

**PENNSYLVANIA
PUBLIC UTILITY COMMISSION
Harrisburg, PA 17120**

Public Meeting held November 6, 2025

Commissioners Present:

Stephen M. DeFrank, Chairman, Joint Motion
Kimberly Barrow, Vice Chair, Statement, Dissenting
Kathryn L. Zerfuss
John F. Coleman, Jr.
Ralph V. Yanora, Joint Motion

Petition of PPL Electric Utilities Corporation
for Approval of its Second Distributed Energy
Resources Management Plan

P-2024-3049223

OPINION AND ORDER

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BY THE COMMISSION:

Before the Pennsylvania Public Utility Commission (Commission) for consideration and disposition are the Exceptions of PPL Electric Utilities Corporation (PPL, Company, or Petitioner) and the Joint Solar Parties (JSPs),¹ filed on July 15, 2025, to the Recommended Decision (R.D.) of Administrative Law Judge (ALJ) John M. Coogan, issued on June 30, 2025, in the above-captioned proceeding. Replies to Exceptions were filed by PPL, the JSPs, the Office of Consumer Advocate (OCA), and the Office of Small Business Advocate (OSBA) on July 22, 2025.

For the reasons delineated in this Opinion and Order, we shall: (1) grant, in part, the Exceptions of PPL; (2) deny the Exceptions of the JSPs; (3) reverse the ALJ's Recommended Decision; and (4) approve PPL's Petition for Approval of its Second Distributed Energy Resources (DER) Management Plan (Petition), as modified by, and consistent with, this Opinion and Order.

I. Background and Procedural History

At the outset, we note that the first proceeding regarding PPL's DER Management Plans was initiated on May 24, 2019, when PPL filed its

¹ American Home Contractors, Inc. (AHC), Enphase Energy, Inc. (Enphase), the Solar Energy Industries Association (SEIA), SolarEdge Technologies, Inc. (SolarEdge), Sun Directed, Sunnova, Inc., Tesla, Inc. (Tesla), and Trinity Solar, LLC (Trinity) (collectively, the Joint Solar Parties or the JSPs). On September 13, 2024, the JSPs filed a letter amending the list of JSPs, stating that Sunnova, Inc. is no longer a member of the JSPs.

DER Management Petition, at Docket No. P-2019-3010128, requesting Commission approval to implement its First DER Management Plan and Pilot Program.²

By Order entered December 17, 2020, the Commission adopted, as its action, the Recommended Decision of ALJs Emily I. Devoe and Mary D. Long, issued November 17, 2020, approving the Joint Petition for Approval of Settlement of All Issues (DER Settlement) without modification and approving PPL’s First DER Management Plan and Pilot Program, including various tariff modifications and waivers of Regulations necessary to implement the Company’s DER Pilot Program, as modified by the terms and conditions of the DER Settlement. *Petition of PPL Electric Utilities Corporation for Approval of Tariff Modifications and Waivers of Regulations Necessary to Implement its Distributed Energy Resources Management Plan*, Docket No. P-2019-3010128 (Final Order entered December 17, 2020) (*December 2020 Order*).

The DER Settlement consisted of two principle parts: (1) requirements for smart inverters³ on PPL’s distribution system beginning January 1, 2021; and (2) a pilot program to test and evaluate the costs and benefits of: (a) monitoring the DERs and remotely managing the smart inverters’ grid support functions, versus (b) relying on other means to maintain distribution system status visibility and using the smart inverters’ autonomous grid support functions. *See* DER Settlement at ¶¶ 48-63.

² Distributed Energy Resources, or DERs, are “small, modular, energy generation and storage technologies that provide electric capacity or energy.” *See* <https://www.nrel.gov/docs/fy02osti/31570.pdf> (accessed November 26, 2025). DERs import and export energy onto the distribution system. The larger a DER, the more power it can export or import to the grid.

³ Inverters are devices that convert the direct current (DC) power produced by solar panels into the alternating current (AC) power transported on the electric distribution system for use in homes and businesses. Smart inverters provide additional functionality to standard inverters.

Regarding the requirements for smart inverters, new DERs interconnecting with the Company's distribution system were required to have smart inverters installed that meet the new Electrical and Electronics Engineers (IEEE) and Underwriters Laboratories (UL) standards; specifically: (1) UL 1741 SA; and (2) the Company's testing for the communications requirements under IEEE 1547-2018. DER Settlement at ¶¶ 48-49. These interim requirements were used by PPL until January 1, 2023, at which point, the Company transitioned to requiring new DERs to have smart inverters installed that meet IEEE 1547-2018 and have been certified with IEEE 1547.1 / UL 1741 SB. *Id.*

Further, as part of the *December 2020 Order*, discussed, *supra*, the Commission permitted PPL to conduct a three-year DER Pilot Program.⁴ The Pilot Program began on January 1, 2021, and was set to end on March 21, 2025. By Commission Opinion and Order entered September 12, 2024, the term of PPL's DER Pilot Program was extended until thirty (30) days after the Final Order is entered in the instant docket. *See Petition of PPL Electric Utilities Corporation for Approval of Tariff Modifications and Waivers of Regulations Necessary to Implement its Distributed Energy Resources Management Plan*, Docket No. P-2019-3010128 (Opinion and Order entered September 12, 2024) (*September 2024 Order*).⁵

According to PPL, the Pilot Program was designed to test and evaluate:
(1) the costs and benefits to distribution system operation and design of monitoring DERs

⁴ A full description of PPL's DER Pilot Program is contained in the Second Revised DER Management Pilot Implementation Plan, which was submitted on February 28, 2023, in the Company's First DER Management Plan proceeding at Docket No. P-2019-3010128. *See* PPL Exh. CD-2.

⁵ On August 12, 2024, PPL, the OCA, the OSBA, the Sustainable Energy Fund of Central Eastern Pennsylvania (SEF), and the JSPs filed the Joint Petition for Extension of PPL's DER Management Pilot Program Period under Paragraph 62 of the DER Settlement due to the constrained time frame to litigate the Second DER Management Plan before the Pilot Program sunset on March 21, 2025.

through devices connected to inverters,⁶ as compared to maintaining distribution system status visibility through other means (*e.g.*, automated meter reading equipment, Advanced Distribution Management Systems (ADMSs), modeling); and (2) the costs and benefits to distribution system operation of active management of DERs as compared to the benefits available through the use of inverter autonomous grid support functions. R.D. at 9 (citing PPL St. 1 at 13).⁷

The Company's Second DER Management Plan proceeding commenced on May 20, 2024, when PPL filed the instant Petition requesting approval of tariff modifications and other authorizations that are needed to implement its Second DER Management Plan (Second DER Management Plan or Plan), at the above-captioned proceeding, pursuant to Paragraph 62 of the DER Settlement.

On June 7, 2024, the OSBA filed a Notice of Intervention, Public Statement, and Verification at the above-captioned docket.

⁶ During the Pilot Program, the Company is authorized to purchase and install DER Management devices on all new DERs with inverters up to an annual limit of 3,000 DER Management devices. DER Settlement at ¶ 55. However, the “annual cap on the number of DER management devices will not be an annual cap on the number of new DERs that can be interconnected with the Company’s distribution system.” *Id.* Additionally, under Paragraph 64 of the DER Settlement, PPL is authorized to make a claim in its next base rate proceeding to recover the capital costs and expenses associated with the DER Management devices that the Company purchases, owns, installs, and maintains pursuant to the DER Settlement. DER Settlement at ¶ 64. We note that on September 30, 2025, PPL filed for a general rate increase pursuant to 66 Pa.C.S. § 1308(d), at Docket No. R-2025-3057164. That matter is currently an active proceeding before the Commission.

⁷ As outlined in the Second Revised DER Management Pilot Implementation Plan, the results from the DER Pilot Program are reported through an annual report filed with the Commission providing “detailed quantitative information relevant to the evaluation of the results of the Pilot.” *See* PPL Exh. CD-2 at 17. As of the date the record in this proceeding closed, two annual reports had been filed. The annual reports for Program Years 1 and 2 spanned March 22, 2022 to March 21, 2023 and March 22, 2023 to March 21, 2024, respectively.

On July 1, 2024, the OCA filed an Answer in response to the Company's Petition.

On July 8, 2024, the JSPs filed an Answer, Petition to Intervene, and Protest.

On July 10, 2024, the PP&L Industrial Customer Alliance (PPLICA) filed a Petition to Intervene.

On July 12, 2024, SEF filed a Petition to Intervene.

A Prehearing Conference convened on August 6, 2024, as scheduled. PPL, the OCA, the OSBA, the JSPs, PPLICA, and SEF were present and represented by counsel. During the Prehearing Conference, various procedural matters were discussed and resolved, including: (1) the Petitions to Intervene filed by the JSPs, PPLICA, and SEF were granted; (2) litigation schedules were set; and (3) modifications to the Commission's discovery rules were established. A Scheduling Order was issued on August 7, 2024.

On September 26, 2024, PPL filed a Motion for Protective Order, and the ALJ issued the Protective Order on September 27, 2024.

On October 21, 2024, the ALJ issued an Order Modifying Scheduling Order adopting the parties' proposed revised litigation schedule. On October 22, 2024, the ALJ issued a Corrected Modified Scheduling Order.

On January 8, 2025, a Corrected Hearing Notice was issued, scheduling the telephonic evidentiary hearing for February 11 through 13, 2025.

On February 11 and 12, 2025, the first and second days of evidentiary hearings were held as scheduled.

On February 13, 2025, a Cancellation Notice was issued, which canceled the third day of hearings scheduled for February 13, 2025. Also on February 13, 2025, the ALJ issued a Briefing Order setting forth requirements for the briefs to be submitted in this proceeding.

On March 25, 2025, PPL, the JSPs, the OCA, the OSBA, and SEF filed Main Briefs.

On April 15, 2025, PPL, the JSPs, the OCA, the OSBA, and SEF filed Reply Briefs.

The record in this proceeding closed when Reply Briefs were filed on April 15, 2025.⁸

On June 30, 2025, the Commission issued the Recommended Decision of ALJ Coogan, wherein he recommended that the Commission deny PPL's Petition, based upon his determination that the Parties opposing PPL's Second DER Management Plan (the JSPs, the OCA, the OSBA, and SEF) presented evidence of greater weight than PPL. R.D. at 1, 42-46, 49

As noted above, PPL and the JSPs filed Exceptions on July 15, 2025. Replies to Exceptions were filed by PPL, the JSPs, the OCA, and the OSBA on July 22, 2025.

⁸ On April 16, 2025, the JSPs filed a Motion for Leave to File a Sur Reply Brief (JSPs' Motion). On May 6, 2025, PPL and the OCA filed answers to the Motion. By Order issued on May 13, 2025, the ALJ denied the JSPs' Motion. *See* R.D. at 5.

II. Discussion

A. PPL's Petition and Proposed Plan

By its Petition, based on the purported successes of its Pilot Program, PPL is requesting approval to implement its Second DER Management Plan following the conclusion of the DER Pilot Program, thirty (30) days after the Commission's Final Order in this proceeding. *See September 2024 Order.* Through its Second DER Management Plan, PPL is proposing to continue installing DER Management devices⁹ and actively monitoring and managing DERs, as well as to expand on the DER Pilot Program by authorizing PPL to:

- (1) actively monitor and manage the smart inverter settings on all DERs that are in the Pilot Program's control groups;
- (2) utilize the Volt/Watt functionality, with customer consent, when the interconnecting DER could create a localized high voltage issue on the distribution system at the time of interconnection, which would not be resolved by the Volt/VAR or Constant Power Factor grid support functions; and
- (3) make the Pilot Program permanent. As such, provisions in the Settlement that limit the scope of the Pilot Program's requirements, such as the annual cap of 3,000 DER Management devices, would be eliminated. Moreover, the Company proposes to install DER Management devices on:
 - (1) solar photovoltaic systems interconnected before the Pilot Program started on January 1, 2021; and
 - (2) inverter-based DERs interconnected after the Pilot Program started without DER Management devices installed on them.

PPL St. 1 at 22-23. Complete details of the Second DER Management Plan's requirements are set forth in the Second DER Management Plan, submitted as

⁹ PPL proposed continuing the recovery of the costs for the Second DER Management Plan through base rates, as it is allowed for the DER Pilot Program. OCA St. 1 at 23.

PPL Exhibit SS-1, and the Company's proposed modifications to Tariff Rule 12, submitted as PPL Exhibit SS-2.

To implement the Company's Second DER Management Plan, PPL is requesting approval, pursuant to Section 75.13(k) of the Commission's Regulations, to require the installation of DER Management devices for all new DERs that apply to interconnect to its distribution system. Specifically, Section 75.13(k) states, in pertinent part, that "[t]he EDC and DSP may not require additional equipment or insurance or impose any other requirement unless the additional equipment, insurance or other requirement is specifically authorized under this chapter or by order of the Commission." 52 Pa. Code § 75.13(k). Here, the Company will continue to require new customer generators to install additional equipment (*i.e.*, the DER management device) and impose additional requirements (*e.g.*, that the customer-generator allow PPL Electric to monitor and manage the DER and that the DER utilize a standardized, non-proprietary communications protocol specified by the utility) that are not specifically authorized under Chapter 75 or a Commission order. Petition at ¶¶ 119-22.

B. Legal Standards

As the Petitioner or moving party, PPL has the burden of proof to establish that they are entitled to the relief they are seeking. 66 Pa.C.S. § 332(a). To establish a sufficient case and satisfy the burden of proof, PPL must show, by a preponderance of the evidence, that the relief sought is proper under the circumstances. *Samuel J. Lansberry, Inc. v. Pa. PUC*, 578 A.2d 600 (Pa. Cmwlth. 1990), *alloc. denied*, 602 A.2d 863 (Pa. 1992). That is, PPL's evidence must be more convincing, by even the smallest amount, than that presented by an opposing party. *Se-Ling Hosiery, Inc. v. Margulies*, 70 A.2d 854 (Pa. 1950). Additionally, the Commission's decision must be supported by substantial evidence in the record. More is required than a mere trace of evidence or a

suspicion of the existence of a fact sought to be established. *Norfolk & Western Ry. Co. v. Pa. PUC*, 413 A.2d 1037 (Pa. 1980).

PPL’s proposed Plan constitutes “service” as such term is broadly defined under Section 102 of the Public Utility Code (Code), in relevant part, as follows:

“Service.” Used in its broadest and most inclusive sense, includes all acts done, rendered, or performed, and all things furnished or supplied, and any and all facilities used, furnished, or supplied by public utilities. . .in the performance of their duties under this part to their patrons, employees, other public utilities, and the public, as well as the interchange of facilities between two or more of them . . .

66 Pa.C.S. § 102.

As the party with the burden of proof, PPL must demonstrate by a preponderance of the evidence that its proposed Plan as a utility “service” is adequate and reasonable pursuant to Section 1501 of the Code. Section 1501 of the Code requires PPL to furnish reasonable and adequate service and facilities as shall be necessary or proper for the accommodation, convenience, and safety of its patrons, employees, and the public, stating as follows in pertinent part:

§ 1501. Character of service and facilities.

Every public utility shall furnish and maintain adequate, efficient, safe, and reasonable service and facilities, and shall make all such repairs, changes, alterations, substitutions, extensions, and improvements in or to such service and facilities as shall be necessary or proper for the accommodation, convenience, and safety of its patrons, employees, and the public. Such service also shall be reasonably continuous and without unreasonable interruptions

or delay. Such service and facilities shall be in conformity with the regulations and orders of the commission . . .

66 Pa.C.S. § 1501.

Moreover, the Commission’s Regulations at 52 Pa. Code Chapter 75, regarding the Alternative Energy Portfolio Standards (AEPS), set forth the requirements and standards that Electric Distribution Companies (EDCs) must meet if customer-generators on their system intend to pursue net-metering opportunities and interconnect with the electric distribution grid. *See* 52 Pa. Code § 75.21; *see also* 73 P.S. § 1648.5 (directing the Commission to develop technical and net metering interconnection rules for customer-generators). Specifically, EDCs are required to “file a tariff with the Commission that provides for net metering consistent with” Chapter 75 of the Commission’s Regulations. 52 Pa. Code § 75.13(c). Also, an EDC and default service provider “may not require additional equipment or insurance or impose any other requirement” on a net metering customer-generator “unless the additional equipment, insurance or other requirement is specifically authorized under this chapter or by order of the Commission.” 52 Pa. Code § 75.13(k).

As we proceed to review the various positions of the Parties and their Exceptions, we note that any issue that we do not specifically delineate shall be deemed to have been duly considered and denied without further discussion. We are not required to consider expressly or at length each contention or argument raised by the parties. *See Consolidated Rail Corp. v. Pa. PUC*, 625 A.2d 741 (Pa. Cmwlth. 1993); *see also, generally, University of Pennsylvania v. Pa. PUC*, 485 A.2d 1217 (Pa. Cmwlth. 1984).

C. Position of the Parties

1. PPL

PPL asserted that the proposals under its Plan are necessary and appropriate because they will help the Company fully realize the benefits of actively monitoring and managing DERs. PPL stated that, as demonstrated by the Pilot Program, the Company can leverage the smart inverters' grid support functions to improve safety, reliability, and resiliency, reduce interconnection costs for DER interconnection applicants (*e.g.*, avoidance of paying for distribution system upgrades), mitigate the impact of DERs on the distribution system, and increase the distribution circuits' hosting capacity by monitoring and managing DERs in the service territory. PPL M.B. at 12.

As PPL argued in its Main Brief, its Second DER Management Plan will help address the daunting resource adequacy challenges facing the Commonwealth. PPL M.B. at 24-28. Additionally, PPL asserted that the Company is already experiencing issues caused by DERs on its distribution system and must act now to improve and maintain the safety, reliability, and resiliency of its electric service. PPL M.B. at 13-21.

PPL's witness, Mr. Salim Salet, discussed the purported benefits to the Company, its customers, and the Commonwealth of Pennsylvania, by listing what PPL's Plan will enable it to do, such as:

1. Facilitate and encourage the increased deployment of DERs in its service territory by reducing interconnection costs for customers installing DERs and increasing hosting capacity on the distribution system;
2. Improve the safety, reliability, adequacy, and resiliency of its distribution service by gaining visibility into the DERs' impacts on the distribution

system and actively leveraging the grid support functions of the DERs' smart inverters;

3. Improve distribution system operations and planning by eliminating "hidden load" at DER points of interconnection; and
4. Reduce the Company's capital costs and operation and maintenance expenses that are passed onto ratepayers by, among other things, remotely managing the DERs' voltage support functions to mitigate voltage violations on distribution circuits, which decreases system upgrades as well as costs to manually address voltage violations (*e.g.*, reduction in the number of truck rolls).

PPL St. 1 at 31 (citations omitted).

PPL's witnesses testified at length regarding the need to implement the Second DER Management Plan. *See* PPL St. 1-R at 7-8; PPL St. 6-R at 18-20, 24-25; PPL St. 7-R at 3-4, 9-10. For example, PPL's witness, Elizabeth Cook, Ph.D., explained how the Company's pioneering of a "first-in-the-nation" DER management model "reflects PPL Electric's forward-thinking approach to address the DERs currently on the system and be prepared for future DER growth." PPL St. 6-R at 25 (emphasis in original).

PPL contended that its cost-benefit analysis is reliable, robust, and transparent, and clearly demonstrates that the Company's proposal will be cost-effective. PPL's initial cost-benefit analysis was prepared as part of its Program Year 2 Annual Report for the DER Pilot Program. *See* PPL Exh. CD-4. In its Main Brief, PPL stated that it hired an outside consultant, Concentric Energy Advisors, Inc. (Concentric), to

create a cost-benefit analysis of the costs and benefits of the Second DER Management Plan:

[Outside consultant] Concentric included three categories of costs in its analysis: (1) the cost of the DER Management devices; (2) the ongoing maintenance of those devices; and (3) other costs that may be associated with the program. Concentric's analysis considered three categories of benefits solely related to the active management of DERs.

PPL M.B. at 29 (citation omitted).

According to PPL, the cost-benefit analysis conducted by Concentric and discussed by PPL's witness, Mr. Steven Wishart, demonstrates that the Second DER Management Plan will produce benefits that far exceed its costs, with aggregate net benefits of approximately \$65 million.¹⁰ See PPL St. 10-R at 5-11; PPL Exh. SWW-1R. PPL argued that the other Parties' arguments, *infra*, criticizing the projected costs and benefits have no merit, considering the conservative methodology used to generate the analysis.¹¹ PPL stated that the Company has demonstrated that even if the Plan's benefits

¹⁰ PPL's Annual Report for Program Year 2 indicated that avoided "truck rolls" (visits to customer locations by PPL) produced the majority of program benefits, amounting to roughly 62% of PPL's claimed benefits of its DER Pilot Program. PPL Exh. CD-4. However, the approach employed by Concentric "...to estimate avoided truck rolls...result[ed] in a much lower estimate," approximately 5% of the total program benefits. PPL St. 10-R at 9, 18, 29. Further, Mr. Wishart explained that Concentric's cost-benefit analysis indicated that 85.9% [$(\$61,348,156 + \$64,660,328) / \$146,619,280 = 85.9\%$] of the Plan's benefits would come from "incremental hosting capacity," stemming from "Avoided Distribution Infrastructure Investments" and "Avoided Energy From Incremental Hosting Capacity." PPL St. 10-R at 6, 15, Table SWW-2.

¹¹ PPL contended that the OSBA's criticisms of the cost-benefit analyses lack merit, that SEF erred in arguing that the cost-benefit analyses are missing essential information, and that other Parties incorrectly argued that PPL's cost-benefit analyses did not comply with the DER Settlement. PPL stated that it did not analyze autonomous settings separately in a cost-benefit analysis, because IEEE Standard 1547-2018 had been incorporated into the Commission's Regulations for DERs since the Commission approved the DER Settlement. PPL R.B. at 9-20.

were removed completely, the Plan's absolute costs would not significantly impact customers' bills. Finally, PPL indicated its willingness to explore cloud-based communications in lieu of its DER Management devices, which would significantly reduce the largest driver of costs in the cost-benefit analysis and only increase the benefit-cost ratio projected by the Company in this proceeding. PPL M.B. at 28-40.

PPL argued that denial of its Petition will adversely affect PPL, the Company's distribution system, its customers, and the Commonwealth. PPL asserted that as a regulated EDC, PPL must provide safe, reliable, adequate, and reasonable service, as required under the Code. PPL argued that the deployment of DERs continues to present challenges to the Company complying with that statutory duty. PPL averred that without active management and monitoring of DERs, however, distribution system operators are severely limited in their ability to respond to these changing dynamics and the issues created by DERs. PPL stated that as distribution systems have become increasingly similar to transmission, *i.e.*, a mix of demand and generation, the need to balance generation and demand becomes vitally important. PPL contended that such balancing cannot be accomplished without the ability to monitor and manage generation assets on the grid. PPL M.B. at 13-15.

PPL also argued that its Second DER Management Plan will help address climate change and sustainability objectives by facilitating and encouraging increased deployments of DERs. PPL M.B. at 21-24. PPL asserted that "[w]ithout active DER management and monitoring...the Commonwealth, Commission, and PPL Electric all will lose a vital tool in addressing climate change and sustainability objectives." *Id.* at 7. PPL further opined that the Company can achieve its reduced emissions because its DER solar customers will have an "inspiring feeling of energy independence [which will] likely motivate them to take additional actions to help mitigate climate change." *Id.* at 22. PPL asserted that its Pilot proves, and its Phase II Plan needs, control over DERs in order to achieve its CO² emission reductions. *Id.* at 23.

PPL also contended that its Second DER Management Plan will help address resource adequacy challenges. PPL submitted that, although other Parties have suggested various forms of data collection instead of the Company's proposal, such data collection alone cannot provide the situational awareness and system-wide connectivity needed to meet these resource adequacy challenges and help de-stress the transmission system. PPL M.B. at 24-28.

PPL contended that it has fully rebutted the JSPs' allegations that the Company has placed restrictions on inverters and projects; caused customers, solar installers, and inverter manufacturers to experience increased costs; affected customers' and inverter manufacturers' systems and communications; caused lost sales and delayed projects; and affected inverters' warranties. PPL M.B. at 41-44. Additionally, the Company contended that the Commission should disregard the JSPs' safety-related allegations concerning PPL's DER Management devices. *Id.* at 44-53. Finally, PPL argued that the other Parties' recommendations either have already been adopted or should be rejected. *Id.* at 53-59. PPL stated that it fully evaluated and responded to the other Parties' suggested alternatives to the Company's proposal. PPL asserted it was not feasible, practical, efficient, or cost-effective to try to rely on third-party aggregators to assure distribution system reliability and power quality. PPL averred that it investigated and responded to Parties' contentions about using autonomous functions instead of implementing the Second DER Management Plan. PPL R.B. 24-30 (citing OCA M.B. at 15-19, 23-24, 26, 28-30, 35-36; OSBA M.B. at 6; SEF M.B. at 6, 9; JSPs M.B. at 32-34).

2. JSPs

The JSPs, all of whom installed and/or are continuing to service customers under the Pilot Program, manufacture and/or service inverters approved by PPL for use with its Pilot Program, and/or represent the foregoing, asserted that they have been

impacted by PPL's First DER Management Plan, and will be further impacted if PPL's Second DER Management Plan is approved as proposed. JSPs M.B. at 1-3.

The JSPs argued that the Commission should decline to approve PPL's program, as it unreasonably and unlawfully exceeds Pennsylvania's standards. First, the JSPs asserted that PPL's inverter testing requirements exceed those of IEEE and UL, and that PPL is not authorized to bar manufacturers and configurations that are certified as standards-compliant from interconnecting based on its unilateral resolution of a standards gap. JSPs M.B. at 11-16.

Second, the JSPs asserted that PPL's tacit claim of exclusivity over reactive power overreaches. The JSPs contended that PPL disregarded evidence put forth that the JSPs have participated in programs involving their management of customers' reactive power. The JSPs also argued that PPL misunderstands the implications of its demands that the manufacturer designs an inverter large enough to produce sufficient reactive power to meet PPL's needs, as well as the customer's interest in real power. The JSPs underscored that the Commission has the responsibility to determine who shall manage reactive power capability. JSPs M.B. at 16-18.

Next, the JSPs averred that PPL overplays its concern that its control of customers' inverters is required to use remote on/off functions on battery storage or solar systems that have not safely isolated, or "islanded" from the distribution system. The JSPs state that anti-islanding capability is already built into inverter-based systems certified to IEEE 1574 standards and tested in accordance with UL 1741. The JSPs contended that it is squarely the responsibility of this Commission to decide whether the levels of penetration seen today warrant the Commission's granting PPL a monopoly over monitoring and management of residential customers' DERs. JSPs M.B. at 18-20.

The JSPs contended that PPL’s proposal is premature, averring that “PPL has failed to demonstrate why its program, with first-in-the-nation features, must be approved now.” JSPs M.B. at 20-22. PPL’s Pilot Program has been underway for four and a half years, but as the JSPs pointed out, still no other utility has emulated or even come close to requiring active management and monitoring of DERs over this four-and-a-half-year period. JSPs M.B. at 11-12.

Further, the JSPs argued that PPL has failed to show the costs of its program are reasonable. The JSPs argued that PPL’s cost-benefit analyses presented in this proceeding are undermined by both changing analyses as well as overstating the amount of benefits PPL’s program would provide from incremental hosting capacity.¹² *See* JSPs M.B. at 26-31. The JSPs contended that PPL failed to properly reflect the benefits of active management in its cost-benefit analyses. *See* JSPs M.B. at 28-29. Further, the JSPs alleged that PPL’s witness, Mr. Wishart, double-counted the incremental hosting capacity benefits of “Avoided Distribution Infrastructure Investments” and “Avoided Energy from Incremental Hosting Capacity,” on the premise

¹² The Interstate Renewable Energy Council defines hosting capacity as follows:

[T]he amount of DERs that can be accommodated on the distribution system at a given time and at a given location under existing grid conditions and operations, without adversely impacting safety, power quality, reliability or other operational criteria, and without requiring significant infrastructure upgrades.

OCA St. 1SR at 18 (citing <https://irecusa.org/wp-content/uploads/2021/07/IREC-Optimizing-the-Grid-2017-1.pdf>).

that an interconnecting customer-generator can produce only one of those benefits but not both.¹³ *Id.*

The JSPs averred that PPL failed to conduct the analyses required by the Commission, and the analyses it did provide are flawed. The JSPs stated that PPL failed to adequately compare the costs and benefits of active management of DERs by PPL to the benefits available by using alternate approaches. The JSPs also asserted that PPL failed to analyze alternative methods it could use to obtain monitoring data. The JSPs stated that when PPL did compare use of autonomous smart meter inverter functions to active management in regard to the efficacy of voltage control, the analysis was notably unscientific. JSPs M.B. at 31-36.

Findings of Fact (FOF) Nos. 43 through 104 of the ALJ's Recommended Decision summarized the harm caused by PPL's program requirements, as perceived by the JSPs, including that compliance therewith has driven up the costs of projects, disrupted customers' communications and power generation, blocked market entry for product developers, and blocked the development of a market for third-party aggregators. R.D. at 13-22.

The JSPs also raised a number of harms resulting from Second DER Management Plan standards. Commission Regulations provide standards for certification

¹³ The JSPs explained that Mr. Wishart's analysis included \$61.3 million in projected benefits from "Avoided Distribution Infrastructure Investments" and \$64.6 million in projected benefits from "Avoided Energy from Incremental Hosting Capacity." The JSPs explained that counting both values for all 258 MW of DER interconnecting using incremental hosting capacity is inappropriate, because it blends two separate counterfactuals: one in which all 258 MW of DERs would have come online only due to PPL's program and therefore provided a potential new generation resource, and another in which the DERs would have come online despite PPL's program and therefore would have paid for grid upgrades associated with DER interconnection. However, according to the JSPs, it is unreasonable for Mr. Wishart to count both values for all DERs. *See* JSPs M.B. at 28-30.

of interconnecting DERs. 52 Pa. Code § 75.22. However, as explained by the JSPs, PPL has set forth additional requirements from interconnecting DERs. JSPs M.B. at 11-20. As a result of the standards imposed by PPL, the JSPs alleged the harm to the JSPs, other solar customers and companies, and the public interest generally.

Specifically, the JSPs argued:

- PPL’s program restrictions have and will result in lost sales. JSPs M.B. at 37-40.
- PPL’s proposal will result in additional losses to Pennsylvania businesses and customers. JSPs M.B. at 40-42.
- The Company’s proposal will adversely affect the market for third-party aggregation by “block[ing]” or “limit[ing] market entry” and “blocking or impeding competition from third-party grid service providers.”¹⁴ JSPs M.B. at 42-44, 47-51.
- PPL’s Program is anti-competitive, as it blocks third party aggregators from being able to offer more cost-effectively the same grid services over which PPL has made itself the monopoly provider.¹⁵
- PPL’s DER Management devices interfere with customers’ power generation and solar and inverter companies’ communications with inverters, citing alleged issues experienced by Tesla, Enphase, SolarEdge, and Sun Directed. *See* JSPs M.B. at 44-47.

¹⁴ The JSPs argued that PPL’s inverter testing requirements are unreasonable and go beyond the requirements under IEEE 1547-2018 and UL 1741-SB. They contend that PPL is not authorized to bar manufacturers and configurations that are certified as standards-compliant from interconnecting based on the Company’s unilateral resolution of a standards gap. JSPs M.B. at 11-16, 42-44.

¹⁵ *See* JSPs M.B. at 17-18, where the JSPs argued that PPL’s assertion that it should control DER is inconsistent with IEEE 1547-2018; JSPs M.B. at 33-34, where the JSPs highlighted that PPL’s failure to have evaluated use of third parties deprives the Commission of being able to assess whether PPL’s monopoly is in the public interest; and JSPs M.B. at 48-51, summarizing testimony put forth by the JSPs on the impacts of PPL’s DER Pilot Program and Plan on third-party aggregators, and how it undermines one of the purposes of standards, which is to level the playing field and promote competition.

- The fact that PPL's proposed Plan will be mandatory is of great concern. *See* JSPs M.B. at 4-6, 22-24.
- PPL's Pilot Program, and as expanded by its proposed Plan, is the only program in the country that has seized the services provided by customers' DERs without compensation. *See* JSPs M.B. at 22, 24-26.
- PPL's installation method of its DER Management devices violates the National Electric Code (NEC), voids customers' warranties, and causes thermal damage. JSPs M.B. at 51-60.

As relief, the JSPs requested that the Commission bar PPL from requiring that inverters be tested for compatibility with PPL's Management devices; deny the Petition, although PPL may continue to require smart inverter settings that provide voltage regulation via autonomous functions; or, if the Commission chooses not to deny approval, then make the Program voluntary, and its requirements and testing applicable only to voluntarily participating DERs; and order PPL to immediately cease connecting to SolarEdge inverters to power its DER Management devices, and replace SolarEdge inverters in which it has installed its DER Management device, or pay \$2 million into a fund for replacements of inverters with PPL's DER Management devices installed and thermal damage. JSPs M.B. at 36-60.

3. OCA

The OCA submitted that PPL's proposed Second DER Management Plan should be rejected. Alternatively, should the Commission consider approving the Plan,

the OCA proposed that PPL be required to submit a DER Orchestration Plan,¹⁶ which the OCA averred would provide more transparency regarding its plans for orchestrating all DERs and delivering value to ratepayers. OCA M.B. at 1, 41-43.

The OCA contended that PPL’s proposal to install a DER Management device on every interconnected DER to provide dedicated communications for real time monitoring is unprecedented and not cost-effective. *See* OCA M.B. at 13-22.

In its Main Briefs, the OCA discussed multiple jurisdictions with significantly more DERs, including San Diego and Hawaii, where utilities are demonstrating today that DERs can be managed reliably, safely, and efficiently in the absence of dedicated controls used in PPL’s DER Pilot Program. According to the OCA, PPL’s Plan is the only plan in the country that proposes mandatory active monitoring of all interconnected DERs using a device management system. OCA M.B. at 14-17, 19-20. For instance, the OCA’s witness, Mr. Ron Nelson, testified that “[b]oth San Diego and Hawaii have current DER penetrations that are a decade or more ahead of PPL’s

¹⁶ The OCA proposed requiring PPL to file a DER “Orchestration Plan” that consists of, but is not limited to, the following:

- PPL’s DER integration strategy, including a technology maturity and investment plan, for electric vehicles, energy storage systems, solar, thermostats, microgrids, and other controllable loads;
- Alternatives analysis that considers the size and type of DER, third-party services and procurements (including third-party/aggregator DERMS integration), and the enabling costs for integration, and;
- A cost-benefit or cost-effectiveness framework used to evaluate the alternatives analysis and selected approach.

OCA M.B. at 42.

projected growth and they both continue to operate their grids safely and reliably. *Id.* at 15 (citing OCA St. 1SR at 5).

The OCA highlighted that PPL introduced a new cost-benefit analysis in the Company's rebuttal testimony that significantly deviates from PPL's analysis presented in direct testimony. In this regard, the OCA echoed the concerns of the JSPs that PPL's cost-benefit analyses presented in this proceeding are undermined by both changing analyses, as well as overstating the amount of benefits PPL's program would provide from incremental hosting capacity. Further, the OCA averred that PPL failed to conduct the analyses required by the DER Settlement, and the analyses it did provide are flawed. According to the OCA, PPL failed to adequately compare the costs and benefits of active management of DERs by PPL to the benefits available by using alternate approaches. OCA M.B. at 19-34.

In particular, the OCA argued that increasing hosting capacity should not be treated as a "ratepayer benefit" in a cost-benefit analysis because it is a "cost-shift onto ratepayers." *Id.* According to the OCA, "[i]ncreasing hosting capacity investment does not benefit the system as a whole" since "avoided infrastructure costs are a benefit to DER customers that are paid for by all other ratepayers." OCA M.B. at 33.

The OCA contended that PPL failed to consider and evaluate alternatives to its proposal, such as relying on third-party aggregators, autonomous functions, advanced DER modeling, cloud-based communications, and/or Application Programming Interfaces (APIs). *See* OCA M.B. at 15-19, 23-24, 26, 28-30, 35-36. Therefore, the OCA proposed that PPL be required to conduct a DER Orchestration Plan to evaluate the cost-effectiveness of several pathways for monitoring and controlling DERs. *Id.* at 34-39.

Lastly, the OCA raised issues concerning how the costs associated with the Second DER Management Plan will be allocated to and recovered from customers. OCA M.B. at 33, 39-42. According to the OCA, “PPL proposes that all customers will pay for the costs of the DER II, as the costs would be incorporated into base rate[s].” OCA M.B. at 33. Therefore, the OCA contended that the Company’s proposal will “likely shift costs from DER owners to other consumers,” and “[b]y approving PPL’s DER II, and then putting off the consideration of the rate impact for ratepayers who do not own DER to a later rate base [sic] proceeding, the Commission cannot determine whether PPL’s DER II results in just and reasonable rates” *Id.* at 40-41.

The OCA stated that PPL’s willingness to explore cloud-based communications is not fully developed or supported in its filing. The OCA asserted that PPL’s lack of exploration of cloud-based communications is one of many reasons why requiring a DER Orchestration Plan is reasonable and prudent. The OCA insisted that instead of rushing an unprecedented program into implementation without the necessary details, PPL should complete a DER Orchestration Plan as proposed by the OCA so that all interested stakeholders, including the Commission, have a clear understanding of what PPL is proposing along with the necessary supporting evidence. Additionally, the OCA proposed that, given the lack of certainty or supporting analysis by PPL as to a reasonable size threshold for mandatory utility or alternative controls, no DER should be subject to mandatory control under PPL’s proposal until further analysis is completed regarding DER orchestration. OCA R.B. at 17-25.

4. OSBA

The OSBA contended there is insufficient evidence to indicate how well-performing or cost-effective the Company’s DER Pilot Program was. The OSBA asserted that the cost-benefit analysis presented by PPL in rebuttal testimony was flawed and fails to provide the necessary evidence that the benefits of active management

outweigh the costs. Therefore, the OSBA requested that: (1) PPL's proposed Plan be denied without prejudice; (2) PPL's DER Pilot Program be extended for two years beyond March 21, 2025; and (3) PPL be ordered to perform a full cost-benefit analysis as outlined by the OSBA's witness, Mr. Justin B. Farr, so that all interested parties can fully review any future DER program proposed by PPL. OSBA M.B. at 2-8.

5. SEF

In the same vein as the opposition posed by the JSPs, SEF alleged that PPL's proposal is premature, not in the best interest of customers, not in the public interest, and therefore is not just and reasonable. SEF M.B. at 3, 5, 11.

In its Main Brief, SEF raised issues regarding cybersecurity, deregulation, utility motives, healthcare security, and rate impacts, summarized as follows:

- PPL's insistence on actively controlling DER systems rather than only autonomous control increases the risk of cyber security incidents. SEF M.B. at 8 (citing SEF St. 1-R at 3).
- Utility control over DER generation undermines the longstanding goals of deregulating the electric generation market. Additionally, SEF avers that PPL's control over a DER facility is inconsistent with 66 Pa.C.S. § 2807(d)(1) where PPL can change the customer's electricity supplier without consent. SEF M.B. at 7.
- Because PPL is a monopoly, profit-driven entity, its motives conflict with DERs' desires to obtain affordable, abundant, and reliable energy while reducing energy costs and negative environmental impacts. PPL's motivation to increase distribution sales may lead it to curb output from DERs. SEF M.B. at 5.
- PPL's Second DER Management Plan presents risks to individuals who rely on their DER systems for healthcare equipment, batteries, and electric vehicles. SEF M.B. at 8.

- PPL’s DER Plan, unnecessarily increases the costs to DER owners and ratepayers, as PPL would not guarantee that ratepayers will never bear the burden of PPL’s cost to implement its Plan. SEF M.B. at 6, 10-11.

See SEF M.B. at 5-11.

Similar to the OCA and the JSPs, SEF also argued that PPL failed to properly reflect the benefits of active management in its cost-benefit analyses. *See* SEF M.B. at 6. Specifically, SEF contended that “every benefit PPL describes in its Petition can be achieved solely with basic autonomous control (setting parameters and monitoring outputs).” *Id.*

SEF further argued that the information and data used by PPL for its cost-benefit analysis is lacking, claiming that there is “essential information” missing from the cost-benefit analysis, specifically claiming that the Company “failed to gather the costs to installers, contractors, DER system owners, and ratepayers to implement PPL’s Pilot Program” and “failed to assess the cost savings to customers of implementing an autonomous control-only plan versus PPL’s [sic] active control plan.” SEF M.B. at 10-11.

As relief, SEF requested that the Commission not approve PPL’s Petition as submitted, and in the alternative, either limit PPL’s Plan to only autonomous control of those DERs that grant permission for such monitoring or institute a Commission based hearing to create and implement a consistent regulatory structure for all DERs across the Commonwealth. SEF M.B. at 11-12.

6. PPLICA

PPLICA did not file testimony or submit briefs in this proceeding.

D. Recommended Decision

In his Recommended Decision, ALJ Coogan made 118 Findings of Fact and reached 12 Conclusions of Law. R.D. at 5-25, 46-49. The Findings of Fact and Conclusions of Law are incorporated herein by reference and are adopted without comment unless they are either expressly or by necessary implication rejected or modified by this Opinion and Order.

ALJ Coogan recommended that the Commission deny PPL's Petition because of the Company's "failure to meet its burden of proof in this proceeding." R.D. at 1, 42-46. Specifically, the ALJ concluded that PPL failed to carry its burden of proof in demonstrating: (1) why the scope of its proposed active monitoring and control of DER devices for all customer-owned and third-party-owned inverter-based DER installations is reasonable or necessary; (2) how the proposed standards of PPL's proposal will result in harms to participants in the DER program; and (3) that its proposal is supported by a reliable and positive cost-benefit analyses. *See* R.D. at 42, 43, 44, 46. According to the ALJ, the other Parties' evidence outweighed PPL's evidence regarding: (1) the scope of the Plan; (2) the impact of the Plan's requirements; and (3) the Company's cost-benefit analyses. *See* R.D. at 42-46. Therefore, based on review of the record evidence established in this proceeding, and the particular circumstances identified in this proceeding, ALJ Coogan recommended that the Commission deny the Company's Petition. R.D. at 42, 46, 49.

Citing directly to the opposing Parties' briefs, which in turn summarize the evidence they presented, and he assessed, ALJ Coogan concluded:

The JSPs demonstrated that PPL's proposal contains extreme, first-in-the-nation features and other jurisdictions with higher rates of solar penetration rely on an array of tools, *e.g.*, custom smart inverter setting profiles, grid modernization

investments, voluntary flexibility interconnection options, and compensation for customers and non-utility service providers who both provide and receive grid services, without causing power quality or reliability issues. JSPs MB at 20-22. The OCA similarly established that it is unaware of any other utility that mandates full monitoring and control of DERs as proposed by PPL, and that other jurisdictions, which are ahead of PPL in terms of DER deployment and penetration levels, use other more effective and economical management strategies. OCA MB at 13-19. As the JSPs explain, if PPL's proposal is approved as designed, customers will be subject to a level of utility control they may not have envisioned.

R.D. at 43.

In FOF Nos. 38 and 41, the ALJ found as a factual matter that PPL's proposal to mandate, and fully, actively control small DERs has not been required in jurisdictions with higher penetration. The ALJs also found that none of the utilities in these jurisdictions have experienced DER related reliability issues. R.D. at 12-13. In FOF Nos. 32 and 40, ALJ Coogan found that no other utility in the country has conditioned permission to interconnect on the DER owner's inverter being compatible with a utility-owned management device, a requirement that clearly exceeds national standards and state requirements. R.D. at 11, 13. In FOF No. 40 and on page 36 of the Recommended Decision, the ALJ found, and referred to the JSPs' presentation of evidence, that the anti-competitive nature of PPL's proposed program – in which the PPL-owned management Devices seize the grid services provided by customers' DERs without compensating them, is also unique. In FOF Nos. 43 through 104, the ALJ recited the harms caused by PPL's program requirements, including that compliance therewith has driven up the costs of projects, disrupted customers' communications and power generation, blocked market entry for product developers, and blocked the development of

a market for third-party aggregators.¹⁷ R.D. at 13-22. In FOF Nos. 105 through 114, the ALJ found that PPL's installation of its DER Management device in nearly 8,000 SolarEdge inverters in a manner not authorized by SolarEdge caused thermal damage and voided customers' warranties. R.D. at 23-24. Moreover, in FOF Nos. 42 and 115 through 118, the ALJ found flawed cost-benefit analyses that did not comport with Commission requirements. R.D. at 13, 24-25.

Regarding PPL's cost-benefit analyses, ALJ Coogan noted first that:

As a condition of approval of its Pilot program, the Commission required that PPL compare the costs and benefits of active management of DERs by PPL's Devices, to the benefits available through the use of inverter autonomous grid support functions. PPL St. 1, p. 13.

R.D. at 13, FOF No. 42. The ALJ noted PPL's explanation as to why it did not evaluate the benefits of active management against the benefits from use of autonomous functions, as follows:

PPL maintains...that other parties incorrectly argue that PPL's cost-benefit analyses did not comply with the First DER Management Plan settlement. PPL states it did not analyze autonomous settings separately in a cost-benefit analysis because IEEE Standard 1547-2018 had been incorporated into the Commission's regulations for DERs since the Commission-approved the Settlement in the First DER Management Plan proceeding. PPL RB at 9-20.

R.D. at 31. Nevertheless, ALJ Coogan concluded:

I also agree with the JSPs that PPL failed to adequately provide analyses comparing the costs and benefits of active

¹⁷ In FOF Nos. 63, 74, and 90, ALJ Coogan gave weight to the JSPs' evidence that PPL's Plan imposes barriers and costs the JSPs have not faced in any other place they do business. *See* R.D. at 16, 18, 20.

management of DERs with the use of inverter autonomous grid support functions. JSPs MB at 31-36. The OCA also demonstrated that PPL failed to provide a clear comparison of the value of autonomous smart inverter functions in comparison to active management benefits. OCA MB at 28-29. Such analyses were one of the stated purposes of the Pilot Program where settlement terms provided for the testing and evaluation of "...the costs and benefits to distribution system operation of *active management* of DERs as compared to the benefits available through the use of inverter autonomous grid functions." *Petition of PPL Electric Utilities Corporation for Approval of Tariff Modifications and Waivers of Regulations Necessary to Implement its Distributed Energy Resources Management Plan*, Docket No. P-2019-3010128, Recommended Decision at 16 (Order entered Dec. 17, 2020) (emphasis in original). Without such analyses, it is not possible to fully evaluate whether PPL's proposed Second DER Management Plan is either reasonable or necessary.

R.D. at 44. Therefore, ALJ Coogan concluded that PPL's cost-benefit analyses do not support its proposal, providing the following reasoning:

I also find merit in the parties' criticisms that PPL failed to provide reliable or positive cost-benefit analyses to support its proposal. The JSPs convincingly argue that PPL's cost-benefit analyses presented in this proceeding are undermined by both changing analyses as well as overstating the amount of benefits PPL's program would provide from incremental hosting capacity. JSPs MB at 26-31. The OCA similarly asserts that PPL introduced a new cost-benefit analysis in rebuttal testimony that deviates from the analysis PPL presented in direct testimony. OCA MB at 26. In addition to criticizing the cost-benefit analysis introduced in PPL's rebuttal testimony, the OSBA also highlights PPL's changing cost-benefit analyses. OSBA MB at 5-7. PPL itself undermines confidence in its cost-benefit analyses where it

asserts that even without benefits the rate impact is “minimal.” PPL RB at 36.

R.D. at 46.¹⁸

E. Exceptions and Replies

1. PPL’s Exception No. 1 and Replies

In its Exception No. 1, PPL objects to the ALJ’s finding that “PPL has not demonstrated why the scope of its proposed active monitoring and control of DER devices is reasonable or necessary.” PPL Exc. at 6 (citing R.D. at 43). To advance its position, PPL makes several arguments within the Company’s Exception No. 1.

First, according to PPL, the ALJ incorrectly denied its Petition merely for being the first electric utility to make a DER management proposal of this scale; and that other jurisdictions have higher levels of penetration. PPL Exc. at 6 (citing R.D. at 43). PPL defends its “first-in-the-nation” argument by contending that the reason other jurisdictions, that may have higher DER penetration levels, have not yet established active management and monitoring programs is that when they started employing other measures, the technologies didn’t exist, and therefore, such utilities in those jurisdictions may not have had the capability to implement programs such as PPL’s Plan. PPL Exc. at 8 (citing PPL R.B. at 5-6).

PPL attempts to call into question the credibility of the JSPs’ witness, Mr. Brian Lydic, by pointing to instances in which Mr. Lydic applauds utilities for taking a proactive approach; however, PPL also admits that Mr. Lydic’s critique of PPL’s

¹⁸ See FOF No. 115-18, where ALJ Coogan documented the discrepancies between PPL’s initial and rebuttal cost-benefit analyses. R.D. at 24-25.

program is based on “the mandatory nature of PPL Electric’s proposal and the Company’s use of a utility-owned device to monitor DERs...” PPL Exc. at 9-10 (citing PPL R.B. at 6-9).

Second, PPL contends that the ALJ ignored the Company’s testimony that safety and reliability challenges posed by DERs exist even at the current levels of penetration, and that its Plan “is the optimal solution to resolving these issues.” PPL Exc. at 10-12 (citing PPL M.B. at 13-17). According to PPL, under its Pilot Program, the Company has “lost out on the opportunity to mitigate or resolve approximately 604,000 voltage violations that were caused by interconnected DERs in the control and grandfathered groups.” PPL Exc. at 12.

PPL further submits that the ALJ disregarded the Company’s argument that active monitoring and management outperforms autonomous features and that the Company’s program resolves concerns with anti-islanding and load masking. PPL Exc. at 12-14 (citing PPL M.B. at 18-20).

Lastly, PPL contends that ALJ Coogan’s recommendation disregarded the Company’s claim that the purported increases in hosting capacity yielded by PPL’s program will aid in addressing Pennsylvania’s concerns about resource adequacy, as well as climate change and sustainability. PPL Exc. at 14-18 (citing PPL M.B. at 21-26).

In reply, the JSPs argue that the ALJ correctly determined that the scope of PPL’s Plan was unreasonable and unnecessary. JSPs R. Exc. at 4. According to the JSPs, the other Parties did not oppose the Company’s plan merely because of its first-in-the-nation status, but rather because PPL failed to demonstrate why the scope of its proposed active monitoring of DER devices is reasonable or necessary. *Id.* at 5 (citing R.D. at 43). In support, the JSPs point to the ALJ’s findings that: (1) none of the utilities in jurisdictions with higher penetration require mandatory active monitoring and control

of small DERs; and, (2) this absence of mandatory active control has not caused these utilities DER-related reliability issues. JSPs. R. Exc. at 6 (citing R.D. at 12-13, FOF Nos. 38 and 41). The JSPs further note the ALJ's finding that no other utility in the country has conditioned permission to interconnect on the compatibility of the DER owner's inverter with a utility-owned management device. JSPs R. Exc. at 6 (citing R.D. at 11, 13, FOF Nos. 32 and 40).

According to the JSPs, the ALJ did not ignore PPL's argument that active monitoring and management outperforms autonomous features, as PPL claims. JSPs R. Exc. at 8 (citing PPL Exc. at 12). The JSPs reference the ALJ's agreement with the JSPs that PPL did not adequately provide analyses comparing the costs and benefits of active management of DERs with the use of inverter autonomous grid support functions and the ALJs' finding that the OCA demonstrated that PPL did not provide a clear comparison of the value of autonomous smart inverter functions and active management benefits. JSPs. R. Exc. at 8 (citing R.D. at 44). In addition, the JSPs argue that the ALJ did not disregard PPL's claim that its program resolves concerns with anti-islanding, as PPL asserts. JSPs R. Exc. at 9 (citing PPL Exc. at 13). Instead, the JSPs contend that the ALJ considered the JSPs' evidence that concerns with anti-islanding were overstated. JSPs R. Exc. at 9 (citing R.D. at 32).

Lastly, the JSPs argue that the ALJ did not disregard PPL's assertion that the purported increases in hosting capacity yielded by the Company's program will aid in addressing Pennsylvania's concerns regarding resource adequacy, climate change, and sustainability. JSPs R. Exc. at 9 (citing PPL Exc. at 14, 16). Rather, the JSPs reference the ALJ's conclusion that the JSPs persuasively argued that the Company's cost-benefit analyses overstated the amount of benefits that the program would provide from incremental hosting capacity. JSPs R. Exc. at 9-10 (citing R.D. at 46).

In its reply, the OCA contends that PPL mischaracterizes the ALJ's recommendation from the outset in its Exception No. 1, as the Company incorrectly argues that the ALJ recommended the denial of PPL's Petition merely for being "first-in-the-nation." OCA R. Exc. at 5 (citing PPL Exc. at 6). In support, the OCA contends that, contrary to PPL's assertions, the ALJ did not recommend rejection of the proposal "simply for being a pioneer," but rather because PPL's proposal is not seen in other jurisdictions that have achieved higher rates of DER success, as measured in terms of DER deployment and penetration levels. OCA R. Exc. at 5 (citing R.D. at 42, 43). According to the OCA, the ALJ determined that the JSPs and the OCA demonstrated that jurisdictions with higher DER deployments rates utilize more cost-effective and economical management tools without subjecting customers to the level of utility control that PPL proposes. The OCA continues that these alternative tools include custom smart inverter setting profiles, grid modernization investments, voluntary flexibility interconnection options, and compensation for customers and non-utility service providers that both provide and receive grid services. OCA R. Exc. at 5 (citing R.D. at 43).

In further support, the OCA contends that the ALJ correctly reasoned that PPL's Plan is unlike its Pilot Program and is unprecedented because it makes utility control of DERs mandatory for all inverter-based DER installations and requires the installation of an approximately \$1,000 device on every DER connected to PPL's system, paid for by ratepayers. OCA R. Exc. at 6 (citing OCA R.B. at 2; OCA St. 1SR at 4). The OCA cites testimony from the OCA's witness, Mr. Nelson, stating that both San Diego and Hawaii have current DER penetrations that are "a decade or more ahead of PPL's projected growth and they both continue to operate their grids safely and reliably." OCA R. Exc. at 6 (citing OCA M.B. at 15; OCA St. 1SR at 5). According to the OCA, these utilities demonstrate that DERs can be managed reliably, safely, and efficiently in the absence of dedicated controls used in PPL's Pilot Program. OCA R. Exc. at 6 (citing OCA R.B. at 3; OCA M.B. at 14-17; OCA St. 1SR at 5). In further support, the OCA

argues that Arizona, California, Hawaii, Massachusetts, and Rhode Island have five to ten times more DER per capita than Pennsylvania and are likely to remain far ahead of PPL into the future. OCA R. Exc. at 6 (citing OCA St. 1 at 33). Given the demonstrated success of other jurisdictions with larger quantities of DERs and their lack of utility monitoring and control of DER installations, the OCA argues that PPL has failed to demonstrate that its proposed scope is necessary to maintain safe, reliable, and adequate distribution service. OCA R. Exc. at 7.

Regarding distribution system reliability and safety and cost-effectiveness, the OCA asserts that it presented credible witness testimony showing that PPL's Plan should distinguish between small and large DER installments. The OCA further argues that mandatory, active monitoring is only needed for large DERs, as they represent a significant fraction of the demand on a distribution circuit, creating an acute risk to reliability and safety, while more cost-effective methods should be explored for small DERs. OCA R. Exc. at 7 (citing OCA St. 1 at 31-36; OCA St. 1SR at 33-36). Specifically, the OCA notes the main issue for its witness, Mr. Nelson, was about cost-effective solutions and that there are different cost-effective solutions for large DER and small DER installments. OCA R. Exc. at 8-9 (citing OCA St. 1 at 32, 26; OCA St. 1SR at 34-36).

As to PPL's claim that small DER in the aggregate are no different from and potentially have the same impact as large DER, the OCA argues that Mr. Nelson was clear that the scope of the solution has not been rationalized and "the significant difference to the Company's proposal is that the 1,000 small DER are 1,000x more costly to control than the single large DER ..." Hence, Mr. Nelson reasoned, "[i]f a solution is cost-effective for large DER, but not cost effective for small DER, then small DER should use a different management solution." OCA R. Exc. at 9 (quoting OCA St. 1SR at 34).

Next, the OCA highlights the testimony of its witness, Mr. Nelson, that PPL's assessment did not prove the need for real-time monitoring of all DERs through EDC-owned/operated devices. The OCA further notes that small DERs do not require real-time monitoring and could be served by less frequent, less costly monitoring methods. OCA R. Exc. at 9 (citing OCA St. 1 at 43). The OCA also notes the potential for third-party aggregators to provide control and communication services, which, the OCA argues, PPL has not adequately studied as an alternative. OCA R. Exc. at 10 (citing OCA St. 1SR at 42; OCA St. 1SR at 13). The OCA asserts that Mr. Nelson also identified other potentially more cost-effective solutions, such as advanced DER modeling and cloud-based communications. OCA R. Exc. at 10 (citing OCA M.B. at 35-36; OCA St. 1 at 14, 25; OCA St. 1SR at 38, 40).

The OCA concludes that the Commission should not simply modify PPL's plan to apply only to large DERs, but rather, in the interest of ratepayers, require PPL to submit a revised plan distinguishing small and large DER installments and presenting different solutions with supporting assessments and cost-benefit analysis for the Parties to review on a formal record. OCA R. Exc. at 10- 11

2. PPL's Exception No. 2 and Replies

In its Exception No. 2, PPL contends that the ALJ improperly found that PPL's requirements for interconnecting DERs have resulted in "credible harms." PPL Exc. at 18 (citing R.D. at 1, 42, 44-46, 49). Specifically PPL argues that: (1) the Company rebutted the JSPs' allegations regarding lost sales and interconnection delays;¹⁹ (2) the ALJ erroneously concluded that PPL has "blocked or limited market entry for Third-Party Aggregation" and "blocked or impeded competition from third-party grid

¹⁹ See PPL Exc. at 18-21 (citing PPL M.B. at 43-44; PPL St. 2 at 34-36; PPL St. 2-R at 21-22, 29-31, 49; PPL St. 2-RJ at 40).

services providers;”²⁰ (3) the JSPs’ claims regarding the DER management device’s interface with the communications were “flawed and overstated;”²¹ (4) the Company fully rebutted claims related to voided warranties and thermal damage;²² and (5) the ALJ incorrectly agreed with the JSPs that PPL’s inverter testing requirements “erode uniformity and the market certainty that the standards are intended to provide” and incorrectly agreed with the arguments calling for a statewide proceeding.²³ PPL Exc. at 18-29.

In reply, the JSPs contend that the ALJ did not overlook PPL’s argument that the AHC’s estimates of lost sales due to PPL’s Plan were overstated but instead found that the AHC “based its information on the location of the sites where sales were lost on, *inter alia*, copies of the customers’ utility bills.” JSPs R. Exc. at 12 (citing PPL Exc. at 19; citing R.D. at 13, FOF Nos. 45, 46). The JSPs emphasize the ALJ’s determination that “AHC provided evidence showing it denied sales to at least 52 customers because the customers requested products that were not on PPL’s Approved List,” which, the JSPs argue, supports the ALJ’s conclusion that “the JSPs demonstrated ... lost sales resulting from PPL’s program restrictions.” JSPs R. Exc. at 12 (citing R.D. at 13, FOF No. 43).

The JSPs argue that the ALJ correctly found that PPL has “blocked or limited market entry for third-party aggregation and blocked or impeded competition

²⁰ See PPL Exc. at 21-22 (citing PPL R.B. at 36-38).

²¹ See PPL Exc. at 22-24 (citing PPL R.B. at 38-41).

²² See PPL Exc. at 24-28 (citing PPL M.B. at 44-52).

²³ See PPL Exc. at 28-29 (citing PPL R.B. at 40-43).

from third-party grid service providers.” JSPs R. Exc. at 15 (citing PPL Exc. at 21-22). The JSPs note the reasoning behind such determination:

PPL’s ability to assert primary control of a customers’ inverter will be a significant blocker for third-party aggregators of battery energy storage in PPL’s territory and will block the provision of wholesale market grid services from aggregated DERs by creating unique and excessive risk and complexities for aggregators, which ultimately will dissuade them from aggregating Pennsylvania-based DERs.

JSPs R. Exc. at 15-16 (citing R.D. at 20, FOF No. 92).

Next, the JSPs assert that the ALJ did not ignore PPL’s claims that the JSPs’ complaints of interference with systems’ communications were overstated and flawed. JSPs R. Exc. at 16 (citing PPL Exc. at 22-23). Rather, the JSPs submit, the JSPs, the ALJ found that the JSPs raised several credible harms resulting from the Second DER Management Plan Standards. JSPs R. Exc. at 16 (citing R.D. at 44).

The JSPs further contend that the ALJ did not disregard the Company’s presentations that allegedly show that its connection of its devices to SolarEdge inverters did not cause thermal damage. Instead, the JSPs argue that the record contains credible evidence countering PPL’s claims, to which the ALJ cited. JSPs R. Exc. at 17-18 (citing PPL Exc. at 24-27). Noting the ALJ’s finding that “[a]lthough PPL’s connections of its wires voided the customers’ warranties, SolarEdge voluntarily replaced damaged customers inverters,” the JSPs point to the ALJ’s conclusion that the JSPs presented credible evidence that PPL “fail[ed] to account for its device installation voiding customers warranties and causing thermal damage.” JSPs R. Exc. at 18 (citing R.D. at 13, 45, FOF No. 107).

Lastly, the JSPs assert that the ALJ did not incorrectly find that PPL’s inverter testing erodes market certainty and uniformity, as PPL claims. JSPs R. Exc. at 19 (citing PPL Exc. at 28). Conversely, the JSPs argue that the ALJ found that: (1) PPL’s testing program exceeds both state and national standards, and that no other utility requires such testing; (2) PPL’s imposition of additional testing requirements has blocked or impeded inverters’ entry into PPL’s market; and (3) PPL’s imposition of additional testing requirements is unreasonable. JSPs R. Exc. at 19 (citing R.D. at 11, 13, and 22, FOF Nos. 32, 40, and 100).

In its reply, the OCA argues that the ALJ correctly determined that PPL failed to carry its burden of proof in demonstrating that the proposed standards of the Plan would not result in harms to owners of inverter-based DER installments. OCA R. Exc. at 11.

The OCA specifically notes what it characterizes as flaws in PPL’s arguments related to the ALJ’s conclusions that PPL had “blocked or limited market entry for Third-Party Aggregation” and “blocked or impeded competition from third-party grid services providers.” OCA R. Exc. at 12 (citing R.D. at 45; PPL Exc. at 22). The OCA points to the testimony of its witness, Mr. Nelson, who testified that PPL dismissed third-party aggregation as an alternative, “in spite of the fact that there are many examples of third-party aggregators providing such services, and zero examples of utilities enacting the type of mandatory management strategy proposed by PPL.” OCA R. Exc. at 12 (citing OCA St. 1SR at 41-42).

According to the OCA, the ALJ identified a concern that the Commission already provides standards for certification of interconnecting DERs at 52 Pa. Code § 75.22, but PPL sets forth additional requirements from interconnecting DERs. OCA R. Exc. at 12 (citing R.D. at 44). The OCA states that the ALJ concluded that “as a result of the standards imposed by PPL, the JSPs demonstrated harm to the JSPs, other solar

customers and companies, and the public interest generally.” OCA R. Exc. at 12 (quoting R.D. at 44). The OCA notes the ALJ’s finding that the JSPs had demonstrated the following categories of harm: (1) lost sales resulting from PPL’s program restrictions; (2) failure to account for additional losses to Pennsylvania businesses and customers; (3) blocked or limited market entry; (4) failure to account for the interference with customers’ communications and power generation; (5) blocked or impeded competition from third-party grid services providers; and (6) failure to account for its device installation voiding customers’ warranties and causing thermal damage. OCA R. Exc. at 13 (citing R.D. at 45).

The OCA emphasizes that an important theme of its concerns, that the ALJ repeats in the Recommended Decision, is that no other utility in the country mandates the same restrictions or controls as PPL’s proposal and that such proposal is not necessary for DER management. OCA R. Exc. at 13 (citing R.D. at 45).

The OCA reiterates its agreement with the ALJ that the JSPs raised important concerns regarding the potential harms to owners of inverter-based DER installations, which, the OCA argues, must be considered as a part of the Commission’s determination in this proceeding and resolved before implementation of a Second DER Management Plan. According to the OCA, the ALJ’s recommended adoption of the substantial evidence presented by the JSPs highlights the OCA’s overall concerns regarding how PPL has failed to meet its burden of proof under Section 1501 of the Code regarding safe and reliable service. Moreover, the OCA argues that the Findings of Fact demonstrate that the Company has failed to meet its burden of proof regarding interconnectivity standards. OCA R. Exc. at 14.

3. PPL's Exception No. 3 and Replies

In its Exception No. 3, PPL objects to the ALJ's conclusion that the Company's cost-benefit analyses do not support its proposed Second DER Management Plan. PPL Exc. at 29 (citing R.D. at 44, 46). To advance its position, PPL makes several arguments within the Company's Exception No. 3.

First, PPL maintains that, according to its forward-looking cost-benefit analysis (intended to justify its proposed Second DER Management Plan) conducted by Concentric and introduced in rebuttal testimony, the Company's proposal will produce a projected \$65.5 million in net benefits over the 2025-2030 period. PPL Exc. at 29-30 (citing PPL M.B. at 28-31; PPL Exh. SWW-1R). PPL further maintains that, by producing these net benefits, the Company's proposed Plan will directly benefit ratepayers through decreased revenue requirements in base rate proceedings. PPL Exc. at 31 (citing PPL M.B. at 35).

Second, PPL reiterates its discussion regarding "incremental hosting capacity," which accounts for 86% of present value benefits in PPL's cost-benefit analysis. PPL Exc. at 31-33 (citing PPL R.B. at 12-14). Specifically, PPL argues that, contrary to the ALJ's conclusion, which is based on the JSPs' allegations, the Company's cost-benefit analyses do not overstate the benefits of the incremental hosting capacity. PPL Exc. at 31 (citing R.D. at 46). PPL maintains that the JSPs took the testimony of the Company's witness, Mr. Wishart, about his "treatment of avoided energy costs" and "avoided infrastructure investments" out of context. PPL Exc. at 32-33 (citing PPL R.B. at 13-14).

Next, PPL alleges that the ALJ disregarded the Company's explanation as to why its cost-benefit analyses utilized different methodologies. PPL Exc. at 34-35 (citing PPL R.B. at 14-15). Similarly, PPL contends that the ALJ undervalued the

Company's explanation as to why it did not separately analyze autonomous smart inverter functions. PPL Exc. at 35-36 (citing PPL R.B. at 19).

Lastly, PPL argues that the ALJ erred in stating that the cost-benefit analyses are undermined by PPL's statement that its proposal would have a minimal rate impact even after excluding all benefits. PPL Exc. at 36 (citing R.D. at 46). PPL maintains that "the rate impact is minimal when solely looking at the costs of the Second DER Management Plan." PPL Exc. at 36 (citing PPL M.B. at 36).

In reply, the JSPs argue that the ALJ correctly determined that PPL's cost-benefit analyses do not support the Company's proposal. JSPs R. Exc. at 19. The JSPs point to the findings in the Recommended Decision where the ALJ finds merit to the Parties' criticisms that PPL did not provide reliable or positive cost-benefit analyses to support its proposal and that the JSPs persuasively argue that such analyses are undermined by both changing analyses and overstating the amount of benefits. *Id.* at 20 (citing R.D. at 46).

Specifically, the JSPs point to the ALJ's notation of the discrepancies between PPL's initial and rebuttal cost-benefits analyses. JSPs R. Exc. at 20 (citing R.D. at 24-25, FOF Nos. 115-18). In addition, the JSPs reference the ALJ's agreement with the JSPs that PPL did not adequately provide analyses comparing the costs and benefits of active management of DERs with the use of inverter autonomous grid support functions. JSPs R. Exc. at 21 (citing R.D. at 44). The JSPs assert that the ALJ rejected PPL's witness', Mr. Wishart's, conclusions regarding the amount of projected benefits to be yielded by the program and that the Commission should defer to the ALJ's evaluation and determination that the JSPs' presentation was more credible than PPL's witness, Mr. Wishart. JSPs R. Exc. at 22.

Next, the JSPs argue that the ALJ did not overlook PPL's explanation as to why its cost-benefit analyses used different methodologies, but rather, the ALJ found convincing the JSPs' argument that such analyses are undermined due to both changing analyses and overstating the amount of benefits. JSPs R. Exc. at 22-23 (citing PPL Exc. at 34; R.D. at 46). In a similar vein, the JSPs argue that the ALJ did not devalue PPL's explanation as to why it did not separately analyze autonomous smart inverter functions, as the ALJ considered and indirectly rejected PPL's explanation. JSPs R. Exc. at 23 (citing PPL Exc. at 35; R.D. at 31).

Lastly, the JSPs contend that the ALJ did not err in stating that the cost-benefit analyses are undermined by PPL's statement that its proposal would have a minimal rate impact even after excluding all benefits. The JSPs highlight the ALJ's reference to PPL's evidence on rate impacts as additional evidence that the Company's cost-benefit analyses are improbable. JSPs R. Exc. at 23 (citing PPL Exc. at 36; R.D. at 34).

In reply, the OCA argues that the ALJ correctly concluded that PPL failed to carry its burden of proof in that it failed to provide a reliable or positive cost-benefit analysis to support its proposal. OCA R. Exc. at 14 (citing R.D. at 44). In support of its argument, the OCA asserts that PPL introduced a new cost-benefit analysis in rebuttal testimony that significantly deviated from the Company's analysis presented in direct testimony. The OCA argues that, as a result, the Parties that addressed the cost-benefit analysis were deprived of a meaningful opportunity, as required by due process, to respond to PPL's rejoinder testimony on the subject. OCA R. Exc. at 14.

Regarding Concentric's cost-benefit analysis, the OCA contends that the Company's assigning of increased hosting capacity as the primary benefit to all ratepayers is significantly flawed, as this benefit accrues only to connecting DER customers, resulting in a cross subsidy where over 90% of ratepayers without DER are

paying for the majority of the costs of the second DER plan. OCA R. Exc. at 15. The OCA argues that the Company is not obligated, as an EDC, to increase hosting capacity and the increase to hosting capacity under the second DER plan requires that non-DER customers pay for the increase instead of DER owners/customers. *Id.* at 16 (citing OCA St. 1SR at 18-19). Further, the OCA notes the testimony of its witness, Mr. Nelson, that because most of the hosting capacity improvements from the DER Management device are from an increase in monitoring and visibility in the planning sphere, PPL should focus on improving its planning tools and interconnection process versus mandating deployment of field devices. OCA R. Exc. at 17 (citing OCA St. 1SR at 23).

Moreover, the OCA argues that Concentric's cost-benefit analysis fails to consider the costs of compensating net metering customers and that per statute, PPL is required to compensate net metering customers at the retail rate for any excess kWh. OCA R. Exc. at 17-18 (citing OCA M.B. at 34; 73 P.S. § 1648.5).

Next, the OCA contends that PPL failed to assess the costs and benefits of alternative strategies aside from the proposed mandatory active management approach for all DERs and that such failure supports the conclusion that the Company failed to carry its burden of providing a reliable or positive cost-benefit analysis to support its proposal. OCA R. Exc. at 18. The OCA references the testimony of its witness, Mr. Nelson, that the new cost-benefit analysis raised "several new questions...that underscore the need to evaluate alternatives to the Company's proposed mandatory active management approach to DER integration." OCA R. Exc. at 18 (citing OCA St. 1SR at 17-18; OCA R.B. at 8). According to Mr. Nelson, the second analysis "exaggerates benefits and obfuscates the incremental benefits" of its proposal "over other alternative management strategies, such as autonomous settings" and failed to "evaluate the costs and benefits of alternative strategies." *Id.*

The OCA notes that PPL was required under the DER Settlement to compare the cost and benefits of the distribution system operation of active management of DERs as compared to the benefits available through the use of inverter autonomous grid support functions. OCA R. Exc. at 19, 20. The OCA asserts that PPL failed to provide a clear comparison of the value of autonomous smart inverter functions in comparison to the active management benefits in the DER Pilot and consider whether autonomous function can maintain distribution system reliability in the face of substantial DER growth. OCA R. Exc. at 20 (citing OCA M.B. at 28). The OCA argues that, as a result of PPL's failure to comply with the DER Settlement, all Parties are disadvantaged, including PPL, when evaluating the Company's Pilot Program. OCA R. Exc. at 20 (citing OCA M.B. at 30; OCA R.B. at 15).

In its reply, the OSBA argues that the ALJ correctly determined that PPL's cost-benefit analysis did not support the Company's proposed Plan. According to the OSBA, PPL's forward-looking cost-benefit analysis is fundamentally flawed and misleading for several reasons. First, the OSBA argues that the Company's cost-benefit analysis was hastily assembled and introduced late in the proceeding, appearing for the first time in PPL's rebuttal testimony rather than being completed earlier and included in the Company's initial application. Second, the OSBA contends that PPL's cost-benefit analysis contains assumptions that grossly overstate the result. OSBA R. Exc. at 1.

In addition, the OSBA argues that PPL failed to apply for Commission approval to use DER monitoring devices for conservation voltage reduction services, as mandated by a recent Commission Order. According to the OSBA, the benefits of this service are not properly included in the forward-looking cost-benefit analysis and must be removed. OSBA R. Exc. at 2.

The OSBA notes that incremental hosting capacity accounts for 86% of present value benefits in PPL's cost-benefit analysis and that PPL's model calculates two

separate benefit streams linked to incremental hosting capacity: (1) avoided distribution infrastructure investment; and (2) avoided energy. According to the OSBA, multiple assumptions are used to calculate each benefit stream. OSBA R. Exc. at 2 (citing PPL Exc. at 32-33). The OSBA challenges PPL's claim that each DER Management device (that is installed in the future) will provide an additional 3.3 kW of hosting capacity, characterizing this as PPL's "guess." OSBA R. Exc. at 2 (citing OSBA M.B. at 5-6).

Next, the OSBA argues that PPL artificially inflates benefits by excluding various capital expenses from its cost-benefit analysis. The OSBA contends that PPL's cost-benefit analysis suffers from a fundamental limitation in that it focuses solely on demonstrating the benefits derived from active management. OSBA R. Exc. at 3. According to the OSBA, this narrow approach fails to provide a basis for comparing PPL's proposed Second DER Plan to other reasonable technical solutions. *Id.* (citing OSBA M.B. at 6).

The OSBA identifies what it characterizes as a major defect—the cost-benefit methodology and assumptions used in PPL's application to analyze the Pilot program differ substantially from those used in PPL's rebuttal testimony for the forward-looking cost-benefit analysis, despite both being intended to justify PPL's Plan. OSBA R. Exc. at 3 (citing PPL Exc. at 30-31).

The OSBA concludes that PPL's forward-looking cost-benefit analysis represents an example of selective analysis, where the Company included every possible future metric that favors the Company's position, while excluding any metrics that undermine it. OSBA R. Exc. at 4-5.

4. PPL's Exception No. 4 and Replies

In its Exception No. 4, as an alternative to outright rejection of its Petition, PPL asserts that the ALJ's recommendation failed to consider changes to the Company's proposal, such as other Parties' proposed modifications to the Company's proposal. PPL Exc. at 36-39.

Thus, PPL argues that the ALJ could have recommended that the Company modify its Plan so as to fashion an appropriate threshold for determining when DERs must participate therein. PPL Exc. at 37. PPL also asserts that the way to remedy the potential for its device installation to be causing thermal events could have been to require that it use a different control device, such as cloud-based monitoring. *Id.* Further, PPL states that the ALJ could have recommended that the DER Pilot Program be extended for a limited time pending PPL's production of an acceptable cost-benefit analysis. *Id.* at 39. PPL contends that, by recommending that the Commission reject the Plan in its entirety, the ALJ's recommendation is unreasonable and contravenes the public interest. PPL Exc. at 3.

In reply, the JSPs take issue with PPL's assertion that the ALJ failed to consider reasonable modifications to the Company's proposal. According to the JSPs, throughout the proceeding, PPL objected to the same modifications it now argues the ALJ failed to consider. JSPs R. Exc. at 23 (citing PPL Exc. at 36). The JSPs contend that the ALJ correctly recommended the denial of PPL's Petition due to the lack of record upon which the ALJ could have based any modifications. JSPs R. Exc. at 24.

In reply, the OCA argues that PPL failed to carry its burden of proof regarding any modifications to its proposal. The OCA emphasizes that there is a notable absence from the record of a submission of a revised Plan by the Company or any meaningful commitments or assessments to support revisions to its original Plan. The

OCA contends that it would be premature for the Commission to direct modifications to PPL's original Plan given the limited record and lack of substantial evidence as to appropriate modifications to the Plan. OCA R. Exc. at 20. In support, the OCA contends that PPL only mentioned its willingness to explore cloud-based communication in rejoinder testimony and that such willingness is not fully developed or supported in its filing. OCA R. Exc. at 21 (citing OCA R.B. at 17). The OCA notes that its witness, Mr. Nelson, testified that PPL's voluminous rebuttal necessitated revising his direct testimony recommendation to recommend that the Commission reject PPL's proposed Plan. OCA R. Exc. at 21 (citing OCA St. 1SR at 2-3; OCA R.B. at 18).

The OCA proposes that in pursuit of a revised Plan, the Commission could direct further proceedings and that such proceedings should begin by PPL proposing a revised Plan. Moreover, the OCA notes that in this proceeding, it recommended requiring PPL to file a DER Orchestration Plan consisting of: (1) PPL's DER integration strategy; (2) alternatives analysis considering the size and type of DER, third-party services and procurements, and the enabling costs for integration; and (3) a cost-benefit or cost-effectiveness framework used to evaluate the alternatives analysis and selected approach. OCA R. Exc. at 22. Additionally, the OCA proposes that PPL should be required to provide an evaluation of three different flexible interconnection approaches that apply to both exporting and importing facilities including export and import limitation schemes, scheduled interconnections, and actively managed interconnections. *Id.* at 22-23.

5. JSPs' Exceptions and Replies²⁴

As a threshold matter, the JSPs note that they “take no exception to any aspect of the [Recommended Decision],” and therefore styled their Exceptions as a brief. The JSPs explain that they “submit [their] ‘brief’ to note ‘exceptions’ with the ALJ’s omission of certain housekeeping matters that will need to be addressed for PPL to wind down its Pilot Program, should the Commission adopt the [Recommended Decision] and deny PPL’s Petition.” JSPs Exc. at 2.

²⁴ We note that the format of the JSPs’ Exceptions does not strictly comply with Section 5.533 of our Regulations:

§ 5.533. Procedure to except to initial, tentative and recommended decisions.

* * *

(b) Each exception must be numbered and identify the finding of fact or conclusion of law to which exception is taken and cite relevant pages of the decision. Supporting reasons for the exceptions shall follow each specific exception.

(c) The exceptions must be concise. The exceptions and supporting reasons must be limited to 40 pages in length. Statements of reasons supporting exceptions must, insofar as practicable, incorporate by reference and citation, relevant portions of the record and passages in previously filed briefs. A separate brief in support of or in reply to exceptions may not be filed with the Secretary under § 1.4 (relating to filing generally).

However, Section 1.2(a) of our Regulations allows for the liberal construction of our requirements in order to secure a just, speedy, and inexpensive determination, so long as the substantive rights of the Parties are not affected. 52 Pa. Code § 1.2(a). As such, we find that considering the merits of the JSPs Exceptions will not affect the substantive rights of any Party. Consequently, we will consider those Exceptions in this Opinion and Order.

In their Exceptions, the JSPs request that the Commission impose certain restrictions on PPL if the Second DER Management Plan is not approved and the Company's Pilot Program ends. JSPs Exc. at 2-5. Specifically, the JSPs ask the Commission to clarify that if the Company's proposal is denied: (1) "PPL is not authorized to subject inverters to PPL DER Lab testing, nor to condition interconnection on the results of any testing done by it or on its behalf;" (2) "PPL is no longer allowed to restrict installation of certain inverter types to single-inverter installations or maintain any other restrictions that were based on testing PPL performed under the Pilot for compatibility with its DER Management Device;" (3) PPL will cease maintaining and publishing its list of inverters that are approved for interconnection with the Company's distribution system ("Approved Inverter List"); and (4) "for those Customer-Owned or Third-Party Owned smart inverters who have not consented to continued monitoring, PPL disconnect, or allow disconnection of, its Device from those data ports."²⁵ JSPs Exc. at 3-5.

In addition, the JSPs renew their request, initially made in their Main Brief, that the Commission order PPL to "replace SolarEdge inverters in which it has installed its Device or pay \$2 million into a fund for replacements of inverters with PPL's Devices installed and thermal damage." JSPs Exc. at 5.

In reply, as a threshold matter, PPL submits that the JSPs Exceptions do not conform with the Commission's Regulations because they are styled as a brief,²⁶ are

²⁵ As support for this argument, the JSPs claim that the DER Management device may interfere with installer's attempts to service DER systems and that PPL's access to data ports threatens to complicate potential use of the data ports by DER aggregators in the future. JSPs Exc. at 5.

²⁶ Section 5.533(c) of the Commission's Regulations provides that "[a] separate brief in support of or in reply to exceptions may not be filed with the Secretary under § 1.4." 52 Pa. Code § 5.533(c).

unnumbered,²⁷ and improperly raise new arguments that are unsupported by the record in this proceeding.^{28,29} PPL R. Exc. at 2.

Notwithstanding the foregoing, PPL counters that the JSPs' Exceptions inappropriately seek to amend the Commission's *December 2020 Order*, approving the DER Settlement. PPL points out that, apart from PPL's continued ability to monitor DERs using the DER Management devices with written customer consent, none of the JSPs' proposed conditions on the end of the Pilot Program are set forth in the DER Settlement. PPL notes that Paragraph 63 of the DER Settlement already addresses what PPL is authorized to do when: (1) the Pilot Program ends; and (2) the Company no longer can actively manage DERs, which states:

Regardless of whether this remote active management program is continued or not, the Company will be authorized to continue: (a) requiring new DERs to have IEEE 1547-2018 compliant smart inverters per Paragraph 49, supra; (b) utilizing the smart inverters' automated grid support functions per Paragraph 58, supra; and (c) monitoring the DERs that have the Company's DER management devices

²⁷ Section 5.533(b) of the Commission's Regulations provides that "[e]ach exception must be numbered and identify the finding of fact or conclusion of law to which exception is taken and cite relevant pages of the decision. Supporting reasons for the exceptions shall follow each specific exception." 52 Pa. Code § 5.533(b).

²⁸ See, e.g., *Application of Apollo Gas Company*, 1994 Pa. PUC LEXIS 45, at *8-9 (Order entered February 10, 1994) (denying party's attempt to introduce extra-record evidence in its exceptions); *Arthurs v. Pa. Elec. Co.*, 2019 Pa. PUC LEXIS 197, at *14 (Order entered May 23, 2019) ("This Commission can consider only the evidence in the record before us, and we cannot consider extra record evidence or new arguments presented for the first time in the Exceptions stage of the proceeding.").

²⁹ As previously noted, although that the format of the JSPs' Exceptions does not strictly comply with Section 5.533 of our Regulations, we find that considering the merits of the JSPs Exceptions will not affect the substantive rights of any Party. Consequently, we will consider those Exceptions in this Opinion and Order.

installed per Paragraph 55, *supra*, provided that such monitoring shall continue only with written customer consent.

PPL R. Exc. at 4 (citing DER Settlement at ¶ 63). Therefore, according to PPL, though framed as requests for clarifications to be made in the Commission’s Final Order entered in this proceeding, adopting the JSPs’ proposals would require the Commission to clarify or modify its *December 2020 Order*. PPL R. Exc. at 4.

PPL further points out that throughout the JSPs’ Exceptions, they request that the Commission prohibit PPL from taking certain actions “as of the date of [the Commission’s] Final Order,” based on the premise that the Pilot Program would cease at that Point. PPL R. Exc. at 6 (citing JSPs Exc. at 3-4). PPL contends that these requests directly conflict with the Commission’s *September 2024 Order*, which extended the term of PPL’s DER Pilot Program until thirty days after the Final Order is entered in the instant docket. PPL R. Exc. at 6-7.

In addition, PPL objects to the JSPs’ requests for relief that, according to PPL, were improperly raised for the first time in their Exceptions or Main Brief. PPL R. Exc. at 7-9. By waiting until their Exceptions or Main Brief to raise certain arguments and requests for relief, PPL contends that the JSPs denied PPL the opportunity to engage in discovery, present testimony, and cross examine witnesses about these issues. Accordingly, PPL submits that if the Commission were to consider or grant these arguments and requests for relief now, PPL’s due process rights would be violated. *Id.* at 9.

Next, PPL focuses on the JSPs’ assertion that Commission clarification is needed to “confirm that as of the date of the Final Order issued in this Docket, for those Customer-Owned or Third- Party Owned smart inverters who have not consented to continued monitoring, PPL disconnect, or allow disconnection of, its Device from those

data ports.” PPL R. Exc. at 10-12 (citing JSPs Exc. at 4). PPL objects to this request for clarification, arguing that it is based on the JSPs’ flawed allegations that PPL’s DER Management devices have interrupted interfered with inverter communications, and no credible evidence supports the JSPs’ claims that PPL’s DER Management devices have blocked or limited market entry for third-party aggregation or blocked or impeded competition from third-party grid service providers. PPL R. Exc. at 10.

According to PPL, not only does the JSPs’ request directly conflict with the Commission’s *September 2024 Order* by requesting the Commission to order the Company to remove all devices from the data ports “as of the day of the” issuance of a Final Order in the instant proceeding, as previously indicated, but nothing in the record establishes that the Company could disconnect all its DER Management devices (at over 9,000 customer locations as of December 2, 2024) from the inverters’ data ports on the same day that the Commission issues its Final Order in this proceeding. *Id.* at 11. PPL submits that the JSPs’ request contravenes common sense and the Settlement’s intent, which was to allow monitoring to continue provided the Company obtains written customer consent. *Id.* at 11-12.

Next, PPL objects to the JSPs request for relief regarding inverter testing and approval. PPL R. Exc. at 12-13. As previously argued by PPL, the JSPs’ requests that: (1) the Commission order PPL to discontinue its Approved Inverter List; and (2) that the Commission prohibit inverter testing altogether were inappropriately raised for the first time in Exceptions and, likewise, inappropriately seek to amend the Commission’s *December 2020 Order*. *Id.* at 12. PPL adds that by prohibiting the Company from testing inverters and placing reasonable limitations on installations based on that testing, it would hamper the Company’s ability to provide safe and reasonable service to its customers. Therefore, the Company asserts that its testing of inverters

cannot and should not end entirely if the Pilot Program ends and the Second DER Management Plan is rejected.³⁰ *Id.* at 12-13.

Lastly, PPL opposes the JSPs' renewed request for the Commission to order PPL to "replace SolarEdge inverters in which it has installed its Device, or pay \$2 million into a fund for replacements of inverters with PPL's Devices installed and thermal damage." PPL R. Exc. at 13 (citing JSPs Exc. at 2, 5). According to PPL, such request for relief should be denied for several reasons. PPL R. Exc. at 13-14. First, PPL argues that the JSPs' request amounts to an improper request for damages of which the Commission does not have the authority to order. Second, PPL argues that such request should not be granted as the burden of proof lies with PPL for approval of its Second DER Management Plan, where the sole determination is whether PPL's Petition should be approved with or without modification. *Id.* at 14. Further, PPL argues that the JSPs' requested relief goes beyond the scope of this proceeding by seeking affirmative relief from the Commission, which PPL contends, is more appropriately sought in a formal complaint proceeding pursuant to Section 701 of the Code. *Id.* at 15.

F. Disposition

1. PPL's Exceptions

At the outset, we acknowledge that the ability to install a DER is of great importance to many residential and commercial customers, as this provides an option to reduce electricity bills and increase consumption of renewable energy, thereby mitigating greenhouse gas emissions. We also recognize the challenges PPL faces, in this context,

³⁰ PPL explains that if the Pilot Program ceases and the Second DER Management Plan is not approved, the Company anticipates that it would no longer test inverters for compatibility with the DER Management device, given that such device would not be installed moving forward. PPL R. Exc. at 13.

to meet its obligation to provide reasonable, safe, and reliable service to its customers even as increasing DER adoption removes some control from the Company and may cause the provision of these services to be more challenging. Therefore, it is important that these programs strike the proper balance between encouraging DER adoption without negatively impacting the safety or reliability of the distribution system.

Based on our review of the record,³¹ the ALJ's Recommended Decision, the Exceptions to the Recommended Decision, the Replies to Exceptions, and PPL's proposed Second DER Management Plan, we disagree with ALJ Coogan that the Parties opposing PPL's proposal (*i.e.* the JSPs, the OCA, the OSBA, and SEF) presented evidence outweighing the evidence presented by PPL. Rather, we agree with PPL that the Company has thoroughly demonstrated that its proposed Plan will produce significant benefits for PPL's ratepayers, interconnecting customer-generators, and its electric distribution system that are well in excess of the costs of its proposal. Accordingly, as discussed below, we shall reverse the ALJ's recommendation and grant PPL's Petition, as modified by this Opinion and Order.

In its Exceptions, PPL argues that its Second DER Management Plan: (1) is reasonable and necessary, especially given the resource adequacy challenges before the Commonwealth; (2) does not result in credible harms to the JSPs; and (3) is supported by the Company's cost-benefit analyses.

Specifically, in its Exception No. 1, PPL contends that the ALJ erred in finding "that PPL has not demonstrated why the scope of its proposed active monitoring

³¹ This case was extensively litigated, involving tens of thousands of pages of direct, rebuttal, surrebuttal, rejoinder and surrejoinder testimony and hundreds of exhibits from the Parties' witnesses; two days of evidentiary hearings, post-hearing briefs; and extensive and heavily litigated written discovery. PPL filed testimony from thirteen witnesses; the JSPs filed testimony from fifteen witnesses. PPL cross-examined four of the JSP's witnesses. The JSPs cross-examined ten of PPL's witnesses.

and control of DER devices is reasonable or necessary.” PPL states that its proposal, a “first-in-the-nation” design, establishes the Company in the vanguard of distribution advancement by improving reliability and helping to address the significant resource adequacy challenges faced by the Commonwealth. PPL highlights the importance of reviewing the Petition with an understanding of the technological maturity of its existing distribution infrastructure. The Company contends that regulators and utilities should consider the opportunity to utilize certain functions before achieving higher penetration of DERs in order to optimize future DER growth and avoid any negative impacts as penetration increases. PPL Exc. at 9.

PPL further contends that the continued unmonitored and unmanaged deployment of DERs presents challenges to the safe and reliable operation of electric distribution systems and to the electrical grid at large. These challenges include manifesting voltage changes outside regulatory limits, increasing wear-and-tear of voltage management devices, overloading circuits leading to failure or accelerated loss of life, disruptions to conservation voltage reductions, continued energization of “islanded” feeders presenting risks to utility workers and the public, damages to other customers equipment caused by transient overvoltage, and issues caused by “load masking” where DER load masks actual demand causing challenges, including faulty switching decision. PPL Exc. at 10-11.

Notably, the Company submits that approval of the Petition will help address resource adequacy by increasing the hosting capacity on distribution circuits, thereby permitting more customers to connect DERs and larger DERs to be connected without requiring system upgrades.

We find that the record herein supports granting PPL’s Exception No. 1. As distributed energy investments in the Commonwealth continue to grow, it is reasonable to design programs and protocols to better coordinate utility hosting of these

resources in an effective manner. The DER Pilot has already mitigated over 604,000 voltage violations through active management. There is no doubt that continuation and expansion of PPL's Pilot, as proposed, will continue to provide benefits of better managed voltage.

Further, we are of the opinion that all tools to help manage resource adequacy must be duly considered. The increased capacity to host DERs will help de-stress the transmission system. PPL's projections, based on its experience from the DER Pilot, exhibit that this proposal would increase incremental hosting capacity by 258 MWs over a five-year period. PPL St. 10-R at 16. Further, enhanced voltage management will result in more efficient use of electricity, thereby decreasing the overall watts needed, again offering a helpful hand in meeting the electric resource needs of the future.

In its Exception No. 2, PPL contends that the ALJ improperly found that PPL's requirements for interconnecting DERs have resulted in "credible harms" to the JSPs. In response to the JSP's claims concerning adverse effects of the Second DER Management Plan, PPL provided evidence to rebut each of the JSP's claims regarding lost sales and interconnection delays. *See* PPL Exc. at 19-21. Specifically, PPL provided record evidence which, we find in the aggregate, sufficiently rebuts and outweighs the JSPs claims regarding harm; including, but not limited to:

- Asserted lost sales from locations outside of PPL's service territory. PPL M.B. at 43.
- Included smart inverter cost analyses with inaccurate size comparisons. PPL St. 2-R at 21-22.
- Failed to use actual revenues, number or projects, and costs. *Id.* at 29-31, 49.

- Misstated the underlying cause of alleged installation delays. *Id.* at 40.
- Overstated the labor costs associated with smart inverter installations. *Id.* at 34, 36.

Based on this evidence, we find that PPL has satisfactorily rebutted the JSPs claims of “credible harms” regarding lost sales and/or interconnection delays.

In addition to asserting lost sales and interconnection delays, the JSPs assert that PPL’s Second DER Management Plan has “blocked or limited market entry for third-party aggregation and blocked or impeded competition from third-party grid service providers.” JSPs R. Exc. at 15. In response, PPL asserts that nothing in its Second DER Management Plan inhibits or precludes DERs from contracting with aggregators or participating in third-party aggregation. In fact, PPL stated that it is willing to conduct a Request for Proposal (RFP) to receive bids from third-party aggregators and original equipment manufacturers. In evaluating these bids, “PPL Electric would evaluate, among other things, the cost, the amount and location of the bidder’s DERs, and the bidder’s ability to transmit the Company’s commands to the DERs.” PPL R.B. at 26 (citing PPL St. 1-RJ at 6).

To ensure that PPL’s Second DER Management Plan does not result in blocked or limited market entry for third-party aggregation for DERs, we will direct PPL to conduct an RFP from third-party aggregators. As such, we do not find any potential harm attributable to the JSPs blocked or limited market entry claims. Accordingly, we find that PPL’s Exception No. 2 should be granted, with the RFP modification explained herein.

In its Exception No. 3, PPL objects to the ALJ’s conclusion that the Company’s cost-benefit analyses do not support its proposed Second DER Management Plan. We agree with PPL that the Company has thoroughly demonstrated that its

proposed plan will produce significant benefits for PPL's ratepayers, interconnecting customer-generators, and its electric distribution system that are well in excess of the costs of its proposal.

To conduct a cost-benefit analysis of its proposed plan, PPL retained a third party, Concentric Energy Advisory, Inc. (Concentric). Concentric's cost-benefit analysis determined that between 2025 and 2030, PPL's Second DER Management Plan will result in significantly higher benefits than projected costs. More specifically, Concentric projected that the total costs related to active management in that period will total \$26.5 million, with active management producing more than \$48 million in benefits, including approximately \$7.9 million in reduced operations and maintenance (O&M) expense, \$13.4 million in avoided distribution infrastructure investments, \$18.7 million in energy reduction, and \$7.8 million in conservation voltage reduction. In addition to examining the benefits associated exclusively with active management, Concentric's modeling further projected the benefits attributable to the detailed monitoring of the Company's distribution system enabled by DER Management devices. Accounting for the monitoring capabilities created by the installation of DER Management devices results in net benefits that are even greater, growing to approximately \$65.5 million on a net present value basis, with the monitoring capabilities alone producing an additional \$98.6 million in total benefits. PPL Exc. at 29-31.

Importantly, PPL provided that after accounting for these reduced capital costs and expenses from the Company's Second DER Management Plan, the estimated revenue requirement impact would be approximately \$4.5 million lower than without the proposed program. PPL asserts that this would put a downward pressure on rates and would decrease customers' bills. PPL Exc. at 31.

Based on this cost-benefit analyses, we believe that PPL has met its burden of proof to demonstrate that the benefits of its Second DER Management Plan

significantly outweigh the costs, to the direct benefit of its ratepayers. Therefore, PPL's Exception No. 3 shall be granted.

We note that, as an alternative to outright rejection, as recommended by the ALJ, PPL, in its Exception No. 4, requests that the Commission direct reasonable modifications to its proposed Plan, which PPL contends that the ALJ failed to consider. Originally, in its direct testimony, the OCA made proposals for PPL to file a DER Orchestration Plan and provide an evaluation of three different flexible interconnection approaches within twelve months of the entry of Commission's final Order in this proceeding. OCA St. 1 at 6-7. In its testimony, PPL stated that the Company is willing to file such a DER Orchestration Plan. PPL St. 1-R at 20. We agree with PPL and with the OCA's original recommendation that the Company should be required to file a DER Orchestration Plan and provide an evaluation of three different flexible interconnection approaches within twelve months of the entry of the Commission's final Order in this proceeding. Accordingly, we shall grant PPL's Exception No. 4, in part, to the extent that we are directing PPL to adopt the DER Orchestration Plan modification, as set forth herein.

2. JSPs' Exceptions

Lastly, the JSPs' request for relief included a request that the Commission order PPL to replace all SolarEdge inverters on which it has installed its DER Management devices or pay \$2 million into a fund for replacing such inverters. This request for relief was presented in the JSPs' Main and Reply Briefs and repeated in their Exceptions. We find that the ALJ was correct in not addressing this request for relief found in the JSPs' Briefs. This request was not presented at the evidentiary hearing, and PPL did not have an opportunity to hear the requests or respond to them at the hearing. Considering the requests at the briefing stage or in the Exceptions would violate PPL's right to due process. *Hess v. Pa. PUC*, 107 A.3d 246, 266 (Pa. Cmwlth. 2014).

Moreover, neither the ALJ nor the Commission can direct PPL to replace all SolarEdge inverters on which the Company has installed its devices or pay for the replacement of such inverters. The Commission does not have the authority to order a public utility service to pay monetary damages. *Feingold v. Bell Tel. Co. of Pa.*, 383 A.2d 791 (Pa. 1977) (*Feingold*); *Byer v. Peoples Natural Gas Co.*, 380 A.2d 383 (Pa. Super. 1977); *DeFrancesco v. Western Pa. Water Co.*, 453 A.2d 595 (Pa. 1982); *Elkin v. Bell of Pa.*, 420 A.2d 371 (Pa. 1980). Therefore, a request for damages is not appropriately before the Commission; rather, damage payments must be ordered by a court of competent jurisdiction, such as a county court of common pleas. *Feingold*. Accordingly, the JSPs' request for damages cannot, and will not, be considered here.

For similar reasons, it is inappropriate for the JSPs to take the new position, in the Exceptions stage, that PPL cannot conduct any testing on any inverters that will be interconnected to its distribution system, without any regard to operations or safety. Before the ALJ, the JSPs neither argued this position nor introduce any testimony or evidence specifically in support of their new request to prohibit the Company from maintaining and publishing its Approved Inverter List if the Pilot Program ends.

PPL correctly notes that Paragraph 63 of the DER Settlement already addresses what PPL is authorized to do when: (1) the Pilot Program ends; and (2) the Company no longer can actively manage DERs. PPL R. Exc. at 4 (citing DER Settlement at ¶ 63). Therefore, none of the JSPs' proposed conditions on the end of the Pilot Program, apart from PPL's continued ability to monitor DERs using the DER Management devices with written customer consent, are set forth in the DER Settlement. For example, the DER Settlement does not require PPL to remove its DER Management devices when the Pilot Program ends, nor does the DER Settlement prohibit the Company from testing inverters, maintaining an Approved Inverter List, or placing appropriate restrictions on inverters interconnecting with its distribution system. Therefore, adopting the JSPs' proposals would require the Commission to clarify or modify its

December 2020 Order, especially since the Commission’s *December 2020 Order*, approving the DER Settlement, already sets forth the terms governing the end of the Pilot Program, and was silent about the removal of installed DER Management devices from the inverters’ data ports. Given the *December 2020 Order*’s silence on this point, the decision on whether to disconnect or allow the disconnection of DER Management devices from the inverters’ data ports is a matter that should be left to PPL’s managerial discretion.³²

Moreover, several of the JSPs’ requests contravene the Commission’s *September 2024 Order* and the relief granted therein, by requesting that the Commission prohibit PPL from continuing to operate its Pilot Program as of the date of its Final Order in this proceeding.³³ Accordingly, we shall deny the JSPs’ Exceptions.

III. Conclusion

For the reasons discussed herein, we will: (1) grant, in part, and deny, in part, the Exceptions of PPL; (2) deny the Exceptions of the JSPs; (3) reverse the ALJ’s Recommended Decision; and (4) approve PPL’s Petition, as modified by, and consistent with, this Opinion and Order. ; **THEREFORE**,

³² The Commission is not a “super-board of directors” for the public utility companies, and it has no right of management over them. *Peoples Cab Co. v. Pa. PUC*, 137 A.2d 873, 878 (Pa. Super. 1957). Further, as explained by the Pennsylvania Supreme Court under the management decision doctrine “it is not within the province of the Commission to interfere with the management of a utility unless an abuse of discretion or arbitrary action by the utility has been shown.” *Pickford v. Pa. PUC*, 4 A.3d 707, 715 (Pa. Cmwlth. 2010) quoting *Pa. PUC v. Philadelphia Electric Company*, 561 A.2d 1224, 1226–27 (Pa. 1989).

³³ As indicated, *supra*, due to the constrained time frame to litigate the Second DER Management Plan before the Pilot Program sunset on March 21, 2025, by the *September 2024 Order*, the term of PPL’s DER Pilot Program was extended until thirty days after the Final Order is entered in the instant docket.

IT IS ORDERED:

1. That the Exceptions filed by PPL Electric Utilities Corporation on July 15, 2025, to the Recommended Decision of Administrative Law Judge John M. Coogan, issued on June 30, 2025, in the above-captioned proceeding, are granted, in part, and denied, in part, consistent with this Opinion and Order, modifying PPL Electric Utilities Corporation's Petition for Approval of its Second Distributed Energy Resources Management Plan.

2. That the Exceptions filed by American Home Contractors, Inc., Enphase Energy, Inc., the Solar Energy Industries Association, SolarEdge Technologies, Inc., Sun Directed, Tesla, Inc., and Trinity Solar, LLC on July 15, 2025, to the Recommended Decision of Administrative Law Judge John M. Coogan, issued on June 30, 2025, in the above-captioned proceeding, are denied, consistent with this Opinion and Order.

3. That the Recommended Decision of Administrative Law Judge John M. Coogan, issued on June 30, 2025, in the above-captioned proceeding, is reversed, consistent with this Opinion and Order.

4. That PPL Electric Utilities Corporation's Petition for Approval of its Second Distributed Energy Resources Management Plan is granted, as modified by, and consistent with, this Opinion and Order.

5. That within twelve (12) months of the entry date of the Commission's Opinion and Order in this proceeding, PPL Electric Utilities Corporation shall file a Distributed Energy Resource Orchestration Plan with the Commission and provide an evaluation of three (3) different flexible interconnection approaches.

6. That within twelve (12) months of the entry date of this Opinion and Order in this proceeding, PPL Electric Utilities Corporation shall conduct a Request for Proposal from third-party aggregators and original equipment manufacturers.

7. That a copy of this Opinion and Order be served on the Commission's Bureau of Technical Utility Services, Energy Division.

8. That this proceeding, at Docket No. P-2024-3049223, remain open, pending satisfactory compliance with the directives set forth in Ordering Paragraph Nos. 5 and 6 above.

BY THE COMMISSION,



Matthew L. Homsher
Secretary

(SEAL)

ORDER ADOPTED: November 6, 2025

ORDER ENTERED: December 3, 2025