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.
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> 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.
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> 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