

STATE OF NORTH CAROLINA
UTILITIES COMMISSION
RALEIGH

DOCKET NO. E-2, SUB 1197
DOCKET NO. E-7, SUB 1195

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

IN THE MATTER OF)	
)	
APPLICATION BY DUKE)	REPLY COMMENTS OF
ENERGY CAROLINAS, LLC AND)	GREENLOTS
DUKE ENERGY PROGRESS, LLC)	
FOR APPROVAL OF PROPOSED)	
ELECTRIC TRANSPORTATION)	
PILOT)	

Pursuant to Rule R1-19 of the Rules and Regulations of the North Carolina Utilities Commission ("the Commission"), the *Order Requesting Comments on Proposed Electric Transportation Pilot Program*, and the *Order Granting Extension of Time to File Comments and Reply Comments* issued in these dockets, Zeco Systems, Inc. d/b/a Greenlots ("Greenlots") submits the following reply comments regarding the Proposed Electric Transportation Pilot Program ("the Pilot Program") filed by Duke Energy Carolinas, LLC ("DEC") and Duke Energy Progress, LLC ("DEP") (collectively, "the Companies" or "Duke") on March 29, 2019.

BACKGROUND

Headquartered in California, Greenlots is a leading provider of electric vehicle ("EV") charging software and services committed to accelerating transportation electrification in North Carolina and beyond. The Greenlots network supports a significant percentage of the DC fast charging infrastructure in North America, and an increasing 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 EV charging loads and respond to local and system conditions. Greenlots is helping accelerate the electric mobility future through the delivery of innovative software and services to empower utilities, cities, automakers, fleets, and many others to deploy EV charging infrastructure at scale. The Greenlots footprint spans 13 countries, and includes deployments in North Carolina.

On May 6, 2019, Greenlots filed a Petition to Intervene. That petition was allowed by Commission Order on May 17, 2019. On July 5, 2019, Greenlots filed initial comments, which included an overview of Duke's filing and proposed Pilot Program which, in the interest of brevity, will not be repeated here. Greenlots has reviewed the initial comment submissions of all parties, and offers the following reply comments.

GREENLOTS' REPLY COMMENTS

Greenlots reiterates its strong support for the proposed Pilot Program. As a leading provider of EV charging software and services committed to accelerating transportation electrification throughout the country, and with particular interest in the success of the deployment efforts and market growth within North Carolina, Greenlots recommends approval of the Companies' Pilot Program as proposed and without delay or change in size or scope. While rather small in relation to the market need, the Pilot Program is prudent, targeted, and will have a significant beneficial impact in accelerating both the adoption of electric vehicles and the market for EV charging infrastructure, while supporting attainment of state greenhouse gas reduction goals. Additionally, and as stated by several intervenors in the record, the Commission should approve the Pilot Program because it is in the public interest, will meet a need regarding the advancement of EV charging in North

Carolina that is not likely to be met by the private EV charging market, will pilot a diverse portfolio of load management strategies, and will foster and accelerate the development of the private EV charging market while supporting EV drivers in a manner that the private market will not be able to in the near term.

I. Duke's Proposed Pilot Program Should Not be Delayed, Postponed or Reduced in Size or Scope, as it is Critically Needed to Support Attainment of State Goals, Support Economic and Market Development, and is in the Public Interest.

Duke's Proposed Pilot Program are a reasonable and critically needed investment to meet North Carolina's climate and greenhouse gas reduction goals, and is in the public interest because it: (1) will reduce air pollution and facilitate achieving the state's targets for reducing emissions economy-wide, and in the transportation sector in particular, as articulated in Governor Cooper's Executive Order 80; (2) supports the state's national commitments, including to the United States Climate Alliance; (3) creates downward pressure on rates by better utilizing the Companies' electric distribution system; (4) could improve the integration of renewable and intermittent resources through dispatchable load; (5) will bring EVs and EV charging infrastructure to locations that otherwise will be unlikely to see EV charging infrastructure installed; (6) will introduce and pilot price signals and managed charging programs to encourage EV charging behavior that is beneficial to the grid; (7) will support economic development associated with advanced mobility in North Carolina; and (8) will facilitate the electrification of transit buses and school buses, directly benefiting populations and communities most sensitive to and marginalized by diesel emissions.

In similarly articulating their overall support for the Pilot Program, many of these benefits and realities are echoed by other parties in their initial comments, including the

North Carolina Justice Center and Southern Alliance for Clean Energy (“NCJC/SACE”),¹ Sierra Club,² and Environmental Defense Fund.³ This broad alignment recognizes the imperative to move with speed in supporting transportation electrification, especially given the lock-in costs associated with waiting, given the length of time that each new non-electric vehicle will stay on the road, magnifying the consequence of delay that some parties advocate for. There can also be a considerably long lead time required to acquire a charging site, and then design, permit, and construct EVSE in many contexts and situations. Accordingly, concerted action is needed now, as the costs associated with delay compound considerably with the passage of time. At the same time, the Pilot Program is modest in scale in relation to the size and scope of the challenges it is designed to address, and the significant benefits for society and all ratepayers that stand to be unlocked as listed above. The Pilot Program will expand on existing EV and EV charging infrastructure implementations in a way that will target likely EV market audiences, and gain data, knowledge, and experience on program design, costs, rates, load management solutions and EV and charging education and utilization.

Furthermore, and paradoxically, by delaying or not providing drivers with these resources and more charging options as the Pilot Program would accomplish, this delay would actually compound the fragile market conditions that parties advocating for delay critique. Indeed, the 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. Greenlots notes that when similar considerations

¹ NCJC/SACE Initial Comments at 1.

² Sierra Club Initial Comments at 2-5.

³ EDF Initial Comments at 1.

were evaluated earlier this year in the context of DTE Energy’s “Charging Forward” pilot program filing in Michigan, both the Michigan Commission’s Staff and the Administrative Law Judge assigned to the case recommended expanding the scope and budget of the proposed program by a full third over what the utility originally proposed.⁴ That Commission ultimately did not approve this scale of expansion, primarily due to objections from the applicant DTE, the utility, about the expansion being premature. Greenlots recognizes, of course, that while factors can vary by jurisdiction, that situation is a pointed illustration of the broad recognition of the need to move with both speed and scale in accelerating transportation electrification.

For these various reasons, the proposed Pilot Program is in the interest of the public and the market and should be approved as proposed without delay.

II. The Proposed Utility Ownership Components of the Pilot Program Meets a Need Regarding the Advancement of EVs and EV Charging Infrastructure in North Carolina In A Manner Not Being Met and Not Likely to be Met by the Private EV Charging Market, While in Fact Supporting its Growth and Development.

Greenlots recognizes that a few parties contend that the Pilot Program proposed by Duke may hamper private market development and market opportunities.⁵ While this is a legitimate consideration, the reality remains that the private EV charging marketplace alone cannot adequately meet North Carolina’s transportation electrification and emissions goals, let alone achieve market transformation or maximize future growth and associated benefits and, accordingly, the Companies’ proposal to accelerate the proliferation of EV

⁴ See “Notice of Proposed Decision” in Michigan Public Service Commission Case No. U-20162 dated March 5, 2019.

⁵ North Carolina Clean Energy Business Alliance Initial Comments at 1; North Carolina Sustainable Energy Association Initial Comments at 1, ChargePoint Initial Comments at 3.

charging infrastructure will fill a need that has not been met, and is not likely to be met, by the competitive EV charging market.

The concerns expressed over competition center around the notion that Duke will own too large a share of the market, or achieve a first-mover advantage.⁶ Neither of these contentions are well-founded. The existence of just 43 public fast charging stations in the state installed by the private market⁷ contradict any notion of a first mover advantage; if the market saw a sustainable, viable business model given the levels of EV penetration it would have seized upon this supposed advantage. Indeed, this market void stems largely from the fact that private equity funded development often requires rapid and high returns on investment that can be at odds with capital investments such as public EVSE. Moreover, a significant amount of this limited private market development is likely supported by public funds, and in some cases is a product of legal settlements. Indeed, private market EVSE developers have been operating both in North Carolina and the broader region for several years now, and have not been successful in achieving the market state that is suggested can be attained if utility investment is precluded.

Furthermore, concerns about Duke controlling too large a market share both significantly underestimate the ultimate size of the market that this program is designed to support attainment of, while mistakenly portraying the market as being fixed in size. In reality, private market EVSE development and utility EVSE development is not a zero-sum game, in that any charger owned by a utility is one not owned by the private market. This failure to understand the additive nature of utility investment, and that the market is

⁶ *Id.*

⁷ Duke application at p. 3.

not fixed in size, fundamentally misconstrues both the state of the market, and the dynamics that influence market development.

While well intentioned, this market view is unhelpfully narrow and short sighted, mortgaging long-term market growth and transformation, and the needed support of EV drivers and their purchasing decisions, for misplaced and inaccurate concerns over the perceived fragility of the near-term market. Critically, this concern and the proposed exclusion of utility investment would instead slow the growth of the market while both limiting near-term and long-term opportunities for private market participants. As described in more detail in Greenlots' initial comments,⁸ utility investment as proposed by Duke results in increased near-term opportunities for all market participants by providing a motivated buyer through utility procurement, while buoying the growth of the market over time. This hybrid market development model in which both third-party private market participants and regulated utilities actively participate and benefit eliminates the risk of possible negative outcomes in choosing just one market development path, while seeding realization of a maximized future market over time.

One only needs to look to California's history in contending with these issues to illustrate this dynamic. In 2011, the California Public Utilities Commission ("CPUC") was persuaded to ban utility investment in charging infrastructure based on the same reasoning we are hearing now is this proceeding over concerns about the "competitive market" and the "crowding out" of private investment.⁹ Instead of a decision resulting in a boon to private market participants and a reinvigorated market developing charging infrastructure and filling market gaps, with the threat lifted of utility investment compromising private

⁸ See pp. 12-13.

⁹ See CPUC Decision 11-07-029 issued July 25, 2011 in Rulemaking 09-08-009.

investments, the result in fact was that the market didn't move and the decision acted as a clear constraint on EV market growth in a state where the market was expected to thrive. As a result of these gaps going unfilled by the private market, and the need to accelerate the market, among other considerations, the CPUC in 2014 reversed this decision to allow utility ownership of EV charging infrastructure on a case-by-case basis.¹⁰ Following the realization of this mistake, and its reversal, and with the support of other state policy, California is now the undisputed leader in both EV adoption and EV infrastructure deployment. California is now host to the most vibrant market in the country for each, with limited private investment existing alongside and benefiting from both utility ratepayer and public state investment.

Eight years later, North Carolina need not and should not make the same mistakes of early movers like California; instead it should use this perspective and learn from these lessons and reject the negative arguments presented in this proceeding. Recognizing the fundamental link between charging infrastructure visibility, availability, and EV adoption, both confining and hampering EV adoption when scarce, or acting as a market and EV adoption catalyst when prominent and adequately available, the Commission should approve Duke's Pilot Program to help break through these market barriers, accelerate the market across key market segments, support EV purchase decisions, and improve the current and future environment for private investment.

¹⁰ See CPUC Decision 14-12-079 issued December 22, 2014 in Rulemaking 13-11-007.

III. A Retail-Based, Site Host-Focused Marketplace Is Not the Only Way to Support Market Competition and Development, and Does Not Necessarily Best Support the Needs of Drivers.

Several parties in their initial comments advocate for design modifications to the Pilot Program aimed at centering around site hosts. For example, ChargePoint advocates that the program be amended to “[e]nable site hosts under all offerings to operate charging stations on their sites, and to determine pricing to drivers, to ensure competition in the EV charging marketplace and allow for optimized utilization of stations and the driver experience.”¹¹ The North Carolina Sustainable Energy Association (“NCSEA”) similarly “requests that the Commission deny Duke’s request to make capital investments in the Pilot and instead direct Duke to file a make ready program.”¹² In fact, a make ready program would also represent a capital investment on Duke’s part, just a different type of capital investment, and this program design is similarly centered around site hosts, and retail procurement of EVSE by site hosts.

As noted in Greenlots’ initial comments, there is a prevalent and incomplete view of the market, that competition can only take place or best takes place at the retail level. These comments and program design modification suggestions are prime examples of that view. While site hosts certainly are an important part of the EV charging ecosystem, they represent just one (key) part of it, and there are many other important considerations when designing pilots and programs that will most effectively grow the market. Principal among these considerations are driver needs, as they are the ones actually making the critical decision whether to drive electric, or not. Except in some fleet situations, site hosts usually aren’t the party that is electrifying their vehicle(s).

¹¹ ChargePoint Initial Comments at 17.

¹² NCSEA Initial Comments at 16.

This is critically important to realize, as supporting driver decisions to electrify, and ensuring their experience is good once driving electric is the most important consideration when designing programs to support and accelerate transportation electrification. Site hosts and their needs are only an intermediary element of this equation, where it also turns out that they can, in fact, be equally well served, if not better served, when a utility provides a seamless, turn-key program and takes care of all the procurement, installation, operation, maintenance and ownership details associated with EV charging stations. A site host being presented with a large number of charging technologies, choices and options where they instead have to make often uninformed decisions and handle a multitude of details does not necessarily better serve their needs, and it certainly doesn't necessarily lead to a better electric driver experience using that charging infrastructure when these various critical considerations are being handled by an entity that likely holds no particular core competencies in these areas (unlike a utility, for example).

Greenlots' aim in illuminating these market realities is to provide this Commission and stakeholders with a broader and more encompassing view of the market and its realities than those offered by other parties. ChargePoint includes in its initial comments a set of five "best practices" . . . "to support successful implementation of utility programs that align the goals of the utility, competitive market participants, and most importantly – ChargePoint's end customers."¹³ These concepts do not focus on supporting electric drivers, which as discussed above should be the ultimate goal of any program to support and accelerate transportation electrification and grow the market, with significant

¹³ ChargePoint Initial Comments at 7.

mindfulness to grid and load management, and associated ratepayer cost savings and benefits.

Greenlots does not believe that the “most important” goal of utility pilot and program design should be conforming it to the needs of a specific company’s customers (unless they are specifically drivers), or a company’s specific business model, or specific way of doing business. In fact, this “best practice” has helped facilitate and lead to one company becoming the market leader by a sizable margin, holding the largest market share and market power in most every segment of the market.¹⁴ Furthering this, in fact, would likely lead to anti-competitive results. Rather, utility pilot and program design attributes should support and foster a diversity of market participants, business models, and mechanisms for supporting driver needs and accelerating transportation electrification, which is exactly what Duke has proposed with its Pilot Program – both directly and indirectly.

Greenlots respects the market views and business models of all market participants, and recognizes that there are diverse approaches and objectives. Indeed, many market participants, including Greenlots, do not have business models specifically centered around selling directly to site hosts, focusing instead on larger scale procurement programs. Accordingly, by providing this broader perspective, Greenlots encourages the Commission and stakeholders to look beyond any ideology that suggests there is only one form of market competition, or place where it can develop, or program design that can support growth of this market.

¹⁴ See *Id.* at 1-2 “ChargePoint is the leading electric vehicle charging network in the world...” and “the only charging technology company on the market that designs, develops, and manufactures hardware and software solutions across every EV market segment.”

As articulated in our initial comments, 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 different types of players, regardless of size or market position to compete on a leveled playing field. Additionally, this 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 good result in the near term, especially for ratepayers, however mindfulness for unintended negative longer-term impacts in potentially limiting market value and sustainability is also required). Indeed, this 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. Duke has designed the Pilot Program with specifically-tailored program design features adapted for the needs of the different market segments targeted in its portfolio, which will provide a diverse set of opportunities for market participants, and more critically for growing the market, charging options focused on EV drivers.

IV. Unfettered “Network Choice” is Likely to Increase Program Cost and Complexity, While Constraining Customer Switching Ability.

ChargePoint argues that site hosts should have unfettered choice in charging networks they may wish to utilize.¹⁵ While this can sound beneficial, there are several important and potentially costly implications to this that the Commission and stakeholders should recognize. First, this would place an incredible burden on Duke, or any utility for

¹⁵ *Id.* at 8, 12, 14, 17.

that matter, in being required to make its distribution system operating system and back-end software integrate and operate with any EV network operator that a site host, for example, may “choose.” Complexity and resulting costs associated with this integration, especially if a network does not operate on open communication standards and protocols, can be massive, resulting in significantly increased costs to ratepayers, or with fixed budgets, less deployed infrastructure.

Indeed, the consequences of forcing utilities to offer a potentially unlimited number of networks in their program design eliminates the ability of utilities to standardize on back-end network, billing and control infrastructure, and impairs the ability of the industry to adopt standards that create efficiency, reduce costs, and improve the consumer experience. What ChargePoint proposes would be expensive and inefficient if Duke was required to integrate its back-end system with or otherwise accommodate each and every hardware provider’s particular network system. It could also result in increased consumer protection and security concerns with respect to the flow of customer data, and outside entry points into utility billing systems. The experience of many utilities in EV charging pilots is that the time, cost and complexity to separately integrate with each EV charging provider’s specific network offering is one of the most challenging aspects of such programs. Duke should not be forced to learn this same costly lesson that already has already been learned in other jurisdictions.

ChargePoint offers a cellular phone network analogy in support of this specific program design tweak that it requests,¹⁶ suggesting that forcing one EV charging network on the market would have the same effect as forcing all cellphones to operate on just one

¹⁶ *Id.* at 8.

specific network. Under scrutiny however, this example actually disproves their point. Cell networks enjoy a high level of interoperability, meaning that any user can make a call to any other user, even if they are on different networks (like T-Mobile, Verizon, AT&T, etc.), and easily choose and switch between different networks. This is the same kind of transparent interoperability Greenlots would like to see emerge in the EVSE market. The cell phone customer experience exists precisely because there are standards that allow all those different "edge solutions" to interoperate (*i.e.*, the edge solutions interface into a cell backbone that is highly standardized). If the cell backbone (or in this analogy, the utility's back-end software system) had to deal with edge solutions that each used a unique or unstandardized protocol that had to be integrated separately and manually, there would be prohibitive integration costs and no interoperability, or ease in customers being able to switch from one network to another. That is essentially the exact structure that would be supported and perpetuated by imposing on Duke the requirement to separately integrate with and work with any EV network provider.

Greenlots again provides this added perspective with the intention of broadening the market perspectives that Commission and stakeholders may draw from on a topic that when unpacked, unfortunately, is rather technical, and not as simple or virtuous as it may sound or seem. Additionally, it must be clarified that despite the innocuous sounding term of "network choice", the market has a history of business models designed to offer no "choice" in what network they wish to use with the charger/EVSE being offered, and this requested program design tweak would act to reinforce this dynamic. Indeed, customers are generally forced to use a specific network if they choose to purchase specific hardware/EVSE, and importantly, have no ability to switch or change networks in the

future should they wish to. This point is critical, especially since customers often do not understand this implication initially, and then end up locked into network service agreements preventing them from being able to switch to or choose other offerings should it not continue to meet their needs, or for any other reason. Worse yet, in many situations the hardware/EVSE from a technical standpoint has no ability to operate with any network other than the one it was sold with, due to it not being based on or having the ability to communicate with back-end software and networks via open standards and communication protocols. The use of the term “choice” therefore is in fact entirely a misnomer, as proponents of this “choice” do not seek to provide their customers with additional choice in network services either at the initial point of sale, or afterwards. Ultimately, and perhaps paradoxically, this notion of “choice” acts to restrict competition, product innovation and customer choice in both hardware and software, both at the initial customer purchase decision, and ongoing.

For these reasons, expecting utilities to support any number of software or network service platforms, each with significant integration costs, isn't scalable, cost effective, in alignment with procurement best practices, or ultimately even supportive of true customer choice and switching ability. Instead, to actually provide for this, the utility requires procurement flexibility and choice, recognizing that it is also a customer of this industry. This is especially true with smaller, pilot-scale programs. Greenlots therefore urges the Commission to leave this specific consideration to later program implementation, providing for sufficient utility flexibility as necessary to avoid these other undesirable outcomes. This will avoid unwittingly adopting seemingly innocuous program design

requirements that, in fact, may significantly increase program cost and complexity, while not serving the best interests of a flexible, interoperable, hardware/software ecosystem.

V. Duke Should Consider Calls for Greater Incorporation of Smart Charging and Load Management in its Pilot Program Design.

Several parties advocate for increased use of smart/managed charging and load management in the design of the Pilot Program. Environmental Defense Fund suggests that Duke consider piloting managed charging-based load management with more than just two of the seven proposed pilot programs, such as the Fleet EV Charging Program and the EV Transit Bus Charging Station Program.¹⁷ NCJC/SACE suggests considering additional load management strategies at multi-family dwellings.¹⁸ Sierra Club notes that more data collection with respect to managed charging/smart could be beneficial.¹⁹

As also discussed in our initial comments, Greenlots notes that Duke's Pilot Program as proposed already approaches the subject of EV load management in a more advanced and deliberate way than most utility EV charging programs. This said, this is a topic that is especially important in the context of pilot programs, and Greenlots accordingly encourages Duke and the Commission to consider ways in which the proposed Pilot Program can be enhanced to both incorporate and evaluate smart charging and other load management strategies to a greater degree.

CONCLUSION

Duke has proposed a measured and targeted portfolio of well-designed Pilot Program offerings to gain learning and to accelerate transportation electrification that

¹⁷ EDF Initial Comments at 15.

¹⁸ NCJC/SACE Initial Comments at 34.

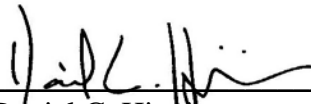
¹⁹ Sierra Club Initial Comments at 2.

leverages the Companies' core competencies and ability to help support and accelerate the market to the benefit of all utility customers. Despite the misplaced objections of a few parties, Duke has designed the Public Charging Expansion portion of its Pilot Program to develop a modest, market-seeding, foundational network of public charging infrastructure that represents a very small percentage of what will be required in the coming years in market segments not adequately served by the private sector. This investment is critical, warranted and well-precedented. Earlier this year in Maryland, for example, the Commission there, after a lengthy and deliberate stakeholder process, approved over \$20 million of utility owned public charging infrastructure, recognizing the critical role of this specific type of investment in market animation and development – which unfortunately currently cannot be replicated or offered as effectively through private market offerings. This Commission is armed with a thoughtful utility filing which presents the potential to create meaningful and beneficial impact in North Carolina, drawing on best practices from across the country that Greenlots can attest to. With the comments offered, Greenlots urges the Commission's approval, while cautioning against many of the specific program design modifications requested by parties that are not in the best interest of serving EV drivers, or the development of a vibrant long-term marketplace.

Greenlots looks forward to continued engagement in efforts supporting transportation electrification in North Carolina, and we thank the Commission for consideration of these comments.

Respectfully submitted, this the 9th day of August, 2019.

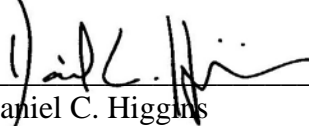
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CERTIFICATE OF SERVICE

I hereby certify that a true and exact copy of the foregoing document was duly served upon counsel of record for the Public Staff and all parties to these dockets by either depositing same in a depository of the United States Postal Service, first-class postage prepaid, addressed as shown below, or by electronic delivery, this the 9th day of August, 2019.

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