November 30, 2017

Irene Kim Asbury, Secretary
New Jersey Board of Public Utilities
44 South Clinton Avenue
Trenton, NJ 08625

RE: BPU EV Stakeholder Group Task 2 Questions

Dear Secretary Asbury,

Greenlots is pleased to submit these comments in response to Task 2 questions posed during the September 15 Stakeholder Meeting to the EV Group:

What goals for EV infrastructure should be established?

Greenlots sees the potential for an extremely aggressive adoption curve for electric vehicles in New Jersey and beyond, due to the inherently superior technology and lower costs of ownership and operation of electric vehicles. However, the deployment of EV infrastructure will continue to be the most critical factor in determining the adoption curve of EVs in the short at medium term, at least.

Greenlots is a member of ChargEVC and appreciates ChargEVC's development of a roadmap for New Jersey, including the clear identification of infrastructure targets, with associated timeframes. Having articulated targets is critical to providing confidence to automakers and dealers, and potential purchasers of EVs. While Greenlots is supportive of ChargEVC's identified targets, Greenlots sees these numbers as too conservative, possibly by an order of magnitude.

As will be discussed below, Greenlots believes that a more aggressive policy and regulatory approach is necessary, with the establishment of more robust infrastructure goals. With respect to goals, Greenlots suggests an amendment of and additions to those identified by ChargEVC, as follows:

- A total of ~~600~~ *2400* public DC fast chargers throughout the state at 300 locations by 2020, with at least ~~2~~ *4* chargers at each location
- 500 Level 2 public community chargers by ~~2025~~ *2020*
- *500 Level 2 government fleet chargers by 2020*
- A total of 50% multifamily properties with chargers or charger ready by ~~2025~~ *2020* for use by residents
- A total of 25% of commercial properties with chargers by ~~2025~~ *2020* for use by employees and fleets
- A total of 50% multifamily properties with chargers or charger ready by ~~2025~~ *2020* for use by residents

Greenlots recognizes that electrical capacity and physical site limitations may create constraints on the number of chargers deployed at each location, but inherently believes that drivers require a "gas station" model for public DC fast charging to minimize wait times and maximize confidence, and that additional sharp action need be taken to support EV charging in longer dwell time locations. Management and grid integration strategies may be employed to minimize costs and/or form a basis for an incentive structure for electric utilities both at DCFC and Level 2 locations.

Greenlots also recognizes that the goal(s) above are targeted toward light duty transportation electrification, and therefore consideration of targets for medium and heavy duty transportation electrification is necessary to support adoption of vehicles in these weight classes. While technology development has been lagging in these weight classes, it is appropriate to initially focus on supporting transit bus deployment and increasingly, the use of heavy duty fleet vehicles by governments and the private sector. Without addressing off road vehicle electrification, including at ports and airports, and without addressing all segments of on road heavy duty vehicle electrification, Greenlots recommends that at a minimum, goals be established to create a backbone of charging for freight movement, and to facilitate transit and school bus investments by cities, transit agencies, and school districts.

- *A total of 200 public DC fast chargers for dedicated heavy duty truck charging throughout the state at 50 locations by 2020, with at least 2 chargers at each location, with a focus on supporting goods movement from the ports and airports, and interstate*
- *500 Level 2 or 100 DC fast chargers or some combination of the two for government fleet vehicles such as garbage and maintenance trucks by 2020*
- *A total of 50% of school districts with chargers or charger ready by 2020 for use by school buses*
- *A total of 50% of transit districts with chargers or charger ready by 2020 for use by transit buses*

Greenlots will be happy to discuss additional goals and timelines, and further address the need for the goals identified above.

What role should the Board, other government agencies; electric utilities, non-governmental organizations and the private market have in addressing EV/infrastructure adoption?

As will be discussed further below, private investment in deploying charging infrastructure is occurring at a level that can only be described as a market failure at this point in time and stage of the market. Many drivers who want EVs are not purchasing or leasing them because there is an incredibly inadequate deployment of charging infrastructure.

As such, it is essential to identify and support the reasoned and targeted deployment of capital from other sources, with utility ratepayer investment being one of the clearest paths forward.

The Board must oversee this activity and ensure that it is in the interests of New Jersey and its ratepayers. The Board will need to review and approve appropriate investments. While there seems a clear regulatory pathway for the Board to approach the transportation electrification space, as identified by responses to the Task 1 questions posed by Staff, it may be necessary for the Board to evolve its regulations and review procedure to adequately accommodate this technology space, and provide guidance to utilities.

For electric utilities, Greenlots believes it essential to take a larger, and flexible role to bringing EV infrastructure to the market, and managing the infrastructure once deployed. This is critical to scale vehicle adoption to the point where the private market may be more motivated to invest and create a sustainable market, or indeed, it may be necessary indefinitely if a sustainable private market does not develop. To be clear, we view a sustainable market to be driven by vehicle adoption, not infrastructure deployment, but of course infrastructure deployment is necessary to drive vehicle adoption.

Greenlots has seen a range of utility infrastructure deployment models in other jurisdictions, and believes at this point that a utility ownership or stewardship model to be in the best interests of the market, of ratepayers, of drivers, and of the grid as a whole. This model best levels the playing field for competition by products and services that can then compete on a basis of features and functionality, creates on-going competition for hardware and software, and fosters innovation by creating the aforementioned on-going features and functionality based competition, and can maximize choice for the end customer without fragmenting the market and adding complexity for users. Importantly, this model also improves the market for ownership/stewardship by other entities by increasing vehicle adoption to the point where there is a more robust market from scaled vehicle adoption.

A deeper utility role can also help ensure a maximization of the benefits of managed charging, which can lower costs for all ratepayers by making the grid more flexible and efficient. At this stage of the market, other jurisdictions have recognized the benefits of a deeper utility role, but have taken an approach of planned re-evaluation as the market grows and vehicle adoption scales.

What is the present status of EVs and EV infrastructure in New Jersey?

EVs are being adopted at an increasing rate, but due to a lack of infrastructure, are effectively being adopted with an artificial ceiling and market cap. With adequate access to infrastructure—at a cost below gasoline—to support increasingly longer range vehicles, vehicle purchasers in New Jersey will be able to realize the cost savings associated with lower fuel costs, lower maintenance costs, and longer useful lives, inherent in electric vehicles. And in turn, New Jersey will benefit from more of those dollars being spent locally.

This is particularly true with transit and fleet operators, who stand to realize immediate cost savings even with potentially higher purchase prices of EVs over internal combustion engine vehicle alternatives.

What EV/EV infrastructure developments can be expected in the short/medium term under a Business as Usual scenario?

Unfortunately Greenlots has seen and believes that a Business as Usual scenario will result in unrealized cost savings in the many millions of dollars in the near term. Greenlots believes the ChargEVC analysis on this subject is a useful guide. As are an increasing number of reports, including by the Regulatory Assistance Project and MJ Bradley. Fundamentally, there is not a reasonable return on investment for non utility entities to purchase, install, operate, and maintain EV charging infrastructure. This would not inherently be an unresolvable challenge with an adequate level of vehicle adoption to create a secondary effect similar to the current gas station model where fueling stations are a marginally positive revenue generator, but attract a customer base to purchase coffee, candy, and other goods. However, infrastructure deployment must precede vehicle adoption, and the investment dollars simply are not flowing adequately to more meaningfully grow vehicle adoption, or accommodate potential rapid adoption in the next few years that if unmanaged could create costs to ratepayers that would easily be avoided by more proactive utility involvement in the near term.

Greenlots looks forward to continuing to engage in this process and supporting the BPU's investigation into these and other issues related to deploying EV infrastructure and growing EV adoption. Please don't hesitate to reach out with questions.

Sincerely,

Thomas Ashley
Vice President, Policy