDCs offer customers voluntary time of use ("TOU") rates. While TOU rates can be a useful first step to send price signals to shape charging behavior, Greenlots views them as a rather blunt instrument that, on their own, fail to optimize EV load, for several reasons. First, many EV drivers do not participate in TOU rates: a recent SEPA study found that nationally, more than one-third of all EV drivers with TOU rates available did not participate in those rates (outside of California, participation is even lower—less than 50% of all drivers).[16] Second, and more importantly, software enables more flexible and powerful charging management that unlocks significantly more value both to grid operators and ratepayers, particularly as EV adoption increases.

The second mechanism the Straw Proposal offers for managed charging is to rely on advanced metering infrastructure ("AMI"), or smart meters, "regardless of the charger's technical capabilities."[17] While AMI certainly offers increased functionality if compared to the absence of any smart technology, AMI nevertheless has significant drawbacks in its ability to effectively enable managed charging. Moreover, as a practical matter, AMI is an additional expense for the

[16] Smart Electric Power Alliance. November 2019. Residential Electric Vehicle Rates that Work at 21. Available at: https://sepapower.org/resource/residential-electric-vehicle-time-varying-rates-that-work-attributes-that-increase-enrollment/
[17] *Straw Proposal Docket,* Straw Proposal at 14.

utility or the customer to bear, and the timeframe for deploying AMI to all utility customers in New Jersey is inconsistent with meeting the state's statutory commitments.

Greenlots urges the Board to look beyond TOU rates or AMI and instead embrace strategies that leverage software to more effectively and powerfully manage charging, such as direct load control and dynamic, real-time pricing. These software-based strategies can better utilize and dispatch flexible EV loads at charging stations with longer dwell times such as residences and workplaces to better maximize system-wide benefits and cost reductions. These strategies and pricing instruments can also be deployed in higher power charging and shorter dwell time contexts, including DC fast charging.

Broaden Focus to Address More Market Segments, Including Heavy Duty

The Straw Proposal rightfully pays significant attention to residential and public charging applications, but it will benefit from a broader focus on electrification of commercial fleets, transit, medium and heavy duty vehicles, ports and other applications. Electrification of these and other market segments will help the Board and the state's EDCs do more to improve air quality and reduce emissions. While technology to electrify these sectors is commercially available today, the often higher up-front costs are often a more significant barrier to electrification that with light-duty passenger vehicles, both because of the higher vehicle costs and the need for greater infrastructure planning investment.

As utilities consider the particular needs of and challenges presented by different market segments, a core consideration must be how or how best to support EV equity. Many New Jerseyites do not own their own home, and many do not own their own passenger vehicles. Enabling all citizens to participate in and enjoy the benefits of TE requires a broad and diverse set of strategies. Examples include utility investment in electric bus (especially transit) infrastructure, utility support for disadvantaged community electric car sharing and even providing incentives to low-income ratepayers for leasing or buying new or used electric vehicles. And, as noted earlier in our comments about make-ready, a strong, supportive and turn-key EV charging program targeting multi-unit dwellings can also help to support EV equity.

Other Considerations

Financial: When assessing the financial impact of utility EV programs on ratepayers, the Straw Proposal should consider both costs and savings through a whole-house lens that takes into account overall energy consumption and spending. For example, for a household with its own vehicles, the Straw Proposal should look beyond the electric bill to also consider gasoline costs and the lifetime operational costs of the vehicles. While switching to EVs may lead to increased consumption of kilowatt hours and correspondingly higher electric bills, it should also drive down overall energy consumption and fuel costs. In short, many customers will save money beyond the downward pressure on electricity rates. It would be counterproductive to oppose a program

based on a slight increase in customers' electric bills if that investment enables even greater cost savings.

Health and climate: It is widely understood that TE offers numerous health, air quality and climate benefits. The American Lung Association published a report that quantified the monetary health benefits of transitioning fleets in states to a majority of ZEV vehicles by 2050. In New Jersey, the net benefits are projected to be $4.1 billion annually.[18]

Similarly, a report published two weeks ago examined the impact of vehicle emissions on increased air pollution, human illness and premature death, as well as climate change-inducing greenhouse gas emissions in the Toronto metropolitan area. The report found that, in a scenario in which all light-duty passenger vehicles were electric, "a single EV replacing a gas-powered car brings [$7,250 US dollars] in social benefits, justifying significant spending to get more EVs on the road quickly."[19]

Jobs and Economy: The economic value of the clean energy economy is already widely understood in New Jersey. Indeed, the Board has taken strong action previously to establish regulatory frameworks that support the growth of the solar industry and—more recently—the offshore wind industry. Similar actions by the Board can position New Jersey to prepare and transition its transportation economy for the 21st century and enable the state's workers to both support and benefit from electrification.

While most research about the economic and job-related benefits of TE are national in their scope, Advanced Energy Economy recently published an in-depth analysis of the TE supply chain potential next door to New Jersey in Pennsylvania. The study identified hundreds of businesses that could immediately be retooled to supply the EV market, and hundreds more that could transition with relatively minimal time and investment. Importantly, however, the study also found that "to spur the transition to EVs and start putting [people] to work, regulatory and legislative action is needed to encourage EV deployment in the state and address one of the major barriers to EV adoption: a lack of available charging infrastructure."[20]

In Closing

[18] American Lung Association (October 2016), Clean Air Future: Health and Climate Benefits of Zero Emission Vehicles, at 14.
[19] Environmental Defence and Ontario Public Health Association. June 2020. *Clearing the Air: How Electric Vehicles and Cleaner Trucks Can Reduce Pollution, Improve Health and Save Lives in the Greater Toronto and Hamilton Area.* Available at: https://clearingtheair.ca.
[20] Advanced Energy Economy (June 8, 2020), A Supply Chain is Growing for Electric Transportation. Here's What It Could Do for One State. Available at: https://blog.aee.net/a-supply-chain-is-growing-for-electric-transportation.-heres-what-it-could-do-for-one-state.

Greenlots thanks the Board for its consideration of these comments and for the collaborative, stakeholder-driven approach it is taking in this docket.

As the Board considers Greenlots' and other stakeholders input in developing a regulatory framework for utility participation in TE, Greenlots urges the Board to also be mindful of the costs of inaction. The questions are not simply about what added costs utilities may incur, but what added expenses will be passed onto ratepayers if the Board discourages certain investments? For instance, if the BPU discourages utility ownership of charging stations to kickstart EV adoption at a pace needed to meet the state's goals, what economic benefits will the state lose? What added healthcare costs will New Jerseyites incur? How much more severe will their health outcomes be?

When it comes to software-based managed charging, the choice before the Board is not simply a binary matter of whether to allow EDCs to incur new costs to invest in that technology or not; the choice is between incurring new costs and unlocking the value that such software will provide, or not incurring those costs but facing additional costs elsewhere. For example, according to the Regulatory Assistance Project, increasing EV penetration and uncontrolled charging of vehicles could cause peak demand to double. The result would be significant investment in new generation and system capacity that would operate at very low load factors.[21]

Put another way, the managed charging choice is relatively simple: invest in managed charging software and increase the likelihood of applying downward pressure on rates for all ratepayers; or invest in new generation and system capacity and increase the likelihood of applying upward pressure on rates. The regulated EDCs will likely earn a rate of return regardless of which approach the Board takes. The ratepayers are the ones who stand to gain or lose.

Respectfully submitted,

Josh Cohen
Director, Policy

[21] Hildermeier, J., Kolokathis, C., Rosenow, J., Hogan, M., Wiese, C., and Jahn, A. (2019). Start with smart: Promising practices for integrating electric vehicles into the grid. Brussels, Belgium: Regulatory Assistance Project. https://www.raponline.org/wp-content/uploads/2019/03/rap-start-with-smart-ev-integration-policies-2019-april-final.pdf

June 17, 2020

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

VIA ELECTRONIC MAIL

RE: Docket No. QO20050357 - In the Matter of Straw Proposal on Electric Vehicle Infrastructure Build Out

Ms. Camacho-Welch:

CALSTART is pleased to offer its comments in response to New Jersey's Electric Vehicle Infrastructure Ecosystem 2020 Straw Proposal.[1] CALSTART applauds 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.

With this 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. Indeed, the State must act quickly to reach its adopted goals of 330,000 zero-emission vehicles (ZEVs) by 2025 and 2 million by 2035.

New Jersey cannot meet its ZEV, climate, and air quality goals without clear policies from the BPU that enable all EV use cases through infrastructure deployment and rate design. Significant utility investment in medium- and heavy-duty vehicle (M-HDV) charging infrastructure and shrewd rate design will be necessary to increase the trajectory of EV adoption in New Jersey, including by M-HDV fleets like freight carriers and NJ Transit.

I. Background

CALSTART is a national not-for-profit clean transportation technology consortium, with more than 250 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 by vehicle manufacturers, parts and components suppliers, EV charging station providers, transit agencies, low carbon fuel

[1] New Jersey Board of Public Utilities. New Jersey Electric Vehicles Infrastructure Ecosystem 2020 Straw Proposal. Released May 22, 2020. https://www.nj.gov/bpu/pdf/Final_EV_Straw_Proposal_5.18.20.pdf
[2] State of New Jersey Department of Environmental Protection. 2018 Statewide Greenhouse Gas Emissions Inventory. Released October 2018. https://www.nj.gov/dep/aqes/pdf/GHG%20Inventory%20Update%20Report%202018_Final.pdf

producers, electric and gas utilities, and more. CALSTART has offices located in California, Colorado, Michigan, and New York.

CALSTART has maintained a Northeast regional office in Brooklyn, NY since 2013. Since that time, CALSTART has specialized in administering programs that facilitate the adoption of cleaner, more efficient vehicle technologies throughout the region. In particular, CALSTART has 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; since 2014, CALSTART has provided technical assistance, incentive administration, and outreach support to NYSERDA to implement the New York Truck Voucher Incentive Program (NYTVIP),[3] a point-of-sale discount program for fleet purchasers of all-electric and alternative fuel M-HDVs. From 2017 through early 2020, CALSTART administered Charge to Work NY,[4] a point-of-sale incentive program providing $4000 per port for Level 2 charging station purchases for downstate New York workplaces to support commuters in switching to EVs. 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.[5]

CALSTART is a recognized authority with respect to workplace EV charging programs and the commercialization of zero- and near-zero-emission technologies for M-HDVs. In late 2018, CALSTART launched the Global Commercial Vehicle Drive to Zero Program,[6] a worldwide, collaborative program to support the rapid transformation of people and goods movement to advanced clean technologies in key cities and regions across the globe. This strategy was developed by CALSTART in conjunction with the California Air Resources Board (CARB) and industry, and CALSTART will soon initiate 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, supportive policies, and infrastructure preparedness.

II. Responses to Selected Questions

A. The "Shared Responsibility" Business Model for Ownership, Maintenance and Advertising of EV Infrastructure

1) The Board requests comment on how to treat infrastructure costs in multi-family buildings where spots are assigned to, or owned by, a single user.

Customers who live in multi-unit dwellings (MUDs), which make up a vast number of New Jerseyans, will have a high barrier to purchasing, or sharing, an EV without charging infrastructure installed in parking structures at or near their buildings. California and other states have designed MUD-specific incentive programs to assist building owners in installing these chargers, which can have especially high upfront costs in older buildings. The BPU should work with other state and local agencies to ensure that chargers are

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

installed in all new MUDs with more than four units where parking is already included in the project. The BPU should consider how to incentivize neighborhood "charging hubs" that utilize both fast charging (DCFC) and Level 2 charging. For new construction, California is tackling this issue through the statewide building code and creating an EV-ready code requirement, recognizing that it is generally exponentially cheaper to install EV infrastructure at the time of construction vs. retrofitting parking at MUDs. At a sub-state level, leading municipalities such as Atlanta,[7] Chicago,[8] and San Francisco[9] have in recent years introduced or tightened "EV-ready" ordinances to require greater infrastructure preparedness at MUDs.

B. Process for Making a Location Charger Ready

1) EDC would have twelve (12) months from the date of the request to make a site Charger Ready. Staff anticipates that any delay greater than 12 months would result in reduced EDC earnings on that portion of the Charger Ready infrastructure, unless an appeal is granted by the Board. Staff requests comment on how this should be handled.

CALSTART's experience with make-ready infrastructure indicates that processes such as interconnections and permitting can take up to 18 months. The Straw Proposal notes that EDCs would make a location Charger Ready upon request from an EVSE Infrastructure Company or a state, local, or municipal entity. However, the speed of the process often depends on external factors like the duration of the local permitting process, which can delay the installation of interconnections. It may not be fair to penalize EDCs for extended timelines in these circumstances, but it may be appropriate to provide an incentive to ensure that interconnections are completed as quickly as possible, since that is the element that the EDC can control.

C. Ensuring Equitable Distribution of EVSE

1) Staff specifically requests comment on how to identify Equity Areas, how to define when a market is not sufficiently mature to drive investment, how long to wait for the market to respond, or whether certain communities should be immediately identified (based on Census Tract or other data) as areas where additional financial support may be necessary.

Efforts and investments that provide community access to EVs or appealing mobility options can more effectively address equity and mobility access than solely ensuring the level distribution of EV chargers throughout the state. Given financial constraints, funding may be better spent by ensuring that all communities have access to clean mobility options, such as electric transit buses and school buses, community electric carshare programs, or on-demand electric shuttle programs. Accelerating the use of electrified transportation in and around these communities is key to achieving the state's environmental justice and air quality goals. The provision of more EV chargers in equity areas does not necessarily

[7] http://atlantacityga.iqm2.com/Citizens/Detail_LegiFile.aspx?MeetingID=2068&ID=13626

[8] https://www.chicago.gov/city/en/depts/cdot/provdrs/conservation_outreachgreenprograms/news/2020/april/chicago-city-council--approves-ordinance-to-increase-chicago-s-e.html

[9] https://sfmayor.org/article/mayor-lee-signs-new-ordinance-make-san-francisco-electric-vehicle-ready

increase equity for residents—equity in clean mobility can take many different forms and address the communities needs as they see them.

CARB's Clean Mobility Options (CMO) Voucher Pilot Program[10] in California, which CALSTART administers, is the leading example of a state investing in access for disadvantaged communities to shared, zero-emission modes of transportation. CMO explicitly aims to address historical patterns of urban planning that have pushed low-income individuals into neighborhoods without robust transit access and increase car-dependency—a cycle that is effectively a poverty trap. By empowering communities to identify their own mobility needs and receive grants to implement cutting-edge shared mobility solutions, CMO enhances mobility access and associated economic opportunity for some of California's most vulnerable populations. A similar program in New Jersey could effectively enhance the State's burgeoning portfolio of clean mobility investments while advancing critical objectives relating to equity and environmental justice.

D. Rate Reforms Designed to Encourage Adoption of Electric Vehicles

2) Straw directs each EDC to either waive demand charges associated with EV charging or develop a rebate methodology that ensures that the effective $/kW-hour rate remains below a specified "set point." Staff requests feedback on the best way to achieve demand charge reductions.

CALSTART is supportive of waiving demand charges associated with EV charging, at least temporarily, and the development of a rebate methodology while the State considers more appropriate permanent rate designs for various types of EV charging as it learns more about the corresponding load patterns. We find that the most important rate design principle to speed EV adoption is to ensure that the costs of charging a vehicle can be easily understood by customers of all types, and that charging a vehicle should be cheaper on a per-mile basis than fueling one with gasoline or diesel. For businesses looking to electrify fleet operations, operational costs associated with charging are critically important, making it imperative that EV charging be cheaper than diesel fueling.

Incumbent rates can be a key barrier to public charging station deployment, fleet adoption of EVs, workplace charging, etc. Generally, while home charging is an affordable option, it is not available to all consumers. Fleets will be disincentivized to buy EVs in the presence of large demand charges. If New Jersey were to provide optional rates that align well with grid constraints and that accommodate the low load-factor of EV charging, this could remove barriers to EVSE installation and EV adoption by various types of users.

The BPU should ensure that commercial EV adoption is cost-effective by requiring EDCs to file programs aimed at making cost-based, technology-neutral commercial rates available to EV customers. The BPU should consider additional options to mitigate other impacts of charging, such as managed charging strategies (to right-size infrastructure build-out) and time-variant (e.g., time-of-use) pricing to minimize contributions of EVs to peak load.

[10] https://www.cleanmobilityoptions.org/

California has been a prime example of how rate designs and utility programs can rapidly expand EV adoption. Pacific Gas & Electric offers a new optional commercial EV rate, that replaces demand charges with a "subscription rate" and Time-of-use pricing, and the utility must track costs and revenues for this class over time to consider modifications.[11] Alternatively, General Service rates in New Jersey could be modified to send customers more precise signals about when to charge, or that include components such as demand limiters that enable lower load-factor accounts. Examples of utilities that offer technology-neutral tariffs with components like demand limiters include Xcel Minnesota, Dominion Energy, Madison Gas & Electric, and Ameren Illinois.

III. Recommendations for Addressing Medium- and Heavy-Duty Vehicles

CALSTART is disappointed that the Straw Proposal does not discuss commercial EVs and the development of supportive infrastructure for commercial EVs. New Jersey's freight and goods movement activity is among the greatest in the country, and accordingly the positive economic and environmental benefits commercial EVs can bring to the state are immense. New Jersey cannot meet its climate mandates for clean air and environmental justice goals without transforming all classes of vehicles. Lower-income communities in New Jersey disproportionately shoulder the burden of diesel pollution, and cleaner trucks and buses are the starting point for cleaner air in urban areas. What is more, New Jersey's environmental justice communities are disproportionately affected by tailpipe pollution from commercial vehicles, as they rely more heavily on public transportation and are often surrounded by major highways and other roadways heavily trafficked by commercial vehicles.

Through New Jersey's participation in Regional Greenhouse Gas Initiative (RGGI), the state is allocating significant funds to accelerate the transition to electric transportation. The State has taken the bold and commendable decision to allocate 75% of RGGI auction revenues from 2020 through 2022 toward catalyzing clean and equitable transportation. Specifically, the New Jersey Economic Development Authority (NJEDA) is expected to allocate 75-80% of its allocation for industrial, commercial and institutional entities to this initiative, including the promotion of EV adoption by commercial vehicle fleets.[12] Similarly, the New Jersey Department of Environmental Protection (NJDEP) administers the State's $76 million allocation of funds from the federal Volkswagen Settlement and is focusing on funding vehicle projects that replace inefficient diesel engines with cleaner or all-electric propulsion systems.[13] If the State is to invest significant sums in assisting commercial and industrial businesses to accelerate their transition to EV fleets, the BPU's infrastructure planning should complement vehicle investments being prioritized by partner agencies.

CALSTART is actively involved in the transformation of the commercial vehicle sector to zero-emission technologies. EV options are now commercially available across a wide

[11] PG&E. https://www.pge.com/tariffs/assets/pdf/tariffbook/ELEC_SCHEDS_BEV.pdf

[12] State of New Jersey Department of Environmental Protection. RGGI Strategic Funding Plan: Years 2020 through 2022. Released April 2020. https://nj.gov/rggi/docs/rggi-strategic-funding-plan.pdf

[13] State of New Jersey Department of Environmental Protection. Beneficiary Mitigation Plan For the Volkswagen Mitigation Trust. Released December 13, 2018. https://www.state.nj.us/dep/vw/BMPfinal.pdf

variety of M-HDV types, including transit, school, and shuttle buses, cargo vans, step vans, box trucks, yard tractors, sanitation trucks, and heavy-duty regional haul trucks. CALSTART's Zero-Emission Technology Inventory (ZETI) shows 96 medium- or heavy-duty EV models that are available currently in the United States, a figure that is projected to more than double in the next year.[14] Hundreds more commercial EV models will be available in the next 3-4 years.

The charging needs of these fleets will be significant: heavy-duty vehicles, in particular, may require high-speed charging of several hundred kilowatts per charger concentrated at a common site. Planning to serve the needs of electric fleets will take many years, so now is the time to send clear signals to this segment of the EV market.

For school districts, which may warrant specific attention by utilities, infrastructure is a crucial component of purchasing an electric school bus. Based on previous experiences, including the biggest deployment of electric school buses in North America, we recommend the utilities develop program proposals that would allocate a minimum of $10,000 per electric school bus for charging infrastructure.

CALSTART recommends that the BPU immediately provide high-level guidance to the utilities on developing M-HDV charging programs to support commercial fleet electrification, and that utilities develop and file program proposals within the next twelve months. As an alternative, we recommend that BPU convene a workshop to explore best practices for commercial fleet programs and we would be pleased to speak at this event as well as to recruit industry participation.

IV. Conclusion

CALSTART is pleased to offer its suggestions in response to the strategies and questions posed by the BPU as it seeks to accelerate market transformation for clean transportation in New Jersey. We hope to be a resource to the BPU and partner agencies and look forward to the implementation of this transformative framework.

Sincerely,

Benjamin Mandel
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Meredith L. Alexander, J.D.
Policy Director
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[14] CALSTART. Zero-Emission Technology Inventory (ZETI). https://globaldrivetozero.org/tools/zero-emission-technology-inventory/

CONSUMER ENERGY ALLIANCE
THE VOICE OF THE ENERGY CONSUMER

June 17, 2020

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

RE: Docket # QO20050357, Straw Proposal on Electric Vehicle Infrastructure

Dear Secretary Camacho-Welch,

On behalf Consumer Energy Alliance (CEA), a diverse group representing families, small businesses and men and women from various industries, including labor, manufacturing, small business and conservation, I write today to share our comments on the Straw Proposal on Electric Vehicle Infrastructure issued by the New Jersey Board of Public Utilities.

CEA has long supported energy and technological diversity. Our organization's main concern with the Straw Proposal is the truncated timeline for implementation, resulting in limited opportunity for robust public engagement to help inform the process. The legislature's extremely ambitious deadlines from Senate Bill 2252 to rapidly expand the requirement that 330,000 electric vehicles be in use across the state (up more than ten times from some nearly 31,000 registered vehicles today) in just five years will require tremendous investment and carefully thought-out answers to several key questions that have yet to be fully addressed. As the Board heard during the June 3rd technical conference, many of the questions raised by the selected participants on the Proposal revolved around the following themes:

- How much will the proposal cost? Who pays and why?
- How will equity issues and charging locations be resolved?
- How is the rate design going to be structured?

Considering the significant public policy implications before the Board, it's clearly more important that regulators get this done right rather than getting it done fast. Unfortunately, as we understand the current stakeholder process, there was little notification before the last public meeting (and the only one set so far) and only two weeks have been provided for the public to give comments on the numerous complex issues raised in the Proposal. All parties and stakeholders involved would tremendously benefit from more time to examine and respond to the topics outlined in the Proposal. Scheduling an additional technical conference to address the feedback that may be offered during the public comment period would be fruitful for the Board to more thoroughly assess the ramifications of what may ultimately be implemented.

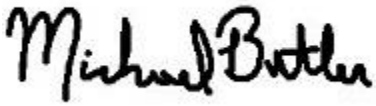
As the Governor's Energy Master Plan noted, the goals of the Straw Proposal are to:

- Attract private capital into the EV infrastructure sector;
- Minimize the risk of ratepayers, and implement infrastructure that does not quickly become obsolete or under-utilized; and
- Design EV infrastructure policies that are fair to both EV-driving ratepayers and non-EV driving ratepayers, to ensure the benefits of EVs are shared by all ratepayers.

The Straw Proposal's planned regulatory structure is anticipating that all electric distribution companies must have a proposed plan submitted by December 31st, roughly six months from today, and final implementation must be done by April 1, 2021. Setting such an ambitious timeline for largely unresolved and highly technical issues creates the likelihood of future problems and unintended consequences, especially if the burden of these outcomes fall on the shoulders of small businesses and families in New Jersey.

We certainly appreciate the fact that Board has been given a small window of time due to the authorizing legislation that was passed, and we also appreciate the general direction toward greater energy diversity. However, adding additional comment and input sessions would ensure more public buy-in and a greater chance that the Board will meet the goals and objectives outlined in the Energy Master Plan. This would likely create an environment for a more effective rollout of EV infrastructure and deployment that is fair for all consumers, families and stakeholders that are involved.

Sincerely,



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June 17, 2020

VIA ELECTRONIC FILING

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

Re: I/M/O the Straw Proposal on Electric Vehicle Infrastructure Build Out
BPU Docket No. QO20050357

Dear Secretary Camacho-Welch:

On behalf of ChargePoint, Inc. ("ChargePoint"), we appreciate the opportunity to offer the enclosed comments of ChargePoint in the matter referenced above.

Thank you.

Very truly yours,

Murray E. Bevan

Enclosure

I. Introduction & Background on ChargePoint

A. Introduction

On May 18, 2020, the New Jersey Board of Public Utilities ("BPU") Staff ("Staff") released its *New Jersey Electric Vehicles Infrastructure Ecosystem 2020 Straw Proposal* ("Straw Proposal").

ChargePoint applauds BPU Staff for the proposed EV Ecosystem ("Ecosystem"). We appreciate the opportunity to offer these comments in response to the proposed program design, as well as related issues raised in the Straw Proposal. In addition to our comments below, ChargePoint respectfully requests stakeholders be afforded an opportunity to submit reply comments. ChargePoint recommends reply comments be submitted no later than July 2, 2020.

In summary, our comments are as follows:

- The shared responsibility model proposed in Staff's Charger Ready Straw Proposal is a key first step to build out New Jersey's EV infrastructure;
- Customer rebates, combined with make-ready incentives, are among the most effective tools to incentivize EVSE deployment;
- The Straw Proposal should expressly recognize that the EV charging market is growing and dynamic and that there is no one business case for the EVSE industry or for EV charging site hosts;
- The Straw Proposal should be expanded to incentivize transportation electrification across the entire EV Ecosystem to include medium and heavy-duty electric vehicle charging applications and commercial fleets;
- The BPU should establish a Charger Ready Advisory Council to inform program evaluation;
- It is premature to request EDCs submit proposals to establish a process and timeframe for EDCs to provide a "Last Resort" function by owning and operating EV charging stations;
- The Straw Proposal should not restrict the manner in which a site host may price EV charging services to customers;
- The Straw Proposal should allow for EVSE Infrastructure Companies to develop appropriate locations and for independent site hosts to directly participate in the Charger Ready program;
- It is not necessary to create a new process to identify 'Poor Performing EVSE Infrastructure Companies;'
- The BPU should initiate a separate proceeding to consider EV tariffs that present alternatives to traditional demand-based rate structures; and,
- We recommend certain modifications to Staff's proposed terminology.

B. Background on ChargePoint

ChargePoint is the leading electric vehicle (EV) charging network in the world, with scalable solutions for every charging need and for all of the places that EV drivers go: home, work, around town, and on the road. ChargePoint's network offers more than 113,000 places to charge, including more than 1,696 spots in New Jersey, and those numbers continue to grow. With thousands of customers in several verticals including workplaces, cities, retailers, apartments, hospitals, and fleets, ChargePoint provides an integrated experience enabling consistent performance, efficiency and reliability at every touchpoint whether one is using a mobile app, plugging into a charger, managing the station or analyzing charging data. On the network, drivers have completed more than 78 million charging sessions, saved upwards of 93 million gallons of fuel, and driven more than 2.2 billion electric miles.

ChargePoint delivers scalable solutions that enable businesses to support more drivers, add the latest software features and expand their electric vehicle and fleet needs with minimal disruption to overall business. Hardware offerings include Level 2 (L2) and DC fast charging (DCFC) products, and ChargePoint provides a range of options across those charging levels for specific use cases including light and medium duty and transit fleets, multi-unit dwellings, residential (multi-family and single family), destination, workplace, and more. ChargePoint's software and cloud services enable site hosts to manage charging onsite with features like Waitlist, access control, charging analytics, and real-time availability. All products are UL-listed, ENERGY STAR® and CE (EU) certified, and the modular design minimizes downtime and makes maintenance and repair more seamless.

ChargePoint's primary business model consists of selling its smart charging solutions directly to businesses and organizations while offering tools that empower site hosts and station owners to deploy charging designed for their individual application and use case. ChargePoint provides charging network services and data-driven and cloud-enabled capabilities that enable site hosts to better manage their charging assets and optimize services. For example, with those network capabilities, site hosts can view data on charging station utilization, frequency and duration of charging sessions, set access controls to the stations, and set pricing for charging services. These features are designed to maximize utilization and align the EV driver experience with the specific use case associated with the specific site host. Additionally, ChargePoint has designed its network to allow other parties, such as electric utilities, the ability to access charging data and conduct load management to enable efficient EV load integration onto the electric grid.

II. Comments on Charger Ready Program Design

A. The Straw Proposal provides the necessary foundation for building a robust EV Ecosystem in New Jersey, however, ChargePoint recommends several enhancements to Staff's Proposal to ensure its effectiveness

1. The Shared Responsibility Model proposed in Staff's Charger Ready Straw Proposal is a key first step to build out New Jersey's EV infrastructure

Staff explains that the Charger Ready Straw Proposal is based on a "shared responsibility" model in which, "*EDCs invest in (and earn on) the wiring and backbone infrastructure necessary to enable a robust EV Ecosystem and the private sector owns, operates and advertises the EVSE. Even though under normal circumstances, private investors will install, operate, and market the charging stations, making sites across the state Charger Ready represents an extension of EDC responsibility*."[1]

The shared responsibility model is generally consistent with approaches taken in the majority of utility EV charging programs around the country and plays to the strengths of utilities as well as competitive market site hosts,[2] vendors, and EV Infrastructure Companies. A cohesive partnership between regulated utilities and competitive market actors will be critical to meeting New Jersey's ambitious energy, environmental, and transportation goals.

However, as discussed further below, while the Charger Ready proposal as currently structured is a key first step to deploying EV infrastructure throughout New Jersey, ChargePoint recommends several enhancements to Staff's proposal.

2. Customer rebates, combined with make-ready incentives, are among the most effective tools to incentivize EVSE deployment

In the Straw Proposal, Staff broadly endorses utility and customer side "make-ready" but proposes, "*that charging station infrastructure, or EVSE, costs will be generally borne by private investors, with no recourse to ratepayer funds.*"[3] ChargePoint interprets this statement to eliminate the possibility of customer rebates for EVSE.[4] However, rebates toward EVSE purchase costs, combined with make-ready incentives, have been utilized by utilities across the country to successfully incentivize deployment of EV infrastructure while minimizing overall program costs.[5] As discussed further below, the BPU has the authority to authorize rebates for EVSE.

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[1] EV Straw Proposal at 7

[2] Site host means the entity that owns, leases, manages, or otherwise possesses the premises upon which the electric vehicle charging station is or is planned to be located for the purpose of charging an electric vehicle. The site host may also be the utility customer of record and responsible for operation and maintenance of, and paying for the energy delivered to the electric vehicle charging station.

[3] EV Straw Proposal at 7.

[4] It is unclear to ChargePoint if this prohibition would apply to all EV charging use cases, or only public/MUD deployments.

[5] *See, e.g.*, Alternate Proposed Decision Regarding Southern California Edison Company's Application for Charge Ready and Market Education Programs, CPUC, Docket No. A.14-10-014, (Jan. 16, 2016), available at: https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M157/K682/157682806.PDF; Petition of the Electric Vehicle Work Group for Implementation of a Statewide Electric Vehicle Portfolio, Case No. 9478, Order No. 88997, (MPSC Jan. 14, 2019), available at: https://www.psc.state.md.us/wp-content/uploads/Order-No.-88997-Case-No.-9478-EV-Portfolio-Order.pdf; Decision Directing PG&E to Establish an Electric Vehicle Infrastructure and Education

Customer rebates should apply to costs associated with private businesses or entities deploying EVSE that meet functional requirements of the utility program to ensure that grid benefits are created. Under this program design, participating EV charging site hosts receive a utility incentive to support the purchase and installation of smart EV charging hardware and software that meet core functional requirements, such as collecting data and providing the ability for load management. Rebate programs have been utilized by investor owned utilities for years supporting energy efficiency programs so there is already an administrative framework making it simple to add EV program incentives without driving up utility costs.

ChargePoint urges the BPU and Staff not to prejudge the ability for utilities to offer customer rebates for EVSE, regardless of use case or market segment. Prematurely eliminating the ability for customer rebates to play a vital role in incentivizing EVSE will impair the State's ability to meet its ambitious transportation electrification goals. Therefore, ChargePoint recommends the Charger Ready proposal be expanded to include customer rebates for EVSE, particularly for priority market segments and Equity Areas. In the alternative, ChargePoint recommends that any rebate program proposed by an EDC be evaluated by the BPU, with input from stakeholders, on a case by case basis through individual utility applications.

ChargePoint recommends that in many cases rebate levels be "partial," meaning something less than the full cost of the EVSE and thus still requiring site host investment ("skin in the game"). These partial rebates should be based on guidelines that are supported by the BPU and Staff with broad stakeholder input and should target residential, workplace and other commercial locations. Higher levels of rebates should be considered for segments that have been traditionally harder to reach due to market barriers, e.g., DCFC or Equity Areas (including LMI communities).

Finally, cost recovery for utility rebates can be approached by treating the rebate as a regulatory asset, thereby allowing both cost recovery and a rate of return on the investment similar to other capital investments.[6]

Program, CPUC, Docket No. 16-12-065 (Dec. 21, 2016); Massachusetts Department of Public Utilities. Docket 17-05. "Order Establishing Eversource's Revenue Requirement." November 30, 2017. (available at https://eeaonline.eea.state.ma.us/EEA/FileService/V1.4.0/FileService.Api/file/FileRoom/dehehcjj); New York Public Service Commission. Matter No. 17-00887. "Proceeding on Motion of the Commission as to the Rates, Charges, Rules and Regulations of Niagara Mohawk Power Corporation d/b/a National Grid for Electric Service." (available at http://documents.dps.ny.gov/public/MatterManagement/CaseMaster.aspx?MatterCaseNo=17-E-0238) (utility-provided make-ready coupled with EVSE rebates provided by New York State Energy Research and Development Authority).

[6] *See, e.g.* In the Matter of the Petition of the EV Work Group for the Implementation of a Statewide EV Portfolio, Case No. 9478, Md PSC (January 14, 2019) (approving rate based rebates for three Maryland investor owned utilities); In the Matter of the Application of Consumers Energy Co for Authority to Increase its Rates, Case No. U-20134 , MI PSC (May 19, 2020) (approving rate based rebates for Consumers Energy); In the matter of the Application of DTE Electric Company for Authority to Increase its Rates, Case No. U-20162, MI PSC (May 2, 2019) approving rate based rebates for DTE);: Petition of Virginia Electric & Power Company, For approval of a Plan for

a) The BPU has a long history of authorizing customer rebates to further New Jersey's clean energy goals

On many prior occasions during the last 30 years, the BPU has exercised its broad regulatory authority to approve similar customer rebate and incentive programs offered by utilities for purchases of equipment that would not be owned by the utilities and has allowed those utilities to recover their associated costs from ratepayers. Several of these BPU orders approving utility rebate and incentive programs pre-dated New Jersey's passage of the Regional Greenhouse Gas Initiative Act ("RGGI Act"), which was enacted in January 2008, the Clean Energy Act ("CEA"), which was enacted in May 2018, and the New Jersey Plug-In Vehicle Act ("PIV Act"), which was enacted in January 2020.

For example, in 1994, five years prior to New Jersey's enactment of the Electric Discount and Energy Competition Act ("EDECA") and long before the RGGI Act, Clean Energy Act, and PIV Act were enacted, the BPU approved utility rebates for the purchase of compressed natural gas-powered vehicles ("NGVs") by utility customers and allowed PSE&G to recover from ratepayers the partial cost of providing these rebates.[7,8] This NGV incentive program, like the current proposals for electric vehicle charger rebates by utilities, was intended to jump start the market for this transportation technology.

Furthermore, for over a decade the BPU has been approving New Jersey electric utility customer rebate programs for the purchase of energy efficient equipment for residential customers (such as smart thermostats) and incentives for the installation of energy efficient equipment for hospital customers, local government customers, and multi-family building owners.[9] The BPU also has a long history of approving gas utility customer rebates, including:

Electric Distribution Grid Transformation Projects, Case No. PUR-2019-00154, VA SCC (March 26, 2020) (approving rate based rebates for Dominion).

[7] *Re Public Service Electric and Gas Company*, 1994 WL 534983 (N.J.B.P.U.), 155 P.U.R. 4th 441 (Sept. 8, 1994).
[8] *Id.*
[9] *See, e.g., I/M/O Petition of Public Service Electric and Gas Co. Offering and Energy Efficiency Economic Stimulus Program in Its Service Territory On a Regulated Basis And Associated Cost Recovery Mechanism*, B.P.U. Docket No. EO09010056, (Decision and Order Approving Stipulation, August 1, 2009) ("EEE Program); *I/M/O Petition of Public Service Electric and Gas Co. for Approval of Its Energy Efficiency 2017 Program and Recovery of Associated Costs*, B.P.U. Docket No. EO17030196 (Order Adopting Stipulation, August 23, 2017) (including Smart Thermostat rebate program). The EEE Program was extended via B.P.U. Docket No. EO11010030 (July 14, 2011) ("EEE Extension I"), and B.P.U. Docket No. EO14080897 (April 15, 2015) ("EEII Program").

- a 2009 order authorizing South Jersey Gas to implement, among other programs, an enhanced residential heating, ventilation, and air conditioning ("HVAC") rebate program which was renewed by the BPU several times;[10]
- a 2018 order authorizing the New Jersey Natural Gas "SAVEGREEN" program that provides, among other things, rebates to customers for energy efficient products, home energy assessments, and HVAC incentives.[11]

In addition, the BPU has over multiple years approved PSE&G's recovery from ratepayers for "Solar Loan" programs that involved the utility's investment of capital in loans to developers of solar generation facilities that are not owned by the utility.[12]

The BPU's June 10, 2020, Order Regarding the Establishment of Energy Efficiency and Peak Demand Reduction Programs ("EE Order") continues its long history of allowing utility rebates and incentives to achieve New Jersey's energy goals by directing each electric and gas public utility to establish energy efficiency and peak demand reduction programs pursuant to the EE provisions of the Clean Energy Act of 2018, and approving BPU Staff's recommendations for utility administered rebates and incentive programs for residential, multi-family, and commercial and industrial customers.[13]

As noted by the BPU in its June 10, 2020, EE Order, "[m]any of New Jersey's electric and gas public utilities offer a variety of EE programs that serve specific markets or customers not explicitly addressed by NJCEP programs or that enhance NJCEP offerings through additional incentives or alternative payback options", and "[t]he State also administers the Comfort Partners program in conjunction with the utilities, working to offer free energy efficient upgrades to qualified low-income customers".[14]

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[10] *I/M/O THE PETITION OF SOUTH JERSEY GAS COMPANY FOR APPROVAL OF AN ENERGY EFFICIENCY PROGRAM ("EEP") WITH AN ASSOCIATED ENERGY EFFICIENCY TRACKER ("EET") PURSUANT TO N.J.S.A. 48:3-98.1*, BPU Docket No. GO12050363 (June 21, 2013) (discussing its original approval of the rebate program in its July 24, 2009, order).

[11] *I/M/O Petition of New Jersey Natural Gas Company for Approval of Existing and New Energy Efficiency Programs and a Class I Renewable Energy Program and the Associated Cost Recovery Mechanism Pursuant to N.J.S.A. 48:3-98*, BPU Docket No. GO18030355 (September 17, 2018) at 4, ¶ 13.

[12] *I/M/O Petition of Public Service Electric and Gas Co. for Approval of a Solar Loan III Program and Associated Cost Recovery Mechanism*, B.P.U. Docket No. EO12080726 (Decision and Order Approving Stipulation, May 29, 2013) ("Solar Loan III); *I/M/O Petition of Public Service Electric and Gas Co. for Approval of a Solar Loan II Program and an Associated Cost Recovery Mechanism*, B.P.U. Docket No. EO09030249 (Decision and Order Approving Stipulation, November 10, 2009) ("Solar Loan II); *I/M/O Petition of Public Service Electric and Gas Co. for Approval of a Solar Energy Program and an Associated Cos Recovery Mechanism*, B.P.U. Docket No. EO07040278 (Decision and Order Approving Settlement, April 8, 2008) ("Solar Loan I"). Notably, the BPU conducted a full evidentiary proceeding regarding the merits of the Solar Loan I program during 2007 (pursuant to the BPU's general ratemaking authority) prior to the enactment of the RGGI Act.

[13] *I/M/O the Implementation of P.L. 2018, C. 17 Regarding the Establishment of Energy Efficiency and Peak Demand Reduction Programs*, NJ BPU Docket Nos. QO19010040, QO19060748, QO17091004 (Agenda Item 8D - June 10, 2020) ("EE Order") at 10, 50, 86.

[14] EE Order at 5-6.

Moreover, the BPU emphasized in the recent EE Order the long history of utility involvement in demand side management ("DSM") incentive programs for energy conservation, which the BPU began approving as early as the 1980s.[15]

New Jersey law defines "demand side management" as "the management of customer demand for energy service, through the implementation of cost effective energy efficiency technologies, including, but not limited to installed conservation, load management, and energy efficiency measures on and in the residential, commercial, industrial, institutional and governmental premises and facilities in this state."[16] The PIV Act amended EDECA to include "plug-in vehicles and plug-in electric vehicle charging infrastructure" programs as demand side management programs eligible for funding through the Societal Benefits Charge ("SBC"), which is a charge that appears on ratepayers' utility bills.[17] Electric vehicle charging infrastructure can serve as a very effective demand side management tool for grid load management if EV charging is incentivized to occur during off peak time periods. New Jersey's 2019 Energy Master Plan ("EMP") emphasizes the following demand side management benefits of electric vehicle charging infrastructure:

> "Electrified transportation can provide grid benefits such as better utilizing the distribution grid, shaving peak load, and providing power back to the grid. With managed charging, battery EVs can charge when there is excess capacity or reduced demand, better utilizing the distribution grid during off-peak times. Further, as Vehicle-To-Grid technology matures, electrified vehicles on the grid can provide mobile battery storage and load balancing power, which will further reduce or shift energy demand to avoid increased capacity costs."[18]

The NJ 2019 EMP also clarifies that programs designed to increase the use of electric vehicles are energy conservation measures because "[v]ehicle electrification reduces total final energy demand. EVs are more efficient than gasoline-powered vehicles in terms of energy used per mile traveled, and allow New Jersey's final energy demand to decrease in the Least Cost scenario, even as electricity load increases".[19] Therefore, in addition to the BPU's general regulatory authority to approve utility customer rebates and incentives, section 13 of New Jersey's RGGI Act authorizes the BPU to approve rate recovery for utilities that offer customer rebates for EV charging infrastructure since such infrastructure is an energy conservation measure.[20] The RGGI

[15] EE Order at 4 ("The Board began approving utility demand side management ("DSM") programs for energy conservation in the 1980s and adopted DSM regulations in 1991 that (1) required electric and gas public utilities to offer conservation, EE, and load management programs, known collectively as DSM programs; (2) provided incentives to initiate and implement programs; and (3) permitted cost recovery of the programs and recovery of the fixed cost portion of lost revenues due to the programs.").
[16] N.J.S.A. § 48:3-51.
[17] N.J.S.A. § 48:3-60(a)(3).
[18] New Jersey 2019 EMP at 62, available at: https://nj.gov/emp/docs/pdf/2020_NJBPU_EMP.pdf.
[19] 2019 EMP at 61.
[20] N.J.S.A. § 48:3-98.1(a)(1).

Act defines "energy efficiency and energy conservation programs" to include both programs that conserve energy and programs for making the use of electricity "more efficient".[21]

Moreover, the 2019 EMP emphasizes that the importance of developing financing for clean energy projects, including instructing the BPU to "work with utilities, third-party providers, and other industry actors to develop mechanisms to provide rebates at the point of sale. This lessens administrative overhead and lowers barriers to entry for those who otherwise wouldn't be able to afford waiting for a rebate check."[22] Specifically with respect to electric vehicles, the 2019 EMP repeatedly emphasized the BPU's authority to facilitate the growth of electric vehicle infrastructure in New Jersey and instructed the Board to explore "both rate-based and non-rate based solutions" to ensure that "utility providers and other stakeholders can offer a significant opportunity for widespread charging deployment across multiple transportation modes and sectors."[23] The PIV Act should be read in parallel with New Jersey's 2019 Energy Master Plan because the New Jersey Legislature expressly referenced the Energy Master Plan and its "objectives" as being synonymous with the goals of the PIV Act.[24] The PIV Act further states: "The Legislature therefore determines that it is in the public interest to establish goals for the increased use of plug-in electric vehicles in the State, to support the increased use of plug-in electric vehicles by providing incentives for the purchase or lease of such vehicles and for related charging equipment."[25] The PIV sets forth ambitious goals for the development of electric vehicle charging infrastructure in New Jersey, and the New Jersey Legislature expressly provided in the PIV Act that the Board may "pursuant to P.L.2019, c.362 (C.48:25-1 et al.) **and any other existing statutory authority**, adopt policies and programs to accomplish the goals established pursuant to this section."[26] The phrase "any other existing statutory authority" clearly includes the BPU's general ratemaking and regulatory authority over utilities[27] as well as the RGGI Act, Clean Energy Act, and EDECA. As discussed above, the BPU has a long history of exercising its broad authority under all of these statutes to approve utility customer rebates for equipment that will not be owned by the utility. There is absolutely no legal basis or policy justification for the Board to treat utility customer rebates for electric vehicle charging infrastructure differently.

B. The Straw Proposal should expressly recognize that the EV charging market is growing and dynamic and that there is no one business case for the EVSE industry or for EV charging site hosts

In developing the "shared responsibility" model to deploy EV infrastructure, the Straw Proposal appears to take the position that only EVSE Infrastructure Companies will be site hosts. For

[21] N.J.S.A. § 48:3-98.1(d).
[22] 2019 EMP at 222.
[23] *See* 2019 EMP at 68.
[24] N.J.S.A. § 48:25-1.
[25] *Id.*
[26] N.J.S.A. § 48:25-3(b) (emphasis added).
[27] See, e.g., N.J.S.A. § 48:2-13(a) ("The board shall have general supervision and regulation of and jurisdiction and control over all public utilities…").

example, the Straw Proposal states that EVSE Infrastructure Companies would be primarily responsible for, "*Installing, owning, maintaining and marketing the EVSE…*"[28] Further, the Straw Proposal assumes that, "*EVSE Infrastructure Companies could charge customers either based on the time of charging or the amount of electricity the customer consum[es]*."[29] As discussed below, the Straw Proposal oversimplifies the current market for EV infrastructure.

The EV charging market is growing and dynamic, and there is no one static business case for the EVSE industry or for EV charging site hosts. For example, currently charging station providers approach site hosts with their unique products and features, competing with other providers to sell or install charging equipment. Site hosts have an open choice of several options for charging equipment and networks from different providers with different business models. Site hosts also compete for EV drivers in providing charging services and set their pricing and access features in ways that will attract drivers to their sites. In most cases, it is the site host, not the EVSE Infrastructure Company, that owns and operates the charging equipment.

The business case, or value proposition, for various entities to install and operate charging stations incorporate many different value streams and varies across use cases. As an example, for DCFC, a significant driver of value for site hosts are the ancillary transactions that take place while a driver is charging up an EV. The assumed EVSE Infrastructure Company model in the Straw Proposal only considers a model which primarily depends on driver revenues or subscriptions and are unable to account for other value streams associated with the site host. Site hosts balance costs against the value created by hosting a station, which are often beyond direct revenue that may be generated. Non-financial benefits include providing fringe benefits to attract and retain employees, attracting new customers and have them stay for longer periods of time for businesses, meeting sustainability goals for local governments and businesses, appealing to new tenants, amongst many others. Additionally, the vast majority of EV charging does not take place at public charging stations.[30] Residential customers acquire EVSEs for use at home in order to take advantage of faster charging and provide for a connected user interface to support scheduling and tracking of charging at home.

According to the Department of Energy's Alternative Fuels Data Center ("AFDC"), across New Jersey, there are 791 public charging outlets,[31] or ports, utilizing a standard connector that enable charging of any model of EV deployed by nine EV charging companies. Of those 791 outlets, there are 122 DC fast ports and 669 Level 2 charging ports. It is important to note that the AFDC total does not include essential, non-public charging locations, such as workplace and residential, that

[28] EV Straw Proposal at 9.
[29] EV Straw Proposal at 9, FN 4.
[30] See, e.g., DoE at, https://www.energy.gov/eere/electricvehicles/charging-home, (most plug-in electric vehicle drivers do more than 80% of their charging at home.)
[31] U.S. DoE Alternative Fuel Data Center; filtered by New Jersey, Electric Fuel, Level 2 and DC Fast, Standard Connectors J1772/CCS/CHAdeMO; Accessed June 8th, 2020. Despite the best efforts of this database to include all public chargers, it is likely this number is undercounting the total numbers simply due to a delay in registering new installations.

are often cornerstones of successful utility EVSE programs. The vast majority of these public charging stations have been the result of site host investment, in whole or in part. This is an emerging market defined by natural demand and private investment across a diversity of communities. As EV adoption continues to grow and become more widespread in New Jersey, we will continue to see greater and increasing demand for EV charging solutions in new areas. ChargePoint and its competitors will continue to market and sell charging stations to a variety of site hosts in New Jersey, who own and operate those charging stations on their properties. As such, the Straw Proposal's assumption that all charging stations will be owned and operated by an EVSE Infrastructure Company does not accurately reflect the market, and New Jersey's EV Ecosystem should be developed with a recognition of all business models.

The Straw Proposal also assumes there are two methods for site hosts to price charging services. However, networked EV charging stations provide site hosts with the ability to set pricing for EV charging services in many ways. These dynamic pricing tools allow charging station hosts to incentivize driver behavior, which is essential given that EV charging is a combination of vehicle refueling and parking. Flexibility in pricing allows site hosts to tailor pricing to the unique needs of the site, including, but not limited to:

- A free charging session;
- A fixed rate for the session, for which the driver pays a set fee for the entire session;
- An energy rate, for which the driver pays for the energy consumed on a per kilowatt-hour (kWh) basis;
- An hourly rate, for which the driver pays per hour, similar to how a parking meter operates;
- Length-of-Stay pricing, for which one price is charged during the first x hours and another price is charged for every hour afterwards;
- Time-of-Day pricing, for which one price is charged during peak hours and another during off-peak hours.
- A minimum and/or a maximum fee per session;
- A combination of the above, in which, for example, a flat session fee followed by an hourly rate, an hourly rate followed by per kWh pricing, a minimum session fee followed by an hourly rate, or a free period of time followed by per kWh pricing; and
- Driver groups, for which station owners may set unique policies for different classifications of drivers (e.g. employees vs. visitors) using the options above.

ChargePoint recommends the Straw Proposal be revised to not restrict the manner in which a site host may price EV charging services to customers.

C. The Straw Proposal should not require DCFC chargers to simultaneously charge two vehicles

The Straw Proposal establishes "*certain performance requirements*"[32] that an EVSE Infrastructure Company must accept in order to use an EDC-funded Charger Ready location. One requirement is that an EVSE Infrastructure Company, "*Commits to using chargers capable of handling more than one EV, such as dual-port chargers, wherever technically feasible*."[33] ChargePoint interprets this requirement to mean that each EV charger deployed under the Charger Ready program must be capable of charging two vehicles *simultaneously*.

ChargePoint recommends that Staff allow site hosts more flexibility in selecting the appropriate charging solution when participating in the Charger Ready program given the wide array of charging solutions provided by the EVSE industry.

For L2 stations, many EVSE manufacturers offer both single and dual-port stations. Dual-port stations allow up to two vehicles to charge simultaneously. This can be supported by dedicated electrical circuits for each connector, or by sharing a single circuit between the two connectors.

For DC fast charging, EVSE manufacturers generally provide multiple ports to allow drivers whose vehicles use different connector standards to plug in. Typically, publicly accessible DCFC provide both an SAE Combo Charging System (CCS) or CHAdeMO connector. Due to the design considerations for DC fast charging, most solutions on the market allow for only one of the connectors to be in use at any time at a given station.

We respectfully recommend that Staff remove the requirement that charging solutions be able to charge two vehicles simultaneously, to allow EVSE Infrastructure Companies to deliver the best charging solution for the site host.

D. The Straw Proposal should be expanded to incentivize transportation electrification across the entire EV Ecosystem to include medium and heavy-duty EV charging applications and commercial fleets

As recognized in the Straw proposal, "*New Jersey needs to create a comprehensive EV Ecosystem that provides consumers with easy access to electric vehicle charging infrastructure where they work and play*."[34] However, Staff has limited the Charger Ready Straw Proposal to publicly available light duty and MUD charging infrastructure. By only considering a small subset of the EV Ecosystem, Staff may have inadvertently limited the effectiveness of the Charger Ready proposal. The Charger Ready program, as currently constructed, will lead to an over-deployment of EVSE at public locations and under-deployment of EVSE at workplaces. More importantly, this

[32] EV Straw Proposal at 10.
[33] EV Straw Proposal at 11.
[34] EV Straw Proposal at 1.

program would fail to account for the significant value for ratepayers and the public created by deploying workplace and residential EVSE.

ChargePoint recommends the Straw Proposal be expanded to incentivize transportation electrification across the entire EV Ecosystem by including public and non-public EVSE locations. Making all charging locations eligible to receive Charger Ready incentives will increase effectiveness of the program and increase benefits for all ratepayers:

- Over 90% of EV charging takes place at home and work.[35] The EVSE-related load at residential and workplace locations is flexible and responsive to price signals, as drivers at these locations typically park for extended periods of time.
- Workplace and residential charging load profiles are good matches to support increased volumes of variable energy resources like wind and solar on the grid, because it can be moved to times when variable renewable energy resources are more prevalent.[36]
- Supporting the deployment of EVSE at workplaces, where availability thereof makes employees six times more likely to buy an EV, would accelerate the achievement of New Jersey's EV goals.[37]
- Multiple medium and heavy-duty vehicles have been announced and will hit the market within the term of the Charger Ready Program, including: Freightliner eM2 106 (medium duty delivery truck), Peterbilt Motors 220EV (medium duty truck), Navistar eMV (medium duty truck), Freightliner eCascadia (heavy duty highway tractor), Mack Trucks LR BEV (heavy duty refuse truck), Tesla Semi (heavy duty truck), and Volvo VNR (heavy duty regional-haul truck). The Charger Ready Program should be designed to ensure support for operators interested in electrifying their medium and heavy-duty fleets, especially since upfront charging infrastructure is a core barrier in this sector.

States across the country, including Wisconsin,[38] Ohio[39] and Michigan[40] are moving forward to incentivize fleet and workplace transportation electrification and we urge the BPU to similarly address these vital transportation segments. New Jersey's 2019 Energy Master Plan supports

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[35] Smart, John, *Lessons Learned About Workplace Charging in the EV Project*, Idaho National Labs (2015), available at https://www.energy.gov/sites/prod/files/2015/07/f24/vss170_smart_2015_p.pdf.

[36] Regulatory Assistance Project, "Beneficial Electrification of Transportation," at 37 (Jan. 2019) ("RAP 2019 Electrification Report"), available at https://www.raponline.org/wp-content/uploads/2019/01/rap-farnsworth-shipley-sliger-lazar-beneficial-electrification-transportation-2019-january-final.pdf.

[37] U.S. DOE, Workplace Charging Challenge, available at: https://www.energy.gov/sites/prod/files/2017/01/f34/WPCC_2016%20Annual%20Progress%20Report.pdf.

[38] Application of Northern States Power, as an Electric Utility, for Approval of Electric Vehicle Service Programs, Wisconsin PSC Docket 4220-TE-104 (Proposed).

[39] I/M/O the Application of uke Energy Ohio, Inc. for Authority to Adjust its Power Forward Future Initiatives Rider, Ohio PUC Docket 19-1750-EL-UNC (Proposed).

[40] I/M/O the Application of Consumers Energy Company for Authority to Increase its Rates for the Generation and Distribution of Electricity and for Other Relief, Michigan PSC Case U-20697 (Proposed).

ChargePoint's recommendations regarding incentivizing fleet and workplace transportation electrification:

> [T]his shared responsibility model ensures that utility providers and other stakeholders can offer a significant opportunity for widespread charging deployment across multiple transportation modes and sectors (i.e., residential, multifamily, **workplace**, **fleets**, and public DC fast charging), using both rate-based and non-rate-based solutions, and resulting in diminished consumer "range anxiety" and increased EV adoption rates.
>
> …..State agencies will work with industry leaders and manufacturers to establish which kinds of vehicles (e.g., buses, refuse trucks, delivery trucks, drayage trucks, jitneys, etc.) should be incentivized as "first adopters" to further drive development and enable the technologies and efficiencies established in the early generations of vehicles to inform future vehicle manufacturing. NJEDA is finalizing a Request for Information aimed at commercial fleet owners, supply chain companies, and other related parties (e.g., truck leasing/financing), and **will offer electric truck purchase incentives beginning in the second half of 2020**. When this nascent market is more fully developed, the state will establish transition goals to EVs for the **medium- and heavy-duty fleet**. Further, the state will work with local industry to create incentives to encourage EV adoption for local delivery to reduce the emissions around warehouses and ports (see Goal 1.3). The strategy adopted should take account of opportunities that may exist for New Jersey to participate in the development of the supply chain for these vehicles by bringing relevant assembly and manufacturing jobs to the state. Finally, the state will also work with school district-owned and commercially-owned school bus fleet operators to incentivize and encourage EV adoption as a means to upgrade fleets and reduce operating costs. Those may include, as an example, incentives for Boards of Education that prioritize contracting with bus companies that utilize EVs.
>
> New Jersey should also consider **truck and bus rebate or grant programs** to reduce the incremental up-front cost of purchasing EVs over their conventional counterparts, or explore a state-wide procurement mechanism wherein the batteries in medium- and heavy-duty EVs are leased, thereby reducing the up-front cost of one comparable to a new diesel vehicle, and allowing the reduced operating costs (e.g., for fuel and maintenance) to cover the battery lease payments over time. In addition, agencies such as NJEDA should work with private lenders and trucking industry participants to develop longer term loan products that can enable the lower projected operating costs for EV trucks and buses to more effectively provide for the payback of the high upfront investment in electric versions of vehicles. The state could also help facilitate financing for bulk purchases to drive down capital procurement costs. New Jersey will work with transportation network companies, as discussed earlier, to advance the

> deployment of public charging infrastructure along busy transportation corridors and within urban areas and to ensure private sector support for an electric fleet transition.
>
> ….New construction offers New Jersey the most cost-effective opportunities to incorporate modern technologies into buildings. As discussed earlier in Strategy 1: Reduce Energy Consumption and Emissions from the Transportation Sector, a common barrier to electric vehicle (EV) adoption is the lack of charging opportunities, **particularly at the workplace** and at multi-unit dwellings. The state should consider mechanisms, such as new legislation or incentives, to ensure that new commercial and multi-unit dwelling construction are built to EV-ready standards. Development of these mechanisms should be done in conjunction with stakeholders and local municipalities.[41]

E. EV chargers deployed pursuant to the Charger Ready Program should meet minimum specifications

ChargePoint understands that in developing the Straw Proposal, Staff focused largely on the Charger Ready aspects of the Ecosystem, rather than the EV charging infrastructure that will be deployed. However, in doing so, Staff misses an opportunity to set minimum functional requirements that any EVSE installed under the Charger Ready program must meet.

ChargePoint recommends that any EVSE installed under the Charger Ready program shall require advanced charger capabilities in order to future-proof any investments, and reduce Staff's concerns with EVSE obsolescence. Advanced, or smart, chargers will be vital to ensuring that EV charging benefits New Jersey's grid by enabling the EDCs, or third-parties, to have advanced remote load management controls to facilitate off-peak charging and other managed charging strategies.[42] An advanced charger can also collect interval data to inform usage patterns, and provide enhanced network communication capabilities between the EV driver and the utility, or third-party systems. Specifically, ChargePoint recommends that chargers have the ability to connect to a network, be UL certified, have smart energy management and data storage capabilities, and low standby power consumption (which may be demonstrated by ENERGY STAR certification). By requiring advanced chargers from the outset, the BPU and Staff will enable program administrators, vendors, and customers to reap significant benefits from increased functionality, wider program design options, and ultimately a more successful program deployment. In addition, networked charging would obviate the need for installation of AMI meters in many use cases thereby lowering the overall cost for a customer to install EV charging infrastructure.

[41] NJ 2019 EMP at 68, 74-75, 166 (emphasis added).

[42] ChargePoint notes that managed charging may be appropriate for residential charging for Level 2 stations but may not be appropriate for public DC fast charging stations, where it is more difficult for drivers to plan their routes or change charging behavior.

Furthermore, ChargePoint recommends that EDCs should be required to develop a methodology to qualify EVSE equipment and to regularly update the list of qualified charging solutions to keep up with the pace of innovation and allow site hosts to best meet the evolving needs of drivers, site hosts, and grid operators.

F. Establish a Charger Ready Advisory Council to inform program evaluation

The Straw Proposal is silent on program evaluation and reporting guidance. ChargePoint requests that Staff and the BPU consider providing guidance on these topics as part of this proceeding. The Charger Ready program is a complex program with many interrelated activities and market players. Regular review and check-ins on the efficacy of its various elements will ensure it swiftly adapts to technological and market developments and takes advantage of valuable insights from participating stakeholders.

In order to increase program transparency and accountability, we recommend establishing a Charger Ready Advisory Council ("CRAC") that would meet quarterly to review pertinent metrics and evaluate program options. The CRAC would also inform a formal bi-annual program review by the BPU.

We recommend that the CRAC be comprised of representatives from relevant constituencies, including Staff, municipalities, public agencies and authorities, the EDCs, EV charging industry, environmental justice advocates, labor and installation partners, environmental stakeholders, and the automotive industry.

We further recommend that each EDC, in consultation with the CRAC, be directed to file annual reports detailing the status of its individual program implementation, lessons learned, and potential enhancements to the program to ensure full deployment is achieved. The reports should include, at minimum: number of sites made Charger Ready; number of Charger Ready sites operational; location of each deployment; average time to make locations Charger Ready and, how many Charger Ready sites are in Equity Areas.

III. Comments on Ensuring Equitable Distribution of EVSE

ChargePoint applauds the Straw Proposal's focus on ensuring, "*equitable geographic diversity, particularly with respect to ensuring a viable EV ecosystem in low-income, urban, environmental justice communities, or rural communities [collectively Equity Areas] …If the market is not delivering EV services to a particular Equity Area, within a given timeframe, the EDCs would be eligible to act in lieu of an EVSE Infrastructure Company, meaning that it could directly own and operate the EVSE."*[43] The Straw Proposal refers to this as a "Last Resort" function by the EDCs. Staff is seeking stakeholder comment on proper criteria to implement any "Last Resort" function by the EDCs.

[43] EV Straw proposal at 11-12.

A. EDC "Last Resort" function

ChargePoint understands Staff's concern that the market may not deploy charging equipment when and where desired. However, ChargePoint stresses that the BPU must provide sufficient time for the market to meet customer needs. As stated in the EV Stakeholder Workshop on June 3rd, "a Last Resort must mean last resort".[44] As such, ChargePoint believes it is premature to request EDCs submit proposals to establish a process and timeframe for EDCs to provide a "Last Resort" function by owning and operating EV charging stations.[45] Specifically, combining Charger Ready with EVSE rebates for these "Equity Areas" should first be tested, given these are less costly, less risky for ratepayers, and more flexible alternatives to accelerate the market. Further, ChargePoint argues that it is premature to determine the "Last Resort" function can only be met by an EDC owning and operating EV Charging stations.

Prior to authorizing EDCs to own and operate EV charging stations, ChargePoint encourages the BPU to carefully consider whether and under what circumstances supplemental EVSE incentives can be made available. We recommend that prior to considering utility ownership and operation of EV charging stations, the BPU should establish a stakeholder working group to determine whether additional financial incentives (i.e., rebates covering EVSE and related operating costs) are necessary to support EVSE deployment at (i) strategic locations and (ii) underserved communities. Granting EDCs the flexibility to propose additional incentives in response to unique community needs will support wider and more equitable access to electric transportation. Authorization for additional incentives could be granted temporarily by the BPU and revisited at the bi-annual review.

Should the BPU feel it necessary to determine a timeframe for when the market is not delivering EV services to Equity Areas in this proceeding, ChargePoint recommends a period of not less than 24 months from the commencement of provision of make-ready and EVSE rebate incentives to provide the market appropriate time to respond.

B. EDC ownership of EVSE

ChargePoint believes it is premature to consider EDC ownership and operation of EV charging stations. However, should the Board consider direct ownership of EVSE by utilities in this proceeding, ChargePoint respectfully recommends that the Board identify program requirements associated with such ownership to avoid any unintended market impacts.

For example, the Board should ensure that such utility-owned EVSE include local site host choice of at least two vendors for both hardware and software and choice over whether to flow through the applicable EV rate charged by the utility to the driver or to flow through alternative pricing

[44] Stephanie Brand, NJ Rate Counsel, EV Workshop, available at: www.njcleanenergy.com/ev, at 1:15:51.
[45] EV Straw Proposal at 13.

to the driver (with the site host responsible for the applicable EV rate in both circumstances). In doing so, market forces can still be in play, private market actors will be encouraged to invest their own capital and local site hosts will be able to maximize station utilization and optimize the driver experience. Examples of such programs that include utility ownership with local site host choice and control include San Diego Gas & Electric "Power Your Drive" and Pacific Gas & Electric's EV Charge Network in California.[46]

In addition, the Board should develop appropriate procedural valves/gates to avoid prematurely authorizing utilities to directly own and operate publicly-available EV charging stations. For example, in response to National Grid's proposal to own & operate public EVSE, the Rhode Island Public Utility Commission ("RIPUC") required that the Company first pursue non-ownership incentives (i.e., make ready and rebate) for at least one year before returning to the RIPUC with a proposal to own and operate EVSE. Requiring a "waiting period" was an important factor in ensuring the prudency of ratepayer investments.[47] Indeed, National Grid identified in its first annual filing that it would defer consideration of ownership for an additional year.

IV. Comments on The Proposed EV Mapping Effort

The Staff Straw proposal establishes a process combining an 'EV Mapping Effort,' which refers to an effort, "*to map existing and proposed EV Ecosystem investments, under the lead of the Department of Environmental Protection ("DEP"), in conjunction with the Board and other Agencies,"* [48] with a 'Charger Ready Map Proposal,' which "*is a proposal from an EDC which pre-identifies areas that are suitable for Level Two or DC Fast Charging based on the EV Mapping Effort."*[49] ChargePoint understands Staff's desire to coordinate the deployment of resources to create a robust EV Ecosystem, however the proposal provides few guidelines regarding how the mapping efforts will be conducted, the timeframe in which the efforts will be completed, or who will participate in the mapping efforts.

Utilities and regulatory agencies can, and should, play a central role in supporting the deployment of EVSE in New Jersey. However, ChargePoint is concerned that the proposed process would (a) inadvertently exclude critically important locations and participants and (b) unduly burden utilities with the responsibility of designing comprehensive EV charging networks without the assistance of third-parties with significant industry experience. ChargePoint requests clarification from Staff and the BPU that site hosts and EVSE Infrastructure Companies can request sites be made Charger Ready whether or not the site has been identified via either mapping effort.

[46] See, Decision Regarding Underlying Vehicle Grid Integration Application and Motion to Adopt Settlement Agreement, CPUC, Docket No. A.14-04-014 (January 28, 2016); Decision Directing PG&E to Establish an Electric Vehicle Infrastructure and Education Program, CPUC, Docket No. 16-12-065 (Dec. 21, 2016);

[47] In Re: The Narraganset Electric Company d/b/a national Grid Proposed Power Sector Transformation Vision and Implementation Plan, Rhode Island PUC Docket No. 4780. (Order Issued may 5, 2020), Available at: http://www.ripuc.ri.gov/eventsactions/docket/4770-4780-NGrid-Ord23823%20(5-5-20).pdf

[48] EV Straw Proposal at 5.

[49] EV Straw Proposal at 4.

Additionally, a site not being identified during the mapping processes should not impede, in any way, the work necessary to make the location Charger Ready.

A. Encourage site host recruitment without restricting participation

Staff's Straw Proposal establishes that EDCs will, "*Develop hosting maps in conjunction with the EV Mapping Effort that identify where to prioritize making sites Charger Ready…while avoiding lengthy and costly distribution upgrades."*[50] ChargePoint recommends that the Charger Ready proposal allow for a variety of participants and avoid imposing strict eligibility criteria based on load capacity and/or site host business models.

Load serving capacity data is critically important to inform developers and site hosts and should be an important consideration when deploying EVSE. However, installation and interconnection costs are not the sole consideration. Other key site considerations include, but are not limited to: safe and well-lit access; access to key locations and amenities (workplaces, dining, restrooms, shopping); and wi-fi and cell connectivity.

As stated previously, EV charging stations are not only operated by entities whose sole business is the provision of charging services. The EV charging market is growing and dynamic, and there is not a uniform business model for the industry or for EV charging site hosts. The business case, or value proposition, for various entities to install and operate charging stations incorporate many different value streams and varies across use cases.

Should Staff prefer to impose strict eligibility criteria, we recommend delaying such implementation until the first bi-annual program review to allow for collaborative development of criteria through the CRAC process.

B. Recruit program participants through multiple channels

We recommend against making utilities bear the sole responsibility for identifying priority Charger Ready locations. Instead, we recommend that the Straw Proposal allow for EVSE Infrastructure Companies to develop appropriate locations and for independent site hosts to directly participate in the Charge Ready program.

Allowing for broad customer engagement by third-party vendors, and by independent site hosts themselves, would be in both customers' and the public interest. There are no one-size-fits-all charging solutions, and EVSE providers often work closely with site hosts to provide customized infrastructure and equipment deployment solutions that meet their specific needs, which reduces the risk of stranded assets.

[50] EV Straw Proposal at 8-9.

Including third-parties in developing locations and recruiting site hosts would not prevent utility engagement with potential program participants, nor would it delay the program. Utilities should, of course, freely engage with their customers about the Charger Ready program, provided that such utility engagement does not inadvertently limit third-party participation.

V. The Straw Proposal Inappropriately Directs EDCs to Identify "Poor Performing EVSE Infrastructure Companies"

In the Straw Proposal, Staff, "*proposes that the EDCs will jointly establish and file for Board approval* ***criteria for identifying Poor Performing EVSE Infrastructure Companies*** *(i.e., not adequately maintaining operational equipment)"*[51]

ChargePoint supports ensuring robust consumer protection mechanisms for EV charging in New Jersey, which are critical to drivers, site hosts, and the general public. However, we are concerned that requiring EDCs to carry out consumer protection functions would be inconsistent with state law and prematurely impose requirements that should otherwise be administered through existing state agency channels.

The New Jersey Legislature recently found that the provision of EV charging is "a service and not a sale of electricity by an electric power supplier or basic generation service provider."[52] As the provision of competitive services is outside the BPU's jurisdiction, it would be more appropriate for related consumer protection issues to be overseen by the Office of Weights and Measures within the New Jersey Division of Consumer Affairs.[53] Similar offices around the country have begun to implement the *Tentative Code for Electric Vehicle Fueling Systems*, which is included in Section 3.40 of the National Institute of Standards and Technology's (NIST) Handbook 44.

To the extent that the Board would seek to ensure ongoing operations and maintenance of stations deployed under the auspices of the Straw Proposal, ChargePoint recommends including a requirement that participants commit to keeping EV charging equipment maintained and operational with a 95% annual uptime guarantee for a minimum term (e.g., five years).

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[51] EV Straw Proposal at 11.

[52] N.J.S.A. § 48:25-1 .

[53] NJ Division of Consumer Affairs website, https://www.njconsumeraffairs.gov/OWM/Pages/default.aspx ("The New Jersey Office of Weights and Measures tests and inspects all commercially used devices from prescription pharmacy balances to large capacity truck scales. In addition, the office is responsible for testing fuel meters, airplane fuel trucks located in area airports, laser guns and radar tuning forks used for speed enforcement and portable vehicle scales used in highway safety programs. This is just a small sample of the devices tested and inspected annually by the New Jersey Office of Weights and Measures….The New Jersey Office of Weights and Measures core mission is to protect consumers from unscrupulous business practices and maintain equity in the marketplace.").

VI. Comments on Rate Reforms Designed to Encourage Adoption of Electric Vehicles

A. New Jersey should develop alternatives to traditional, demand-based rates

As Staff correctly notes, "*DC Fast Chargers, have a large instantaneous draw, which can create large demand charges, particularly when such stations are combined into "banks" of chargers. This problem is particularly acute in the early days of EV adoption, where some stations may have relatively few monthly charging sessions over which to recoup a high demand charge.*"[54]

ChargePoint appreciates Staff's acknowledgement of the burden traditional demand charges place upon DCFC stations and we support the recommendation to consider alternatives to traditional demand-based rates to sensibly address this challenge. However, ChargePoint believes it is premature to limit the potential solutions to, "*either wave demand charges associated with EV charging or develop a rebate methodology that ensures that the effective $/kW-hour rate (i.e., the demand charge averaged over the number of kW-hours used in a given month added to the standard $/kW-hour rate) remains below a specified "setpoint.*""[55]

While short-term subsidies like those identified in the Straw proposal can offset burdensome demand charges, as stated at the workshop, multiple approaches to rate design are necessary because there is not a singular use case for EV charging.[56] ChargePoint believes that it is critical for the Board to ensure the development of long-term, sustainable, tariff-based solutions that reflect actual costs and benefits to the grid of EV load, rather than short-term subsidies. We urge the BPU to initiate a separate proceeding to consider such long-term sustainable rate designs that more precisely allocate costs and benefits of EV load. This type of long-term, sustainable tariff-based EV rate design is necessary to attract private investment in EV charging infrastructure, especially at the DCFC level. Many examples have already successfully been implemented or are currently being developed in other jurisdictions. For example:

- Charging stations can be separately metered with unique "EV Charging" rates, reflective of marginal costs and benefits to serve the EV charging use case in question.[57]
- Replacing or pairing demand charges with higher volumetric pricing to provide greater certainty for charging station operators with low utilization. This rate could be scaled based on utilization or load factor as charging behavior changes over time.[58]

[54] EV Straw Proposal at 12.
[55] EV Straw Proposal at 13.
[56] Adam Benshoff, Edison Energy Institute, EV Workshop, available at: www.njcleanenergy.com/ev, at 4:58:11.
[57] Alternative rate structures have been recently approved in California by Pacific Gas & Electric (PG&E) and Southern California Edison (SCE) to the California Public Utilities Commission.
[58] Pacific Power has implemented such a rate in Oregon, providing for a demand charge transition discount of 90% and an on-peak energy charge transition discount of 10%, and reducing the demand charge transition discount gradually each year to 0% while increasing the on-peak energy charge transition discount gradually each year to 100%. *See* Pacific Power, Oregon Schedule 45, Public DC Fast Charger Optional Transitional Rate Delivery Service at

- Implement a "rate limiter" as EV adoption increases, in which the average cost equivalent of a customer's demand charges would be limited to no more than a set cents/kWh value.[59]
- Forgive a portion of billed demand when the customer has a low load factor.[60]

B. New Jersey should avoid short-term subsidies, like the set point method, to fix long-term problems

1. The set point subsidy is designed to solve a different problem than that which is faced by DC fast charging site hosts

Traditional, demand-based commercial and industrial electricity rates are misaligned with low load-factor use cases like DC fast charging. The most appropriate and sustainable solution to this problem would come in the form of non-discriminatory electricity rates that reflect cost-causation, send appropriate price signals to customers, and avoid artificially subsidizing otherwise misaligned electricity rates on an ongoing basis.

In contrast, the set point method has been described by Atlantic City Electric as a short-term "incentive to offset the customer's demand charges" in the form of a "monthly rebate to reduce the effective cost of electricity."[61] As envisioned in the Straw Proposal, Staff suggest that the "*actual level of the set point would be agreed to by the EDCs, in conjunction with interested stakeholders, and then filed with the Board*," and would "*be benchmarked so that electric vehicle charging remains below the equivalent cost of diesel or gasoline on a per-mile traveled basis.*"[62]

ChargePoint is generally supportive of proposals that mitigate the significant cost of demand charges that are borne by EVSE site hosts, be they operators of highway corridor chargers, municipal electric fleets, or state agencies like NJ Transit. We acknowledge that the set point method would likely lower the cost to operate DC fast chargers for customers that are allowed to participate in the program. However, we are concerned that the set point subsidy is an unsustainable and inappropriate method to mitigate unintentional flaws in rate design.

Specifically, the set point subsidy:

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https://www.pacificpower.net/content/dam/pcorp/documents/en/pacificpower/rates-regulation/oregon/tariffs/rates/045_Public_DC_Fast_Charger_Optional_Transitional_Rate_Delivery_Service.pdf. Approved in Oregon PUC Docket No. 485 on May 16, 2017.

[59] Ameren implemented such a rate in Illinois, which was designed to limit the average monthly cost for customers who limited their total kWh usage during the four summer billing periods of June through September to 20% or less of their annual kWh consumption. *See* https://www.ameren.com/-/media/rates/files/illinois/aiel14rtds4.pdf. (Docket No. 16-0387).

[60] Xcel Minnesota's general service rate offers an example of this approach, see https://www.xcelenergy.com/staticfiles/xe/Regulatory/Regulatory%20PDFs/rates/MN/Me_Section_5.pdf.

[61] Petition by ACE at 18.

[62] EV Straw Proposal at 13.

- **Fails to address geographic variability in DCFC load factor**. DCFC utilization will continue to vary greatly based on a number of different factors beyond light-duty EV adoption. For example, DCFC deployed in a less-traveled corner of an EDC's service territory will consistently experience lower utilization than a high-density corridor deployment, irrespective of statewide EV adoption. It would be short-sighted to assume that the unintended impacts of demand charges will be overcome at the conclusion of a short-term rate subsidy.
- **Pegs the price of electricity to the price of gasoline**. The Straw suggests that set point subsidies would depress the cost of EV charging at a DCFC enrolled in a C&I electricity rates below the market price of gasoline. This would be an inappropriate use of ratepayer funds. Gasoline prices are determined by market prices, not by the Board. In contrast, a site host's electricity costs are based in part on the Company's distribution and transmission costs, both of which have no relation whatsoever to the price of gasoline and fail to appropriately capture the cost to serve DCFC customers.
- **Provides discriminatory relief from demand charges**. Electricity rates are made available to customers on a nondiscriminatory basis, and so subsidies that offset structural problems with C&I should similarly be made available without discrimination We are concerned that, in practice, this would not take place. For example, ACE proposed to limit set point subsidy eligibility to new customers that participate in an infrastructure make ready program, thereby excluding existing C&I customers and customers that do not elect to participate in an infrastructure deployment program.

We respectfully urge the Board to require utilities to develop alternatives to traditional, demand-based tariffs to provide customers in New Jersey with sustainable, cost-based, long-term solutions reflective of actual marginal net costs to serve EV chargers. Such a long-term sustainable rate design is necessary to attract private capital investment in the long-term.

C. EV TOU rates

ChargePoint supports the Staff straw proposal requirement, "*that each EDC offer a time-of-use rate for EV chargers designed to reward customers who charge during periods where electricity is cheap*."[63] Incentivizing EV charging to take place during off-peak periods through TOU rates can lead to increased utilization of existing utility assets and avoid the need for additional capacity and grid infrastructure. However, TOU rates may not be a perfect application for public DCFC stations since these stations are often used by EV drivers that cannot adjust their usage to avoid the impact of higher priced TOU time periods. This user group may include drivers traveling longer distances on highways unable to schedule their stops to align with changes in pricing or charger availability caused by higher priced TOU time periods. Therefore, any rates should be

[63] EV Straw Proposal at 13.

developed with careful consideration of the needs of both site host utility customers and EV drivers, and with an express goal of avoiding unintended consequences.

VII. Recommended Changes to Charger Ready Terminology

Based on the comments above, ChargePoint recommends the following modifications, deletions and/or additions to Staff's proposed terminology (Section III of the Straw proposal).

- "EVSE Infrastructure Company" refers to an entity that offers EVSE and/or associated software/cloud and other services in support of operating EV charging stations. ~~using private capital to deploy Electric Vehicle Service Equipment (i.e., "charging station infrastructure").~~ An EVSE Infrastructure Company cannot be an EDC, affiliated with an EDC, or controlled by an EDC, unless otherwise approved by the Board.

- "Operational" means a charging location that an EVSE Infrastructure Company, or site host, would be required to maintain and promptly fix, in accordance with industry standards, in the event of malfunctioning hardware or software that would impede the use of the equipment by a consumer.

- ~~"Poor Performing EVSE Infrastructure Companies" means EVSE Infrastructure Companies that fail to regularly maintain or promptly fix malfunctioning locations in accordance with industry practices, i.e., EVSE Infrastructure Companies that fail to maintain Operational charging locations, as defined above.~~

- "Site Host" means the entity that owns, leases, manages, or otherwise possesses the premises upon which the electric vehicle charging station is or is planned to be located for the purpose of charging an electric vehicle. The site host may also be the utility customer of record and responsible for operation and maintenance of, and paying for the energy delivered to the electric vehicle charging station.

VIII. Conclusion

ChargePoint appreciates the opportunity to provide comment on Staff's Straw Proposal, which would establish a comprehensive statewide EV Ecosystem to support the deployment of EV charging stations throughout New Jersey. Our recommendations would strengthen the proposed EV Ecosystem by accelerating the achievement of New Jersey's statewide energy and environmental goals, minimizing costs and maximizing benefits for ratepayers, and ensuring that New Jersey builds out a robust electric transportation network. ChargePoint reserves its rights to provide additional comments as this process develops, and additional stakeholders weigh in.

Edison Electric INSTITUTE

Power by Association℠

June 17, 2020

Aida Camacho-Welch
Secretary of the Board
Board of Public Utilities
44 South Clinton Avenue, 9th Floor
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Trenton, New Jersey 08625-0350

Re: Straw Proposal on Electric Vehicle Infrastructure Build Out; Docket No. QO20050357

Dear Secretary Camacho-Welch,

The Edison Electric Institute (EEI) respectfully submits this letter to the New Jersey Board of Public Utilities (BPU) in response to the call for comments in Docket No. QO20050357, *In the Matter of Straw Proposal on Electric Vehicle Infrastructure Build Out* (Proposal). EEI has been monitoring electric vehicle (EV) proceedings across the country and appreciates the opportunity to provide the BPU with a national perspective on the integral role electric companies can play in advancing the deployment of EV infrastructure, highlighting some of the positive attributes of EVs that benefit all customers, and providing recommendations for areas of further consideration in the Proposal.

EEI is the association that represents all U.S. investor-owned electric companies. Our members provide electricity for 220 million Americans and operate in all 50 states and the District of Columbia. Collectively, the electric power industry supports more than 7 million jobs in communities across the United States. EEI's member companies, which include Public Service Electric & Gas Company, Atlantic City Electric, and Jersey Central Power & Light, deliver safe, reliable, affordable and increasingly clean electricity that powers the economy and enhances the lives of all Americans.

A Robust and Competitive EV Ecosystem Needs Significant EDC Participation

Electric companies are well-positioned to make targeted and strategic investments in EV charging infrastructure that benefit the broader community and accelerate EV adoption. The enactment of Senate Bill 2252 earlier this year set the ambitious goal of having at least 330,000 EVs on New Jersey's roads by the end of 2025 and at least 2 million EVs by the end of 2035.[1] Nationally, the current lack of EV charging infrastructure is one of the primary barriers to widespread EV adoption. EEI and the Institute for Electric Innovation (IEI) released a report in

[1] *See* Senate and General Assembly the State of New Jersey, "Senate Bill 2252," approved January 17, 2020, https://www.njleg.state.nj.us/2018/Bills/PL19/362_.PDF.

2018 forecasting 18.7 million electric vehicles on the road by 2030.[2] To support that many EVs by 2030, 9.6 million charging ports will be needed.[3] This penetration is unlikely to be achieved without significant electric company investment.

Automakers and suppliers are also making substantial commitments to EVs and are expected to invest $225 billion in EV development and technology through 2023.[4] However, it is also important to highlight that the availability of infrastructure can drive the adoption of EVs. Within two years of Evergy deploying its Clean Charge Network in the Kansas City region, it had experienced a 95 percent increase in EV adoption across its service territories, making Kansas City one of the fastest growing EV markets in the country.[5] Continued growth in the EV market requires automakers to increase EV model availability and electric companies (along with other entities) to increase the availability of charging infrastructure.

To date, 48 electric companies in 26 states and the District of Columbia have invested more than **$1.51 billion** in EV programs.[6] While this is an impressive number, more is needed. The type of EV program can vary by state and electric company, but usually includes at least one of the following elements: (1) investments in, or ownership of, charging infrastructure; (2) rebates and incentives to customers for charging infrastructure deployment; (3) customer education and outreach; and (4) EV-specific rates. Together, these programs can unlock value for all customers by growing the EV market for all participants, by helping to integrate EV charging into the energy grid in a cost-effective manner, and by driving outcomes that protect customer interests and maximize customer value.

EEI applauds the Staff's Proposal for recognizing that developing a comprehensive EV Ecosystem can include significant roles for both Electric Distribution Companies (EDCs) and Electric Vehicle Service Equipment (EVSE) Infrastructure Companies while remaining competitive. Many states have found that electric company investment can be complementary to and supportive of a competitive market for charging services. For example, in approving Portland General Electric's public transportation pilot program, Oregon's Public Utility Commission acknowledged that electric company investment to deploy more charging infrastructure leads to greater EV adoption, which, in turn, creates the need for more infrastructure and allows for additional opportunities to provide charging equipment and services.[7] More EVs on the road would lead to greater utilization of the charging infrastructure and likely attract more private investment.[8]

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[2] *See* Edison Electric Institute and the Institute for Electric Innovation, Electric Vehicle Sales Forecast and the Charging Infrastructure Required Through 2030, November 2018, available at https://www.edisonfoundation.net/-/media/Files/IEI/publications/IEI_EEI-EV-Forecast-Report_Nov2018.ashx

[3] *See Id.*

[4] *See* ABC News, "Has cheap fuel pulled the plug on electric vehicles?" https://abcnews.go.com/Business/cheap-fuel-pulled-plug-electric-vehicles/story?id=70619683

[5] *See* Clean Charge Network, "Five Years: A Timeline of EV Growth in Our Region," March 2020, https://cleanchargenetwork.com/five-years/

[6] *See* Edison Electric Institute, "Electric Transportation State Biannual Regulatory Update: June 2020," https://www.eei.org/issuesandpolicy/electrictransportation/Documents/FINAL_ET%20Biannual%20State%20Regulatory%20Update_June%202020.pdf

[7] *See Application for Transportation Electrification Programs, Order No. 18-54,* Docket No. UM 1811 (Feb. 16, 2018) at 10-11, available at: https://apps.puc.state.or.us/orders/2018ords/18-054.pdf.

[8] *See id*. at 11.

Flexible Rate Design Will Not Only Encourage EV Adoption But Also Maximize Grid Efficiencies

As EV adoption grows, both the energy grid and the electric company's role as an integrator of energy resources becomes more important. Significant EV adoption without a coordinated or managed charging program could lead to capacity constraints or require upgrades to the distribution grid. Managed charging refers to any strategy that provides a signal to influence how drivers charge their EVs, including time-varying rates, demand response programs, and other types of smart charging. EVs that are charged either at home (*e.g.,* single family or multi-family dwellings) or at work provide the greatest opportunity to manage charging in the near term.[9] Managed charging can enhance the EV customer experience by saving drivers money, lowering their carbon footprint, and simplifying their charging process. Electric companies can also use managed charging programs to more directly engage and interact with customers.

EVs also benefit all customers by improving energy grid utilization. Programs that encourage charging to occur when the energy grid has available capacity will minimize costs and help the energy grid operate more efficiently, effectively lowering the average system cost, which provides direct benefits to all electric customers. A June 2019 report by Synapse Energy analyzed the energy grid costs and revenues associated with EVs in the service territories of Pacific Gas & Electric and Southern California Edison, which have the most EVs in their service territory of any other electric company. From 2012 through 2018, revenues from EVs were $584 million greater than costs.[10] One reason is because EV customers on time-of-use (TOU) rates tend to charge during off-peak hours, which helps utilize the energy grid's resources more efficiently and keeps costs down for everyone.[11] This is not a California-only dynamic: a study by E3 for AEP Ohio's service territory similarly found that EV adoption results in net customer benefits, as the revenue collected from EVs charging on the energy grid exceeds the cost to serve them.[12]

Additionally, a study by the Illinois Citizen's Utility Board (CUB) calculated hourly and flat-rate charging costs and compared the total charging costs for various vehicles and charging scenarios. EV drivers on a time-based rate, such as Ameren's Power Smart Pricing, would save up to 51 percent on their energy costs when compared to customers on flat rates.[13] Accordingly, CUB concluded that time-base rates are effective at incentivizing EV drivers to charge when there will be minimal strain on the energy grid.

The Proposal should be commended in attempting to strike a balance by addressing all uses (both home and public charging), by looking for equity between residential and multi-family charging, and by encouraging the use of managed charging through inclusion of time-of-use

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[9] Vehicle-to-grid is not considered, as this opportunity is limited for these use cases in the near term.
[10] *See* Synapse Energy, "Electric Vehicles Are Driving Electric Rates Down: June 2019 Update," https://www.synapse-energy.com/sites/default/files/EV-Impacts-June-2019-18-122.pdf
[11] *See id.*
[12] *See* Energy and Environmental Economics, "Cost-Benefit Analysis of Plug-in Electric Vehicle Adoption in the AEP Ohio Service Territory," https://www.ethree.com/wp-content/uploads/2017/10/E3-AEP-EV-Final-Report-4_28.pdf
[13] *See* Illinois Citizen's Utility Board, "Charge for Less: An Analysis of Electricity Pricing for Electric Vehicles in Ameren Territory," February 2020, https://www.citizensutilityboard.org/wp-content/uploads/2020/02/ChargeForLess_Ameren_Final.pdf

(TOU) rates. As the Proposal inherently recognizes, when designing EV rates, there are a number of strategies that electric companies can employ in order to help increase the deployment of EV infrastructure. These strategies include creating a separate rate, providing rate options for customers with particular focus on incentivizing charging during off-peak hours, and providing more detailed pricing signals that reflect the true costs to the energy grid.[14] To date 25 electric companies have an approved EV-specific rate for a variety of customer use types including residential, public charging, electric buses, and commercial fleet charging.[15]

Since the EV market is nascent in New Jersey, now is the time to experiment with rate designs that will best encourage efficient use of the grid without inhibiting the market's growth. This can be done through the use of different strategies that change over time. While the Proposal includes good guideposts of suggested rate attributes, EDCs should be given the flexibility to propose other rates and rate structures for EVs that include those considerations, keep costs low, and adjust to changing market conditions.

Equitable Distribution and Availability of EVSE Cannot be Achieved Without EDC Ownership

As mentioned above, EVs provide benefits to drivers and non-drivers by putting downward pressure on electricity rates, but it is also important to emphasize that electric companies' direct participation in the EV market is vital to ensure that these benefits are realized by all customers, regardless of socio-economic situation, geographic location or whether they own an EV. Approximately a quarter of all approved investment in electric company programs have an equity component.[16] This can include dedicating a portion of program funds to deploying infrastructure in a low-income community or investing a certain portion of funds to the electrification of transit or school buses. Regardless of the mechanism, electric companies can (and do) support markets that private investors may not find attractive because of unfavorable economics. This is because electric companies take seriously their role of serving all customers. However, when evaluating whether an EV program is equitable, the BPU should not only consider equity in customer rates, but also the impacts on the community including increasing access to zero-emission transportation options, impacts on jobs, and reducing air pollution.

In addition to all these direct customer benefits, EVs emit less air pollution than traditional gasoline powered vehicles, which enhances communities' efforts to reduce their carbon emissions. Currently, the transportation sector accounts for 42 percent of greenhouse gas

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[14] *See* The Brattle Group, "Increasing Electric Vehicle Fast Charging Deployment," January 2019, http://files.brattle.com/files/15077_increasing_ev_fast_charging_deployment_-_final.pdf

[15] *See* Atlas Public Policy EV Hub, "Electric Utility Filings Dashboard," accessed June 6, 2020, https://www.atlasevhub.com/materials/public-policy/

[16] *See* Atlas Public Policy EV Hub, "25 Percent of Approved Utility Investment Going to Underserved Communities," December 2, 2019, https://www.atlasevhub.com/data_story/25-percent-of-approved-utility-investment-going-to-underserved-communities/

(GHG) emissions New Jersey,[17] which is "the largest single sector of carbon emissions."[18] As the Proposal recognizes, New Jersey will be unlikely to meet its ambitious clean energy or carbon reduction targets without widespread transportation electrification.[19]

Specific Recommendations to Straw Proposal

While the Proposal does a good job ensuring that the responsibility of developing of the EV Ecosystem is shared, there are some elements of the Proposal that may require a bit more flexibility and, if not revised before adoption, could inadvertently slow down EV deployment in New Jersey. In addition to providing rate design flexibility and ensuring an integral role for EDCs in EV Ecosystem infrastructure development, this includes reconsideration of the Straw Proposal's restriction around EDC ownership of EVSE, the timing associated when making locations Charger Ready, and the suggestion that EDCs act as "reporters" or "enforcers" of poor performing EVSE Infrastructure Companies.

First, as proposed, EDC ownership of charging stations would only be permissible under specific conditions that equates to a last resort and would disallow EDC ownership of new charging stations after December 31, 2025, unless extended by the BPU after a market analysis.[20] These restrictions could have unforeseen consequences preventing the state's achievements of aggressive EV goals. Thirteen other states have allowed electric companies to invest in at least two of the following infrastructure models: make-ready, ownership of charging stations, and rebates.[21] The BPU should consider a more flexible investment model that allows EDCs to contribute to the deployment of infrastructure through a variety of means, including both infrastructure upgrades and ownership of EVSE charging stations. As was addressed by EEI's Adam Benshoff during the June 3, 2020 technical conference, California initially excluded electric companies from participating in the EV market. When the growth of EV charging infrastructure was not keeping pace to meet the state's EV goals, the commission reversed its decision to consider electric company proposals on a case by case basis. The state later went further and enacted SB 350, which required electric companies to file electric transportation plans and actively participate in the EV market.[22] Limiting EDCs role in this market may unintentionally and unnecessarily delay the markets growth. Because the SB 2252 targets are set to be achieved in such a short timeframe, the Proposal, if anything, should be more inclusive of EDC ownership of EVSE equipment.

Second, the Charger Ready portion of the Proposal, if left unchanged, could also have negative impacts by adding extra time and complexity to the process. As currently drafted, EDCs are allowed 12-months from the date of request by an EVSE company to make a location "Charger Ready." However, the time allotted for an EVSE Infrastructure Company to determine whether

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[17] *See* State of New Jersey Department of Environmental Protection, "Transportation & Emissions," accessed June 9, 2020, https://www.nj.gov/dep/aqes/opea-trans-emissions.html#:~:text=While%20emissions%20from%20individual%20cars,air%20toxics%20and%20greenhouse%20gases.

[18] *Straw Proposal* at 6.

[19] *See id.*

[20] *See id* at 12.

[21] *See* EEI, "Electric Transportation State Biannual Regulatory Update: June 2020."

[22] *See* State of California Legislature, "Clean Energy and Pollution Reduction Act of 2015 (SB. 350), approved October 7, 2017, https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201520160SB350.

they want to install a charging station should be limited as well. Allowing too much time for EVSE Infrastructure Companies to make decisions when 1,400 chargers (including Charger Ready infrastructure upgrades) needs to be completed in less than five years could impact an EDC's ability to meet their 12-month deadline. This is even more important as the Proposal seeks to reduce an EDCs' earnings on that portion of EV infrastructure if somehow delayed beyond 12-months, unless an appeal is granted by the BPU. In addition, a cornerstone of the entire Proposal is the creation of EV maps, but there is no inherent recognition in the Proposal that the EDCs' role in creating these maps in such a short timeframe will be a heavy lift. It is imperative to leave enough lead time for the maps to be developed accurately and not require multiple rounds of approval, so that EDCs can ensure selected locations are ready in a timely fashion. If this is not allowed, the ambitious targets in SB 2252 will already be in jeopardy of not being met.

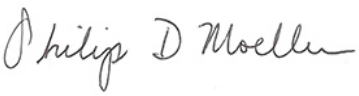
Finally, assigning EDCs the role of identifying, reporting, and revoking EVSE Infrastructure Companies' use of poorly maintained charging infrastructure[23] is highly unusual, puts the burden of proof on EDCs, and inappropriately delegates enforcement functions that are better left with the BPU. EDCs are regulated entities – they are not (and should not) be enforcers of BPU plans or Orders.

Conclusion

As New Jersey works to finalize policies that support the deployment targets in SB 2252 and grow the EV market for all participants, EDCs should not only be permitted to participate in this space but also be given an integral role in designing and implementing programs that best meet the needs of their customers. A healthy and competitive electric transportation market with significant EDC involvement will benefit EV and non-EV drivers alike.

Thank you for the time and opportunity to provide comment on these important issues. We commend the BPU for releasing a well thought out Proposal and encourage consideration of the recommendations herein before issuing a Final Order.

Respectfully submitted,



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[23] *See Proposal* at 11.

Submitted *Via* Email

June 17, 2020

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

RE: Straw Proposal on Electric Vehicle Infrastructure Build Out Docket No. QO20050357

Dear Secretary Camacho-Welch:

Please find enclosed the comments of the undersigned organizations submitted in response to the Board of Public Utilities' Straw Proposal on Electric Vehicle Infrastructure Build Out. We appreciate the opportunity to provide input on this important topic, and look forward to continuing the conversation as the Board further develops its Straw Proposal

Sincerely,

Kathy Harris,
Clean Vehicles and Fuels Advocate
NRDC

Eric Miller
New Jersey Energy Policy Directory
NRDC

On behalf of:

Environment New Jersey
Isles, Inc.
The Natural Resource Defense Council
The Nature Conservancy- NJ Chapter
New Jersey Conservation Foundation
New Jersey League of Conservation Voters
New Jersey Sustainable Business Council
Sierra Club
Tri-State Transportation Campaign

I. Introduction

The undersigned organizations ("Commenters") appreciate the opportunity to provide input on the Board of Public Utilities' ("BPU, or Board") New Jersey Electric Vehicles Infrastructure Ecosystem 2020 Straw Proposal (*hereinafter*, "Straw Proposal"). The Straw Proposal is an important step to support the growing electric vehicle ("EV") market by increasing infrastructure investment in the Garden State, particularly the "make ready" or "charger ready" aspect of the EV Ecosystem. However, we believe there is an opportunity to strengthen the Straw Proposal to ensure that it provides clean transportation opportunities to all residents, helps to optimally integrate EVs onto the electric grid, and develops this infrastructure in a deliberate and flexible manner that will allow New Jersey to achieve its transportation electrification goals.

The transportation sector accounts for 42% of greenhouse gas emissions in New Jersey, and to achieve the state's climate goals under the Global Warming Response Act ("GWRA")[1] and Zero Emission Vehicle ("ZEV") program, electrifying the state's light-duty vehicles is an important first step.[2] New Jersey has already begun to set itself up as a transportation electrification leader on the East Coast. In early 2020, Governor Murphy signed N.J.S.A. 48:25-3 into law ("PIV Act") which, in part, directed the BPU to develop one of the most robust EV rebate programs in the country, as well as set goals for infrastructure to support these vehicles.

Moreover, New Jersey's 2019 Energy Master Plan ("EMP") states that "the transportation sector should be almost entirely decarbonized by 2050."[3] It also recommends that the state take "concrete steps to start to phase out motor gasoline and convention diesel consumption as *quickly as possible*."[4] One of the largest barriers to widespread and rapid EV adoption is range anxiety[5], and the "chicken-and-egg problem"—where the private sector has not made a business case to install a robust network of charging infrastructure absent a critical mass of EV's on the road, and there will not be a critical mass of EV's on the road until there is sufficient charging infrastructure available. If properly designed, the Straw Proposal can serve as the first step to solve this dilemma.

We applaud the BPU for advancing the goal transportation electrification in New Jersey. Our ensuing comments provide suggestions for modifications to strengthen the Straw Proposal and set New Jersey up to be an EV and transportation electrification leader throughout the country.

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[1] N.J.S.A. 26:2C-37 et seq.
[2] https://www.nj.gov/dep/aqes/oce-ghgei.html
[3] EMP at 59.
[4] *Id.*
[5] Range Anxiety is the fear of running out of charge before a driver reaches their destination due to a perceived lack of charging infrastructure.

II. Comments

1. The BPU Should Clarify the Scope and Purpose of the Straw Proposal

Commenters urge the Board to clarify whether the Straw Proposal is intended to be a comprehensive document aimed at setting the policy guidelines for EV goals in the state, or whether it is a more narrowly tailored document aimed squarely at achieving the state's ambitious charging infrastructure goals. The Plug-In Vehicle Act ("PIV Act") includes ten specific EV related goals for the state:

1. At least 330,000 of the total number of registered light duty vehicles in the State shall be plug-in electric vehicles by December 31, 2025;
2. At least 2 million of the total number of registered light duty vehicles in the State shall be plug-in electric vehicles by December 31, 2035;
3. At least 85 percent of all new light duty vehicles sold or leased in the State shall be plug-in electric vehicles by December 31, 2040;
4. At least 400 Direct Current Fast Chargers shall be available for public use at no fewer than 200 charging locations in the State;
5. At least 1,000 Level Two chargers shall be available for public use across the State by December 31, 2025, and after initial installation, those EVSE may be upgraded to higher power or DC Fast Chargers as appropriate by the owner or operator of the EVSE;
6. Aggressive goals for charging infrastructure build-out at multi-family residential properties;
7. Aggressive goals for charging infrastructure build-out at franchised overnight lodging establishments;
8. The electrification of state-owned non-emergency light duty vehicles, with the electrification of 25 percent of the state fleet by 2025 and full electrification by 2035.
9. A rapid transition to electrify NJ Transit buses with all purchases being full electric in 2032 and a mandate that 10 percent of bus purchases made by the NJ Transit Corporation are electric by 2024, 50 percent by 2026 and 100 percent by 2032, with an initial priority for routes in low-income, urban or environmental justice communities.
10. Other goals for medium-and heavy-duty vehicle electrification and infrastructure adopted by the NJDEP by December 31, 2020.

N.J.S.A. 48:25-3 (a)(1)-(10).

Based on the foregoing, there are four near-term goals the state needs to achieve by the end of 2025: (1) 330,000 registered light duty vehicles; (2) 1,000 Level Two chargers; (3) electrification of 25 percent of the state fleet; and, (4) 10 percent of bus purchases made by the

NJ Transit Corporation are electric by 2024. Importantly, the pace of change does not slow down after 2025, with goals becoming more ambitious into the 2030s and beyond.

Given the ambitious nature of the goals, and the short timeline in which to achieve them, the Commenters recommend that the Straw Proposal provide further guidance on programs and policies that will support the other goals enumerated in the PIV ACT through a flexible approach that will prioritize the rapid achievement of these goals, rather than a rigid framework designed only to meet one or two of the goals.

2. The BPU Should Further Iterate that its Straw Proposal Would Not Delay Current Utility Filings in front of the Board

In 2018, both Atlantic City Electric ("ACE") and Public Service Electric and Gas ("PSEG") filed petitions for approval of electric vehicle programs.[6] Both filings contain a number of incentives, rebates, and other utility activities to support EVs and transportation electrification. Some of those activities are discussed in the Straw Proposal; however, others are not. For example, both utility filings provide customer incentives for charging equipment at the residential, multi-unit dwellings ("MUDs"), and commercial sectors.

While Commenters agree that both utilities and the Board should endeavor to avoid duplicative incentive offerings, we do not believe that means the door should be shut for utility incentives at this time. Instead, the Commenters urge the Board to clarify that both active filings will not be delayed by the Straw Proposal or any changes to the Minimum Filing Requirements ("MFRs"). The Board should look to utility programs to "gap fill" in areas where there are no currently existing programs, or where the state would like to increase available funding for existing programs.

The utility filings contain many additional program offerings not currently provided by the Board or other entities. For example, PSEG proposes incentives for 2,200 Level 2 mixed used chargers, 450 DC Fast Chargers, and incentives for electric school buses, charging equipment, and open solicitation for customized electrification processes. ACE proposes similar programs that would speed up the deployment of this infrastructure while providing the basis for other programs related to clean transit *via* school buses, NJ Transit, and other potential medium-, and heavy-duty fleet electrification.

Given that many of the active parties in this proceeding are also active parties in the PSEG and ACE proceeding, the Commenters recommend that the BPU further clarify that the

[6] *See* In The Matter of Atlantic City Electric Company for Approval of a Voluntary Program for Plug-In Vehicle Charging. BPU Docket No. EO18020190, *and* In the Matter of the Petition of Public Service Electric and Gas Company for Approval of its Clean Energy Future-Electric Vehicle and Energy Storage ("CEF-EVES") Program on a Regulated Basis BPU Docket No. EO18101111.

ongoing straw proposal will not impact the already-set procedural schedule of the utility filings given their importance to New Jersey's achievement of the PIV Act goals. The Commenters discuss the potential impacts and design of MFRs in greater detail in Section 3 of these Comments.

3. The BPU Should be Flexible in its Approach to the Role of Regulated Utilities in the EV Space

There are three primary barriers to EV adoption: 1) incremental vehicle cost; 2) the lack of charging infrastructure; and 3) the lack of consumer awareness. EDCs are uniquely situated to help overcome these barriers and meaningfully accelerate the adoption of light-, medium-, and heavy-duty EVs. New Jersey's EDCs should develop programs and rate options that increase fuel cost savings, speed the deployment of EV charging infrastructure, increase consumer awareness of the benefits of EVs, and improve the utilization of the electric grid to the benefit of all customers.

Regulated electric utilities have several characteristics that make them well-suited to play a central role in EV infrastructure buildout. First, their specific and expert knowledge of the distribution system and the potential impact of vehicle charging on load shape and shifting. It is critical that New Jersey's investment in the distribution system happen in close coordination with its build out of EV charging infrastructure ("EVSE") given the potential load impacts of widespread EV adoption. Moreover, utilities are able to optimize the electric grid and ensure that most electric vehicle charging occurs during off-peak hours, if granted regulatory approval for demand response, education programs, programs and tariffs that allow for managed charging or rate design.

While the Commenters support the Straw Proposal's identification of the key role that utilities play in make-ready—or "charger-ready" as defined in the Straw Proposal—activities, we strongly encourage the BPU to not discount EDC ownership of EV charging stations at this time, as EDC ownership is a valuable tool to expand initial deployment of charging stations both in certain sectors such as environmental justice, underserved communities and public, affordable housing MUDs, as well as more broadly statewide. While the Straw Proposal proposes an avenue for utility ownership of charging stations, that role is narrowly defined and includes a waiting period that would likely prevent New Jersey from meeting its ambitious targets contained in the EMP and PIV Act.

We also urge the BPU to consider avoiding specific MFRs, but instead focus on goals and objectives of the individual programs. Program design should not be litigated in the abstract or hypothetical, but rather in the context of actual programmatic proposals supported by robust applications. The determination of whether the utilities' proposals satisfy the statutory criteria

cannot be made in the abstract but must be evaluated with full information and in the context of a complete portfolio of transportation electrification investments. Utility transportation electrification applications should be assessed on their ability to: 1) increase charging station deployment; 2) maximize fuel cost savings (relative to a fixed forecast of gasoline prices); and 3) optimize EV load, for instance by shifting it to off-peak hours.

Additionally, given that rapidly approaching deadline of the PIV Act goals, as wells as the Board's stated preference for utility programs to begin in April of 2021, the Commenters recommend that to the extent the Board modify or adopt MFRs, it not apply to active filings that are already in front of the Board. Instead, the Commenters recommend adopting principles that could, if needed, be propounded in discovery so as not to delay the proceedings.

Furthermore, the Board should provide additional flexibility on "duplicative" program offerings. The Board identifies it has an intention to provide residential charging incentive programs. However, in areas where the Board is currently silent on its intention, or other programs do not already provide incentives, utilities should be permitted to propose programs or incentives. Additionally, even if there is an existing state program, utilities should be free to propose additional incentives so long as the proposal includes an explanation of how the program will create synergies or complimentary incentives.

For example, the PIV Act provides that the BPU may establish a residential charging program incentive of $500.00. An EDC should be permitted to make a showing as to whether a $500.00 incentive level is sufficient to induce action, and whether it should provide additional incentives to customers to leverage capital from multiple sources of funding. Such a structure would foster more innovation in EDC plan filings, as well as a more rapid build-out of charging infrastructure.

While the private market providers ("EVSE Companies") have a key role to play in the build out of infrastructure across the state, utilities' expertise and status as regulated entities make them uniquely well-positioned to play a central role in EV infrastructure build-out both statewide as well as in the MUD space in particular. Landlords at MUDs are not generally in the business of procuring, operating, and maintaining charging stations, and therefore without utility involvement, may be deterred from participating in programs. This has been clearly evidenced by previous pilots implemented by Southern California Edison (SCE) and San Diego Gas & Electric (SDG&E). In SCE's Charge Ready pilot, which included no ownership option and provided a rebate to cover 100% of the make-ready costs for participating sites, only three percent of all deployments were in MUDs. In the SDG&E Power Your Drive pilot which included utility ownership of charging stations, over forty percent of all deployments were in MUDs—suggesting landlords would rather have the utility procure, operate, and maintain charging stations. Incorporating the lessons learned in those pilots and building upon the success

of SDG&E's pilot, SCE redesigned its successor Charge Ready 2 Program to include a turnkey utility-ownership solution, providing MUDs with both the make-ready infrastructure and the electric vehicle charging station.[7] The BPU should use the lessons learned and best practices from other utilities as guidelines when designing their programs to improve participation at MUDs and support more equitable and widespread transportation electrification.

4. BPU Should Ensure the Straw Proposal Provides a Pathway for all Residents to have Access to Clean Transportation

The state should take a multi-sector, multi-technological approach to ensure that all NJ residents have access to clean transportation. This includes, but is certainly not limited to, equitable access to charging infrastructure, light-duty vehicles, medium- and heavy-duty ("M&HD") vehicles, identification of low- and moderate- income ("LMI") and Environmental Justice ("EJ") communities, transit, rates that reduce fueling costs, and multi-modal transportation options. As discussed elsewhere in these comments, it's important that investments are made in these communities in the near term, and not after a waiting period to determine who should be able to enter this space.

Utility ownership of charging stations may be particularly valuable in certain segments, such as MUDs. Therefore, we recommend utility turn-key solutions for charging infrastructure located at MUDs in LMI and EJ communities. Low- and moderate-income communities still face significant barriers to EV adoption. In addition to the upfront cost of purchasing an EV, access to charging infrastructure and lack of awareness have inhibited EV adoption in these communities. In many cases low-income drivers face heightened barriers relative to other drivers, with diminished access to financing, less access to information on EVs, and a lack of public charging infrastructure in their neighborhoods. When considering investments in electric vehicle charging infrastructure, especially in LMI and EJ communities, it's important to look at examples and lessons learned from other utilities, such as Pacific Gas and Electric's ("PG&E") widely supported, approved LMI program.[8] PG&E's *Empower Electric Vehicle Charger Incentive and Education Program* was designed to address all of these barriers and could serve as a model program for expanding the benefits of transportation electrification to historically underserved households in New Jersey.

It's also important that the BPU consider how to get investments in underserved communities, including rural communities, whose charging needs have not been met by the competitive market. We don't need to wait and see where these communities are—charging station maps already show where the major gaps are, and where investment is needed.[9]

[7] http://docs.cpuc.ca.gov/PublishedDocs/SupDoc/A1806015/1826/247318458.pdf
[8] Miles Muller, *California Approves Novel Low-Income EV Charger Program*, NRDC, September 2019; https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M314/K145/314145047.PDF
[9] E.g. Plugshare.com; https://afdc.energy.gov/stations/

a. Ensure benefits of Clean Transportation for All

In February 2020, the Edison Electric Institute, Illinois Citizens Utility Board, National Consumer Law Center, NRDC, and Sierra Club issued a joint statement highlighting a shared recognition that electrifying cars, trucks, and buses can benefit everyone—especially those in disadvantaged communities.[10] This statement underscores the importance of thoughtful utility investments and programs to ensure equitable access to clean transportation. The Straw Proposal takes a step in the right direction towards this equitable access by considering how to make MUD charging accessible to customers, but we offer some recommendations to increase transportation electrification in LMI and EJ communities.

Since these communities are often disproportionately burdened by transportation emissions—as a result of more polluting and health-harming vehicles and heavy traffic—it is important that clean transportation solutions are made available within these communities and to residents of these disadvantaged areas. Accordingly, the Board should direct utilities to:

- Lower household expenditures by increasing access to the use of clean and affordable electricity as a transportation fuel, support the electrification of buses, medium and heavy-duty trucks, and other vehicles and equipment to improve local air quality;
- Improve the utilization of the electric grid through intelligent rate design and accelerated EV adoption, putting downward pressure on rates to the benefit of all customers;
- Take advantage of the flexibility and energy storage inherent in electric vehicles to facilitate the integration of renewable generation; and
- Install charging infrastructure in LMI and EJ communities, with increased incentives for multi-unit dwellings to ensure those residents can also charge at home.

Utilities should also consider and develop additional programs that bring the benefits of transportation electrification to all citizens, regardless if they own or have access to a personal vehicle. This could include innovative programs such as electric vanpools or carshares for drivers or electric transit and other clean transportation options. One model for such a program is the Trenton E-Mobility project that is being spearheaded by Isles, Inc., ChargEVC, Environment New Jersey, and NJ Clean Cities Coalition. The project consists of an electric vehicle car- and rideshare program that will work to improve residents' mobility in and out the city with the goal of increasing access to jobs, healthcare, and other resources. The program plans to partner with community-based organizations whose clientele are challenged with transportation to ensure that

[10] Joint Statement Supporting Electric Transportation (February 2020) *available at* https://www.nrdc.org/sites/default/files/media-uploads/joint_statement_supporting_electric_transportation_0.pdf

it serves residents in need. A similar community-driven approach can be developed in other underserved communities in the state.

b. Set guidance on fleet and medium- and heavy- duty vehicle electrification

Fleet electrification is a way to ensure LMI and EJ communities are able to realize the benefits of clean air and transportation options. Electrifying transit buses would provide a clean alternative for those who do not own a personal vehicle; electric school buses clean up the air while driving through communities and transporting children to school; electric delivery and heavy-duty vehicles reduce pollution on New Jersey's roads, especially those around the ports, industrial sites, and in urban areas. This can lead to ancillary savings for communities that are burdened by the worst of pollution, as an Electric Bus Analysis by Columbia University suggests one-electric bus can save $150,000 in healthcare costs for communities due to reductions in air pollution and resulting emergency room visits.[11]

While light-duty vehicles are the largest source of pollution on the roads, M&HD vehicles are significant sources of criteria air pollutants including NO_x, SOx and PM 2.5, therefore the electrification of these vehicle types provide vital opportunities for clean transportation of goods and people, especially for those who may not have access to a personal vehicle. The board should release guidance on fleet electrification as soon as possible, especially for M&HD vehicles. M&HD electrification is a triple-win: it is good for the environment, good for fleets' bottom lines, and can provide jobs and economic growth.[12] In addition to the environmental and health benefits, supporting the electrification of M&HD vehicles provides economic benefits to New Jersey businesses. According to a recent analysis conducted by CalETC, electric trucks and buses will have the lowest total cost of ownership in 2030, even without purchase incentives in California. We expect a similar total cost of ownership nationwide, including in New Jersey.[13]

Many fleet vehicles "return home" to charge overnight. Therefore, it's important that fleets have the necessary infrastructure available. As this can be expensive, the BPU should provide similar make-ready programs to support fleet electrification. Other M&HD vehicles—such as long-distance delivery trucks and transit buses—may need to charge throughout the day or along their routes. Therefore, it's important that infrastructure for these vehicles is available across major thoroughfares and delivery routes. For transit buses, charging should be available en-route or at bus stations to ensure vehicles are able to complete their routes without fear of running out of charge.

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[11] Judah Aber, *Electric Bus Analysis for NYC Transit* (May 2016) *available at*, http://www.columbia.edu/~ja3041/Electric%20Bus%20Analysis%20for%20NYC%20Transit%20by%20J%20Aber%20Columbia%20University%20-%20May%202016.pdf

[12] ICF, Comparison of Medium- and Heavy- Duty Technologies in California, December 2019.

[13] *Id.*

c. The BPU should develop criteria to identify EJ and LMI communities

As disadvantaged communities are often subject to the brunt of transportation emissions, it is important for clean transportation investments in these communities. For the sake of this question, the term "disadvantaged communities" is assumed to encompass both EJ and LMI communities. Therefore, when determining locations of disadvantaged communities, BPU must consider both LMI and EJ components and metrics. We encourage the Board to also consider programs that can support supplementary clean transportation opportunities, such as transit and delivery trucks, that will allow for LMI and EJ communities to realize the benefits of transportation electrification.

Unfortunately, there is no consensus in the literature on the definition of a disadvantaged community. However, we encourage the board to convene with environmental justice organizations in New Jersey to most accurately define "disadvantaged" or other synonymous language. Additionally, the Board can consider other state and federal examples and tools to identify these communities. For example, California's "Greenhouse Gas Reduction Fund Investment Plan and Communities Revitalization Act" directs the California Environmental Protection Agency to identify disadvantaged communities based on geographic, socioeconomic, public health, and environmental hazard criteria, and may include, but are not limited to, either of the following:

(1) Areas disproportionately affected by environmental pollution and other hazards that can lead to negative public health effects, exposure, or environmental degradation.

(2) Areas with concentrations of people that are of low income, high unemployment, low levels of homeownership, high rent burden, sensitive populations, or low levels of educational attainment.[14]

The American Public Health Association provides additional guidance and defines environmental justice communities as: "…[C]ommunities [that] are composed of marginalized racial/ethnic, low-income/poor, rural, immigrant/refugee, and indigenous populations that live in areas disproportionately burdened by environmental hazards, unhealthy land uses, psychosocial stressors, and historical traumas, all of which drive environmental health disparities. EJ communities are underserved by public and private entities that create and enforce environmental hazards and are underrepresented in decision-making processes."[15]

[14] California Health and Safety Code § 39711.

[15] American Public Health Association, Addressing Environmental Justice to Achieve Health Equity, Policy Number 20197, November 2019.

The US Environmental Protection Agency has a publicly available tool, EPA EJ Screen, that the BPU and utilities may use to locate disadvantaged communities.[16] This tool allows users to map environmental justice criteria, such as ozone levels, traffic proximity, Superfund proximity, amongst others. Additionally, NRDC has developed a method to develop cumulative scores that can be used to identify overburdened communities—those areas that appear to be disproportionately affected by pollution burdens and well as social vulnerabilities that can make them more susceptible to the impacts of pollution—in other cities and states, such as Chicago, which may be replicated in New Jersey.[17] It is important that consistent definitions of "burdened communities" or "environmental justice communities" be used in all comprehensive statewide policy.

However, it's important to note that designating and identifying priority communities (e.g. LMI, EJ, and underserved communities) is just the first step—the BPU and utilities also need to have a dialogue with community members about their specific transportation needs.

5. A Well-Designed EV Program Will Provide Benefits to All NJ Customers, Regardless of Whether They Themselves Own an Electric Vehicle

EV investments, including those by utilities, can put downward pressure on rates for all utility customers-- regardless of whether they own an EV. A recent analysis by Synapse Energy Economics entitled Electric Vehicles are Driving Electric Rates Down analyzed real world data from the two utility service territories with the highest number of EVs in the country (PG&E and SCE) and found that EVs are already putting downward pressure on rates—with EV drivers in PG&E and SCE territory contributing nearly $600 million more than associated costs to serve them. Accordingly, the benefits of EVs are not just environmental; as that study appropriately concluded: "EVs offer a key opportunity to reduce harmful emissions and save customers money at the same time."[18]

Synapse evaluated the revenues and costs associated with EVs from 2012 through 2018 in PG&E and SCE service territories. They compared the new revenue the utilities collected from EV drivers to the cost of the energy required to charge those vehicles, plus the costs of any associated upgrades to the distribution and transmission grid and the costs of utility EV programs that are deploying charging stations for all types of EVs. In total, EV drivers contributed an estimated $584 million more than the associated costs. And this finding is not merely a result of

[16] United States Environmental Protection Agency Environmental Justice Screening and Mapping Tool, Version 2019, *available at* https://ejscreen.epa.gov/mapper/

[17] Meleah Geertsma, New Map Shows Chicago Needs Environmental Justice Reforms, NRDC, October 2018, *available at* https://www.nrdc.org/experts/meleah-geertsma/new-map-shows-chicago-needs-environmental-justice-reforms

[18] Frost *et al.*Synapse Energy Economics, Electric Vehicles are Driving Electric Rates Down, at 1 (June 2019), *available at* https://www.synapse-energy.com/sites/default/files/EV-Impacts-June-2019-18-122.pdf.

the fact most EV drivers in PG&E and SCE territory remain on default rates and pay high upper-tier prices as a result. Even if three in four were on time-of-use rates designed for EVs, those drivers would still have provided approximately $450 million in net-revenues.

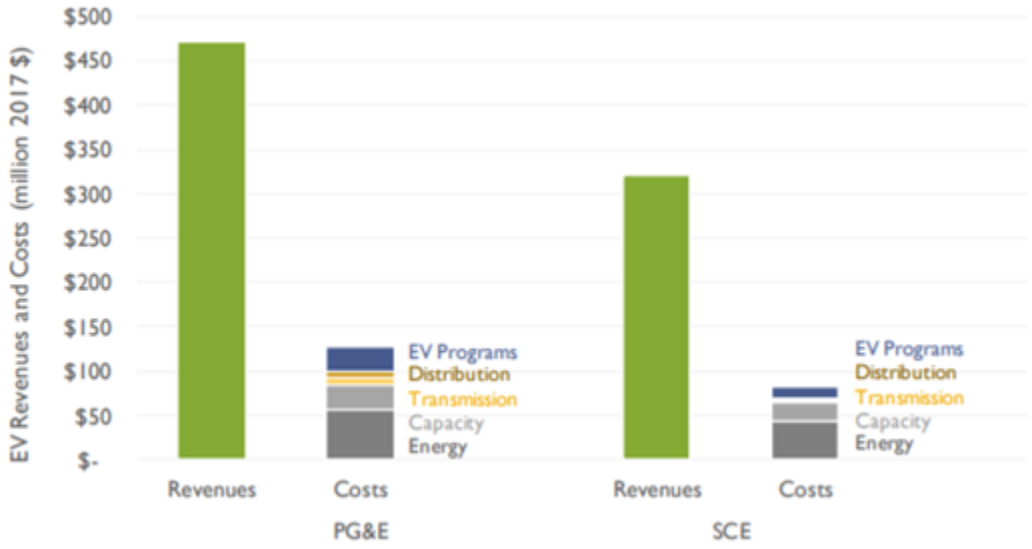

Figure 1: PG&E and SCE Revenues and Costs of EV Charging, 2012-2018

Were comparable analysis done in New Jersey, the results would almost certainly be similar, though the net revenue would be smaller given the lower number of EVs in New Jersey. EV drivers in New Jersey are likely already putting downward pressure on utility rates to the benefit of all customers. And those benefits will continue to grow in the future as additional vehicles are added to the grid.

Another study completed by M.J. Bradley & Associates demonstrates similar benefits on the East Coast. The study found that the EV adoption levels needed to meet New York's climate goals would provide more than $75 billion in net benefits, including $24 billion in reduced utility bills for all utility customers stemming from the same effect already observed in the real world by the Synapse study.[19] The New York analysis also estimates that drivers in the state could realize $34 billion in reduced fuel and maintenance costs. Utility customers in New Jersey deserve to realize the same cost savings.

The Energy Information Agency tracks "household energy insecurity" and documents that "nearly a third of U.S. households reported facing a challenge in paying energy bills or sustaining adequate heating and cooling in their home in 2015.[20]" That number will likely only

[19] Electric Vehicle CostBenefit Analysis, MJ Bradley & Associates, *available at* https://mjbradley.com/sites/default/files/NY_PEV_CB_Analysis_FINAL.pdf
[20] https://www.eia.gov/consumption/residential/reports/2015/energybills/

increase as a result of the current economic crisis. Utility regulators, consumer advocates, and environmentalists have a robust history of working together to reduce utility bills, especially for low-income households. But it's time for utility policy to target the total household energy bill. It would be a mistake to focus solely on the average American household's $1,300 annual electric bill while ignoring the $2,000 to $3,000 that the average household spends every year on gasoline. For the last 40 years, driving on electricity has been the cost equivalent of driving on dollar-a-gallon gasoline, and it is projected to stay that way for the next 30 years.[21] In contrast, while gasoline prices are low now, they tend to fluctuate significantly more than the price of electricity. Because electricity is generated from a diverse set of domestic fuels and because it is carefully regulated by state agencies, its price is inherently more stable, delivering energy cost savings households can bank on for the long-term.

6. The Board Should Ensure Public Charging Stations Funded Under this Program are Truly Open to *All* EV Drivers

Currently, the proposal requires that the sites be "available to the public on either a subscription or per-use basis, at the customer's election." However, this is not sufficient to ensure equitable public access to charging stations funded under utility programs. While the Board has appropriately recognized the importance of ensuring that drivers—rather than the EVSPs—are given a choice of payment options at these stations, more specificity regarding minimum payment standards for "per-use" access is necessary. As currently drafted, only requiring that sites be available to the public on a "per-use" basis could still allow payment by proprietary phone apps, 1-800 numbers, or contactless cards—all of which many drivers pulling up to those stations may lack. To not specify minimum consistent payment standards would be to risk leaving drivers stranded at these sites simply because they lack the right proprietary key fob or mobile payment app, and to leave them guessing about what payment options will be available at each new location they pull up to.

For stations that are deployed with the help of state and utility customer funds, it is imperative that drivers have consistent and equitable payment options that allow them to access these stations as easily as they can access gas pumps. Accordingly, we strongly encourage the Board to instead require that all utility funded charging stations comply with minimum payment standards—mirroring those recently adopted by the California Air Resources Board—ensuring that drivers can pay for charging at these stations as easily as they pay for gasoline.[22] Further, only non-proprietary charging stations should be eligible for make-ready incentives or utility owned stations. This will ensure that all EV drivers, no matter what type of vehicle they drive, will be able to use a utility supported or owned charging station when driving in New Jersey.

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[21] Max Baumhefner, Go Electric to Avoid the Holiday Gas Price Roller Coaster, NRDC, 2018.
[22] https://ww2.arb.ca.gov/sites/default/files/2020-06/evse_fro_ac.pdf. *See also* https://www.nrdc.org/experts/miles-muller/california-moves-make-paying-charging-easier

7. The Straw Proposal Should Ensure EV's and Associated Infrastructure are Integrated into the Grid

New Jersey's goal of getting 330,000 EVs on the road by 2025 will cause an increase in load on the electric grid. However, if EVs are integrated onto the grid properly, EVs can actually provide benefits to the grid and put downward pressure on rates for all customers, as previously discussed. Real world data shows, however, that unless drivers see price signals to shift charging to off-peak hours when there is more space on the grid, they will continue to charge when they get home, regardless of the time-of day.

Rate design is one of the most important components that the Board should address to ensure the rapid and equitable adoption of EV's within the state. Broadly speaking, rate design refers to the price that customers experience on their energy bills based on their energy usage. Rate design includes both the $/kWh (volumetric), any fixed charges (such as demand charges or distribution charges) as well as non-avoidable surcharges that do not vary with the amount of energy consumed. Taken together, these comprise a customer's bill and send price signals to customers about how and when to consume energy. Therefore, smart rate design is one of the strongest tools regulators have to influence customer behavior by sending clear price signals and providing either incentives or disincentives for certain types of consumption patterns. There are two primary functions of rate design as it relates to EVs: (1) helping to effectively manage EV load to maximize benefits to customers, drivers, and the grid; and (2) developing rate structures that reflect the unique characteristics of EV load in order to support the sustainable development of a robust EV charging ecosystem and to ensure that assets developed under this program are used and useful.

We appreciate the BPU's efforts to address rate design in this straw proposal, however, we offer modifications to the proposal, based on real-world best practices, that will help to strengthen the rate design efforts and provide long-term, sustainable solutions.

First, to maximize the benefits of proper EV integration and minimize upgrades required to support EV deployment (e.g. additional transformers and capacity), effective management of new EV load will be needed.[23] We urge the BPU to require utilities to develop and submit for approval strategic plans to integrate EV load in a manner that facilitates the use of renewable generation, improves the utilization of the grid, and provides drivers and fleet operators who charge in a manner consistent with grid conditions the opportunity to realize significant fuel cost savings relative to gasoline or diesel.

[23] Pamela MacDougall, Steering EV Integration Forward, NRDC, June 2019, *available at* https://www.nrdc.org/experts/pamela-macdougall/steering-ev-integration-forward.

Further, EV owners should have the option to sell electricity to the utility during high peak demand events, through vehicle-grid-integration (VGI). When the utility buys energy from distributed energy storage owners at a lower price than the marginal price in the PJM market, all ratepayers save money. While VGI currently has a more prominent role in the M&HD vehicle electrification, especially for electric school buses, in 2016, San Diego Gas and Electric Company (SDG&E) developed a VGI pilot program, "Power Your Drive," which a goal of installing 3,500 EV charging stations at MUDs and workplaces. As part of this program, a VGI rate was developed and has shown success in influencing pricing behavior to optimize the grid.[24]

There are a variety of ways for utilities to manage EV load and ensure charging benefits the grid, including time-of-use ("TOU") rates. In addition to optimizing EV charging, whole-house TOU rates can support energy efficiency initiatives and shift an even larger portion of the load to load to off-peak hours. Whole house TOU rates should be proposed by utilities to support these energy efficiency programs, which the Board should address in a separate proceeding to help to achieve additional goals outlined in the EMP. When the Board evaluates with whole-home TOU rates or EV-specific TOU rates, it should ensure that both rate structures work together to maximize load-shifting

The Straw Proposal recommends EV-only TOU rates, which we support as they can "limit the risk of having a larger bill due to TOU rates' not aligning with their non-EV base load," and therefore can provide significant benefits to customers.[25] Although EV load currently represents a small fraction of total system load, this has the potential to change rapidly with the large number of charging stations slated to be installed under the EV Law. Consequently, it is prudent for utilities to develop and test plans now for managing EV load, and we urge the BPU to require the utilities to submit plans that describe what strategies they intend to employ to ensure New Jersey realizes the benefits of transportation electrification. Expanding advanced metering infrastructure ("AMI") in tandem with EV charging infrastructure can help inform grid load shifts and monitor and evaluate any demand response programs employed due to increased data sharing.

For ratepayer-supported stations in these settings (i.e., those receiving incentives through a utility make-ready program), it may be appropriate to require that price signals intended to incentivize load management be passed through from site hosts to drivers utilizing those stations. Data collection and reporting requirements on site host rates to drivers will be critical in evaluating whether rates to drivers at stations supported by utilities are encouraging effective load management and fuel cost savings. To facilitate load management, all charging stations supported under utility programs should be "smart" charging stations that allow for the utility to

[24] https://www.sdge.com/sites/default/files/regulatory/Corrected%20Seventh%20Semi-annual%20%20PYD%20Report.pdf
[25] http://www.synapse-energy.com/sites/default/files/PA-EV-Rates-Report-18-021.pdf

actively manage load and collect data on customer charging behaviors. While rate design is a valuable tool to manage load and keep rates down, smart charging technology can significantly increase those benefits. Smart charging stations should be required as part of any utility incentive program, and further should be encouraged for any utility owned and operated programs.

a. Residential Customers

There are two types of residential customers that the Board should consider in putting forward its own, or evaluating utility, rate design proposals: residential single-family homes, and MUDs that contain residential customers but are classified as C&I at the building level.

With regard to customer-owned residential chargers, the Straw Proposal provides important guidance directing each EDC to develop EV-TOU rates. We agree that utilities should consider EV-only TOU rates, which will allow for customers to shift their charging to off-peak hours, without affecting those customers who are unable to shift all of their charging to off-peak times.

Alternatively, the residential customers who reside in MUDs face a different set of considerations, as the BPU notes. Currently, MUDs are placed on C&I rates, which can drastically increase charging costs for residents. As one of the major benefits of transportation electrification is reduced fueling costs, utilities need to consider ways in which to secure these reduced fueling costs, regardless of their home type. However, we caution the Board and utilities from subscribing to the notion that MUD customers must be at perfect "price parity" to single-family home customers, which would be complicated and nearly impossible to implement without violating core rate design principles. Instead, we encourage the Board to look at the recent examples of long-term, sustainable C&I EV rate reform put forth by PG&E and SDG&E, which both proposed new cost-based rates designed to improve the economics of public charging, multi-unit-dwelling charging, and M&HD vehicle charging.[26] The Board should follow the lead of PG&E and SDG&E to put similarly sustainable solutions in place through new cost-based rates that reflect the unique characteristics of EV load, improve the economics of transportation electrification, and encourage charging behavior that supports the operation of the electric grid.

b. C&I rates

The Straw Proposal rightly notes concerns with demand charges, especially at public charging stations. As was noted during the technical conference, demand charges can be extremely costly, and make charging stations economically infeasible, especially during the nascent EV market when stations may be underutilized. While we agree with the notion that demand charges need to be addressed as they relate to charging stations, we differ as to the

[26] https://www.nrdc.org/experts/miles-muller/reforming-rates-electric-trucks-buses-fast-chargers; https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M318/K552/318552527.PDF

appropriate approach. The Straw Proposal recommends that EDCs should "either waive demand charges associated with EV charging or develop a rebate methodology that ensures that the effective $/kW-hour rate… remains below a specified 'set-point.'"[27] However, this is a blunt and short-term solution that does not address the larger issues concerned with demand charges and placing charging stations in the same rate class as commercial and industrial buildings. The Board should look to implement long-term, sustainable solutions in lieu of open-ended subsidies and band-aid approaches.

It is important to note that even with high EV penetration, some societally beneficial charging locations will never experience the high levels of utilization that would enable the site host or fleet operator to assimilate current demand charges and build a viable business model. Consequently, time-limited demand charge relief is not a viable long-term solution to overcoming the issues demand charges pose to site-hosts and fleet operators.

It is critical to develop rates that more accurately reflect the unique characteristics and costs of EV charging, rather than forcing stations to take service on commercial and industrial rates designed for large buildings and factories. Rate designs for high-powered transportation electrification use cases should impose demand charges only to the extent absolutely necessary, and instead recover costs through more predictable rates where possible.

Synapse Energy Economics recently released a report on best practices for C&I EV rate reform. In its report, Synapse notes that "[t]raditional C&I rates were generally designed for large buildings, rather than for public fast charging of passenger vehicles or for depot charging of truck and bus fleets" and those rates ``do not reflect the unique costs or flexibility of EV charging and can charge commercial EV customers much more than their true cost of service." Time-limited discounts are not a sustainable solution, and utilities and regulators should develop new C&I rates designed with EV use cases in mind that are both cost-reflective and take advantage of the unique characteristics and flexibilities of EV load. Synapse offers the following principles for C&I rates:

- Rates should promote efficient use of fixed system resources, which will reduce rates for all utility customers;
- Rates should be easy to understand and predictable;
- Rates should be designed with end users in mind;
- Time-varying volumetric rates are generally preferable to demand charges;
- Non-coincident peak demand charges should generally be avoided;
- It may be appropriate to set rates to recover marginal costs rather than embedded costs; and

[27] Straw Proposal at 12-13.

- Programs that rely on price signals inherent in rate design to deliver grid and user benefits should ensure users actually see those price signals.

Synapse recommends time-of-use energy charges or critical peak pricing over coincident demand charges for recovering the costs of shared infrastructure, since energy charges better capture the duration of time that a customer is using that infrastructure. And Synapse cautions that, while limited non-coincident demand charges may be appropriate for recovering distribution infrastructure costs sized to meet the maximum demand of a single customer, "non-coincident demand charges are often set too high and recover costs that are not truly driven by individual customer peaks." We urge the Board to consider Synapse's recommendations in moving forward with new C&I rate design, including the prioritization of time-varying volumetric rates over demand charges and to avoid non-coincident peak demand charges altogether.

8. Interoperability

To prevent against stranded assets and ensure the Make-Ready Program stays up to date on standards and technology, the BPU should require that *"qualifying EVSEs <u>actively utilize</u> open access standards for communication of data between the EVSE and the back-end network."*[28][1] This would align with language and requirements recently adopted by the California Public Utilities.[29]

This is essential because EV charging companies could potentially install EVSEs with software that technically has or uses (i.e. is compatible with) open communications protocols such as the Open Charge Point Protocol (OCPP), but which still require proprietary extensions that close these EVSEs off from other networks. Alternatively, they could install EVSEs with these capabilities, but have this functionality turned off or disabled. In such cases, a charging company could potentially leave the market and abandon the EVSE without activating the open standards, and other companies would not be able to assume operation of the station. Accordingly, the Board should require that the EVSEs not merely be compatible with open access standards for communication of data between the EVSE and the back-end network, but that they have those open access standards installed and utilized on the EVSE at the time of deployment.

[28] California A. 18-07-020
[29] *Id.*

III. **Conclusion**

The Commenters appreciated the opportunity to provide input on the Straw Proposal and applaud the Board for moving forward on a program to rapidly expand New Jersey's EVSE infrastructure. The state, EDCs, and EVSE companies all have critical roles to play for New Jersey to meet the ambitious targets contained in the EMP, GWRA and PIV Law. As the Board further develops its Straw Proposal, the Commenters urge the Board to act with an open-mind and prioritize the principle of flexibility that will allow New Jersey to electrify its transportation sector rapidly and equitably.

Sincerely,

Environment New Jersey
Isles, Inc.
The Natural Resource Defense Council
The Nature Conservancy- NJ Chapter
New Jersey Conservation Foundation
New Jersey League of Conservation Voters
New Jersey Sustainable Business Council
Sierra Club
Tri-State Transportation Campaign

PORT AUTHORITY NY NJ
AIR LAND RAIL SEA

June 17, 2020

New Jersey Board of Public Utilities
New Jersey Electric Vehicles Infrastructure Ecosystem 2020 Straw Proposal
Comments from the Port Authority of New York and New Jersey

The Port Authority of New York & New Jersey (Port Authority) builds, operates and maintains infrastructure critical to the New York/New Jersey region's trade and transportation network. These facilities include the country's busiest airport system, marine terminals and ports, the PATH rail transit system, six tunnels and bridges between New York and New Jersey, the Port Authority Bus Terminal in Manhattan, and the World Trade Center site. For more than nine decades, the Port Authority has worked to improve the quality of life for the more than 18 million people who live and work in the New York and New Jersey Metropolitan Region - a region that supports 9.2 million jobs.

In October 2018, the Port Authority embraced the Paris Climate Agreement, making it the first US transportation agency to do so. The Port Authority is committed to reducing emissions associated with our facilities and improving air quality for neighboring communities. This includes a variety of innovative programs and initiatives to conserve energy, increase our use of renewable energy, and transition vehicles and equipment from fossil-fuel to zero-emissions models. Included in the Agency's roadmap to meeting its Paris-aligned interim greenhouse gas (GHG) reduction target of 35 percent by 2025 and 80 percent by 2050 are commitments to electrify 100 percent of its airport shuttle buses and 50 percent of its light duty fleet vehicles. In fact, the first electric buses in the state of New Jersey were deployed at Newark Liberty International Airport. By the third quarter of 2020, all of our regular route airport shuttle buses will be electric.

The Port Authority wishes to express its appreciation for the leadership New Jersey is demonstrating to accelerate electric vehicle (EV) adoption on the East Coast. The commitment the State has made to have 330,000 EVs on the road by 2025, and the legislation intended to support this goal, S-2252 (P.L.2019, c.362), recognizes the need for an incentive program for light-duty electric vehicles and at-home electric charging infrastructure. As a bi-state transportation agency that enables the movement of people and goods throughout the region, we believe there is a strong need for cross-sectoral collaborative solutions to address transportation-related emissions. This collaboration should include public agencies such as the Port Authority, private sector companies, and regulated utilities, and should include not just LDVs and residential charging, but other classes of vehicles and charging infrastructure deployments.

The Port Authority respectfully submits the following comments on the various elements of the New Jersey Electric Vehicles Infrastructure Ecosystem 2020 Straw Proposal.

1. **BPU Framework: A "shared responsibility" model for EV infrastructure that promotes appropriate roles for both the Electric Distribution Companies (EDC) and private investors. Under this model:**

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- **EDCs would be responsible for the wiring and backbone infrastructure necessary to enable a robust number of Charger Ready locations, along with the ability to own and operate Electric Vehicle Service Equipment (EVSE) in specified circumstances, as further described in Section V. Program Elements or as otherwise determined by the Board; and**
- **Non-utility entities, which we refer to as EVSE Infrastructure Companies, would be primarily responsible for installing, owning and/or operating, and marketing EVSE using private capital.**

Port Authority Response:

The Port Authority strongly supports the concept of shared responsibility. We believe that, at a minimum, EDCs should provide make-ready infrastructure as an extension of the utility's infrastructure and service and should therefore be eligible for rate recovery. Furthermore, EDCs have all necessary information related to available electrical capacity and potential strains on grid infrastructure and possible required upgrades to facilitate and accelerate infrastructure deployment. While make-ready is a natural fit for EDCs, the Port Authority also believes that, especially in a capital-constrained post-COVID environment, it also makes sense for EDCs to be providers-of-last resort for EV infrastructure to ensure NJ stays on track to meet its EV objectives, and to catalyze the market – bringing costs down for users and other providers. Aside from EDCs acting as providers-of-last-resort, the BPU framework should seek to leverage the private sector for the installation, and assuming associated technology risk, of the charger installation and management. The Port Authority looks forward to evaluating our permitting requirements where we are the Authority of Jurisdiction to align with New Jersey's revised requirements to reduce the significant delay in approval noted by the industry.

2. **BPU Framework: Funding of the EV Ecosystem, which builds on the shared responsibility model:**
   - **EDCs will invest in, and earn on, the wiring and backbone infrastructure necessary to make locations Charger Ready as well as on any Board-approved EVSE owned by the EDCs; and**
   - **EVSE Infrastructure Companies would expect to see returns from their sales of electric charging equipment and services to the public.**

Port Authority Response:

As mentioned in our response to #1, the Port Authority supports the utility's role as provider-of-last resort, especially with respect to charging deserts where the infrastructure deployment will serve to drive down vehicle conversion costs. Many of the communities around our facilities are charging deserts with high population density and feature multi-unit dwellings

(MUDs) where residents may not have access to EVSE. Furthermore, this infrastructure will support the business model for ride hailing companies or other service providers to go electric. Individual vehicle ownership or access to a personal vehicle is low in these areas, making the infrastructure more essential, but the economics more difficult. The utility's role here cannot be understated. However, the Port Authority views the utility as a provider-of-last resort in the near-term to encourage the development of a market in these locations, not as a long-term opportunity for utilities to provide EV charging services.

In late July 2019, the Port Authority released a Request for Information (RFI) for Electric Vehicle Charging Infrastructure and Supportive Services. The purpose of the RFI was to solicit information from the marketplace on industry best practices, innovative service offerings, and new technologies in preparation for the purchase and installation of new EVSE and services to support the Agency's various commitments towards vehicle electrification. The RFI requested feedback on several electric vehicle charging infrastructure concepts and service models, including private financing of charging infrastructure through Charging-As-A-Service model. After receiving nearly 20 responses from different private companies and conducting interviews of a subset, it was clear that the private industry has developed business models around the private financing of charging infrastructure. However, they will only do so where charger utilization is high and user dwell time is low. This poses a challenge for fleet owners, especially those that require EVSE to be deployed behind their own meter and/or in a campus setting, as is the case with many Port Authority deployments at our airports and other facilities. In many cases, fleet owners cannot guarantee a level of utilization necessary to mobilize private capital.

3. **BPU Framework: A commitment that all communities within the State of New Jersey have equitable access to the EV Ecosystem, which may include allowing EDCs to own EVSE where the private sector is unwilling to provide services.**

   PA Response: Answer included in response above.

4. **BPU Framework: Reform utility rate structures that are acting as barriers to mass deployment of EV infrastructure, including:**

   A strong preference that EVSE serving residential customers operate on a retail rate structure, whether single-family or multi-family dwellings with rate parity between single-family and multi-family customers; and

   - **Reform to commercial and industrial demand charge structures so that the effective cost of electricity for public charging facilities does not exceed an agreed to amount on a per-KW-hour basis."**

Port Authority Response:

The Port Authority believes that rate reform is critical to enabling EV deployment. Demand charges are cost prohibitive and represent a significant barrier to higher-powered EVSE or larger battery deployments. Supporting fleet EV deployment is critical to catalyzing the market for both EVs and EVSE, and can achieve high levels of GHG reduction and improved air quality. Many Port Authority facilities are located in environmental justice (EJ) communities, where improving air quality is a priority. For reasons stated in comment #2, however, there are challenges to fleet owners, such as the Port Authority, in deploying EVSE which include both the up-front and ongoing costs of EVSE installation and operation. Therefore, eliminating or minimizing demand charges and focusing instead on volumetric time-of-use (TOU) rates for EVSE deployed by Commercial & Industrial customers could accelerate adoption and, therefore, scaling of EV fleets, which would have a large societal benefit. Rates designed in this manner should not create a cost shift if TOU rates are cost-based and represent incremental revenues from electricity sales. At a minimum, calibrating demand charges based on charger utilization to ensure efficient allocation of funds is an approach that could help fleet deployments and rationalize high-powered EVSE (DC fast chargers) siting in locations where utilization can be high, such as to serve for-hire vehicles at airports. EV-specific rates should be available to all EV commercial use cases, including fleet charging, workplace charging, and public charging, and should apply to existing and new EVSE. Focus on transparent rate design for all use cases, rather than relying upon short-term EV-related incentives will support development of robust markets and the EV ecosystem.

It should also be noted that while the focus of straw proposal is on Light Duty Vehicles (LDVs) and residential EVSE, Medium and Heavy Duty Vehicles (MHDV) and the need for associated EVSE that meets the operational characteristics and duty cycles of these must be considered in any EV-related policy. Taking this broader view of the market will support development of a comprehensive EV charging ecosystem, and ensure impacts on EJ communities are addressed, for example, buy providing a pathway for electrification of trucks taking cargo from marine port facilities. The Port Authority's 35 percent by 2025 GHG reduction goal relates to direct Port Authority emissions. Our airport bus and LDV electrification goals advance that goal, and also provide a sound platform for engagement with our tenants and customers to address the Port Authority's indirect GHG emissions, which represent 96 percent of the Agency's emissions across all scopes. Ensuring EV policy addresses MHDVs is critical to reducing the Agency's indirect emissions.

5. **BPU Framework: This Straw proposes that the EDCs will include in (or update, as applicable) their EV filings and long term EV plans the additional information discussed below, and further directs all EDCs to file EV plans and proposed EV programs by December 31, 2020, with implementation dates commencing no later than April 1, 2021.**

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Such filings shall include the following information (which does not comprise all relevant information necessary to review and approve such filings):

- **EDC proposals for EV programs should also include the following information, at minimum:**
  - **A list of all airports, seaports, bus and rail terminals owned and/or administered by entities like the Port Authority or New Jersey Transit, or other public carrier;**
  - **A description of the facilities currently serving such locations and a planning-level estimate of the costs to electrify such facilities. If planning level estimates for electrification of such facilities have not been prepared, the EDCs may file a proposed schedule by which they will prepare and file such estimates prior to the approval of any EV program;**

PA Response:

The Port Authority looks forward to growing our relationship with PSE&G as it relates to vehicle electrification, and to supporting their development of a planning-level estimate of the costs to electrify our air, sea, and bus operations. We hope the Board of Public Utilities will work swiftly to approve the related filings utilities have provided to begin implementation and piloting of their proposals. The Port Authority has made significant commitments to decarbonize its operations and vehicle electrification represents a keystone of that approach. While PSE&G is a critical partner, they currently lack the expeditious approval and flexibility to assist in the rapid decarbonization of transportation that we hope will result from this straw proposal.

The Port Authority again commends New Jersey for its leadership in transportation electrification. We look forward to continued collaboration with the NJBPU and various stakeholders to inform policy, rate, and program development to catalyze the transition to a low-carbon economy.

Sincerely,

Christine Weydig
Director
Office of Environmental and Energy Programs

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June 17, 2020

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Aida Camacho-Welch
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RE: New Jersey Electric Vehicle Infrastructure Ecosystem 2020 Straw Proposal
BPU Docket No. QO20050357

Comments of Atlantic City Electric Company

Dear Secretary Camacho-Welch:

1. Introduction

On May 18, 2020, the New Jersey Board of Public Utilities ("BPU" or "Board") established BPU Docket No. QO20050357, opening a proceeding that "will help inform Staff's recommendations to the Board for developing a pathway forward for electric vehicle ("EV") charging infrastructure build-out in the State, and the roles of private and public entities in this endeavor.[1]" On the same date, BPU Staff (herein "Staff") released the New Jersey Electric Vehicle Infrastructure Ecosystem 2020 Straw Proposal ("Straw Proposal"), which presents Staff's viewpoints on the market design elements necessary to "create a comprehensive EV ecosystem that provides consumers with easy access to EV charging infrastructure where they work and play.[2]" Recognizing that exploring these issues must be done in partnership with a diverse group of stakeholders, Staff has invited interested stakeholders to provide comments on its Straw Proposal. Atlantic City Electric Company ("ACE" or the "Company") offers these comments on the scope of this proceeding and thanks Staff for the opportunity to provide its perspective on the emerging and important issues of transportation electrification in New Jersey.

Many of the issues that Staff's Straw Proposal seeks to explore include questions regarding who should construct, own, operate, and pay for the charging infrastructure necessary to make New Jersey a national leader in the adoption of EVs. At a high level, and for the focus of these comments, the Straw Proposal provides a set of policies, including: (1) a standardized approach to EV charging deployment where EDCs invest in make ready components, and EV charging companies invest in, own, and operate chargers on sites; (2) consideration for EDC ownership of charging infrastructure as a party of last resort; and, (3) proposed rate design alternatives to encourage rapid deployment of EV charging infrastructure. Staff argues that the Straw Proposal's policies will contribute to the development of what it refers to as New Jersey's "EV ecosystem," or a comprehensive market that provides consumers with easy access to electric vehicle charging infrastructure.

In summary, while ACE shares the intent to foster a long-term, sustainable EV ecosystem in New Jersey, the Company believes certain policies in the Straw Proposal must be revisited. While Staff's Straw Proposal aspires to establish a comprehensive policy framework for EV infrastructure development, as currently drafted, it falls short in its attempt to address all of the market considerations necessary to promote sufficient deployment of charging infrastructure across the State. Specifically, ACE finds that the Straw Proposal includes several restrictive policies regarding the role of the utility in providing charging infrastructure offerings to accelerate the EV market. In contrast with Staff's recommendations as presented in the Straw Proposal, ACE believes that a broader role for utilities will be necessary if New Jersey is to succeed in achieving its goals of a widespread deployment of EV charging infrastructure and subsequent EV adoption, as set forth in both the Energy Master Plan ("EMP") and as recently signed into law in the plug in vehicle legislation ("S2252"). At a time in which New Jersey requires a robust and comprehensive approach to contribute to the acceleration of its EV market, ACE believes that Staff's shared responsibility business model is unduly limiting. While the make ready model may be effective in accelerating EV charging infrastructure deployments in some segments of the market, the complexity and nuance of each segment must be addressed with a range of market development strategies and investment models. ACE also believes that as a utility, it is uniquely positioned to provide innovative rate design solutions to accelerate EV market growth. Overall, ACE believes that enabling utilities to leverage all of the tools at their disposal, including all roles of utility investment in charging infrastructure and rate design initiatives, will be critical to attaining State goals and realizing the benefits of transportation electrification for New Jersey ratepayers.

2. New Jersey's policy foundations and market drivers require a clear and wide-ranging role for utilities in deploying charging infrastructure to achieve an EV ecosystem

As Staff's Straw Proposal notes, New Jersey recently established a set of key policies on the topic of EVs that inform the context of this discussion. Namely, the State has (1) signed the Zero-Emission Vehicle ("ZEV") Program Memorandum of Understanding, (2) finalized an EMP that includes specific targets for electrification, and (3) signed into law S2252, setting goals and establishing incentives for the EV market. Importantly, it is ACE's firm belief that in order to achieve the intent of these mandates, programs, and actions, New Jersey must establish and implement a strong role for the utility in transportation electrification. Unfortunately, as highlighted in more detail in section 4 of the Company's comments, the Straw Proposal's

recommendations conceive of a limited role for utility investment in the EV charging ecosystem, which ACE believes will prevent the State from meeting these newly instituted and aggressive objectives.

Overall, the new goals (330,000 light duty vehicles on the road by December 31 2025, and at least 400 DC Fast Chargers for public use and 1000 Level Two chargers deployed by that same date), guidance, and incentives offered in New Jersey demonstrate a clear and urgent approach to transportation electrification that require all stakeholders and market participants, including utilities, to provide solutions to accelerate market growth. The intent behind that approach becomes more evident when looking at the current State of New Jersey's EV market, and in particular, the adoption rate observed among ACE customers. There are currently 29,658 EVs registered in the State, including both battery electric and plug-in hybrid vehicles. According to the U.S. Department of Energy's Alternative Fuels Data Center ("AFDC"), there are 669 public Level 2 ports and 121 public DC fast charging ports statewide, many of which do not meet the technical requirements established for public charging in law. In the counties served in ACE's service territory, there are 2,974 registered EVs.[1] Per AFDC data, to charge those vehicles, ACE customers have access to four public DC fast charger and 26 L2 charger locations within the service territory.[2] As range anxiety, or lack of access to public charging solutions, is a key factor in driving EV adoption among the State's drivers, the relatively low distribution of available public charging locations has and continues to pose serious long-term challenges to the growth of New Jersey's EV market. This is especially the case in ACE's service territory. The recently passed EV law establishes goals for the development of public charging, including high power public fast charging, that is crucial to overcoming this consumer adoption barrier, and investment from the private markets are not on track to attain.

As these figures show, in order to carry out the intent and benchmarks set forth in the ZEV Program, the EMP, and S2252, New Jersey has less than five years to more than quadruple the deployment of public charging infrastructure and achieve ten times the EV adoption observed today. As evidenced in other market leading states, charging infrastructure is needed in other segments beyond public chargers – if customers don't have a place to charge, they won't buy an EV. Achieving these aggressive goals for EV sales and EV charging infrastructure deployment requires not only utility investment in charging infrastructure, but direct planning, facilitation, and ownership of charging assets in a strategic and comprehensive manner, leveraging the abilities of all market stakeholders. It is in this context of state- and market-driven demands that ACE filed its comprehensive Voluntary Program for Plug-In Vehicle Charging.

ACE's pending plug-in vehicle proposal ("In the Matter of the Petition of Atlantic City Electric Company for Approval of a Voluntary Program for Plug-In Vehicle Charging", Amended Petition, BPU Docket No. EO18020190) advances 13 distinct, segment-specific offerings to not only address the need for public charging in ACE's territory, but to provide measures to encourage and provide charging availability at home, around town, and between towns. These measures include incentives for residential, multi-unit dwelling, workplace, and public charging, make ready

[1] Atlas Public Policy, "EV Hub – New Jersey 12/31/2019 Data," https://www.atlasevhub.com/materials/state-ev-registration-data/.

[2] U.S. Department of Energy, Alternative Fuels Data Center. Accessed June 14, 2020. www.afdc.energy.gov.

infrastructure for DC fast charging, rate designs for beneficial electrification, and a limited utility-provided deployment of public charging infrastructure. This broad spectrum of offerings is designed to meet the same policy goal as the Straw Proposal, to encourage a lasting EV ecosystem. These offerings also address two equally important goals: providing the charging infrastructure needed to enable EV adoption, but also residential managed charging programs that will help mitigate impact on the grid. The portfolio approach ACE proposes leverages the strengths of various business models (incentives, make ready, and utility ownership) and market participants to meet the challenges of each market segment. ACE believes that this comprehensive, but flexible, approach must be considered and incorporated into the Straw Proposal as a core principle.

3. The "Shared Responsibility Model" is unnecessarily limiting to utility role in charging infrastructure deployment at a time with the market's needs are diverse and expansive.

At this nascent stage in the market, the role of the utility must be both broad-based among market segments yet nuanced to meet the needs of each different part of the EV ecosystem the Straw Proposal puts forward. The needs of residential charging are different than those of public DCFC, which are different than those of fleet charging, and so on. ACE believes that the Straw Proposal unnecessarily applies a one-size-fits-all approach to the utility role in charging infrastructure deployment based around make ready investment, when in fact the needs in the market are much wider and more complex. In many cases, the proposed utility programs will help attract and leverage private infrastructure investment, but this benefit of utility involvement is not adequately represented in the Straw Proposal policy framework.

The Straw Proposal presents a vision of the EV ecosystem in line with the policy ambitions advanced in the State, but its utility role methodology lacks a recognition of the complexity of the EV market segments and how to stimulate further buildout of EV charging infrastructure in each. Not all market segments will be evenly and perfectly suited for a make ready model, as the Straw Proposal dictates. Instead, all models of utility investment will be required and must be tailored to the needs of the market, both at this point in time and dynamically as the market grows. ACE's portfolio approach is designed to meet the needs of various segments of the market with different measures to effectively address market gaps.

ACE agrees with the Straw Proposal's position that there is a role for private investment in charging infrastructure. In fact, many of the offerings in ACE's Plug-in Vehicle Program have key elements of private investment, primarily in meeting the match of an incentive. But the Straw Proposal suggests that nearly all segments of the market should be reserved for private investment at a time when it may not materialize uniformly or expeditiously enough to meet the State's goals. Private investment in charging infrastructure is itself not a static feature of each segment of the market, and even within segments may vary from place to place. For example, the level and extent of private investment in charging infrastructure may face impacts due to depressed economic conditions, observed lower adoption of EVs, and perceptions of an inadequate business model, locally and nationally. As such, it is ACE's position that limiting opportunities for the utility's role across multiple segments of EV charging infrastructure, including ownership and operation of charging stations, may limit growth rates in both EVs and associated infrastructure. By employing various models of investment across all parts of the EV ecosystem, utilities can attract private

capital to New Jersey's market for the long term, helping to bridge the market to more scaled and sustainable conditions.

The Straw Proposal suggests that New Jersey should attract private capital, minimize risk of ratepayer investment in stranded assets, and ensure the benefits of EV investments are shared by all ratepayers. ACE submits that these are in fact benefits to regulated utility investments in EV infrastructure, of which the Board oversees and reviews to determine appropriateness and effectiveness, and that these utility investments can be done in a form that is complementary with private investment. Regardless of the utility investment model employed, the Board can ensure technology standards are met and key targets for program success are measured and reported.

4. Considering the utility as a party of "Last Resort" for deployment of EV charging is inconsistent with the Administration's objectives and the current State of the New Jersey EV market.

ACE agrees with the view expressed in the Straw Proposal on the need for equitable distribution of EV infrastructure and believes that it is well suited to ensure all communities have access to both EV infrastructure technology and its associated benefits. This need is evident across multiple charging segments, especially including multi-family and public charging facilities in the "charging deserts" that are not currently well served by private investment. This is especially critical for ACE customers, who, due to the more rural nature of the territory, currently lack widespread availability of public charging options. But, the Straw Proposal's position that areas of the market must fit a specific definition to qualify for utility-owned charger deployment is simplistic and restrictive and cannot adequately account for the nuances of real-work projects. There are many factors that contribute to the overall decision to install charging infrastructure in a particular location, including: availability of favorable distribution system assets, local EV registrations, site host business considerations, and traffic volumes in a given area. All of these factors interplay to comprise a fluid and evolving business case. The definition of a "last resort" is therefore highly subjective and dynamic, changing constantly over time with the ebb and flow of the market. In addition, the Straw Proposal implies a "wait and see" approach to determining "last resort," when in fact the market faces unmet need for charging infrastructure now. Rather than seek a definition or gauge the maturity of the market on an objective basis, ACE suggests that that the merits of each investment be weighed at the time of its proposal and in context.

As a function of the ambitious growth rate required in New Jersey's market, the State should be expanding, not restricting, the kinds of investments utilities can make in EV charging infrastructure. Given the aggressive policies established in the State compared against today's realities, the market is truly at a foundational level. In contrast to a last resort, ACE's proposal to own and operate a limited, but essential amount of charging infrastructure should be viewed as a first mover in its territory. If implemented, this initial capital deployment would serve to increase local EV adoption, accelerating the growth of the EV market, which in turn would provide the necessary signals to incentivize further buildout from non-utility entities. ACE believes that the Straw Proposal should be amended to recognize this first mover role that utilities can play in not only addressing current market gaps, but also helping to catalyze and motivate private capital concurrently.

5. The utility is uniquely positioned to deploy effective, targeted, and appropriately structured rate design measures that encourage private investment and in turn contribute to the accelerated growth of the EV market

ACE agrees with Staff's views as expressed in the Straw Proposal around the role of effective rate design in the development of a robust EV charging ecosystem. As a policy tool, effective rate design can not only achieve the objective of recovery of the necessary revenue requirement associated with providing electric service to customers, but also encourage customers to make rational, economically efficient decisions regarding the ways they choose to manage their energy usage. To this end, ACE believes it is uniquely positioned to leverage this policy tool to encourage increased EV adoption, thereby contributing to the reduction of structural barriers to widespread EV deployment across the State.

ACE agrees with Staff's view that EDCs should offer voluntary time-of-use ("TOU") rates for EV charging, which rewards consumers who elect to charge during off-peak periods. As such, in its pending filing with the BPU, ACE has proposed several TOU rate offerings to both encourage off-peak charging and gain greater insights into charging activities. While ACE acknowledges Staff's recommendation encouraging EDCs serving residential customers to offer a single retail rate structure with rate parity between single family and multi-family dwellings, it is ACE's position that establishing a single rate for these similar, but different customer classes would be contradictory ACE's mandate is to apply the principle of cost causation in its rate design. The rates in New Jersey for ACE customers are based on historical embedded system costs, and it is ACE's position that all customers should pay rates that reflect this same basis. ACE believes its current rates are cost-based and achieve the goal of sending the appropriate price signals to customers to encourage economically efficient charging behaviors.

Finally, ACE acknowledges Staff's recommendation to reform commercial and industrial demand charge structures so that the effective cost of electricity for public charging facilities do not result in excessive $/kWh charges. While the existence of demand charges themselves is often characterized as a market factor that results in the hindrance of widespread deployment of EV charging infrastructure and subsequent EV adoption. It is ACE's view that the more pressing market characteristic is one of low utilization. While lower levels of utilization can impose higher demand and customer charge costs on EVSEs, in a market with higher levels of utilization, fixed costs can be spread over greater amounts of kilowatt-hour usage, thus reducing the impact of the demand charge on the overall bill. ACE believes that effectively designed rebate mechanisms are critical in accelerating the growth of a charging market currently characterized by low utilization rates. Through the use of well-designed rebate mechanisms, ACE believes that the desire to maintain cost-based rate structures would remain intact, while simultaneously providing rebates that are designed to facilitate greater EV adoption. As detailed in its filing with the BPU, ACE has recommended the use of a rebate mechanism known as the set point, which aims to fix the price of the overall cost of energy. The proposed strategy is explicitly targeted at attracting and leverage private investment in public fast charging, but is "self regulating" in that it provides only the incentive required to deliver the necessary economic stimulus needed by private investors. This approach provides a strong and appropriate balance between addressing the economic challenges in the public fast charging market while containing impact on ratepayers in a transparent and efficient way. Longer term, when utilization is higher due to more PEVs being on the road,

the level of incentive will naturally decline, and private owner/operators of these public charging stations will transition naturally to a standard commercial tariff.

6. ACE opposes applying minimum filing requirements to cases already open and pending before the Board.

As noted above, the Straw Proposal advances minimum requirements for EDCs to include in EV charging proposals, which makes sense going forward, but certainly not for pending filings. ACE finds that its current proposal pending before the Board provides the necessary information regarding the intent and methodology of each offering. ACE does not believe that its pending petition must be amended or refiled to accommodate new proposed requirements. Further, imposing such requirements at this juncture is improper. ACE initially filed its EV petition in February 2018, following briefings and discussions with Staff and others. Thereafter, the BPU retained jurisdiction over the case and assigned Commissioner Chivukula as the hearing officer. On December 17, 2019, ACE filed an amended petition, again, after consultation with Staff and others. On April 9, 2020, Commissioner Chivukula set a procedural schedule, including an opportunity to file motions, conduct discovery, and evidentiary hearings. At no time since ACE's initial filing did the BPU or Rate Counsel indicate that ACE's filing was administratively incomplete. To now require ACE to amend its application based on standards that did not previously exist would seem to raise due process concerns. Imposing new and unexpected filing requirements on proposals already in mature stages of consideration would be counter to the Straw's stated goal of not delaying progress on the current filings.

7. Conclusion

ACE thanks Staff for the opportunity to provide comments on the Straw Proposal, as it poses several critical policy positions that have implications for the growth of the EV market in New Jersey. ACE looks forward to playing an active role in facilitating the growth of a long-term scalable and sustainable market for EVs and associated charging infrastructure.

Respectfully submitted,

Philip J. Passanante
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Fuel Merchants Association of New Jersey

June 17, 2020

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

RE: DOCKET NO. QO20050357 - IN THE MATTER OF STRAW PROPOSAL ON ELECTRIC VEHICLE INFRASTRUCTURE BUILD OUT

Dear Secretary Camacho-Welch:

Incorporated in 1933 the Fuel Merchants Association of New Jersey represents distributors of branded and unbranded motor fuel to service stations, fleets, marinas, construction, agricultural, and government customers. FMA's members also distribute heating fuel and perform HVAC services.

FMA is also submitting comments on this straw proposal under separate cover as part of a coalition. The purpose of these comments is to address an issue which is outside of the BPU's authority but is nevertheless essential if the State of New Jersey desires to build out EV charging infrastructure, the roadblock municipalities are placing on businesses that wish to currently install EV charging infrastructure.

The straw proposal is not only weighted to benefit EDC shareholders at the expense of ratepayers, it fails to recognize the contribution to EV charging infrastructure that shareholders of existing businesses are willing to make but are precluded from making.

Businesses that already provide the driving public with convenient locations to power their vehicles, have desired, at their shareholders' expense, to invest in EV charging infrastructure, even with the dim prospect of meaningful return on the investment anytime soon. Unfortunately, municipalities have determined that EV charging infrastructure at a retail gasoline service station is not an accessory use at such a location. The result is the business that wants to install EV charging infrastructure must go through the zoning process, adding needleless delay and expense. When the delay and expense are combined with the lack of return on the capital deployed, businesses are not likely make the investment in EV charging infrastructure.

New Jersey must remove these municipal barriers if it hopes to maximize private sector capital investment EV charging infrastructure.

Sincerely,

Eric DeGesero
Executive Vice President

State of New Jersey
DIVISION OF RATE COUNSEL
140 EAST FRONT STREET, 4TH FL
P.O. BOX 003
TRENTON, NEW JERSEY 08625

PHIL MURPHY
Governor

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Lt. Governor

STEFANIE A. BRAND
Director

June 17, 2020

By Electronic Mail
Honorable Aida Camacho-Welch, Secretary
NJ Board of Public Utilities
44 South Clinton Avenue, 9th Floor
P.O. Box 350
Trenton, NJ 08625-0350

Re: In the Matter of Straw Proposal on
Electric Vehicle Infrastructure Build Out
BPU Docket No. QO20050357

Dear Secretary Camacho-Welch:

Please accept for filing the enclosed comments being submitted on behalf of the New Jersey Division of Rate Counsel ("Rate Counsel") in response to the Request for Written Comments issued by the Staff of the Board of Public Utilities for comment on June 3, 2020, with subsequent Public Notice extending the deadline for comments to June 17, 2020. In accordance with the Notice, these comments are being filed electronically with the Board's Secretary at board.secretary@bpu.nj.gov.

Please acknowledge receipt of these comments.

Thank you for your consideration and attention to this matter.

Respectfully submitted,

STEFANIE A. BRAND
Director, Division of Rate Counsel

By: */s/ Brian Weeks*
Brian Weeks, Esq.
Deputy Rate Counsel

BW
Enclosure

cc: All via e-mail:
Joseph Fiordaliso, President
Dianne Solomon, Commissioner
Mary-Anna Holden, Commissioner
Upendra Chivukula, Commissioner
Bob Gordon, Commissioner
Abraham Silverman, Esq., BPU
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Sherri Jones, BPU
B. Scott Hunter, BPU
Rachel Boylan, Esq., BPU
Pamela Owen, DAG

IN THE MATTER OF STRAW PROPOSAL ON
ELECTRIC VEHICLE INFRASTRUCTURE BUILD OUT
BPU Docket No.: QO20050357

Comments of the Division of Rate Counsel

June 17, 2020

Preliminary Statement

Encouraging the electrification of the transportation sector is an important goal, but one that will only be achieved over time and with contributions from many sources. In enacting the PIV Act, the Legislature recognized this and struck a balance between encouraging the adoption of Electric Vehicles ("EVs") and not over burdening the customers of regulated electric utilities. The PIVAct includes broad goals and policies, but provides specifically for only certain limited programs to be paid for out of funds collected from ratepayers via the Societal Benefits Charge. The PIV Act also cites other sources of funding such as the Regional Greenhouse Gas Initiative ("RGGI"), Electrify America Funds and New Jersey Transit funding that may also be used to support this initiative.[1] While the PIV Act was signed into law before the current pandemic and economic downturn, the need for that balance is even greater now, with so many New Jersey households enduring the loss or reduction of income.

Rate Counsel supports the general proposition in the Staff Straw proposal ("Straw", "Straw Proposal") that ratepayer funding, via utility contributions to this effort, must be limited to those tasks that require utility expertise and other tasks only as a last resort.[2] Private equity and funding should be accessed to the greatest extent possible. Other sectors that will benefit from this effort, in particular the transportation sector, should also be asked to contribute.

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[1] Codified at N.J.S.A. 48:25-1 through -11 the "Plug-In Vehicle Act" ("PIV Act") or Electric Vehicle Act" ("EV Act").

[2] "New Jersey Electric Vehicles Infrastructure Ecosystem 2020 Straw Proposal," available at https://www.state.nj.us/bpu/pdf/publicnotice/Notice_Stakeholder_Meeting_EV_Straw_Proposal_5-18-20.pdf.

However, Rate Counsel has some significant concerns regarding how the Staff Straw attempts to accomplish its overall purpose and the process that is being employed to put these policies and programs into place. With respect to process, the Straw does not seem to contemplate the promulgation of regulations, even though it announces new rules that would be applied broadly and are not inferable from the statutory language. It seeks to implement these changes through utility filings with wholly unrealistic timeframes and deadlines. It would simply not be possible to provide due process for the many stakeholders whose interests are implicated by this proposal under the timeframes set forth in the Straw. Moreover, the Straw itself is not being reviewed consistent with due process, as not all interested parties were given an opportunity to comment, and only certain stakeholders were "selected" to speak on panels based on unknown criteria.

Substantively, Rate Counsel has concerns about the Straw as well. Although stating clearly that utilities should only be permitted to construct EV charging equipment as a "last resort," the Straw then asks the utilities to map out where they will build these "last resort" charging stations by December 2020, well before there can be any actual understanding of where the market will develop and lead to privately built and financed stations. Also, though not mentioned in the substantive portions of the Straw, the minimum filing requirements at the end ask the utilities to submit plans to replace school buses throughout the state. This is wholly inappropriate as well as being illegal.

Ratepayers cannot be asked to fund this entire initiative and the Board lacks legal authority to order them to pay for costs beyond that which is used and useful in the provision of utility service. Rate Counsel urges the creation of an EV tariff for customers with EVs so that they may fairly pay for the additional costs that go along with their use of EVs, and to encourage them to utilize managed charging to minimize the burden on the distribution system. The most equitable result here would be for the private market and those who benefit from EV charging to pay as

much of the associated costs as possible. Requiring ratepayers as a whole, many of whom may never be able to afford these luxury vehicles, to subsidize those who can afford them, is wholly inequitable, and is not made up for by the fact that there may be system benefits several decades from now. Rate Counsel urges Staff and the Board to truly limit utility involvement, and thus ratepayer costs, to those aspects of transportation electrification that protect the distribution system and require utility involvement. The rest should be paid for by those who benefit.

Comments

As part of the process to implement the PIV Act, the Office of Clean Energy staff ("OCE", "Staff") of the Board of Public Utilities ("Board", "BPU") on May 18, 2020 circulated the Straw Proposal. Staff also held a webinar on June 3, 2020, at which selected stakeholders were invited to provide verbal comments and an opportunity was provided for questions.

The New Jersey Division of Rate Counsel ("Rate Counsel") provides the following comments on the Straw Proposal which correspond to the Straw's subsections.

I. Introduction [Straw, pp. 1-3]

Before considering socializing the cost of facilitating EV use, a view of the "big picture" is helpful to frame the issues. One view of utility regulation sees regulation as a proxy for market forces where none exist, such as where public utilities operate with exclusive municipal franchises to provide service, in other words, a monopoly. Since a monopoly has no competition to place downward pressure on prices, regulation steps in to ensure that rates are just and reasonable for an essential service like electricity. The ratemaking process ensures that only those costs associated with the provision of utility service are recoverable through rates. Rate Counsel urges the Board to be vigilant to ensure that the costs of EV adoption – not tied to the provision of utility service – are not passed through to ratepayers who do not own or operate EVs.

Today, EVs constitute a very small but growing part of the total new vehicle market. EVs embody the new technology of modern batteries for electric propulsion. EV drivers, in marketing parlance, squarely fall into the category of "early adopters." In a competitive market – not in the utility monopoly realm – early adopters reasonably expect to pay more and typically do pay more to be among the "first," whether it's a color TV, an electric calculator, a personal computer. a cellular phone, a flat screen TV, the latest smart phone, or some other emerging technological innovation of its time. EV buyers are no exception. The models of best-selling brands of EVs range in price from around $37,000 to over $100,000. Clearly, these are luxury vehicles by any measure. Even the lowest priced EVs are considerably more expensive than a new compact family sedan. All are far more expensive than a typical used car. Realistically, there are no low-priced EVs on the horizon and there are not likely to be until there is greater demand. Unlike a natural monopoly like electricity, where it has not been feasible or cost effective for a competitor to build a duplicate, competing system, the prices for electric vehicles should come down as more and more people enter the market and competitors seek to increase their market share. In that circumstance, intervention via regulation would not be needed, and other ratepayers – many of whom do not even own a car – would not be required to absorb through utility rates the socialized costs of early adoption. The proposal here, in the guise of promoting this nascent industry, is to declare that the market has already failed and that the regulators must step in to impose socialized costs. Rate Counsel submits that this finding cannot be made at this juncture and that the focus should be on promoting robust competition to spur the broad adoption of EVs rather than skipping ahead to a monopolistic regulatory model.

Rate Counsel recognizes the potential that EVs have for reducing greenhouse gas ("GHG") emissions tied to climate change. However, ratepayers have already contributed much over the years to energy efficiency ("EE") and renewable energy ("RE") programs designed to reduce the

GHG profile of the electric and gas public utility sector of the economy, and will continue to do so. As the Straw recognizes, the expanded use of EVs will add significantly to electric load.[3] This anticipated EV-related increase in electric load will lead to a commensurate need to reduce the resulting increase in GHG emissions. Thus, the proliferation of EVs will lead to the need for even greater contributions from ratepayers for EE and RE programs to mitigate the EV-related GHG emanating from the utility sector and for distribution upgrades to ensure continued reliability. Requiring more from electric ratepayers who do not drive EVs while seeking no contribution from the transportation sector and not enough from those who can afford EVs is inequitable and potentially unnecessary.

Finally, unlike EV owners, electric ratepayers have no alternatives. Note that by their very nature, EVs are alternative fuel vehicles, as compared to modern household electric refrigerators and washing machines that are dependent on electricity and a permanent connection to the utility distribution grid. The cost burden placed on other electric ratepayers who have no reasonable alternatives must be considered, particularly at a time when unemployment levels are very high, as they are now. Therefore, socializing the costs of EV charging among all electric ratepayers does not appear to be a reasonable concept now.

As set forth herein, the confounding of electric public utility rate regulation and EV promotion is fraught with numerous policy and legal issues which impose constraints on utility involvement in this area. That said, there are reasonable ways to promote and support EV adoption within these constraints. The best way to simultaneously accelerate the development of an EV ecosystem without unjustly burdening other ratepayers is to establish separate tariffs for EV charging. This is discussed in detail in Section V(D) of these comments.

[3] Straw, p. 6.

II. Statutory Authority [Straw, pp. 3-4]

A. Legal Issues

The Board must ensure that any EV initiative is consistent with its statutory grant of authority and with public utility law.[4] Rate Counsel does not believe that New Jersey's electric distribution companies ("EDCs") may or should be in the business of constructing, owning or operating EV chargers, or purchasing and donating EVs, on a rate regulated basis, and opposes imposing the costs for such investments on ratepayers as a whole. The PIV Act[5] does not authorize the Board to allow regulated utility investments in public charging. The PIV Act identifies goals for the adoption of EVs in New Jersey, but the specific measures it authorizes differ from the Straw Proposal. While draft versions of the PIV Act included provisions allowing EDCs to invest in EV infrastructure and recover those investments from ratepayers, the Legislature removed those provisions from the bill before it was finalized. The PIV Act that was ultimately passed by the Legislature and signed by the Governor authorizes the Board to offer incentives of specific amounts, using specific sources of funding, to promote the purchase of EVs and the installation of in-home EV chargers. The Act provides that the Board shall administer a "Plug-in Electric Vehicle Incentive Fund" ("PIV Fund"), using funds collected via the Societal Benefits Charge ("SBC") and Regional Greenhouse Gas Initiative ("RGGI"), further appropriations by the Legislature and the investment income of the PIV Fund itself to fund up to $5000 in rebates for the purchase of electric vehicles.[6] The Act also allows the BPU to create a program paid for through SBC funds to provide

[4] On these and other bases, Rate Counsel has moved to dismiss both of the EDCs' EV-related filings now pending before the Board. I/M/O Petition of Atlantic City Electric Company for Approval of a Voluntary Program for Plug-In Vehicle Charging, BPU Docket No. EO18020190; I/M/O Petition of Public Service Electric and Gas Company for Approval of its Clean Energy Future – Electric Vehicle and Energy Storage ("CEF-EVES") Program on a Regulated Basis, BPU Docket No. EO18101111.

[5] N.J.S.A. 48:25-1 through -11.

[6] N.J.S.A. 48:25-7.

up to $500 for in-home chargers. There is no mention of any authority for the BPU to authorize the utilities to implement additional programs and charge the costs of those programs to ratepayers.

Although the PIV Act does authorize the Board to establish EV-related programs pursuant to existing statutory authority,[7] there is no authority in any other existing statutes that allows BPU to authorize ratepayer-funded charging stations. EDECA only addresses BPU authority to allow programs related to the provision of safe, adequate and proper service.[8] It specifically limits the ability of regulated utilities to perform "competitive services," which are defined as services outside BPU's traditional jurisdiction over distribution and transmission monopolies.[9]

Other existing statutes also do not authorize the BPU to approve ratepayer-funded charging stations. While N.J.S.A. 48:3-98.1 allows utilities to seek approval for energy efficiency and renewable energy programs, EV programs are not energy conservation or efficiency. To the contrary, the 2019 EMP anticipates that electrifying the transportation industry will cause a large increase in the demand for electricity.[10] Therefore, the construction and ownership of charging stations by EDCs is not authorized under N.J.S.A. 48:3-98.1.

New Jersey public utility law has developed safeguards for the respective property rights and obligations of ratepayers and public utility companies. An EDC may recover only the fair value of prudent investments in utility property that is used and useful in providing public utility service.[11] Public utility service must be safe, adequate and proper.[12] Utility rates must be "just and

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[7] N.J.S.A. 48:25-3(b).
[8] N.J.S.A. 48:2-13(d).
[9] N.J.S.A. 48:3-51, -56, -58 and -50.
[10] State of New Jersey, "2019 New Jersey Energy Master Plan, Pathway to 2050," available at https://nj.gov/emp/docs/pdf/2020_NJBPU_EMP.pdf, p.176.
[11] See e.g., In re Proposed Increased Intrastate Industrial Sand Rates, 66 N.J. 12, 22-24 (1974); I/M/O Petition of Pub. Serv. Coordinated Transp., 5 N.J. 196, 217 (1950); Atlantic City Sewerage Co. v. Bd. of Pub. Util. Comm'rs, 128 N.J.L. 359, 365-66 (Sup. Ct. 1942); Duquesne Light Co. v. Barasch, 488 U.S. 299, 307 (1989); Smyth v. Ames, 169 U.S. 466, 547 (1898).
[12] N.J.S.A. 48:2-23.

reasonable."[13] A related principle is that costs should be allocated to the party who causes the utility to incur them, i.e., the "cost causation" principle. In other words, a party that wants and will benefit from a public utility investment or service should pay for it.

Applying these principles quickly exposes the troubling portions of the Straw Proposal. The provision of electric transportation equipment is not a public utility function, so purchasing or subsidizing the ownership or use of an EV will not provide a public utility service. An EDC certainly may not use ratepayer funds to purchase an electric school bus and donate it to a school district or their transportation contractor, nor donate to the school or contractor the incremental cost of an electric school bus. Such equipment would not be used and useful in providing public utility service. The same principles prohibit using ratepayer funds to purchase electrically powered motor vehicles or other equipment to be owned and used by a port authority, transportation agency or other entity. Nor should ratepayers be asked to shoulder the costs of EV-related investments that the competitive market deems risky, due to the specific location or technology. If they are too risky to justify private investment, they may not be prudent utility investments for which ratepayers as a whole may be charged.

Because purchasing an EV costs thousands of dollars more than a comparable motor vehicle with an internal combustion engine, EVs remain an expensive novelty product for higher-income consumers. It is not just or reasonable or equitable for lower-income ratepayers who do not own an EV, and who are unlikely to own one in the near future, to subsidize infrastructure that primarily benefits high-income early adopters of EVs.

Rate Counsel does not object to allowing utilities to invest in, and earn on, the wiring and related "backbone" infrastructure necessary to make locations "charger ready," depending on the work to be done. This is reasonably consistent with the traditional utility function of ensuring that

[13] N.J.S.A. 48:3-1.

EDCs provide adequate distribution system infrastructure to serve their customers. However, these costs should to the extent possible be borne by EV owners and EVSE companies through their EV-only tariffs. Moreover, where a charger ready installation presents risk, such as a location where it may not be profitably used, the utility customer who requests the installation should bear the risk by paying an appropriate deposit to be repaid consistent with the Board's Main Extension Rules.[14]

B. Procedural Issues

The stakeholder process being used to review the Straw Proposal needs to be expanded. It forms an incomplete and inadequate basis for launching a Board-regulated program of EDC involvement in EV-related industries. Simply put, the Straw Proposal process denies interested parties their right to participate with notice and an opportunity to be heard. The Board has a "duty to provide clear notice that would enable a meaningful opportunity for comment" in order to "satisfy its basic administrative law obligation to act with transparency through the provision of prior notice and opportunity for comment."[15]

While a public "stakeholder" meeting was conducted, that meeting consisted of select panel members making presentations on requested topics. It was not an opportunity for interested parties to comment on what they thought of the Straw Proposal. Moreover, the process of selecting panelists was opaque. While Staff stated that they would endeavor to ensure the panels represented various interests and diverse opinions, constituencies and business models, the basis for selecting or rejecting certain individuals is unknown. Parties not selected as panelists were offered the opportunity to ask questions and make public statements, "time permitting."[16] The result is that

[14] N.J.A.C. 14:3-8.1 to-8.14.
[15] In re Provision of Basic Generation Service for the Period Beginning June 1, 2008, 205 N.J. 339, 344 (2011).
[16] I/M/O Straw Proposal on Electric Vehicle Infrastructure Build Out, BPU Docket No. QO20050357, New Jersey Electric Vehicles Infrastructure Ecosystem 2020 Straw Proposal, May 18, 2020 Public Notice, pp. 14-15.

parties with a significant interest in the outcome of this matter were denied the opportunity to present their comments as part of a panel.[17]

Rate Counsel also believes the schedule set forth in the Straw Proposal is unrealistic and cannot be undertaken consistent with due process. The Board currently has before it two major, separate and different EV-related filings by EDCs that are fundamentally incompatible with the Straw Proposal. For example, both proposals call for ratepayer-funded charging stations well beyond those that can be considered as a "last resort." Under the procedural schedules for those EDC EV matters, it is unlikely that they will be decided before the end of calendar year 2020. The Straw states that the EDC petitions should be litigated on a parallel track, but given their inconsistency with the Staff Straw, it is unclear how or whether those cases can be resolved simultaneously without a clear duplication of efforts and waste of resources on the part of the parties and the Board.

Moreover, given the uncertainty created by those significant unresolved matters and the lack of guidance from the Board on the appropriate scope of EDC involvement in EV-related investments, it is unclear whether any of the EDCs will be in a position to file proposed programs by December 31, 2020. It is also unclear how any New Jersey EDC will have sufficient data to identify "last resort" EVSE locations by the end of this year, since it will take at least several years before anyone knows which locations will be built by privately funded market participants.[18] Even if the utilities were able to file petitions consistent with the Straw by December 31, it is highly unlikely the Board can consider those petitions consistent with due process and approve the EDCs'

[17] Among the excluded are key industry participants such as ChargePoint, which has been very involved in the Board's EV stakeholder process, is an Intervenor in both of the EDC EV-related proceedings now pending before the Board, and specifically requested participation on the panels.

[18] Identifying EVSE locations also must include action by the DEP, which is to designate those heavily used public roads in the State that are "travel corridors," N.J.S.A. 48:25-2, where DC Fast Chargers are to be located. N.J.S.A. 48:25-3.

EV-related programs by April 1, 2021, a mere 90 days later. This timeframe does not allow sufficient time for Board Staff and interested parties to obtain discovery, file testimony or otherwise litigate these petitions if they are contested pursuant to the Administrative Procedure Act ("APA").[19] This problem is compounded by the fact that Staff proposes having all utilities file their proposed EV programs for Board review on the same schedule. This will be extremely burdensome to all interested parties, including Board Staff and Rate Counsel, and does not allow for the procedural requirements of the APA to be met.

Finally, if the Board decides to adopt the recommendations in the Staff Straw proposal, the measures set forth in the Straw Proposal require rulemaking. They are meant to be broadly applicable, uniformly applied, and prospective. The provisions are not based on any previous statute or Board standard, and they set a general administrative regulatory policy.

While New Jersey agencies enjoy great leeway when selecting among procedures to fulfill their statutory mandates,[20] for some types of actions rulemaking is required.[21] The New Jersey Supreme Court has established criteria for determining whether an administrative determination constitutes rulemaking. These elements, if present, define an administrative action as a rule which, in order to be valid, must be promulgated in accordance with the procedures governing rulemaking as provided by the Administrative Procedure Act.[22]

> An agency determination is considered an administrative rule if it:
>
> (1) is intended to have wide coverage encompassing a large segment of the regulated or general public, rather than an individual or a narrow select group;
> (2) is intended to be applied generally and uniformly to all similarly situated persons;

[19] N.J.S.A. 52:14B-1 to -31 and 52:14F-1 to -23; see, N.J.A.C. 1:1-1 et seq.; N.J.A.C. 1:14; N.J.A.C. 14:1-8.1.
[20] In re Provision of Basic Generation Service for the Period Beginning June 1, 2008, 205 N.J. 339, 347 (2011).
[21] Metromedia, Inc. v. Director, Division of Taxation, 97 N.J. 313, 331-32 (1984).
[22] N.J.S.A. 52:14B-1 to -31 and N.J.S.A. 52:14F-1 to -23; 97 N.J. at 328.

> (3) is designed to operate only in future cases, that is, prospectively;
> (4) prescribes a legal standard or directive that is not otherwise expressly provided by or clearly and obviously inferable from the enabling statutory authorization;
> (5) reflects an administrative policy that (i) was not previously expressed in any official and explicit agency determination, adjudication or rule, or (ii) constitutes a material and significant change from a clear, past agency position on the identical subject matter; and
> (6) reflects a decision on administrative regulatory policy in the nature of the interpretation of law or general policy.[23]

While not all factors need be present to require rulemaking, here the Straw Proposal presents all six factors requiring rulemaking. The current process in the Straw Proposal is clearly not an appropriate substitute for rulemaking. Moreover, while the PIV Act authorizes the Board, in consultation with the DEP, to promulgate regulations to implement it,[24] it does not supplant the provisions of the APA that require rulemaking for agency action that meets the Metromedia standards.

III. Background on Terminology [Straw, pp. 4-5]

Rate Counsel recommends clarifying the terminology in the Straw. Some terms are undefined and others are confusing or contradictory. For example, the Straw's definition of "community location" seems to contradict the PIV Act's definition. The Straw's definition of "community location" adds the word "travel," which results in allowing "corridor" locations located within one mile of a "travel corridor" roadway to be included among "community" locations. But the PIV Act's definition excludes "corridor" locations from "community" locations. N.J.S.A. 48:25-2. The terms "operational" and "poor performing EV infrastructure companies" are also vaguely defined and should be clearly defined by rule. Other undefined terms include "evacuation routes" and market "maturity."

[23] 97 N.J. at 331-32; see also I/M/O the Board's Review of the Applicability and Calculation of a Consolidated Tax Adjustment, Docket No. A-1153-14T1 (App. Div. Sept. 18, 2017) (unpub.).
[24] N.J.S.A. 48:25-11.

IV. Objectives Underlying this Straw Proposal [Straw, pp. 6-7]

See Section I, Introduction.

V. Program Elements

A. The "Shared Responsibility" Business Model for Ownership, Maintenance and Advertising of EV Infrastructure. [Straw, pp. 7-8]

Rate Counsel generally supports the Straw's "shared responsibility" model, whereby EDCs are responsible for distribution grid and "make ready" work, and EVSE Operators are responsible for the ownership and operation of charging station equipment. However, Rate Counsel's support for the shared responsibility model is conditioned upon setting limitations on ratepayer cost responsibility, establishing limitations on EDC involvement in EVSE operation and ownership, and the adoption of EV-only rate tariffs. These conditions are discussed in detail in the within comments. Further, as a general guiding principle, ratepayers who do not own or operate EVs should not bear the costs of building the "EV Ecosystem."

In sum, Rate Counsel generally agrees that the primary role of EDCs should be "backbone infrastructure" for charger ready locations. This infrastructure provides substantial benefit to EV owners and should be funded through each EDC's "EV-only" tariff, described more fully in Section V(D) of these comments. With very few exceptions, non-utility entities should be responsible for installation of EV chargers, whether they be private EVSE companies, building or business owners, residents, or unregulated affiliates of EDCs.

1. **Proposed EDC Role in the EV Ecosystem: [Straw, pp. 8-9]**

The Straw proposes that EDCs should only be permitted to recover the costs of "distribution system upgrades, the costs of making a location Charger Ready, and the costs of any

mapping exercises."[25] Rate Counsel generally concurs that rate recovery by an EDC should be limited to such costs. Rate Counsel does not object to allowing utilities to invest in, and earn on, the wiring and backbone infrastructure necessary to make locations Charger Ready. This is reasonably consistent with a traditional utility function of ensuring adequate physical and operational support for electric customers. More information is needed with respect to mapping costs in order to assess whether such cost are necessary to project system load or for distribution planning purposes. However, in any case, EV-related costs such as make ready work, should to the extent possible be recovered from EV owners and EVSE companies through EV rate tariffs, as described in Section V(D).

Similarly, Rate Counsel agrees that any such potentially recoverable costs should be subject to prudency and reasonableness tests. Rate Counsel maintains that such costs should also be subject to the "used and useful" test described more fully in the comments on Section II (A).

Rate Counsel does not concur with the provision in the Straw that envisions the EDCs determining in their rate recovery filings which costs are eligible for recovery as well as the rate recovery mechanism. The Straw proposes a definition of recoverable costs in utility filings as "investments [which] are otherwise appropriate for recovery through the rate recovery mechanism proposed by the EDC." Rate Counsel maintains that the cost recovery mechanism should only be that methodology approved by the Board and not a method subject to the discretion of the EDC. Further, Rate Counsel maintains that any such cost recovery should be effectuated through a newly created EV rate tariff, as described in Section V(D). Finally, Rate Counsel maintains that there is no compelling reason to depart from the "beneficiary pays" principle for EV costs. Recovery of EV-related cost through an EV rate tariff would also be consistent with the "beneficiary pays" principle.

[25] Straw, pp. 8-9.

Rate Counsel does not agree that EDCs should be authorized to construct or own EVSE. The PIV Act did not direct or authorize the Board to permit EDCs to enter the EVSE industry, nor is there any statutory support for such EDC involvement, as set forth in Section II. The concept of "Last Resort" EVSE is discussed more fully in Section V(C).

2. <u>Proposed Role for EVSE Infrastructure Companies: [Straw, pp. 9-10]</u>

Rate Counsel supports the Straw's designation of EVSE infrastructure companies as preferred owners and operators of EVSE. Rate Counsel also concurs with the Straw proposal that any ratepayer-funded make ready work be conditioned upon public access to the EVSE facility and other criteria.

B. Process for Making a Location Charger Ready [Straw, pp. 10-11]

The Straw would require an EDC to make a location "charger ready" within 12 months upon a request by an EVSE infrastructure companies. Further, the Straw would allow an EVSE Infrastructure Company up to 24 months from when a site is charger- ready until the EVSE is installed on the site.[26] However, as proposed, there is essentially no penalty for EVSE infrastructure companies who, after obtaining the necessary "charger ready" work, elect not to install or operate EVSE at that location. This raises a risk of stranded assets, and there aren't any provisions to prevent such risks. Mechanisms such as penalty provisions or deposit requirements should be considered to mitigate the risk of stranded investment. In any case, rate recovery of EDC make ready work should not begin until the work is "used and useful," which means a fully functional EVSE installation that is open for public access.

The "return" of EVSE to the EDCs raises significant questions that should be resolved. It is unclear what "charger ready" infrastructure would be returned to the EDC. Since the BPU has no

[26] Straw, p. 10.

authority over competitive EVSE providers, how would this return be effectuated? Would this be required by contract with the competitive EVSE provider? How will the costs be addressed? If the BPU requires this "return" of property, it must ensure that it has regulatory authority to do what is proposed, that costs are fairly allocated, and that its actions do not constitute a regulatory taking.

C. Ensuring Equitable Distribution of EVSE [Straw, pp. 11-12]

Rate Counsel fully supports equitable access to the EV Ecosystem for all residents of New Jersey. However, the current reality, and the likely reality for several years, is that individual EV ownership is largely restricted to higher-income residents.[27] The EVs of today are luxury vehicles that cost many thousands of dollars more than equivalent conventional vehicles. Board Staff implicitly recognizes this reality in its description of these areas as "geographic localities within New Jersey where the market is not sufficiently mature to build EVSE on a purely merchant basis." If residents of these areas were able to purchase EVs, there would be a natural market for EVSE that will attract commercial investment, just as there is a competitive market today for gas stations in lower-income regions.

Subsidizing EV charging infrastructure in regions where EV ownership is low to nonexistent does not serve the needs of the residents of these communities. Unlike some other economic activities, EV chargers are fully automatic and do not create a significant number of jobs. At least for the next several years, the primary benefit of locating chargers in lower-income areas is to alleviate the "range anxiety" of other drivers who are passing through. In truth, it is likely that such public chargers will get very little use, as most drivers will charge their vehicles at home or at work. For these reasons, Rate Counsel does not believe that New Jersey's EDCs should be in the

[27] Rate Counsel notes that the definition of "EV Ecosystem" in the Straw Proposal does not appear to be consistent with the use of this term in the body of the document. Rate Counsel recommends a new definition that encompasses the full universe of charging equipment, backbone infrastructure, and EVs throughout New Jersey.

business of constructing or owning chargers on a rate regulated business and opposes imposing the costs for public charging on ratepayers as a whole.

Furthermore, low-income customers should not be subsidizing high-income customers. Simply putting infrastructure in low-income or Environmental Justice ("EJ") areas does not mean that these customers will benefit, since EVs are still more expensive than ICE or even hybrid models, and certainly far more costly than used cars. To provide actual benefits to low and moderate income and EJ communities, the focus should be on lowering emissions in those areas via improvements in public transportation and/or encouraging fleet owners to electrify their vehicles over time at their own cost, or by taking advantage of the rebate program established in the PIV Act. However, low and moderate income customers, who will already be contributing to EE and RE programs to lower emissions, as well as the rebate programs in the PIV Act and the distribution system upgrades that will be needed with broad EV adoption, should not be made to contribute further to subsidize charging stations simply to alleviate the "range anxiety" of much wealthier customers. This is particularly true during these uncertain economic times when many New Jersey consumers are unemployed or have had their incomes lowered.[28]

Further, no specific mechanism has yet been proposed for identifying underserved or "equity" areas for utility investment, although Staff has requested comment in this area.[29] Rate Counsel's position is that "party of last resort" should really mean last resort, and should not mean that some formula is implemented to identify areas before there is an opportunity for a real market

[28] There is also no reliable evidence to support the frequent claim by EV advocates that broad EV adoption will lower costs for all consumers. The ChargeEVC Study, which is often cited for that proposition only assumed a fairly low level of ratepayer contribution to the EV ecosystem. If ratepayers are asked to pay more than what was assumed in that study, the potential savings for all ratepayers is diminished or disappears. Even if some savings does result, it will not be evident on ratepayer bills for a very long time. In the meantime, consumers, many of whom are already struggling, will see their bills go up.

[29] Straw, pp. 11-12.

response, which could be two to three years. If the Board is going to ultimately order utility-funded charging infrastructure in some areas, it is essential that the affected communities be given meaningful input into the process, that community concerns are met, and that care is taken to ensure that the local community benefits directly from each project.

As an alternative approach to funding charging infrastructure in immature markets that cannot support commercial charging stations, the Board could establish a fund for the construction of EVSE in underserved areas and direct the EDCs to condition the provision of charge-ready service on the EVSE provider's contribution to that fund. The New Jersey Department of Transportation ("NJDOT") or some other suitable state agency could then be responsible for allocating such funds for this purpose. In this way, the EVSE suppliers and customers would pay for the alleviation of range anxiety, as opposed to all ratepayers including low-income New Jerseyans who are unlikely to own EVs anytime soon.

D. Rate Reforms Designed to Encourage Adoption of Electric Vehicles [Straw, pp. 12-13]

EV charging presents new and unique load which will result in increased demand for electricity. Further, in order to meet EV vehicle registration and charging station targets, some additional funding may be required. The cost of distribution grid upgrades and make ready work are but a few of the anticipated costs of the EV ecosystem build-out which will need to be funded. As noted throughout these comments, Rate Counsel believes that there should be a specific rate structure for EV charging. This would accomplish the following two very important goals:

a. Ensure that EV users pay the utility-related costs of the EV ecosystem, and that these costs are not socialized to the low-income customers who are unlikely to own an EV in the near future; and
b. Support TOU rates to encourage off-peak charging, or on-site storage to alleviate peak demand.

While Rate Counsel recognizes the particular burden demand charges can place on EVSE that impose infrequent, high draws on the system, Rate Counsel notes that these charges do reasonably reflect the burden that such high draws place on the distribution system and on the ratepayers who fund it. Further, EVSE providers should be incentivized to concentrate charging in off-peak hours, or to implement other solutions to mitigate on-peak loads such as on-site battery storage. Therefore, Rate Counsel does not support the complete elimination of demand charges or the economic signal they represent. Instead, Rate Counsel recommends that demand charges be reduced for EVSE during off-peak time, but not during on-peak times. Users who insist on charging during peak times should pay a premium to reflect the burden they are imposing on the system, and should not be given an effective subsidy for this practice by other ratepayers. Separate EV-only charging tariffs, discussed below, could permit some degree of flexibility to address the structure of demand charges as compared to a typical commercial rate tariff.

Separate EV charging tariffs would address these concerns in a way which offers flexibility to meet the needs of both EV owners and EVSE operators; the actions needed to expand the EV ecosystem; as well as the physical reality and cost of the impact of EVs on the electric distribution grid. Furthermore, a separate EV tariff structure would facilitate a rapid build-out of the EV ecosystem by providing the flexibility to address demand charges and TOU rates, as well as a mechanism to fund "make ready" and other EV-related activities. Moreover, a separate EV charging tariff would not burden other traditional ratepayers who do not own EVs and, unlike vehicle owners, have no substitute energy sources other than grid-sourced electricity.

Further, EV charging tariffs could be developed which correspond to the level of charging voltage, and whether the charging is at a residential or commercial location. At the outset, all EV charging at Level 2 and above could be subject to a unique EV tariff which would roughly correspond to the charging voltage. For example, a Level 2 charger would be subject to, for

instance, an EV-2 Tariff and rates, whereas a DC Fast Charger would be subject to an EV-DCFC tariff and rates, and so on. EV tariffs, in turn, could more easily accommodate unique Time of Use ("TOU") rates and demand charges for EV charging, as compared to attempting to "force fit" EV-friendly TOU rates and demand charges onto existing conventional electric service tariffs. Further, Riders could be added the EV tariff rates to cover the cost of Make Ready work, EV Mapping and administrative costs. This structure follows the principle where rates follow cost causation. With EV charging tariffs, the costs of the EV ecosystem are allocated to EV users.

In addition, the requirement that EV owners apply for service under an EV charging tariff would assist EDCs in evaluating the ability of the existing local distribution grid to handle the added load of EV charging. This would help avoid the possibility of multiple EV chargers appearing on a single circuit without EDC foreknowledge, which could affect reliability if the necessary upgrades are not performed.

Furthermore, well-designed regulation could drive technological development. For example, automotive emissions and mileage regulations were at times "stretch goals" which drove innovation in vehicle pollution controls and efficient design. Likewise, a separate tariff (and metering) for EV charging, with appropriate TOU and demand charges, could spur development of new technologies such as onboard metering and telemetry, vehicle-to-grid ("V2G") systems, and battery storage. Such regulations could drive innovation in the EV and energy sphere.

In addition, EV charging tariffs could more easily address rate parity between residential and multi-family charging than conventional utility tariffs which have a clear delineation between Residential and Commercial (multi-family) rate classes. For example, under an EV tariff the rates for Level 2 charging, based on voltage or other criteria, could be the same for single-family and multi-family Level 2 charging units. In short, EV charging tariffs would provide the flexibility needed to address the unique issues presented by EVs.

An EV charging tariff could also address the conundrum raised by demand charges without resorting to waivers or rebates. Under an EV charging tariff - providing the class revenue requirement is met - energy and demand charges could be adjusted or offset to meet the unique needs of EV charging. However, demand charges should be cost based to the fullest extent possible so as not to distort price signals. For this reason, waivers and rebates should be avoided as well. Both distort price signals by artificially lowering demand charges which could result in the need for costly system upgrades to meet peak demand which would then be socialized to other ratepayers who receive no related benefit. Further, cost-based demand charges would provide an incentive for the development of battery storage and managed charging for customers who seek to avoid the increased charges. Finally, with an EV tariff the cost of any rebates or waivers would be recovered through other elements of the EV tariff customers. For instance, if the Board approves the use of demand charge waivers or rebates, the cost of such mechanisms should be recovered though a rider or other element of an EV tariff. In any case, the cost of rebates or waivers should not be recovered from other rate classes or from ratepayers who are not EV owners.

Furthermore, separate EV charging tariffs would recognize the uniqueness of EV load and its impact on the grid and energy supply resources. EV charging is incremental load, so mandatory TOU rates for EV charging are necessary to ensure that EV charging does not add to system peaks and the need for costly system upgrades. Again, an EV tariff would have the flexibility to incorporate TOU rates. The peak rate must be set high enough to discourage on-peak charging, with a large differential from off-peak rates. Further, TOU rates will drive the adoption of new technology to manage charging, such as battery storage and V2G telemetry to ascertain peak times and schedule charging times accordingly.

Finally, the Straw proposes a “set point” for vehicle charging rates that is “benchmarked so that the vehicle charging remains below the equivalent cost of diesel or gasoline on a per mile

basis."[30] It is unclear how the Board can set "just and reasonable" rates pegged to volatile petroleum prices that are often moved or manipulated by international events and actors, and not based on the cost of providing electric utility service.

E. Other Policy Considerations and Minimum Filing Requirements [Straw, pp. 13-14]

As discussed above, Rate Counsel has concerns about the Straw's proposed timetable. In addition, Rate Counsel has concerns about how any policy determinations made as a result of the stakeholder process will affect pending EDC EV cases. Rate Counsel also has concerns about the scope of the proposed EDC filings.

First, Rate Counsel believes the schedule set forth is unrealistic, especially if (as noted above) two of New Jersey's utilities are concurrently pursuing EV programs that are inconsistent with Staff's proposal. It is unlikely that all utilities will be ready to file programs by December 31, 2020, or that a review of the filings could be completed in time for program implementation on April 1, 2021, a mere 90 days later. Further, having all utilities file programs for Board consideration on the same schedule will be extremely burdensome on limited Staff and Rate Counsel resources, as well as for parties participating in all filings.

In addition, while the Straw has many elements Rate Counsel supports, they are incompatible with current EV filings by PSE&G and ACE, both of which are subject to pending motions to dismiss. In any case, those EV proceedings should be withdrawn or put on hold pending Board direction on the proper utility role in building and operating EV infrastructure. There is no reason for parties to spend the time and resources litigating proposals if they are ultimately going to be found incompatible with New Jersey's policies in this area.

[30] Straw, p. 13.

In addition, it is unclear how the utilities will know by December 31, 2020 where "last resort" charging stations would be needed. If Staff seeks to ensure that private capital is used wherever possible over ratepayer funds, then the market must be allowed time to develop before we can see where the market fails to lead to the construction of needed stations. It is simply not consistent with Staff's stated goals to have the utilities propose locations of "last resort" stations by December.

Finally, the Straw Proposal recommends that EDC proposals include plans for electrification of school bus fleets. This raises two concerns. First, Rate Counsel strongly objects to the idea that electric ratepayers should pay for the replacement of school buses. Requiring them to do so, is inconsistent with BPU's legal authority and threatens to add a significant financial burden on customers, many of whom are already struggling to pay their bills. The Straw Proposal states that EDC proposals for EV programs should include, among other elements, "[p]roposals for electrification of school bus fleets." A number of participants in the Technical Conference addressed the many economic, environmental, and human health benefits of converting medium duty trucks and school buses to electric technology. Rate Counsel is cognizant of these benefits and of the importance of reducing pollution throughout the state, and particularly in Environmental Justice communities. However, while it is not clear exactly what Staff has in mind, Rate Counsel strongly objects to the idea that electricity ratepayers should be charged for replacing of school buses simply because of those pollution benefits. This is a social and environmental policy objective that is clearly not related to the duty of electric utilities to provide low-cost, reliable electric service. There is no statutory authority whatsoever that allows BPU to now become the regulator in charge of the state's school bus fleets. Just because something gets plugged in, does not bring it within BPU's statutory authority. Many school buses in this state are owned and operated by private companies that contract with school districts. Requiring the ratepaying public

to pay for buses that would then be donated to either school districts or private companies raises many legal and constitutional issues.[31] Moreover, Staff's straw could lead to significant stranded costs related to existing school buses, which will also have to be paid for either by taxpayers or ratepayers. In short, Board Staff's apparent idea, not discussed in the body of the Straw but slipped into the minimum filing requirements, that utility ratepayers should pay for the replacement of school buses throughout the state is not authorized by law and is poor public policy. It certainly could not be simply adopted by the Board through approval of the Straw without rulemaking and the articulation of the legal authority for ordering it.

[31] See, In re N.J. Am. Water Co., 169 N.J. 181 (2001) (finding insufficient nexus between utility charitable contributions and the provision of utility service to allow utility to charge ratepayers for charitable contributions).

June 17, 2020

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

Re: Docket No. QO20050357, Initial Comments of the Alliance for Automotive Innovation in the Matter of Straw Proposal on Electric Vehicle Infrastructure Build Out

Dear Secretary Camacho-Welch:

The Alliance for Automotive Innovation ("Auto Innovators")[1] thanks the New Jersey Board of Public Utilities ("BPU") for the opportunity to provide comments on the *Straw Proposal on Electric Vehicle Infrastructure Build Out* ("Straw Proposal").

Auto Innovators represents automakers that collectively produce nearly 99% of the new cars and light trucks sold in the United States, tier one original equipment suppliers, and technology and other automotive companies. Auto Innovators is committed to supporting and implementing policies and programs that help support transportation electrification, including battery electric, plug-in hybrid, and hydrogen fuel cell technologies.

This is a pivotal point in the development of the electric vehicle (EV) market. Today, there are 48 electric models offered[2]—more than any point in history. Moreover, nearly every major automaker has announced plans to increase the number of electrified platforms. In the next two years, automakers intend to offer over 100 different EV models in a variety of market segments.[3] However, automotive industry investments alone are not enough to ensure increased market penetration for electrified vehicles. Increasing customer demand for EVs is necessary, and time and time again studies have shown that purchase incentives and available charging/refueling

[1] Formed in 2020, the Alliance for Automotive Innovation is the singular, authoritative, and respected voice of the automotive industry. Focused on creating a safe and transformative path for sustainable industry growth, the Alliance for Automotive Innovation represents the manufacturers producing nearly 99 percent of cars and light trucks sold in the U.S. The newly established organization, a combination of the Association of Global Automakers and the Alliance of Automobile Manufacturers, is directly involved in regulatory and policy matters impacting the light-duty vehicle market across the country.
[2] *Veloz Sales Dashboard,* Veloz, https://www.veloz.org/sales-dashboard/ (data retrieved 2/28/20)
[3] https://www.autonews.com/article/20181001/OEM04/181009990/nearly-100-electrified-models-slated-to-arrive-through-2022

infrastructure are key parameters to increasing customer demand. Near-term utility engagement on transportation electrification is essential to build and maintain momentum as these new vehicles hit the market.

Both plug-in electric vehicles (PEVs) and hydrogen fuel cell electric vehicles (FCEVs) are EVs and are necessary to electrify the light duty market, especially in light of Governor Murphy's goal of 330,000 EVs on New Jersey roads by 2025 and at least 2 million by 2035.[4] Both electric charging and hydrogen refueling infrastructure is necessary for the EV market to grow and achieve the Governor's targets.

Auto Innovators appreciates the agency's initiative to increase EV infrastructure toward the level needed to meet Governor Murphy's goals and the Legislature's recognition of the urgency of adopting aggressive targets for the installation of EV chargers in the next five years under SB 2252. In particular, the stretch goal of 2 million EVs in 2035 will require close to all new light-duty vehicles to be an EV. Customers need to be confident that the infrastructure is there to meet their driving needs. For PEVs, this means not only home charging, but also workplace, fast charging on corridors, urban charging clusters, and key destinations. For those without easy access to charging at home (e.g. apartment dwellers), it will be even more important to focus on building out a full EV charging ecosystem. FCEVs also have the potential to serve drivers without home charging access, though New Jersey currently lacks hydrogen refueling infrastructure.

This proceeding is vitally important to supporting electrification in New Jersey. With less than 38,000 EVs on the road today,[5] New Jersey is only 11% of the way to meeting the state's goal of 330,000 EVs by 2025, leaving a significant gap to make up in the next five years. Infrastructure is continuously cited as a main reason that customers will not make the switch to electric vehicles, and evidence in New Jersey would support that reasoning. Per the Straw Proposal, New Jersey is currently ranked 45th in the nation in electric charging stations per registered vehicles. Continued private and public investment is necessary if New Jersey is going to accomplish its vehicle and infrastructure goals.

In conjunction with electric charging infrastructure, New Jersey needs to start hydrogen infrastructure development along with resolving tunnel restrictions for FCEVs. Auto Innovators supports Senate Bill 762 (and its companion, Assembly Bill 741) that establishes the New Jersey Fuel Cell Task Force within the NJ BPU to increase use of fuel cells in New Jersey, and was thrilled to hear that it passed the Senate on June 15.

We appreciate the need for utility charger-ready infrastructure, as this reduces cost for future electric vehicle supply equipment (EVSE) installation. However, it is simply too early in market development to know

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[4] N.J.S.A 48:25-1 et. seq.
[5] www.atlastevhub.com

with precision the exact and most efficient role for utilities. Investing in charger-ready infrastructure is certainly an important and foundational role for utilities, but there will be instances where a utility ownership model makes the most sense to overcome barriers. We urge BPU to be flexible in the role of utilities, evaluate ways to support a competitive market between public and private providers, and be willing to adapt as the EV market continues to evolve.

In order to not hinder any existing utility investment in transportation electrification, any future filings should complement existing programs, and not replace them. The comments below will touch on the following specific items:

- Charging Infrastructure Needs
- Hydrogen Refueling Needs
- Charger Ready and Utility Ownership
- Utility Rate Structures
- Timing
- Education & Outreach

Charging Infrastructure Needs

By 2025, N.J.S.A. 48:25-1 et seq. calls for 400 DC fast chargers and 1,000 L2 publicly accessible chargers. We see this requirement as a good start, but certainly more is necessary to accommodate 330,000 EVs ramping up to 2 million by 2035.[6] Home charging continues to be the predominant source of charging, with current EV drivers doing more than 80 percent of EV charging at home.[7] However, home charging is not sufficient to meet market needs. Drivers need to be confident that their EV can take them wherever they need to go, and this will require a complete ecosystem of charging including workplace, fast charge corridors, fleet charging, urban clusters, and key destinations. As we look to expand the market beyond early adopters and reach the 40% of Americans who do not live in a single-family home,[8] options such as charging at multi-unit dwellings (MUDs) and workplaces will be critically important. Given the importance of MUD, fleet, and workplace charging, we encourage BPU to provide additional flexibility on the "public access" requirement in the Straw Proposal so as not to preclude Charger Ready investment for much-needed infrastructure deployment at these sorts of locations. In this way, New Jersey can help address the needs of all residents, including those residents who may not be able to own an EV - either due to cost, lack of access to charging, or existing ownership of

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[6] For reference, NREL's EVI Pro Lite suggests that New Jersey would need over 20,000 public and workplace L2 chargers and nearly 1,500 DC Fast Chargers, using default vehicle inputs and assuming that 80% of drivers have home charging access. These numbers increase substantially if the goal is to serve additional drivers without home charging access. https://afdc.energy.gov/evi-pro-lite

[7] https://www.energy.gov/eere/electricvehicles/charging-home

[8] https://www.nytimes.com/2020/04/16/business/electric-cars-cities-chargers.html?smid=em-share

another vehicle. Incentivizing charging infrastructure for EV fleets, dedicated to transporting members of the public, can provide a unique role in expanding green miles traveled by the public. While outside of the scope of this Straw Proposal, it is important to note that FCEVs with centralized hydrogen refueling provides another option for addressing addresses MUD charging through a "gas station" model that will be familiar to drivers and should have little or no impact on the grid.

In addition to MUD and workplace charging being critical for EV owners, these applications also provide an opportunity for managed charging. With vehicles typically parked overnight at MUDs or during the day at workplaces, typical charging habits offer the opportunity for electric vehicles to provide stability to the electric grid. For the reasons laid out above, we recommend that workplace and MUD charging receive some urgency in New Jersey.

Auto Innovators understands the desire to maximize market response to EV charging, and eliminate the concern of stranded assets; however, we feel that the EV Mapping Effort laid out in the Straw Proposal may be too restrictive on a nascent market and may not adequately incorporate insights from the private sector. Stranded assets were a concern in years past, but with improved charging technology and the expansion of electric vehicles, there should be much less concern. The EV Mapping Effort and the Electric Distribution Company's (EDC) hosting maps are well-intended, but at this stage of the market, it is important not to discount market and customer insights from the private sector with regard to potential siting.

Hydrogen Refueling Needs

To meet New Jersey's goals, a full suite of EVs are necessary, including PEVs and hydrogen FCEVs. In order for the full suite of EVs to be viable, refueling and charging infrastructure is necessary. Currently, there are no hydrogen refueling stations in New Jersey,[9] making owning a FCEV impossible. If New Jersey is going to meet its goals of 330,000 EVs by 2025 and 2 million EVs by 2035, action is required now to build out hydrogen refueling and charging infrastructure. Auto Innovators supports Senate Bill 762, and its companion Assembly Bill 741, that establishes the New Jersey Fuel Cell Task Force within the New Jersey BPU to increase the use of hydrogen fuel cells in New Jersey. The passing of Senate Bill 762, establishing a New Jersey Fuel Cell Task Force, indicates the Garden State's willingness to embrace the unique benefits of FCEVs, including fast refueling in under 5 minutes, long range of 300 miles or more, and central refueling stations that can serve a community of 500 or more vehicles each, similar to a current gas station.

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[9] https://afdc.energy.gov/stations/#/analyze?region=US-NJ&country=US&fuel=HY&ev_levels=dc_fast&hy_nonretail=true&access=public&access=private&status=E&status=T&status=P

Charger-Ready and Utility Ownership

Auto Innovators agrees that charger-ready investment is a potentially valuable and foundational mechanism for utility investment to support infrastructure deployment. A well-designed charger-ready program can meet many market needs while leveraging the core competencies of utilities and catalyzing private sector investment. We commend the staff for developing a draft set of performance requirements intended to improve the effectiveness of the Charger Ready investments, though we acknowledge that these may need to be adjusted somewhat pending industry input. We are generally supportive of the desire to accelerate installation (requirement #1), ensuring that chargers are maintained (requirement #2). We have some concerns about ensuring public access on a subscription or per-use basis (requirement #3) as this appears to preclude workplace or MUD sites that may not be publicly accessible. We recommend continued discussion with stakeholders on the specifics of the requirements around returning a site to EDC control (requirement #5) so as to avoid unintended consequences, though we support the intent. Overall, we thank the staff for the work on the charger-ready proposal and believe that these sorts of programs should be an important part of the solution for addressing infrastructure gaps and accelerating electrification.

However, we caution that there is not one "right" model for utility engagement and infrastructure ownership, given the complexity of all the various EV infrastructure use-cases. Despite several years of committed efforts by all stakeholders to facilitate transportation electrification, the market remains immature. Infrastructure deployment is falling short of what is needed and there are still questions around the business cases and economics. Vehicle charging is not yet a fully competitive market, particularly in certain market segments and locations. There will be cases where a full "turnkey approach" enabled by utility ownership is necessary to overcome barriers and deploy much-needed infrastructure. Examples of market segments where utility ownership could be beneficial include MUDs and DCFC in areas not likely to draw private sector investment (e.g., corridors or disadvantaged communities). Different situations will call for different models.

The Straw Proposal states:

> Staff proposes that charging station infrastructure, or EVSE, costs will be generally borne by private investors, with no recourse to ratepayer funds, except where the EDC acts as the party of last resort, where investment in EVSE is not occurring, or is not occurring in specific geographic areas. EDCs shall continue to bear the burden of demonstrating that any investments made to serve such areas are reasonable, prudent, and that rate recover of such investments is appropriate.[10]

[10] *BPU EV Infrastructure Straw Proposal*, page 7.

We maintain that the market is already failing to meet demand, and precluding utility ownership except as a "last resort" may unintentionally hinder EV infrastructure build-out. We are not necessarily suggesting that this program should be modified to allow for broader utility ownership, but do want to highlight the potential benefits of utility ownership for overcoming barriers in some cases and the need for BPU flexibility supporting a competitive market going forward. If utility ownership of EVSE is limited to "last resort" cases, we urge the Board to provide additional clarity on how this is defined, and over what timeframe, and to ensure that there is a streamlined process of making the determination so that infrastructure deployment is not needlessly delayed.

Utility Rate Structure

Auto Innovators applauds BPU staff for recognizing the importance of utility rate structure in any transportation electrification program. In order to accelerate widespread transportation electrification in New Jersey, it will be important for potential EV operators, including individual EV owners and EV fleet operators, to have access to EV-specific rates—both residential and commercial—that are easily understood, provide cost savings relative to conventional (petroleum) fuels, offer flexibility to both personal and fleet vehicle ownership, lay the foundation for vehicle-grid integration (VGI), and further incentivize electrification. In designing any EV rates to encourage and incentivize the use of EVs, utilities and the BPU should ensure that the EV rates are clear, do not have cumbersome requirements that discourage potential customers (individual and fleet) during the initial sign-up process, include time-of-use and seasonal variability options, and lead to cost savings for EV drivers and fleet operators.

A key benefit to EV customers and EV fleet operators is the ability to save money by charging when rates are lowest, but understanding and enrolling in these rate structures can be prohibitively difficult in some markets. To continue to maximize the potential for EV adoption by individual households and commercial fleets, supportive EV charging rates for both residential and commercial customers should be developed. These rates should be structured with both operator and grid needs in mind so as to accelerate transportation electrification while also incentivizing and encouraging charging behaviors that benefit the grid. Thus, we believe additional attention is needed to create these EV-specific rates that take into account electrification goals, costs, and benefits for all stakeholders, and when implemented, simplify and better communicate program structures and benefits to ratepayers. Auto Innovators generally supports the intent of the three rate reforms described in the Straw Proposal, though we acknowledge that there may be multiple ways to address issues such as demand charges and we encourage an approach that allows flexibility for reaching these goals:[11]

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[11] *BPU EV Infrastructure Straw Proposal*, page 12.

i. Ensure that chargers serving residential customers in MUDs are charged a rate (in $/kW-hour) that is consistent with normal residential rates;

ii. Ensure that demand charges applicable to publicly available chargers, many of which are in the Commercial & Industrial rate class, do not result in excessive $/kW-hour charges; and

iii. Ensure that each EDC offers a voluntary TOU rate for EV charging that rewards consumers that elect to charge during off-peak periods.

Time-of-Use (TOU) rates should be easy for customers to read and understand, and barriers to enrollment should be removed. Where possible, analysis of a customer's existing rate structure should be compared against new or alternative TOU rates to optimize customer bill savings and maximize power generation from renewable energy sources. Additional variations on simple TOU rates that deserve exploration include dynamic rates and seasonally varying rates.

TOU rates are a foundational component of vehicle-grid integration (VGI) and, can offer significant grid benefits.[12] In addition, more active solutions like active managed charging with one-way power flow (V1G) or vehicle-to-grid solutions with bidirectional power flow (V2G) can complement rate design. Taken together, these VGI solutions have the potential to improve reliability and lower the cost of electrical service by avoiding adverse grid impacts from on-peak charging, lowering the costs of integrating increasing levels of variable renewable generation, and increasing the utilization of existing assets, thereby putting downward pressure on electricity prices to the benefit of all utility customers. Utilities, regulators, and third parties should explore opportunities to leverage EVs as distributed energy resources—particularly in use cases with centralized management and charging.

Program Timing

As stated previously, if New Jersey is going to meet its goals by 2025, infrastructure development is needed now. The Straw Proposal offers one year for the utilities to make a location charger-ready, another year, with possible extensions for an additional year, for the EVSE company to install the charger. This timing can result in three years before a charger is available for EV consumers. To meet Governor Murphy's goals, action is needed now—waiting three years will not move the needle. Reducing the proposed timing and increasing

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[12] https://ww2.energy.ca.gov/2019publications/CEC-500-2019-027/CEC-500-2019-027.pdf

program flexibility will increase the number of chargers available and provide a ramp to meet the state's ambitious EV goals.

Outreach & Education

Utilities have a critical role to play in reaching out to and educating consumers about EVs and available rates that may make at home charging a more cost-effective option. While the Straw Proposal doesn't reference outreach and education, utilities can contribute in a variety of means, from consumer-facing outreach programs that promote electric vehicles to education on charging and rates. Regulators have approved ratepayer-funded programs in several states that provide examples of potential utility engagement on this front. Utilities have the ability to contact large numbers of customers, and can help grow the market through outreach. Additionally, they have a wealth of expertise with respect to the functionality of the grid and the current available information on how vehicle charging has and may impact it. We recommend that BPU not leave these resources on the table.

Conclusion

Auto Innovators appreciates the opportunity to provide these comments on the BPU Straw Proposal. We believe that BPU and the utilities have important roles to play in helping achieve New Jersey's ambitious EV goals and timelines. It is imperative that the charger-ready programs retain sufficient flexibilities to address needs and adjust to lessons learned.

As stated throughout our comments, we have a long way to go to meet our EV charging infrastructure targets, and charging infrastructure being in place ahead of vehicles is essential to growing the EV market. We commend BPU on taking this important step, and we look forward to working with BPU, staff, and the utilities to continue to build out the infrastructure necessary for increased vehicle electrification.

Respectfully submitted,

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North America
e-Mobility

June 17, 2020

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

Re: In the Matter of Straw Proposal on Electric Vehicle Infrastructure Build Out (Docket No. QO20050357)

Dear Secretary Camacho-Welch,

Pursuant to the May 18, 2020 *Notice* in Docket No. QO20050357,[1] Enel X North America, Inc. (Enel X) is pleased to submit the following comments on the *New Jersey Electric Vehicle Infrastructure Ecosystem 2020 Straw Proposal* (Straw Proposal) issued by the New Jersey Board of Public Utilities ("Board" or "BPU").

Enel X e-Mobility, formerly known as eMotorWerks and a subsidiary of Enel, the global utility company, is a leading provider of electric vehicle (EV) charging technologies. Enel X manufactures and sells the JuiceBox, the market-leading Level 2 home EV charger, along with a comprehensive line-up of commercial Level 2 and DC fast charging (DCFC) hardware solutions for workplace, fleet, and public charging applications. These products run on JuiceNet, Enel X's cloud-based software platform used for asset management, EV charging submetering and data transfer, and flexible control for managed EV charging. Enel X's smart charging solutions complement a broad portfolio of customer-facing clean energy offerings including demand response, front-of- and behind-the-meter energy storage, solar photovoltaic, and advisory services for commercial / industrial customers and fleet electrification.

I. Introduction

The recent passage of Senate Bill (S) 2252 signals New Jersey's strong intent to catalyze the market for EV charging infrastructure in support of the state's interrelated goals and policies to decarbonize the economy,[2] transition to clean energy,[3] and promote EV adoption. Chiefly, S 2252 codifies Governor Murphy's target of 330,000 light-duty EVs on state roads by 2025, increasing to 85% of all light-duty vehicle registrations by 2040. Electrifying the state's transportation sector would address New Jersey's largest source of carbon emissions and air pollution and would generate significant economic, environmental, and societal benefits that would accrue to its residents.

[1] https://www.nj.gov/bpu/pdf/publicnotice/Notice_Stakeholder_Meeting_EV_Straw_Proposal_5-18-20.pdf

[2] The Global Warming Response Act of 2007 sets a long-term greenhouse gas reduction target of 80% below 2006 levels by 2050.

[3] See "2019 New Jersey Energy Master Plan: Pathway to 2050," https://nj.gov/emp/docs/pdf/2020_NJBPU_EMP.pdf

By one estimate however, the state is only around 10% of the way towards meeting its 2025 objective.[4] Additionally, per the Straw Proposal, New Jersey is also ranked near the lowest 10th percentile of all US states in terms of EV charging stations per registered vehicle.[5] Significant effort and investment are thus needed by state agencies, Electric Distribution Companies (EDCs), EV original equipment manufacturers (OEMs), EV Service Providers (EVSPs), and advocates if the state is to successfully foster a transition to EVs in the face of commonly-cited barriers to adoption like up-front cost, range, consumer awareness, and charging infrastructure availability.

The Board's recently-launched "Charge Up New Jersey" rebate, initiated per S 2252, will help mitigate the cost premium of EVs in the near-term, while continued investment and innovation on behalf of EV OEMs and suppliers will autonomously increase EV ranges and is expected to result in price parity between EVs and internal combustion engine (ICE) vehicles within the next 3-5 years.[6] S 2252 also tasked the New Jersey Department of Environmental Protection (DEP) with launching a statewide campaign to educate consumers about the availability and benefits of plug-in EVs, state goals for EV deployment, and the availability of the "Charge Up New Jersey" EV incentives.[7]

On the other hand, EV infrastructure deployment is currently hampered by poor economics, primarily stemming from low levels of EV adoption and station utilization as well as the impact of traditional commercial electric rates on ongoing operating costs, creating a vicious cycle that inhibits the business case for the rapid deployment of charging infrastructure. The BPU correctly seeks to break out of this business-as-usual scenario and catalyze the EV charging market through developing a comprehensive "EV Ecosystem" framework, which is based on:

1. A "shared responsibility" model for EV infrastructure deployment between EDCs and private investors;
2. Funding;
3. A commitment that all New Jersey communities have equitable access to the EV Ecosystem; and
4. Reforming utility rate structures that serve as barriers to grid-integrated and/or high capacity EV charging.

Enel X commends the Board for initiating this timely inquiry into the establishment of a sustainable EV Ecosystem in the Garden State. The Straw Proposal puts forth a good starting point for discussing the roles, responsibilities, and processes for EV Ecosystem members in

[4] As of December 2019, there are 30,017 EVs registered in New Jersey, spanning Battery Electric Vehicles and Plug-in Hybrid Electric Vehicles. https://www.drivegreen.nj.gov/dg-electric-vehicles-basics.html

[5] Straw Proposal, at 2.

[6] E.g., https://www.bloomberg.com/opinion/articles/2019-04-12/electric-vehicle-battery-shrinks-and-so-does-the-total-cost.

[7] Aside from the state sponsored EV campaign, EDCs also play a critical role in marketing, education, and outreach on the availability and benefits of EVs and generating interest in any EV infrastructure programs they host, given their pre-existing relationships and communication channels with customers.

constructing, owning, operating, and paying for a comprehensive EV charging network, as well as optimally integrating new EV charging load into the grid.

That said, Enel X believes that the scope and details of the Straw Proposal are too narrow and rigidly prescribed for the Board to deliver on its goal to develop a comprehensive EV Ecosystem. As written, the Straw Proposal would effectively amount to picking winners and losers in terms of both private sector business models for EV infrastructure buildout and the specific charging use cases that benefit from EDC ratepayer funding. Many elements of the Straw Proposal require further revision and refinement to ensure that the Board fosters a diverse, competitive, innovative, and truly comprehensive marketplace for EV charging infrastructure across all relevant light-duty market segments,[8] and does not close the door on different approaches to deploying infrastructure at such an early juncture in the market. This is assuming the Board's intention to set broad and binding policy guidance for all subsequent EDC investments in EV charging infrastructure.

Our comments below focus on the roles, funding sources, and process to access EDC investments; eligibility of, and allowable business models deployed by, private EV infrastructure providers; how to equitably distribute and provide access to EV supply equipment (EVSE); guidance for residential EVSE incentives; and the Straw Proposal's relationship to EDCs' pending EV infrastructure filings. We respectfully urge the Board to modify its Straw Proposal in the ways described to ensure that the buildout of EV charging infrastructure is achieved in the most efficient and cost-effective manner possible while supporting the development of a competitive and sustainable EV charging market that assists in the timely achievement of New Jersey's climate and energy goals.

II. The Proposed "Shared Responsibility" Business Model

a. Background

In laying out its vision for a "shared responsibility" model for EV infrastructure investment and deployment, the Straw Proposal defines roles and responsibilities of EDCs and private "EVSE Infrastructure Companies" (referred to subsequently herein as "EV Service Providers" or EVSPs, for reasons described below) and delineates a process by which the latter can request the former to make a location "Charger Ready."[9] Under this model, EDCs would invest in and earn a return on the wiring and backbone infrastructure necessary to enable EV charging infrastructure at a site, while the private sector would own, operate, and advertise the EVSE, with private capital the primary means of EVSE funding.[10]

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[8] S 2252 provides for the Board and DEP to "establish other goals for vehicle electrification and infrastructure development that address medium-duty and heavy-duty on-road diesel vehicles and associated charging infrastructure."

[9] The Straw Proposal (at 4) defines "Charger Ready" as "the pre-wiring of electrical infrastructure at a parking space, or set of parking spaces, to facilitate easy and cost-efficient future installation [EVSE], including, but not limited to, Level Two EVSE and [DCFC]. Making a site Charger 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. 'Charger Ready' is synonymous with the term [customer-side] 'Make Ready.'"

[10] Straw Proposal, at 7-11.

EDCs would be responsible for performing upgrades on the utility side of the meter and Charger Ready wiring on the customer side of the meter; develop hosting capacity maps in conjunction with the EV Mapping Effort;[11] and assume costs for ensuring equitable distribution of EVSE as a "Last Resort." The Straw Proposal would allow EDCs to recover all costs associated with distribution system upgrades, the costs of making a location Charger Ready, and the costs of any mapping exercises, provided the EDCs make an adequate showing that the costs are reasonable and prudently incurred.

EVSPs would be tasked with determining where charging stations are sited; requesting that sites be made Charger Ready; installing, owning, maintaining, and marketing EVSE as to maximize consumer acceptance and revenue; and performing these functions under contract to the EDC as a "Last Resort." EVSPs could either "use Charger Ready locations funded by ratepayers, or to establish their own Ecosystems without financial support from ratepayers."

EDCs would make a location Charger Ready upon a request from an EVSP or governmental entity and would have one year from the request to complete the work. EDCs would give priority to recommended locations from the EV Mapping Effort in "sequencing" their buildout of Charger Ready wiring. In order to access ratepayer funding for Charger Ready wiring, EVSPs would have to commit to having operational EVSE at a site within one year of Charger Readiness; keeping the site operational and publicly accessible for at least two years; providing per-use or subscription payment options; utilizing dual-port EVSE whenever technically feasible; and returning Charger Ready infrastructure back to the EDC in instances of poor performance or abandoning EVSE operations the site. Finally, EDCs would be required to establish criteria for "Poor Performing EV Infrastructure Companies" and an associated statewide *pro forma* contract that could be used to revoke an EVSP's use of a Charger Ready Location for failing to adequately maintain operational equipment.

b. Discussion

Enel X agrees that EDCs making locations "Charger Ready" is essentially an extension of the distribution system and builds on EDCs' deep experience in delivering electricity and operating distribution infrastructure. Allowing EDCs to earn a rate of return on Charger Ready investments, even though this goes beyond the typical line of demarcation at the customer meter, should also provide an adequate incentive for these companies to expeditiously respond to requests for Charger Ready wiring. We certainly agree that EDCs should be permitted to seek recovery of their reasonably incurred costs following the execution of their roles and responsibilities delineated here.

Enel X does not oppose the Straw Proposal's high-level approach to splitting the responsibility for EV infrastructure buildout and funding between EDCs and private sector actors. However, we strongly disagree with certain foundational elements of the proposal, both explicit and implied, pertaining to private sector roles, business models, and funding access. Given the Straw Proposal's objective to resolve key policy issues in a generic docket and ensure a consistent statewide approach to EV Ecosystem development, it is imperative that the Board rectify these issues to avoid unnecessarily stunting the growth of the EV charging market.

[11] Lead by the DEP.

First, we note that, as proposed, the shared responsibility model seems to singularly respond to – or at least be preferentially driven by – the requirements of S 2252 that pertain to publicly accessible EV chargers. This is inferred by the proposed criterion that an EVSE Infrastructure Company must make a site open to the public as a prerequisite to accessing EDC ratepayer funding.[12] This is despite the fact that S 2252 includes requirements for private-access EVSE deployments at multi-family dwellings and hotels, and also enables the Board to establish and implement a program to provide incentives for the purchase and installation of residential EVSE.[13]

Second, the Straw Proposal uses the term "EVSE Infrastructure Companies" to describe the non-EDC private sector entities that partner with EDCs to deploy infrastructure. This term should be amended. The EV charging marketplace consists of a diverse array of actors that provide different combinations of the discrete elements that comprise the EV charging value chain – e.g., hardware manufacturers, software developers, charge point operators, mobility service providers. Distilling these functions into the term "EVSE Infrastructure Companies" connotes a very specific type of EV charging company, one that either manufactures and / or installs EVSE (i.e., hardware). This might amount to a minor detail, but if taken literally, this definition could have significant implications on the eligibility of different EV charging market participants for EDC funding and programs. We recommend that the Board amend this term to "EV Service Provider" or EVSP: a commonly used, catch-all term for a company that provides EV charging services

Third, and most critically, the shared responsibility model cites a single business model and process by which the private sector can deploy EV infrastructure: wherein EVSPs are responsible for "installing, owning, maintaining, and marketing the EVSE," and are responsible for requesting that an EDC make a location Charger Ready. This gives further evidence to the hypothesis that the Straw Proposal is primarily geared towards enabling the public DCFC portion of S 2252, as this business model is typically employed by companies that own and operate public DCFC networks.

The Straw Proposal's reliance on this model fails to consider that S 2252 sets separate requirements and allowances for EV charging deployments – namely, EVSE deployment requirements at multifamily building and hotels; minimum deployment targets for publicly-accessible Level 2 EVSE; and the Board's ability to adopt incentives for residential EVSE purchase and installation – that are often fulfilled through a business model wherein EVSPs sell EVSE hardware to property owners and site hosts, who are then responsible for owning, operating, and maintaining the stations through network service subscriptions. It should be mentioned that publicly available DCFC can also be deployed through selling EVSE hardware to site hosts or property owners.

Taken together, these critiques amount to a call for the Board to reevaluate the parameters of the shared responsibility model against the stated objectives of the Straw Proposal to establish guidelines for "a comprehensive EV Ecosystem." If the Board's intent is to only focus on publicly accessible chargers, then the Straw Proposal should be clarified as such. Otherwise,

[12] Straw Proposal, at 10-11.

[13] The Straw Proposal does include guidance for the residential and multifamily segments with regards to rates and EDC showings on the additionality of proposed residential EVSE incentives, but the point here is that neither segment is explicitly considered in the context of the shared responsibility model.

the Board should look to establish a shared responsibility model that provides solutions beyond a single market segment and business model, to consider the roles of EDCs, EVSPs, and ratepayer funding to catalyze Charger Ready deployment across a broad cross-section of light-duty segments, including single- and multi-family residential, workplace, fleet, and public destination using multiple different business models, funding sources, and ownership structures.

We recognize that the Board's proposal to solely use private capital to fund EVSE and Charger Readiness at private-access locations stems, at least in part, from the following directives laid out in New Jersey's Energy Master Plan pertaining to the affordability of the state's electrification efforts:

1. attract private capital into the EV infrastructure sector and substitute shareholder dollars for ratepayer capital wherever possible;
2. minimize the risk of ratepayers paying for stranded EV infrastructure investments, such as the risk that charging station infrastructure becomes technologically obsolete or is simply never utilized at a high level, through strategic mapping and encouraging private investment; and
3. design EV infrastructure policies that are fair to both EV-driving ratepayers and non-EV driving ratepayers, to ensure the benefits of EVs are shared by all ratepayers.[14]

We would argue, however, that the balance of the Straw Proposal is overly concerned with the first two of these affordability pillars without adequately considering the beneficial impacts of the third. Widespread EV adoption across vehicle classes is poised to bring considerable new load to the electric system, which will generate significant new revenues in the process. To the degree that this new load can be optimally integrated into the existing system and increase overall system utilization, these incremental revenues will have the effect of driving down electric rates for all ratepayers, including non-EV drivers.

To this end, the Straw Proposal correctly requires the creation of time-of-use rates for EV charging, which not only maximizes the fuel savings from switching from an ICE to an EV, but also communicates the correct price signals to "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."[15] In California, studies have demonstrated that EV charging on TOU rates in PG&E and SCE territories from 2012 through 2018 generated almost $450 million more in revenues than associated costs.[16] Without considering the additional expected revenue associated with a specific EDC proposal, the Board should not carry the default assumption that ratepayer funding for EV infrastructure creates an unaffordable situation for ratepayers. Quite the opposite: ratepayer funding for EV infrastructure can generate a positive return on those investments.

We also recommend that the Board not close the door on the possibility of ratepayers funding EVSE incentives, especially following S 2252's allowance for the board to adopt rebates for EVSE purchase and installation for residential customers. In our view, any perceived risk of technology obsolescence and stranded assets with regards to EVSE is overblown. Most EVSE

[14] Straw Proposal, at 7. EMP, at 65.

[15] Straw Proposal, at 13.

[16] https://www.synapse-energy.com/sites/default/files/EV-Impacts-June-2019-18-122.pdf

have expected useful lives of at least 10 years, and it is far from the case that EV charging technology is changing so rapidly that deployed stations must be completely abandoned or become unworkable.

Regarding business models, we implore the Board to not prescribe the approaches that an EVSP or other private-sector entities must employ in order to receive Charger Ready wiring from the EDC, not to mention participation in the EV Ecosystem more broadly. Relatedly, the Board should not prescribe that an EVSP or government entity must be the customer of record in submitting a request for an EDC to make a location Charger Ready. The Board should instead aim to be broadly inclusive in allowing the responsibilities for EVSE ownership, operation, and maintenance to fall to wide range of entities and customers. This recommendation extends to enabling a more flexible option for EDC ownership in different market segments beyond the Board's proposal for EDCs to serve as the provider of "last resort" for Equity Areas.

Ultimately, the role of this Straw Proposal should be to provide high-level guidance to EDC filings across market segments to meet the entirety of applicable statutory requirements and other state policy goals, while setting up a framework for continual review and revision of EDC investments given the achievement of said goals, ongoing market and technology maturation, and the actual learned experience from EDCs and EVSPs in implementing, managing, and participating in those programs. As it stands though, the vision presented in the Straw Proposal is too narrow to develop a comprehensive EV Ecosystem. We respectfully request that the Board revise its proposal as described herein to achieve the state's near-term EV and EVSE deployment goals and support a robust and sustainable EV charging market.

III. Equity Areas

We wholeheartedly agree with the Board that the equitable geographic distribution of EV infrastructure is critical to ensuring a viable EV Ecosystem in the state. The Straw Proposal considers how to define "Equity Areas" to ensure adequate EVSE coverage across low-income, urban, environmental justice communities, rural communities, or evacuation routes. In our view, "Equity Areas" should largely be defined by metrics of income and pollution burden. All things being equal, urban areas should be assumed to attract adequate levels of utilization, while EVSE deployment in rural areas should initially be focused along travel corridors. The EV Mapping Effort could also add criteria to its suitability scoring to reflect evacuation routes.

However, the proposal to estimate a timeframe in which to evaluate the market's deployment of charging services in these Equity Areas before allowing EDC-owned solutions as a last resort is unworkable. There is no set definition of "market failure," and arguably, the need for incentives to drive the business case for EV charging points to the conclusion that the market is not sufficiently mature *across the board* to build EVSE on a purely merchant basis. Plus, the end-of-2025 deadlines for EVSE deployment in S 2252 require that the state act immediately in setting a plan in motion to, e.g., more than double the amount of existing public DCFC stations in the state.[17]

[17] The US Department of Energy's Alternative Fuels Data Center notes 345 DCFC charging outlets as of June 17, 2020. https://afdc.energy.gov/stations/states

Enel X believes that the process for deploying EVSE in Equity Areas should align with the process that is determined for determining "high priority sites" per the EV Mapping Effort and EDC hosting capacity maps. In other words, Equity Areas should overlay the map of "high priority sites."[18] Once Equity Areas are defined, given the Straw Proposal's focus on Equity Areas that "may be identified as suitable locations for a Charger Ready location by the EV Mapping Effort, but where the market is not sufficiently mature to build EVSE without financial assistance," the Board should provide additional incentives for EVSE deployed at "high priority sites" within Equity Areas, beyond any incentive made broadly available for EDC programs. The Board could also set certain targets for EVSE deployment in Equity Areas within EDC investment programs, specific to the objectives and market segments entailed by such programs. These incentives and targets would signal the state's emphasis on deployment in these areas to attract developers and make up for the assumed lack of utilization.

IV. Guidance Regarding EDC Residential Rebate Proposals

S 2252 authorizes the Board to establish and implement a program to provide incentives for the purchase and installation of in-home EVSE. The Straw Proposal subsequently directs EDCs that propose residential rebates to include additional showings on how any proposed residential EVSE rebate is not "duplicative," and instead complimentary, of any existing state-level rebate. The Straw Proposal also would require EDCs to include in their residential EVSE incentive program proposals "an analysis of the role of Advanced Metering Infrastructure ("AMI") and EDC plans for AMI roll-out," explaining that, "Staff is considering whether or not to recommend a requirement that all unique, individual residential charging incentives include deployment of an AMI or "smart meter" in preference, and/or in addition to, any installed charger regardless of the charger's technical capabilities."[19]

Enel X believes that it would be inappropriate to tie the availability of residential EVSE incentives to AMI deployment, as the latter is a longer-term proposition that would unnecessarily delay the availability of EVSE incentives. What is more, the technical capabilities of smart or networked Level 2 EVSE include embedded, revenue-grade submeters and cloud-based data transfer that can enable a wide variety of rates, incentives, and programs to encourage and reward off-peak charging, without the need to install a separate smart meter. Many utilities across the country take advantage of the metering capabilities of smart EVSE for their residential smart charging offerings. In a notable example, a residential smart charging pilot from Xcel Energy in Minnesota found that utilizing EVSE submeters for EV-only TOU billing saved customers an average of $2,196 in up-front costs that would have otherwise been entailed by installing separate AMI for EV charging.[20] We urge the Board to instead recommend a requirement that residential charging incentives aim to utilize the full capabilities of smart Level 2 EVSE to encourage off-peak charging, especially due to the Board's concerns around ratepayer affordability.

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[18] https://njdep.maps.arcgis.com/apps/webappviewer/index.html?id=b05c57f8170c414e83046d04aeb64311

[19] Straw Proposal, at 14.

[20] Xcel Energy, *Petition – Electric Vehicle Home Service Program*, Docket No. E002/M-17-817, August 30, 2019, at 6. https://www.edockets.state.mn.us/EFiling/edockets/searchDocuments.do?method=showPoup&documentId=%7bE067E46C-0000-C51B-9F3A-CE1803EC2609%7d&documentTitle=20198-155611-01

V. Straw Proposal Relation to Pending EV Filings

Staff states that its consideration of generic policy issues via development of the Straw Proposal will proceed in parallel with its evaluation of EV-related filings from individual EDCs, which "will ultimately result in a faster development of a successful EV Ecosystem." Staff directs all EDCs to file (or update, as applicable) EV plans and proposed EV programs by December 31, 2020, with implementation dates commencing no later than April 1, 2021. Section V.E. of the Straw Proposal includes a list of information sought from the EDCs in their new or updated filings.

Enel X notes that EV infrastructure filings from Atlantic City Electric[21] and Public Service Electric and Gas[22] have been pending without a hearing at the Board for an average of two years and include many programmatic elements that are not contemplated by the Straw Proposal. Given the significant and foundational revisions we seek, along with the uncertain timing of the Board's ruling on this proposal, it is likely impractical for EDCs to revise their comprehensive EV filings based on revised Straw Proposal guidance by a December 31, 2020 deadline.

We believe that the Board should proceed in reviewing the EDCs' existing filings without delay. The resulting Straw Proposal guidance should aim to continually review EDCs' investment proposals and revise program design based on empirical data on a going-forward basis.

VI. Conclusion

Enel X thanks Board Staff for its review and consideration of these comments. We are committed to helping New Jersey establish itself as a nationwide leader in EV adoption, which is predicated on the widespread availability of EV charging infrastructure. We again urge the Board to adopt the foregoing recommendations and look forward to working with Staff, other state and local agencies, EDCs, OEMs, EVSPs, and advocates in the service of creating a truly comprehensive EV Ecosystem in the Garden State.

Sincerely,

Marc Monbouquette
Regulatory Affairs Manager
Enel X e-Mobility

[21] Docket No. E018020190, filed February 23, 2018

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SUBMITTED VIA EMAIL TO BOARD.SECRETARY@BPU.NJ.GOV

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. QO20050357, In the Matter of Straw Proposal on Electric Vehicle Infrastructure Build Out

Dear Secretary Camacho-Welch:

Environmental Defense Fund ("EDF") respectfully submits this comment to New Jersey Board of Public Utilities ("Board" or "BPU") Docket No. QO20050357, In the Matter of Straw Proposal on Electric Vehicle Infrastructure Build Out. Per staff request, these comments are submitted via e-mail before 5:00pm EST on June 17, 2020 and thus are timely filed.

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, and uses the power of markets to speed the transition to clean energy resources. Consistent with its organizational purpose, EDF 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 and energy efficiency. EDF works collaboratively with market participants sharing these goals.

We have over 20 years of experience driving the adoption of clean trucks and buses. This includes collaborating with commercial entities such as FedEx to accelerate technology development and engaging in transformative legislative and regulatory initiatives focused on reducing diesel emissions, which include criteria pollutants that are harmful to human health as well as greenhouse gas ("GHG") emissions. EDF's current campaign focuses on moving at least 30% of new medium and heavy-duty vehicles ("MHDVs") to zero-emission solutions by 2030 – jumpstarting a transition that is an essential element of any global strategy to avoid the worst

global warming outcomes and improve air-quality related health outcomes for vulnerable urban populations. In this electrification campaign, EDF is once again collaborating with diverse market participants and stakeholders, ranging from vehicle manufacturers such as Daimler to fleet owners such as Walmart and UPS, as well as electric vehicle ("EV") charging industry participants such as Chargepoint and advocates such as ChargEVC.

EDF marries its extensive background working towards a transformation of the MHDV sectors 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, through the Energy Master Plan process, 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 June 3 public meeting, where we focused on the urgent need to electrify buses and trucks to clean the air, particularly in vulnerable communities. We thank you for the opportunity to submit these comments and provide an important perspective on New Jersey's EV development.

EDF supports BPU's efforts to advance New Jersey's EV ecosystem in an equitable and effective manner. In responding to BPU's Straw Proposal, this comment explains that:
(1) Expanding the State's EV ecosystem is vital for public health and decarbonization;
(2) Utility investment may be appropriate beyond Charger Ready infrastructure and in areas without private EV development;
(3) MHDV electrification requires much more immediate attention from BPU;
(4) Equity must be at the center of New Jersey's EV ecosystem development;
(5) Rate design, supporting technology, and practices that optimize EV charging and infrastructure are essential for widespread EV adoption, successful vehicle-grid integration, and optimal environmental outcomes, including low-cost, efficient integration of 100% clean electric generation; and
(6) BPU must design their marketing, outreach, and education plans to reach a broad array of communities, businesses, and other stakeholders.

II. DISCUSSION

1. Developing New Jersey's Electric Vehicle Ecosystem Is Critical

There is an urgent need to ambitiously expand EVs and EV infrastructure throughout New Jersey. Transportation is the largest emissions source in New Jersey, accounting for more than 40 percent of New Jersey's harmful GHGs,[1] and is a major contributor to local air quality problems that harm communities across the state.[2] Achieving the state's climate goals, as well as improving air quality and public health, demands rapid electrification in this sector.[3] This in turn requires a robust ecosystem composed of charging and grid infrastructure to support EVs.

Establishing and sustaining an EV ecosystem is especially imperative for protecting communities across the state already disproportionately burdened by transportation and other sources of pollution.[4] But rapidly achieving EV-enabled air quality improvements in the communities that need them most demands a mindful approach to EV infrastructure build-out that prioritizes the phase-out of diesel vehicles operating in the most vulnerable communities.

It is crucial that New Jersey jumpstart its EV ecosystem immediately, as the charging infrastructure needed to support EVs will take years to build out – especially in light of the nascent state of New Jersey's EV charging marketplace. Drivers, businesses, and transit entities need that infrastructure to use EVs fruitfully throughout the state. Without the infrastructure, the EV sector will not achieve scale in New Jersey. Additionally, the faster New Jersey develops the infrastructure needed to charge EVs at scale, the faster it can utilize EVs and their infrastructure to meet grid storage needs and provide balancing services in a system increasingly reliant on intermittent renewable resources.[5]

New Jersey's EV ecosystem development must be cost-effective beyond strict monetary terms. To ensure that benefits outweigh costs, the BPU will need to consider impacts on total cost of ownership as well as societal costs and benefits of various policy approaches, including the health benefits, environmental impacts, and broader economic effects. Too often, direct program costs dominate consideration over these very real costs and benefits. Failing to account for the societal impacts of policies will result in uninformed, biased decisions that do not reflect New Jersey's reality. We appreciate the difficulty in formulating such a comprehensive analysis, and

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[1] New Jersey Bureau of Public Utilities, *2019 New Jersey Energy Master Plan: Policy Vision to 2050* at 24 (June 10, 2019), *available at* https://www.nj.gov/emp/docs/pdf/2020_NJBPU_EMP.pdf [hereinafter *NJ EMP*].

[2] Diesel Particulate Concentrations data retrieved on June 12, 2020 from New Jersey Department of Health, New Jersey State Health Assessment Data, available at https://www-doh.state.nj.us/doh-shad/indicator/view/DieselCnty.html.

[3] The *NJ EMP* seeks to establish a 100% clean energy system. Additionally, the Global Warming Response Act ("GWRA") requires New Jersey to reduce GHG emissions by 80 percent from 2006 levels by 2050. N.J.S.A. 26:2C-37 et seq.

[4] "Importantly, the health benefits will apply more directly to environmental justice communities and other New Jersey residents who are currently disproportionately burdened by air pollution." *NJ EMP* at 51. *See infra* section 4 for further discussion.

[5] *See* J. Coignard *et al.*, "Clean Vehicles as an Enabler for a Clean Electricity Grid," ENVIRON. RES. LETT. 13 (2018) 054031, *available at* https://iopscience.iop.org/article/10.1088/1748-9326/aabe97/pdf.

we applaud BPU's commitment to developing such a test in the near future.[6] Full and consistent evaluation of all these factors likely requires a transformative approach to cost-benefit analysis. But the Board should strive throughout this proceeding to make decisions with societal costs and benefits in mind as much as possible. BPU can utilize New Jersey's Societal Cost Test ("SCT"), preferably supplemented with some quantification and valuation of climate and public health benefits available from emissions reductions, even before the complete "Resource Value Test" is developed.[7] The SCT will allow the Board to assess all program costs and benefits from a societal perspective, "includ[ing] the effects of externalities."[8] More complete cost-effectiveness analysis, including societal impacts, is critical for equitable and effective decision-making at this stage of New Jersey's EV development. It also conforms with the state legislature's findings on vehicle electrification[9] and BPU's commitment to a least-cost decarbonization scenario outlined in the EMP.[10]

Grid capacity should also inform EV ecosystem development. To this end, EDCs should evaluate grid hosting capacity to identify locations with constraints or surplus electric capacity.[11] Although hosting capacity must not be the sole or major determinant of where charging infrastructure is located – transportation, transit, market, and equity considerations will also be vital – grid hosting capacity information is critical for helping utilities and developers select sites for potential build-out in the near term. In connection with considering the challenges that vehicle charging can pose for the grid, it is important to keep in mind that with the right enabling technology and market signals, some EV charging loads may be capable of functioning as significant grid assets – for example, improving the ability of the grid to integrate variable renewable resources, whether overall or at a particular location on the grid. Therefore, EV

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[6] *See In the Matter of the Implementation of P.L. 2018, c.17 Regarding the Establishment of Energy Efficiency and Peak Demand Reduction Programs*, *In the Matter of the Clean Energy Act of 2018 – Utility Demographic Analysis*, and *In the Matter of Electric Public Utilities and Gas Public Utilities Offering Energy Efficiency and Conservation Programs, Investing in Class I Renewable Energy Resources and Offering Class I Renewable Energy Programs in their Respective Service Territories on a Regulated Basis Pursuant to N.J.S.A. 48:3-98.1 – Minimum Filing Requirements*, BPU Docket Nos. QO1901040, QO19060748 & QO17091004, Order dated June 10, 2020 (Agenda Item 8D) at 32. *Available at* https://www.nj.gov/bpu/pdf/boardorders/2020/20200610/8D--Order%20Directing%20the%20Utilities%20to%20Establish%20Energy%20Efficiency%20and%20Peak%20Demand%20Reduction%20Programs.pdf.

[7] *Id*.

[8] California Public Utilities Commission, *California Standard Practice Manual: Economic Analysis of Demand-Side Programs and Projects* at 18 (Oct. 2001), *available at* https://www.cpuc.ca.gov/uploadedFiles/CPUC_Public_Website/Content/Utilities_and_Industries/Energy_-_Electricity_and_Natural_Gas/CPUC_STANDARD_PRACTICE_MANUAL.pdf.

[9] "…vehicle electrification offers a wide range of benefits, such as improved air quality, reduced greenhouse gas emissions, and savings in motor vehicle operating costs for vehicle owners." N.J.S.A. 48:25-1.

[10] The EMP states that the "costs of needed investments" to reach the state's climate goals "are more than offset by avoided fuel costs, avoided air pollution, and other emission reduction benefits." *NJ EMP* at 257.

[11] *See generally,* Interstate Renewable Energy Council, *Optimizing the Grid: A Regulator's Guide to Hosting Capacity Analyses for Distributed Energy Resources* (Dec. 2017), *available at* https://irecusa.org/wp-content/uploads/2017/12/Optimizing-the-Grid_121517_FINAL.pdf.

charging load may be relevant to the system's hosting capacity with respect to distributed renewable generation.

In addition, each EDC should be required to perform a distribution grid impact study ("DGIS"), which would evaluate longer term grid impacts and build-out that are foreseeable based on projections of what vehicle electrification will entail. Such a study would consider the impact of incremental electric load resulting from the electrification of light-duty, medium-duty, and heavy-duty vehicles on transmission and distribution systems (i.e., any required electric system investments and the associated costs), including at the feeder level.[12] Needs identified can potentially be met through conventional wire infrastructure and/or through non-wires solutions including batteries, demand response programs, and/or vehicle-grid integration ("VGI") optimized through efficient price signals.

2. Utility Support May Be Expanded beyond Charger Ready Infrastructure and Areas of Last Resort

The shared responsibility model laid out by the Straw Proposal is a reasonable foundation for allocating roles and responsibilities among utilities and non-utility companies. We agree that the Electric Distribution Companies ("EDCs") should be "responsible for the wiring and backbone infrastructure necessary to enable a robust number of Charger Ready locations."[13] We would recommend further clarifying that it is appropriate for the EDC to engage in developing such wiring and backbone infrastructure, including on customer property and on either side of the meter, where customer-located and customer-side wiring and backbone infrastructure is reasonably necessary to prepare a site for EV charging. With their EVSE and power infrastructure experience, EDCs are in the best position to build New Jersey's Charger Ready infrastructure. California, the state with by far the most developed EV ecosystem in the U.S.,[14] mainly utilized this approach as well.

However, utility involvement in EV development should be more extensive and flexible than the Straw Proposal describes. As it stands, EDCs have the "ability to own and operate Electric Vehicle Service Equipment ("EVSE") in specified circumstances,"[15] limiting utility support to places "where investment in EVSE is not occurring."[16] Investing in EV development for these areas and promoting a more equitable distribution of EV infrastructure is an important role for

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[12] *See, e.g.,* J. Coignard *et al.*, "Will Electric Vehicles Drive Distribution Grid Upgrades?: The Case of California," in IEEE ELECTRIFICATION MAGAZINE, vol. 7, no. 2, pp. 46-56 (June 2019), *available at* https://ieeexplore.ieee.org/document/8732007.

[13] Notice: *In the Matter of Straw Proposal on Electric Vehicle Infrastructure Build Out* at 2, BPU Docket No. QO20050357 (May 18, 2020) [hereinafter *Straw Proposal*].

[14] U.S. Department of Energy, Alternative Fuels Data Center, "Electric Vehicle Registration Counts by State," *available at* https://afdc.energy.gov/data/10962.

[15] *Straw Proposal* at 2.

[16] *Id.* at 7.

utilities to play. But utility support for EV development is needed beyond areas of "last resort,"[17] including the MHDV sector and other more nascent EV market segments. We must allow EDCs to own and operate EVSE in a wider range of circumstances.

There are clear advantages to expanding utility involvement in New Jersey's EV ecosystem given their general infrastructure experience and greater capital flexibility. Allowing utilities to install and operate their own EV infrastructure can help address issues of range anxiety and upfront cost that are currently preventing broader uptake of these vehicles. EDCs can ensure charging infrastructure is consistently available throughout the state. This includes but should not be limited to developing the EV ecosystem in locations considered uneconomical by non-utility market participants, creating a more equitable distribution of EVSE and its benefits. By limiting utility ownership to portions of the EV marketplace where uptake is lagging, the shared responsibility model should also limit any anti-competitive effect that could arise as a result of utility ownership. For example, permitting utilities to own EVSE on behalf of commercial fleet owners could also present a turnkey solution for those who are considering electrification of their fleets but who do not wish to own and operate their own charging infrastructure and would view finding and working with non-utility service providers to be an additional, insurmountable barrier.

Relatedly, it is unclear what metrics will determine if a market "is not sufficiently mature to build EVSE without financial assistance,"[18] such that EVSE may be built, operated, and owned by utilities as contemplated by the current Straw Proposal. With Stakeholder input, the BPU needs to specify which metrics will be used to make this decision and circumscribe separate markets in the first place. BPU should also explore whether broader policy changes are necessary. For example, BPU may need to establish special interventions or incentives for multi-unit dwellings where landlords are not motivated to install EVSE. There are also permitting, land use, and other policy issues that BPU should examine with an eye toward streamlining EV ecosystem development in an equitable way.

3. Medium- and Heavy-Duty Vehicles Need More Systematic Attention

New Jersey has committed significant investments to electrify the MHDV sector through the Volkswagen Mitigation Trust and Regional Greenhouse Gas Initiative ("RGGI") fund, making the state a national leader in supporting this market sector transformation.[19] However, the Straw

[17] *Id.*

[18] *Id.* at 11.

[19] The state plans to fund more than $37 million electric replacements for old diesel vehicles using the Volkswagen Mitigation Trust. New Jersey Department of Environmental Protection, "New Jersey to Invest Nearly $45 Million in Electrification of Transportation Sector; Focus on Air Quality Improvements in Environmental Justice Communities," (Apr. 22, 2020), *available at* https://www.nj.gov/dep/newsrel/2020/20_0018.htm. This year alone, New Jersey will invest $60 million to electrify the state's transportation sector. New Jersey Department of Environmental Protection, New Jersey Economic Development Authority, and New Jersey Board of Public Utilities,

Proposal focuses almost entirely on light-duty vehicles ("LDV") and their infrastructure, putting meaningful MHDV development in jeopardy. This is understandable, given the general thrust of New Jersey's Plug-In Vehicle Law ("PIV law"),[20] but ultimately misguided. BPU must immediately and extensively advance MHDV ecosystem development alongside LDVs for several reasons.

First, although the PIV law does not promulgate specific electrification goals for most classes of MHDVs, it does establish electrification goals for one sector: transit buses. Section 3(a)(9) of the PIV law establishes explicit goals for the electrification of transit buses, ultimately requiring 100% of public bus purchases to be zero-emission vehicles by 2032.[21] Further, it clearly signals that goals for the entire MHDV sector are to be set by the end of 2020,[22] less than a year after the law itself was passed and less than seven months from now. Without systematic and clear attention, it is not clear New Jersey can fulfill MHDV-specific requirements within the timelines set out in the PIV law.[23] Moreover, it is worth noting that Public Service Electric and Gas ("PSE&G"), in its currently pending Clean Energy Future-Electric Vehicle/Energy Storage filing,[24] has proposed nothing that would advance electrification of transit buses despite having the service territory that is home to more polluting New Jersey Transit buses than any other. Importantly, low-income customers are unlikely to be early owners of light-duty EVs without additional policy support for them to purchase such vehicles (and many low-income residents of New Jersey don't even own internal combustion engine cars).Thus, the electrification of transit buses and other MHD vehicles that presently belch significant pollution in vulnerable communities is likely the best near-term opportunity to ensure that low-income New Jersey residents benefit directly from the early phases of vehicle electrification.

There is a real risk of utility companies holding up this environmentally beneficial market transformation. Though nascent, and though some portions of the sector require policy support, it is also clear that MHDV technology is advancing rapidly.[25] For example, Bloomberg estimates

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RGGI Strategic Funding Plan: Years 2020 through 2022 (Apr. 17, 2020), *available at* https://nj.gov/rggi/docs/rggi-strategic-funding-plan.pdf.

[20] N.J.S.A. 48:25-1 et seq.

[21] N.J.S.A. 48:25-3(a)(9).

[22] *Id*. at (a)(10).

[23] *Id*. (a)(9) and (10).

[24] Petition of Public Service Electric and Gas Company, *In the Matter of the Petition of Public Service Electric and Gas Company for Approval of its Clean Energy Future-Electric Vehicle and Energy Storage ("CEF-EVES") Program on a Regulated Basis*, BPU Docket No. EO18101111 (Oct. 11, 2020), *available at* https://nj.pseg.com/aboutpseg/regulatorypage/-/media/6EA1F476B43F4BCBAB7D5F7A46E19DF7.ashx.

[25] Navigant Research, *Medium and Heavy Duty Trucks and Buses with Hybrid, Plug-In Hybrid, Battery Electric, and Fuel Cell Powertrains: Global Market Analysis and Forecasts* (2018)*, available at* https://www.navigantresearch.com/reports/market-data-electric-trucks-and-buses.

that 80 percent of transit buses globally will be electric by 2040.[26] CALSTART's Zero-Emission Technology Inventory estimates there will be 195 MHDV models available or announced by 2023, roughly double the number in 2019.[27] However, as with LDVs, it is clear that the lack of charging infrastructure is perceived as a significant barrier to fleet electrification for many entities – which means that these deployment estimates hinge on the availability of charging equipment.[28] Further, New Jersey must be prepared to take on significant increases in electricity loads from MHDVs. Mismanagement of this transition – for example, by forestalling attention to MHDV needs, thus necessitating duplicative upgrades of the same infrastructure being upgraded to support LDV electrification – could delay further market traction in this space and increase the costs of this transition. Ultimately, fleet owners and/or ratepayers would bear these avoidable costs.

Second, MHDVs have vastly different characteristics than LDVs. These vehicles have larger batteries, which leads to higher demand, longer charging time, and higher overall energy consumption. As a consequence, MHDVs can have vastly larger grid impacts than LDVs, especially if large numbers of them are charged in depots at particular locations and times, which is a reasonable expectation for many fleets based on present duty cycles of such vehicles. Additionally, the universe of MHDVs is far more diverse than that of LDVs, given the incredible variety of functions they serve.[29] For example, the power and service needs of public transit buses will be very different from those of delivery trucks, refuse trucks, drayage trucks, or heavy construction equipment like a bulldozer – and their divergent power and service needs mean that their infrastructure needs are also likely to diverge. Planning for MHDV infrastructure needs while the infrastructure needed for the light-duty sector can improve the economics of both, if duplication can be avoided by adding more capacity during initial upgrades. But developing the light-duty piece of the EV infrastructure ecosystem as an isolated initiative, without keeping future MHDV needs in mind, will not meaningfully prepare the utilities or the system to support the development of the charging infrastructure required by the more demanding and complex medium- and heavy-duty sector, and will result in higher costs in the long run.

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[26] Bloomberg New Energy Finance, *Electric Buses in Cities*, (Mar. 29, 2018), *available at* https://c40-production-images.s3.amazonaws.com/other_uploads/images/1726_BNEF_C40_Electric_buses_in_cities_FINAL_APPROVED_%282%29.original.pdf?1523363881.

[27] CALSTART, Zero-Emissions Technology Inventory, "Model availability to double by 2023," (June 3, 2020), *available at* https://globaldrivetozero.org/tools/zeti-analytics/.

[28] *NJ EMP* at 65. *See also* McKinsey, *Charging ahead: Electric-vehicle infrastructure demand*, (Aug. 2018), *available at* https://www.mckinsey.com/~/media/McKinsey/Industries/Automotive%20and%20Assembly/Our%20Insights/Charging%20ahead%20Electric-vehicle%20infrastructure%20demand/Charging-ahead-electric-vehicle-infrastructure-demand-final.ashx.

[29] *See, e.g.,* California Air Resources Board, Public Hearing to Consider the Proposed Advanced Clean Trucks Regulation, Staff Report: Initial Statement of Reasons (Oct. 22, 2019), Exhibit E (Zero Emission Truck Market Assessment), *available at* https://ww3.arb.ca.gov/regact/2019/act2019/appe.pdf.

Finally, MHDVs are critical to equitable electrification of the vehicle sector. They are responsible for an outsized portion of harmful, localized pollution from transportation, including nitrogen oxides ("NOx") and particulate matter.[30] This pollution disproportionately impacts certain communities across the state, often low- and moderate-income and environmental justice communities.[31] This is especially true of diesel vehicles that contribute to heightened levels of diseases such as asthma and heart disease.[32] Far more than for the LDV sector, electrifying the MHDV sector will result in outsized air quality benefits for communities experiencing the worst pollution burdens. Conversely, delaying the electrification of this sector will perpetuate public health inequities that have plagued these communities for far too long.

The EMP recognized this, prioritizing electric public transportation in environmental justice communities for the reasons described above.[33] To prepare the state for this equitable transformation and garner the significant benefits associated with it, BPU must devote systematic attention to the MHDV sector. Equity demands that MHDVs emitting diesel fumes in environmental justice communities be an early and urgent focus of BPU's electrification strategy.

For all of these reasons, infrastructure to support electric MHDVs is a distinct part of the EV ecosystem that needs to be viewed through a separate lens, but developed simultaneously with, infrastructure to support electric LDVs.

4. Equity Must Guide All EV Ecosystem Decision-Making

EDF appreciates the Straw Proposal's emphasis on equity as a key consideration in vehicle electrification. Low- and medium-income and environmental justice communities across the state continue to experience a disproportionately large share of New Jersey's environmental burdens while often failing to accrue environmental benefits.[34] Without active, deliberate policies and action, there is a substantial risk that these communities will continue to be left out of New Jersey's clean energy progress. Through this proceeding, BPU has the opportunity to reverse some of this injustice by elevating equity throughout its vehicle electrification decision-making.

It is important that BPU ensure that communities and community-based organizations are included in the selected approach to developing the EV infrastructure ecosystem from the outset in order to ensure that the EDCs' programs and investments are structured to adequately address equity concerns. This will necessarily involve establishing and maintaining respectful

[30] *NJ EMP* at 59.
[31] *Id*. at 61.
[32] Y. Huang *et al.*, "Global climate and human health effects of the gasoline and diesel vehicle fleets," *GeoHealth* (2020), *available at* https://agupubs.onlinelibrary.wiley.com/doi/pdf/10.1029/2019GH000240.
[33] *Id*. at 8.
[34] *NJ EMP* at 198.

relationships with community leaders, organizations, businesses, governments, and other stakeholders who can provide a necessary, locally-informed perspective on the unique risks and tensions implicated by BPU or utility decisions. Further, this accords with key BPU directives[35] and the spirit of the EMP,[36] both of which emphasize the need to consider environmental justice and participation by the communities most impacted by air pollution.

5. Prepare for Optimal Charging: Technology, Standards, and Price Signals

EV charging has been shown to place downward pressure on utility rates broadly by improving system utilization overall, but this outcome cannot be taken for granted; rather, the electric EV infrastructure ecosystem, including the price signals experienced by vehicle owners, must be deliberately designed to achieve these outcomes. Overall, rates should facilitate electrification by providing an affordable, manageable value proposition to vehicle owners while incentivizing them to minimize the costs they impose on the grid and, ideally, to maximize the benefits they provide. In the case of MHDVs – which, as noted earlier, are an extraordinarily diverse group with divergent needs and capabilities – this is less a question of particular rate designs and more a question of a principled approach. Moreover, the system must embed the technology and standards that make efficient price signals possible.

As previously discussed, MHDV charging will involve a wide variety of energy and operational needs. Fleet customers are differentiated based on their size, the duty cycle of the vehicles and how flexible it is, the extent of their prior experience with complex electric rates, and other factors. It is important to ensure that there are rates that are understandable and manageable even for small businesses with MHDVs; and outreach and education will be important for building understanding of even simple rates, as well as laying the groundwork for future migration to more complex rates. Those who can manage the most complexity and granularity may be well-positioned to provide services to the grid and realize economic benefits for themselves. It is essential to recognize that in light of this diversity, there will not be a single fleet-charging rate that works well for all or most MHD EV owners; rather, a variety of optional rates will be necessary to rapidly scale up electrification of this sector.

Some Principles for Rate Design. Pricing of electric service has an essential role to play in: ensuring that operating electric MHDVs is affordable for truck and bus operators; that the grid burden imposed by MHDV charging is not excessive; and that the benefits of MHDV electrification can be fully realized. Some important principles to keep in mind include the following:

- **Well-designed rates should help ensure the grid costs no more than it needs to, based on actual grid costs.**

[35] Exec. Order No. 23 (Apr. 20, 2018), 50 N.J.R. 1241(b) (May 21, 2018).
[36] *NJ EMP* at 197-214.

- *Pricing should encourage customers to keep their demand, especially their peak demand, from being excessive.* Well-designed time-variant volumetric charges may provide an adequate signal to contain demand for some customers, especially those with smaller loads. However, the larger any specific load becomes, the more important it may be to provide a price signal that directly shapes demand – that is, a demand-based rate of some kind.
- *Pricing should provide a disincentive to charge at high-cost times.* Both demand-based and volumetric rates can accomplish this.
- *The price of the energy commodity should generally be volumetric*, reflecting the reality of how individual units of energy are purchased at wholesale to serve load. Moreover, to reflect the fact that wholesale clearing prices for units of energy vary constantly, energy prices should always be time-variant. Additionally, rate options should be based on level of granularity – from relatively crude time-of-use structures to fully dynamic pricing.
- *To encourage charging in areas of the grid where costs are especially low, incentives can be used.* In addition to temporal differences in costs, there are geographic differences as well; however, utility rates for energy consumption are generally uniform throughout a service territory. To the extent that EV charging could be especially beneficial at particular locations, price signals to encourage such beneficially-located charging could be incentivized via a geographically targeted incentive available outside the tariff.

- **To ensure rapid electrification occurs on a widespread basis, rates must allow vehicle operators to keep their bills manageable.**
  - *Demand-based rates can be challenging for some types of commercial charging customers – particularly publicly-accessible charging customers, but also fleet owners with potentially unpredictable, round-the-clock duty cycles.* Although volumetric rates are an option, the importance of managing demand for very large customers means developing demand-based rates that can be made manageable for those customers should be a high priority.
  - *Demand-based rates should generally be based on coincident demand.*[37] For customers who are able to charge mostly off-peak, this by itself may make demand charges manageable.
  - *Innovations in demand-based rates can also make them more palatable.* For example, subscription charges that allow customers to specify a level of demand and try to stay below it, with new peaks not necessarily leading to permanently higher bills, provide an example of demand-based rates that might work well for some fleets. Other methods that avoid punitive results from inadvertent overages may also be possible, such as assessing demand based on several high-demand periods rather than a single peak.
- **Well-designed pricing is essential for realizing the grid and environmental benefits of MHDV charging.** Some medium- and heavy-duty electric vehicle fleets extremely well suited for providing grid services, such as load balancing that allow the grid to work more efficiently and to integrate higher levels of intermittent renewable generation at low cost. Granular pricing for power consumption is an important first step for enabling these

[37] Coincident charges are applied from when the highest amount of energy is demanded across the relevant grid. Peak time energy usage on that grid will have the highest charges while off-peak times will have the lowest. Non-coincident charges are based on a customer's highest energy demand, regardless of when it occurs.

benefits; as the market matures, directly paying MHDV customers for services provided will become an increasingly important part of operating the grid at low cost while also improving the EV value proposition available to vehicle owners and operators.

Vehicle-Grid Integration. With the right technology and sufficiently granular price signals, vehicle owners and operators can provide a wide variety of values to the grid – ranging from peak reduction to energy storage/discharge onto the grid to highly time sensitive needs such as voltage support and frequency regulation.[38] By leveraging electric vehicles' inherent flexibility to provide highly time-sensitive services through optimal vehicle-grid integration, utilities can help integrate more renewable generation in order to meet the State's goal of 100% clean energy by 2050, as well as EV goals adopted now and in the future, in the most cost-effective manner.[39] VGI includes unidirectional charging services ("V1G") and bidirectional vehicle-to-grid ("V2G")/vehicle-to-building ("V2B") capabilities. In the context of an emergency, electric vehicles with V2G/V2B capability can be an asset insofar as they can provide emergency power when the grid is out. BPU must ensure New Jersey is prepared to harness the VGI capabilities of EV and improve grid resiliency.[40]

Technology and Standards for Optimal Charging. Optimal charging/VGI is only possible with billing and metering systems capable of supporting a wide variety of rate structures that evolve over time. Where EV load may be more flexible than other load at a given premises, submetering can be leveraged to apply such pricing specifically to vehicles.[41] Allowing the

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[38] *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.

[39] *See, e.g.*, C. Zhang *et al.*, "Quantifying the benefits of electric vehicles on the future electricity grid in the midwestern United States," *Applied energy*, 270 (July 15, 2020), *available at* https://www.sciencedirect.com/science/article/abs/pii/S0306261920306863 *and* J. Coignard *et al.*, "Clean Vehicles as an Enabler for a Clean Electricity Grid," ENVIRON. RES. LETT. 13 (2018) 054031, *available at* https://iopscience.iop.org/article/10.1088/1748-9326/aabe97/pdf.

[40] Nissan already offers this service for cars. *See* Nissan Motor Corporation, *EVs as Power Source for Living, available at* https://www.nissan-global.com/EN/TECHNOLOGY/OVERVIEW/vehicle_to_home.html. Proterra, a manufacturer of electric buses, now offers a bidirectional charger with V2G capability. *See* Proterra, "Proterra Introduces New High Power Interoperable EV Charging Technology," (May 7, 2018), *available at* https://www.proterra.com/press-release/proterra-introduces-new-high-power-interoperable-ev-charging-technology/.

[41] To the extent that more efficient results may be achieved by placing vehicle load on a different price structure than other load at the same premises, there is no reason to allow the cost of separate metering or submetering to be a barrier to doing so. 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

submetering functionality built into EVSE to be used in this manner can reduce the cost of putting EV charging on a granular rate by thousands of dollars, unlocking significant additional opportunity for valuable VGI optimization.

It is also essential that New Jersey adopt consistent standards, including communications standards as well as standardized data formats for metering (including submetering). These are important for enabling a wide variety of EV Supply Providers ("EVSPs") to participate in the marketplace, and for customers to change EVSPs without undue cost, confusion, and complexity. New Jersey can benefit from work already done in leading states such as California, which have established various best practices and standards New Jersey can readily adopt. These include Open Charge Point Protocols (OCPP)[42] and requiring charging stations to have Open Automated Demand Response (OpenADR).[43] Standards such as these are critical to ensuring interoperability as well as to avoid stranding assets when the mix of market participants changes. As the EV infrastructure ecosystem takes off and evolves, the state will need to ensure emerging issues in EV development are addressed promptly and in a manner that aligns with accepted standards. Establishing a standing stakeholder working group that includes participants familiar with emerging practice in other jurisdictions will help the Board and EDCs stay up to date.

Relatedly, the Straw Proposal uses the term "managed charging" on page 13 but does not define this phrase in the terminology section of the Straw Proposal. As Staff has welcomed suggestions for terms that should be included in the list (but currently are not), we would recommend expressly defining "managed charging," which is also known as "smart charging." Smart charging means adapting the charging cycle of EVs to both the conditions of the power system and the needs of vehicle users. This facilitates the integration of EVs and the grid while meeting mobility needs.[44] The advantages and opportunities from smart charging will evolve as the EV

Energy, *Compliance Filing – Residential Electric Vehicle Charging Tariff*, 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 10 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=showPoup&documentId={4E71E55E-AEE5-43B2-87B7-4E1BDFCC47C9}&documentTitle=20157-112040-01.

[42] OCPPs standardize communication between EVSE and Electric Vehicle Service Providers (EVSP), allowing 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.

[43] OpenADR is a demand response standard for sending and receiving signals for load and generation flexibility at both the regional transmission organization and utility levels. This will enable EV charging customers to participate fully in the marketplace as it matures.

[44] *See* International Renewable Energy Agency, *Innovation landscape brief: Electric-vehicle smart charging* (2019), *available at* https://irena.org/-

ecosystem and grid develop synchronously. Early on, external signals may primarily encourage users to shift charging away from peaks and/or allow grid operators to avoid excessive load at certain times. But over time, smart charging may come to encompass a range of much more sophisticated practices to provide energy services (even fairly granular ones such as frequency regulation). Laying the groundwork for smart charging requires a future-proofed combination of hardware, software, and standards in which the most beneficial charging behaviors can flourish, even as expectations for what is most beneficial change over time.

6. The Straw Proposal Must Explain its Marketing, Education, and Outreach Approach

Marketing, education, and outreach ("ME&O") are essential for successful vehicle electrification in New Jersey. Yet the Straw Proposal makes little to no mention of BPU's plans for these vital aspects of their EV build out programs. Extensive ME&O will be necessary for informed, effective, and equitable development of New Jersey's EV ecosystem.

BPU and New Jersey's EDCs should provide details, commitments, and concrete plans of action for the extensive ME&O this proceeding requires. BPU should explain how it will provide education about the health, environmental, and economic benefits of EVs, and should also discuss how they will guide people and businesses in utilizing the relevant incentives, rebates, and power rates associated with EVs and EVSE. Utilities cannot merely post information on their websites. Information should be disseminated actively and made available in multiple formats and languages. EDCs should connect stakeholders with knowledgeable representatives to timely answer any questions or concerns about their programs.

ME&O will need to be specially targeted and formatted for different classes of stakeholders, including municipalities, community-based organizations, local environmental groups, potential fleet owners, businesses of various sizes, and critical load sites (e.g. shelters, schools) among others. And as previously mentioned, BPU and EDCs will need meaningful, ongoing engagement with these various stakeholders to assess their needs and maintain open lines of communication. Stakeholders should be able to provide feedback at many points along BPU and EDC decision-making around EV ecosystem development. In other words, creating and preserving transparency throughout every stage of this process is absolutely paramount.

In the case of medium- and heavy-duty vehicle electrification, which is a nascent sector about which little is widely known since much is just emerging, ME&O should include studying the market potential for MHDV electrification in New Jersey. This would entail EDCs undertaking affirmative outreach to customers within their territories to identify those who are or may soon be undertaking electrification initiatives. A market potential study can be an important first step

/media/Files/IRENA/Agency/Publication/2019/Sep/IRENA_EV_smart_charging_2019.pdf?la=en&hash=E77FAB7422226D29931E8469698C709EFC13EDB2.

for the EDCs to understand the task ahead of them, while also providing an opportunity to educate their customers about the process – which may take several years – of arranging for the charging capacity needed to support a major fleet electrification initiative.

Another area where the MHDV fleets will have a particularized need for ME&O as they electrify is rate design. Not all commercial customers will have experience with complex electric rates prior to electrification. Although some fleet owners are commercial or industrial customers with significant electric energy needs and long experience managing complex rates, some owners of diesel vehicles – or even entire fleets – may have had relatively small electric energy needs prior to switching from diesel to electric vehicles. Making it possible for these types of businesses and institutions to participate successfully in the future EV charging marketplace will entail significant education and outreach to ensure that they are charged rates they can manage, and that they understand and have the requisite technology to in fact understand and manage the price signals they face.

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.

Respectfully submitted,

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AARP Real Possibilities
New Jersey

Via electronic mail

June 17, 2020

Aida Camacho-Welch
Secretary
New Jersey Board of Public Utilities
Post Office Box 350
Trenton, New Jersey 08625
board.secretary@bpu.nj.go

RE: Docket # QO20050357 - New Jersey Electric Vehicles Infrastructure Ecosystem 2020 Straw Proposal

Dear Ms. Aida Camacho-Welch

AARP on behalf of our approximately 1.3 million Garden State members appreciates the opportunity to comment on the above referenced Electric Vehicle (EV) straw proposal, (Straw).

In these times of economic stress, as our neighbors as well as our economy recovers from the lasting effects of the pandemic, we believe that regulatory emphasis in the near term should be primarily placed on the affordability of household utilities. We thank you for your work to ensure no household suffers any interruption in critical utility lifeline services during the COVID-19 pandemic.

In this vein, we urge that electric vehicle spending proposals pending before the Board of Public Utilities should be closely scrutinized to ensure that ratepayers continue to receive essential services at rates they can afford. These proposals include the Straw Proposal distributed by the Board Staff on May 18, 2020, in Docket No. QO20050357.

AARP opposes EV subsidies when private sector forces exist in the creation, development and growth of the marketplace. AARP opposes the use of ratepayers as a funding mechanism for the build-out of EV charging infrastructure.[1] Should the Board move forward, AARP supports the Straw's shared responsibility model, including its features intended to mitigate the problems of using ratepayer money to fund investments that may only benefit the utilities, the risk of creating stranded costs, and to designing infrastructure policies that are fair to both EV-driving ratepayers and non-EV driving

[1] Our comments concerning cost responsibility apply as well to pending requests by Public Service Electric and Gas and Atlantic City Electric to hike rates $364 million and $42 million respectively to build out charging infrastructure in their territories The PG&E and AEP proposals would require ratepayers to be responsible for millions of dollars of investment, including funding charging stations around the state, with the utilities reaping the profits. These proposals should not be considered by the Board. AARP supports the Ratepayer Advocate's requests to dismiss these filings.

ratepayers in order to ensure the benefits of EVs are shared by all ratepayers.

For the most part, the Straw divides investment responsibility between the Electric Distribution Companies (EDCs) and unregulated Electric Vehicle Service Equipment Infrastructure Companies (EVSEs) in a way that makes sense to AARP.

Poles and wires are infrastructure that is to be built and maintained for all by the utility. Charging stations are equipment-providers, who install, maintain and operate their equipment as private businesses.[2]

The Straw proposes that the EDCs recover all costs associated with distribution system upgrades, the costs of making a location Charger Ready, and the costs of any mapping exercises, "provided the EDCs make an adequate showing that the costs are reasonable and prudently incurred, and that such investments are otherwise appropriate for recovery through the rate recovery mechanism proposed by the EDC."

Board Staff requests comment on whether these investments would be expected to meet the earnings test applied to line extensions for other purposes, or whether for public policy reasons other measures should be implemented.

AARP believes use of the earnings test remains the best route for evaluation of rate recovery for the EDC investments. The earnings test provides a check on wasteful or ill-considered investments.[3] If ratepayers build out the infrastructure throughout the state, it is not clear when or if anyone will come. This remains the risk if a government-led process determines priority locations for charging stations.

As the Straw Proposal notes, development of an EV market will be an organic process. Technology will be changing, and location and set-up requirements are likely to change. For this reason, the best EV paths cannot be known in advance by any agency or expert; some investments will not bear fruit. The utility is in a better position to identify and take on these risks than its customers. Further, putting the decision about ratepayer investments in the hands of state agencies would amount to a tax imposed through (regressive) utility rates.

Such an investment-prioritization and cost-recovery process would have government necessarily making business decisions that ratepayers will have to pay for, even if and especially if the revenues received do not cover the costs. The result of this reallocation to consumers of business decisions is that utilities will not have a business incentive to make smart decisions that will support a robust EV market. It puts the onus for determining the best locations for charging stations on the public, in advance of actual use by EV drivers.[4] At most, statewide mapping should be used as a guide, but the ultimate responsibility for

[2] We support the proposal that EVSE companies may not be EDCs, affiliated with an EDC, or controlled by an EDC. This restriction ensures that utility customers do not subsidize private equipment companies. We do not see any reason why such hybrid entities should be approved by the Board as proposed, however.

[3] AARP notes that allowing EDCs to propose rate recovery mechanisms for EV investment also invites the use of pre-payment and trackers for cost recovery. AARP opposes such deviations from cost-based ratemaking. They encourage waste, require customers to pay for investments that do not and may never provide utility service, and make Board oversight virtually impossible.

[4] AARP also notes that ratepayer-funded rebates to reduce EV-buyers' first costs will actually exacerbate this problem, spreading incentive cost responsibility to customers who cannot make use of the investment.

specific routes should remain with the utility.

The Straw Proposal recognizes that there will be areas in the state where the market can be expected to be soft for some time:

Board Staff specifically requests comment on how to identify Equity Areas, how to define when a market is not sufficiently mature to drive investment, how long to wait for the market to respond, or whether certain communities should be immediately identified (based on Census Tract or other data) as areas where additional financial support may be necessary. (Notice, p. 12.)

The availability of charging stations is not likely to be the primary reason why there are areas where a market is "not sufficiently mature to drive investment." These areas exist primarily because electric vehicles remain expensive. These vehicles will remain beyond the reach of many customers for some time. Installing infrastructure and charging stations will not solve this problem.

Many low- and moderate-income customers cannot make use of tax credits and utility incentives to buy EVs. EVs are new enough that a secondary market of reliable and efficient pre-owned vehicles has not yet emerged. Thus charging stations may be built, and consumer money spent, well in advance of their usefulness. Also, at the same time, if public money is spent to subsidize this partial answer to the problems of low-emission transportation, other low-emission transport options will not be getting attention needed to build and maintain them.

The urgency to meet climate goals is real, and the state should not stop all such work at this time. However, subsidizing public transit rather than EVs may be a better solution.

During the current economic slowdown, usage is already lower, and emissions are correspondingly lower.[5] Coupled with the strain of the recession on New Jersey consumers, these facts should caution policy makers to be particularly wary of top-down government efforts to create markets that may well not be economically viable.

AARP applauds the staff's Straw proposal for its reliance on a shared investment model and urges the Board to maintain utility financial discipline to keep utilities stockholders invested in the success of any infrastructure build-out.

Finally, consistent with Executive Order No. 127, extending various deadlines associated with rulemaking for state agencies until 90 days following the end of New Jersey's public health emergency, we urge you to pause or suspend the scheduling and conduct of public proceedings on this and other matters, while public attention is completely focused on the fight against COVID-19.

During these very difficult economic times, we urge New Jersey to take the aforementioned actions in order to ensure continued consumer access to critical services, protections for the most vulnerable, and

[5] The EV industry has mixed projections regarding the effect of the pandemic and recession on EV sales. According to research reported in the trade press, global sales of electric vehicles (EV) will drop 43% in 2020. If the economy recovers, the sales should recover in 2021. See https://www.utilitydive.com/news/global-ev-sales-will-drop-43-in-2020-due-to-covid-19-lower-oil-prices-wo/575750/, last viewed June 12, 2020.

rejection of all unnecessary utility spending that would further burden consumers.

Thank you for your prompt attention to these issues. If you have questions, please contact me at eliebman@aarp.org

Sincerely,

Evelyn Liebman

AARP NJ Director of Advocacy

Cc: Stefanie Brand, Director, NJ Division of Rate Counsel
George Helmy, Chief of Staff, Office of Governor Phil Murphy
Matthew Platkin, Chief Counsel, Office of Governor Phil Murphy
Deborah Cornavaca, Deputy Chief of Staff for Outreach, Office of Governor Phil Murphy
Stephanie Hunsinger, State Director, AARP NJ State Director

***AARP** is the nation's largest nonprofit, nonpartisan organization dedicated to empowering Americans 50 and older to choose how they live as they age. With nearly 38 million members and offices in every state, the District of Columbia, Puerto Rico, and the U.S. Virgin Islands, AARP works to strengthen communities and advocate for what matters most to families with a focus on health security, financial stability and personal fulfillment. AARP also works for individuals in the marketplace by sparking new solutions and allowing carefully chosen, high-quality products and services to carry the AARP name. As a trusted source for news and information, AARP produces the world's largest circulation publications, AARP The Magazine and AARP Bulletin. To learn more, visit www.aarp.org or follow @AARP and @AARPadvocates on social media.*

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[i] https://www.njspotlight.com/2020/04/rate-counsel-says-utilities-cant-spend-a-dime-of-ratepayer-money-on- ev-charging-infrastructure/

[ii] https://nj.pseg.com/aboutpseg/regulatorypage/regulatoryfilings

Rockland Electric Company
Comments on
New Jersey Electric Vehicles Infrastructure Ecosystem 2020 Straw Proposal
Docket No. QO20050357

I. Introduction

Rockland Electric Company ("RECO" or the "Company") submits these comments on the New Jersey Board of Public Utilities' ("NJBPU" or "Board") New Jersey Electric Vehicles Infrastructure Ecosystem 2020 Straw Proposal ("Straw Proposal").[1] RECO supports the Board in their efforts to establish a framework to guide the development of a robust electric vehicle ("EV") infrastructure system to help the State meet its EV goals.

The Company's comments set forth below support the proposal for a Charger Ready framework, with roles for both the electric distribution companies ("EDCs") and third-party developers. The Company provides recommendations on how to strengthen the framework, so that EV infrastructure investments are on a level playing field with other utility investments and appropriate cost recovery is provided. The Company encourages the Board to provide flexibility in this framework, so that both EDCs and developers can react to changing market conditions. Finally, the Company emphasizes that while the EDCs have an important role to play, all market participants share in the responsibility to provide a strong environment for EVs, including developers and dealerships. The EV Infrastructure Ecosystem envisioned by NJBPU Staff extends beyond public charging and will include all segments and use cases, such as in-home and workplace charging, and will require the support of a multitude of stakeholders. EV integration will play an important role in reducing greenhouse gas emissions, improving public health, and reducing climate impact of transportation. RECO looks forward to participating in the development and establishment of this important initiative.

II. How to best expand the Electric Vehicle Supply Equipment ("EVSE") Infrastructure and encourage Charger Ready investment.

The Company supports the Shared Responsibility model contained in the Straw Proposal and acknowledges that EDCs have a critical role to play in furtherance of the State's EV goals and greenhouse gas emission reduction targets. It is important to have adequate publicly available chargers to reduce range anxiety and support increased adoption of EVs. In the comments below, the Company discusses the importance of flexibility in identifying locations for Charger Ready investment, makes recommendations regarding cost recovery and standard of review,

[1] *I/M/O Straw Proposal on Electric Vehicle Infrastructure Build Out*, Docket No. QO20050357, New Jersey Electric Vehicles Infrastructure Ecosystem 2020 Straw Proposal

cautions against assigning the EDCs with responsibility over the performance of EVSE Infrastructure Companies,[2] and discusses the importance of outreach and education.

EDC Role

The Straw Proposal advocates for a Shared Responsibility model, identifying the roles for both EDCs and private investors.[3] EDCs will be responsible for making the required upgrades to accommodate EVSE,[4] defined as "charger ready," where requested and to prioritize those sites that are recommended as part of the EV Mapping Effort.[5] The Company supports a "charger-ready"[6] approach wherein the EDC provides utility side equipment up to and including the meter and the EVSE Infrastructure Company, customer or other third party is responsible for customer side investments after the meter up to and including the charger.

Utility side investments under the Charger Ready Program include those investments and incremental cost for providing service up to the utility meter. Such investments may include the installation of a pad mounted transformer or circuit/distribution system upgrades needed to accommodate the additional customer load. The Company recommends that these utility sided investments are capitalized, similar to how other utility sided investments are treated, except Charger Ready upgrades should not be subject to earnings, or revenue, tests as set forth in utility tariffs. The importance of widespread deployment of charging stations in furtherance of the State's clean energy goals and the current nascent market conditions for these stations requires that earnings tests are not applicable to investments made in the Charger Ready program. Instead, the utility will install utility sided equipment and capitalize the entire cost of these assets.

Customer sided investments include expenses related to equipment located after, or behind, the electric meter up to the charger itself. This type of equipment includes, for example, service panels, junction boxes, conduit, and wiring necessary to make a particular location able to accommodate EVSE on a "plug and play" basis. The EDC should have the ability to provide

[2] An EVSE Infrastructure Company is defined as an entity using private capital to deploy EVSE. Straw Proposal at 5.
[3] The Straw Proposal at 7.
[4] The Straw Proposal (p. 4) defines EVSE as:

> [T]he equipment, including the cables, cords, conductors, connectors, couplers, enclosures, attachment plugs, power outlets, switches and controls, network interfaces, and point of sale equipment and associated apparatus designed and used for the purpose of transferring energy from the electric supply system to a plug-in electric vehicle. EVSE may deliver either alternating current or direct current electricity consistent with fast charging equipment standards. "Electric Vehicle Service Equipment" is synonymous with "Charging Station Infrastructure."

[5] The Straw Proposal at 10.
[6] The Straw Proposal (at 4) defines "charger ready" as:

> [T]he 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. Making a site Charger 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. "Charger Ready" is synonymous with the term "Make Ready."

incentives for any customer sided investments in the form of a rebate or other mechanism. The customer[7] will own the equipment and be solely responsible for its operation and maintenance. The EDC will not own or operate any customer sided equipment.

The Company also supports the Straw Proposal's recommendation that the EDCs develop "reverse" hosting maps[8] alongside the State's EV Mapping Effort under the lead of the New Jersey Department of Environmental Protection ("NJDEP"). This will support the identification and selection of developing Charger Ready sites in support of the State's EV statute while avoiding lengthy and costly distribution upgrades.[9] Reverse hosting capacity maps and the NJDEP map are two examples of the useful tools available for developers to inform identification of locations that may be optimal to site a public EV Charging Station. The Company recommends that the Board remain flexible in how sites are prioritized for development, and importantly that utility investment at sites requested by an EV Infrastructure Company are eligible for cost recovery and incentives.

The Company also recommends that the Straw Proposal recognize the important role that EDCs should play in customer and community outreach and education, as well as partnering with EV dealerships and manufacturers. EDCs are uniquely positioned to educate their customers based on their relationship and role as a trusted energy advisor. For example, EDCs can educate customers on various rates they offer to empower customers to take an active role in their energy usage and minimize the bill impacts of at-home charging. In addition, EDCs can leverage lessons learned in other service territories or venues to implement successful outreach and education plans, tailored to the demographics of their service territory and building on their existing relationships with the municipalities in which the EDC provides service.

EDCs can also facilitate Ride and Drive Events at which potential EV buyers can speak with current EV owners and test drive a variety of EVs. RECO's experience[10] with utility-sponsored Ride and Drive Events is that these events serve to increase adoption rates by customers considering the purchase of an EV. Test driving an EV at a dealership limits the models that are available to those sold by the dealership and does not offer the potential buyer an opportunity to hear candid feedback from an EV owner.

Cost Recovery

The Company supports flexibility for the cost recovery criteria applicable to Charger Ready investments, including flexibility regarding the location of the investment and selection of the site. This will allow EDCs to adapt to changing market conditions and consumer behavior. For example, municipalities may wish to install chargers on municipally owned property, such as

[7] RECO refers to customer ownership for ease of drafting but recognizes that different models may contemplate a different third-party ownership. Customer ownership will not include utility ownership.
[8] Reverse hosting capacity maps provide the amount of additional load that can be served.
[9] Straw Proposal at 8-9.
[10] RECO's corporate parent, Orange and Rockland Utilities, Inc. ("O&R"), has successfully sponsored Ride and Drive Events in its New York service territory

a library, as EV adoption increases in their communities. In addition, as the Straw Proposal notes, there may be investments that occur on private property but can be eligible for cost recovery so long as they support public charging or multi-unit dwellings.[11]

The Company agrees with the Straw Proposal's assertion that the EDCs can recover in base rates the costs of infrastructure upgrades installed by the EDC to make a site Charger Ready. This should include allowing a return at the level authorized by the Board in an EDC's most recent base rate case. The Straw Proposal contemplates reducing an EDC's return on equity ("ROE") if the EDC takes longer than 12 months from the date of a request to make a site Charger Ready.[12] This reduction places EV infrastructure investments on a different footing than other EDC investments and could discourage investment in Charger Ready Infrastructure. Application of different ROEs that are tied to specific programs, investments, or portions thereof, is an inappropriate practice whether within or outside of a rate case. The Board recognized as much in its recently issued Order Directing the Utilities to Establish Energy Efficiency and Peak Demand Reduction Programs.[13]

Rather ROEs should be considered and determined holistically within the confines of the rate case process. Adjustments to ROE made outside of a utility's rate case circumvents the rate case process that involves expert witnesses, on behalf of the utility, Division of Rate Counsel and other stakeholders, who rely on their technical expertise to develop and establish a utility's ROE. The Company's investment strategy and its access to capital is based on the total risk component of the Company's portfolio of projects and programs. The risk of varying ROEs can compromise the Company's access to capital and ability to secure lower financing to the benefit of its customers. Disallowing or reducing an EDC's return on a portion of the Charger Ready infrastructure discourages EDC investment in Charger Ready infrastructure. Therefore, any attempt to alter the cost recovery of these investments, regardless of the reason, should be disallowed.

EDCs should have flexibility in the development of EV programs that are designed to encourage and support EV adoption based on the customer demographics and particular service territory of each EDC while cognizant of the bill impacts to all customers. As recognized in the Straw Proposal, EDCs will propose rate recovery mechanisms for infrastructure investments. Board review and approval of EV program components and rate recovery for those components is critical to the EDC's implementation of an EV program. Without approval, the EDCs risk negative impacts to their financial health and implementation of programs that may not align with Staff's current priorities.

[11] Straw Proposal at 7-8. The Company recommends that the Board should require a signed lease letter or other form of agreement indicating that the developer has site control when the investment will be made on private property.
[12] Straw Proposal at 10.
[13] *I/M/O of the Implementation of P.L. 2018, c. 17 Regarding the Establishment of Energy Efficiency and Peak Demand Reduction Programs*, BPU Docket No. QO19010040, Order Directing the Utilities to Establish Energy Efficiency and Peak Demand Reduction Programs (dated June 20, 2020)(at 26).

The Straw Proposal states that EDCs shall continue to bear the burden of demonstrating any investments made are reasonable, prudent, and that rate recovery of such investments is appropriate. An EDC's installation of Charger Ready equipment at the request of a third party should be deemed reasonable and prudent - sufficient to support cost recovery of such investment and should not be dependent on external factors such as the ultimate performance of the charging station, the performance of the EVSE Infrastructure Company, or other impacts to the EV market such as those resulting from the ongoing COVID-19 pandemic. To do so could discourage the investment in EVSE Infrastructure at this early stage of building out New Jersey's "EV Ecosystem" and puts EV investments on a different footing relative to other investments (*e.g.*, infrastructure to support deployment of distributed generation, where the investments do not depend on the project's developer or customer actions).

Allowing for an after the fact review and appeal process produces an uncertain climate for the EDC and reduces the EDC's incentive to support this clean energy initiative. Other processes can be developed that support the timely deployment of Charger Ready infrastructure and can include a working group with members from the EDCs, EVSE Infrastructure Company community, municipalities, government agencies, such as the NJBPU and NJDEP, and other interested parties. Such processes will foster collaboration and analyze and evaluate both the current climate for charger deployment and consider changing market conditions. Development of this type of process will encourage efficient deployment of chargers more effectively than the penalty provisions envisioned in the Straw Proposal.

III. How to ensure equity in the EV Ecosystem.

The Straw Proposal seeks comment on how to identify Equity Areas and how to define when the market is not sufficiently mature to encourage investment in these areas and how long to give for the market to respond. The Company supports the development of public EV chargers in Equity Areas and recommends the Board consider the following:

- Work so that development of public EV charging and other transportation electrification efforts takes place expediently along with the development of such infrastructure throughout the state. This may include providing opportunity for EDC ownership in the earlier years as contemplated in the Straw Proposal.[14] When coupled with the sunset provision of December 2025 for EDC Ownership, such an approach would not threaten the development of a healthy EVSE market in New Jersey.[15]
- Prioritize and promote transportation electrification efforts that meet the needs of Equity Areas, working closely with community groups and the municipalities as how to best serve their community. This can include the prioritization of additional electrification efforts including for public transportation or electrification of fleets/operations that are located in Equity Areas.

[14] Straw Proposal at 12.
[15] Straw Proposal at 12.

The new Office of Clean Energy Equity can play a central role in supporting the equitable implementation of this program and other transportation electrification efforts, thereby affording all New Jersey residents the benefits of transportation electrification. This Office can also work with the EDCs and other stakeholders to identify those Equity Areas where investments and additional support should be provided.

IV. How to design and integrate EV charging into the rate structure.

It is important to provide a holistic approach to advance EV adoption in New Jersey and rate design is an integral component of a successful strategy to meet the State's goals. Appropriate and sustainable rate design approaches should preserve signals to customers to use energy at times that benefit the grid, reflecting cost-causation principles. Further, rate design should include near-term incentive programs, such as those for demand relief, that encourage early installation of EV chargers and adjust as the economic viability of chargers becomes more self-sustaining and require less external financial support. These incentives should be developed to preserve the demand rate structure and the development of time of use rates in the long-term.

Demand Charges and Time of Use Rates

The costs of delivery service are mainly fixed and demand-related with virtually no costs related to volumetric, or kWh, usage. This is because utility investments in infrastructure are driven by customer demands rather than their kWh usage. Therefore, customers' EV charging stations, like other commercial customers, are billed on rates that are mainly demand-based and designed to recover the costs of serving their demand. Because delivery costs are mainly demand-related, demand charges provide appropriate price signals that encourage efficient customer and utility investments. In other words, customers are encouraged to take actions and make investments that improve the efficiency of the delivery system, so these actions and investments benefit not only that individual customer, but all customers on the system.

The Company understands it is important to have a strong framework in place to support the development of charging infrastructure during earlier years when the use of charging stations is expected to remain low. However, there are utility actions that can be taken to assist these stations in the earlier years while preserving demand charges. One solution includes term and MW limited demand rate discounts that can help EV public charging stations overcome low use rates in early years.

To the extent it is determined that an additional incentive is needed, it should be transparent and outside the electric rate structure. For example, the Company has experience through its corporate parent, O&R, with the deployment of the New York Direct Current Fast Charging ("DCFC") Incentive Program. This program provides a limited incentive to increase the number of DCFC stations while preserving the overall goal of an appropriate cost-based rate design, which includes demand charges. Specifically, the DCFC Incentive Program provides an annual

declining per plug incentive for qualifying DCFC stations for a period of seven years.[16] In approving this program, the New York Public Service Commission found that use of these stations will increase and load profiles would need to develop in a way that is beneficial to the electric system. Thus, by preserving the demand charge, the appropriate price signals are sent to customers to operate in a way that continues to benefit the grid.[17] The DCFC Incentive Program balances incenting the development of public charging stations while preserving the cost causation principles for smart rate design. RECO's affiliate, Consolidated Edison Company of New York, Inc., is implementing a combination of delivery rate discounts and the per-plug incentives to improve EV charging station economics during the initial period of low use. A similar approach will assist New Jersey in meeting its goals for EV adoption and environmental goals before the market for public charging becomes viable.

Another option is time-of-use ("TOU") rates that provide incentives to reduce demands that contribute to system peak loads while encouraging off-peak charging. TOU rates and other rate design modifications are effective tools that empower customers to manage their energy consumption and energy bills. Effective rate design can benefit not only customers, but also the distribution system by contributing to peak management. This is turn will benefit all customers. The Company recommends that any TOU rate be designed to be technology agnostic; therefore, any TOU rate should be applied to the entire household consumption. Such rates can encourage the customer's holistic approach to energy management while providing greater benefits to the grid through peak demand management. These can be supplemented, where necessary, with transparent incentive programs for policy-specific resources.

Customers can act to promote charging of EVs in ways that benefit the grid and the customer. Technology solutions, such as energy management systems that mitigate demands at EV charging stations, could include pricing structures for EV drivers that can help to manage EV charging station demands. The charging station's adoption of staggered charging will also help to manage those demands. EV drivers can also be educated to plan their trips and home charging during off-peak hours as practicable to supplement EV public charging needs.

It is important that measures adopted by the Board send appropriate price signals from the outset so EV charging stations are designed to incorporate demand management practices and technologies, as well as price structures for EV drivers, in order to use the grid in an efficient manner.

[16] Case 18-E-0138, *Proceeding on Motion of the Commission Regarding Electric Vehicle Supply Equipment and Infrastructure*, Order Establishing Framework for Direct Current Fast Charging Infrastructure Program (issued February 7, 2019)(at 8).
[17] Id at 34.

V. Additional EDC Role

The Straw Proposal grants authority to the EDCs over "Poor Performing EVSE Infrastructure Companies" whereby the EDC effectively becomes a regulator of EVSE Infrastructure Companies and their performance and operations.[18] Assigning this responsibility to the EDCs also serves to assign to the EDCs and their customers the EVSE Infrastructure Companies' operational risk. Assigning such a role to the EDCs is not appropriate. However, the Company is open to a more limited role, such as participating in a stakeholder process on how the State can appropriately identify those EVSE Infrastructure Companies that can participate in the Charger Ready Program. Similarly, the Company is willing to explore the consequences of EVSE Infrastructure Companies failure to commence operations successfully or their poor performance.

VI. Conclusion

The Company looks forward to continuing working with the Board and stakeholders to develop a flexible framework for the State to move forward with the development of the EV Ecosystem and the deployment of EV Charging Infrastructure.

[18] Straw Proposal at p. 11, wherein it recommends that EDC jointly develop criteria for identifying poor performing EVSE Infrastructure Companies including notice provisions, and the ability to revoke an EVSE Infrastructure Company's use of Charger Ready infrastructure for pre-determined grounds.

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June 17, 2020

VIA ELECTRONIC MAIL
Honorable Aida Camacho-Welch
Secretary
State of New Jersey
Board of Public Utilities
Post Office Box 350
Trenton, New Jersey 08625-0350

Re: New Jersey Electric Vehicles Infrastructure Ecosystem 2020 Straw Proposal
Docket No. QO20050357

Dear Secretary Camacho-Welch:

I enclose Rockland Electric Company's Comments on the New Jersey Electric Vehicles Infrastructure Ecosystem 2020 Straw Proposal in the above-referenced proceeding. Please note that Rockland Electric Company is making this filing solely in electronic form pursuant to the Board's directive in its Emergency Order dated March 19, 2020 in BPU Docket No. EO20030254.

Please contact me if you have any questions regarding this filing.

Very truly yours,

/s/ John L. Carley

John L. Carley
Associate General Counsel

c: Ami Morita, Esq. (via electronic mail)

June 17, 2020

Aida Camacho-Welch, Secretary
New Jersey Board of Public Utilities
Post Office Box 350
Trenton, New Jersey 08625
Submitted electronically to: board.secretary@bpu.nj.gov

Dear Ms. Camacho-Welch,

Docket #QO20050357: In the Matter of Straw Proposal on Electric Vehicle Infrastructure Build Out

Thank you for the opportunity to provide comments on the straw proposal on electric vehicle infrastructure build out. The Agricultural Retailers Association, American Fuel & Petrochemical Manufacturers, Fuel Merchants Association of New Jersey, National Tank Truck Carriers, New Jersey Petroleum Council, New Jersey Food Council, and New Jersey Farm Bureau ("Associations"[1]) recognize New Jersey's goal to increase the number of electric vehicles (EV) operating in the state and the intent to expand the charging station network that could be needed for those vehicles. We commend the Board of Public Utilities' (BPU) outreach process soliciting comments in advance of proposed rulemaking and the approach in developing the subject Straw Proposal (Straw).

The BPU must carefully consider the impacts of the ongoing public health emergency and New Jersey's staggering budget difficulties, and their ensuing impact on already financially vulnerable residents and ratepayers.

We strongly oppose the BPU Straw proposal that enrich Electric Distribution Companies and EVSE infrastructure companies at the expense of ratepayers, many of whom could never afford an electric vehicle.

The Associations support a competitive and equitable transportation sector, that provides for consumer choice and allows for a market supplied and funded by private companies - not by captive ratepayers - to determine the mix of energy sources and technologies required to meet societal needs. The best approach to achieving this is through a free market that is transparent to all electricity consumers. To that end, we strongly oppose the BPU's proposal to allow Electric Distribution Companies (EDC) to use money generated through rate base increases to invest in and earn income from the installation of "charger-ready" infrastructure. We instead strongly support the use of private capital to build out that infrastructure using the Cost Causation Principle that currently applies to every new and existing electric service customer in New Jersey.

[1] Please see the last page for descriptions of these organizations.

When making policies that incentivize the installation of electric vehicle supply equipment (EVSE), the BPU should consider the unintended and uneven socio-economic impacts that could result from such initiatives.

Even small utility rate hikes in good economic times can have a disproportionate impact on households. Nearly 1 in 3 American households reported difficulty paying their energy bill, according to a 2018 Energy Information Administration report. [2] New Jersey has the 10th highest electricity energy rates of all the 50 states with the average consumers' electric bill costing $145 per month.[3] According to 2017 figures, 9% of the New Jersey population was living in poverty[4] while the elderly and fixed-income families made up 16% of the population.[5] It is these New Jersey families who will pay for EV charging infrastructure through higher electricity bills, yet given the high average cost of electric vehicles, they are least likely to benefit from this infrastructure.

To that end, we point you to the concerns raised by Stefanie A. Brand, director for New Jersey Division of the Rate Counsel (NJDRC), who noted during the June 3, 2020 BPU webinar[6] that, "We can't ask people, residential or business customers, [suffering from impacts of the Covid-19 pandemic] to pay more for an essential service like electricity right now, unless it's absolutely necessary."

In 2019, Colorado proposed and passed a law that granted utilities the authority to increase customer rates to cover the costs for EV charging infrastructure. In response to the proposed law, AARP[7] stated that utility customers could have to pay an additional $50-$75 per year in utility bills for EV charging infrastructure that very few people use. Regardless of the exact increase, rate increases to cover charger-ready infrastructure will burden residents, most of whom are not going to utilize the service – a service that could be provided by private capital, as is happening across the country.

The Straw will predominantly benefit high earners.

According to the nonpartisan Congressional Research Service, 78% of the total federal expenditures on the EV tax credit have gone to people who earn more than $100,000.[8] Researchers at the University of California at Berkeley echoed these findings[9], concluding in a 2015 study "that the top income quintile has received about 90 percent of all [federal EV] credits." In contrast, the New Jersey median household income is $79,400.[10] Further, the consumer purchase price of an average electric vehicle is about 45% more than an internal

[2] https://www.eia.gov/todayinenergy/detail.php?id=37072
[3] https://www.chooseenergy.com/electricity-rates-by-state/
[4] https://www.thebalance.com/us-poverty-rate-by-state-4585001
[5] https://www.prb.org/which-us-states-are-the-oldest/
[6] https://register.gotowebinar.com/recording/1544180925673058822 (starting at approximately at time 1:12:30)
[7] https://states.aarp.org/colorado/senate-bill-19-77-is-bad-for-colorado-consumers
[8] https://fas.org/sgp/crs/misc/IF11017.pdf
[9] Borenstein, Severin; Davis, Lucas W., "The Distributional Effects of U.S. Clean Energy Tax Credits," University of California Berkeley, October 2015, http://conference.nber.org/confer/2015/TPE15/davis.pdf
[10] https://www.census.gov/quickfacts/fact/table/NJ,US/INC110218

combustion engine vehicle (i.e. an EV costs about $55,600[11] while the average ICEV costs about $38,259[12]). According to the Office of Energy Efficiency & Renewable Energy (EERE), approximately 80% of EV owners will charge their vehicle at home[13] and it is expected to continue to be the case. In summary, allowing utilities to rate base the charger-ready infrastructure will benefit those who do not need the help, and result in a higher energy bill for those who do not choose to drive an EV or who can least afford an increase in their electric bill. Further, building a large public charging network that attempts to replicate the "gasoline" model of distribution could result in noneconomic decisions and expenditures.

EVs are no longer a nascent technology and automobile manufacturers have demonstrated that further incentives are neither needed nor warranted.

The first electric car was built more than a hundred years ago. More recently EVs have seen a more than eleven-fold increase in EV sales since 2011. One EV manufacturer, Tesla, has a market cap more than twice that of Ford and General Motors combined. The technology is now a commercial-scale, multibillion-dollar industry more than capable of financing its own self-sustaining growth without burdening ratepayers, many of whom are unlikely to purchase their product. Many private businesses form a robust, competitive presence in New Jersey for investment in this market opportunity. The increases in available EV models and battery range do not serve as a call for EDC investment in make-ready infrastructure, but alternatively show the robustness of the current EV market and point to the opportunity for private capital to be invested in the EV Ecosystem described in the proposed Straw proposal. And we already see this type of investment in EV charging taking shape, including:

- Tesla has already installed more than 13,000 "superchargers" nationwide.[14]
- In 2019, in collaboration with Greenlots and Electrify America, Ford announced plans to allow driver access to their network of more than 12,000 places to charge in North America.[15]
- Electrify America committed to deploy over 2,000 fast chargers at nearly 500 locations across 42 states by the end of 2019. They will spend $2 billion to install EV infrastructure.[16]

Charger-ready infrastructure should be funded according to the existing "beneficiary-pays" model.

[11] https://www.autofinancenews.net/editorial/carousel/new-car-prices-inch-up-ev-prices-tumble-in-june/ (This is the EV transaction price, which does not include the federal EV tax credit but may include other incentives.)
[12] https://mediaroom.kbb.com/2019-11-01-Average-New-Vehicle-Prices-Up-Nearly-3-Year-Over-Year-According-to-Kelley-Blue-Book
[13] https://www.energy.gov/eere/electricvehicles/charging-home (accessed 6/9/20)
[14] https://cleantechnica.com/2019/07/06/tesla-supercharger-networks-evolution/
[15] https://media.ford.com/content/fordmedia/fna/us/en/news/2019/10/17/ford-introduces-north-americas-largest-electric-vehicle-charting-network.html
[16] https://www.cnbc.com/2019/05/10/vws-2-billion-penalty-for-diesel-scam-builds-ev-charging-network-across-us.html

The Straw proposes that EDCs be allowed to invest in and earn income on "charger-ready" infrastructure. The "EDCs would request recovery of their investments and other costs through a traditional rate case," or other authorized statute or regulation. And notes,

> "historically, the costs of upgrades on the EDC's side of the meter necessary to accommodate new development including, for example, EVSE, are assigned under a 'beneficiary-pays' model, where the entity creating the need for the upgrades (here, presumably the EVSE Infrastructure Company) pays for the upgrade costs, consistent with the Boards regulations on extensions of utility service…"

We oppose the EDC's being allowed to invest in these infrastructure upgrades, thus requiring the recovery of both the cost of the investments and the associated shareholder returns from rate payers through traditional rate cases. Per the state's own watchdog, we also believe this proposal may extend beyond the BPU's authority. As NJDRC wrote in their April filing[17] other than [Societal Benefit Charge[18]] funds, the [Plug-In Vehicle] Act does not authorize or direct the Board to allow the investment of any ratepayer funds on its implementation. In fact, the PIV Act does not provide any role or authority for regulated public utilities to invest in or subsidize EVs or EVSE." The legislature authorized $30 million in SBC funds to incentivize EVs, had it wanted to provide more, it would have done so in the PIV Act. In fact, that's exactly what the representatives of the electric charging industry requested, and the legislature rejected.

There is no need to <u>change</u> the "beneficiary-pays" model where the entity that creates the need for the upgrades pays for the upgrade costs.

To make the costs and associated climate benefits of EV charging infrastructure more transparent to the New Jersey resident, the infrastructure should be funded by private businesses (or a deregulated utility using non-regulated funds) that charge a market price for the electricity and the convenience of charging that is borne by the person actually receiving the electricity. This would parallel the existing gasoline station business model that has resulted in placing stations in locations where they are needed. This would also result in investing capital where there is market opportunity, thus minimizing the risk of charger-ready infrastructure installation where it is not economic. The Associations do not support changing the time-tested beneficiary-pays model.

The use of private capital to fund projects requires companies to hone their analysis and ensure that they are utilizing their resources in the most efficient and effective manner. While assuming companies will have the best intent, being able to identify where a charging station is placed by the EDC, and having that asset available to the EVSE Infrastructure Company essentially for free, does not force companies to most effectively manage their resources. Such an approach will result in inefficient placement of EDC capital and likely lead to stranded assets.

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[17] https://www.nj.gov/rpa/docs/PSEG-Clean_Energy_Future_Electric_Vehicle_Energy_Motion_to_Dismiss_4-17-20.pdf

[18] NJDRC, PSEG-Clean Energy Future Electric Vehicle Energy Motion to Dismiss 4-17-20, "The legislation directs the Board to undertake certain statewide tasks, including promulgating rules, conducting studies and allocating $30 million per year from the Societal Benefit Charge ("SBC") to subsidize the purchase of certain types of EVs and EVSE in New Jersey. N.J.S.A. 48:25-7."

Alternatively, if private capital is utilized to buildout the infrastructure as has historically been done, the pace of the infrastructure buildout will match the EV adoption rate and as EVs become more prominent, the demand for charging stations will increase and create more opportunity to invest in that infrastructure; accordingly, drawing more private capital to buildout infrastructure. Allowing the market to function will result in the most robust development of the EVSE and ensure it is placed in the best locations.

A model that envisions rate-based investment with a rate of return on that investment will send an adverse signal to private investors that the utilities could be allowed to dominate the EV charging sector, ultimately stifling innovation in new technologies and pricing structures.

The BPU policies should provide for consumer choice and allow the market to determine the mix of energy sources required to meet societal needs.

BPU policies should not include special rates that are intended to artificially set the benchmark of EV charging below the equivalent cost of diesel or gasoline on a per-mile traveled basis as suggested in the Straw. The Straw also allows for time of use pricing by which multiple rates are charged during the course of a 24-hour period.[19] New Jersey law prohibits motor fuel prices from changing more than once in a 24-hour period.[20] The price of fuel (e.g., liquid fuel, electricity, hydrogen, etc.) should be set by the market and the rules for pricing should be consistent among all fuels.

The goal of the 2019 Energy Master Plan is to electrify everything, including space and water heating in the building sector. As such, the EMP recognizes that New Jersey will move to winter peaking load for its electric demand.[21] What will happen to nighttime rates when the demand for electric heat spikes overnight in the winter? Will additional upgrades be needed to the electric distribution system to ensure its reliability?

Cross-subsidization of EV infrastructure costs by customer classes that are not using the infrastructure is not appropriate.

Additional clarity is needed on the Straw's proposal to reform "commercial and industrial demand charge structures so that the effective cost of electricity for public charging facilities does not exceed an agreed to amount on a per-KW-hour basis."

The Associations support the adoption of policies that focus on the consumer, strengthen our energy security, improve our standard of living and protect our environment.

There will be consumers for whom electric vehicles work well for their needs, taste, lifestyle, and finances, and there will be consumers who will continue to prefer vehicles powered by an efficient internal combustion engine fueled with gasoline and diesel. There are also New Jersey residents that do not own a vehicle and commute to work or navigate around the city using NJ Transit's extensive network of Light rail, commuter rail and bus routes that touch almost every community in the state. As the Board considers the Straw, the public policy should ensure an

[19] https://www.nj.gov/bpu/pdf/Final_EV_Straw_Proposal_5.18.20.pdf (Footnote 4, page 9)
[20] N.J.S.A. 56:6-2(a)
[21] https://nj.gov/emp/docs/pdf/2020_NJBPU_EMP.pdf (pp.54,160,175,260)

equitable footing for all technologies and all consumers. Public policy should not favor a small group of upper-income households who use EVs at the cost of the rate payers and lower-income households. Instead, we encourage the creation of a level playing field for all technologies and more importantly for all consumers and residents in the State of New Jersey.

If you have any questions or would like to further discuss these issues, please contact Jim Benton, NJPC at (202) 682-8533, or Don Thoren, AFPM at (202) 844-5526. We look forward to continuing engagement and dialogue on this most significant public policy issue. Thank you.

Sincerely,

Agricultural Retailers Association

American Fuel & Petrochemical Manufacturers

Fuel Merchants Association of New Jersey

National Tank Truck Carriers

New Jersey Petroleum Council

New Jersey Food Council

New Jersey Farm Bureau

Appendix

About Associations:

Agricultural Retailers Association -- Agricultural retailers supply farmers and ranchers with products and services. These products include seed, nutrients, crop protection products, feed, equipment and technology. Retailers also provide consultative services such as crop scouting, soil testing, field mapping, custom planting and application and development of nutrient management and conservation plans.

American Fuel & Petrochemical Manufacturers (AFPM) is a trade association representing U.S. refining and petrochemical manufacturing capacity across the country, including in New Jersey. AFPM members produce the fuels that drive the U.S. economy and the chemical building blocks integral to millions of products that make modern life possible.

Incorporated in 1933 the **Fuel Merchants Association of New Jersey** represents distributors of branded and unbranded motor fuel to service stations, fleets, marinas, construction, agricultural, and government customers. FMA's members also distribute heating fuel and perform HVAC services.

The **National Tank Truck Carriers**, Inc. has represented the tank truck industry before Congress and various federal agencies since its founding in 1945. NTTC's membership is comprised of over 600 companies that specialize in bulk transportation services by cargo tank throughout North America. The tank truck industry generates approximately 5% of all truck freight revenue, but that represents 30% of all truck freight in terms of tonnage because of the heavy nature of the liquid bulk products handled.

New Jersey Petroleum Council is a division of the American Petroleum Institute (API) which represents all facets of the natural gas and oil industry, supporting 10.3 million US jobs and nearly 8% of the USA economy. API's more than 600 members include large integrated companies, as well as exploration and production, refining, marketing, pipeline, marine businesses, and service and supply firms and provide the majority of the nation's energy.

New Jersey Food Council is an alliance of food retailers and their supplier partners united to provide vision and leadership to advance the interest of its members. The member companies provide food and nourishment on a daily basis to 9 million New Jerseyans and the regional neighbors.

New Jersey Farm Bureau the largest general farm organization in the state consisting of more than 8,100 members; leading private sector advocate for crop and livestock commodity producers.

June 17, 2020

Joseph L. Fiordaliso
President
New Jersey Board of Public Utilities
Post Office Box 350
Trenton, NJ 08625-0350

Re: DOCKET NO. QO20050357: In the Matter of Straw Proposal on Electric Vehicle Infrastructure Buildout

Dear Mr. Fiordaliso,

Electrify America, LLC, appreciates the opportunity to comment on the Straw Proposal on Electric Vehicle Infrastructure Buildout. Electrify America is a wholly-owned subsidiary of Volkswagen Group of America that operates the nation's largest open DC fast charging network for electric vehicles. Our company currently operates 33 chargers across seven stations in New Jersey, with another 19 chargers across three stations under construction. Additionally, we have numerous projects under development in the state through our second phase of investments, which are expected to be completed by December 2021. Finally, we have just announced the opening of our submissions portal for input from a broad range of stakeholders that will be considered for our third cycle of investments, which may lead to further EV charging infrastructure in the state between January 2022 and June 2024.

Support from the utility sector is critical to ensuring that New Jersey meets its ambitious targets for transportation electrification, including the goals of 330,000 plug-in vehicles registered and 400 DC fast chargers deployed in the state by 2025, and Electrify America commends the New Jersey Board of Public Utilities for developing this straw proposal to help meet the state's commitments to transportation electrification.

Electrify America's comments on the Straw Proposal are best summarized in three principles, which are further elaborated on within this letter:

ACCESS

First, there must be public vehicle charging options that are available ubiquitously to all drivers, especially for the significant population that will not have access to workplace or residential chargers.

FAIRNESS

Second, in keeping with the above, effective utility rates for electricity delivered to public charging stations should be commensurate with if not lower than those for residential charging in order to create equitable incentives for adopting electric transportation between those that have access to charging at home and those that do not.

EXPERIENCE

Third, the speed of charging an EV should approach that of refueling a gas/diesel powered vehicle. To accomplish this requires higher power level charging infrastructure.

ACCESS

With respect to the principle of Access, Electrify America broadly supports the framework of "shared responsibility" outlined in the proposal, under which electric distribution companies (EDCs) would be responsible for the "wiring and backbone infrastructure" to support charger-ready locations, and EVSE infrastructure companies would be "primarily responsible for installing, owning and/or operating, and marketing EVSE." As an EVSE Infrastructure Company with substantial investments in New Jersey, Electrify America appreciates the recognition that private companies have already made substantial investment in the state, and that utility support for make-ready infrastructure can encourage additional private sector investment in EV charging infrastructure in New Jersey.

Electrify America now provides feedback on some of the details of the straw proposal, including the proposed utility responsibility to "develop hosting maps in conjunction with the EV Mapping Effort that identify where to prioritize making sites Charger Ready."[1] Electrify America selects "customer-centric" sites for development based on a range of key criteria, including, but not limited to, an agreement with a site host, proximity to major travel corridors, continuity with existing charging infrastructure, site visibility, lighting, and safety, adequate parking, and geospatial modeling based on existing and projected EV deployments and charging needs. An overly prescriptive approach towards identifying sites for development could potentially interfere with the private sector's capacity to identify suitable targets for EVSE deployment. As such, we encourage the Board to consider the EV Mapping Effort as only one input to prioritizing where to make sites Charger Ready, and to recognize that sites proposed by EVSE infrastructure companies are also based on sophisticated analysis of viable and consumer-oriented charger locations.

Another area that raises some concern is the 12-month timeframe for EDCs to make locations Charger Ready, particularly when combined with the existing long timeframes for project development in New Jersey. Having now developed projects in 46 states, Electrify America has found that EVSE permitting timeframes for projects in New Jersey are by a wide margin the longest in the country, taking more than 2.5 times the national average. Electrify America's 2019 National Annual Report states that the average permitting duration for projects in New Jersey was 114 business days, or more than five months.[2] If the 12-month timeframe for EDCs to make locations Charger Ready begins at the end of an already lengthy permitting process, the overall timeframe for station development could easily extend to one-and-a-half to two years. Reducing both permitting timeframes and the expected timeline for EDCs to complete Charger Ready improvement will be necessary to ensuring that stations are deployed in an expeditious manner.

Electrify America supports the proposal that EDCs would perform any necessary upgrades on the utility side of the meter to support new charging station infrastructure and the anticipated load on the distribution system caused by the expansion of the EV ecosystem, and that such costs will be recovered from the rate base, not from the EV charging station provider building the station. But Electrify America encourages the Board to design this program so that the EDCs act expeditiously to make the upgrades on the utility side of the meter at the sites which the charging industry has identified, secured and permitted, thereby enabling the EDCs to

[1] State of New Jersey Board of Public Utilities, 2020. "New Jersey Electric Vehicles Infrastructure Ecosystem 2020 Straw Proposal," p. 8.
[2] Electrify America, 2020. "2019 Electrify America National Annual Report," p. 6. Available at: https://media.electrifyamerica.com/en-us/releases/94

facilitate the rapid deployment of charging stations and the rapid growth of the charging industry in New Jersey without depending on the EDCs to direct that growth.

FAIRNESS

With respect to the outlined principle of Fairness, Electrify America supports the commitment to "reform utility rate structures that are acting as barriers to mass deployment of EV infrastructure"[3] in the state. Electrify America notes that commercial rates meant for high load factor service were not designed for utilization by the unique low-load factor profile of high-powered DC Fast Charging. This could result in improper subsidization from public charging networks, and would need to be addressed should EVSE infrastructure companies have an appropriate signal to invest in New Jersey.

In the Public Stakeholder Meeting held on June 3rd regarding the Straw Proposal, Electrify America outlined the operational risks imposed on EVSE infrastructure companies that make New Jersey among the most uneconomical states in the nation for EVSE infrastructure companies providing fast charging services. Specifically, Electrify America noted that a single energized location could have a potential demand charge exposure approaching $750,000 annually regardless of the level of customer activity or the volume of electricity delivered[4]. This operational risk discourages EVSE infrastructure investment in the state generally, and it is particularly discouraging to those investing in the fastest, most consumer-friendly charging stations that focus on high-power charging. As a result, especially high demand charges will serve as an impediment to the Charger Ready vision the Straw Proposal outlines if not addressed.

The Straw Proposal states that the effective rate for energy by residential customers in multi-family dwellings should be comparable to that paid by those living in single-family dwellings. Electrify America would suggest to the Board to expand this proposal to all public fast charging infrastructure to best meet the fairness principle outlined above.

As outlined in Electrify America's Cycle 2 ZEV Investment Plan, access to affordable, fast, ubiquitous public charging is a critical component to transportation electrification. It is recognized that current electric vehicle adoption is concentrated with households that have access to charging at home. Equity in charging cost is frustrated by the fact that lower-income Americans are much more likely to rent their homes than wealthier Americans. According to analysis of Census data by CityLab, "households earning less than $50,000 per year have a homeownership rate of around 45 percent, while nearly 80 percent of households earning more than $50,000 own."[5] Because it is far more difficult to install a home charger at a rental property or multi-unit

[3] State of New Jersey Board of Public Utilities, 2020. "New Jersey Electric Vehicles Infrastructure Ecosystem 2020 Straw Proposal," p. 2.

[4] Electrify America operates a location in East Brunswick, NJ with eight 150 kW DCFC and two 350 kW DCFC, with a total interconnected load of 1900 kW. Based on the PSE&G Tariff effective June 1, 2020 an LPL Summer Demand Charge of $8.9495/kW + CIEP Capacity Charge of $11.6828/kW + BGS Transmission Charge of $12.9349/kW would be applicable, resulting in a total demand charge of $33.5672/kW or $63,778/month if a coincident charging event materialized. (https://nj.pseg.com/aboutpseg/regulatorypage/-/media/6A04206002AF417EA4857F50778FE6A0.ashx)

[5] In addition to income disparities, a 2018 Harvard University study found significant disparities in homeownership by race and ethnicity. See https://www.citylab.com/life/2018/08/who-rents-their-home-heres-what-the-data-says/566933/; http://www.jchs.harvard.edu/sites/default/files/Harvard_JCHS_State_of_the_Nations_Housing_2018.pdf

dwelling, these trends create a significant challenge to EV adoption in New Jersey, and they accentuate the critical importance of providing available, convenient, and ultra-fast EV charging to populations that cannot easily install a home charger. To best meet New Jersey's ZEV Memorandum of Understanding and SB2252 goals of 330,000 plug-in vehicles registered and 400 DC fast chargers deployed in the state by 2025, equitable EV adoption incentives must be provided to all drivers, whether or not they have access to home, workplace, or multi-dwelling charging infrastructure.

To accomplish this via rate reform, Electrify America urges the Board to have EDCs minimize demand charges and fixed service costs, while allowing recovery of only the marginal cost to serve without riders or other non-bypassable surcharges associated with historical infrastructure costs and unrelated programs. Specifically, the effective $/kW-hour charges for all public charging infrastructure should be comparable to effective rates for residential charging in each EDC to best meet the Fairness objective outlined above. Furthermore, such rates should be guaranteed for a reasonable horizon, such as 10 years, to ensure that investment in economically viable for EVSE infrastructure companies.

Electrify America holds that the make-ready Charger Ready incentives combined with appropriate rate reform should broadly provide sufficient incentives to meet New Jersey's objectives for charging infrastructure by 2025. In areas where infrastructure needs may not be met via these approaches alone, Electrify America would encourage close examination of utility ownership and operation of charging infrastructure. Given the significant ratepayer risk that would be incurred by EDC ownership, including potentially stranded investments, Electrify America would encourage the Board to maintain the Shared Responsibility approach to meet its goal of ensuring equitable distribution of EVSE. Specifically, in the areas where EV charging station investments are least economically appealing to the private sector, we would also encourage the Board to address that through targeted capital support and additional rate relief to attract private capital investment and competitive activity, while maintaining the existing role of the EDCs. Simply put, competition should spur best outcomes.

EXPERIENCE

With respect to Experience, Electrify America is encouraged that the Straw Proposal outlines 150 kW and above DCFC for Charger Ready to best meet the experience needed to drive EV adoption in the state. In the Public Stakeholder Meeting held on June 3rd regarding the Straw Proposal, Electrify America noted that 150 kW charging infrastructure may provide refueling speeds of nine miles per minute, while Electrify America's 350 kW DCFC infrastructure may provide refueling speeds of 20 miles per minute for capable vehicles[6] – approaching gas station refueling speeds. Electrify America posits that this fast charging customer experience is crucial to achieving New Jersey's ZEV adoption goals, especially as a large segment of the population may never have practical access to workplace or home charging, and encourages the Board to further incentivize such customer friendly higher power level infrastructure as part of its implementation of Charger Ready. Electrify America also wishes to emphasize that providing maximum charging speeds on demand to customers who need them is critical to user experience, making DC fast charging unsuitable for load management solutions that throttle customer charging power. In 2017, the Rocky Mountain Institute found that DC fast

[6] Assumes 3.5 miles per kilowatt-hour.

charging "users expect to be able to obtain a maximum-speed charge from them in the shortest possible time, so it's generally not practical to turn DCFC on and off (or ramp their power output) in response to changing grid conditions."[7]

Importantly, Electrify America urges the Board to consult with industry regarding the technology specifications prioritized under the program. In particular, we note that the Straw Proposal indicates that an EVSE Infrastructure Company electing to use an EDC-funded Charger Ready location would be required to commit to "using chargers capable of handling more than one EV, such as dual-port chargers, wherever technically feasible." Electrify America installs large-format charging stations that are "capable of handling more than one EV," but each charger is dedicated to a charging space and cannot charge more than one vehicle at a time. While each charger includes two cables, the two cables are necessary because auto manufacturers have not yet standardized the location of the charging port on today's EV models, with ports located alternatively at the front center, front driver's side, back driver's side, front passenger's side, and back passenger's side. Two cables are necessary to comfortably reach all of these charge port configurations, without making the cables overly long or heavy, particularly given that Electrify America stations require thicker cables capable of supporting up to 350 kW of charging power. While simultaneously charging two cars from a Level 2 AC charger is quite common, Electrify America is not aware of a single large charging network in the United States that commonly deploys DC fast chargers capable of charging two vehicles at the same time. As such, Electrify America respectfully recommends that the Board eliminate the dual-port requirement, which is not consistent with trends in charger design and charging speed.

Electrify America appreciates the opportunity to comment on the Straw Proposal, and looks forward to continuing to work with the Board and the State of New Jersey in meeting the state's ambitious targets for electric vehicle and infrastructure deployment.

Sincerely,

/s/

Matthew B. Nelson
Director of Government Affairs

[7] Rocky Mountain Institute, 2017. "From Gas to Grid: Building Charging Infrastructure to Power Electric Vehicle Demand," p. 35. Available at: https://rmi.org/wp-content/uploads/2017/10/RMI-From-Gas-To-Grid.pdf

Camacho, Aida

From: Jeanne Fox <jeanne.fox52@gmail.com>

Sent: Wednesday, June 17, 2020 4:51 PM
To: Comments, Rule; Secretary, Board; Camacho, Aida
Cc: Mooij, Kelly; Silverman, Abe; Witherell, Benjamin; Sadovy, Christine; Peterson, Stacy; Flanagan, Paul
Subject: [EXTERNAL] Re: Comments: In the Matter of Straw Proposal on Electric Vehicle Infrastructure Build Out

First I commend the BPU Clean Energy staff for putting together three fine panels on June 3rd. I participated in the entire day and was impressed by the balanced information provided. Overall the panelists represented their points of view well. The staff moderators did quite well and asked good questions of their panelists.

The Straw goal of "substituting non-utility investor supplied capital for ratepayer capital wherever possible" is the correct one. New Jersey can accomplish the State's purpose of aggressively developing an Electric Vehicle Infrastructure that will allow us to meet the State's bold objectives. Having as much competition as possible on the EV front is just plain common sense. Other states have private Electric Vehicle Service Equipment (EVSE) investors now ready to compete in New Jersey. The utilities should only be involved in their traditional roles of efficiently providing the numerous distribution system upgrades that will be required for the new EV ecosystem.

The Board must focus on what is in the public interest and the benefits to the customers and ratepayers. The staff rightfully wants to avoid utility stranded costs. Stefanie Brand properly emphasized the grim financial situation of so many families. And, now, Covid-19 has many more families living hand-to-mouth - choosing between food and rent. The Board cannot do business as usual now and for the foreseeable future. Thankfully, S.2252 befittingly involves the utilities only as a last resort. "Last resort" must mean last resort. An EDC should only end up being a "party of last resort" if the private sector, i.e. no qualified EVSE - steps up. The BPU should aggressively recruit EVSEs and also consider some additional benefit/compensation in those few areas that may appear to be " last resort" before a utility is allowed to provide charging service in that area (due to the rate-basing costs that would later be charged to ratepayers). Also, as recommended by a number of stakeholders, if there is a "last resort" area, the EDC must bear the burden in a traditional rate case that the investment is reasonable & prudent. And, such areas should <u>not</u> be designated by the EDCs early on - at the beginning of this EV process (as appears to be the case with the Straw) - but much later. Otherwise, as Ms. Brand stated "it would be a sham." I am please that the Straw states that these locations cannot be an EDC or affiliate or controlled by an EDC (unless approved by the Board). So, before the Board approves via Board Order, any such "Last Resort" action, you should know for certain that, in fact, there is no other viable option.

We are all proud that New Jersey has done a good job over the last 30 years of dramatically reducing GHG emissions from electricity

generation. And, as we know, the #1 cause of New Jersey's CO2 emissions now is transportation. The major purpose of our EV program is to reduce the Carbon emissions from fossil fuels. An important secondary outcome is to dramatically lessen other fossil fuel pollutants, e.g. PM10 and PM2.5, which cause serious health issues, e.g. asthma - most especially in our Environment Justice(EJ)/urban communities. The EV program will be our first big step forward to electrification of the State as set forth in the 2019 Energy Master Plan.

I strongly concur with the Greenlots' Scott Fisher that the Straw focuses way too much on light duty EVs. Studies show that there would be more significant pollutant reductions, including CO2, by targeting heavy duty vehicles and by eliminating diesel fuel usage. The next area that should be addressed after that, before concentrating on personal EVs, should be mid-level EVs, e.g smaller trucks and cargo vans. Studies also show that many low income communities rely upon public transportation rather than cars. DEP's Peg Hanna pointed out that 23% of our State's Black and Latino population do not have personal vehicles. And, Isles' Kate Miguel said that 30% of Trenton residents, 30/40% of Jersey City residents and 50% of Newark residents have **no** cars. Thus, my educated guess is that the 23% statistic includes rural LMI people. So, many urban LMI really will not benefit much from locating charging stations in their neighborhoods. With Covid-19 they can hardly afford to live. So, to truly benefit LMI/EJ urban communities, vehicles that serve that community, e.g. Head Start and senior shuttles as well as urban fleets should be prioritized for electrification. As Pam Frank stated fleets account for 9% of all New Jersey vehicles and many of them are in the port areas. To help reduce idling/pollution/CO2, the State should concentrate on the urban fleets first, e.g. governments, Federal Express. Use the Clean Energy Fund for these EVs rather than for personal cars. And, urban school bus fleets may also be used as energy storage - during the summer & during school season's late afternoon/early evening peak hours (helping the taxpayers and helping to cut the peak).

I urge the Board to reconsider the $5000 rebates for **all** personal EVs. If the BPU truly wants to help the EJ/equity areas, electrify the most polluting vehicles that negatively impact their communities. Covid-19 has changed the situation of many New Jersey's people. Our situation is quite different than it was when the EMP was first being developed. The $5000 rebate for light duty vehicles is handing the more affluent individuals money that we do not need. Possibly consider rebates for people who live in urban areas and who commute to jobs in urban areas but not to suburbia. Locate charging station where a large volume of people work in urban areas, e.g. the colleges, Prudential, the PAC, government buildings, etc. This would lessen the pollution that the urban residents experience. We all know that California is the state most advanced with EVs. The California Air Resources Board (CARB)is most aggressively addressing the large vehicles as their priority for good reason. Our State should target the dirty, congested area first and foremost!

As Environment New Jersey's Doug O'Malley stated the long-term costs of E-buses is much lower than that of fossil fuel buses. So government and school bus fleets would benefit in the long term as would the taxpayers.

New Jersey Transit really must step up with electrifying their bus fleet - starting, again, first in our urban centers. I again recommend that all new NJT buses purchased going forward be EVs.

As in the past, I again highly recommend that the BPU target EV electrification efforts in the most congested areas of the State - both traffic congestion-wise and electricity congestion-wise. This would help relieve rush hour traffic as well as lessen public health issues. It would also help lower rates for all electricity customers in that congestion area. The utilities should be asked to provide to the BPU as well as to the public the locations of those electricity congestion areas. Also, the V program should focus on the PANYNJ, NJT & bus terminals. Please review closely the Rutgers 2018 report on Public Health and our Ports. Work with Rutgers - most especially in Newark and Camden as well as with NJIT & Essex County College in the Heights section of Newark. Encourage them to go EV with almost all new vehicles.

Concerning Rate design reform - getting the utility tariffs correct is critical. New Jersey has to get it right. I suggest that the Board seriously consider doing "pilot" tariffs for maybe two years and then analyze the results. As stated by RMI's Stephanie Green, there should be dedicated EV tariffs and separate EV (smart)meters. The cost shifts should be measured/tracked/reported/demonstrated and then reviewed. The costs should be modeled so that it remains at least slightly under the gasoline price. One possibility could be, as done by P,G&E would be a "Subsciption Charge" where there would be more certainty for the customer. Mark Warner encouraged consistency with public charging and multifamily charging. While the EDCs certainly have different tariffs, their EV tariffs should be as consistent statewide with each other as possible. Their peak periods may differ but that can be worked out before the EV tariffs are implemented or at least after the first 2 years.The staff should probably convene the stakeholder group to review any inconsistencies between the EDC's EV tariffs. This should be done most especially when pilot results (e.g. 2 years) are reviewed.

Time of Use residential tariffs are OK but it would likely be better to spread the usage out over time. I recommend a " Managed" or "Smart Charging" pilot (or pilots) wherein a utility controls the overnight residential charging during off-peak periods. Incentives could be given such as, in the pilot case, customers who voluntarily sign up would pay no

more than what they would have otherwise paid on the typical residential tariff.

EVgo, reportedly the largest EVSE in the country (in a dozen states), recommended cost-based/no subsidy tariffs, minimization of the demand charge and limiting the monthly fixed charges. He also recommended the commercial EV rates should be technology neutral. These recommendations, which would be prospective for new charging stations, appear to be reasonable. And, as noted by Tesla, commercial EV rates should signal the best times to charge, provide some level of certainty and should effectuate $/kWh on par with the commercial class average. It seems that EVSE should charge either on per-kW-hour or on a time basis. However, the Board may, again, want to try some commercial tariff pilots as well.

Regarding Multifamily dwellings, I concur with Pam Frank that having the EDC put the infrastructure into place for existing multifamily dwellings is "putting the cart before the horse." The EDCs probably should do so with most new multifamily construction. Otherwise, wait until existing multi-family units request such infrastructure. We don't need any unnecessary additions to rate base for at least the next several years. Not when New Jersey's rates are already so high.The Board may want to do several pilots regarding the issue of where parking spots are assigned in multifamily situations.

I urge that only EVs be approved to serve as ride sharing vehicles, e.g. Uber, Lift. I note that these vehicles are primarily used during rush hours. The State should work with the urban municipalities to adopt this requirement.

I concur with IBEW's Ian Leonard that there needs to be continuity across the state for both the electricians and also for the vehicle owners and the EVSEs.

The proposed Travel Corridors plan makes sense. And, clearly, based upon the significant improvements in technology, the Straw is ,properly, only locating public fast chargers along the travel corridors.

As EDF's Elizabeth Stein suggested, the BPU should conduct a Distribution Grid Impact Study so that all actually know the impact of this ongoing aggressive EV effort, which will help keep costs more manageable, better deal with coincidental peak and more fairly allocate the costs. This could also help provide high value services to the Grid via aggregators. And, as Pam Frank said, we need to be careful about creating a coincidental peak for residential customers which at the end of the work day would double peak demand. EV charging should end up being Grid reinforcing, if done

properly, so that unnecessary costs will be avoided.The system should be designed so that ancillary services can help build more flexibility into our electric system the will benefit ratepayers as well as the environment.

I highly commend the Staff Straw that has charging station infrastructure costs should be borne by the private sector and not by utility ratepayers. Competition is clearly the way to go. Attract private capital into the EV market. Utilities certainly should strategically "make ready" but, as required by EDECA, competition should occur in every other part of the EV ecosystem.

Thank you for this opportunity to comment on this important Straw.

Sincerely,

Jeanne Fox
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973-271-0500

Exclusive Incenting of Plug-in Electric Vehicle Purchase is a Less Effective and Costly Strategy for Minimizing the CO_2 Emissions Caused by NJ Light Duty Vehicle Travel

(Version 1.3.1)

by
Dr. Dan Udovic, P.E. [1]
[2] [3]

ABSTRACT

The NJ Board of Public Utilities has recently approved a $30M per year rebate program that encourages NJ light duty vehicle drivers to purchase and grid-charge higher cost **Plug-in** Hybrid ICE/Electric[4] and All-Electric vehicles at utility ratepayer expense. No incentives are provided, however, to encourage the purchase of lower cost **non-Plug-in** Hybrid ICE/Electric vehicles that achieve equivalent CO_2 emission reduction at less public cost per vehicle, when used by average NJ drivers [5].

I am a Physicist and active NJ Professional Engineer, specializing in Energy, Power, Communication, and Control Systems with 40 years of experience in advanced technology product development and system integration. I have a B.S. degree in Engineering Physics, and M.S. and Ph.D. degrees in Electrical Engineering.

The techno-economic analysis I present in the Appendix supports my claim that incenting the purchase and grid-charging of **Plug-in** electric vehicles has much higher societal cost than incenting the purchase of **non-Plug-in** Hybrid ICE/Electric vehicles. This conclusion assumes that the State's goal is to achieve the highest and fastest reduction of the CO_2 emissions caused by **all** light duty vehicle travel within the state.

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[4] ICE => Internal Combustion Engine
[5] See `https://nj.gov/governor/news/news/562020/approved/20200117b.shtml`

This is especially true, considering that

1. Large **ratepayer-funded incentives** are being paid to NJ residents who purchase a **Plug-in** Electric vehicle, **independent of the number of miles they actually drive each year**[6], while

2. **No federal or NJ incentive** exists to encourage the purchase of a **non-Plug-in** Hybrid ICE/Electric vehicle despite it having a comparable CO_2 footprint as its Plug-in EV counterparts, when driven by average NJ drivers (who statistically drive 13,476 miles per year).

3. Properly incenting higher volume purchase of more affordable Hybrid ICE/Electric vehicles enables a more rapid retirement of existing lower fuel economy ICE vehicles, thereby minimizing the cumulative CO_2 emissions caused by **ALL** NJ light duty vehicle travel over the upcoming years.

4. Incenting **non-Plug-in Hybrid ICE/Electric** vehicle purchase using NJ Societal Benefit funds is justified because **it enables the State to meet its 2030 clean energy goals at least utility ratepayer cost** without having to upgrade regional electric grid infrastructure to deliver major new electric capacity otherwise needed to replace the transport energy now provided by gasoline.

   These non-Plug-in Hybrid ICE/Electric vehicles can be fueled with domestically-sourced E10 gasoline, causing no greater CO_2 emissions/mile than NJ grid-charged Plug-in EVs, when used by the average NJ driver. These same Hybrid ICE/Electric (and **Hybrid Fuel Cell/Electric vehicles**) can consume carbon neutral fuels, when available in the near future, **causing no global warming**, no matter how many miles traveled daily.

   This allows both EDCs (Electric Distribution Companies) and grid power providers to focus on

   > reducing the CO_2 emissions caused by **present heating, cooling, and appliance** electric demand,

   rather than

   > incenting new demand for Plug-in EVs without any restrictions on the use of fossil fuel power plants.

5. **Hybrid ICE/Electric** and **Hybrid Fuel Cell/Electric** technologies are more viable than Battery All-Electric technology for meeting the **light and heavy transport** needs of New Jersey, while reducing the net CO_2 emissions caused by this travel (at much lower ratepayer and truck owner cost).

[6] The average miles one drives in an existing low fuel economy ICE vehicle versus driving the same miles in a replacement electric vehicle determines the expected societal benefit (i.e., averted CO_2 emissions) of substitute travel in the lower CO_2 emissions/mile electric vehicle.

Executive Summary

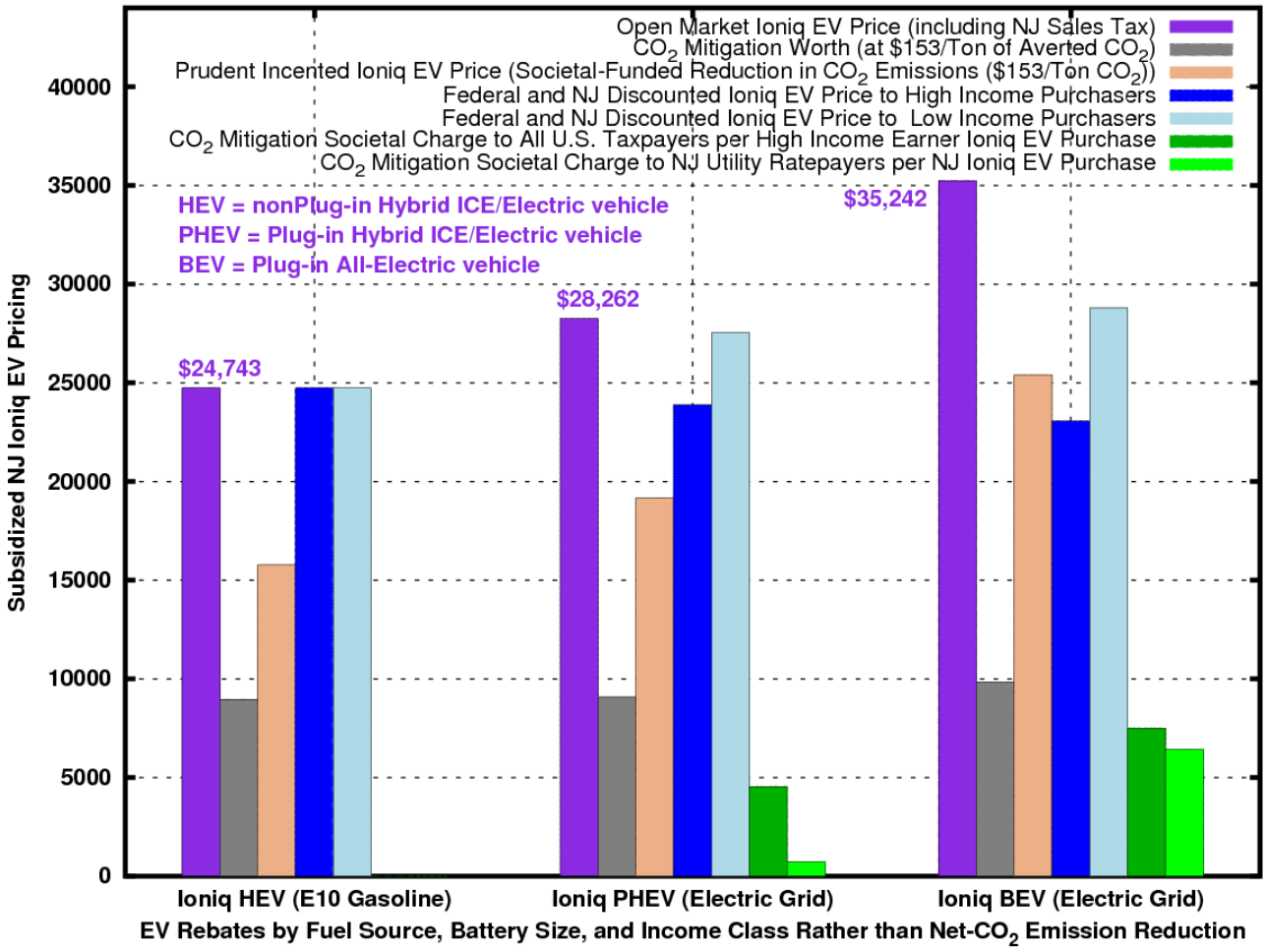


Figure 1: Current Government Incentives for Three Example NJ 2020 Ioniq Electric Vehicle Purchases

Figure 1 is derived from data contained in Table 1 below.

All results are based upon

1. Hyundai Ioniq Electric vehicles being driven by average NJ drivers (i.e., 202,000 miles) over a 15 year period as replacements for their existing 20 MPG E10 gasoline-fueled reference vehicles.

Ioniq Electric [Vehicle Type, Real Cost, Fuel Mix, Battery Capacity]	[Income Bracket, **Final Vehicle Cost** (after Incentives)]	15 Year Societal Cost @ ($153/Ton CO_2)	Federal Tax Credit	NJ Incentives	[Gov't Incentive, **Resultant Averted CO_2 Tax Rate**, Prudent Incentive (@$153/$CO_2$ Ton), **Incentive Disparity**]
Hybrid (ICE/Electric), **$24,743** E10 Gasoline, **1.56 Kw-hrs**	[High Income, **$24,650**]	$4,716, (30.8 tons CO_2)	$0	$0	[$0, **$0/Ton of Averted CO_2**, $8,960, **$8,960 too little**]
Hybrid (ICE/Electric), **$24,743** E10 Gasoline, **1.56 Kw-hrs**	[Low Income, **$24,650**]	$4,716, (30.8 tons CO_2)	$0	$0	[$0, **$0/Ton of Averted CO_2**, $8,960, **$8,960 too little**]
Plug-in Hybrid (ICE/Electric), **$28,262** Grid-electric + E10 Gasoline, **8.9 Kw-hrs**	[High Income, **$22,623**]	$4,595, (29.9 tons CO_2)	$4,543	$725	[$5,268, **$89/Ton of Averted CO_2**, $9,081, **$3,813 too little**]
Plug-in Hybrid (ICE/Electric), **$28,262** Grid-electric + E10 Gasoline, **8.9 Kw-hrs**	[Low Income **$27,431**]	$4,595, (29.9 tons CO_2)	$0	$725	[$725, **$12/Ton of Averted CO_2**, $9,081, **$8,356 too little**]
Plug-in All-Electric, **$35,242**, Grid-electric, **38.3 Kw-hrs**	[High Income, **$21.295**]	$3,840, (25.0 tons CO_2)	$7,500	$2,189 + $4,250 = $6,439	[$13,939, **$216/Ton of Averted CO_2**, $9,836, **$4,103 too much**]
Plug-in All-Electric, **$35,242**, Grid-electric, **38.3 Kw-hrs**	[Low Income, **$28,795**]	$3,840, (25.0 tons CO_2)	$0	$2,189 + $4,250 = $6,439	[$6,439, **$100/Ton of Averted CO_2**, $9,836, **$3,397 too little**]

Table 1: Current EV Incentives Are a Function of Battery Size, Grid Connection, and Income Level Rather than the CO_2 Mitigation Achieved by Competing Vehicle Technology/Fuel Candidates

2. Hyundai Ioniq Plug-in Hybrid and All-Electric vehicles being recharged using the NJ regional electric grid[7].

The Federal-posted EPA fuel economies for these three types of model year 2020 Hyundai Ioniq Electric vehicles can be viewed at

`https://www.fueleconomy.gov/feg/Find.do?action=sbs&id=42243&id=42290&id=42273`

Comparing gray bar heights in Figure 1 for the Ioniq Electric vehicle types listed shows that each averts nearly the same amount of expected CO_2 emission societal damage ($\approx$ **$9,000**) should a 20 MPG gasoline-fueled ICE vehicle be replaced.

Examining all dark and bright green bar heights in Figure 1 show that no incentive exists to encourage NJ drivers to purchase a **non-Plug-in** Ioniq Hybrid/Electric vehicle despite its expected equivalent CO_2 reduction performance and $3,519 and $10,497 cheaper costs (MSRP + sales tax) compared to its Ioniq Plug-in Hybrid ICE/Electric and All-Electric counterparts.

Comparing the dark blue versus light blue bar heights associated with each of the three electric vehicle types demonstrates that the chief benefactors of the joint "**Federal + NJ State Plug-in Only Electric Vehicle Incentive**" are NJ's high income earners, who receive $4,543 and $7,500 more than NJ low income earners [8] towards purchasing an Ioniq Plug-in Hybrid or All-Electric vehicle, respectively.

This is despite the fact that

> **The societal benefit** (i.e., averted CO_2-emissions) **achieved by competing electric vehicles is independent of the income class of the vehicle owner** (for the same miles driven).

Table 1 contains a detailed breakdown of the data used to generate Figure 1. The last column of this table provides the following information:

1. the total societal charge paid by U.S. taxpayers and NJ utility ratepayers per vehicle to purchasers of NJ Hyundai Electric vehicles.
2. the effective "averted CO_2" tax rate that NJ taxpayers and utility ratepayers pay due to these Government incentives,
3. the expected societal benefit (i.e., averted CO_2 damage (@ $153/Ton CO_2)) to accrue from driving these vehicles rather than a reference 20 MPG gasoline vehicle, and

[7] See `https://inets.org/jcpl2019Mix.jpg` and `https://inets.org/jcpl2019Emissions.jpg`.

[8] A low income NJ resident is defined here to be a NJ federal taxpayer whose federal tax liability is zero after personal standard or itemized deductions. A high income NJ resident is defined to be a NJ taxpayer whose federal tax liability, after personal standard or itemized deductions, is at least $7500 for the current year.

4. Government's under (**blue-highlighted**) or over (**red-highlighted**) incenting of EV purchase, based upon a prudent \$153/Ton (averted CO_2 emission) incentive level[9] .

Ioniq Electric Vehicle Type	Average Fuel Mix	15 Year Societal Cost (\$153/Ton CO_2)	Federal Tax Credit	NJ Incentives	[Total Gov't Incentive, **Averted CO_2 Valued** @\$153/Ton]
Plug-in Hybrid (ICE/Electric)	Clean Energy (Solar) + E10 Gasoline	\$1,640	\$4,543	\$725	[\$5,268, **\$12,036**]
Plug-in Battery All Electric	NJ Electric Grid @ (.89 lbs CO_2/Kw-hr)	\$3,840	\$7,500	\$2,189 + \$4,250 = \$6,439	[\$13,939, **\$9,836**]
Plug-in Hybrid (ICE/Electric)	NJ Electric Grid @ (.89 lbs CO_2/Kw-hr) + E10 Gasoline	\$4,595	\$4,543	\$725	[\$5,268, **\$9,081**]
Hybrid (ICE/Electric)	E10 Gasoline (17.7 lbs CO_2/Gallon)	\$4,716	\$0	\$0	[\$0, **\$8,960**]
Plug-in Hybrid (ICE/Electric)	Coal Electric Grid @ (2.10 lbs CO_2/Kw-hr) + E10 Gasoline	\$8,612	\$4,543	\$725	[\$5,268, **\$5,064**]
ICEV@20 MPG	E10 Gasoline	\$13,676	\$0	\$0	[\$0, **\$0**]

Table 2: The Societal Payback from Government-Legislated Plug-in EV Purchase Incentives Depends Heavily upon EV Charging Station Average Fuel Mix

[9] **\$153/Short Ton (CO_2)** is the U.S. Goverment Interagency Working Group's prudent estimate of the present cost of future (2035) CO_2 emissions, given the latest evidence of the increasing probability of extremely damaging ecosystem events caused by escalating atmospheric CO_2 levels.

Column 3 of Table 2 lists the expected societal damage (@ \$153/ton of CO_2 emissions) due to 15 years of average NJ driving (i.e., 202,000 miles) in each of three competing Ioniq electric vehicle types (compared to a reference 20 MPG ICE vehicle), when the new electric capacity required to periodically recharge the Plug-in EV's traction battery is obtained according to three possible future grid fuel mix scenarios:

1. New electric capacity is provided by either autonomous or grid-tied **clean energy power systems** (0 lbs. CO_2 per Mw-hr) emission intensity,
2. New electric capacity continues to be delivered over the electric grid at the **EDC's current emission intensity** (890 lbs. CO_2 per Mw-hr),
3. New electric capacity is delivered over the electric grid using available out-of-state underutilized **coal power plants** (2100 lbs. CO_2 per Mw-hr) emission intensity, or

Comparing Column 3 values in Table 2 illustrates that the Societal benefit payback from a Plug-in Electric vehicle's use is highly dependent upon the CO_2 emission intensity of the energy mix regularly used to charge its traction batteries.

For example, an Ioniq Plug-in Hybrid ICE/Electric vehicle **if regularly charged using grid electricity from a coal power plant** (See the table row containing the gray Fuel Mix cell), is expected to produce \$3896 more CO_2 damage (@ \$153/Ton CO_2) on average over a 15 year lifetime, when compared to using the competing lower cost gasoline-fueled Ioniq Hybrid ICE/Electric vehicle.

On the other hand, the same Ioniq Plug-in Hybrid ICE/Electric vehicle **if regularly charged using clean energy harvested fron on-site solar panels** (See table row containing the green Fuel Mix cell), is expected to produce \$3076 less CO_2 damage (@ \$153/Ton CO_2) on average over a 15 year lifetime, when compared to using the competing lower cost gasoline-fueled Ioniq Hybrid ICE/Electric vehicle.

Lastly, the same Ioniq Plug-in Hybrid ICE/Electric vehicle **if regularly charged using electricity delivered over NJ's present electric grid** (See table row containing the white Fuel Mix cell), is expected cause near identical amounts of CO_2 damage (**\$4,595** versus **\$4,716**) on average over a 15 year lifetime, when compared to using the competing lower cost gasoline-fueled Ioniq Hybrid ICE/Electric vehicle.

Consequently, I urge that utility ratepayers not be charged for the building and operation of grid infrastructure and public EV charging stations whose **new electric grid demand** is either fully or partially met using CO_2 emitting power plants.

RECOMMENDATIONS

The Board of Public Utilities will shortly finalize NJ's 2020 EV Purchase Incentive Program. I urge the Board to take this opportunity to

1. **reapportion Societal Benefit fund use so as to balance out the Federal Tax Credit to EV purchasers that rewards high income and excludes low income earners**. Doing so will result in a combined "Federal + NJ State EV Purchase Incentive" that is based upon expected CO_2 emission reduction, rather than EV buyer income class,

2. **reallocate Societal Benefit funds based upon the achievable CO_2 mitigation of each available electric vehicle technology+fuel source**, rather than incenting only those EV types that promote regional electric grid expansion, and

3. **incent average NJ drivers** to replace their existing ICE vehicles with the **most affordable** Electric vehicles on the market (i.e., **E10 gasoline-fueled Hybrid ICE/Electric vehicles**). Achieving this will most rapidly reduce light duty vehicle CO_2 emissions in New Jersey over the coming 10 years, and at least utility ratepayer cost.

APPENDIX: TECHNO-ECONOMIC ANALYSIS

1 "Averted CO_2" Incentive Cost Metric

If an important use of the Societal Benefit funds collected from all NJ utility ratepayers is to minimize the CO_2 emissions caused by energy consumption within the State, then comparison of the cost vs. benefit of **the expected CO_2 reductions from competing proposed clean energy incentives** should be the metric applied for deciding which possible incentive to adopt.

The statistical metric to be minimized in this analysis is

The Incentive Cost per Ton of Expected "Averted CO_2 Emissions"

that induces a NJ resident to replace his existing heating, cooling, transport, or power system with a system that causes less CO_2 emissions and minimzes the resident's **personal** cost of doing such.

When evaluated using this metric, certain clean energy system candidates will exhibit inferior societal benefit for the incentive required, and consequently should not be heavily-funded by NJ ratepayers.

2 Relevant Facts

1. The average U.S. driver travels

   13,476 miles/year = 365 days x 36.9 miles/day[10]

   in his vehicle. The average NJ driver travels slightly less.

2. U.S. drivers typically keep their cars for 13-17 years before scrapping[11].

3. JCP&L's current charge for NJ residential class grid electricity is $0.15/Kw-hr.

4. The power plant CO_2 emissions caused per unit of NJ electric by JCP&L is .443 tons/Mw-hr.

5. The current NJ cost of E10 regular gasoline is $2.40/gallon.

6. The fossil CO_2 emissions per gallon of E10 gasoline combustion is 17.7 lbs.

7. One Gasoline Gallon Equivalent (GGe) of energy is 33.4 Kw-hrs.

[10] See `https://www.metromile.com/blog/2018-year-review/`.
[11] See `https://berla.co/average-us-vehicle-lifespan/`

3 Opportunity to Accurately Compare Three Electric Vehicle Technologies

Estimating the relative societal value of competing electric vehicle technologies/fueling choices is more accurate when such comparisons are made using competing implementations from the same manufacturer, for the same car model.

Three competing Hyundai Ioniq electric vehicle offerings provide such an opportunity:

1. the 2020 Hybrid ICE/Electric Ioniq Vehicle (**$23,200**),
2. the 2020 Plug-in Hybrid ICE/Electric Ioniq Vehicle (**$26,500**), and
3. the 2020 All-Electric Ioniq Vehicle (**$33,045**),

The EPA-measured fuel economies for these three vehicles can be viewed at[12]

`https://www.fueleconomy.gov/feg/Find.do?action=sbs&id=42243&id=42290&id=42273`

[12]Once at this site, If you further select the “Energy and Environment" tab, you will be presented with a comparison of the projected CO_2 emissions of the three Ioniq electric vehicle models, for the case where the plug-in vehicles are charged only with clean electricity (i.e., 0 lbs CO_2/Kw-hr), rather than electricity from New Jersey’s electric grid (i.e., 0.89 lbs CO_2/kw-hr). This analysis calculates and discusses the real CO_2 footprint of these plug-in EVs when charged by the NJ electric grid without restriction on the use of fossil fuel power plants.

4 CO_2 Emissions Due to Electric Grid Charging of Plug-in EVs

Jersey Central Power & Light is the second largest Electric Distribution Company (EDC) in the State[13].

Figure 2 is Jersey Central Power & Light's declaration of the **average fuel mix** used to produce the electricity delivered to its NJ residential customers between June 1, 2018 and May 30, 2019

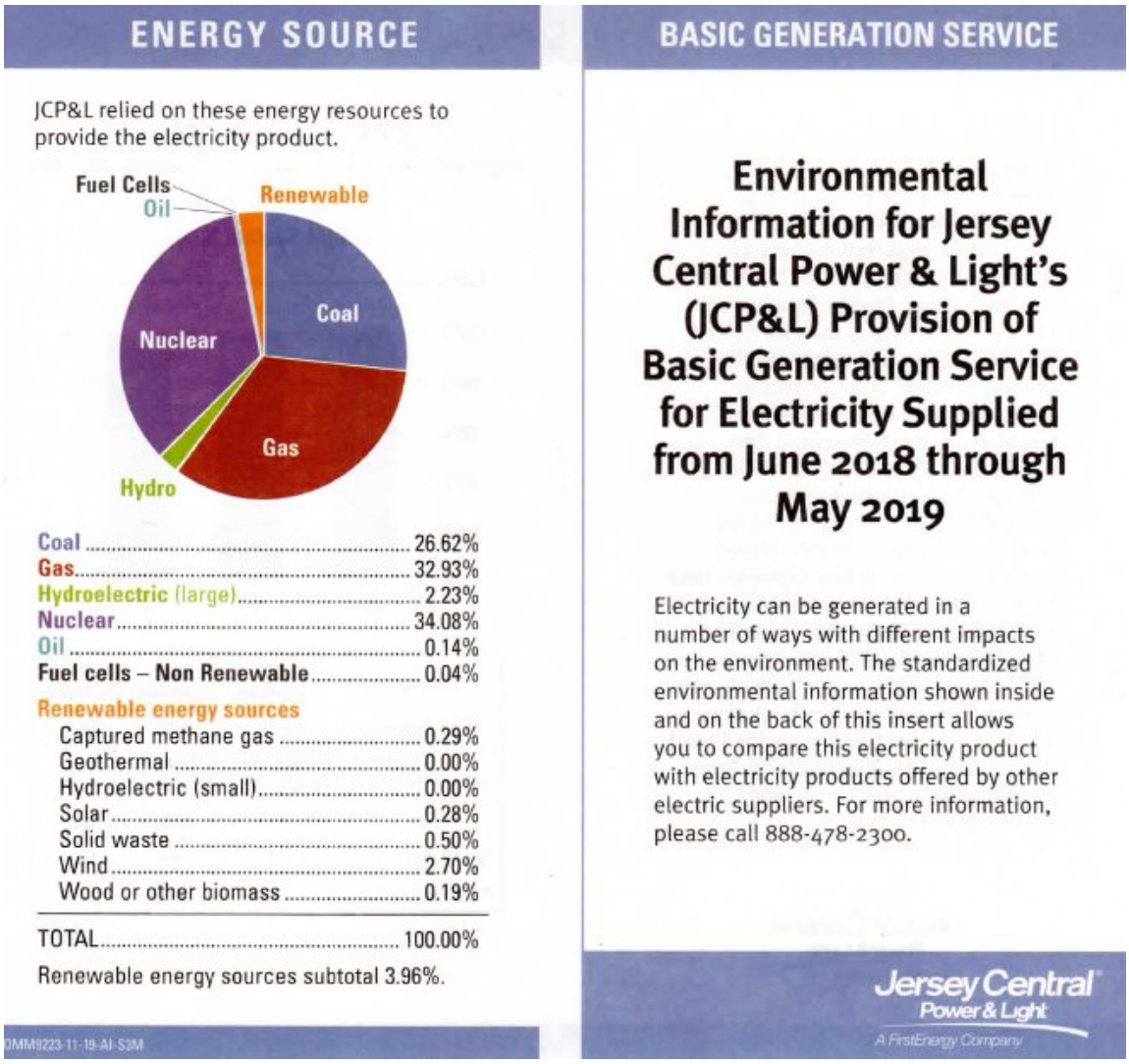
The figure reveals these power plant statistics for the electricity delivered to NJ customers:

59.7% was produced by **CO_2-emitting** fossil fuel power plants,

34.1% was produced by **carbon-free** nuclear power plants, and

6.2% was produced by **carbon-free** (2.2% hydroelectric) renewable energy sources.

[13] See
https://njcleanenergy.com/main/public-reports-and-library/links/electric-utilities-territory-map



ENERGY SOURCE

JCP&L relied on these energy resources to provide the electricity product.

Coal	26.62%
Gas	32.93%
Hydroelectric (large)	2.23%
Nuclear	34.08%
Oil	0.14%
Fuel cells – Non Renewable	0.04%
Renewable energy sources	
Captured methane gas	0.29%
Geothermal	0.00%
Hydroelectric (small)	0.00%
Solar	0.28%
Solid waste	0.50%
Wind	2.70%
Wood or other biomass	0.19%
TOTAL	100.00%

Renewable energy sources subtotal 3.96%.

DMM9223-11-19-AI-S3M

BASIC GENERATION SERVICE

Environmental Information for Jersey Central Power & Light's (JCP&L) Provision of Basic Generation Service for Electricity Supplied from June 2018 through May 2019

Electricity can be generated in a number of ways with different impacts on the environment. The standardized environmental information shown inside and on the back of this insert allows you to compare this electricity product with electricity products offered by other electric suppliers. For more information, please call 888-478-2300.

Jersey Central Power & Light
A FirstEnergy Company

Figure 2: JCP&L Fuel Mix for Producing NJ Ratepayer Electricity (June 2018 thru May, 2019)

Figure 3 is Jersey Central Power & Light's companion declaration of the **CO_2 emissions** associated with the production and delivery of this electricity to its NJ customers.

This JCP&L chart reveals that

886 lbs = .443 tons of CO_2

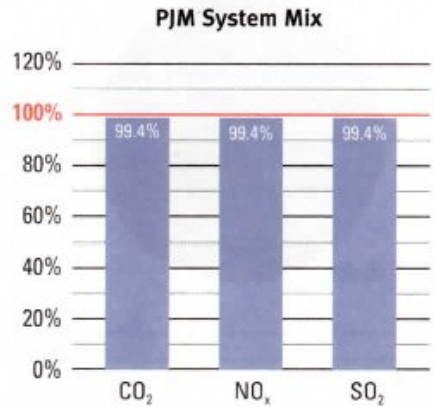
was emitted per Mw-hr of NJ grid electric distribution during that time.

AIR EMISSIONS RATES

Pursuant to N.J.A.C. 14:8-3:1(b)2, air emission rates for CO_2, NO_x, and SO_2 associated with the fuel mix must be reported in units of pound per megawatt-hour (lb/MWh). The Benchmark Energy Source and emission rate data is the PJM System Mix for EY 2019 and represent the average amount of air pollution associated with the generation of electricity in the PJM region. The PJM System Mix average emission rate for all electricity generation in the PJM Region can be used for comparison when a NJ TPS or BGS Provider supplies actual emission data for a product making an affirmative environmental claim that exceeds the NJ Renewable Portfolio Standards. CO_2 is a "greenhouse gas" which may contribute to global climate change. NO_x and SO_2 react to form acids found in acid rain. NO_x also reacts to form ground level ozone, an unhealthful component of "smog."

Jersey Central Power & Light
A FirstEnergy Company

JCP&L Emissions Rates
(expressed as a percentage of PJM emissions rates)



Data Source	CO_2 (lb/MWh)	NO_x (lb/MWh)	SO_2 (lb/MWh)
PJM System Mix	891.012	0.491	0.659
JCP&L	885.716	0.488	0.655

	CO_2	NO_x	SO_2
% of PJM Emissions	99.4	99.4	99.4
PJM Benchmark (%)	100.0	100.0	100.0

Figure 3: JCP&L's Corresponding Grid Electric Emission Intensity Declaration

5 2020 Ioniq Plug-in Hybrid ICE/Electric vehicle ($26,500)

The Hyundai Ioniq Plug-in Hybrid ICE/Electric vehicle is equipped with an 8.9 Kw-hr lithium-ion battery capable of powering 29 miles of all-electric vehicle travel. [14]

At $25 per mile of all-electric range, NJ State will pay each NJ purchaser of this vehicle

$725

from public State funds as an incentive to purchase[15].

The average U.S. driver travels

36.9 miles per day[16]

in his vehicle, while the average NJ driver travels slightly less.

Electric vehicles (both hybrid and all-electric) are designed to protect traction batteries from complete discharge. Assuming that EV traction batteries are normally not allowed to deplete more than 80% of their full capacities, the effective daily all-electric travel range of the Ioniq Plug-in Hybrid ICE/Electric vehicle is realistically

25.4 miles/day[17].

based upon 119 MPGe all-electric fuel economy.

The remaining

11.5 miles/day

of average NJ driver daily travel is fueled by gasoline using (hybrid ICE/electric) power at 52 MPG fuel economy.

If the Ioniq Plug-in Hybrid vehicle owner recharges his EV traction battery nightly using grid electricity, he is expected to consume

43.3 Mw-hrs[18]

[14]The actual range of this Ioniq vehicle is 630 miles when powered by both available battery and gasoline energy
[15]per NJ State Legislation S-2252 (P.L.2019, c.362)
[16]36.9 miles/day = (13,476 miles/year)/(365 days/year)
[17]25.4 miles = 119 MPGe x (.8 x 8.9 Kw-hr/(33.4 Kw-hr/Gge))
[18]43.3 Mw-hrs = 15 yrs x 365 days/yr x (.8 x 8.9 Kw-hrs per day/.9 efficiency)

of grid electricity over the vehicle's expected 202,000 mile, 15 year lifetime.

At $0.15/Kw-hr current residential electricity rate, this is expected to cost the driver

$1.19/day .

During this same 15 year period,

1211 gallons (i.e., .221 gallons/day) of E10 gasoline[19]

will be burnt to power the EV during the same 202,000 miles of expected travel.

At an average NJ pump price of

$2.40/gallon (E10 regular gasoline),

this equates to an additional

$0.53/day gasoline cost,

yielding a combined total fuel cost of

$1.72/day

The CO_2 emissions caused by grid electric charging of the Ioniq vehicle over its estimated 15 year, 202,000 mile lifespan is

19.2 CO_2 tons[20] = 43.3 Mw-hrs x .443 tons/Mw-hr,

while another

10.7 CO_2 tons of emissions[21]

is emitted while combusting on-board gasoline.

Consequently, the total lifetime CO_2 emissions from traveling 202,000 miles in NJ using this Plug-in Hybrid ICE/Electric vehicle is expected to be

29.9 CO_2 tons

[19] 1211 gallons = 15 yrs*(365 days/yr)*(11.5 miles/day)/52 MPG

[20] These CO_2 emissions occur at the power plants producing the electricity to charge the EV, but not at the EV.

[21] 10.7 CO_2 tons = 1211 gallons x (17.7 CO_2 lbs/gallon)/(2000 lbs/ton).

6 2020 Ioniq Hybrid ICE/Electric vehicle ($23,200)

The Ioniq Hybrid contains a 1.56 Kw-hr lithium-ion battery capable of powering 5 miles of all-electric travel via its battery + electric motor drive train.

At $25/mile State rebate per mile of all-electric range, **NJ State should pay**

$125

to NJ residents who purchase this Hybrid ICE/Electric vehicle, **but does not**. Both NJ State and the Federal government fails to incent the hybrid ICE/Electric vehicle's

1. harvesting and transforming of clean vehicle kinetic energy into traction battery chemical energy by means of regenerative deceleration and braking, and
2. the use of this harvested clean energy to power the electric drive motor.

The Ioniq Hybrid has EPA-rated 58 MPG fuel economy and 655 mile travel range between refills.

If this vehicle is purchased and used by the average NJ driver, he will drive 202,000 miles over an expected 15 year lifetime, and consume

3,483 gallons[22]

of E10 gasoline, at an expected fuel cost of

$1.53/day[23]

and 15 year lifetime ICE CO_2 emissions of

30.8 CO_2 tons[24]

compared to

$1.72/day fuel cost, and 29.9 CO_2 tons of emissions[25]

of equidistance travel in the grid-charged Ioniq Plug-in Hybrid vehicle.

[22] 3,483 gallons = 202,000 miles/58 MPG.

[23] $1.53/day = (36.9 miles/58 MPG) x $2.40/gallon

[24] 30.8 CO_2 tons = (17.7 lbs/gallon) x 3,483 gallons / (2000 lbs/ton)

[25] 19.2 tons of these CO_2 emissions do not occur at car, but rather at the fossil fuel power plants that participated in plug-in EV charging.

7 2020 Ioniq All-Electric vehicle ($33,045)

The All-Electric version (BEV) of the Hyundai Ioniq is equipped with a 38.3 Kw-hr lithium-ion battery pack that can power 170 miles of electric travel.

At $25 State rebate per mile of all-electric range, a NJ resident who purchases this vehicle will receive

$4250

from the State.

This car's traction battery will be recharged at least once every 136 miles[26] of vehicle travel. If purchased and used by the average NJ driver, the BEV need only be recharged once every three days in order to keep its traction battery from discharging more than 65% of its capacity.

However, if this average NJ driver has the ability to recharge his BEV at home, he need only top off its battery with 10.3 Kw-hrs (28% of its capacity) nightly, requiring much less frequent use of public DC Fast charging stations now legislated for construction[27].

If the average NJ driver purchases and uses his Ioniq all-electric Ioniq vehicle over its estimated 15 year useful lifetime, he will have driven 202,000 miles powered by battery chemical energy.

At 133 MPGge fuel economy,

1519 GGe[28]

of battery-stored chemical energy is needed to drive these miles.

Assuming that on-site charging of the traction battery occurs at 90% efficiency,

56.4 Mw-hrs[29]

of on-site electricity is cumulatively required to provide this chemical energy over the vehicle's 15 year lifetime.

If the traction battery is charged only using clean energy sources,

[26] 136 miles = .8 x 170 miles

[27] On January 17, 2020, Governor Murphy signed S-2252 into law (N.J.S.A. 48:25-1), which establishes a Statewide public plug-in electric vehicle charging system. The bill directs a working group of the Board of Public Utilities, the Department of Environmental Protection, the Department of Transportation, the New Jersey Transit Corporation, the New Jersey Turnpike Authority, the South Jersey Transportation Authority, and the Department of Community Affairs to develop a Statewide plan for installing at least 400 public DC fast chargers and 1000 Level Two publicly-accessible chargers across New Jersey by December 31, 2025.

[28] 1519 GGe = 202,000 miles/133 MPGe

[29] 56.4 Mw-hrs = 1519 GGe x ((33.4 Kw-hrs/GGe)/.9)

no CO_2 emissions

will occur.

If the traction battery is charged instead using the NJ regional electric grid (at current CO_2 emission intensity),

25.0 CO_2 tons[30]

of emissions will occur at the fossil fuel power plants providing portions of this electricity.

The daily cost of the grid electric energy needed to recharge the Ioniq BEV's traction battery @13,476 miles/year vehicle travel is

$1.55/day[31]

[30] 25.0 CO_2 tons = (.443 CO_2 tons/Mw-hr) x 56.4 Mw-hrs