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November 29, 2021

VIA ELECTRONIC FILING

Rosemary Chiavetta, Secretary
Pennsylvania Public Utility Commission
Commonwealth Keystone Building
400 North Street, 2nd Floor
Harrisburg, PA 17120

Re: Policy Proceeding—Utilization of Storage Resources as Electric Distribution Assets Additional Questions; Docket No. M-2020-3022877

Dear Secretary Chiavetta:

Pursuant to the Pennsylvania Public Utility Commission's Secretarial Letter dated August 12, 2021 in the above-captioned proceeding, enclosed herewith for filing are the Comments of Metropolitan Edison Company, Pennsylvania Electric Company, Pennsylvania Power Company and West Penn Power Company.

Please contact me if you have any questions regarding this matter.

Very truly yours,

Tori L. Giesler

kbw
Enclosures

c: As Per Certificate of Service

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Policy Proceeding—Utilization of Storage	**:**	
Resources as Electric Distribution Assets	**:**	**Docket No. M-2020-3022877**
Additional Questions	**:**	

COMMENTS OF METROPOLITAN EDISON COMPANY, PENNSYLVANIA ELECTRIC COMPANY, PENNSYLVANIA POWER COMPANY AND WEST PENN POWER COMPANY

I. INTRODUCTION

On December 3, 2020, the Pennsylvania Public Utility Commission ("Commission") issued a Secretarial Letter announcing its initiation of the above-captioned generic docket intended to explore whether policies should be adopted that would allow electric distribution companies ("EDCs") the opportunity to substitute conventional distribution upgrades with alternatives, specifically, electric storage, as a distribution asset in their effort to enhance or maintain distribution reliability. In its Secretarial Letter, the Commission invited interested parties to provide comments on this topic generally and in particular as to three specific questions:

1. What applications can electric storage provide as a distribution asset for utilities that would facilitate improved reliability and resiliency?
2. What are the defining characteristics of electric storage used for distribution asset planning as distinguished from generation resources? What thresholds, if any, would classify electric storage as a generation resource and therefore outside permitted distribution ratemaking and recovery?
3. Is it prudent for utilities to include electric storage in their distribution resource planning and, if so, where and under what circumstances? Further, is it appropriate for utilities to include such investments in rate base?

Following an extension of the established comment period via a Secretarial Letter issued on December 30, 2020, comments were filed by a number of interested stakeholders on or about February 18, 2021, including by Metropolitan Edison Company ("Met-Ed"), Pennsylvania Electric Company ("Penelec"), Pennsylvania Power Company ("Penn Power") and West Penn Power

Company ("West Penn") (collectively, the "Companies"). On August 12, 2021, the Commission issued a Secretarial Letter recognizing the substantial input received to date and seeking clarification and additional information related to that input which had already been provided, with a due date for additional comment set as thirty days following publication in the *Pennsylvania Bulletin*. Via Secretarial Letter issued on August 12, 2021 the date by which stakeholder input was required to be submitted was extended to November 29, 2021. In accordance with the Commission's August 12 Secretarial Letter, the Companies hereby provide the following additional input to the clarification and follow up questions posed by the Commission on this important topic in the sections to follow.

II. COMMENTS

The Companies appreciate the continued opportunity to submit comments on the utilization of storage resources as electric distribution assets and the Commission and other stakeholders' recognition of electric distribution companies' ("EDCs") need to transition toward a future which accommodates evolving needs of customers with increased reliability and resiliency. The changing circumstances of electricity generation and consumption make thoughtful and targeted investments in grid modernization and advanced technologies more important than ever.

Generally, energy storage refers to infrastructure that allows for the on-demand absorption and release of electrical energy into the electric grid in parallel. Examples of energy storage resources include pumped-hydro storage systems, compressed-air energy storage, compressed gas storage systems, battery-based AC energy storage systems, flywheels, and electrochemical capacitors – to name a few. By definition, energy storage should not be considered a "generation resource". Instead, the defining characteristics relative to whether recovery through distribution rates should be permitted must be viewed as related to the applications in which energy storage

are used. The development of strategically deployed storage offers a new tool available to EDCs when determining how to respond to ever-changing reliability challenges, including those brought about by increasingly volatile weather patterns and changing usage patterns as a result of increasingly new technology adoption. Responding to these changing circumstances will also require investments in the necessary infrastructure, systems, and personnel in order to transform the legacy distribution grid into a modern, resilient distribution system optimized to coordinate with transmission operations and wholesale markets.

As we continue to discuss the various ways in which energy storage can be used as a distribution asset, it is increasingly clear that in order to focus the conversation, it is important to think about how we are defining energy storage in the context for which it is contemplated for use in this docket. Energy storage has a multitude of possible applications, end users, owners, and challenges. However, the proceeding in which these comments are offered has focused the discussion around energy storage on the concept of deployment as distribution assets in order to support current-day electric distribution system operation. In that context, storage should be viewed as merely another tool at the disposal of an EDC's operations team to consider in determining the safest, most reliable, and most cost-effective design of its system. While it's true that storage has potential for other applications outside of that realm, when an EDC is designing its system to ensure these goals are met, other possible uses for energy storage are typically not going to be determinative factors. Energy storage will need to provide the exact amount of power for the exact amount of time at the exact location needed in order to effectively serve its distribution purpose. It will therefore be unavailable for other applications where the timing of such other uses would require the energy storage system to charge at the same time it is needed to supply power to the grid.

For these reasons, energy storage in this context should be looked at no differently than any other piece of equipment deployed across an EDC's system. And if we can agree that energy storage could be leveraged in this context without implicating the other applications it is known to be useful for, then we can fairly easily resolve many of the questions that the Commission is seeking to answer, while not bogging the industry down in conversation – or worse, dispute – over applications that really aren't relevant for this discussion to the detriment of advancing technology in our distribution operations. In summary, when viewed in the context of the focused, discrete application of a distribution system asset, energy storage solutions can be – and should be – viewed as another useful and potentially cost-effective tool in a distribution planning engineer's toolbox to resolve system problems in the same way that planning engineers consider new substations, new transformers, and new wires options today. With that concept in mind, the Companies offer the following specific comments in response to the directed questions posed in the August 12 Secretarial Letter.

1) **What are the parameters that would allow for the use of energy storage on the distribution grid? For example, what factors should be used in the consideration of the energy-storage project? Should the energy-storage project meet certain thresholds and demonstrate certain requirements, e.g., demonstration of cost-effectiveness as compared to alternate measures, demonstration of need, required RFPs to solicit potential third-party providers, limitations on project size and scope, etc.?**

    - **Under what regulatory/statutory framework would energy storage be a distribution asset?**
    - **Another consideration is the size limitations, in terms of nameplate capacity, that are acceptable for energy storage. For example, if an energy-storage system is designed to meet the specific need of voltage regulation, should the capacity be limited only to address this problem, or is it acceptable to size the system to provide additional capacity?**
    - **Most commenters agreed that energy storage needs to be a cost-effective solution. However, more information is needed to understand what elements would inform the cost-effectiveness test. Because of its versatility, energy storage has the potential to provide benefits other than resolving a specific resiliency or reliability problem. Should these other functions be considered**

in a cost-effectiveness test? For example, if a decision needs to be made as to whether to install an energy-storage system versus more traditional infrastructure upgrades, what other energy-storage functions should be considered when trying to determine which is more cost-effective?

As discussed in the Companies' initial comments at this docket, energy storage dedicated to use as a distribution asset should be limited to a storage asset that is deployed by a utility for its own operation, control and maintenance in a way that supports the deploying EDC's distribution operations, which assets should be included in distribution ratemaking in the same manner as any other distribution asset. This includes energy storage intended to assist EDCs in managing distribution loading, enhancing reliability and resiliency, or for purposes of voltage management. Energy storage can be used within distribution planning to reduce system peak loads for both planned and contingency scenarios. It can also be considered as a non-wire alternative to traditional infrastructure investments and can be utilized as a distribution solution for a transmission system contingency. In these types of applications, the storage is used as a utility asset and regulated investment in a way that is designed to benefit customers in the form of greater operational flexibility, and in turn, enhanced grid reliability – in exactly the same way traditional investment is applied.

EDCs bear sole responsibility and accountability for ensuring the safety of not only their workers, but the safe and reliable operation of the distribution system on behalf of their customers and the public. Where storage is not proposed for use in any generation function and solely for purposes of distribution system functionality, there should be absolutely no question that the assets should be not only owned and operated by the EDC, but all recovery opportunities should also be permitted that any other distribution assets would be eligible for. After all, there is no ongoing debate as to what entities are permitted to own and operate the poles, wires, transformers and the like on an EDC's system. In a distribution system application, energy storage facilities should be

viewed no differently, as it is simply not a generation or competitive asset in that instance. Furthermore, apart from the standard review opportunities that can exist for purposes of base rate setting and approval of long-term infrastructure improvement plans ("LTIIPs"), an EDC is not required to routinely defend its choice of one system design, asset choice, or technology deployment over another before it is permitted to plan its system. As such, no such requirement should be introduced in the context of energy storage merely because it is a technology that has other types of applications altogether, or because it is less familiar than those we have lived with for many years. Ultimately, the only parameter that would be needed to allow for recognition of energy storage as a distribution-only asset in this context is development of a regulatory definition that would clearly interpret and delineate energy storage as a distribution system asset as against that used for another purpose. While there are additional conversations that could be held regarding whether those other purposes would constitute "generation" within the confines of the Competition Act or something else entirely, those conversations are outside the scope of this proceeding and are not germane to the use of storage purely as a distribution system asset.

In defining what energy storage for distribution purposes means, the Commission should generally allow for the use of energy storage on the distribution grid to support distribution grid reliability and resiliency, provide voltage support and volt-amps reactive ("VAR") control, and manage short term peak line/system loading or other distribution system constraints as a result of electric vehicle ("EV") adoption and other electrification - all instances where energy storage can be effective in supporting the needs of distribution utilities and the customers they serve. This definition should have some measure of flexibility in it as well, given fast-changing technology both on and off an EDC's system. While energy storage has primarily been used for backup supply when power is interrupted, its uses are increasing and will continue to vary in scope as batteries

and related technologies develop. In the distribution asset context, energy storage will not eliminate the root causes of distribution outages, but it could present a viable alternative to traditional infrastructure in cases of weak circuit ties, occasional peak loading, etc. In the proper applications, energy storage can supplement an EDC's existing facilities where it is challenged with long radial feeders or at the edge of the service territory where extensive upgrades would otherwise be necessary but not necessarily cost effective.

EDCs will consider reliability and resiliency parameters when evaluating distribution energy storage needs for customer owned distributed energy resources ("DER"). With the increased penetration of many small DER devices that can operate for retail bill management or be dispatchable, electric distribution companies can expect to encounter new challenges in managing variable system loads to ensure system reliability. This reality becomes especially true with the advent of Federal Energy Regulatory Commission ("FERC") Order 2222, which allows distribution connected customers to participate in the wholesale market through an aggregator. FERC Order 2222 is expected to facilitate more participation from small generators, home solar systems, and EVs and associated charging systems. These developments could alter the natural diversity of the DER landscape given that aggregations may drive more coordinated load flows, which would in turn create additional concerns regarding overloads, voltage regulation and proper coordination of overcurrent devices as distribution circuit power flow becomes more bidirectional. As mentioned earlier, the deployment of utility-owned energy storage would assist EDCs in managing distribution loading, enhancing reliability and resiliency, or for purposes of voltage management. As a result, energy storage can be used for distribution system planning to reduce system peak loads for both planned and contingency scenarios, can be considered as a non-wire

alternative to traditional infrastructure investments and may be considered as a distribution solution for transmission system contingencies.

Regardless of the reason for its use, the optimal amount and placement of energy storage will be dependent on the unique needs of each EDC, the purpose it is looking to use that energy storage for, and the details of the EDC's current and projected system needs. The key to maximizing this benefit for EDC customers is the strategic integration of energy storage technologies, which electric utilities are in the best (and arguably, only) position to determine. It is for this reason that energy storage size limitations should not generally be considered as defining or limiting characteristics for use as a distribution asset. Many factors that would influence size limitations include the operating voltage of the distribution circuit, the available hosting capacity, system overcurrent protection coordination, location of the energy storage system, and the impact charging the energy storage system creates. Like many other elements increasingly impacting distribution systems, these parameters are expected to become more variable in the future, thereby making stated limitations of size impractical. In general, higher voltage distribution circuits can accommodate larger DER than lower voltage distribution circuits. Hosting capacity is the amount of DER that can be accommodated on a circuit without the need for broader system upgrades. Each particular use case will depend on the presence and saturation levels of other DER on the circuit as well as voltage and loading impacts. The location of the energy storage system will also impact the size. As a for instance, substation deployment locations will be able to accommodate larger energy storage systems than deployment locations near the end of the distribution feeder. Impacts to overcurrent protective device coordination must also be taken into account to preserve safety and reliability of the distribution system. Similarly, line loading impacts must be considered to ensure that when the battery systems are charging, there are no overloading concerns.

Beyond the capacity and locational determinations for distribution energy storage systems, the ability for energy storage systems to be utilized for multiple system issues will help stack benefits to provide more value and be more cost effective. Voltage regulation applications of energy storage systems must take into consideration various circuit load levels, coordination with other voltage regulators and capacitors, and interaction with existing renewables or DERs on the circuit. Energy storage systems can be a cost-effective supplemental solution to help resolve distribution problems in the long and short term and the elements to inform cost effectiveness will be different for each duration. Energy storage may present a long-term solution where installed at the end of a long distribution feeder that only feeds a few customers, is not expected to experience significant load growth, and may not fully include other distribution automation capabilities and would be costly to otherwise upgrade with traditional wires solutions. However, the ability to entirely avoid otherwise costly upgrades should be an element for consideration in the long-term solution. Short-term use of energy storage can resolve issues more timely, less costly and allow time for additional studies to be done and should consider the deferral of more expensive traditional solutions as an element of cost effectiveness. This will become increasingly important as new customer DER technologies and renewable resource saturation increases and line loading becomes more sporadic or even bi-directional, given that storage offers the ability to support the grid as well as behave as a load acceptor for reverse energy flow. For all of these reasons, the cost-effectiveness analysis should be performed for energy storage as a proposed distribution solution no differently than traditional assets are considered today, albeit using inputs that are unique to the storage technology and its applications.

2) **What EDCs have undertaken energy-storage initiatives as a pilot program and what were the results and lessons-learned?**

- **The lessons learned from EDCs who have introduced energy-storage initiatives as pilot programs would be helpful to understand some of the issues that surround energy storage. Indeed, their experiences may provide cogent information and better understanding of the proper framework for adopting an energy-storage policy. For example, the Maryland Public Service Commission has approved several pilot projects for EDCs and at least one for a third-party owner.**

As discussed in the Companies' initial comments at this docket, other jurisdictions have begun to recognize this philosophy as applied to the deployment of storage as a distribution system asset in appropriate applications, including the neighboring state of Maryland, which will include pilots deployed by one of the Companies' sister utilities. Meanwhile, the Companies are aware that several of their Pennsylvania peers are piloting this technology as well. As those projects mature and opportunities for lessons learned are available, the Companies agree that looking to those and other industry examples for the sharing of best practices would be of tremendous value. The electric utility industry and the utility industry at large has a strong practice of sharing such experiences already in the context of both well-accepted and new technologies, both at local and national levels. The Companies see no reason that this approach would change in the case of energy storage used as a distribution system asset. From a policymaking standpoint, this information is equally valuable, with proper recognition given for differences in state-by-state legal constructs.

3) **Under what circumstances is it appropriate to deploy energy storage as compared to traditional infrastructure upgrades?**

- **Aside from cost-effectiveness, other questions need to be answered as to what circumstances would warrant energy-storage deployment instead of traditional infrastructure upgrades. While in some cases it might make sense to deploy energy storage as a cost-effective solution, energy storage should not be viewed as the appropriate solution in all cases.**

- **For example, at the end of a circuit with no projected load growth, energy storage may be an appropriate solution for reliability issues. However, if there is an area experiencing new construction and where load growth is projected, it may be more appropriate to consider adding a substation now, at a greater cost, rather than deploying more inexpensive energy storage that may not be able to fulfill the load that is expected.**

For distribution use cases, energy storage solutions should be evaluated in the same way traditional distribution planning solutions are considered. Energy storage as a distribution asset can be another tool in a distribution planning engineer's toolbox. These use cases could include but are most certainly not limited to:

- options for addressing general load growth or a derating of an existing asset (such as a substation transformer) in an area that is transmission or sub-transmission constrained
- options to provide capacity for areas that are a long distance from an existing transmission or sub-transmission lines
- providing capacity relief for areas with high seasonal peak loads such as an island with a high summer peak and almost no load during the off season
- providing a supplemental energy source and tie point to support a distribution circuit as opposed to constructing a new circuit
- deployment in remote areas and areas at the end of the distribution grid where constructing additional circuits could be cost prohibitive
- deployment in conjunction with distribution automation schemes where the energy storage system could be used .and for voltage regulation or phase balancing to extend load transfers and restore a greater number of customers more rapidly.

While energy storage may not be the most cost-effective solution in every case, it should be considered in the EDC's process along with evaluating other factors that would ultimately lead to a wires solution. While the cost of energy storage systems continues to decrease, it may not be the lowest cost option as compared to a traditional wires solution. An example of where this can occur is an area experiencing rapid load growth where energy storage may not be the best long-term solution if additional capacity upgrades could be required for future needs. To ensure this is accounted for, an appropriate time frame for projected needs to be incorporated when comparing options.

4) Who should own an energy-storage asset? EDCs, third-party vendors, or some combination of both?

- **Most commenters expressed an opinion as to ownership of energy storage and there is valid reasoning behind all positions.**
- **EDCs assert that they are in the best position to own and operate energy storage and can provide operational visibility that a third-party may not.**
- **Those that view electric storage as a generation-only asset cite the legal framework that Pennsylvania uses that deregulates the generation and sale of electricity, particularly the Electricity Generation Customer Choice and Competition Act. Thus, they question the legality of EDC ownership.**
- **Interestingly, most commenters agree, whether they view it as a distribution asset or a generation resource, that circumstances exist where energy storage is a viable solution to resiliency and reliability issues on the distribution grid.**
- **However, they assert that there needs to be a framework and rules for what can be done, depending upon the ownership model. For example, if EDCs own energy storage, their participation in wholesale or ancillary markets should be prohibited. Conversely, if a third-party owns the energy storage, they may participate in wholesale or ancillary markets, but their primary function should be to support the resiliency or reliability issue for which they were needed.**
- **If a third-party owned model is pursued, the details of Request for Proposals for bidding purposes needs to be determined.**
- **Energy-storage ownership needs to be explored further in order to provide clear guidance on the circumstances and processes of who should acquire and maintain control over the asset.**

As discussed at the outset of these comments, EDCs are responsible for the reliability and performance of the distribution system and should own the energy storage assets, which should not be viewed as "generation" given their use in this context. However, EDCs should be able to coordinate with third parties and customers that own and manage DERs for distribution grid reliability where appropriate and possible (e.g., retail DERs participating in PJM's wholesale markets). Dependance solely on third parties to provide these services is not prudent. EDCs that own DERs can utilize them in many ways as discussed above and can relocate them as needed timely to resolve immediate issues timely while considering longer term solutions. A third party inherently lacks the knowledge of the exact amounts of power needed to be delivered at the exact location and for the exact duration of time in the same way that an EDC is given its familiarity

with its own distribution system. Also, failure by the third party to deliver can result in degradation to the EDC's reliability performance against regulatory-established criteria and cause customer dissatisfaction that the EDC would not be in a position to control. EDC ownership of energy storage deployed for distribution purposes ensures this responsibility remains with the EDC – where it belongs.

5) **What processes should the Commission use to review requests to utilize energy storage as a distribution asset and recover associated costs?**

- **If the model of energy-storage ownership is through an EDC, then questions need to be answered as to how the Commission should review the appropriate use and cost recovery of these assets. What form of review and approval process should the Commission utilize to render a determination on the appropriate treatment of a storage system as a distribution asset? How should the Commission exercise its prudency review: through the issuance of certificates of public convenience under 66 Pa. C.S. §1102; a petition for declaratory order; as part of a base rate case review, or another type of proceeding?**

The Companies recommend using the same standards used by the Commission in examining the prudency of all other distribution asset investments and recovery of the associated costs when considering energy storage assets. Energy storage can be used to avoid or delay upgrades that would otherwise be necessitated by system constraints or reliability requirements. This capability is particularly useful to strategically address the infrastructure needs of growing demand in localized load pockets. An energy storage solution can either defer the need for utilities to implement a traditional solution by several years or it can negate the distribution investment need entirely. There is an additional value of optionality beyond the primary distribution investment deferral or replacement that the system provides. The potential to save ratepayers by deferring or avoiding traditional transmission and/or distribution investments for an additional time can be additive and separate from the value of the distribution deferral as compared to the

traditional investment cost given that projects that appear to be higher cost may be the lower-cost option when risk and uncertainty of future conditions are considered.

Recovery for distribution energy storage investments should be through a combination of § 1307 automatic adjustment surcharges and § 1308 base rate cases. Act 11 provided the opportunity for utilities to reduce the historical regulatory lag of recovering the costs related to capital infrastructure expenditures by providing ratemaking flexibility for utilities seeking timely recovery of prudently incurred costs related to the repair or replacement of distribution infrastructure between rate cases. To take advantage of this opportunity, utilities are required to file a LTIIP for Commission review and approval prior to recovery of the plan investments in a Distribution System Improvement Charge ("DSIC"). In approving an LTIIP, the Commission carefully examines the utility's current distribution infrastructure, including its elements, age, and performance and ensures the LTIIP reflects reasonable and prudent planning of expenditures to replace and improve aging infrastructure in order for the utility to maintain safe, adequate, and reliable service. The quarterly DSIC rate allows a utility to add to customer rates the recovery of the fixed costs (i.e., depreciation cost and pretax return) for eligible plant associated with a repair, replacement or improvement that was not previously reflected in the utility's rates and rate base consistent with a Commission-approved LTIIP. The LTIIP review process provides an existing mechanism for comprehensive Commission review prior to implementation of energy storage assets. Likewise, a base rate case filing allows for scrutiny by the Commission and other interested parties of a utilities rate base claim to confirm that the assets included are used and useful in enabling the utility to provide safe and reliable service to customers.

6) **What cost recovery mechanisms should be implemented for the ownership and operation of energy-storage assets?**

- **Should it be through §1308 base rate for all costs, or a combination of §1308 applicable to the capital costs of the battery system and §1307 automatic adjustment for the energy cost associated with running the battery system?**
- **What limits, if any, on the operation of the battery system by the EDC should be established for cost-recovery purposes?**
- **Should the Commission allow EDCs to enter into distribution-related services provided by third party-owned energy-storage systems, and, if so, how should the EDCs recover these costs?**
- **Should the Commission allow EDCs' storage systems to participate in the PJM wholesale markets and how should those revenues be treated? Should the PJM revenues be used to offset the costs of the electric storage system and be credited to customers? Would such a participation model alleviate competition concerns?**

Investments made to implement the energy storage examples described above (or other justifiable applications) are appropriate for utilities to own and recover through existing recovery models, which could include rate base recovery as well as recovery through a DSIC. After all, the deployment of storage as a distribution asset would provide benefits to customers in the same way as any other physical asset deployed across an EDC's system, and may even be in lieu of other distribution investment in the more traditional sense. For these reasons, it would be inappropriate to do anything other than to allow those assets to be recovered through these long-recognized channels. Therefore, Commission policies should support full and timely cost recovery for investments in energy storage similar to other distribution infrastructure investments. Meanwhile, energy storage deployed for the sole purpose of participation in PJM or ancillary markets should not be included in distribution utility ratemaking. Similarly, costs incurred by a utility solely to accommodate energy storage for customer-installed generation should not be included in ratemaking but rather should be passed on directly to the customer driving that increased expense.

When determining the approach through which recovery is permitted, the Commission should provide flexibility in allowing an EDC to propose the appropriate cost recovery mechanism

as it does today. For example, the Commission may allow for the construction of an energy storage asset as part of a utility's LTIIP with subsequent recovery of the in-serviced asset through a DSIC recovery mechanism. In this instance, the energy storage asset would need to support the established standards in evaluating the value of the energy storage project as presented in the LTIIP and be approved as part of the LTIIP as well as for cost recovery associated therewith. On the other hand, if it were more appropriate for an EDC to seek recovery as part of a base rate case filing including cost recovery of the expenses to maintain the energy storage asset, that should be left up to the EDC to propose, like it is currently able to with any other capital asset.

As outlined further in response to the questions below, the Companies do not favor use of energy storage that is otherwise deployed as a distribution system asset for purposes of wholesale market offerings. However, should such assets be permitted to be sold into the wholesale markets, the revenues therefrom should offset the cost to customers in deploying the asset as a distribution system asset.

With respect to energy storage more globally, while there is still much debate regarding how to classify these energy storage assets (distribution, transmission or generation, or all), limiting the ability of EDCs to offer these resources into PJM Interconnection LLC's ("PJM") wholesale markets appears restrictive to obtaining all of the benefits this technology provides and counter to recent FERC directives like Order 2222, which does not restrict EDCs from DER wholesale market participation with distribution connected assets. In fact, some EDCs have specific demand reduction targets to achieve in Phase IV of their Pennsylvania energy efficiency and conservation programs, along with the requirement to offer energy efficiency resources into PJM's capacity market with energy efficiency resources installed as of June 1, 2021. EDCs having the ability to manage DERs in the wholesale market is in line with these efforts and should not be artificially

precluded in this proceeding, where the focus should be on storage strictly used as a distribution system asset.

7) **What are the appropriate models and limitations necessary to allow energy storage to participate in wholesale power markets?**

- **Energy storage has several versatile functions. Some of these functions can address reliability and resiliency issues and some of these functions allow for participation in wholesale power markets. Generally speaking, what role does energy storage participating only in the wholesale markets have on the EDC distribution system operations?**
- **While it is possible to serve these various functions simultaneously, there are issues surrounding EDC-owned energy-storage assets participating in energy, capacity, and ancillary power markets. Fundamentally, allowing EDC-owned energy-storage assets to participate in these markets may have a negative impact on these markets. And at the very least, it may go against the model of competitive markets for power generation. It is also possible that any revenue that an EDC generates from market participation could be used to offset costs, thus reducing customers' bills.**
- **Conversely, allowing third-party ownership of energy storage would alleviate competition concerns. However, the fundamental issue here is how third parties are held accountable for their energy-storage systems to serve reliability and resiliency needs as its primary function while also participating in other power markets. While it is possible to do this, the rules would need to be articulated.**
- **Finally, are there appropriate limits for the EDCs to place on the operation of such wholesale assets? Does this depend on whether the energy-storage asset participates in wholesale markets independently or through Order 2222 Distributed Energy Resource aggregation?**

Energy storage can perform several versatile functions if enabled, but availability of those opportunities will generally be driven by priority of use and size. In the conversation surrounding the questions posed at this docket, the typical functions will address reliability and resiliency issues; however, other functions could include local grid support and participation in wholesale power markets to support the bulk transmission system in certain circumstances. That said, while it is possible to serve these various functions simultaneously, the Companies have concerns surrounding EDC-owned energy storage assets participating in competitive energy, capacity, and ancillary power markets with state subsidized resources. Prior comments have suggested that

allowing third-party ownership of energy storage would alleviate any competition concerns. However, the fact remains that these are distribution connected DERs that will be operated mainly by the EDCs for reliability and resiliency and the benefit of retail customers and that wholesale market participation will not be the primary purpose of these resources. In fact, the more effectively these distribution assets are operated by the EDCs, the less likely they would be needed for wholesale market participation. Also, a fundamental concern is how third parties would be held accountable for their energy storage systems to serve distribution reliability and resiliency needs as its primary function while also participating in the wholesale markets. While it may be possible to do this, adequate rules and system capabilities would need to be implemented as evident in the current discussions the EDCs are having with PJM regarding its FERC Order 2222 compliance filing due in February 2022.

PJM's Minimum Offer Price Rules ("MOPR") proceedings addressed these very issues and have resulted in a process where market participation of state-supported resources is available as long as these resources are not dependent on clearing the capacity market at a specific price. The MOPR process is designed to support the recognition of the various state program initiatives including energy efficiency, demand response, and now distributed energy resources, where they fall within state jurisdiction, to determine the desired mix of generation resources. As mentioned earlier, the EDCs currently oversee market functions relative to the operation of regulated generation units and energy efficiency offers and already have in place the requirements needed for the separation of the market functions from the distribution and transmission functions, which can be leveraged to further support DER operations in the wholesale markets if desired.

III. CONCLUSION

Metropolitan Edison Company, Pennsylvania Electric Company, Pennsylvania Power Company and West Penn Power Company appreciate the Commission offering the continued opportunity to provide comments in response to the Secretarial Letter. The Companies look forward to further collaboration and discussion with the Commission and interested stakeholders on this important topic.

Respectfully submitted,

Dated: November 29, 2021

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BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Policy Proceeding—Utilization of Storage	**:**	
Resources as Electric Distribution Assets	**:**	**Docket No. M-2020-3023877**
Additional Questions	**:**	

CERTIFICATE OF SERVICE

I hereby certify that I have this day served a true and correct copy of the foregoing document upon the individuals listed below, in accordance with the requirements of 52 Pa. Code § 1.54 (relating to service by a participant).

Service by first class mail, as follows:

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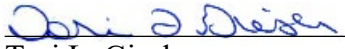
Dated: November 29, 2021



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