

**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 :

**REBUTTAL TESTIMONY OF
STEPHEN WHITLEY**

PPL Electric Statement No. 4-R

March 4, 2020

1 **Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

2 A. My name is Stephen Whitley, and my business address is 33 Emerald Glen, Laguna
3 Niguel, California 92677.

4
5 **Q. WHAT IS YOUR CURRENT OCCUPATION?**

6 A. I am an electric industry consultant doing business as Stephen Whitley LLC. I provide
7 consultation, testimony, and advice to various clients in the electric industry on matters
8 including planning, operations, engineering, environmental, distributed energy resources,
9 electricity markets, Regional Transmission Organization (“RTO”) and Independent
10 System Operator (“ISO”) policies and procedures, and regulatory affairs.

11

12 **Q. HAVE YOU PREVIOUSLY SUBMITTED IN DIRECT TESTIMONY IN THIS**
13 **PROCEEDING?**

14 A. Yes. My direct testimony is set forth in PPL Electric Statement No. 4.

15

16 **Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?**

17 A. I will respond to several allegations and recommendations made in: NRDC Statement
18 No. 1, the Direct Testimony of Harry Warren submitted on behalf of the Natural
19 Resources Defense Council (“NRDC”); OCA Statement No. 1, the Direct Testimony of
20 Ron Nelson submitted on behalf of the Office of Consumer Advocate (“OCA”); SEF
21 Statement No. 1 (Non-Proprietary Version), the Direct Testimony of John Costlow
22 submitted on behalf of the Sustainable Energy Fund (“SEF”); and SEF Statement No. 2,
23 the Direct Testimony of Ron Celentano submitted on behalf of SEF.

1 More specifically, my rebuttal testimony addresses the following subjects: (1)
2 PPL Electric's DER Management proposal is not premature; (2) other parties'
3 recommendations for a statewide proceeding should be rejected; (3) the benefits of PPL
4 Electric monitoring and managing the smart inverters' grid support functions far exceed
5 the benefits of solely relying on third-party DER aggregators; and (4) "alternative
6 approaches" to obtaining inverter data from DERs are inefficient and substantially worse
7 than the Company's proposal.

8
9 **I. PPL ELECTRIC'S DER MANAGEMENT PROPOSAL IS NOT PREMATURE**

10 **Q. OCA WITNESS NELSON AND SEF WITNESSES COSTLOW AND**
11 **CELENTANO ASSERT THAT THE COMPANY'S DER MANAGEMENT**
12 **PROPOSAL IS PREMATURE FOR VARIOUS REASONS. (OCA ST. NO. 1, PP.**
13 **17-39; SEF ST. NO. 1 (NON-PROPRIETARY), PP. 5-9; SEF ST. NO. 2, PP. 6-8, 10-**
14 **11, 15.) DO YOU AGREE?**

15 **A.** No. The fundamental fallacy underpinning the OCA's and SEF's claims is that the
16 Company only needs to take action when DER penetration levels increase to the point
17 where PPL Electric is experiencing wide-spread issues. Such an approach is harmful to
18 PPL Electric and its customers and inconsistent with prudent system planning. If PPL
19 Electric waits until this critical point is reached, reliability issues will surface and
20 imprudent/more costly decisions will undoubtedly be made. Now is the time to get out
21 ahead of these issues and move forward. No parties disputed the Company's direct
22 testimony (PPL Electric Statement No. 2 (Reder Direct) and PPL Electric Statement No.
23 4 (Whitley Direct)) showing all of the problems that arose in other states and countries

1 because the electric utilities did not get ahead of the issues. PPL Electric is correct in
2 wanting to learn from the mistakes of other utilities, not repeat them.

3 The Company should not be forced to repeat the same mistakes as California,
4 Illinois and Hawaii. Given that PPL Electric is responsible for distribution system
5 planning and reliability, the Company should be permitted to monitor and manage the
6 DERs interconnected with its system for the benefit of PPL Electric, DER owners, and all
7 PPL Electric customers.

8 OCA and SEF also fail to recognize the immense difficulty in correcting those
9 issues when too many DERs are interconnected without smart inverters and without DER
10 management devices. You would either have to: (1) retrofit existing installations; or (2)
11 only reap the incremental benefit of having new DER interconnections with smart
12 inverters and DER management devices. Neither of these options, however, is a good
13 approach. Under the first option, retrofitting existing installations would be more costly
14 and disruptive for customers. As explained in Ms. Reder's rebuttal testimony (PPL
15 Electric Statement No. 2-R), Germany was forced to manually retrofit 300,000 DERs,
16 which cost approximately €175 million (or around \$190 million). As for the second
17 option, the number of DERs with smart inverters and management devices could be too
18 low to have any real, measurable benefits to the distribution system and ratepayers.
19 Indeed, as noted in Ms. Reder's rebuttal testimony (PPL Electric Statement No. 2-R), the
20 National Association of Regulatory Utility Commissioners' ("NARUC") February 12,
21 2020 resolution encourages state regulators to take action now to implement IEEE 1547-
22 2018 before too many non-smart inverters are installed.

1 Moreover, as explained in PPL Electric Statement No. 6-R (Wallace Direct), the
2 DER management device, if installed at the time the DER is being installed, will reduce
3 the installation costs for DERs under 15 kW, which comprise approximately 80% of new
4 DERs in PPL Electric's service territory, by approximately \$393 to \$700. Mr. Wallace
5 also explains that the ConnectDER DER Management device could help customers save
6 approximately \$1,000 to \$1,600 in estimated costs to upgrade their electric panels.
7 However, the customer loses out on all of those cost savings if the DER is not originally
8 installed with that DER management device. Therefore, retrofitting existing installations
9 or delaying the implementation of the Company's proposal would result in many DER
10 owners losing out on these significant installation cost savings.

11 In addition, I must emphasize that we are dealing with electric service, which is
12 an essential human need and a hazardous industry. The fact that the OCA and SEF are so
13 dismissive of PPL Electric's clear effort to get ahead of these issues is confounding. It is
14 never a good policy to wait until the problems overwhelm the system to act. PPL Electric
15 must be permitted to implement its DER Management Plan and implement these
16 reasonable and effective steps to address the issues presented by DERs on its distribution
17 system.

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19 **Q. OCA WITNESS NELSON ALSO CONTENDS THAT THE ONLY UTILITIES**
20 **WHO NEED TO TAKE ACTION ARE THE ONES WHO FORECAST DERS.**
21 **(OCA ST. NO. 1, P. 33.) WHAT IS YOUR RESPONSE?**

22 A. It appears that Mr. Nelson is viewing this from the perspective of DERs causing issues at
23 the ISO or RTO level, rather than on a more localized distribution level. Although PPL

1 Electric may not currently be experiencing substantial issues from DERs on the
2 transmission system, the Company is, without a doubt, experiencing issues with DERs on
3 its distribution system, as explained in Mr. Salet’s rebuttal testimony (PPL Electric
4 Statement No. 1-R) and Dr. Miu’s direct testimony (PPL Electric Statement No. 3).

5
6 **II. OTHER PARTIES’ RECOMMENDATIONS FOR A STATEWIDE**
7 **PROCEEDING SHOULD BE REJECTED**

8 **Q. NRDC WITNESS WARREN, OCA WITNESS NELSON, AND SEF WITNESSES**
9 **COSTLOW AND CELENTANO RECOMMEND THAT THE COMMISSION**
10 **INITIATE A STATEWIDE PROCEEDING TO ADDRESS THE ISSUES RAISED**
11 **BY PPL ELECTRIC’S PETITION. (NRDC ST. NO. 1, PP. 7-10, 14-18, 32; OCA**
12 **ST. NO. 1, PP. 4, 46-50, 52; SEF ST. NO. 1 (NON-PROPRIETARY), PP. 9-10, 16;**
13 **SEF ST. NO. 2, P. 15.) DO YOU AGREE?**

14 **A.** No. As I explained in my direct testimony (PPL Electric Statement No. 4), a statewide
15 proceeding is not the correct approach here. I continue to believe that PPL Electric’s
16 DER Management Petition should be granted and that the Company should be permitted
17 to proactively implement IEEE 1547-2018 and its DER Management Plan.

18 I have substantial experience in a statewide proceeding on these issues, and it has
19 **not** been timely. In New York, it officially began in April 2014 and continues today. It
20 has involved hundreds of meetings, thousands of hours of staff and consulting time, and
21 there is no end in sight.

22 I was involved with the New York Public Service Commission (“NYPSC”), my
23 staff, and the market participants when the Reforming the Energy Vision (“REV”)
24 initiative was conceived and initiated. Audrey Zibelman was the Chair of the NYPSC

1 and took this on as a top priority initiative. In 2012 and 2013, in my role as CEO of the
2 New York Independent System Operator (“NYISO”), I began receiving input from the
3 DER community that their behind the meter resources were not being compensated
4 properly. These were retail assets and not under NYISO’s responsibility. Chair
5 Zibelman and her staff then developed the concept that a distribution level market could
6 be developed and coordinated with the NYISO wholesale market in a manner to improve
7 efficiency and reliability. Their view was that a DSO (Distribution System Operator)
8 would be developed to manage these assets as well as the distribution system.

9 The Andrew Cuomo administration, the NYPSC, and state energy policy lead
10 Richard Kauffman announced REV in April 2014. When they introduced REV, the
11 administration cited the need to modernize New York’s utility infrastructure to be more
12 resilient in light of the impact of Hurricane Sandy. They also cited trends such as the
13 aging of the electric grid, the need to control energy prices, and the threat of climate
14 change.

15 During these proceedings, there has been constant argument put forward by the
16 aggregators that a Distribution System Operator is not needed, and that it would hinder
17 competition. DER owners have been clearly frustrated by the progress.

18 Some utility-sponsored demonstration projects have been developed through this
19 process to demonstrate the value of DERs (e.g., Brookline Navy Yard), but I do not see
20 any movement toward a conclusion of the process so that the state can move forward
21 with actions or policy in this area. What I do see is a continued stakeholder process.
22 Further, although I am not personally familiar with the Maryland proceeding, I
23 understand it too has taken multiple years.

1 For these reasons, and as explained further in Mr. Salet’s rebuttal testimony (PPL
2 Electric Statement No. 1-R) and the following sections, the other parties’
3 recommendations for a statewide proceeding should be rejected for several reasons.
4

5 **A. A STATEWIDE PROCEEDING WOULD UNNECESSARILY DELAY PPL**
6 **ELECTRIC’S ABILITY TO ADDRESS THESE ISSUES FOR AN**
7 **UNDETERMINED NUMBER OF YEARS**

8 **Q. WOULD THE OTHER PARTIES’ APPROACH UNNECESSARILY PROHIBIT**
9 **PPL ELECTRIC FROM ADDRESSING THESE ISSUES FOR AN**
10 **UNDETERMINED NUMBER OF YEARS?**

11 A. Yes. Only NRDC actually places a deadline on the statewide collaborative process that it
12 recommends, *i.e.*, January 1, 2022, although that proceeding would only be limited to
13 ensuring that all new inverters in Pennsylvania be compliant with IEEE 1547-2018 by
14 that deadline. (NRDC St. No. 1, p. 10.) In contrast, the OCA and SEF simply
15 recommend that the Commission initiate a statewide proceeding with no parameters on
16 what should be addressed in that proceeding or how long it should last.

17 As I understand their positions, the other parties are advocating for an “all or
18 nothing” approach, where either all EDCs in Pennsylvania implement IEEE 1547-2018 or
19 none of them do. However, PPL Electric is ready to implement IEEE 1547-2018 and its
20 DER Management Plan now. In fact, as explained by Mr. Salet, the Company has
21 several technologies and infrastructures that its peer EDCs do not currently have and that
22 are necessary to implement IEEE 1547-2018 and the DER Management Plan. Therefore,
23 it would be unreasonable to force the Company to wait until all other EDCs in

1 Pennsylvania are ready to implement IEEE 1547-2018 and to comply with any other
2 requirements that are developed in a statewide proceeding.

3 In addition, statewide stakeholder processes have taken exceptionally long times
4 in other states. The New York REV proceeding has now gone on for 70 months. Other
5 state-wide proceedings are suffering the same negative fate.

6 Conversely, PPL Electric's DER Management Petition proceeding will result in a
7 ruling on the merits of its proposal much sooner. Given the substantial benefits of PPL
8 Electric's proposal (see PPL Electric Statement No. 1-R), the Company should be able to
9 implement its proposal now and not wait for a lengthy statewide proceeding.

10 Moreover, assuming that the statewide stakeholder process is only initiated after
11 the Commission rules on PPL Electric's DER Management Petition and any appeals of
12 the Commission's decision, it could be years until that statewide stakeholder process
13 begins.

14 Further, although I agree with NRDC witness Warren that IEEE 1547-2018
15 should be implemented sooner rather than later, there is no guarantee that other
16 stakeholders, including other EDCs, will be supportive. In fact, I have been advised by
17 PPL Electric's counsel that the Commission must afford the other EDCs and interested
18 stakeholders due process. As a result, my understanding is that the Commission: (1)
19 cannot predetermine the result of the statewide stakeholder process; and (2) must allow
20 that process to play out before determining whether or not all EDCs must implement
21 IEEE 1547-2018 by January 1, 2022.

1 **B. OTHER PARTIES’ CLAIMS ABOUT INCREASED COSTS AND**
2 **REGULATORY BURDEN FROM INDIVIDUALIZED PROCEEDINGS**
3 **ARE UNFOUNDED**

4 **Q. DO YOU AGREE WITH NRDC WITNESS WARREN AND OCA WITNESS**
5 **NELSON THAT WITHOUT A STATEWIDE PROCEEDING, THERE WILL BE**
6 **INCREASED COSTS AND REGULATORY BURDEN BECAUSE THERE WILL**
7 **BE INDIVIDUAL PROCEEDINGS FOR EACH EDC TO IMPLEMENT A**
8 **PROPOSAL SIMILAR TO THE DER MANAGEMENT PLAN (NRDC ST. NO. 1,**
9 **P. 16; OCA ST. NO. 1, PP. 46-47)?**

10 A. No. The other parties have not produced any evidence to support their claims that
11 individualized proceedings for EDCs to implement similar proposals to PPL Electric’s
12 DER Management Plan are more expensive and burdensome. Moreover, their claims
13 presuppose that other EDCs in Pennsylvania will even make similar filings to the DER
14 Management Plan. Given the differences in EDCs’ technology infrastructure that are
15 noted in Mr. Salet’s rebuttal testimony (PPL Electric Statement No. 1-R), it is unlikely
16 that other EDCs will be making such filings in the near future.

17 In that regard, a statewide proceeding would be more burdensome and costly
18 because it would be a broader proceeding involving more parties, rather than a singular,
19 more-focused proceeding for only PPL Electric.

20 In addition, the other parties have not produced any evidence that having uniform
21 standards for all of the EDCs reduces costs for customers and installers when deploying
22 and interconnecting DERs. And if there were such increased costs, they would pale in
23 comparison to the estimated reductions in DER installation costs under PPL Electric’s

1 proposal, which are addressed in Mr. Wallace’s rebuttal testimony (PPL Electric
2 Statement No. 6-R).

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4 **C. NRDC’S RELIANCE ON THE DRAFT NARUC RESOLUTION AND THE**
5 **EPRI DIAGRAM IS MISPLACED**

6 **Q. DO YOU AGREE WITH NRDC WITNESS WARREN THAT THE DRAFT**
7 **NARUC RESOLUTION AND THE EPRI DIAGRAM DEMONSTRATE THAT A**
8 **STATEWIDE PROCEEDING IS NECESSARY (NRDC ST. NO. 1, PP. 16-17;**
9 **NRDC EXHS. A AND C)?**

10 **A.** No. As explained in Ms. Reder’s rebuttal testimony (PPL Electric Statement No. 2-R),
11 the NARUC Board of Directors approved the resolution on February 12, 2020. Although
12 that resolution mentions the state utility commissions initiating statewide proceedings to
13 implement IEEE 1547-2018, it still demonstrates that EDCs, like PPL Electric, must take
14 action now to develop smart inverter deployment standards. Moreover, while the EPRI
15 model envisions the “Preferred Utility-Required Profile” applying to “Most DERs” and
16 being adopted through a “state-wide or similar” process, PPL Electric’s DER
17 Management proposal provides a sound and extremely efficient solution to address the
18 issues concerning new DER interconnections on its distribution system. A statewide
19 proceeding would only add costs and delays without any real value.

20 Other EDCs in Pennsylvania likely are not ready and will not be ready to
21 implement IEEE 1547-2018 and a plan similar to the Company’s DER Management
22 Plan, given that they lack the requisite technologies. I expect that will cause such a
23 statewide proceeding to be substantially delayed. Further, depending on what
24 technologies those EDCs have implemented, their capabilities to take advantage of the

1 smart inverter functions would likely be much more limited than PPL Electric. I believe
2 it is more prudent to foster innovation and enable PPL Electric to leverage its capital
3 investments in these technologies now. Otherwise, the Company will be forced to wait
4 and, ultimately, implement less beneficial standards. Indeed, other EDCs may be less
5 willing and capable of taking advantage of the smart inverters' grid support functions
6 than PPL Electric. Therefore, the standards developed throughout a statewide proceeding
7 would likely be designed to accommodate the current statuses of those EDCs, rather than
8 built around the leading initiatives and technologies undertaken by PPL Electric.

9
10 **D. PJM INTERCONNECTION LLC DOES NOT NEED TO PARTICIPATE**
11 **IN THIS PROCEEDING OR A STATEWIDE PROCEEDING BEFORE**
12 **IEEE 1547-2018 AND THE COMPANY'S PROPOSAL CAN BE**
13 **IMPLEMENTED**

14 **Q. DO YOU AGREE WITH OCA WITNESS NELSON THAT A STATEWIDE**
15 **PROCEEDING IS NEEDED TO ADDRESS CHANGES TO**
16 **INTERCONNECTION STANDARDS SO THAT PJM CAN PARTICIPATE (OCA**
17 **ST. NO. 1, P. 48)?**

18 A. No. The Commission is more than capable reviewing and adjudicating PPL Electric's
19 proposal without PJM's input. Moreover, the Company's proposal is limited to DERs
20 interconnected with PPL Electric's distribution system. Therefore, PPL Electric's
21 proposal would not affect any DERs interconnected with the Company's transmission
22 system, which is subject to FERC's jurisdiction. Thus, it is unclear to me why Mr.
23 Nelson believes that PJM's participation in this proceeding or a statewide proceeding is
24 needed before either IEEE 1547-2018 can be implemented or the Commission can
25 approve PPL Electric's DER Management Petition.

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E. STATEWIDE PROCEEDINGS DO NOT BETTER ACCOUNT FOR POTENTIAL IMPACTS ON DER SYSTEM DESIGN, ELECTRIC VEHICLES, BATTERIES, AND COMPENSATION (IF ANY) FOR DER CUSTOMERS PROVIDING GRID SUPPORT SERVICES

Q. NRDC WITNESS WARREN ARGUES THAT A STATEWIDE PROCEEDING IS NEEDED IN ORDER TO EVALUATE THE POTENTIAL IMPACTS ON DER SYSTEM DESIGN, ELECTRIC VEHICLES, BATTERIES, AND COMPENSATION (IF ANY) FOR DER CUSTOMERS PROVIDING GRID SUPPORT SERVICES. (NRDC ST. NO. 1, PP. 14-15.) DO YOU AGREE WITH MR. WARREN?

A. No. In fact, the issues about DER system design, electric vehicles, batteries, and compensation for grid support services are all addressed in Mr. Salet’s rebuttal testimony (PPL Electric Statement No. 1-R). Therefore, I believe the instant proceeding is allowing for a full and complete investigation of these issues, and a statewide proceeding is not needed to address these topics. Statewide proceedings have been bogged down for years now by stakeholders with varying interests (*e.g.*, aggregators, DER owners, and others). Many pilot projects have been initiated and completed to address the benefits of DER resources. Now is clearly the time to have PPL Electric move forward to demonstrate how communication and operation of the facilities can be accomplished in a cost effective, safe, and reliable manner. Over my career, I have seen over and over again that “time is the enemy” when faced with a developing issue like this. Now is the time for the Company to move forward with its DER Management proposal.

1 **F. THERE DOES NOT NEED TO BE A “SEPARATE IMPLEMENTATION**
2 **PROCESS FOR IEEE 1547-2018”**

3 **Q. OCA WITNESS NELSON CONTENDS THAT THE “COMMISSION SHOULD**
4 **CREATE A SEPARATE IMPLEMENTATION PROCESS FOR IEEE 1547-2018”**
5 **THAT IS DISTINCT FROM A DETERMINATION AS TO WHETHER THE**
6 **COMPANY CAN MONITOR AND MANAGE DERS. (OCA ST. NO. 1, P. 15.) DO**
7 **YOU AGREE?**

8 A. No, I do not agree. There is no need for a separate implantation process for IEEE 1547-
9 2018. In fact, in Mr. Salet’s rebuttal testimony (PPL Electric Statement No. 1-R), he
10 even notes that, as advised by counsel, the Commission’s regulations incorporate
11 revisions to IEEE 1547 and UL 1741 as “amended and supplemented,” so there may not
12 even need to be an implementation process for IEEE 1547-2018 in Pennsylvania.
13 Moreover, creating two separate implementation processes for the Company’s proposal
14 would only compound the issues and delays involved with PPL Electric not being able to
15 implement its DER Management Plan now. Further, as Ms. Reder explains in her
16 rebuttal testimony (PPL Electric Statement No. 2-R), utility monitoring and management
17 is actually contemplated by IEEE 1547-2018.

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19 **G. CHANGING INTERCONNECTION STANDARDS THROUGH A**
20 **STATEWIDE PROCEEDING IS NOT AN “INDUSTRY BEST**
21 **PRACTICE”**

22 **Q. OCA WITNESS NELSON ALSO ARGUES THAT CONSIDERING**
23 **INTERCONNECTION STANDARD MODIFICATIONS THROUGH A**
24 **STATEWIDE PROCEEDING IS “AN INDUSTRY BEST PRACTICE.” (OCA ST.**
25 **NO. 1, PP. 40-41.) DO YOU AGREE WITH THAT POSITION?**

1 A. No. To the contrary, statewide proceedings have proven to be disastrous. The New York
2 proceeding is now in excess of 70 months, with no end in sight. Other states have
3 experienced similar results. Time is of the essence in this matter. Safety and reliability
4 are a major concern, and continued delays will ultimately cost new DER customers in
5 PPL Electric’s service territory, as outlined in Mr. Salet’s testimony.

6 In addition, Mr. Nelson recently submitted direct testimony on December 20,
7 2019, in the Public Service of New Hampshire d/b/a Eversource Energy (“Eversource
8 Energy”) rate case before the New Hampshire Public Utilities Commission that conflicts
9 with his position in this proceeding.¹ In the Eversource Energy case, one of Mr. Nelson’s
10 grounds for criticizing the Company’s “base capital plan” and “grid transformation
11 enablement program” was the utility’s failure to update its interconnection standards to
12 incorporate IEEE 1547-2018. According to Mr. Nelson, updating those interconnection
13 standards could be much cheaper solutions to increase hosting capacity when compared
14 to traditional distribution system upgrades. Specifically, his testimony on page 33 states
15 the following:

16 [T]he Company has not upgraded its interconnection standards recently
17 and has not considered current IEEE standards, including 1547-2018 and
18 2030.5. Updating interconnection and engineering standards are important
19 because they could reduce distribution system investments. For example,
20 the Company has noted that one of its objectives is to increase hosting
21 capacity on the distribution system with its spending plans. However,
22 customer-owned smart inverters or energy storage systems could be used
23 to increase hosting capacity. Through updated interconnection standards,
24 smart inverters can be required to operate under specific configurations to
25 increase hosting capacity. Energy storage can also be operated to increase

¹Direct Testimony of Ron Nelson on behalf of the New Hampshire Office of Consumer Advocate, p. 36, *In re Public Service of New Hampshire d/b/a Eversource Energy*, Docket No. DE 19-057 (Dec. 20, 2019), available at https://www.puc.nh.gov/Regulatory/Docketbk/2019/19-057/TESTIMONY/19-057_2019-12-20_OCA_TESTIMONY_NELSON.PDF.

1 hosting capacity. Embedding increased hosting capacity into the entire
2 distribution system may be a costly investment. Before upgrading the
3 entire systems['] hosting capacity, these lower cost alternatives should be
4 explored.²

5 Therefore, Mr. Nelson’s position in the Eversource Energy rate case completely
6 contradicts his contention in this case that PPL Electric’s proposal to update its
7 interconnect standards to incorporate IEEE 1547-2018 is not an “industry best practice.”

8
9 **III. THE BENEFITS OF THE COMPANY’S PROPOSAL FAR EXCEED THE**
10 **BENEFITS OF SOLELY RELYING ON THIRD-PARTY DER AGGREGATION**

11 **Q. OTHER PARTIES HAVE RAISED CONCERNS ABOUT THE POTENTIAL**
12 **IMPACT THE DER MANAGEMENT PROPOSAL WOULD HAVE ON THIRD-**
13 **PARTY DER AGGREGATION. (NRDC ST. NO. 1, PP. 8-9; OCA ST. NO. 1, PP.**
14 **18-28, 42-44; SEF ST. NO. 1 (NON-PROPRIETARY), P. 4.) WOULD YOU**
15 **PLEASE RESPOND?**

16 A. As explained by Mr. Salet in his rebuttal testimony (PPL Electric Statement No. 1-R),
17 third-party DER aggregators are free to continue operating in the Company’s service
18 territory under the DER Management proposal. Thus, there will be no adverse impact on
19 third-party DER aggregation.

20 However, it should be emphasized that the benefits of PPL Electric’s monitoring
21 and managing DERs and take advantage of smart inverters’ grid support functions far
22 exceed the benefits of solely relying on third-party DER aggregators. As even
23 acknowledged by OCA witness Nelson, the Hawaii Public Utilities Commission
24 (“HPUC”) “recognized that third-party aggregators may not stand ready at the outset of

² *Id.* (emphasis added).

1 the program to provide the requisite DER communication and control functionality.”
 2 (OCA St. No. 1, p. 25.) Here are some of the primary benefits of PPL Electric
 3 monitoring and managing DERs versus solely relying on third-party aggregation: (1)
 4 safety of utility workers and the public; (2) optimization of distribution operations for the
 5 benefit of all consumers; (3) distribution and transmission system reliability; and (4)
 6 reduction and/or deferment of huge capital investments on the distribution system.

7 In addition, the other parties fail to recognize that while PJM has the ability to
 8 remotely monitor and manage generation interconnected to transmission systems, there is
 9 no similar ability for the operator of the distribution system (in this case, PPL Electric) to
 10 monitor and manage generation interconnected to its distribution system. The absurdity
 11 of their position is readily apparent in the following chart:
 12

PJM’s Ability to Remotely Monitor and Manage Generation Interconnected to Transmission Systems	PPL Electric’s Ability to Remotely Monitor and Manage Generation Interconnected to Its Distribution System (Under the DER Management Proposal)	PPL Electric’s Current Ability to Remotely Manage Generation Interconnected to Its Distribution System (As Suggested by NRDC, OCA, and SEF)
Voltage Regulation Frequency Regulation Load Balancing Real Power Curtailment Black-Start Capability Remote Shut-Off in Emergency Situations	Voltage Regulation Frequency Regulation Remote Shut-Off in Emergency Situations	None

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In fact, New York is exploring the use batteries in the city to provide black start capability for generating units during a system restoration event following a disturbance. Currently, the grid operators depend on gas and oil-fired peaking units to provide this service. However, upcoming stringent environmental regulations will likely preclude this option. With the development of significant wind and other renewable resources in New York, this option begins to look very attractive. Clearly, these resources need to be under the operational management of the electric utility, who is responsible for operating and maintaining the distribution system.

Therefore, as seen in the chart above, PPL Electric’s DER Management proposal is trying to rectify this critical gap in monitoring and managing generation interconnected at the distribution system level. Yet, the other parties continue to advocate for absolutely no remote monitoring and management of such generation. Their position is untenable and should be soundly rejected.

V. “ALTERNATIVE APPROACHES” TO OBTAINING INVERTER DATA FROM DERS ARE WOEFULLY INEFFICIENT AND SUBSTANTIALLY WORSE THAN THE COMPANY’S PROPOSAL

Q. OCA WITNESS NELSON RAISES A QUESTION AS TO WHETHER THE COMPANY CONSIDERED “ALTERNATIVE APPROACHES” TO GETTING INVERTER DATA FROM CUSTOMERS AND ARGUES THAT “OTHER FORMS OF DATA COULD BE USED TO ADDRESS LOAD MASKING ISSUES, WHILE ALSO PROVIDING VALUABLE INFORMATION FOR SYSTEM

1 **PLANNING PURPOSES.” (OCA ST. NO. 1, PP. 16-17.) WOULD YOU PLEASE**
2 **RESPOND?**

3 A. Mr. Nelson’s advocacy for “alternative approaches” to obtaining inverter DERs should be
4 rejected. When compared to the Company’s DER Management proposal, alternative
5 approaches to obtaining inverter data from DERs are woefully inefficient and
6 substantially worse. It appears that Mr. Nelson is contemplating DER customers
7 manually providing information to the Company. Not only does this place an increased
8 burden on the customers, but this approach is incredibly inefficient. Moreover, it results
9 in the data becoming stale, which is much less useful for planning and operating
10 purposes. As a prudent system operator, PPL Electric operates its distribution system
11 using real-time data so that it can respond quickly in response to any safety or reliability
12 issues that arise on the system. By comparison, waiting for customers to provide that
13 data to PPL Electric is not a reasonable approach. Safety of the line crews and the
14 public, as well as the reliability of the distribution system, demand that PPL Electric be
15 able to monitor and DERs interconnected with its distribution system. Therefore, PPL
16 Electric must be able to monitor these DERs in real-time, so that the Company can
17 respond in a timely and efficient manner to the issues being experienced on its
18 distribution system.

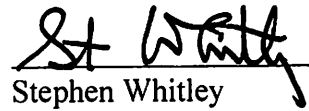
19
20 **Q. DOES THIS CONCLUDE YOUR REBUTTAL TESTIMONY AT THIS TIME?**

21 A. Yes, although I reserve the right to supplement my rebuttal testimony.

VERIFICATION

I, STEPHEN WHITLEY, being a Consultant at Stephen Whitley LLC, hereby state that the facts above set forth are true and correct to the best of my knowledge, information and belief and that I expect PPL Electric Utilities Corporation 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: 3-4-24



Stephen Whitley