

**BEFORE THE  
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Cheryl Higgins

v.

PPL Electric Utilities Corporation

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C-2018-3005927

**INITIAL DECISION**

Before  
Elizabeth H. Barnes  
Administrative Law Judge

**INTRODUCTION**

A residential customer filed a complaint seeking to prevent an electric distribution company (EDC) from installing a smart meter a/k/a “Advanced Metering Infrastructure (AMI) meter” or “Radio Frequency (RF) meter” on her service address. The complaint will be dismissed for failure to prove by a preponderance of evidence that the installation of the smart meter constitutes unsafe or unreasonable service under 66 Pa. C.S. § 1501 or otherwise violates the Public Utility Code, a Commission order, regulation, or a Commission-approved tariff of the company.

**HISTORY OF THE PROCEEDING**

On November 9, 2018, Cheryl Higgins (Complainant) filed the instant Complaint requesting that PPL Electric Utilities Corporation (PPL or Respondent) be precluded from installing a radio frequency (RF) meter on her residence at 404 Main St., Avoca, Luzerne County, Pennsylvania. Complaint at 3. Complainant raises issues regarding health, safety, data privacy, and fire hazards. Ms. Higgins claims the RF fields are class 2B carcinogens and that the Energy Policy Act of 2005 precludes the mandatory installation of smart meters.

The Complaint was served upon PPL on November 9, 2018.<sup>1</sup> On November 29, 2018, Respondent filed an Answer. The Answer admits that the Respondent provided electric service to the Complainant at the service address and notified Complainant that it would be installing a new AMI meter. Respondent contends that it is required to install AMI, or smart meters, for all automatic meter reading (AMR) customers.

On December 12, 2018, a Notice was issued scheduling a telephonic hearing on July 9, 2019, and assigning me as presiding officer. On February 1, 2019, I issued a Prehearing Order. On July 3, 2019, PPL filed a Motion to Compel Responses to Discovery. On July 9, 2019, the hearing was held as scheduled. Complainant appeared *pro se* in person with one exhibit entitled “Smart Meter RF Emissions vs. Other Common Devices.”

Respondent appeared represented by Devin Ryan, Esquire and Curtis Renner, Esquire with four written statements, 15 exhibits and four witnesses: Kevin Durkin, Donald Vinciguerra, Christopher Davis, Ph.D., and Mark Israel, M.D. Respondent’s Statements 1-4 and Exhibits CD-1 – CD-5; MI-1-MI-3; KD-1-KD-6 and DV-1 were admitted into the record. Transcript (Tr.) 4. A transcript consisting of 52 pages was filed and the record closed on July 18, 2019. This case is ripe for a decision.

### FINDINGS OF FACT

1. The Complainant in this proceeding is Cheryl Higgins, who resides at 404 Main Street, Avoca, Pennsylvania (service address). Tr. 4.

2. The Respondent in this proceeding is PPL Electric Utilities Corporation, an electric distribution company (EDC). Tr. 4.

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<sup>1</sup> PPL signed a waiver of the Section 702 requirement for registered or certified mail service of formal complaints, 66 Pa. C.S. § 702, and agreed to electronic service under the Commission’s waiver of 702 program. *See In Re: Electronic Service of Formal Complaints*, Secretarial Letter Dated December 22, 2014, at Docket Nos. M-2013-2398153 *et al.* Service is listed in the electronic Audit History of the case as entered by the Secretary’s Bureau as having been effective on November 9, 2018. Thus, PPL’s Answer filed on November 29, 2018 is deemed timely filed.

3. Complainant resides with her husband and four children in a 6-bedroom single family home on Main Street, Avoca, Pennsylvania. Tr. 7.

4. Complainant is neither a medical doctor nor an engineer. Tr. 14.

5. Complainant alleges her son had a “horrible reaction” to a WiFi router, which caused his face to swell and warts to appear on his fingers, until she moved the router from his bedroom on the second floor to the foyer on the first floor. Tr. 10-16, 42-43, 49.

6. Complainant seeks to opt out of a smart meter installation because she believes it will cause deleterious health effects in her children. Tr. 13-14, 49-50, Complainant Exhibit No. 1.

7. Complainant has three laptops, a Bluetooth speaker, an iPad, four iPhones and an Alexa smart speaker in her home. Tr. 16.

8. On average, the household uses the cell phones approximately thirty minutes daily. Tr. 17-18.

9. Thirty minutes daily exposure to a cell phone equates to a lifetime of exposure from an AMI meter. Tr. 30, PPL Exhibit CD-4 and CD-5.

10. The RF Mesh Meter to be installed at Complainant’s residence does not add any transients or harmonics over and above what is already coming in on the AC powerline. Tr. 28.

11. On June 30, 2014, PPL filed its new Smart Meter Plan intended to comply with all the requirements of Act 129 of 2008 and the Commission’s Smart Meter Implementation Order. PPL Electric Exhibit No. DV-1, *PPL Smart Meter Technology Procurement and Installation Plan*, June 30, 2014.

12. PPL selected RF Mesh meters and metering system because the Company determined that the RF Mesh system would support the 15 capabilities required by Act 129 and the Smart Meter Implementation Order. PPL Electric Exhibit No. DV-1.

13. The RF Mesh system allows the Company to receive data from the customer's meter wirelessly, unlike PPL's previous PLC system that used the customer's actual wires. PPL Statement No. 3 at 6-7.

14. Under the Smart Meter Plan, the RF Mesh meters are to be deployed by the end of 2019. PPL Electric Statement No. 4 at 6.

15. PPL intends to install a Landis + Gyr E350 FOCUS AXR-SD meter at Complainant's service property. PPL Electric Statement No. 4 at 6, PPL Exhibit No. DV-1.

16. The Federal Communications Commission (FCC) identification number for the new AMI meter is R7PEG1R1S2. PPL Electric Statement No. 4 at 6.

17. The Landis + Gyr Focus AXR-SD meter is certified by the Underwriters Laboratories at UL 2735. PPL Statement No. 4 at 8.

18. The Landis + Gyr Focus AXR-SD meter is compliant with the American National Standards Institute (ANSI) C12.10. PPL Statement No. 4 at 8.

19. PPL Witness Davis has a Ph.D. in Physics and is a fulltime Professor with an endowed Chair at the University of Maryland, where for over 30 years he has taught Physics, Electrical Engineering, Electromagnetics, and RF Electromagnetics to undergraduate and graduate students. PPL Electric Statement No. 1 at 1-5.

20. In addition to his teaching, Dr. Davis is an active scientific researcher in the fields of Physics, Biophysics, Electrical Engineering, Bioelectromagnetics and RF Bioelectromagnetics, conducting many scientific studies in these fields and publishing over 250 studies in peer-reviewed scientific journals. PPL Electric Statement No. 1 at 1-5.

21. Dr. Davis conducted a substantial amount of research on RF fields of the type produced by the AMI meters being used by PPL. PPL Electric Statement No. 1 at 3.

22. RF fields are part of the lower energy, non-ionizing portion of the electromagnetic spectrum which consists of lower frequency signals that do not have enough energy to break chemical bonds in cells or DNA. PPL Electric Statement No. 1 at 5-6.

23. RF fields come from many sources in our everyday environments, including AM/FM radio, television broadcast, cell phones and their communication networks, portable phones, garage door openers and Wi-Fi networks. PPL Electric Statement No. 1 at 5-7, 12.

24. “Dirty electricity” is a non-scientific term that sometimes is used to refer to electrical characteristics (harmonics and transients) that can be found on household wiring. PPL Electric Statement No. 1 at 8.

25. The FCC has determined safe public exposure levels for RF fields from devices that transmit RF signals, such as the AMI meters. PPL Electric Statement No. 1 at 9-10.

26. The FCC safe public exposure limits are based on evaluations of the body of scientific research on RF fields and were adopted in consultation with other federal agencies, including the Food and Drug Administration (FDA) and the Environmental Protection Agency (EPA). PPL Electric Statement No. 1 at 9-10.

27. The levels of RF fields from the Landis + Gyr Focus AX-SD AMI meters are 98,000 times lower than the RF exposure safety limits established by the FCC. PPL Electric Statement No. 1 at 15, PPL Electric Exhibit CD2.

28. The level of RF fields from the Landis + Gyr Focus AX-SD AMI meter is 0.0000061 mW/cm<sup>2</sup> at a distance of one meter. PPL Electric Exhibit CD-2.

29. The FCC RF maximum limit standard is  $0.6 \text{ mW/cm}^2$  at one meter distance. PPL Electric Exhibit CD-2.

30. RF signals from the AMI meter are of very short duration and will occur for only a total of 84 seconds over a 24-hour period. PPL Electric Statement No. 1 at 7, PPL Electric Exhibits CD-2 and CD-3.

31. The RF field exposure 30 feet from a person using a cell phone are three times larger than the RF fields from the AMI meter. PPL Electric Statement No. 1 at 14, PPL Electric Exhibit CD4.

32. RF fields from using cell phones near the head can be over 260,000 times higher than the RF fields from the AMI meter. Tr. 14, PPL Electric Exhibit CD4.

33. There are 11 television broadcast towers within a 50-mile radius of Complainant's service address in Avoca, Pennsylvania. Tr. 31-32, PPL Electric Statement No. 1 at 15.

34. Based on the locations of each tower and their RF power outputs, the constant background level of RF fields at Complainant's residence are 78 times higher than the RF signals from the AMI meter. PPL Electric Statement No. 1 at 15, PPL Electric Exhibit CD-5.

35. The level of RF fields from AMI meters being used by PPL is far too low to cause a thermal or heating effect. PPL Electric Statement No. 1 at 13-14.

36. PPL Witness Israel received his undergraduate degree from Hamilton College and his medical degree from the Albert Einstein College of Medicine, and he completed his medical training at Harvard Medical School. PPL Electric Statement No. 2 at 1.

37. Dr. Israel is a Professor of Medicine, Pediatrics, and Molecular and Systems Biology at the Dartmouth Medical School and the Executive Director of the Israel

Cancer Research Fund in New York, an international charitable fund for medical and scientific research programs. PPL Electric Statement No. 2 at 1.

38. Dr. Israel is board certified and licensed to practice medicine. PPL Electric Statement No. 2 at 3.

39. Dr. Israel has conducted medical research for 40 years in a wide variety of areas, including systems biology, biochemistry, cell biology, cancer, molecular biology, and molecular genetics and has published over 245 medical research studies in leading peer-reviewed scientific journals. PPL Electric Statement No. 2 at 3-4.

40. Dr. Israel also has taught medicine and science for more than 30 years to medical students, graduate students, interns, residents, and practicing physicians in a number of fields, including endocrinology, immunology, hematology, neurology, cardiology, biochemistry, cell biology, genetics, molecular genetics, medical oncology, and radiation oncology. PPL Electric Statement No. 2 at 3.

41. Claimed symptoms related to Electromagnetic Hypersensitivity (EHS) are more accurately described as “Idiopathic Environmental Intolerance” (“IEI”), in which “idiopathic” means “cause unknown,” rather than electromagnetic hypersensitivity. PPL Electric Statement No. 2 at 12-13.

42. There are no established medical criteria for the diagnosis or treatment of IEI. PPL Electric Statement No. 2 at 15-16.

43. IEI and the variety of symptoms attributed to it are not caused by exposure to RF fields. PPL Electric Statement No. 2 at 15-16.

44. The World Health Organization and a number of other public health authorities have concluded that the scientific research on RF exposures from cell phone use, which are far higher than the RF from PPL’s smart meters, has not shown that RF fields cause adverse health effects. PPL Electric Statement No. 2 at 10-16, PPL Electric Exhibit MI-1.

45. The BioInitiative Report is not an objective or balanced reflection of the current state of scientific knowledge. PPL Electric Statement No. 2 at 16.

46. Several state public health authorities in the United States have also investigated claims about health effects from smart meters and have concluded that there is no credible scientific evidence that RF fields from smart meters will cause or contribute to any adverse health effects. PPL Electric Statement No. 2 at 11, PPL Electric Exhibit MI-2.

47. As a part of its Smart Meter Plan proceeding, PPL filed a detailed AMI Customer Privacy Policy, which sets forth the data PPL will collect through the new smart meter, the steps the Company will take to protect the data, and the ways in which PPL will use the data. PPL Electric Exhibit No. DV-1.

48. PPL uses firewalls to prevent anyone from obtaining unauthorized access to the AMI network. PPL Statement No. 4 at 7-8.

49. Customer data is encrypted to make the data readable to only PPL personnel who can decode the encryption. PPL Statement No. 4 at 7-8.

50. PPL's cybersecurity and data privacy policies are consistent with the national standards for the industry. PPL Statement No. 4 at 7-8.

## DISCUSSION

### Legal Standards

Under Section 332(a) of the Public Utility Code, 66 Pa. C.S. § 332(a), “the proponent of a rule or order has the burden of proof.” It is well-established that “[a] litigant’s burden of proof before administrative tribunals as well as before most civil proceedings is satisfied by establishing a preponderance of evidence which is substantial and legally credible.” *Samuel J. Lansberry, Inc. v. Pa. Pub. Util. Comm’n*, 578 A.2d 600, 602 (Pa. Cmwlth. 1990). The preponderance of evidence standard requires proof by a greater weight of the evidence.

*Commonwealth v. Williams*, 557 Pa. 207, 732 A.2d 1167 (1999). This standard is satisfied by presenting evidence more convincing, by even the smallest amount, than that presented by another party. *Brown v. Commonwealth*, 940 A.2d 610, 614 n.14 (Pa. Cmwlth. 2008).

If the party seeking a rule or order from the Commission sets forth a *prima facie* case, then the burden shifts to the opponent. *MacDonald v. Pa. R.R. Co.*, 348 Pa. 558, 36 A.2d 492 (1944). Establishing a *prima facie* case requires either evidence sufficient to make a finding of fact permissible or evidence to create a presumption against an opponent which, if not met, results in an obligatory decision for the proponent. Once a *prima facie* case has been established, if contrary evidence is not presented, there is no requirement that the party seeking a rule or order from the Commission must produce additional evidence to sustain its burden of proof. See *Replogle v. Pa. Elec. Co.*, 54 Pa. PUC 528, 1980 Pa. PUC LEXIS 20 (Order entered Oct. 9, 1980); see also *Dist. of Columbia's Appeal*, 21 A.2d 883 (Pa. 1941); *Application of Pennsylvania-American Water Co. for Approval of the Right To Offer, Render, Furnish or Supply Water Serv. to the Pub. in Additional Portions Of Mahoning Twp., Lawrence County, Pa.*, Docket No. A-212285F0148, 2008 Pa. PUC LEXIS 874 (Order entered Oct. 29, 2008).<sup>2</sup>

In addition, a person does not sustain his or her burden of proof in an electric and magnetic field exposure case when the record evidence, “taken as a whole, leads to the ultimate finding and conclusion that the scientific studies at present are inconclusive.” *Letter of Notification of Phila. Elec. Co. Relative to the Reconstructing and Rebuilding of the Existing 138 kV Line to Operate as the Woodbourne-Heaton 230 kV Line in Montgomery and Bucks Counties*, 1992 Pa. PUC Lexis 160, at \*210-11 (June 29, 1992) (Initial Decision) (“*Woodbourne-Heaton*”). Rather, the person must demonstrate by a preponderance of the evidence that such exposure actually causes adverse health effects. *Id.* at \*211. Specifically, in AMI meter-related matters,

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<sup>2</sup> In addition, any finding of fact necessary to support an adjudication of the Commission must be based upon substantial evidence. *Met-Ed Indus. Users Grp. v. Pa. Pub. Util. Comm'n*, 960 A.2d 189, 193 n.2 (Pa. Cmwlth. 2008) (citing 2 Pa.C.S. § 704). Substantial evidence is such relevant evidence as a reasonable mind might accept as adequate to support a conclusion. *Borough of E. McKeesport v. Special/Temporary Civil Serv. Comm'n*, 942 A.2d 274, 281 n.9 (Pa. Cmwlth. 2008) (citation omitted). Although substantial evidence must be “more than a scintilla and must do more than create a suspicion of the existence of the fact to be established,” *Kyu Son Yi v. State Bd. of Veterinary Med.*, 960 A.2d 864, 874 (Pa. Cmwlth. 2008) (citation omitted), the “presence of conflicting evidence in the record does not mean that substantial evidence is lacking.” *Allied Mech. and Elec., Inc. v. Pa. Prevailing Wage Appeals Bd.*, 923 A.2d 1220, 1228 (Pa. Cmwlth. 2007) (citation omitted).

the Commission has held that “[t]he Complainant will have the burden of proof during the proceeding to demonstrate, by a preponderance of the evidence, that [the utility] is responsible or accountable for the problem described in the Complaint.” *Kreider v. PECO Energy Co.*, Docket No. P-2015-2495064, p. 18 (Order entered Sept. 3, 2015) (*Kreider*); *see also Romeo v. Pa. Pub. Util. Comm’n*, 154 A.3d 422, 429 (Pa. Cmwlth. 2017) (finding that the smart meter complainant should have a hearing to try to prove his claim through “the testimony of others as well as other evidence that goes to that issue”).

Section 701 of the Public Utility Code provides that “any person . . . having an interest in the subject matter . . . may complain in writing, setting forth any act or thing done or omitted to be done by any public utility in violation, or claimed violation, of any law which the commission has jurisdiction to administer, or of any regulation or order of the commission.” 66 Pa. C.S. § 701. Therefore, a complainant must generally demonstrate that the public utility violated the Public Utility Code or a Commission regulation or order.

The Commission has exclusive jurisdiction to adjudicate “issues involving the reasonableness, adequacy, and sufficiency” of a public utility’s facilities and services. *See Elkin v. Bell of Pa.*, 420 A.2d 371, 374 (Pa. 1980) (citations omitted). Section 1501 of the Public Utility Code states, in pertinent part, that:

Every public utility shall furnish and maintain adequate, efficient, safe, and reasonable service and facilities, and shall make all such repairs, changes, alterations, substitutions, extensions, and improvements in or to such service and facilities as shall be necessary or proper for the accommodation, convenience, and safety of its patrons, employees, and the public. Such service also shall be reasonably continuous and without unreasonable interruptions or delay. Such service and facilities shall be in conformity with the regulations and orders of the commission. Subject to the provisions of this part and the regulations or orders of the commission, every public utility may have reasonable rules and regulations governing the conditions under which it shall be required to render service. . .

66 Pa. C.S. § 1501.

Section 57.28(a)(1) of the Commission’s Regulations provides:

An electric utility shall use reasonable effort to properly warn and protect the public from danger, and shall exercise reasonable care to reduce the hazards to which employees, customers, the public and others may be subjected to by reason of its provision of electric utility service and its associated equipment and facilities.

52 Pa. Code § 57.28(a)(1).

When presented with a challenge to an AMI meter installation, the Commission has pronounced that “[t]he ALJ’s [Administrative Law Judge’s] role . . . will be to determine based on the record in this particular case, whether there is sufficient evidence to support a finding that the Complainant was adversely affected by the smart meter or whether [the utility’s] use of a smart meter will constitute unsafe or unreasonable service in violation of Section 1501 under the circumstances in this case.” *Kreider* (citing *Woodbourne-Heaton*, 1992 Pa. PUC Lexis 160, at \*12-13). *Frompovich v. PECO Energy Co.*, Docket No. C-2015-2474602 at 10 (Opinion and Order entered May 3, 2018).

#### Opt-out v. Opt-in

Complainant contends the Energy Policy Act of 2005 precludes the mandatory installation of the RF Mesh meter. Conversely, PPL contends the Commonwealth Court has already decided this issue in PPL’s favor in the case of *Romeo v. Pa. Pub. Util. Comm’n*, 154 A.3d 422, 429 (Pa. Cmwlth. 2017) (*Romeo*).

#### Disposition

In *Romeo*, the Commonwealth Court held: “Because federal standards are a supplement to the state standards and the state is only required to consider the federal standards, the federal and state standards are not and cannot be in conflict.” *Id.* The Commonwealth Court has held that the Energy Policy Act does not preempt the smart meter provisions of the Pennsylvania Public Utility Code or of Act 129. Tr. 48.

Act 129 amended Chapter 28 of the Public Utility Code (Code), 66 Pa. C.S. §§ 2801-2815, and required EDCs with more than 100,000 customers to file smart meter technology procurement and installation plans for Commission approval and to furnish smart meter technology within its service territory in accordance with the provisions of the Act. While Act 129 does not provide customers a general “opt-out” right from smart meter installation at a customer’s residence, a customer’s formal complaint that raises a claim under Section 1501 of the Code, 66 Pa. C.S. § 1501, related to the safety of a utility’s installation and use of a smart meter at the customer’s residence is legally sufficient to proceed to an evidentiary hearing before an ALJ. *See Povacz v. PECO Energy Company*, Docket No. C-2012-2317176 (Order entered January 24, 2013) (*January 2013 Povacz Order*); *see also Kreider*.

To the extent that the Complainant desires the ability to “opt out” of the smart meter installation, she could advocate for such ability before the General Assembly, which is considering amending Section 2807(f) in some pending bills including: PA House Bill Nos. 1564 and 1565; and Senate Bill No. 443. These bills are not law. The Commission has held that it has no authority, absent directive in the form of legislation, to prohibit an EDC from installing a smart meter where a customer does not want one. *See January 2013 Povacz Order*. PPL would be in violation of the law if they did not install a smart meter at similarly situated residences. *Id.* The Commission has held that there is no provision in Pennsylvania law to allow a customer to opt out from the installation of an AMI meter, and thus, this requested relief is outside of the Commission’s jurisdiction and authority. *Hoffman-Lorah v. PPL Electric Utilities Corporation*, C-2018-2644957 (Opinion and Order entered May 23, 2019) at 43-44. There is no legal requirement that PPL be required to wait until legislation is passed allowing customers to opt out of a smart meter installation. Accordingly, I find in favor of Respondent on this issue.

The Commission has addressed whether an EDC can offer some accommodation or alternative to customers who have concerns about AMI meters. In its January 28, 2016 Order, the Commission elaborated upon the kinds of accommodations or alternatives that might be possible, stating:

It may be possible, for example, for the Respondent to install the smart meter in a different location other than outside of the Complainant’s

bedroom or to use a different type of smart meter at this Complainant's home.

*Kreider at 23.*

The Commission did not state that meter deployment could be delayed upon request to the deadline for smart meter deployment in 2020. In *Povacz v. PECO*, C-2015-2475023 (Initial Decision issued March 16, 2018), the ALJ gave the residential customer an option to notify the EDC whether she would relocate the meter socket at her service address. If timely done, the ALJ further ordered the customer to pay the costs to move her meter socket and ordered the EDC to bear the costs associated with connecting its service to a new location of a meter socket. *Id.* at 32, Ordering Paragraphs Nos. 1-9. On March 28, 2019, the Commission rejected the ALJ's directive that PECO must absorb the costs on its side of the meter to the extent any costs are anticipated to be incurred by PECO should the Complainant opt to relocate the meter board on her property. *Povacz*. Opinion and Order entered March 28, 2019.

In the instant case, PPL Witness Durkin testified PPL Electric Rule 4(I)(1) refers to the relocation of facilities, which would include the meter. Rule 4(I)(1) and (2) provide:

(1) The relocation of customer's facilities due to moving or rearranging Company's facilities at the direction of either the federal, state or local government is the customer's responsibility and expense.

(2) The relocation of Company facilities, when done at the request of others, is at the applicant's expense and payment of the company's estimated cost of the relocation is required in advance of construction. When the request is from an affected property owner and the facilities are on the customer's property, the charges for relocation of distribution system facilities are limited to estimated contractor costs, estimated direct labor and estimated material costs, less an amount equal to any estimated maintenance expense avoided as a result of the relocation.

Rule 4(I)(1) and (2), Supplement No. 59, Electric Pa. PUC No. 201, PPL Electric Exhibit KD-6, PPL Electric Statement No. 3 at 10. Mr. Durkin's testimony that a meter is considered part of a Company's facilities is unrefuted. PPL Electric Statement No. 3 at 10.

A public utility's Commission-approved tariff is prima facie reasonable, has the full force of law and is binding on the utility and the customer. 66 Pa.C.S. § 316, *Kossman v. Pa. Pub. Util. Comm'n*, 694 A.2d 1147 (Pa. Cmwlth. 1997); *Stiteler v. Bell Telephone Co. of Pennsylvania*, A.2d 339 (Pa. Cmwlth. 1977). Thus, I find Tariff Rule 4(I)(1) and (2) to be binding upon the parties, and Complainant has failed to show the tariff provision to be unreasonable. Under PPL's Tariff Rule 4(I)(1) and (2), Complainant has the option of relocating his meter to a different location because while PPL chooses the type of meter, the customer chooses the location of the meter board and socket. If Ms. Higgins would like a different location for the AMI meter, she can hire an electrician to move the meter board/socket to a new location on the service property. This will, in some situations, require work on the PPL system as well to extend its conductors to the new meter board location. PPL will limit charges for relocation of distribution system facilities to estimated contractor costs, estimated direct labor and estimated material costs, less an amount equal to any estimated maintenance expense avoided as a result of the relocation in accordance with its tariffed provisions. This option remains open to the parties. However, there is no tariff provision requiring PPL to move an AMI meter solely at the EDC's expense. This is consistent with the Commission's decision in *Torres v. PPL C-2018-2641883* (Final Order entered November 30, 2018 adopting Initial Decision issued October 17, 2018).

### Health and Safety Concerns

Complainant requests PPL be precluded from installing an AMI meter on her service property for health and safety reasons. Complainant contends that the World Health Organization recognizes radio frequency fields as being class 2B carcinogens. Complainant also claims one of her sons suffered from face swelling and warts on his fingers due to a Wi-Fi router in his bedroom until it was relocated to the downstairs foyer. Complainant testified that her family has three laptops, four iPhones, an iPad, a Bluetooth, and an Alexa home speaker in her house, and they limit use of the phones to approximately 30 minutes of texting a day.

Conversely, PPL contends Complainant has failed to meet her burden of proving the meter intended for his service property will cause deleterious health effects.

## Disposition

Complainant in this proceeding is neither a medical doctor nor an engineer. Tr. 10-11. She offered no medical exhibits and no expert witnesses in medicine or biophysics to support her claim that an AMI smart meter will cause adverse health and safety consequences. Although Complainant testified her son had a swollen face and warts on his hands while a Wi-Fi Router was in his bedroom and that these medical symptoms disappeared when the Wi-Fi Router was removed from his second-floor bedroom and relocated to the first-floor foyer in the house, this is insufficient to show that radio frequency fields caused either symptom. Tr. 14-15. Additionally, Complainant admitted that no medical physician directed her to remove the router from her son's bedroom. Tr. 14. Complainant's testimony that there will be deleterious health effects if a smart meter is placed on her property is refuted by the credible expert testimonies of Dr. Mark Israel and Dr. Christopher Davis.

Dr. Israel testified that when people anticipate and sense that they are having symptoms associated with radio frequency field exposure, there can be a "nocebo effect."<sup>3</sup> Tr. 40-42. EHS is not a medical diagnosis that is widely accepted among medical practitioners given the credible testimony of Dr. Israel, who describes EHS as an idiopathic environmental intolerance, which has an unknown cause. The symptoms of EHS seem to vary widely and there is a psychological component to EHS. In giving his opinion, Dr. Israel relied on reports, "It is the IEI-EMF individuals' belief that exposure to RF EMFs will cause harm, rather than actual exposure itself, that results in the presence of symptoms in IEI-EMF individuals." Tr. 40, PPL Electric Statement No. 2.

Complainant's testimony was also refuted by PPL's expert witness Dr. Davis, who has a Ph.D. in Physics and is a fulltime Professor with an endowed Chair at the University of Maryland, where for over 30 years he has taught Physics, Electrical Engineering, Electromagnetics, and RF Electromagnetics to undergraduate and graduate students. PPL

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<sup>3</sup> A "nocebo effect" is said to occur when negative expectations of the patient regarding a treatment cause the treatment to have a more negative effect than it otherwise would have. The complementary concept, the placebo effect, is said to occur when positive expectations improve an outcome. Both placebo and nocebo effects are presumably psychogenic.

Electric Statement No. 1 at 1-5. In addition to his teaching, Dr. Davis is an active scientific researcher in the fields of Physics, Biophysics, Electrical Engineering, Bioelectromagnetics and RF Bioelectromagnetics, conducting many scientific studies in these fields and publishing over 250 studies in peer-reviewed scientific journals. PPL Electric Statement No. 1 at 1-5.

Dr. Davis conducted a substantial amount of research on RF fields of the type produced by the AMI meters being used by PPL. PPL Electric Statement No. 1 at 3. RF fields are part of the lower energy, non-ionizing portion of the electromagnetic spectrum which consists of lower frequency signals that do not have enough energy to break chemical bonds in cells or DNA. PPL Electric Statement No. 1 at 5-6. RF fields come from many sources in our everyday environments, including AM/FM radio, television broadcast, cell phones and their communication networks, portable phones, garage door openers and Wi-Fi networks. PPL Electric Statement No. 1 at 5-7, 12.

“Dirty electricity” is a non-scientific term that sometimes is used to refer to electrical characteristics (harmonics and transients) that can be found on household wiring. PPL Electric Statement No. 1 at 8. AMI meters do not generate electricity, do not generate harmonics and transients that are significant compared to the harmonics and transients already present on the 60 Hz power coming into the home and do not interfere with the operation of household wiring.

The FCC has determined safe public exposure levels for RF fields from devices that transmit RF signals, such as the AMI meters. PPL Electric Statement No. 1 at 9-10. The FCC safe public exposure limits are based on evaluations of the body of scientific research on RF fields and were adopted in consultation with other federal agencies, including the Food and Drug Administration (FDA) and the Environmental Protection Agency (EPA). PPL Electric Statement No. 1 at 9-10.

Dr. Davis opined that the levels of RF fields from the Landis + Gyr Focus AX-SD AMI meters are 98,000 times lower than the RF exposure safety limits established by the FCC. PPL Electric Statement No. 1 at 15, PPL Electric Exhibit CD2. RF signals from the AMI meter

are of very short duration and will occur for only a total of 84 seconds over a 24-hour period. PPL Electric Statement No. 1 at 7.

The RF field exposure 30 feet from a person using a cell phone are three times larger than the RF fields from the AMI meter. PPL Electric Statement No. 1 at 14, PPL Electric Exhibit CD4. RF fields from using cell phones near the head can be over 260,000 times higher than the RF fields from the AMI meter. PPL Electric Exhibit CD4. Complainant has four iPhones, a Bluetooth speaker, Alexa, a WiFi Router, and an iPad in her home. Her family members are receiving radiofrequency fields at a much higher level while using the iPhones next to their heads than they would be living in a house with an RF Mesh meter attached to it on an outside wall. The World Health Organization and a number of other public health authorities have concluded that the scientific research on RF exposures from cell phone use, which are far higher than the RF from PPL's smart meters, has not shown that RF fields cause adverse health effects. PPL Electric Statement No. 2 at 10-15, PPL Electric Exhibit MI-1.

Additionally, there are 11 television broadcast towers within a 50-mile radius of Complainant's location in Avoca, Pennsylvania. PPL Electric Statement No. 1 at 15. Based on the locations of each tower and their RF power outputs, the constant background level of RF fields at Complainant's residence are 78 times higher than the RF signals from the AMI meter. PPL Electric Statement No. 1 at 15, PPL Electric Exhibit CD-5. Thus, given the background RF exposure to the service property compared to the minimal RF exposure from the AMI meter, I am not persuaded to conclude the AMI meter will cause a deleterious health effect. This holding is consistent with recent caselaw precedent including: *Hoffman-Lorah, supra.*; *Sunstein Murphy v. PECO Energy Company*, C-2015-2475726 (Opinion and Order entered May 9, 2019); *Benhayon v. PPL Electric Utilities Corporation*, C-2018-3003491 (Final Order entered April 29, 2019, adopting Initial Decision issued March 25, 2019) and *Lesniewski v. PPL Electric Utilities Corporation*, C-2018-3004594 (Final Order entered April 29, 2019, adopting Initial Decision issued March 25, 2019); *Torres v. PPL Electric Utilities Corporation*, C-2018-2641883 (Final Order entered November 30, 2018); *Millan v. PPL Electric Utilities Corporation*, C-2017-2623236 (Final Order entered June 28, 2019); and *Barris v. PPL Electric Utilities Corporation*, C-2018-3003579 (Final Order entered May 31, 2019).

Recently, in *Povacz v. PECO*, C-2015-2475023 (Opinion and Order entered March 28, 2019), the Commission held Ms. Povacz failed to prove she suffered from electromagnetic hypersensitivity syndrome as she had self-diagnosed the illness. *Id.* at 59-60. Without independent diagnostic evidence to corroborate a Complainant's self-diagnosis, Complainant failed to prove that she was electromagnetically hypersensitive. *Id.* at 60. Specifically, the Commission held:

Based on the foregoing analysis and discussion, we believe the Complainant's evidence is not sufficient to establish a *prima facie* case under 66 Pa. C.S. § 332(a) in demonstrating that the RF exposure levels from a PECO smart meter will cause adverse health effects for the Complainant.

*Id.* at 60.

Similarly, in the instant case, I find Complainant has not established a *prima facie* case to show that any RF exposure levels from a Landis + Gyr Focus AXR-SD meter will cause adverse health effects. The assertions of Complainant that her children's health will deteriorate because of radiofrequency fields emitted by an AMI meter are bald assertions, which do not constitute evidence. *Bervinchak v. PPL Electric Utilities Corporation*, Docket No. C-2016-2572824 (Final Order entered on October 2, 2018). *See also, Pa. Bureau of Corrections v. City of Pittsburgh*, 532 A.2d. 12 (Pa. 1987).

No corroborative medical evidence was proffered to support Complainant's testimony. There is insufficient evidence to show that an AMI meter will cause her family to suffer deleterious health effects. Complainant has no medical degree. Nor has she presented evidence from a medical professional. Her testimony as to the deleterious health effects of an AMI smart meter was refuted by the credible testimony of PPL's expert witness Mark Israel, a Professor of Medicine, Pediatrics, and Molecular and Systems Biology at the Dartmouth Medical School and the Executive Director of the Israel Cancer Research Fund in New York, an international charitable fund for medical and scientific research programs. PPL Electric Statement No. 2 at 1.

Dr. Israel is board certified and licensed to practice medicine. PPL Electric Statement No. 2 at 3. Dr. Israel has conducted medical research for 40 years in a wide variety of

areas, including systems biology, biochemistry, cell biology, cancer, molecular biology, and molecular genetics and has published over 245 medical research studies in leading peer-reviewed scientific journals. PPL Electric Statement No. 2 at 3-4. Dr. Israel also has taught medicine and science for more than 30 years to medical students, graduate students, interns, residents, and practicing physicians in a number of fields, including endocrinology, immunology, hematology, neurology, cardiology, biochemistry, cell biology, genetics, molecular genetics, medical oncology, and radiation oncology. PPL Electric Statement No. 2 at 3.

Claimed symptoms related to EHS are more accurately described as “Idiopathic Environmental Intolerance” (“IEI”), in which “idiopathic” means “cause unknown,” rather than electromagnetic hypersensitivity. PPL Electric Statement No. 2 at 13. There are no established medical criteria for the diagnosis or treatment of IEI. PPL Electric Statement No. 2, p. 16, lines 8-9. IEI and the variety of symptoms attributed to it are not caused by exposure to RF fields. PPL Electric Statement No. 2 at 15.

Several state public health authorities in the United States also have investigated claims about health effects from smart meters and have concluded that there is no credible scientific evidence that RF fields from smart meters will cause or contribute to any adverse health effects. PPL Electric Statement No. 2 at 11, PPL Electric Exhibit MI-2. There is no reliable medical basis to conclude that RF fields from the AMI meters intended for installation by PPL will cause or contribute to the development of illness or disease. PPL Electric Statement No. 2. There is no reliable medical basis to conclude that RF fields from the AMI meters being used by PPL would cause, contribute to, or exacerbate any of the symptoms claimed by the Complainant, or any other adverse health effects. PPL Electric Statement No. 2 at 14-15. Accordingly, I find in favor of Respondent on this issue.

### Data Privacy

Complainant contends in her complaint that it is unreasonable that the new AMI meter invades her privacy and that the meters are not cyber-secure. She offered no evidence to support this claim.

Conversely, PPL contends that Complainant's assertion that the meter is unsecure is a bald assertion unsupported by any evidence other than hearsay. Complainant has no education in engineering. PPL contends its meters are cyber-secure and do not constitute an unreasonable search or invasion of Complainant's privacy.

### Disposition

As a part of its Smart Meter Plan proceeding, PPL filed a detailed AMI Customer Privacy Policy, which sets forth the data PPL will collect through the new smart meter, the steps the Company will take to protect the data, and the ways in which PPL will use the data. PPL Electric Exhibit No. DV-1. PPL uses firewalls to prevent anyone from obtaining unauthorized access to the AMI network. PPL Statement No. 4 at 7-8. Customer data is encrypted to make the data readable to only PPL personnel who can decode the encryption. PPL Statement No. 4 at 7-8. PPL's cybersecurity and data privacy policies are consistent with the national standards for the industry. PPL Statement No. 4 at 7-8. Additionally, if Complainant is concerned about the AMI meter's connection to smart appliances in her home, she can decline to have the ZigBee radio activated. *See Lesniewski, Id.* at 24, wherein the Commission found in favor of PPL regarding the same data privacy issue. Specifically, the Commission held that Ms. Lesniewski had an option to decline activation of the ZigBee radio device located within the AMI meter. For these reasons, I find in favor of Respondent on this data privacy issue.

### CONCLUSION

For all of these aforementioned reasons, the complaint will be dismissed for failure to prove by a preponderance of evidence that the installation of a smart meter constitutes unsafe or unreasonable service under 66 Pa. C.S. § 1501 or a violation of the Public Utility Code, a Commission order or regulation or a Commission-approved tariff of the company. Although the Complainant is genuine in her concerns, the Commission's decisions cited above are controlling. The Motion to Compel filed by PPL on July 3, 2019 will be denied as moot as the underlying complaint will be dismissed.

## CONCLUSIONS OF LAW

1. The Commission has jurisdiction over the parties and the subject matter in this proceeding. 66 Pa. C.S. § 701.
2. PPL Electric Utilities Corporation's smart meter procurement and installation plan, which was approved by Commission Order in the case of *Petition of PPL Electric Utilities Corp. for Approval of Its Smart Meter Technology Procurement and Installation Plan*, Docket No. M-2014-2430781, p. 24 (Order Entered Sept. 3, 2015) does not contain a provision for customers to opt out of smart meter installation.
3. Under Section 332(a) of the Pennsylvania Public Utility Code, the proponent of a rule or order has the burden of proof. 66 Pa. C.S. § 332(a). It is well established that "[a] litigant's burden of proof before administrative tribunals as well as before most civil proceedings is satisfied by establishing a preponderance of evidence which is substantial and legally credible." *Samuel J. Lansberry, Inc. v. Pa. Pub. Util. Comm'n*, 578 A.2d 600, 602 (Pa. Cmwlth. 1990).
4. The preponderance of evidence standard requires proof by a greater weight of the evidence. *Commonwealth v. Williams*, 557 Pa. 207, 732 A.2d 1167 (1999). This standard is satisfied by presenting evidence that makes the existence of a contested fact more likely than its nonexistence. *Brown v. Commonwealth*, 940 A.2d 610, 614 n.14 (Pa. Cmwlth. 2008) (citation omitted).
5. A person does not sustain his or her burden of proof in an electric and magnetic field exposure case when the record evidence, "taken as a whole, leads to the ultimate finding and conclusion that the scientific studies at present are inconclusive" rather, the person must demonstrate by a preponderance of the evidence that such exposure actually causes adverse health effects. *Letter of Notification of Phila. Elec. Co. Relative to the Reconstructing and Rebuilding of the Existing 138 kV Line to Operate as the Woodbourne-Heaton 230 kV Line in Montgomery and Bucks Counties*, 1992 Pa. PUC Lexis 160, at \*210-11 (June 29, 1992) (Initial Decision).

6. In AMI meter-related matters, the Commission has held that “[t]he Complainant will have the burden of proof during the proceeding to demonstrate, by a preponderance of the evidence, that [the utility] is responsible or accountable for the problem described in the Complaint.” *Kreider v. PECO Energy Co.*, Docket No. P-2015-2495064, p. 18 (Order entered Sept. 3, 2015).

7. Section 701 of the Public Utility Code provides that “any person . . . having an interest in the subject matter . . . may complain in writing, setting forth any act or thing done or omitted to be done by any public utility in violation, or claimed violation, of any law which the commission has jurisdiction to administer, or of any regulation or order of the commission.” 66 Pa. C.S. § 701.

8. Complainant has failed to sustain her burden of proof that Respondent violated Section 1501 of the Public Utility Code. 66 Pa. C.S. § 1501.

9. The Commission has exclusive jurisdiction to adjudicate “issues involving the reasonableness, adequacy, and sufficiency” of a public utility’s facilities and services. See *Elkin v. Bell of Pa.*, 420 A.2d 371, 374 (Pa. 1980) (citations omitted).

10. When presented with a challenge to an AMI meter installation, the Commission has pronounced that “[t]he ALJ’s role . . . will be to determine based on the record in this particular case, whether there is sufficient evidence to support a finding that the Complainant was adversely affected by the smart meter or whether [the utility’s] use of a smart meter will constitute unsafe or unreasonable service in violation of Section 1501 under the circumstances in this case.” *Kreider v. PECO Energy Co.*, Docket No. P-2015-2495064, p. 23 (Order entered Jan. 28, 2016) (citing *Woodbourne-Heaton*, 1992 Pa. PUC Lexis 160, at \*12-13).

11. Complainant has failed to sustain her burden of proof that installing the new AMI meter would violate the Public Utility Code or any Commission regulation or order. See 66 Pa. C.S. §§ 332(a), 701.

12. PPL is legally required to install the RF Mesh meter on the Complainant's property by Act 129 of 2008 and Commission orders. See 66 Pa. C.S. § 2807(f); *Smart Meter Procurement and Installation*, Docket No. M-2009-2092655, pp. 9, 14 (Order entered June 24, 2009).

13. Nothing in Act 129 of 2008 permits a customer to "opt-out" of a smart meter installation. See, e.g., *Starr v. PECO Energy Co.*, Docket No. C-2015-2516061, p. 11 (Order entered Sept. 1, 2016).

14. The Commission previously determined that the Company's existing PLC meters are not compliant with Act 129 of 2008 and the Commission's Smart Meter Implementation Order. See, *Petition of PPL Electric Utilities Corporation for Approval of Smart Meter Technology Procurement and Installation Plan*, Docket No. M-2009-2123945, p. 24 (Order entered June 24, 2010).

15. Under the Company's Commission-approved Smart Meter Plan, PPL must replace all of the PLC meters with the RF Mesh meters, which the Commission declared as meeting all of the requirements of Act 129 of 2008 and the Commission's Smart Meter Implementation Order. See, *Petition of PPL Electric Utilities Corp. for Approval of Its Smart Meter Technology Procurement and Installation Plan*, Docket No. M-2014-2430781, p. 24 (Order Entered Sept. 3, 2015).

16. The Complainant has failed to demonstrate that the new AMI meter causes, contributes to, or exacerbates any adverse health effect.

ORDER

THEREFORE,

IT IS ORDERED:

1. That the Formal Complaint filed by Crystal Higgins against PPL Electric Utilities Corporation at Docket No. C-2018-3005927 is denied and dismissed.
2. That PPL Electric Utilities Corporation's Motion to Compel filed on July 3, 2019 is denied as moot.
3. That the docket in this proceeding be marked closed.

Date: July 22, 2019

\_\_\_\_\_/s/  
Elizabeth H. Barnes  
Administrative Law Judge