



October 22, 2018

Docket No. M-2015-2518883

-Via Electronic Filing-

Rosemary Chiavetta, Secretary
Pennsylvania Public Utility Commission
Commonwealth Keystone Building
400 North Street
Harrisburg, PA 17120

RE: Comments of Greenlots on the "Proposed Policy Statement Order" pertaining to the Commission's "Fixed Utility Distribution Rates Policy Statement"

Dear Secretary Chiavetta,

Greenlots submits these comments to the Pennsylvania Public Utility Commission ("the Commission") in response to the May 3, 2018 "Proposed Policy Statement Order" ("the Order") in the above referenced docket, requesting comments on its "Fixed Utility Distribution Rates Policy Statement" ("the Policy Statement"), and its August 14, 2018 Secretarial Letter extending the comment filing deadline.

Greenlots is a leading provider of electric vehicle (EV) charging software and services committed to accelerating transportation electrification in Pennsylvania. 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.

In extending the comment deadline, the Commission's Secretarial Letter recognized the intersecting issues of distribution rate design, a primary topic in this proceeding, and that of alternative ratemaking, the focus of Act 58 passed earlier this year. On the latter issue, in Docket M-2018-3003269 the Commission issued a "Tentative Implementation Order" on August 23, 2018. The goal of distribution rate design should be not only to equitably recover costs from consumers, but also to incentivize beneficial consumer behavior via price signals. Similarly, the goal of ratemaking should be to go beyond deciding a utility's revenue requirement, and also incentivize beneficial outcomes. Both are critical in bringing utilities and energy consumers into the 21st century and allowing the system and all participants to benefit from new technologies-distributed energy resources (DERs) in particular- while driving costs down.

On both of these topics, Greenlots believes there is opportunity for the Commission to acknowledge and further emphasize these policy goals regarding technology and utility and consumer behavior within the Policy Statement, which fundamentally, are the underlying reasons driving these evolutions in both rate design and ratemaking. This will result in clearer

direction to utilities, and more likely result in utility proposals that advance these goals, incentivize behavior that benefits the system, take advantage of new innovations, technologies and opportunities, and drive down system wide costs and rates to ratepayers.

On these topics of alternative ratemaking and rate design, Greenlots broadly agrees with the views expressed and comments filed by AEE Institute on October 9, 2018 regarding the Commission's "Tentative Implementation Order" in Docket M-2018-3003269, in addition to those previously filed comments in this docket. Looking at the May 3 "Proposed Policy Statement Order" in this docket, we note that guidance is limited primarily to rate design, and that there is an opportunity for the Commission extend guidance to alternative ratemaking. We believe this would provide significant value and direction to utilities to propose new programs and ratemaking mechanisms for the benefit of consumers where they are sufficiently incentivized to engage with, facilitate, and indeed, accelerate the implementation of a variety of DERs, including EV charging under Section 1330 of the Public Utility Code 66 Pa. C.S. § 1330. Such guidance is appropriate and perhaps even needed given the nature of these uncharted waters and the evolving business models for the Commonwealth's utilities.

The substance of the "Proposed Policy Statement Order" in this docket concerns rate design, and there are a variety of considerations on those issues specifically as they apply to electric vehicle charging that we believe the Commission should consider. In an era of ever declining load, given the unique promise and singular opportunity of EV loads to ameliorate this trend, this topic deserves special consideration in the context of these policies. Indeed, transportation electrification represents likely the single greatest opportunity to increase the utilization and efficiency of the electric grid to the benefit of all ratepayers. This of course is in addition to the environmental, public health, energy security, economic development and cost savings benefits associated with transportation electrification. This will not happen automatically however. It will require thoughtful and deliberate planning and programs to realize, harnessing the magnitude and flexibility of these loads both with advanced rate design and by leveraging complementary tools and technologies that go further. If managed poorly or not at all, EV loads could create new, or compound existing, grid constraints and exacerbate system peaks.

This is why the development of rates and programs that send accurate price signals to EV loads reflecting grid constraints and realities is essential to align the increased electrification of the transportation system with the interests of the utility system and the broader public. Time-of-use (TOU) rates represent a somewhat blunt but in some cases appropriate beginning instrument to deliver these price signals, especially at low levels of EV market penetration. Other strategies, including managed charging and real-time or dynamic pricing represent more precise instruments that 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. Other dynamic pricing instruments can also be deployed in higher power charging and shorter dwell time contexts, including DC fast charging.

We must emphasize that the underlying key in providing these benefits and unlocking this value is technology and a central utility role. Advanced rate design requires advanced technology to

allow consumers to respond to TOU or more dynamic price signals. Similarly, to implement managed charging, allowing utilities to actively manage the charging of EVs in response to real-time grid demands or constraints requires both software and hardware to make this both seamless for customers and connected vehicles and for the utility to implement. Managed charging programs then can provide grid services in the same way that demand response programs do, but can be more impactful as they can not only curtail load, but also increase load. This capability is extremely powerful in helping to manage and maximize the utilization of grid assets.

Technology is also key to unlocking baseline power levels and corresponding charging speeds needed for resource sizing to shift or manage EV loads, and to do so with meaningful impact. Additionally, especially in the residential market, smart networked chargers are necessary to help enable consumers to be able to respond to advanced rates and charging programs utilizing pre-defined, but potentially evolving and reconfigurable hands-off “set it and forget it” preferences. What is key to understand here is that EV-specific rates and programs governing a single load managed with technology does not require active customer involvement to respond to price signals, as the technology embedded within the charger and network software handles this actively on behalf of the customer or site host. This reality not only makes traditional arguments against advanced rate structures not applicable, but it also makes it practical and warranted to move to advanced rates and programs or optionally advanced rates fully leveraging the capabilities of the underlying technology at the onset.

Grid impact mitigation and benefit creation to the grid can be further achieved by pairing EV charging with complimentary DERs. For example, pairing charging stations with storage can be used to shift load from charging activities to times that are best for the grid. On the other hand, pairing charging stations with distributed solar can reduce total demand and avoid or minimize distribution system upgrades, for example. Both of these distributed technologies can help charging stations to not only shift load and increase utilization but also provide ancillary services back to the grid.

A reoccurring theme seen by stakeholders and utility regulatory bodies across the country are initiatives to provide demand charge relief to operators of DC fast chargers (DCFC). This is on account of the fact that at low utilization, demand charges can be perceived as a market barrier and negative financial impact on the economics of third parties investing in, owning, and operating DCFC infrastructure. This being said, Greenlots recognizes that demand charges send an important price signal, and we generally do not support their blanket removal or retiring for DCFC applications, as this ignores technology-based alternative solutions. For example, smart charging technology alone can significantly reduce costs associated with demand charges, and integrating storage with charging can provide more flexibility and potential cost savings. Considering these factors, an example of a compromise alternative that may be appropriate could be to offer time-limited temporary demand charge relief made contingent upon such entities and their respective utilities agreeing upon appropriate and potentially evolving technology-facilitated smart/managed charging plans that could then help mitigate the system costs seen by all ratepayers.

Looking not too far down the road, and recognizing the value provided by technological solutions already being deployed in EV charging hardware and software today, it becomes easy to see a future where the needs addressed and values historically provided by rate design is instead provided by these technological solutions in a far more effective manner. Indeed, managed charging programs are not limited to complementing rate design, but can instead go further and be a more effective strategic solution for maximizing outcomes.

Regardless of the rate design tools and programs utilized, for them to be most effective in creating system wide benefits, deep and strong utility involvement is key, both with the EV charging hardware and software facilitating these rates and programs, and in the rate and program development themselves. A deep and flexible utility role facilitated by clear Commission direction is essential to leverage its full involvement, assets and capabilities to best position ratepayers to realize the full array of benefits this technology transformation can bring. Whether this be in the development of these rates and programs that send better price signals to manage EV loads in ways that best support the needs of the grid, or minimizing or avoiding unnecessary grid investments by knowing where, when and how EV loads are interacting with distribution infrastructure; these and many other benefits will not be fully realized without deep and active participation by the utility.

Greenlots believes that these considerations are extremely important for the Commission to evaluate as it sets policies aimed at modernizing both the electric grid and the regulatory philosophy which governs it. Developing a regulatory philosophy which both recognizes and embraces the technological evolution underpinning the need to evolve policy, and which sees this not as a disruptive force but rather a welcome and singular opportunity for all market participants will be critical in the success of this collective endeavor. As we've described, the potential and unparalleled impacts and benefits stemming from the electrification of transportation warrants a hard look at traditional rate design and regulatory philosophy, and consideration of technological solutions presenting an alternative.

Greenlots appreciates the opportunity to provide these comments and the Commission's consideration of them as it looks to set guiding policy for utility rate design and alternative ratemaking. The Commission has a critical role to play in supporting the evolution of both these policies and resulting utility proposals and programs which will define the extent to which the system and ratepayers benefit from technological advances. Greenlots stands at the ready to support these ongoing Commission efforts moving forward.

Respectfully submitted,

A handwritten signature in black ink, appearing to be a stylized name, possibly 'J. Th. M.', written in a cursive style.

Docket No. M-2015-2518883

Page 5

Thomas Ashley

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