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February 16, 2024

VIA ELECTRONIC FILING

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

Re: 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: REPLY OF JOINT SOLAR PARTIES

Dear Secretary Chiavetta:

Enclosed for filing in the above-captioned docket is the Reply of the Joint Solar Parties ("JSPs") to the January 29, 2024 Answer of PPL Electric Utilities Corporation ("PPL") to the JSP's Petition for Rescission or Amendment of PPL Electric's Distributed Energy Resources Management Pilot and Request for Expedited Proceeding. .

Please contact me if you have any questions concerning today's filings.

Very truly yours,

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Attachments

BEFORE THE PENNSYLVANIA PUBLIC UTILITY COMMISSION

Petition of PPL Electric Utilities Corporation

For Approval of Tariff Modifications and

Waivers of Regulations Necessary to

Docket No. P-2019-3010128

Implement its Distributed Energy Resources

Management Plan

REPLY OF TESLA, INC., AMERICAN HOME CONTRACTORS, SUN DIRECTED, SUNRUN, INC., and SOLAR ENERGY INDUSTRIES ASSOCIATION ("JOINT SOLAR PARTIES")

Pursuant to 52 Pa. Code § 5.63, Tesla, Inc. ("Tesla"), American Home Contractors ("AHC"), Sun Directed, Sunrun, Inc. ("Sunrun") and the Solar Energy Industries Association ("SEIA") (collectively, the "Joint Solar Parties" or "JSPs" or "Petitioners"), by and through their attorneys, hereby respectfully submit this Reply to the January 29, 2024 Answer of PPL Electric Utilities Corporation ("PPL") to the JSPs' Petition for Rescission or Amendment of PPL Electric's Distributed Energy Resources Management Pilot and Request for Expedited Proceeding ("PPL Answer").

PPL's so-called Answer violates the Commission's rules in a number of ways. 52 Pa. Code § 5.61(e) requires that the answer "advise the parties and the Commission of the parties' position on the issues raised in the petition;" and "state concisely the facts and matters of law relied on."

Form of answers to petitions. The answer must be in writing and:

¹ 52 Pa. Code § 5.61(e) provides:

⁽¹⁾ Advise the parties and the Commission of the parties' position on the issues raised in the petition.

⁽²⁾ State the parties' standing to participate in any Commission proceeding resulting from the petition.

⁽³⁾ State concisely the facts and matters of law relied upon.

⁽⁴⁾ Include a copy of a document

But PPL's Answer is half argument, far exceeding the bounds of 52 Pa. Code § 5.61(e), and half New Matter, which the rules require to have been raised under the heading "New Matter," in other words, that the New Matter be clearly called out as such, and not be surreptitiously baked into an Answer. Thus, PPL's stealth move not only triggers the JSPs' right to file a Reply under Pa. Code § 5.63, it compels that they do, lest their failure to reply to each allegation be deemed in default and the allegations stated in PPL's Answer be deemed admitted.

Accordingly, the JSPs hereby respectfully reply to both PPL's narrative argument and its individual allegations. Each enumerated paragraph corresponds to the same-numbered paragraph in PPL's Answer. The JSPs deny all allegations in the Answer, whether express or implied, that are not specifically and expressly admitted below. The JSPs deny that the headings contained in PPL's Answer constitute allegations of fact, and JSPs deny them, to the extent they are considered as such. The JSPs reserve the right to amend their Reply.

REPLY TO PPL'S ARGUMENT

To recapitulate: on January 18, 2024, the JSPs filed a Petition for Rescission or Amendment⁵ of a December 17, 2020 approval of a PPL pilot program (hereinafter, the

² 52 Pa. Code § 5.62(b) states: "Answers raising new matter. An affirmative defense shall be pleaded in an answer or other responsive pleading under the heading of "New Matter." A party may set forth as new matter another material fact which is not merely a denial of the averments of the preceding pleading."

³ Compare, e.g., a June 5, 2012 "Notice to Plead" filed in Docket Nos. C-2011-2253750, available at: https://www.puc.pa.gov/pcdocs/1180304.pdf, which clearly advises the parties and the Commission that the Respondent has included New Matter in its Answer, and the consequences of the Complainant's failure to respond.

⁴ 52 Pa. Code § 5.63 ("Replies to answers seeking . . . new matter") provides:

⁽a) Unless otherwise ordered by the Commission, replies to answers seeking affirmative relief or to new matter shall be filed with the Commission and served within 20 das after date of service of the answer, but not later than 5 days prior to the date set for the commencement of the hearing.

⁽b) Failure to file a timely reply to new matter may be deemed in default, and relevant facts stated in the new matter may be deemed to be admitted . . .

⁵ The Verified Petition of Joint Solar Parties for Rescission or Amendment of PPL Electric's Distributed Energy Resources Management Pilot; and Request for Expedited Proceeding, will hereinafter be referred to as "JSPs' Petition."

"program").6 The program requires as a condition of interconnection that every customer-owned solar system in PPL territory install a PPL-owned device PPL can use to "manage" the customer's solar energy generation by controlling the customer's PPL-approved inverter. The JSPs' Petition alleges that PPL's approved program, as implemented, has had the effect of restricting the pool of eligible inverters, causing and exacerbating equipment sourcing issues, constricting the types and variety of solar systems that can be installed, and driving up the costs of and delaying installation of solar systems, all of which are harming the clean energy market in the Commonwealth. Further, the JSPs allege that the program, as implemented, is causing severe technical problems, disrupting customers' and installers' ability to communicate with their customers' solar systems and to interpret and/or respond to alerts of system failures, as well as interfering with customers' systems' production of Solar Renewable Energy Credits ("SRECs"). As a result of these largely newly revealed problems, whose existence and/or severity only became manifest once the program was up and running, several installers began closing their operations in PPL territory last summer, and/or significantly curtailing the types of services and equipment they offer.

PPL, in its Answer, fights back hard on JSPs' Petition. ⁷ Chiefly, it argues that the program must run its full 3-Year course; that changes, if any, <u>may</u> be able to be made only if and when the program is extended into a Year 4 (i.e., no earlier than March, 2025⁸); and perversely, that

⁶ The JSPs concur with PPL, as it notes in its Answer at n. 22, that the Commission's December 20, 2020 Order did not approve the Pilot Implementation Plan, and reply they are not contending that the Order approved said Plan. Rather, they are challenging the Order's approval of a Program designed to preclude any opt-outs until the 3-Year program period has expired (see Recommended Decision, ¶ 31), and whose implementation, as contemplated in the program approved via the Order (see Id., ¶ 33), has harmed and will continue to harm the JSPs each day the program continues unchanged. That they are now experiencing harms as a result of program implementation underscores that the JSPs Petition is grounded in "newly discovered evidence" and/or "considerations which appear to have been overlooked or not addressed by the Commission," and are not a re-hashing of evidence or second opportunity to argue properly resolved matters. See Duick, 56 Pa. P.U.C. 55, 559 (Order dated Dec. 17, 1982).

⁷ Additionally, on January 31, 2024, the Office of Consumer Affairs ("OCA") filed a Notice of Intervention pertaining to the Petition and provided a "Public Statement of the Office of Consumer Advocate Pursuant to 71 P.S. Section 309-4(e)" (hereinafter "OCA Statement").

⁸ RD SFOF ¶ 31.

Petitioners should not now be heard on the disruptions they have encountered as a result of program implementation because neither they nor any of the parties to the proceeding four years ago, had engaged fortune tellers able to predict future problems.

The JSPs' motivation is <u>not</u> to relitigate the merits of the approved program. Rather, the JSPs are requesting – based on their experience in the program — that the Commission insert a relief-valve <u>now</u> to mitigate the severity of the program's unintended consequences. In the alternative, the JSPs respectfully argue that if the approved program allows no room for making needed mid-course adjustments, then perhaps it should be terminated.

Towards that end, the JSPs now reply to the slew of gross misstatements made in PPL's Answer. The JSPs agree with PPL that the sole <u>legal</u> bases for the Commission to determine whether to grant review of the Petition were set forth in *Philip Duick et al. v. Pennsylvania gas and Water Company*, C-RO597001, 56 Pa. PUC 553 (PUC Dec. 17, 1982). These include that there be "[1] newly discovered evidence," "[2] a change of circumstance," [3] a "new and novel argument[] not previously heard, or [4] considerations which appear to have been overlooked or not addressed by the Commission." *See* PPL Answer, p. 1, *citing Duick*.

However, the JSPs vehemently deny PPLs' challenges as to the timing of the JSPs' Petition; PPL's untenable speculation; PPL's distorted – almost personal -- grievances against the Petitioners; and PPL's take on the JSPs' legal arguments.

As to timing, PPL's argument (that the Petition was "paradoxically" filed too early and too late⁹), if upheld, would frustrate the purpose of a Petition; and the timing of the JSPs' filing poses <u>no</u> legitimate basis to deny review. JSP's Petition was not too late, as the statute authorizing rescission or amendment clearly states that "[t]he commission may, <u>at any time</u>, after notice and

⁹ See PPL Answer, pp. 6; ¶ 208.

after opportunity to be heard as provided in this chapter, rescind or amend <u>any</u> order made by it." 66 Pa.C.S. § 703(g)(emphasis added).¹⁰

Nor was JSPs' Petition too early. The JSPs fully understand that the approved program structure allows for PPL to apply later this spring for approval to continue the program and/or propose changes to it that would commence in an extended program, or well over a year from now, in 2025. However, the approved structure does not provide for mid-course corrections to be made to the program. Nor does the structure guarantee the JSPs a seat at the table in the discussions as to what a new program might look like, as the JSPs must petition for intervention in such discussion, the grant of same which is firmly within the discretion of the Commission. In any event, regardless of the month in which the JSPs filed their petition, both PPL and the OCA have made clear they oppose adjustments to the program until, at the earliest, analysis is complete of three years of data and the current program has expired. This leaves the JSPs with no choice but to presently seek to terminate the program and/or request that the Commission immediately order modification.

Relatedly, PPL claims that the JSPs collectively, and Sunrun in particular, are barred from complaining about the program now because they could have objected during the Settlement proceedings.¹³ This argument is a red herring. As the JSPs made clear in their Petition and explained more fully below, the problems they experienced in the field have occurred largely as a

¹⁰ In Feleccia v. PPL Elec. Utils. Corp., Docket No. C-20016210 (Order enterer March 7, 2003), cited by PPL in its Answer at footnote 2, the Commission found the Petition at issue in that case, which was filed four months after the Commission's adopting certain factual determinations made by the ALJs, to be merely an attempt to re-litigate facts, which could have been sought in the fifteen days allowed for petitions for reconsideration, and contained no explanation as to the reason for the delay. There is certainly no analogous <u>legal</u> requirement stated anywhere as to when a Petition must be filed following execution of a business decision to cease or limit operations in a territory, as PPL alleges on p. 6 of its Answer.

¹¹ See Swift & Choi De. LLC v. Pa. PUC, 247 A.3d 1198 (Cmwlth Ct. of Pa. Jan. 29, 2021).

¹² PPL Answer, p. 7; OCA Statement, p. 2 of Statement.

¹³ PPL Answer, pp. 7 - 8.

result of program <u>implementation</u>, *i.e.* are precisely the type of "newly discovered evidence" or "substantial change in circumstances" that neither they nor any of the other parties thereto anticipated when the parties and the Commission were steeped in deliberating program <u>design</u>.¹⁴

Second, PPL speculates as to the benefits the program will realize. Notably, PPL claims, without support, that its program has increased hosting capacity, facilitated more cost-effective interconnections, resulted in increases in the numbers of DERs and nameplate capacity added to its system, ¹⁵ and is expected to generate millions in dollars in savings. ¹⁶ But PPL fails to explain whether these phenomena are attributable to its program, or whether they are attributable to external factors, such as a changing marketplace. Further, PPL has failed to calculate the volume of additional benefits the program could yield were not the JSPs, other potential solar energy customers and installers, and other equipment manufacturers, chased out of it.

By way of further example, PPL claims the prices of PPL-approved inverters are comparable with inverters not on its list, 17 but offers no support to justify its claim. More importantly, PPL fails to address the JSPs' complaints that they are frequently required to pay more than market rate when they need to source equipment from outside of their customary

¹⁴ With regard to Sunrun, and in response to PPL's Answer at footnote 1, the JSPs are aware of no precedent stating that a party's decision not to file an objection to a settlement precludes that party from bringing to the Commission's attention a later-discovered grievance, nor any precedent stating that such party is legally or morally bound to refrain from commenting on the later, real-life, impact of that settlement. Indeed, the JSPs respectfully submit that a party's decision to refrain from filing an objection to a settlement does not mean the party does not object to some or all of the settlement. As to PPL's attempts throughout to characterize Sunrun's participation in the earlier stages of the proceeding as less than "active" (see e.g., PPL's underscored and bolded language on p. 7 of its Answer), the JSPs disagree. PPL's characterization and subsequent examples of what PPL believes it means to be an "active" party do not capture the range of activities in which parties to dockets regularly engage that impact a proceeding, including participating in technical meetings or multi-party discussions. Notably, Sunrun's February 8, 2021 submittal of comments on the DER Management Implementation Plan evidence Sunrun's active and continuing participation in technical meetings occurring in this docket.

¹⁵ Answer, pp. 1 - 2.

¹⁶ *Id.* at 2.

¹⁷ *Id.*, p. 6.

channels;¹⁸ and that regardless, certain inverters the JSPs seek are still not included on PPL's approved list.¹⁹

Additionally, one of PPL's chief bases for objecting to the JSPs request that the Commission allow new entrants to opt out of the program, and/or current conscripts to exit it, is PPL's claim that only 100% sign-up will provide the quantum of data required to evaluate the pilot.²⁰ But PPL can't have it both ways – it can't both have enough data to boast, today, that the just-described phenomena are exclusively attributable to its program, while also saying the data are inadequate for it to draw conclusions, and so needs two more years of 100% sign-up to collect still more data. Most importantly, PPL fails to explain why it cannot evaluate the efficacy of its program based on a subset of customers, as is routine with most well-designed pilot programs. PPL must justify its need for 100% sign-up, in light of Petitioners' claims that certain installers and customers must have relief therefrom.

Third, PPL loudly boasts of its own altruistic motives²¹ while casting aspersions on those of the Petitioners.²² For example, PPL seeks to dismiss the JSPs' Petition because of Tesla's alleged "refus[al] to provide any of the necessary information and equipment . . . to add Tesla's inverters to [the Company's] approved inverter list." Answer, p. 3. This is another red herring. Tesla has not refused to provide information; as Tesla has never sought to have its inverter added

¹⁸ See JSP's Petition, ¶ 32.

¹⁹ In particular, PPLs Answers to Sun Directed (Answer, p. 6; ¶¶s 189, 191 − 193) are specious, challenging Sun Directed's claim that the program's requirements do not provide "viable options" for "commercial leads with single phase service" for large commercial projects. Sun Directed will testify that PPL's approved inverter list contains a significant number of models that have been discontinued, models that aren't available to the average general contractor (for example, Sun Power's are available only to Sun Power dealers), and models Sun Directed finds unsatisfactory; and it omits models Sun Directed finds superior. Sun Directed will also testify that as a small installer, it is cost-prohibitive for it to source a high number of different types of inverters for different utility territories. Instead, Sun Directed minimizes the numbers of inverters it sources with the expectation that it can use the same models in numerous territories. But because Sun Directed can't do so in PPL territory, it drives up its expenses, in particular, with regard to sourcing single-phase inverters for projects for commercial customers.

²⁰ See e.g., Answer, ¶ 238.

²¹ See e.g., Answer, pp. 1-2.

²² See Answer, pp. 3-5.

to the Company's approved list, it has never had an obligation to supply PPL with information or equipment. Nor is Tesla aware of any free-standing request by PPL for same.

To the contrary, Tesla, <u>in concert with the other JSPs</u>, together bring this action as <u>installers</u>, whose customers and employers have experienced dismal problems in the field, including <u>problems using the very inverters PPL has approved</u>. As much as PPL claims the termination of a program ought not to be done lightly, the JSPs respectfully counter that no business makes a decision lightly to leave a territory or to limit its business therein. Accordingly, PPL's outright rejection of Tesla's and its co-Petitioners' legitimate grievances <u>as installers</u> is disheartening.²³

In response to PPL's inflammatory allegations on p. 4 of its Answer as to Tesla's "intent," Tesla acknowledges the <u>possibility</u> that Service Technicians sent into the field to resolve customer complaints of device communications failures did not recognize PPL's Management Device, and in their efforts to restore customers' systems' communications, removed PPLs' devices therefrom. But Tesla strongly disagrees that judgment calls made by Service Technicians in the field evidence any intent by Tesla to vandalize or tamper with PPL equipment. To the contrary, it is indisputable

²³ Troublingly, PPL characterizes AHC's claim that it limited operations because of the pilot as "suspect," Answer, ¶ 172, pointing to AHC's purported failure to file any interconnection applications before the program started (Answer, ¶ 174), and to AHC's alleged sole interconnection application (Id., ¶ 173) filed after the Pilot commenced. PPL is grossly mistaken. First, AHC did not begin operations in Pennsylvania in earnest until roughly the time that the pilot commenced, so a purported lack of applications before the pilot indicates nothing. Second, both before and after the pilot began, numerous AHC project applications were filed in PPL territory, but they were filed by one or more third parties. Thus, AHC's purported sole application is not indicative of the level of AHC's involvement in PPL territory. Further, AHC will testify that it has in fact curtailed a line of business in PPL territory because of the program. AHC is a Tesla-certified installer, whose main product offering is the Tesla Solar Roof that presently requires the Tesla inverter. However, AHC will testify that numerous customers have chosen not to go forward with such purchases because PPL's program limits use of inverters to those it has approved, and the Tesla inverter is not on PPLs' list. Based solely on the numbers of opportunities that came in the door just the last quarter, AHC estimates that the sales that did not go forward because of the program would have added a total of 109.71 kW of solar energy in PPL territory. Meanwhile, AHC has seen a 1200% increase nationally, and nearly \$3,000,000,00 in sales from 2022 to 2023 in the rest of Pennsylvania, just for Tesla's Solar Roof. Thus, AHC's claims of its business being limited because of the program, are not "suspect," and should be heard by the Commission.

that upon PPL's alerting Tesla of three instances of Service Technicians' removing PPL's device from customers' systems, Tesla immediately corrected the problems.²⁴

Tesla also strongly denies PPL's claims both that Tesla inappropriately made after-market modifications to Delta and SolarEdge inverters by inserting a ZigBee chip therein that prevented PPL's Management Device from properly communicating with the inverters; and/or that Tesla failed to take "corrective action" by removing the ZigBee chip.²⁵

Significantly, during the time it operated under the program, Tesla used only inverters from PPL's approved list for residential solar installations in PPL territory, both of whose manufacturers expressly call for use of ZigBee communications. SolarEdge's product specifications explicitly stated that ZigBee is a viable communications protocol for use with SolarEdge inverters, ²⁶ and SolarEdge actively encouraged ZigBee's use. Indeed, SolarEdge went so far as to include ZigBee cards in the same box with which it shipped its inverters to Tesla, as may be seen from the product label, reproduced below:

²⁴ The attached correspondence (a March 23, 2023 Cease and Desist letter from PPL, and Tesla's March 28, 2023 response (Attachment 1) shows Tesla's confirmation of three instances in which Tesla became aware that its representatives removed a DER Management Device (and which situation Tesla immediately corrected and took steps to ensure the situation would not be repeated). Please note -- Tesla cannot presently confirm or deny allegations concerning the remaining instances PPL alleges in its Answer, as well as other PPL allegations, as Tesla closed the warehouses in PPL territory upon its ceasing operations there, and the employees and their records are not presently available.

 $^{^{25}}$ Answer, pp. 3 – 4.

²⁶ See SolarEdge HD-Wave Single Phase Inverter Data Sheet, p. 2, available at: https://www.solaredge.com/sites/default/files/se-hd-wave-single-phase-inverter-datasheet-na.pdf, showing ZigBee listed as an optional supported communication interface.

Solar SESSOOH - US

Grid Support Utility Interactive Non-Isolated Photovoltaic Inverter

Operating Voltage Range Max Input Current Max Continuous Output Power 270 - 480Vda 10.8Ado

Voltage Min-Nom-Max

3300Wac @ 208V 3800Wac @ 240 183 - 208 - 229Vac 211 - 240 - 284Vac

Max Continuous Output Current

16A80

Max Output Fault Current
Max Utility Backfeed Current
Frequency Min - Nom - Max
Output Power Factor
Max Ambient Temperature

16Asc 0Asc 59.3 - 60.0 - 60.5Hz +/-0.85 - 1 60 C 1P65 / Type 3R

With Integrated ground fault protection per NEC 690.35 (G)
Type 1 Photovoltaic Arc - Fault Circuit - Protection

IC: 20916-SEZB The enclosed device complies with Part 15

WI-FI Password: p1C2Ftw4

Activation: Gixl diff Kvk/ TzvB M5w7 fAF9 Erk-

WIFI MAC: 48:08:82:50:69:39 ZigBee MAC:

Enclosure



PN: SE3800H — US000BSU4 SN: SJ4219 — 07305E8CC — 2C

Delta's product specifications²⁷ also show that Delta intended and configured its inverters to be compatible with ZigBee communications, expressly listing ZigBee communication as a product feature, as may be seen below.



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Delta's new generation single phase solar inverter M Series with UL certification and HECO, CA Rule 21 compliance, are creative and innovative single phase inverters with an impressive MPPT operating range for the market. Maximum power production is derived from an extremely wide input range (50~550Vdc), low start-up voltage 30v, light weight 43 lbs (19.5kg) for 10kW and up to 98.0% peak efficiency. Thanks to 3 MPP trackers design, the Delta M Series inverter can generate more power from solar and is more flexible for various scales of PV systems and applications. NEMA 4X rating provides excellent protection.



In addition, the M Series is also equipped with RGM (Revenue Grade Meter) with ANSI C12.20 (0.5% Accuracy) and BLE 4.0, with Zigbee/WiFi/Cellular communication. The Delta M Series has established an outstanding industry performance standard and leads the way in technology for residential PV systems.

Thus, based upon information and belief, Delta shipped its inverters to Tesla with ZigBee cards already installed in them.

Accordingly, in light of: (1) PPL's approval of use of Delta and SolarEdge inverters, (2) Delta's and SolarEdge's own product specifications and/or instructions calling for use of Zigbee communications, and (3) Tesla's own experience installing roughly 453,000 residential solar system across the country, all of which have one or more ZigBee devices installed in each inverter and none of which have posed the communications problems seen in PPL territory, ²⁸ Tesla's

²⁷ See Delta's product webpage.

²⁸ Tesla's experience includes that of its predecessor, Solar City; the 453,000 figure refers to the number of installs since 2007 that included one or more ZigBee chips.

purported installation of ZigBee was <u>not</u> "tampering," nor an "after-market modification," as PPL contends. To the contrary, Tesla's installations of ZigBee, if any (i.e., to the extent they were not already installed in the inverters), comported not only with Delta's and SolarEdge's instructions, but also with PPL's program requirements, given PPL's express approval of Delta and SolarEdge inverters.²⁹

The JSPs also deny PPL's allegation that Tesla failed to network its inverters.³⁰ Neither PPL's program nor its associated Implementation Plan mandate use of a particular networking protocol. To the contrary, PPL appears to require only that all applicable inverters be able to "accept commands from the Company-owned DER Management Device connected to a port earmarked and labeled for use by PPL."³¹ Thus, Tesla networked its multi-inverter installs as it always did to allow the ZigBee communications protocol to work properly.

However, Tesla became aware as a result of its extensive communications with PPL that when Tesla networked the inverters in a multi-inverter install in a manner that allowed ZigBee to give Tesla and its customers visibility into a second inverter, PPL was blocked from having visibility into that inverter; and that when Tesla networked the systems as PPL later instructed, Tesla and its customers were blocked from having visibility into those second inverters.

As a result, because PPL's program requires that PPL have visibility into the second inverters, Tesla and its customers have had to live with having less so. Thus, to this day, neither Tesla nor its customers are able to easily monitor the functioning of the second inverters in PPL territory. This has resulted in Tesla expending significant resources determining which of the error

²⁹ Relatedly, the JSPs lack information with which to respond to PPL's allegation in its Answer at footnote 48, that AHC personnel tampered with or disconnected a PPL Management Device in March of 2023, and as such, deny. ³⁰ Answer, ¶ 127, 196.

³¹ PPL Smart Inverters and DER Pilot Management Requirements (Upated 12-1-2023)

alerts it is receiving from the roughly 47 systems experiencing communications disruptions under the Pilot,³² in fact indicate that a customer system has ceased producing power, or is experiencing other technical problems. Additionally, Tesla's inability to access from the second inverter the production data needed to generate SRECs has led Tesla to conclude it would forfeit the credits and take the losses, as other methods of collecting the data would be difficult and not cost-effective.

Tesla also denies PPL's allegation that Tesla failed to actively work with PPL in seeking to resolve the "communications and functionality problems" Tesla's customers experienced with multi-inverter systems; and rejects PPL's assertions that Tesla should have accepted PPL's software code, or developed its own code in order to resolve the above-described communications problems. At present, Tesla has been unable to locate any information confirming that PPL sent software codes to Tesla. But in any event, it is Tesla's present understanding that PPL's software code would not have fixed the problems, as PPL designed its code without having access to Tesla's source code, which means that PPL's code would not work.

Nor was Tesla able to design its own code to fix the problem, as PPL assumes, as it is Tesla's present understanding that it was infeasible for it to design a code that would fix the problems for all inverters. Regardless, Tesla has nowhere else been required as a condition of doing business to devise a utility-specific software solution to a technical issue caused by utility-owned bespoke equipment. Indeed, the fact that the success of PPL's program apparently *requires* that installers or manufacturers devise customized software codes to ensure the compatibility of customer-owned devices with PPL's bespoke, utility-owned, equipment underscores why PPL's

³² JSPs' Petition, p. 16.

³³ Answer, p. 4.

³⁴ *Id*.

program presents challenges for the solar industry – because it threatens to create a patchwork of variable rules and requirements from one utility territory to the next.

Finally, PPL misunderstands JSPs' legal arguments. The JSPs did not point to the Commonwealth's Documents Act because they thought this proceeding involved a rule-making. Rather, the JSPs assert that the Commission <u>did</u> state that a state-wide rule-making might have been an appropriate forum in which to address the changes to the interconnection <u>rules</u> needed to effectuate the program.³⁵ To the extent PPL is now claiming it disbelieves the JSPs' complaints because it hasn't heard them more widely, the JSPs respectfully suggest that were a state-wide proceeding to occur, PPL would indeed hear from additional installers and customers.

Similarly, the JSPs did not point to the Choice Act because they believe that they or PPL are retail electric suppliers.³⁶ Rather, they pointed to it as illustrative of the state's policy of promoting customer choice, which the JSPs' assert is being thwarted by the pilot's restrictions as to types of systems and equipment customers may install.

The JSPs pointed to the Alternative Energy Portfolio Standards Act as evidence that Pennsylvania is seeking to transition to a clean energy economy, not as evidence that PPL violated said Act.³⁷ The JSPs argue in their Petition that to the extent that even arguably meritorious programs such as PPL's program have unintended consequences, they can inadvertently hinder, not further, achievement of state-wide objectives.

Contrary to PPL's allegations on p. 5 of their Answer, Petitioners did not err in referencing California, Hawaii and New York, and commenting that PPL is unique in favoring active management rather than autonomous smart inverter setting as the optimal way for customer-sited

³⁵ RD, p. 67 (Petition, p. 3).

³⁶ See Answer, p. 8.

³⁷ See Id.

clean energy systems to improve grid reliability. An inspection of California Rule 21 shows that California does not use "actively managed" power factor, nor does it use "Fixed Power Factor" as a smart inverter setting. See PG&E Electric Rule No. 21 (sheet/page 200), stating "Fixed power factor – Deactivated". HECO Rule 14(H) (p. 32) also shows that Hawaii does not use "actively managed" power factor, nor does it use "Fixed Power Factor" as a smart inverter setting. See Hawaii Electric Light Company Inc. Rule 14 (p. 30) (stating "Constant power factor – Mandatory deactivation"). Indeed, SolarEdge's guidance on interconnecting in Hawaii, Meeting Hawaii Utility Interconnect Requirements (p. 6), specifically provides steps to take to ensure that Fixed Power Factor is disabled (stating: "If the 3rd line displays CosPhi-0.95, then the old parameters are still selected and the proper Hawaii Country Code needs to be selected."). Finally, no New York investor owned utility presently uses "actively managed" power factor, and all presently require that Fixed Power Factor either be disabled or set to "1" (or "unity"). (Only Orange & Rockland has signaled that it may use a fixed power factor setting at some point in the future.) Thus, New York utilities currently do not use Fixed Power Factor for voltage regulation.³⁸

Finally, PPL points to the annual cap of 3,000 DER Management Devices in \P 231 – 236 as alleviating the need for any opt-outs from the pilot. The JSPs do not dispute there is such cap, but maintain it is undesirable to incentivize delays of projects as means of circumventing a program.

³⁸ See NYSEG and RG&E IEEE 1547-2018 Default Smart Inverter Settings 11-15-2022, p. 2; Con Edison Default IEEE 1547-2018/1547a-2020 Settings, p. 2; Central Hudson Smart Inverter Settings Required for all Inverter-Based Systems, p. 1 (identifying Volt-Var, as opposed to Fixed Power Factor, as the "Preferred Reactive Power Function"); National Grid Electric System Bulletin No. 756 Appendix B, p. 46 (PDF p. 93); and Orange and Rockland Utilities Distributed Energy Resources Interconnection Handbook, p. 15. For convenience, a compilation of the relevant pages from each is attached hereto as Attachment 2.

The JSPs respectfully submit that the multiple distortions,³⁹ over-heated allegations⁴⁰ and off-point digressions masquerading as PPL's Answer only confirm the parties' inability to resolve these disputes amongst themselves, and show why a hearing before the Commission is required on the issues raised in the JSPs' Petition.

REPLY TO PPL'S NUMBERED PARAGRAPHS

- 1. The JSPs admit that PPL Electric is a public utility that provides electric distribution and provider of last resort services in Pennsylvania subject to the regulatory jurisdiction of the Commission. The JSPs lack information to either admit or deny the allegations in the second sentence of this paragraph.
- 2. The allegations in this paragraph contain PPL's characterization of a document which speaks for itself and to which no response is required.
- 3. The allegations in this paragraph contain PPL's characterization of a document which speaks for itself and to which no response is required.
- 4. The allegations in this paragraph contain PPL's characterization of documents which speak for themselves and to which no responses are required.
- 5. The allegations in this paragraph contain PPL's characterization of documents which speak for themselves and to which no responses are required.
- 6. The allegations in this paragraph contain PPL's characterization of documents which speak for themselves and to which no response is required.

³⁹ For example, PPL alleges that the JSPs' claims they have been forced to curtail or cease operations are undermined by the fact that they continued to submit interconnection applications after the pilot commenced. The JSPs do not necessarily deny that they may have done so, but assert that they did because, e.g., they needed to service customers who had placed orders for systems prior to their ending or limiting their business operations.

⁴⁰ The JSPs particularly object to PPL's calling the JSPs "disreputable," "unlawful," or in any way evidencing an intent to "undermine" PPL's program.

- 7. The allegations in this paragraph contain PPL's characterization of documents which speak for themselves and to which no response is required.
- 8. The allegations in this paragraph contain PPL's characterization of a document which speaks for itself and to which no response is required.
- 9. The allegations in this paragraph contain PPL's characterization of documents which speak for themselves and to which no response is required.
- 10. The allegations in this paragraph contain PPL's characterization of a pre-hearing conference, and orders of Administrative Law Judge ("ALJ") Devoe, which speak for themselves and to which no response is required.
- 11. The allegations in this paragraph contain PPL's characterization of documents which speak for themselves and to which no response is required.
- 12. The allegations in this paragraph contain PPL's characterization of documents which speak for themselves and to which no response is required.
- 13. The allegations in this paragraph contain PPL's characterization of documents which speak for themselves and to which no responses are required.
- 14. The allegations in this paragraph contain PPL's characterization of a document which speaks for itself and to which no response is required.
- 15. The allegations in this paragraph contain PPL's characterization of a document which speaks for itself and to which no response is required.
- 16. The allegations contained in this paragraph contain PPL's characterization of a document which speaks for itself and to which no response is required.
- 17. The allegations in this paragraph contain PPL's characterization of a document which speaks for itself and to which no response is required.

- 18. The allegations in this paragraph contain PPL's characterization of a document which speaks for itself and to which no response is required.
- 19. The allegations in this paragraph contain PPL's characterization of a document which speaks for itself and to which no response is required.
- 20. The allegations in this paragraph contain PPL's characterization of documents which speaks for themselves and to which no responses are required. Admit that a prehearing conference was held on November 15, 2019.
- 21. The allegations in this paragraph contain PPL's characterization of documents which speaks for themselves and to which no responses are required.
- 22. The allegations in this paragraph contain PPL's characterization of a document which speaks for itself and to which no response is required.
- 23. The allegations in this paragraph contain PPL's characterization of a document which speaks for itself and to which no response is required.
- 24. The allegations in this paragraph contain PPL's characterization of a document which speaks for itself and to which no response is required.
- 25. The allegations in this paragraph contain PPL's characterization of a document which speaks for itself and to which no response is required.
- 26. The allegations in this paragraph contain PPL's characterization of a document which speaks for itself and to which no response is required.
- 27. The allegations in this paragraph contain PPL's characterization of the ALJs March 16, 2020 notification to the parties, to which no response is required.
- 28. The allegations in this paragraph contain PPL's characterization of a document which speaks for itself and to which no response is required.

- 29. The allegations in this paragraph contain PPL's characterization of a document which speaks for itself and to which no response is required.
- 30. The allegations in this paragraph contain PPL's characterization of a March 25, 2020 email PPL sent to the ALJs to which no response is required.
- 31. The allegations in this paragraph contain PPL's characterization of a document which speaks for itself and to which no response is required.
- 32. The allegations in this paragraph contain PPL's characterization of an April 29, 2020 email PPL sent to the ALJs to which no response is required.
- 33. The allegations in this paragraph contain a characterization of April 30, 2020 directions by the ALJs to which no response is required.
- 34. The allegations in this paragraph contain PPL's characterization of a May 29, 2020 email PPL sent to the ALJs to which no response is required.
- 35. The allegations in this paragraph contain a characterization of May 29, 2020 directions by the ALJs to which no response is required.
- 36. The allegations in this paragraph contain PPL's characterization of a June 26, 2020 email PPL sent to the ALJs, and the ALJs responses, to which no responses are required.
- 37. The allegations in this paragraph contain PPL's characterization of a July 13, 2020 email from the ALJs to which no response is required.
- 38. The allegation in this paragraph contains a characterization of a document to which no response is required.
- 39. The allegation in this paragraph contains a characterization of a document to which no response is required.

- 40. The allegation in this paragraph contains a characterization of a document to which no response is required.
- 41. The allegations in this paragraph contain PPL's characterization of an August 27, 2020 email PPL sent to the ALJs to which no response is required.
- 42. The allegation in this paragraph contains a characterization of a document to which no response is required.
- 43. The allegation in this paragraph contains a characterization of a document to which no response is required.
- 44. The allegation in this paragraph contains a characterization of a document to which no response is require.
- 45. The allegation in this paragraph contains a characterization of the proceedings to which no response is required.
- 46. The allegation in his paragraph contains a characterization of a document to which no response is required.
- 47. The allegations in this paragraph contains characterizations of the ALJs's service of and contents of their November 17, 2020 Recommended Decision to which no responses are required.
- 48. The allegations in this paragraph contains characterizations of the Commission's December 17, 2020 Order to which no response is required.
- 49. The allegations in this paragraph contain characterizations of a document to which no responses are required.
- 50. The allegations in this paragraph contain characterization of a document to which no response is required.

- 51. The allegations in this paragraph contain characterization of a document to which no response is required.
- 52. The allegations in this paragraph contain characterization of a document to which no response is required.
- 53. The allegations in this paragraph contain characterizations of documents to which no responses are required.
- 54. The allegations in this paragraph contain characterization of a document to which no response is required.
- 55. The allegations in this paragraph contain characterization of a document to which no response is required.
- 56. The allegations in this paragraph contain characterization of PPL's October 29, 2021 Supplement No. 322 to Tariff Electric Pa. P.U.C. No. 201 to which no response is required.
- 57. The allegations in this paragraph contain characterization of a document to which no response is required.
- 58. The allegations in this paragraph contain characterization of a document to which no response is required.
- 59. The allegation in this paragraph contains characterization of a document to which no response is required.
- 60. The allegations in this paragraph contain characterization of a document to which no response is required.
- 61. The allegations in this paragraph contain characterization of a document to which no response is required.

- 62. The allegations in this paragraph contain characterization of a document to which no response is required.
- 63. The allegations in this paragraph contain characterization of a document to which no response is required.
- 64. The allegations in this paragraph contain characterization of a document to which no response is required.
- 65. The allegations in this paragraph contain argument, to which no response is required.
- 66. The allegations in this paragraph contain conclusions of law to which no responses are required.
- 67. The allegations in this paragraph contain conclusions of law to which no responses are required.
- 68. The allegations in this paragraph contain conclusions of law to which no responses are required.
- 69. The allegations in this paragraph contain conclusions of law to which no responses are required.
- 70. The allegations in this paragraph contain argument and conclusions of law to which no responses are required.
- 71. The allegations in this paragraph contain conclusions of law to which no responses are required.
- 72. This paragraph of PPL's Answer contains argument, to which no response is required. To the extent a response is required, the JSPs deny that their Petition should be denied.
- 73. This paragraph of PPL's Answer contains characterizations of the JSPs' Petition, to which no response is required.

- 74. This paragraph of PPL's Answer contains legal argument, to which no response is required. To the extent a response is required, the JSPs deny that the Commission should reject the JSPs' requests and deny the JSPs' Petition.
- 75. This paragraph of PPL's Answer contains legal argument and conclusions of law, to which no responses are required. To the extent a response is required, the JSPs deny that the Commission should deny the JSP's Petition.
- 76. This paragraph of PPL's Answer contains a characterization of the JSPs' Petition to which no response is required.
- 77. The allegation in this paragraph of PPL's Answer contains opinion and belief to which no response is required, and is legally and factually insufficient for JSPs to either admit or deny the allegation.
- 78. The allegation in this paragraph of PPL's Answer contains opinion and belief to which no response is required, and is legally and factually insufficient for JSPs to either admit or deny the allegation.
- 79. This paragraph of PPL's Answer contains a characterization of PPL's testimony, to which no response is required.
- 80. This paragraph of PPL's Answer contains a characterization of PPL's testimony, to which no response is required.
- 81. The allegation in this paragraph of PPL's Answer contains opinion and belief to which no response is required, and is legally and factually insufficient for JSPs to either admit or deny the allegation.
- 82. The JSPs lack information to either admit or deny the allegations in this paragraph of PPL's Answer.

- 83. The allegations contained in this paragraph of PPL's Answer are too vague, hypothetical, speculative and non-specific for the JSPs to have the information required to admit or deny the allegations, and as such are denied.
- 84. The JSPs lack information to either admit or deny the allegations in this paragraph of PPL's Answer.
- 85. The JSPs lack information to either admit or deny the allegations in this paragraph of PPL's Answer.
- 86. The JSPs lack information to either admit or deny the allegations in this paragraph of PPL's Answer.
- 87. The allegation contained in this paragraph of PPL's Answer contains opinion and argument to which no response is required.
- 88. The Statement of former Chairman Brown Dutrieuille is a document that speaks for itself and any characterization thereof is denied.
- 89. The allegations contained in this paragraph of PPLs' Answer are too vague, hypothetical, speculative and non-specific for the JSPs to have the information required to admit or deny the allegations. To the extent a response is required, the JSPs deny that the Plan is achieving safe and reliable interconnections (*see supra* pp. 10 11, explaining, e.g., Tesla's difficulties interpreting error alerts from systems in which PPL's DER Management Device has been installed); deny that the Plan is improving the reliability and adequacy of the Company's electric service (*see* the JSPs' Petition, ¶ 40, citing PPL's own data from its Year 1 Report, showing that its active management frequently did more harm than good, including resulting in increasing voltage violations).
- 90. The allegations contained in this paragraph of PPL's Answer contain opinion, to which no response is required.

- 91. PPL Corporation's 2022 Sustainability Report is a document that speaks for itself and any characterization thereof is denied.
- 92. PPL Corporation's 2022 Sustainability Report is a document that speaks for itself and any characterization thereof is denied.
- 93. PPL Corporation's 2022 Sustainability Report is a document that speaks for itself and any characterization thereof is denied.
- 94. PPL Corporation's 2022 Sustainability Report is a document that speaks for itself and any characterization thereof is denied.
- 95. The JSPs lack information to either admit or deny the allegations contained in this allegation of PPL's Answer.
- 96. The allegations contained in this paragraph of PPL's Answer contain opinion and argument, to which no response is required.
- 97. The allegations contained in this paragraph of PPL's Answer contain argument and opinion to which no response is required, and are denied as too vague, hypothetical, speculative and non-specific for the JSPs to have the information required to admit or deny the allegations. To the extent a response is required, denied that PPL has yet shown benefits and cost savings attributable to active management. By contrast, PPL's 2023 DER Management Report ("Report") showed \$1,500 of savings attributable to active management and \$1,261,500 in savings attributable to autonomous inverter functions. Petition, pp. 21 22; Report, p. 17.
- 98. The allegations contained in this paragraph of PPL's Answer are too vague, hypothetical, speculative and non-specific for the JSPs to have the information required to admit or deny the allegations, and as such are denied.

- 99. The allegations contained in this paragraph of PPL's Answer contain argument and opinion to which no response is required, and are denied as too vague, hypothetical, speculative and non-specific for the JSPs to have the information required to admit or deny the allegations.
- 100. PPL's Second Revised DER Management Plan, Attachment C, is a document that speaks for itself and any characterization thereof is denied.
- 101. The allegations contained in this paragraph of PPL's Answer contain argument and opinion to which no response is required, and are denied as too vague, hypothetical, speculative and non-specific for the JSPs to have the information required to admit or deny the allegations.
- 102. The JSPs lack information to either admit or deny the allegations contained in this paragraph of PPL's Answer.
- 103. The JSPs lack information to either admit or deny the allegations contained in this paragraph of PPL's Answer.
- 104. The allegations contained in this paragraph of PPL's Answer contain argument and opinion to which no response is required, and are denied as too vague, hypothetical, speculative and non-specific for the JSPs to have the information required to admit or deny the allegations.
- 105. The JSPs lack information to either admit or deny the allegations contained in this paragraph of PPL's Answer.
- 106. The JSPs lack information to either admit or deny the allegations contained in this paragraph of PPL's Answer. To the extent a response is required, denied that PPL has shown that growth in interconnection application work orders is attributable to its DER Management Plan.
- 107. The JSPs lack information to either admit or deny the allegations contains in this paragraph of PPL's Answer. To the extent a response is required, denied that PPL has shown that growth in interconnection application work orders is attributable to its DER Management Plan.

- 108. The JSPs lack information to either admit or deny the allegations contained in this paragraph of PPL's Answer. To the extent a response is required, denied that PPL has shown that growth in interconnection application work orders is attributable to its DER Management Plan.
- 109. The allegations contained in this paragraph of PPL's Answer contain argument and opinion to which no response is required, and are denied as too vague, hypothetical, speculative and non-specific for the JSPs to have the information required to admit or deny the allegations.
- 110. The allegations in this paragraph of PPL's Answer contain characterization of the JSPs' Petition to which no response is required.
- 111. Denied that "Tesla has caused most, if not all, of these alleged issues," for the multiple reasons explained, *supra*, on pp. 7 14.
- 112. The allegations contained in this paragraph contain argument and opinion to which no response is required. To the extent a response is required, denied that Tesla, which has not sought to have its inverter included on PPL's approved list, was required to provide information or equipment.
- 113. The JSPs lack information to either admit or deny the allegation in this paragraph. To the extent a response is required, denied that Tesla was required to provide information or equipment.
- 114. The JSPs lack information on the Company's view to either admit or deny the allegation in this paragraph of PPL's Answer. To the extent a response is required, the characterization of Tesla's "wants" is denied.
- 115. The JSPs lack information to either admit or deny the allegation in this paragraph of PPL's Answer. To the extent a response is required, the characterization of Tesla's "wants" is denied.
- 116. The allegations in this paragraph of PPL's Answer contain legal conclusions to which no response is required.

- 117. The allegations in this paragraph of PPL's Answer contain legal conclusions to which no response is required.
- 118. The allegations in this paragraph of PPL's Answer contain legal conclusions to which no response is required.
- 119. The allegations in this paragraph of PPL's Answer contain legal conclusions and opinions to which no responses are required. To the extent a response is required, any characterization of what Tesla "wants" is denied.
- 120. The allegations in this paragraph of PPL's Answer characterize the JSPs' Petition and contain legal conclusions and opinions to which no responses are required. To the extent a response is required, denied that Tesla made "after-market modifications." As explained, *supra*, pp. 9 12, Delta and SolarEdge inverters were sent to Tesla with ZigBee communications cards already installed in them, or instructions that Tesla insert the ZigBee chips into the inverters.
- 121. Admit.
- 122. The JSPs lack information to either admit or deny the allegation in this paragraph of PPL's Answer. To the extent a response is required, admit that Delta and SolarEdge inverters comply with IEEE 1547-2018 communications protocols so are compatible with SunSpec Modbus; denied that Delta and SolarEdge inverters require that only SunSpec Modbus be utilized as their communications protocol.
- 123. Admit.
- 124. The JSPs lack information to either admit or deny the allegations in this paragraph of PPL's Answer, to the extent that the phrase "these Delta and SolarEdge inverters" is vague; denied that multi-inverter set-ups with Delta and SolarEdge inverters "must have a 'leader' inverter . . . ," as

that arrangement is not required under all communication protocols supported by Delta and SolarEdge inverters. (emphasis added.)

- 125. Denied that Tesla's insertions of the ZigBee chip in the Delta and SolarEdge inverters results in each inverter having the same Modbus identification number, on grounds that Tesla received SolarEdge and Delta inverters (both of which inverter types were approved by PPL) with ZigBee chips already in them, or sent to Tesla for installation therein. Additionally, upon information and belief, the Delta and SolarEdge inverters received by Tesla to be installed in PPL came preconfigured to support networking of multi-inverter solar systems that contained ZigBee chips. See supra, ¶ 120.
- 126. Denied that Tesla made "after-market modifications." See supra, ¶ 120.
- 127. Denied that Tesla failed to network the inverters. As explained *supra* on p. 12, PPL did not specify a networking protocol; Tesla networked the inverters just as it had in some 453,000 installs across the country that included one or more ZigBee chips.
- 128. The allegations contained in this paragraph of PPL's Answer contain argument and opinion to which no response is required, and are denied as too vague, hypothetical, speculative and non-specific for the JSPs to have the information required to admit or deny the allegations. To the extent a response is required, admitted that PPL and Tesla worked together; denied that PPL "actively" worked with Tesla.
- 129. The allegations contained in this paragraph of PPL's Answer contain argument and opinion to which no response is required, and are denied as too vague, hypothetical, speculative and non-specific for the JSPs to have the information required to admit or deny the allegations. To the extent a response is required, denied that PPL "supplied Tesla with the exact software code . . . that would resolve the issues."

- 130. This allegation of PPL's Answer contains a characterization of a Tesla e-mail that speaks for itself and to which no response is required.
- 131. Denied that Tesla "refused." For the reasons explained *supra* on pp. 13 14, neither PPL's "hand-crafted firmware update" nor "the one that Tesla was developing" would solve the functionality and communications problems caused by PPL's DER Management Device.
- 132. The allegation contained in this paragraph of PPL's Answer contains opinion and argument to which no responses are required. To the extent a response is required, denied.
- 133. The JSPs presently lack information to either admit or deny the allegation in this paragraph of PPL's Answer. Persons with first-hand information and/or documents concerning the alleged incidents are no longer Tesla employees. To the extent a response is required, documents concerning the alleged incidents of Tesla's disconnection and removal of PPL's devices, and the Tesla's immediate corrective actions, are attached as Attachment 1, and speak for themselves.
- 134. The JSPs presently lack information to either admit or deny the allegation in this paragraph of PPL's Answer. Persons with first-hand information and/or documents concerning the alleged incidents are no longer Tesla employees. To the extent a response is required, documents concerning the alleged incidents are attached as Attachment 1, and speak for themselves.
- 135. The JSPs presently lack information to either admit or deny the allegation in this paragraph of PPL's Answer. Persons with first-hand information and/or documents concerning the alleged incidents are no longer Tesla employees. To the extent a response is required, documents concerning the alleged incidents are attached as Attachment 1, and speak for themselves.
- 136. The JSPs presently lack information to either admit or deny the allegation in this paragraph of PPL's Answer. Persons with first-hand information and/or documents concerning the alleged

incidents are no longer Tesla employees. To the extent a response is required, documents concerning the alleged incidents are attached as Attachment 1, and speak for themselves.

- 137. The JSPs presently lack information to either admit or deny the allegation in this paragraph of PPL's Answer. Persons with first-hand information and/or documents concerning the alleged incidents are no longer Tesla employees. To the extent a response is required, documents concerning the alleged incidents are attached as Attachment 1, and speak for themselves.
- 138. The JSPs presently lack information to either admit or deny the allegations in this paragraph of PPL's Answer.
- 139. The JSPs lack information to either admit or deny the allegation in this paragraph of PPL's Answer or the veracity of the photograph depicted thereunder.
- 140. The JSPs lack information to either admit or deny the allegation in this paragraph of PPL's Answer or the veracity of the photograph depicted thereunder.
- 141. The JSPs lack information to either admit or deny the allegation in this paragraph of PPL's Answer or the veracity of the photograph depicted thereunder.
- 142. The JSPs presently lack information to either admit or deny the allegation in this paragraph of PPL's Answer. Persons with first-hand information and/or documents concerning the alleged incidents are no longer Tesla employees. To the extent a response is required, documents concerning the alleged incidents are attached as Attachment 1, and speak for themselves.
- 143. The JSPs lack information to either admit or deny the allegations in this paragraph of PPL's Answer.
- 144. The JSPs lack information to either admit or deny the allegation in this paragraph of PPL's Answer or the veracity of the photograph depicted thereunder.

- 145. The allegations in this paragraph of PPL's Answer contain a characterization of Tesla's March 28, 2023 correspondence, which speaks for itself, and any characterization thereof is denied.
- 146. The JSPs lack information to either admit or deny the allegations in this paragraph of PPL's Answer.
- 147. The JSPs presently lack information to either admit or deny the allegation in this paragraph of PPL's Answer. Persons with first-hand information and/or documents concerning the alleged incidents are no longer Tesla employees.
- 148. The JSPs presently lack information to either admit or deny the allegation in this paragraph of PPL's Answer. Persons with first-hand information and/or documents concerning the alleged incidents are no longer Tesla employees.
- 149. The JSPs lack information to either admit or deny the allegation in this paragraph of PPL's Answer.
- 150. The JSPs presently lack information to either admit or deny the allegation in this paragraph of PPL's Answer. Persons with first-hand information and/or documents concerning the alleged incidents are no longer Tesla employees.
- 151. The JSPs presently lack information to either admit or deny the allegation in this paragraph of PPL's Answer. Persons with first-hand information and/or documents concerning the alleged incidents are no longer Tesla employees.
- 152. Admit.
- 153. The allegations in this paragraph of PPL's Answer contain argument and opinion to which no responses are required. To the extent a response is required, any characterizations of Tesla's efforts and what Tesla and the other JSPs "want" are denied.

- 154. The allegations in this paragraph of PPL's Answer contain argument and opinions to which no responses are required. To the extent a response is required, any characterization of Tesla's actions is denied.
- 155. The allegations in this paragraph of PPL's Answer contain argument and opinions to which no responses are required. To the extent a response is required, any characterization of the contents of the JSPs' Petition is denied.
- 156. The allegations in this paragraph of PPL's Answer contain a characterization of the JSPs Petition to which no response is required. To the extent a response is required, denied that the JSPs' claims are erroneous.
- 157. The JSPs lack information to either admit or deny the allegations in this paragraph of PPL's Answer. To the extent a response is required, denied.
- 158. The JSPs lack information to either admit or deny the allegations in this paragraph of PPL's Answer.
- 159. The JSPs lack information to either admit or deny the allegations in this paragraph of PPL's Answer. To the extent a response is required, denied on grounds that Delta's product specifications show Delta intends and configures its inverters to be compatible with ZigBee communications.
- 160. Denied. Neither California, Hawaii or New York investor owned utilities currently use "actively managed" power factor, or "fixed power factor" as a smart inverter setting for voltage regulation. *See supra*, pp. 14 15 and the documents contained in the links and in the referenced Attachment, confirming not only that the three states' utilities do not use "actively managed" power, but that they often require that fixed power factor be disabled.
- 161. The allegations contained in this paragraph of PPL's Answer contain argument and opinion, and are too vague, hypothetical, speculative and non-specific for the JSPs to have the information

required to admit or deny the allegations, and as such are denied. To the extent a response is required, partly admit, partly deny, as fixed power factor may or may not be used for voltage regulation.

- 162. The allegations contained in this paragraph of PPL's Answer contain argument and opinion, and are too vague, hypothetical, speculative and non-specific for the JSPs to have the information required to admit or deny the allegations, and as such are denied. To the extent a response is required, denied, for the reasons stated *supra* in ¶ 160.
- 163. The allegations in this paragraph of PPL's Answer contain a characterization of the JSPs' Petition to which no response is required.
- 164. The allegations in this paragraph of PPL's Answer contain a characterization of the JSPs' Petition to which no response is required.
- 165. The JSPs lack information to admit or deny the allegations contained in this paragraph of PPL's Answer. To the extent a response is required, Tesla admits it is possible it submitted interconnection applications after July 2023 so as to continue to service customers who placed orders prior to July 2023.
- 166. The allegations in this paragraph of PPL's Answer contain argument and opinion to which no responses are required. To the extent a response is required, denied.
- 167. Denied that PPL supplied "the exact software code . . . that would resolve its communications issues." The allegation concerning Tesla's efforts contains a characterization of a Tesla e-mail that speaks for itself and to which no response is required.
- 168. Denied that either PPL's software code or Tesla's firmware update were "solutions."
- 169. The allegations contained in this paragraph of PPL's Answer contain argument and opinion, and are too vague, hypothetical, speculative and non-specific for the JSPs to have the information

required to admit or deny the allegations, and as such are denied. To the extent a response is required, denied that Tesla had two easy solutions; denied that Tesla was inserting the ZigBee chips, and denied that the ZigBee chips were causing the communications issues.

- 170. The JSPs lack information to either admit or deny whether PPL is aware of any other installers that have decided to end operations in its service territory.
- 171. The JSPs lack information to admit or deny the allegations contained in this paragraph of PPL's Answer. To the extent a response is required, the JSPs admit it is possible Sun Directed submitted an interconnection application on January 8, 2024.
- 172. The allegations contained in this paragraph of PPL's Answer contain argument and opinion, and are too vague, hypothetical, speculative and non-specific for the JSPs to have the information required to admit or deny the allegations. To the extent a response is required, denied that AHC's claim is "suspect," for the reasons stated *supra* in n. 23, the text of which is incorporated into this paragraph as if repeated herein.
- 173. The JSPs lack information to either admit or deny the allegations contained in this paragraph of PPL's Answer. To the extent a response is required, the JSPs admit it is possible that PPL received one interconnection application since July, 2018 from AHC for a 5.76 kW system.
- 174. The JSPs lack information to either admit or deny the allegations contained in this paragraph of PPL's Answer; deny the allegation in PPL's Answer at footnote 48 that AHC personnel tampered with and disconnected PPL's DER Management device, as AHC has no record of onsite activities on March 1, 2023.
- 175. The allegations in this paragraph of PPL's Answer contain argument and opinion to which no responses are required. To the extent a response is required, denied that AHC's operations in PPL territory were limited before the pilot, as: (1) AHC's operations were in their infancy at the

time the pilot began; and 2) AHC uses a third-party to file interconnection applications, so PPL errs when purporting to total the numbers of applications filed; and denied that an application filed after the pilot renders "suspect" AHC's claim that PPL's pilot caused it to limit its operations in PPL territory. *See supra*, n. 23, the text of which is incorporated into this paragraph as if repeated herein.

- 176. The allegations in this paragraph of PPL's Answer contain a characterization of the JSPs' Petition to which no response is required.
- 177. The allegations in this paragraph of PPL's Answer contain a characterization of the JSPs' Petition to which no response is required. To the extent a response is required, denied that the program provides "viable options" for "commercial leads with single phase service" for small commercial projects, for the multiple reasons stated *supra* in n. 19, the text of which is incorporated into this paragraph as if repeated herein.
- 178. The allegations in this paragraph of PPL's Answer contain a characterization of PPL's approved inverter list, to which no response is required. To the extent a response is required, denied that the approved inverter list provides "viable options" for "commercial leads with single phase service" for small commercial projects, for the multiple reasons stated *supra*, n. 19, the text of which is incorporated into this paragraph as if repeated herein.
- 179. The JSPs lack information to either admit or deny the allegations in this paragraph of PPL's Answer.
- 180. The JSPs lack information to either admit or deny the allegations in this paragraph of PPL's Answer.
- 181. The JSPs lack information to either admit or deny the allegations in this paragraph of PPL's Answer.

- 182. The allegations in this paragraph of PPL's Answer contain a characterization of PPL's approved inverter list to which no response is required, as well as lack information the JSPs can admit or deny as to what inverter manufacturers and installers may need is denied.
- 183. The allegations in this paragraph of PPL's Answer contain a characterization of the JSPs' Petition to which no response is required.
- 184. The JSPs lack information to either admit or deny the allegations in this paragraph of PPL's Answer.
- 185. The JSPs presently lack information to either admit or deny the allegations in this paragraph of PPL's Answer. Persons with first-hand information and/or documents concerning the alleged incidents are no longer Tesla employees. To the extent a response is required, denied that Tesla was obliged to provide proof of UL 1741-SB certification.
- 186. The JSPs lack information to either admit or deny the allegations in this paragraph of PPL's Answer.
- 187. The allegations in this paragraph of PPL's Answer contain a conclusion of law to which no response is required.
- 188. The allegations in this paragraph of PPL's Answer contain a conclusion of law to which no response is required.
- 189. The allegations in this paragraph of PPL's Answer contain argument and opinion to which no response is required. To the extent a response is required, denied that the approved inverter list provides "viable options" for "commercial leads with single phase service" for small commercial projects, for the multiple reasons stated *supra* in n. 19, the text of which is incorporated into this paragraph as if repeated herein.

- 190. The allegations in this paragraph of PPL's Answer contain argument and opinion, and a characterization of Tesla's claim, to which no responses are required.
- 191. The allegations in this paragraph of PPL's Answer contain a characterization of Sun Directed's claim, to which no response is required. To the extent a response is required, denied, for the reasons stated *supra* in n. 19, which text is incorporated into this paragraph as if repeated herein.
- 192. Denied, for the reasons stated *supra* in n. 19, which text is incorporated into this paragraph as if repeated herein.
- 193. The JSPs lack information to either admit or deny the allegations in this paragraph of PPL's Answer.
- 194. Denied. Tesla provided support in verifying the allegations in its Petition, and will provide additional support.
- 195. The allegations in this paragraph of PPL's Answer contain argument to which no response is required. To the extent a response is required, denied that its contemplated adders lack justification.
- 196. The allegations in this paragraph of PPL's Answer contain argument and opinion to which no responses are required. To the extent a response is required, denied that a Tesla firmware update would resolve the issue, for the reasons stated *supra* on pp. 13 14; denied that Tesla was installing the ZigBee chip, as explained *supra* on p. 9, and that not installing the ZigBee chip would resolve the networking issue. The JSPs lack information to either admit or deny that the foregoing would reduce the costs of the DER systems by an additional \$100 per inverter.

- 197. The allegations in this paragraph of PPL's Answer contain a characterization of the JSPs' Petition to which no response is required. 41
- 198. The JSPs lack information to either admit or deny the allegations contained in this paragraph of PPL's Answer.
- 199. The JSPs lack information to either admit or deny the allegations contained in this paragraph of PPL's Answer.
- 200. The allegations in this paragraph of PPL's Answer contain argument and beliefs and characterization of the JSPs' Petition, to which no responses are required.
- 201. The allegations contained in this paragraph of PPL's Answer are too vague, hypothetical, speculative and non-specific for the JSPs to have the information required to admit or deny the allegations. To the extent responses are required, the JSPs admit that the underlying data in SREC production would still exist; deny that "pulling it from the revenue-grade meter for the DER system to true-up any lapses in communication" is a viable solution.
- 202. The allegations in this paragraph of PPL's Answer contain argument and characterization of the JSPs' Petition to which no responses are required.
- 203. The allegations in this paragraph of PPL's Answer contain argument and opinion to which no responses are required. To the extent a response is required, deny the characterizations as to there being "a solution" for Tesla to "simply implement."
- 204. The allegations in this paragraph of PPL's Answer contain argument and opinion to which no responses are required. To the extent a response is required, denied that PPL "provided. . . the

⁴¹ In its Answer at footnote 56, PPL encourages Tesla to provide information about customers whose DER Management devices are interfering with SREC production. Tesla is the owner of the SRECs, so it is the customer. Tesla will be pleased to separately provide to PPL more particular information on the particular sites with which it experienced SREC problems.

- exact software code . . that would resolve the issue," for the reason explained *supra* on pp. 13 14.
- 205. The JSPs presently lack information to either admit or deny the allegations in this paragraph of PPL's answer. Persons with first-hand information and/or documents concerning a Company offer are no longer Tesla employees. That the offer to visit "would resolve the issues" constitute opinion, argument and speculation, to which no responses are required.
- 206. The JSPs presently lack information to either admit or deny the allegations in this paragraph of PPL's answer. Persons with first-hand information and/or documents concerning a Company offer are no longer Tesla employees.
- 207. The allegation in this paragraph contain argument and conclusions of law, to which no responses are required.
- 208. The allegation in this paragraph contain argument and conclusions of law, to which no responses are required.
- 209. The allegations in this paragraph of PPL's Answer contain argument, opinion and conclusions of law to which no responses are required. To the extent a response is required, denied that decisions to terminate or curtail business operations trigger a deadline for filing a petition.
- 210. The allegations in this paragraph of PPL's Answer contain argument, opinion and conclusions of law and characterization of the JSPs' Petition, to which no responses are required. To the extent a response is required, denied that decisions to terminate or curtail business operations trigger a deadline for filing a petition.
- 211. The allegations in this paragraph of PPL's Answer contain argument and opinion, to which no responses are required.

- 212. The allegations in this paragraph contain argument and conclusions of law, to which no responses are required.
- 213. The allegations in this paragraph of PPL's Answer contain a characterization of the Settlement document, which speaks for itself, and any characterization thereof is denied.
- 214. The allegations in this paragraph of PPL's Answer contain a characterization of the Settlement document, which speaks for itself, and any characterization thereof is denied.
- 215. The allegations in this paragraph of PPL's Answer contain argument and a characterization of the Settlement document, which speaks for itself, and any characterization thereof is denied.
- 216. The allegations in this paragraph of PPL's Answer contain a characterization of the JSPs' Petition, to which no response is required. To the extent a response is required, denied, insofar as the JSPs Petition requests in the alternative termination or modification.
- 217. The allegations in this paragraph of PPL's Answer contain a characterization of the JSPs' Petition, to which no response is required. To the extent a response is required, any characterization of the JSPs' reliance is denied.
- 218. The JSPs lack information to either admit or deny the allegations in this paragraph of PPL's Answer.
- 219. The allegations in this paragraph of PPL's Answer contain argument and opinion, to which no responses are required.
- 220. The JSPs lack information to either admit or deny what PPL is aware of; admit that the Petition does not identify a decision where a pilot program was terminated before it ended, but deny the characterization of the program as a "pilot," as the "pilot" was tantamount to a rules change without notice and comment.

- 221. Partly admitted and partly denied. The JSPs admit that notice was published in the *Pennsylvania Bulletin* and served on certain solar companies on July 12, 2019, but deny that the notice to Sunrun, Sun Directed and Tesla or other solar companies was meaningful, given that they were not directed to any individual, nor to the companies' headquarters, nor to their legal departments; and none was sent to SEIA.
- 222. The allegations in this paragraph of PPL's Answer contain characterizations of documents which speak for themselves and to which no responses are required. To the extent a response is required, the JSPs deny that the notice to the JSPs or other solar companies was meaningful, given that the notices were not directed to any individual, nor to the companies' headquarters, nor their legal departments.
- 223. The allegations in this paragraph of PPL's Answer contain argument and belief, to which no response is required. To the extent a response is required, denied that Sunrun has not "actively" participated, for the reasons set forth *supra*, in n. 14, which text is incorporated into this paragraph as if repeated herein.
- 224. The allegations in this paragraph of PPL's Answer contain argument and characterization of the docket, which speaks for itself and to which no responses are required.
- 225. The allegations in this paragraph of PPL's Answer contain argument and characterization of Sunrun's filings in the docket to which no responses are required. To the extent a response is required, denied, insofar as Sunrun stated it would not file an objection to the Settlement, and deny the characterization of Sunrun's participation, for the reasons set forth *supra*, in n. 14, which text is incorporated into this paragraph as if repeated herein.
- 226. The allegations in this paragraph of PPL's Answer contain argument, opinion, and conclusions of law to which no responses are required. To the extent a response is required, denied

- that the JSPs had notice and opportunity to oppose the DER Management Plan, for the reasons stated above in ¶ 221, and insofar as Sunrun did not file an objection to the Settlement.
- 227. The allegations in this paragraph of PPL's Answer contain argument, opinion and conclusions of law to which no responses are required.
- 228. The allegations in this paragraph of PPL's Answer contain a characterization of JSPs' Petition, to which no response is required.
- 229. The allegations in this paragraph of PPL's Answer contain argument, to which no response is required.
- 230. The allegations in this paragraph of PPL's Answer contain characterization of the Settlement, a document which speaks for itself, and to which no response is required. To the extent a response is required, deny that the limit of 3,000 DER Management device installations per year is a reason to deny the requested "opt out," as requiring that customers postpone installations until after the limit is reached in order to escape program requirements is not a viable solution.
- 231. The allegations in this paragraph of PPL's Answer contain characterization of the Settlement, a document which speaks for itself, and to which no response is required.
- 232. The allegations in this paragraph of PPL's Answer refer to the Settlement, a document which speaks for itself, and to which no response is required.
- 233. The JSPs lack information to either admit or deny the allegations in this paragraph of PPL's Answer.
- 234. The JSPs lack information to either admit or deny the allegations in this paragraph of PPL's Answer.
- 235. The JSPs lack information to either admit or deny the allegations in this paragraph of PPL's Answer.

- 236. The allegations in this paragraph of PPL's Answer contain argument, to which no response is required.
- 237. The allegations in this paragraph of PPL's Answer contain characterization of PPL's Petition, to which no response is required.
- 238. The allegations in this paragraph of PPL's Answer contain argument, to which no response is required, and lack information to either admit or deny the allegations.
- 239. The allegations in this paragraph of PPL's Answer contain argument, to which no response is required. To the extent a response is required, denied that AMI is a corollary for the program, as AMI involves a swap-out of one piece of utility-owned equipment for another, while PPL's program requires that utility-owned equipment be installed on customers' equipment; and AMI has been required in multiple jurisdictions, whereas PPL's program is unique.
- 240. The JSPs lack information to either admit or deny the allegations in this paragraph of PPL's Answer.
- 241. The JSPs lack information to either admit or deny the allegations in this paragraph of PPL's Answer.
- 242. The allegations in this paragraph of PPL's Answer contain argument, to which no response is required.
- 243. The allegations in this paragraph of PPL's Answer contain argument, to which no response is required.
- 244. The allegations in this paragraph of PPL's Answer contain argument, to which no response is required. To the extent a response is required, deny the characterization of the JSPs' demand.
- 245. The allegations in this paragraph of PPL's Answer contain argument and opinion, to which no responses are required.

- 246. The allegations in this paragraph of PPL's Answer contain argument and opinion and characterization of the JSPs' Petition to which no responses are required.
- 247. The allegations in this paragraph of PPL's Answer contain argument and opinion and characterization of the JSPs' Petition to which no responses are required.
- 248. Denied.
- 249. The allegations in this paragraph of PPL's Answer contain argument and characterization of a Commission Order which speaks for itself, to which no responses are required.
- 250. The allegations in this paragraph of PPL's Answer contain conclusions of law to which no responses are required.
- 251. The allegations in this paragraph of PPL's Answer contain conclusions of law and characterization of a document which speaks for itself, to which no responses are required.
- 252. The allegations in this paragraph of PPL's Answer contain argument, to which no response is required.
- 253. The allegations in this paragraph of PPL's Answer contain conclusions of law to which no responses are required.
- 254. The allegations in this paragraph of PPL's Answer contain argument to which no response is required.
- 255. The allegations in this paragraph of PPL's Answer contain argument, opinion, and legal conclusions to which no responses are required.
- 256. The allegations in this paragraph contain argument to which no response is required.
- 257. The allegations in this paragraph contain argument, opinion, and legal conclusions to which no responses are required.

- 258. The allegations in this paragraph contain characterization of a PPL document to which no response is required.
- 259. The allegations in this paragraph contain argument, to which no response is required.
- 260. The allegations in this paragraph contain argument, opinion and conclusions of law to which no responses are required.
- 261. The allegations in this paragraph contain argument, opinion and conclusions of law to which no responses are required.
- 262. The allegations in this paragraph contain characterization of documents, argument and conclusions of law, to which no responses are required
- 263. The allegations in this paragraph contain characterization of a document to which no response is required.
- 264. The allegations in this paragraph contain a conclusion of law to which no response is required.
- 265. The allegations in this paragraph contain argument, opinion and characterization of documents to which no responses are required.
- 266. The allegations in this paragraph contain argument and characterization of documents to which no response is required.
- 267. The allegations in this paragraph contain argument to which no response is required.
- 268. The allegations in this paragraph contain argument to which no response is required.
- 269. The allegations in this paragraph contain argument to which no response is required.
- 270. The allegations in this paragraph contain argument to which no response is required.
- 271. The allegations in this paragraph contain conclusions of law to which no responses are required.

- 272. The allegations in this paragraph contain conclusions of law to which no responses are required.
- 273. The allegations in this paragraph contain conclusions of law to which no responses are required.
- 274. The allegations in this paragraph and footnote 82 contain argument and conclusions of law to which no responses are required. To the extent responses are required, deny as to burden;⁴² admit to differences in material fact.

[PPL's CONCLUSION]. PPL's Conclusion to its Answer contains argument to which no response is required. To the extent a response is required, the JSPs deny that their Petition should be denied.

Respectfully submitted,

Dated this 16th day of February, 2024

/s/ Bernice I. Corman
Bernice I. Corman, Esq., PA Bar #332915
BICKY CORMAN LAW PLLC
1200 Connecticut Ave., NW, Suite 700
Washington, DC 20036
(202) 213-1672
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Counsel to Tesla, Inc., American Home Contractors, Sun Directed, Sunrun, Inc., and Solar Energy Industries Association

⁴² See Transource Pa., LLC v. Pa. PUC, 278 A.3d 942 ("The burden of proof contains two distinct burdens, the burden of production and the burden of persuasion . . . [T]he burden of persuasion never leaves the party on whom it is originally cast, but the burden of production may shift during the course of proceedings." (internal citation omitted.)).

CERTIFICATE OF SERVICE

I hereby certify that I have this day served a true copy of the foregoing document upon the parties listed below via electronic mail, in accordance with the requirements of 52 Pa. Code § 154 (relating to service by a party):

Darryl A. Lawrence David T. Evrard Office of Consumer Advocate 555 Walnut Street Forum Place, 5th Floor Harrisburg, PA 17101-1923 dlawrence@paoca.org

Adam E. Gersh
Flaster Greenberg, P.C.
1717 Arch Street, Suite 3300
Philadelphia, PA 19103
Adam.gersh@flastergreenberg.com
Sunrun, Inc.

Kimberly A. Klock
Michael Shafer
Assistant General Counsel
PPL Services Corporation
Two North Ninth Street
Allentown, PA 18101-1179
Kklock@pplweb.com
mjshafer@pplweb.com

Devin T. Ryan, David B. MacGregor Post and Schell, P.C. 17 N. 2nd Street, 12th Floor Harrisburg, PA 17101-1601 dryan@postschell.com dmacgregor@postschell.com
PPL Electric Utilities

Nicole Tillman, Executive Director Pennsylvania Office of Small Business Advocate Forum Place 555 Walnut Street, 1st Floor Harrisburg, PA 17101 nitillman@pa.gov

Dated this 16th day of February, 2024

Andrew J. Karas
Emily A. Collins
Fair Shake Environmental Legal Services
647 E. Market Street
Akron, OH 44302
akaras@fairshake-els.org
ecollins@fairshake-els.org
Natural Resources Defense Council

Beren Argetsinger Keyes & Fox LLP P.O. Box 166 Burdett, NY 14818 bargetsinger@keyesfox.com Sunrun, Inc.

Judith D. Cassel
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100 North Tenth Street
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mrbucy@hmslegal.com
Sustainable Energy Fund

Richard Kanaskie
Director and Chief Prosecutor
Bureau of Investigation and Enforcement
Pennsylvania Public Utility Commission
Commonwealth Keystone Building
Harrisburg, PA 17120
Rkanaskie@pa.gov

/s/ Bernice I. Corman

ATTACHMENT 1



17 North Second Street 12th Floor Harrisburg, PA 17101-1601 717-731-1970 Main 717-731-1985 Main Fax www.postschell.com

Devin Ryan

dryan@postschell.com 717-612-6052 Direct 717-731-1985 Direct Fax File #: 175564

March 23, 2023

VIA OVERNIGHT DELIVERY

Tesla Energy Operations, Inc. c/o CT Corporation System 600 N 2nd Street #401 Harrisburg, PA 17101

Re: Cease and Desist // Demand for Information
PPL Electric Utilities Corp. // Tesla Energy Operations, Inc.

DER Management Device Incidents

Dear Sirs/Mdms.:

Post & Schell, P.C. represents the interests of PPL Electric Utilities Corporation ("PPL" or the "Company"), and we write in connection with three (3) incidents ("Incidents") involving tampering and/or conversion by Tesla Energy Operations, Inc. and/or its employees, contractors, or agents ("Tesla" or "you") of certain proprietary business property of PPL, namely its Distributed Energy Resource management devices ("DER management devices") installed at service addresses of PPL's customers. By this letter, among other things, PPL demands that Tesla immediately *cease and desist* from further acts of tampering and/or conversion of DER management devices and otherwise comply with the demands set forth below.

Background of PPL's Distributed Energy Resource Management Devices

On May 24, 2019, PPL filed a Petition with the Pennsylvania Public Utility Commission ("PUC") for permission to require smart inverters that meet the new Institute of Electrical and Electronics Engineers ("IEEE") and Underwriters Laboratories ("UL") standards, to install DER management devices on new DERs interconnected with its distribution system, and to monitor and manage those new DERs. On July 12, 2019, notice of the Petition was served on Tesla Energy Operations, Inc. and several other solar entities, informing them about the Petition and the deadline to file protests or comments. Notice of the Petition also was published in the *Pennsylvania Bulletin* on July 20, 2019. Several parties intervened, and the case was litigated before the PUC. The PUC proceeding involved extensive discovery and the exchange of pre-served written testimony and

Tesla Energy Operations, Inc. c/o CT Corporation System March 23, 2023 Page 2

exhibits. Ultimately, the parties reached a settlement and filed a Joint Petition for Approval of Settlement of All Issues on October 5, 2020 ("Settlement"). On December 17, 2020, the PUC unanimously approved the Settlement and directed PPL to file a compliance tariff consistent with the Settlement. On January 6, 2021, the PUC issued a Secretarial Letter approving the compliance tariff filed on December 23, 2020.

Under the PUC-approved Settlement and tariff, PPL must conduct a pilot program to test and evaluate the costs and benefits of monitoring and managing DERs through the deployment of the DER management devices. Therefore, PPL's installation of DER management devices, subject to the terms and conditions of the Settlement, is a legal requirement under both the PUC's December 17, 2020 Order and PPL's PUC-approved tariff.

PPL's DER management devices are owned, operated, and maintained by PPL. The devices also have conspicuous markings indicating that they are the property of PPL. As public utility facilities, it is unlawful for customers or third parties to tamper with or remove those facilities. Moreover, because the DER management devices are being deployed for safety and reliability reasons, the removal or deactivation of the devices poses a safety and reliability risk to PPL's electric distribution system.

Incidents

Incident #1 – 88 Oak Ledge Ave, Schuylkill Haven, PA 17972 Incident #2 – 58 Thistle Way, Danville, PA 17821 Incident #3 – 29 Baldtop Heights, Danville, PA 17821

PPL has received information establishing that Tesla and/or its employees or representatives removed, disconnected, or otherwise tampered with DER management devices on at least three (3) occasions at the respective PPL service addresses set forth above. Based on reasonable information, PPL believes that the actions of Tesla representatives with respect to these incidents was intentional. Indeed, with respect to Incident #1 and Incident #2, Tesla admitted to its actions, confirmed to PPL that Tesla was in possession of the two (2) DER management devices, and returned the same to PPL and/or to the respective PPL service address. The DER management devices at issue are the proprietary business property of PPL. At no time did Tesla have any authority or permission to remove or disconnect any such DER management devices. The conduct of Tesla with respect to the DER management devices involved in Incidents #1, #2 and #3 are actionable at law.

Risk of Termination of Service to PPL's Customers

Tesla's actions with respect to these Incidents constitute grounds for PPL to terminate electric service to the customer service addresses at issue. Under Section 56.81 of the PUC's regulations, PPL can terminate customers' electric service without notice when the customer: (1) "[t]amper[s] with meters or other public utility equipment"; or (2) "[v]iolat[es] tariff provisions on file with the

Tesla Energy Operations, Inc. c/o CT Corporation System March 23, 2023 Page 3

[PUC] which endanger the safety of a person or the integrity of the public utility's delivery system." 52 Pa. Code § 56.98.

Further, under PPL's PUC-approved tariff, PPL can terminate a customer's electric service with notice when: (1) the "customer's installation, in Company's judgment, has become dangerous or defective or Company has received notice of such a condition, or the customer's equipment or use thereof may impair the equipment of Company or the service to the other customers"; (2) the "Company's property on customer's premises has been interfered with, or evidence is found that the wires, meters, entrance switch or other appurtenances up to and including the point of measurement have been tampered with"; (3) the "customer violates any of these rules" under PPL's tariff; or (4) upon "[f]ailure to comply with the material terms of a settlement" PPL Tariff Rule 10(B), Supp. No. 102 to Electric Pa. P.U.C. No. 201, Fourth Revised Page No. 14, to Supp. No. 227, Electric Pa. P.U.C. No. 201, Fourteenth Revised Page No. 14A.

By tampering with PPL's DER management devices, removing them, or both, Tesla has jeopardized the continued provision of electric service to the customers at issue. If Tesla fails to cease and desist with the tampering and removal of PPL's DER management devices, PPL must take action to preserve the safety, reliability, and integrity of its electric distribution system and ensure its continued compliance with the PUC's December 17, 2020 Order and its PUC-approved tariff.

PPL's Demands

In light of the foregoing, we hereby demand that you immediately:

- 1. <u>Immediately cease and desist</u> any and all further tampering with or conversion of PPL's DER management devices and, within five (5) business days of the date of this letter, expressly certify Tesla's compliance with this request to cease and desist. Should Tesla not expressly certify the agreement to cease and desist such activities in this timeframe, PPL may commence legal action seeking recovery of damages, costs, and attorneys' fees, as well as preliminary and permanent injunctive relief seeking injunctive relief and damages from Tesla.
- 2. <u>Confirm</u> in writing, within five (5) business days of the date of this letter, whether or not the three (3) Incidents set forth above are the only instances of tampering and/or conversion by Tesla of PPL's DER management devices and, if not, provide the addresses of the residences of any other such incidents and, within five (5) business days of the date of this letter, contact the undersigned to coordinate the return of any PPL-owned DER management devices that are within Tesla's possession to PPL.
- 3. <u>Confirm</u> in writing, within five (5) business days of the date of this letter, whether or not any data, electronic or otherwise, was extracted or removed by Tesla or its agents or employees from the three (3) DER management devices involved in the Incidents set forth above or any other such PPL-owned DER management devices at any time.

Tesla Energy Operations, Inc. c/o CT Corporation System March 23, 2023 Page 4

Notices

All notices and written communications from Tesla relating to these Incidents and in response to requests set forth herein shall be to:

David MacGregor, Esquire John W. Dornberger, Esquire Devin T. Ryan, Esquire Post & Schell, P.C. 17 N. Second Street, 12th Floor Harrisburg, PA 17101 dmacgregor@postschell.com jdornberger@postsched.com dryan@postschell.com

With a copy via electronic mail to:

Kimberly A. Klock PPL Services Corporation Two North Ninth Street Allentown, PA 18101 kklock@pplweb.com

This letter is not intended to be and should not be read as a full statement of facts or of PPL's rights and remedies, of the applicable law and/or regulations, or an admission of any fact, or waiver or limitation of any of PPL's rights or remedies, all of which are specifically retained and reserved.

We thank you for your prompt attention to this matter, and please to not hesitate to contact me directly should you have any questions.

Sincerely,

Devin Ryan DR/dmc

cc: Beau Millett (via email – bmillett@tesla.com)
Will Maegerle (via email – wmaegerle@tesla.com)



March 28, 2023

Via Certified Mail and Email

Devin T. Ryan, Esquire (<u>dryan@postschell.com</u>)
David MacGregor, Esquire (<u>dmacgregor@postschell.com</u>)
John W. Dornberger, Esquire (<u>jdornberger@postschell.com</u>)
Post & Schell, P.C.
17 N. Second Street, 12TH Floor
Harrisburg, PA 17101

Re: Your "Cease & Desist" Letter Dated March 23, 2023

Dear Mr. Ryan,

This is letter is in response to your letter on behalf of PPL Electric Utilities Corporation ("You," "PPL" or the "Company") dated March 23, 2023 entitled "Cease and Desist // Demand for Information, PPL Electric Utilities Corp. // Tesla Energy Operations, Inc., DER Management Device Incidents."

In your letter, you described three (3) incidents ("Incidents") in which you state that representatives of Tesla Inc. ("Tesla") removed a DER management device ("Device") from the property of a PPL customer. Tesla had been contacted by these 3 customers in order to address device communications failures that our customers had reported with their Tesla energy systems. As you are undoubtedly aware, following these Incidents (and prior to the date of your letter), Tesla worked quickly with PPL in an attempt to resolve these issues affecting our customers and returned the Devices directly to PPL.

You have demanded that Tesla "immediately cease and desist any and all further tampering with or conversion" of the Devices. While Tesla disagrees with your characterization of these Incidents, Tesla certifies that it will no longer be "tampering" with these Devices, which are in PPL's possession.

You have also demanded that Tesla confirm in writing that these 3 Incidents are the only instances of "tampering and/or conversion" with PPL's DER management devices. After conducting a reasonable investigation, Tesla confirms no actual knowledge of any incidents beyond the 3 aforementioned Incidents at issue.

You have further demanded that Tesla confirm that no data was extracted or removed by Tesla or its agents or employees from these 3 Devices. After conducting a reasonable investigation, Tesla confirms no actual knowledge that any data, electronic or otherwise, was extracted or removed from these Devices.



Like your letter, this letter is not intended to be and should not be read as a full statement of facts or of Tesla's rights and remedies, of the applicable law and/or regulations, or any waiver or limitation of any of Tesla's rights or remedies, all of which are specifically retained and reserved.

As you know, Tesla and PPL had already been working to mitigate and resolve any concerns that PPL may have had regarding these Incidents, and we are not aware of any adverse impact or harm to PPL or to our shared customers resulting from these Incidents. We encourage PPL to reach out to us directly and immediately to address any further concerns (please copy energynotices@telsa.com and legal@tesla.com) and we invite a broader conversation to support a better experience for our shared customers.

Sincerely,

Tesla, Inc.

Cc: Kimberly A. Klock, PPL Service Corporation

Two North Ninth Street, Allentown, PA 18101

Email: kklock@pplweb.com

ATTACHMENT 2

NYSEG and RG&E IEEE 1547-2018 Default Smart Inverter Settings – 11/15/2022

Effective Date: January 1st, 2023

The settings presented below are intended to conform to IEEE 1547-2018. These settings are intended as the default settings to be set on UL 1741 SB 1 certified Smart Inverters interconnecting to NYSEG and RG&E's distribution and sub-transmission systems (Primary Voltage \leq 34.5 kV) with Interconnection Application Acceptance Dates on or after January 1st, 2023. Settings other than these defaults, within the settings ranges allowable in IEEE 1547-2018 may be required on a case-by-case basis and are subject to review and approval by the Companies.

Bulk Power System Settings

AM . F A F A F . F . F			
Performance Cat	tegory	111	
			 - NOW Y

Frequency Disturbance Trip

OF2 Frequency (Hz)	62
OF2 Clearing Time (t)	0.16
OF1 Frequency (Hz)	61.2
OF1 Clearing Time (t)	300
UF2 Frequency (Hz)	56.5
UF2 Clearing Time (t)	0.16
UF1 Frequency (Hz)	58.5
UF1 Clearing Time (t)	300

Frequency Droop

dbOF (Hz)	0.036	
dbUF (Hz)	0.036	
kOF (p.u.)	0.05	
kUF (p.u.)	0.05	
Tresponse (s)	5	

Adjustments to db_{OF} , db_{UF} , k_{OF} , k_{UF} , and $T_{response}$ shall be permitted in coordination with the Companies and the New York Independent System Operator (NYISO)

Voltage Disturbance Trip

OV2 Voltage (V)	1.2
OV2 Clearing Time (t)	0.16
	2.00.00

 $^{^{1}}$ UL 1741 SB certified smart inverters will be required for all projects with application acceptance dates after the January 1^{st} , 2023 cut-in date.

OV1 Voltage (V)	1.1
OV1 Clearing Time (t)	2
UV2 Voltage (V)	0.5
UV2 Clearing Time (t)	1.1
UV1 Voltage (V)	0.88
UV1 Clearing Time (t)	3

Enter Service Criteria

Frequency Minimum (Hz)	59.5
Frequency Maximum (Hz)	60.1
Voltage Minimum (p.u.)	0.917
Voltage Maximum (p.u.)	1.05
Delay Before Export (s)	300
Ramp Time (s)	300
Ramp Characteristics	Linear
Enter Service Exceptions	Linear Ramp Required for Systems >50 kVA

Voltage Support Settings

911				WWW.
	Performance	Category		В
8,			Tel Qi	

Fixed Power Factor

Constant PF Active	No
Power Factor	1
Power Factor Excitation	0

Volt-VAR²

Volt-VAR Active	Yes
Vref	1
V1 - [pu]	0.93
Q1 - %Nameplate Apparent Power Rating	0%
V2- [pu]	0.97
Q2 - %Nameplate Apparent Power Rating	0%
V3 - [pu]	1.03
Q3 - %Nameplate Apparent Power Rating	0%
V4 - [pu]	1.07
Q4 - %Nameplate Apparent Power Rating	-44%

 $^{^2}$ (+) Q Values Indicate Injection of Reactive Power (VARs) from the Inverter onto the Area EPS (-) Q Values Indicate Absorption of Reactive Power (VARs) from the Area EPS to the Inverter



Con Edison Default IEEE 1547-2018 / 1547a-2020 Settings

The settings presented below are intended to conform to IEEE 1547-2018 and 1547a-2020. For inverter-based systems, these default settings shall be input into UL 1741 SB certified smart inverters interconnecting to the Con Edison Electric System with the following Interconnection Application Dates: 1) Systems >50 kW: the effective date of the 2023 update to the New York State Standardized Interconnection Requirements (NYSSIR), and 2) Systems \leq 50 kW: On or after June 1st, 2023. Settings other than these defaults, within the ranges allowable in IEEE 1547-2018 and 1547a-2020 may be required on a case-by-case basis and are subject to review and approval by Con Edison.

I. Operating Categories

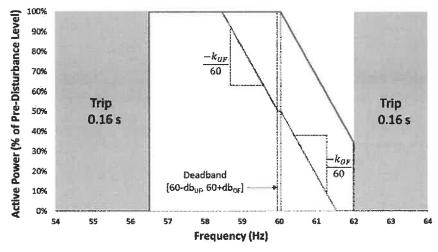
Performance Category	Inverter-Based	Synchronous Generator
Normal	В	A
Abnormal	III	I

II. Frequency Disturbance Trip

		Inverter-Based		Synchronous Generator	
	Trip Function	Freq. (Hz)	Clearing Time (s)	Freq. (Hz)	Clearing Time (s)
	OF2	62	0.16	62	0.16
	OF1	61.2	300	61.2	300
	UF1	58.5	300	58.5	300
	UF2	56.5	0.16	56.5	0.16

III. Frequency Droop

Parameters	Inverter-Based	Synchronous Generator
db _{OF} (Hz)	0.036	0.036
db _{UF} (Hz)	0.036	0.036
k _{OF} (p.u.)	0.05	0.05
k _{UF} (p.u.)	0.05	0.05
T(s)	5	5



--- 50% Pre-Disturbance Active Power, Pmin=0 --- 100% Pre-Disturbance Active Power, Pmin=0

Figure 1: Example Frequency Droop Curves

IV. Voltage Disturbance Trip

	Inverter-Based		Synchronous Generator	
Trip Function	Voltage (p.u.)	Clearing Time (s)	Voltage (p.u.)	Clearing Time (s)
OV2	1.2	0.16	1.2	0.16
OV1	1.1	2	1.1	2
UV1	0.8	3	0.8	3
UV2	0.5	1.1	0.5	0.16

V. Enter Service Criteria 1

Parameters	Inverter-Based	Synchronous Generator
Frequency Minimum (Hz)	59.5	59.5
Frequency Maximum (Hz)	60.1	60.1
Voltage Minimum (p.u.)	0.917	0.917
Voltage Maximum (p.u.)	1.05	1.05
Enter Service Delay (s)	120	120
Enter Service Duration (s)	120 (for >50 kW) / 30 (≤50 kW)	120
Enter Service Type	Linear ramp (for >50 kW) Randomized time delay (≤50 kW)	Linear ramp for all systems

VI. Fixed Power Factor

Parameters	Inverter-Based	Synchronous Generator
Constant PF Active	No	No
Power factor	0.95	0.97
Power Factor Excitation	INJ	INJ

VII. Volt-Var²

Parameters	Inverter-Based	Synchronous Generator
Volt-Var Active	Yes	Yes
V _{ref}	1	1
V ₁ (p.u.) / Q ₁ †	0.93 / 44%	0.9 / 25%
V ₂ (p.u.) / Q ₂ †	0.97 / 0%	1/0%
V ₃ (p.u.) / Q ₃ †	1.03 / 0%	1 / 0%
V ₄ (p.u.) / Q ₄ †	1.07 / -44%	1.1 / -25%
Open Loop Response Time (s)	5	10
Enable Autonomous V _{ref}	No	No

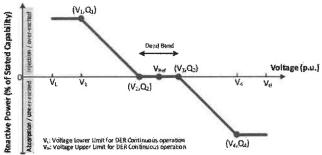


Figure 2: Example Volt-Var Curve

¹ For systems >50 kW after an initial delay of 120 seconds, linear ramping is from 0% of Rated Active Power to 100% over 120 seconds. For systems ≤ 50kW, after an initial delay of 120 seconds, 100% of Rated Active Power exchange is allowed after a randomized 30 second time delay. Enter Service Criteria applies to both power import and export.

² Positive Q values indicate injection of reactive power (VARs) from the inverter into the grid. (-) Q values indicate absorption of reactive power (VARs) from the grid to the inverter. Inverter-based generators with a kVA rating equal to the nameplate kW rating at unity power factor are expected to operate between 0.90 PF leading and 0.90 PF lagging when producing at 100% VA. Synchronous Generators must be capable of operating between 0.97 PF leading and 0.97 PF lagging when producing at 100% VA. These power factors correspond to +/- 44% and +/- 25%, respectively, for each generator type.

nationalgrid

Supplement to

Specifications for Electrical Installations 2024

Requirements for Parallel Generation Connected to a National Grid owned EPS

Electric System Bulletin No. 756

Version 9.0 (Supersedes all previous versions of ESB 756) Aggregators supplemental document. Connectivity between the RTU and router shall be via serial connection.

- (4) Network: National Grid will utilize MPLS or a comparable Virtual Private IP network for private connectivity between National Grid's EMS and the wholesale DER aggregator.
- (5) SCADA: DNP 3.0 protocol for National Grid SCADA data monitoring, control, and regulation.
- (6) Security: Please refer to the Telemetry Requirements for DER Aggregators supplemental document for security requirements.

After establishing an appropriate communications pathway, the wholesale DER aggregator should refer to the NYISO Aggregation Manual for specific rules and procedures on establishing the specific set of object IDs for each new wholesale DER aggregation, including implementation of the appropriate testing protocols.

7.8 Voltage and Frequency Ride Through and Control Requirements

7.8.1 Voltage and Frequency Ride Through

DER shall meet the requirements of the latest version of IEEE 1547 and its amendments ("IEEE 1547"). Specific DER configurations may require the need for additional primary protection schemes or supplemental DER devices to meet the performance requirements outlined in <u>Section 7.6.11</u> and <u>Section 7.8</u>. See ESB 756 Appendix B <u>Section 7.3.2.1</u> for specific DER configurations.

7.8.2 Voltage and Frequency Control

- (A) All DER shall meet the requirements of IEEE 1547 in accordance with Table 7.8.2-1, 7.8.2-2, Table 7.8.2-3, Table 7.8.2-4, and Table 7.8.2-5. Field adjustable settings shall not be changed without express written consent of the Company.
- (B) The voltage and frequency capabilities permitted in IEEE1547 shall follow the default activation state in accordance with Table 7.8.2-1 unless otherwise approved by the Company.

Table 7.8.2-1: Default Mode Settings for Inverter-based Utility Interactive DER

Function	Default Activation State
SPF, Specified Power Factor	OFF ²⁴
Frequency-Droop (Freq-Watt)	ON
Voltage- reactive power mode (Volt/VAR) with Var Priority	ON ²⁵
Active Power- Reactive Power Mode (Watt/VAR)	OFF
Constant Reactive Power mode (Fixed VAR)	OFF
Voltage- Active Power mode (Volt-Watt)	OFF
SS, Soft-Start Ramp Rate	ON
	Default value: 2% of maximum current output per second

²⁴ OFF and operating at unity PF. Or set to ON with unity PF.

²⁵ For DER less than 50 kW, Voltage Reactive Power Mode (Volt/Var) set to OFF

Effective January 1, 2023
Smart Inverter Settings Required for all Inverter-Based Systems
Inverters Must Meet IEEE 1547-2018 and UL 1741 SB Standards

um m m m sxport e e	Bulk Power Sy	Bulk Power System Settings
upport 6	Setting	Selection
upport F	Category	Cat III
upport 6	Voltage Disturbance - OV2	1.20 pu / 0.16 sec
upport F	Voltage Disturbance - OV1	1.10 pu /2.0 sec
upport F	Voltage Disturbance - UV2	0.5 pu / 1.1 sec
upport 6	Voltage Disturbance - UV1	0.88 pu / 3.0 sec
upport F	Frequency Disturbance – OF2	62.0 Hz / 0.16 sec
upport F	Frequency Disturbance – OF1	61.2 Hz / 300.0 sec
upport F	Frequency Disturbance – UF2	56.5 Hz / 0.16 sec
upport	Frequency Disturbance – UF1	58.5 Hz / 300.0 sec
upport 6	Frequency Droop	IEEE 1547-2018 Default
upport F	Enter Service Criteria – Frequency Minimum	≥ 59.5 Hz
upport	Enter Service Criteria – Frequency Maximum	IEEE 1547-2018 Default
upport 6	Enter Service Criteria – Voltage Minimum	IEEE 1547-2018 Default
upport F	Enter Service Criteria – Voltage Maximum	s 1.05 pu
ge Support F	Enter Service Performance - Delay Before Export	300.0 sec
age Support F	Enter Service Performance – Ramp Time	300.0 sec
age Support F	Enter Service Ramp Characteristics	Linear
age Support Functions	Enter Service Exceptions	Require default linear ramp for systems >50 kVA
	Voltage Supp	ort Functions
	Category	8
		Volt-Var
	Modify Volt-Var Curve from Defaults	Yes
	Enable Voit-Watt	No
	Modify Volt-Watt Curve from Default	Yes



ORANGE & ROCKLAND UTILITIES 390 WEST ROUTE 59 SPRING VALLEY NY 10977

TECHNOLOGY ENGINEERING DEPARTMENT

DISTRIBUTED ENERGY RESOURCE INTERCONNECTION HANDBOOK (DERIH)

EFFECTIVE DATE

November 2022

REQUIREMENTS FOR PARALLEL GENERATION UP TO 5MW CONNECTED TO ORANGE AND ROCKLAND'S ELECTRIC DISTRIBUTION SYSTEM

REVENUE METERING ENERGY SERVICES DER CUSTOMERS NEW BUSINESS TECHNOLOGY ENGINEERING
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5.2. Reactive Power Control

Requirements for reactive power control mode are specified in IEEE Std 1547™-2018 clause 5.3 - Voltage and Reactive Power Control.

The settings for:

- Constant Power Factor Mode shall be determined by the CESIR study. Constant reactive power mode settings shall be determined by O&R. The target reactive power level and mode (injection or absorption) will be specified.
- 2. Voltage Reactive Power (volt-var) mode shall be disabled by default.
- 3. Active power-reactive power mode settings shall be disabled by default.

5.3. Active Power Control

Requirements for active power control mode are specified in IEEE Std 1547™-2018 clause 5.4 - Voltage and Active Power Control.

Category B DER shall have voltage-active power (volt-watt) mode disabled by default. The settings for the voltage-active power mode shall be determined by O&R.

6. DER Response to Abnormal Conditions

Requirements for DER response to abnormal conditions are specified in IEEE Std 1547™-2018 clause 6 — Response to Area EPS abnormal conditions. The DER shall meet abnormal operating performance category as identified in Clause 6 of IEEE std 1547™-2018.

Table 6.1 – O&R assignment of IEEE 1547-2018 abnormal performance categories to various types of DERs

Power Conversion	Prime Mover / Energy Source	Category
Inverter	Solar PV, Battery Energy Storage	Category I
	Wind	Mutual Agreement
	Hydrogen Fuel Cell	Mutual Agreement
Synchronous generator	Bio-/landfill gas, fossil fuel, hydro, combined heat & power	Category I
Induction generator	Hydro	Mutual Agreement

VERIFICATION

I, JORDAN S. GRAHAM, being a Senior Energy Policy Advisor at Tesla, Inc., hereby state that with the exceptions of the paragraphs and text identified below, the facts set forth in the Joint Solar Parties' Reply are true and correct (or are true and correct to the best of my knowledge, information and belief) and that I expect Tesla to be able to prove the same at a hearing held in this matter:

Paragraphs

10

16

25

27 29

30 - 37

41

46

53 6.1

164

170

171

172 - 175

189

191

223 - 226

<u>Text</u>

Footnote 14

Foonotes 18 – 19

Footnote 23

I understand that the statements herein are made subject to the penalties of 18 Pa. C.S. § 4904 (relating to unsworn falsification to authorities).

Date: 2/15/24

lordan S. Graham

VERIFICATION

I, THADEUS B. CULLEY, being the Director of Public Policy at Sunrun, Inc., hereby state that the facts set forth in Paragraphs 10, 16, 25, 27, 29, 30 – 37, 41, 46, 53, 61, and 223 - 226 and 226, and footnote 14, in the Joint Solar Parties' Reply are true and correct (or are true and correct to the best of my knowledge, information and belief) and that I expect Sunrun to be able to prove the same at a hearing held in this matter.

I understand that the statements herein are made subject to the penalties of 18 Pa. C.S. § 4904 (relating to unsworn falsification to authorities).

Thadeus B. Culley

VERIFICATION

I, MICHAEL J. SHADOW, being the Chief Executive Officer at Sun Directed, hereby state that the facts set forth in Paragraphs 171, 189 and 191 and footnotes 18 and 19 of the Joint Solar Parties' Reply are true and correct (or are true and correct to the best of my knowledge, information and belief) and that I expect AHC to be able to prove the same at a hearing held in this matter.

I understand that the statements herein are made subject to the penalties of 18 Pa. C.S. § 4904 (relating to unsworn falsification to authorities).

Date: 02/15/24

Michael J. Shadow

Verification on behalf of American Home Contractors, con't.

VERIFICATION

I, NICOLAS ZAVALA, being the Director of Operations at American Home Contractors ("AHC"), hereby state that the facts set forth in Paragraphs 164, 170, 172, 173, 174, 175 and footnote 23 of the Joint Solar Parties' Reply are true and correct (or are true and correct to the best of my knowledge, information and belief) and that I expect AHC to be able to prove the same at a hearing held in this matter. I understand that the statements herein are made subject to the penalties of 18 Pa. C.S. § 4904 (relating to unsworn falsification to authorities).

Verification on behalf of American Home Contractors, con't.

Date: 216/9024 Nicolas Zavala