Pennsylvania Public Utility Commission
Technical Conference on Resource Adequacy

Comments From

Ron Celentano
Pennsylvania Solar & Storage Industries Association (PASSIA)

PUC Docket No. M-2024-3051988
January 9, 2025

Pennsylvania Solar & Storage Industries Association (PASSIA)
7821 Flourtown Avenue
Wyndmoor, PA 19038
(215) 740-0439 - Cell
(215) 836-9958 - Office
Email: Ron.Celentano55@gmail.com

My name is Ron Celentano, President of Pennsylvania Solar & Storage Industries Association ("PASSIA") - a Division of the Mid-Atlantic Solar & Storage Industries Association ("MSSIA"), which is a not-for-profit trade association for over 25 years, made up of businesses and professionals working in Pennsylvania, New Jersey and Delaware involved in the development, manufacturing, design, construction and installation of solar photovoltaic (PV) and energy storage systems. PASSIA/MSSIA is dedicated to advancing solar energy and energy storage as the primary energy sources in the Mid-Atlantic region, to create a sustainable energy future for all segments of the population while generating economic growth and high-quality jobs. I would like to thank the Public Utility Commission ("PUC") for this opportunity to provide comments regarding the recent *Technical Conference on Resource Adequacy* hosted by the PUC on November 25, 2024.

PASSIA strongly supports the comments submitted by Liz Robinson, Executive Director of the Philadelphia Solar Energy Association ("PSEA"), who was also a presenter at the Technical Conference on the second panel. I would like to emphasize a few of the recommendations/issues from that set of comments:

Integrated Distribution Plan – Given the hockey stick rise of electricity consumption from new data centers, electrification, increasing distribution energy resources ("DER") adoption, growth of electric vehicle penetration, and at the same time - the projected retirement of some conventional electric generation plants, it is essential that the PUC prepares and coordinates a stakeholder process for integrated distribution planning ("IDP") development. Electric distribution companies ("EDC") need to plan for this growing number of technical challenges and advances, as part of overall grid modernization.

The Office of Consumer Advocate (OCA) filed testimony in February, 2021, on a Policy Proceeding – Utilization of Storage Resources as Electric Distribution Assets[1], which recommended the PUC require utilities to conduct integrated distribution planning. Considering the dynamic shift of the grid's activity over the last four years, it couldn't be timelier to follow up with this recommendation, particularly if IDPs could be funded by Distribution System Improvement Charges (DSDC) Act 11 of 2012.

There are many resources that can provide expertise with description and guidance for developing an IDP, such as, *GridLab - Integrated Distribution Planning: A Path Forward*[2], *Smart Electric Power Alliance - Integrated Distribution Planning: A Framework for the Future*[3], *LBNL - Integrated Distribution System Planning*[4], and *LBNL - State Requirements for Electric Distribution System Planning* [5](published 12/2024), to mention a few.

Hosting Capacity Maps – The EDCs should develop and provide access for solar developers to hosting capacity maps of their distribution networks. Hosting capacity maps is certainly one of the many parts of an integrated distribution plan, but it can be developed as an independent part of the IDP. Many states have this resource available to the DER industry. This would greatly assist the solar companies with assessing the potential application of an installation, as well as getting a better understanding of the equipment upgrade costs, all of which would help expedite the interconnection process.

[1] Comments of the OCA , Policy Proceeding – Utilization of Storage Resources as Electric Distribution Assets Docket No. M-2020-3022877, 2-18-2021
[2] https://gridlab.org/works/integrated-distribution-planning/
[3] https://sepapower.org/resource/integrated-distribution-planning-a-framework-for-the-future/
[4] https://emp.lbl.gov/projects/integrated-distribution-system-planning
[5] https://emp.lbl.gov/publications/state-requirements-electric

Often we hear from the PA EDCs that hosting capacity maps would pose a security risk because they provide information about the location and capabilities of physical distribution infrastructure. However, as of May 2024, 58 utilities and state agencies have published maps in 26 states, D.C., and Puerto Rico. Other EDCs of Exelon (BGE and Atlantic City Electric) and First Energy (JCP&L) in neighboring states host capacity maps for solar and other DERs, so why can't Pennsylvania EDCs provide the same valuable resource?

PECO does have an online *DER Interconnection Viability Map*, but developers find that it is not very reliable with regard to providing preliminary feasibility potential for interconnection. Although this is definitely not a hosting capacity map, no other EDC in Pennsylvania has this basic mapping tool.

Two internet examples of hosting capacity maps include, **Excel Energy** (https://www.xcelenergy.com/hosting_capacity_map) and **Joint utilities of New York** (https://jointutilitiesofny.org/utility-specific-pages/hosting-capacity).

Improve the PUC's Interconnection Regulations - The PUC's Interconnection Regulations date back almost 20 years to 2006 in the early days of solar in PA, and are now in need of significant improvement to dramatically reduce the average time and cost that solar developers routinely incur getting projects approved by the EDCs. The PUC should also investigate new tools, such as *Grid Unity* software (https://gridunity.com/) to improve the review process, reducing cost for utilities and time for developers.

Over the years, the PUC has had a few interconnection collaborative meetings, where the last one held was over two years ago, on June 1st 2022. PASSIA and a number of solar

developers in PA helped to develop summary of issues and suggested changes needed from that meeting. Although some improvements have been made since, a majority of these issues are still problematic.

Overall, it is strongly recommended that the PUC convene a working group between a select group of solar installers and the EDCs in early 2025, to streamline the interconnection application process.

Some of these issues are as follows:

- **Tighten and Introduce Additional Timelines**

There need to be tight timelines at every step of the interconnection process for both utilities and generators.

A common practice among PA EDCs when they encounter issues that need to be resolved in an interconnection application is to "restart the clock" multiple times. Instead, the EDC should press the pause button. This would cut months of delay out of a very large number of applications and make the PUC's Net Metering and Interconnection Reports more accurate. While this problem has improved marginally over the last two years, problems still persist. Engineering studies also need tight timelines.

Penalties for an EDC's repeated failure to meet timelines need to be put in place.

Timelines need to be established for field verification review, feasibility, system impact or engineering, and facilities studies, as none currently exist. Many times these studies go on for months, significantly delaying the installation of a solar facility.

The Net Metering and Interconnection Reports need to be published on the PUC website on a quarterly basis. They also need to include the number of formal complaints made against each of the EDCs and the average time to completion for interconnection applications.

- **Permission to Operate (PTO)**

The EDCs should issue PTOs if the installation is compliant with the regulations and electrical inspection, even if the bi-directional meters aren't yet installed. There should be a timeline for PTO, no longer than 5 days after compliance, for the bi-directional meter to be installed.

PECO does not issue a permission to operate (PTO) until the meters are installed, which means the fully installed system is not allowed to operate, sometimes for months due to supply chain issues. For direct ownership projects, this often delays final customer payment to the solar contractors. And for solar leasing projects, the customer-generator is may be charged monthly fees to the leasing company, even though the solar PV system has not yet been allowed to be turned on.

- **Online Payment Process for Interconnection Applications** –

In response to the frequency of confusion and lost payments etc., the PUC has encouraged the EDCs to implement an online payment process for interconnection applications at least three years ago, but none of the EDCs have this in place, with the exception of PECO. PECO's online payment portal is scheduled to commence on January 20, 2025. As a result, the application payment getting lost or delayed in the mail is continually a problem with the other EDCs.

- **Interconnection Equipment Upgrade Process and Costs**

The distribution equipment upgrade process is unnecessarily complex and needs to be streamlined and standardized statewide. These costs sometimes tend to change over the course of the application process, without justification, which requires the installer to get revised approval from the customer-generator, further delaying the interconnection application process, or even possibly terminating the project altogether. The intertie protection relaying (IPR) package cost mechanism needs to be streamlined to minimize the fluctuation of cost changes during the process. It was recommended that these costs, along with other upgrade costs, such as for transformers, reclosures, capacitors, etc., should be documented, categorized and reported in the PUC Net Metering and Interconnection report. Upgrade costs need to be standardized across utilities and cost caps need to be set. Currently the PUC does not collect this cost information. In addition, the PUC should also collect and report the interconnection application costs for studies: feasibility, system impact (engineering), facilities, etc.

- **New Construction**

There are numerous problems and extremely long delays caused by lack of clarity and lack of standardization across most of the utilities. Some of these issues include the following:

- Lack of standardization across utilities
- Sometimes the application process is stalled because a customer account number is needed, but it doesn't yet exist because its new construction
- Sometimes the utility doesn't allow the solar system design to be combined with the new construction of service – causing costly delays
- Utilities are not always assigning adequate engineering staff to assess the solar work
- Many times the engineering review results are inconsistent depending on who works on the application

- Building location address confusion due to differences between the utility address and the municipality address for a given property (this also occurs with existing properties, as well)

- **Effective Grounding**

PECO seems to be the only utility in the state, if not in the country, that requires effective grounding for solar PV system installations greater than 50 kW. The need for effective ground requirement for solar PV applications using inverters should be eliminated given that to our knowledge no other utility in the nation requires effective grounding, and there have been no documented problems as a result at other locations.

All solar PV systems and electrical systems require mechanical grounding, and many times, system grounding. Effective grounding basically requires a minimum impedance (resistance) on both sides of a transformer, and it may be more of a concern for rotary generators, but it is not the same issue for static electronic inverters. Furthermore, there is no clear IEEE standard for sizing an effective grounding system for inverters, which results in inconsistent and poor guidance from PECO with how to comply with their own requirement. A few years ago, PECO finally relaxed their effective grounding requirement with General Service (GS) account customers using PECO's wye-wye transformers. However it can still be an issue with High Tension (HT) customers owning their transformer, or if the PECO or customer owned transformer topology is delta-wye.

- **Assigned Contact Person**

Several of the EDCs have taken steps toward online interconnection applications, which is going in the right direction, but that has come at the cost of the installer not having an EDC contact throughout the application process, which they may have had before. There needs to

be an assigned contact person from the EDC throughout the application process, as it seems that the online communication portal is not working for the installers when problems arise, where their messages are often left unanswered or inadequately answered with useless auto-reply responses. PECO and PPL have, for the most part, addressed this issue, but First Energy EDCs are still problematic with having little to no assigned contact personnel for the solar contractors during the interconnection application process.

- **Dispute Resolution Process**

The original interconnection regulation from nearly 20 years ago, specifically had the following subsection section regarding the dispute resolution process, 52 Pa. Code § 75.51,

> (c) *When disputes relate to the technical application of this chapter, the Commission may designate a technical master to resolve the dispute. The Commission may designate a Department of Energy National laboratory, PJM Interconnection L.L.C., or a college or university with distribution system engineering expertise as the technical master. When the Federal Energy Regulatory Commission identifies a National technical dispute resolution team, the Commission may designate the team as its technical master. Upon Commission designation, the parties shall use the technical master to resolve disputes related to interconnection. Costs for dispute resolution conducted by the technical master shall be determined by the technical master subject to review by the Commission.*

This is where a third party technical master would step in and help resolve technical issues between the EDC and the solar industry engineer. But, unfortunately, in the SECOND AMENDED FINAL RULEMAKING ORDER - Implementation of the AEPS Act of 2004, on October 27, 2016 (Docket #L-2014-2404361), this subsection was significantly revised to the following,

> *(c) Pursuit of dispute resolution may not affect an interconnection applicant with regard to consideration of an interconnection request or an interconnection applicant's position in the EDC's interconnection queue.*

The dispute resolution role of a third party technical master was completely removed in this current revision. We urge that the original subsection (c) for the dispute resolution process

mechanism, including the role of a third party technical master, should be reinstated in the interconnection regulation, as it would benefit both parties, including the PUC (e.g., Bureau of Technical Utility Services).

- **Virtual Meter Aggregation (VMA)**

Virtual meter aggregation communication and billing needs to be standardized across utilities.

One possible model is how virtual net metering billing works in Maryland

Billing information to Pennsylvania customers is incomplete and confusing. In PECO's case this has recently gotten much worse with the adoption of their new billing system. Virtually no information is provided to the VMA customer.

There is also inconsistency across the utilities in how VMA is communicated publicly on utility websites, ranging from almost nothing at all, to incomplete and confusing, to PECO's information which is quite good.

////////////////////////////////////

PASSIA strongly supports all the other the comments included in the PSEA testimony, including:

- Require utilities to include long term contracts for zero emission renewable energy in their default supply procurement plans
- Require Utilities to Incorporate Storage in Default Supply
- Increase Demand Response, among both commercial and residential customers
- Increase certainty and diversity of customers for new generation applications, such as enabling Community Choice Aggregation
- Increase the amount of Energy Efficiency savings utilities achieve under Act 129
- Encourage the penetration of Distributed Energy Resources (DERS) and DERAs