



September 23, 2020

KENNETH L. MICKENS, ESQUIRE LLC
LEGAL CONSULTING

E-FILING

Rosemary Chiavetta, Secretary
PA Public Utility Commission
Commonwealth Keystone Building
400 North Street
Harrisburg, PA 17105-3265

Part 1

**Re: PPL Electric – DER Management Plan – Docket No. P-2019-3010128
Sustainable Energy Fund Direct Testimony**

Dear Secretary Chiavetta:

Enclosed please find SEF St. No. 1 (J. Costlow) (Non-Proprietary version), SEF St. No. 2 (R. Celentano) and SEF Cross Examination Ex. No. 2 for filing in the above-referenced proceeding. Parties have been served in accordance with the Certificate of Service. Please contact me if you have any questions.

Sincerely,

Kenneth L. Mickens, Esquire
Attorney for Sustainable Energy Fund

KLM/bls
Certificate of Service
Enclosures

**Petition of PPL Electric Utilities Corporation for Approval of Tariff
Modifications and Waivers of Regulations Necessary to Implement its
Distributed Energy Resource Management Plan**

Docket No. P-2019-3010128

SEF ST. 1

**DIRECT TESTIMONY
SUSTAINABLE ENERGY FUND**

John M. Costlow

February 5, 2020

Testimony of John M. Costlow

Q. Please state your full name and business address.

A. My name is John M. Costlow. My business address is 4110 Independence Dr. Ste 100 Schnecksville, PA 18078.

Q. By whom are you employed and in what capacity?

A. I am employed by the Sustainable Energy Fund (“SEF”) as President/CEO. I assumed this position on June 21, 2014. I joined Sustainable Energy Fund as Director of Technical Services on October 27, 2008. I was previously employed by Florida Public Utilities (West Palm Beach, FL) as Manager, Marketing and Energy Conservation.

Q. What are your duties as President?

A. As President of SEF, I am responsible for providing the vision, leadership and overall management of the Sustainable Energy Fund.

Q. What is your educational background?

A. I received a Bachelor of Science Degree in Organizational Management from Palm Beach Atlantic University and I am a graduate of the U.S. Navy Nuclear Power School where my studies focused on nuclear physics, reactor principles, electrical power generation, electronic monitoring and controls.

Q. What professional certification or positions do you hold?

A. I have received professional certifications as a Certified Carbon Reduction Manager, a Certified Sustainable Development Professional and Renewable Energy Professional, a Performance Contracting and Funding Professional and as a Certified Passive House Consultant. In addition, I currently serve as Vice President of the Lehigh Valley Chapter of the Association of Energy Engineers and I am Chairman of the Mid Atlantic Biomass Energy Association. A copy of my resume is attached to this statement as Appendix A.

Q. Have you previously testified or provided comment before the PUC?

A. Yes. I entered comments to the working group discussion at Docket No. M-2008-2069887, relating to the implementation of ACT 129 and at Docket Numbers M-2012-2289411 and M-2014-2424864, concerning the design and implementation of any future Act 129 EE&C program. In addition, I have participated in and entered comments to the Commission's Low Income Working Group, Fuel Switching Working Group and On Bill Financing Working Group. I testified in the proceeding that established PPL Electric Utilities Corporation's ("PPL Electric" or "Company") EE&C Plan (at Docket No. M-2009-2093216). I also testified in PPL Electric's Time of Use Rate proceedings at Docket Numbers R-2009-2122718, R-2011-2264771, P-2013-2389572, and M-2016-2578051. In

addition, I testified in PPL Electric's Default Service proceedings at Docket Numbers P-2012-2302074 and P-2014-2417907, AEC proceeding at Docket Number R-2008-2060309 and the rate increase proceedings at Docket Numbers R-2010-2161694, R-2012-229057 and R-2015-2469275. Finally, I testified in the proceeding that established UGI Utilities – Electric Division's Energy Efficiency and Conservation Plan (at Docket No. M-2010-2210316).

Q. Are you sponsoring any exhibits in connection with this testimony?

A. I am not sponsoring an exhibit in connection with this non-confidential/highly confidential testimony.

Q. Can you identify the unjust and unreasonable actions that are of concern?

A. Yes. First, in this proceeding PPL Electric, a monopoly, requests the authority to control DERs per company policy. Second, there are very few participants in the proceeding for a matter of significant magnitude that will have great consequence across entire industries. Third, PPL Electric's proposed communication protocol would severely limit a DER owner's ability to communicate with their DERs or utilize third-party services to monitor the health of their systems.

Q. Is this proceeding so urgent that PPL Electric would be harmed without immediate relief?

A. No. The inverters PPL Electric would like to use for control of DERs are not and will not be available for some time.¹ The growth rate of DERs in PPL Electric's territory is not going to change drastically over the next eighteen months. Consequently, the decision to take control of DERs away from DER owners and vest that control with PPL Electric is a significant decision that should only be undertaken after equally significant stakeholder input.

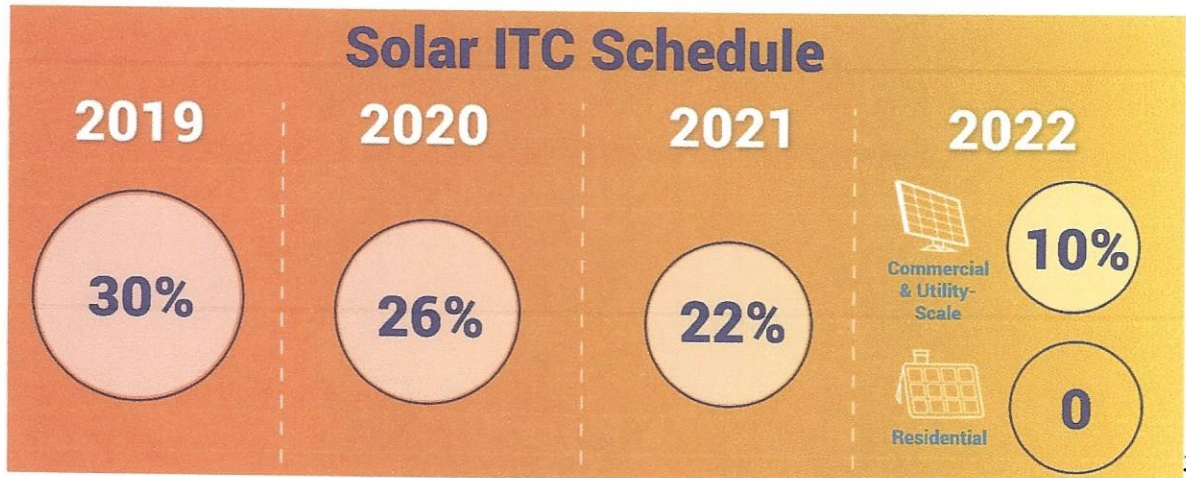
Q. Do you expect the number of DERs to increase in PPL Electric's service territory over the next 18 to 24 months?

A. I expect the number of DERs to increase but do not expect any significant growth in the rate of increase over the next 18 to 24 months. PPL Electric witness Salet identifies several reasons for the increase in DER growth, but the reasons cited are misleading. For example, Mr. Salet states, "[i]n fact, there are financial incentives, legislative changes, political efforts and PPL Electric initiative all contributing to that conclusion."² In addition, Mr. Salet cites the Investment Tax Credit or ITC as a reason for the growth in solar but what he fails to cite is that the

¹ PPL Electric St. No. 2 (Reder), pp. 9-10.

² PPL Electric St. No. 1 (Salet), p. 9

ITC decreased at the end of 2019 from 30% to 26%, in 2021 it will fall to 22% and in 2022 it will be eliminated entirely.



Moreover, Mr. Salet cites the [Finding] Pennsylvania Solar Future Plan of which the Sustainable Energy Fund was a Committed Partner. The stated goal of the Plan is to achieve 10% solar by 2030⁴. To achieve this goal the plan lists some strategies including: (1) increase the AEPS solar carve-out; (2) increase access to capital; (3) provide loan guarantees; (4) implement carbon pricing and invest proceeds in energy efficiency and renewable energy; (5) create uniform siting policies; (6) evaluate exemption to state tax policy; (7) assist sponsors in identifying tax equity investors; (8) expanded use of virtual net metering; (9) community solar; (10) alternative rate-making; (11) C-PACE; (12) accelerated use of smart inverters; (13) long-term contracts; (14) utility ownership and, (15) grid modernization. Based on

³ Retrieved from SEIA February 3, 2020.

⁴ PPL Electric St. No. 1 (Salet), p. 10.

my experience in funding the renewable energy sector for more than ten years, I do not foresee an increase in the solar carve-out, I do foresee access to capital through C-PACE⁵, but at higher interest rates and primarily for utility scale systems, loan guarantees, community solar, expanded use of net metering, utility ownership, and tax policy would all require action from the state legislature, while alternative rate-making and accelerated use of smart inverters would require action by the Pennsylvania Public Utility Commission. Although Governor Wolf (a Democrat) has passed an executive order relating to carbon reduction, the state legislature (which is Republican controlled) appears poised to challenge the Governor's authority to do so. So, in conclusion, although I see continued growth in DERs, I do not foresee any event or series of events that are going to dramatically increase the rate of growth of DERs in the PPL Electric territory.

Q. Is Mr. Salet's forecast from the Finding Pennsylvania Solar Future Plan misleading?

A. Yes. On page 10 of his testimony, PPL Electric witness Salet, in his discussion of the viability of raising Pennsylvania's solar obligation by 2030, cites 11 gigawatts of new capacity projected to come on line, However, he fails to mention that the 11 gigawatts (cited by PSFP) are for all solar photovoltaic, both utility-

⁵ (Commercial Property Assessed Clean Energy) financing makes green energy upgrades more accessible and affordable.

scale and distributed. The distributed capacity which would be related to this proceeding is either 3.9 GW or 1.1 GW depending on the forecast scenario.⁶ Both these goals are a fraction of the 11 gigawatts cited by Mr. Salet and highly dependent on the 15 strategies.

Q. Do you agree with comparisons between the DER market in Pennsylvania, the UK, and California?

A. No. Pennsylvania is not even a top ten state for solar penetration. California, at more than 26 GW, is orders of magnitude greater than Pennsylvania.

Consequently, this testimony is misleading. PPL Electric currently has less than 9,100⁷ solar installations while California has more than 1,000,000 installations.⁸

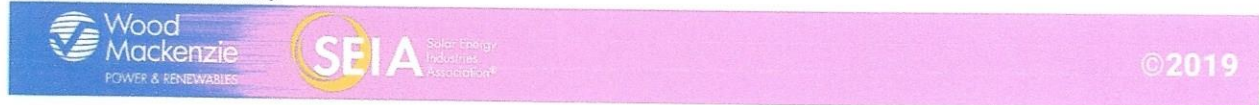
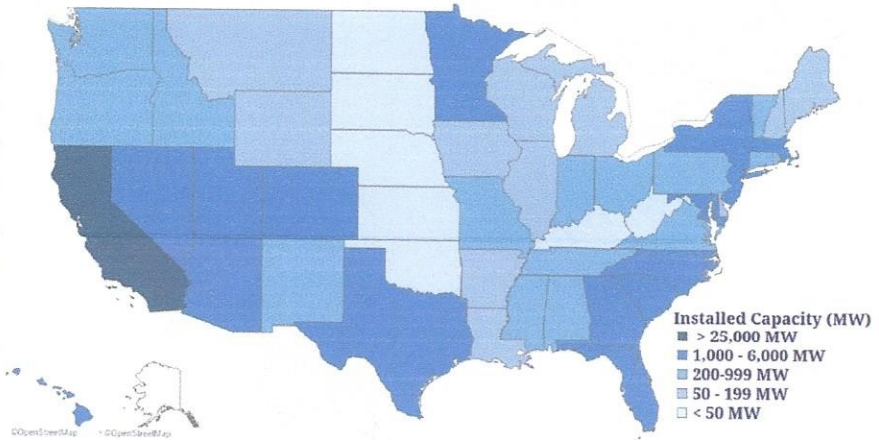
⁶ Pennsylvania Department of Environmental Protection Pennsylvania Solar Future Plan. November 2018 p. XVI Table 1

⁷ PPL Electric St. No. 1 (Salet), p. 8

⁸ <https://seia.org/states-map> Q3 2019

Top 10 States

California	26,232 MW
North Carolina	5,662 MW
Arizona	3,913 MW
Texas	3,421 MW
Florida	3,414 MW
Nevada	3,277 MW
New Jersey	3,014 MW
Massachusetts	2,582 MW
New York	1,893 MW
Georgia	1,762 MW



Q. For a proceeding with such a significant policy implication, is there wide participation in this proceeding?

A. No. DER control is a major policy decision and should be established through a stakeholder process with a wide group of stakeholders including biomass, solar, micro-hydro, CHP, electric vehicle, battery storage, and inverter technology experts along with a breadth of policy experts. This proceeding has failed to achieve this objective.

Q. Did you previously advocate for a statewide proceeding?

A. No. I believed that there would be much interest in this proceeding due to the significance of the policy issue. I attribute the lack of participation to the significant cost associated with a litigated proceeding and lack of industry awareness of the proceeding. In fact, SEF only became aware of the proceeding

through second-hand information after the matter had been delayed by the Commission.

Q. Do you oppose PPL Electric's Petition to monitor and control DERs?

A. Yes. To allow PPL Electric, a monopoly, the ability to control Distributed Energy Resources (DERs) is a prodigious change in policy. This petition, if approved, would wrestle DER control away from DER owners, negatively impacting the democratization of energy. One aspect of a DER purchase is resiliency. PPL Electric's petition would provide the authority to curtail and remotely shutoff DERs, including not just solar systems but a host of renewable generation platforms that utilize inverters as well as batteries and electric vehicles. For this reason alone, PPL Electric's petition should be rejected.

Q. Who currently possesses the right to control DERs?

A. After initial setup during configuration, the DER owner possesses the right to control their DER, although many of the new inverters autonomously provide some of the control functions PPL Electric is seeking.

Q. Does the DER owner currently possess the right to curtail production?

A. Yes. The DER owner currently possesses the right to curtail production.

However, the petition by PPL Electric would provide PPL Electric with the control to curtail the DER's production.

Q. Does the DER owner currently possess the right to turn the DER on or off?

A. Yes. The DER owner currently possesses the right to turn the DER on or off.

However, the petition by PPL Electric would provide PPL Electric with the control to shut the DER down remotely.

Q. Is there a concern regarding the ability of PPL Electric to shut down the DER remotely?

A. Yes. Ratepayers with battery storage may utilize that storage capacity for resiliency. Shutting off that storage could put ratepayers and their property at risk.

Q. Are there currently other methods to pursue resiliency that PPL Electric is ignoring in this proceeding?

A. Yes. PPL Electric is not pursuing non inverter-based backup generators. These generators use fossil fuels. It is curious that PPL Electric is proposing to shut off primarily renewable driven DERs during certain grid emergencies but has no apparent provisions for identically treating fossil fuel generators.

Q. In your opinion, does PPL Electric's proposal to control DERs endanger DER owners?

A. Yes. DER owners are combining batteries and distributed generation (like solar) to provide power to essential loads in the event of a grid failure. Under PPL Electric's proposal, PPL Electric could shut these systems down during a grid failure putting these DER owners and their property at risk. The ability to shut down DERs would also devalue their DER investment.

Q. Is PPL Electric requesting permission to shut down all DERs or are they targeting renewables?

A. PPL Electric appears to be primarily targeting owners of solar generation. There is an unknown number of PPL Electric ratepayers with behind the meter backup generators. Nowhere in this testimony is PPL Electric proposing to control these assets, which are run by fossil fuels. These units use mechanical and automated transfer switches. Transfer switches are often built into the inverters of distributed battery systems to disconnect the system from the grid in the event of power failure. This is just another example of the electric utility industry creating hurdles for renewable generation that do not exist for fossil fuel generation.

Q. Could PPL Electric benefit financially from curtailing and or shutting off DERs?

A. Yes. By reducing the production of DERs, PPL Electric could increase its distribution revenue.

Q. Are there situations in which PPL Electric could indirectly curtail facilities electricity consumption?

A. Yes. Energy users may curtail energy consumption as part of a demand control program.

Q. Are demand control programs voluntary?

A. Yes. Demand control programs are voluntary.

Q. Are parameters of the demand control program established by the Pennsylvania Public Utility Commission or per Company Policy?

A. The program's parameters are established by PUC policy.

Q. Is PPL electric proposing a voluntary program within the parameters of established Commission policy?

A. No. PPL Electric is proposing a involuntary program to control customer DERs and per Company Policy. This is a significant issue since the actual Company Policy is not part of PPL Electric's tariff.

Q. In your opinion, will control via Company Policy have a chilling effect on DER growth?

A. Yes. If PPL Electric curtails DER production, it will decrease the value of the DER to the DER owner. Company policy that can be modified at the whim of PPL Electric and is not clearly articulated in a tariff adds additional financial risk for third parties and direct owners of DERs.

Q. Will PPL Electric's use of the inverters RS485 bus impact the ability of DER owners to monitor and manage their equipment as well as integrate other forms of DERs, like batteries?

A. Yes. For example, SEF has recently constructed a Net Zero building in PPL Electric's territory. The existing RS485 bus has been used to communicate with the other inverters on-site and will be used for SEF's solar monitoring and control system. It appears that PPL Electric cannot connect its proposed communication

device without disconnecting SEF's ability to monitor, interface and control its system.

Q. Is the new UL Standard 1741 complete?

A. No. PPL Electric witness Salet has testified the standard is "forthcoming."⁹

Q. Are inverters that meet the UL Standard currently available?

A. No. It is unknown if any of the inverter manufacturers have produced a product yet for a yet to be finalized standard.¹⁰

Q. How do inverters get tested and approved in the PPL Electric territory?

A. I suspect that PPL Electric envisions inverter manufactures bringing their inverter to PPL Electric for testing and approval. If true, this procedure could lead to significant delays for the DER owner, further increasing their risks..

Q. Does PPL Electric's interconnection process work for new construction?

A. No. PPL Electric promotes its interconnection application system, but as of last month, it was still incapable of handling an interconnection request for new construction.

⁹ PPL Electric St. No. 1 (Salet), p. 6.

¹⁰ PPL Electric St. No. 2 (Reder), pp. 9-10.

Q. Is PPL Electric able to accommodate more DERs with the denial of this petition?

A. Yes. Through the upgrade of PPL Electric's distribution system.¹¹

Q. What is your recommendation regarding this proceeding?

A. Due to the enormous policy implication of this proceeding and the very limited participation of industry experts, I recommend that the Commission suspend PPL Electric's petition and open a statewide stakeholder proceeding.

Q. Does this conclude your direct testimony on this subject ?

A. Yes.

¹¹ PPL Electric St. No. 1 (Salet), p. 17.

APPENDIX A

John Costlow

4110 Independence Dr Ste 100
Schnecksville, PA 18078

CERTIFICATIONS

Certified Renewable Energy Professional
Certified Sustainable Development Professional
Certified Passive House Consultant

Certified Carbon Reduction Manager
Certified Performance Contracting and Funding Professional

CURRENT EMPLOYMENT

Sustainable Energy Fund, Allentown, PA.

2014 - Present

President & CEO

As President, I provide vision, leadership and overall management to the Sustainable Energy Fund. As President I am responsible for mission management; Board of Directors relations; financial and investment results; identifying and developing investment opportunities consistent with the strategic direction of the organization; staff development; effective and efficient administration; overall management of operations; and communicating to the various external and internal constituencies in an effective and efficient manner. In addition, I am responsible for providing expert testimony on behalf of SEF before the Pennsylvania Public Utility Commission and evaluating the technical and financial feasibility of funding requests. I frequently speak on topics of renewable energy, energy efficiency, carbon reduction and sustainability.

Director of Technical Services

2008 - 2014

As DTS, I was responsible for leading SEF's programs. In that role I managed the ongoing operations of the organization including program development and implementation, marketing, strategic planning, information systems, administrative systems and metrics. Under my leadership annual funding disbursements for renewable energy and energy efficiency projects increased by 400%, the organizations local sustainable energy conference grew to become the region's largest sustainable energy event with participants from across the US and 18 countries. Together with legal counsel, I worked through the regulatory process to implement rebates for solar thermal systems, long-term solar rec procurements, favorable net metering rules and time of use rates.

EMPLOYMENT HISTORY

Florida Public Utilities, West Palm Beach, FL.

2006 - 2008

Manager Marketing and Manager Energy Conservation

During my tenure, I provided leadership to marketing and energy conservation departments. I oversaw operations of various administrative, conservation, merchandising and sales teams. Responsible for the company's electric and natural gas demand side management programs from design through implementation and cost recovery. Presented the companies energy conservation programs to the Florida Public Service Commission.

Sears and Roebuck, Ft. Lauderdale, FL

2004 - 2006

Metro Installation Manager

Responsible for the overall profitability and management of the installation process for HVAC, replacement windows, storm shutters, entry doors, and kitchens throughout South Florida. Recruited, trained and managed subcontractor network. Oversaw local regulatory compliance. Returned to energy industry upon completion of bachelor degree in organizational management.

Energy Control Companies, Ft. Lauderdale, FL.

2000 - 2004

Vice President of Operations

As VP of Operations I was responsible for daily business operations and new product development. During my tenure, I directed development of custom hardware and remote access software for energy management as well as development of a remote diagnostic Facility and Energy Management Center that oversaw 50 million square feet of geographically disperse facilities. I left to pursue BS in organizational management.

Creative Control Designs/ Johnson Controls, Columbus, OH
Technical Support Manager

1998-2000

Managed day-to-day operations of remote energy management center for more than 5,000 geographically dispersed facilities. Developed business plan and implemented Ultimate Environmental Partner program for nationwide network of mechanical, electrical and general contractors. Developed and implemented national flat rate index methodology for retail sector labor. Responsible for the HVAC and lighting maintenance budget for Warner Brothers, Borders, The Limited, Victoria's Secret, Bath & Body, Lane Bryant and others. I authored technical training manuals for internal personnel and subcontractors.

American School of Technology Columbus, OH

1996 - 1998

HVAC Department Head

Oversaw operation of HVAC department, laboratories and school facilities including development of new curricula for existing HVAC adding electronic controls program and achieved national accreditation. Awarded Teacher of the Year 1997.

United States Navy

1983 - 1987

Nuclear Reactor Operator/Electronics Technician

Served aboard the USS John Marshall nuclear powered attack submarine and amphibious transport as nuclear reactor operator and controls technician. Received the Submarine Warfare Insignia and Personal Letter of Accommodation.

EDUCATION

Palm Beach Atlantic University West Palm Beach, FL **BS Organizational Leadership and Management**
Naval Nuclear Power School, **Nuclear Power Plant Operations**

Honor graduate

Electronics Technician A School

Lancaster High School Lancaster, NY **Regents High School Diploma**

ORGANIZATIONS, APPOINTMENTS, WORKING GROUPS

Current

Vice President Lehigh Valley Chapter Association of Energy Engineers

Member Association of Energy Service Professionals

Member Alternative & Renewable Development Institute

Former

Greater Lehigh Valley Chamber of Commerce, Energy & Environment Committee

Chairman Mid Atlantic Bioenergy Council

Vice President Pennsylvania Biomass Energy Association

President Lehigh Valley Chapter Association of Energy Engineers

Pennsylvania Public Utility Commission On-Bill Financing Working Group

Pennsylvania Public Utility Commission Fuel Switching Working Group

Appointed to Lower Macungie Township Environmental Advisory Committee

Pennsylvania Public Utility Commission Low Income Working Group

Harrisburg Area Community College Alternative Energy Curriculum Development Group

Board of Directors Palms West Chamber of Commerce

USGBC, South Florida, Governmental Advocacy Committee

AFFIDAVIT

I, John M. Costlow, certify that I am President/CEO of the Sustainable Energy Fund and that, in said capacity, I am authorized to and do make this Affidavit for it, that the facts set forth in the foregoing SEF St. 1 are true and correct to the best of my knowledge, information and belief. I understand that false statements made herein are made subject to the penalties of 18 Pa. C.S. § 4904, relating to unsworn falsifications to authorities.



John M. Costlow
President/CEO
Sustainable Energy Fund

Dated: February 5, 2020

CERTIFICATE OF SERVICE
(Docket No. P-2019-3010128)

I hereby certify that a true and correct copy of the foregoing SEF Direct Testimony (SEF St. 1 (J. Costlow) (Non-Proprietary version) & SEF St. 2 (R. Celentano)) and SEF Cross Examination Ex. 2 have been served upon the following persons, in the manner indicated, in accordance with the requirements of 52 Pa. Code § 1.54 (relating to service by a participant).

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Hon. Emily DeVoe
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Date: September 23, 2020