

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

**PETITION OF PECO ENERGY)
COMPANY FOR APPROVAL OF ITS)
DEFAULT SERVICE PROGRAM FOR)
THE PERIOD FROM JUNE 1, 2021)
THROUGH MAY 31, 2025)**

DOCKET NO. P-2020-3019290

SURREBUTTAL TESTIMONY

OF

KARL R. RÁBAGO

ON BEHALF OF THE

ENVIRONMENTAL STAKEHOLDERS

July 23, 2020

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1 **I. INTRODUCTION**

2 **Q. Please state your name, business name, and business address.**

3 A. My name is Karl R. Rábago. I am the principal of Rábago Energy LLC, a Colorado
4 limited liability company, located at 2025 E. 24th Avenue, Denver, Colorado.

5 **Q. Have you previously submitted testimony in this proceeding?**

6 A. Yes. I submitted direct testimony that is identified as Environmental Stakeholders
7 Statement No. 1.¹

8 **Q. What is the purpose of your surrebuttal testimony?**

9 A. The purpose of my surrebuttal testimony is to respond to arguments offered by PECO
10 Energy Company (the “Company”) witnesses John J. McCawley, Scott G. Fisher, and
11 Joseph A. Bisti.

12 **II. SURREBUTTAL TO THE REBUTTAL TESTIMONY OF JOHN J. MCCAWLEY**

13 **Q. Have you reviewed the rebuttal testimony of Company witness John J. McCawley?²**

14 A. Yes.

15 **Q. Mr. McCawley begins his rebuttal testimony by claiming that your direct testimony
16 misstates the applicable law. How do you respond?**

17 A. Mr. McCawley starts by asserting that my direct testimony ignored key features of the
18 law and that my testimony asserted that Act 129 of 2008 “[reintroduced] the pre-
19 Competition Act obligation of Pennsylvania electric utilities to plan for and undertake
20 investments in generation to meet the long-term needs of customers.”³ That assertion is a

¹ Environmental Stakeholders, *Direct Test. of Karl R. Rábago*, Docket No. P-2020-3019290 (June 16, 2020) (“Rábago Direct Testimony”).

² Company, *Rebuttal Test. of John J. Mccawley, P.E.*, Docket No. P-2020-3019290 (July 9, 2020) (“McCawley Rebuttal Testimony”).

³ McCawley Rebuttal Testimony at 4:13–15.

1 mischaracterization of my testimony. Moreover, it ignores the very real and specific
2 requirements imposed on default service providers and carefully detailed in my direct
3 testimony. As stated in my testimony:⁴

4 “Pennsylvania law⁵ requires that the Company, as a default service provider, to:

- 5
- 6 • Provide default service electric generation supply to non-shopping customers
7 pursuant to a commission-approved competitive procurement plan;
- 8 • Procure electric power supply through a prudent mix of spot, short-term, and
9 long-term contracts;
- 10 • Configure and acquire a prudent mix of contracts that is designed to ensure
11 adequate and reliable service, least cost to customers over time, and
12 compliance with competitive procurement provisions of the law; and
- 13 • Propose a plan and provide sufficient and competent evidence to support the
14 Commission’s determination that the plan includes prudent steps necessary to
15 negotiate favorable supply contracts and obtain least-cost generation supply
16 contracts on a long-term, short-term, and spot market basis; and that neither
17 the DSP [“Default Service Plan”] nor its affiliated interest has withheld from
18 the market any generation supply in a manner that violates Federal law.”

19 As indicated, none of this testimony calls for PECO to undertake pre-Competition Act-
20 style investments in generation. My testimony recommends that PECO take prudent steps
21 to carry out its duties under the presently-applicable statutory framework, which requires
22 PECO to develop a procurement plan that it can demonstrate will be “least cost over
23 time” and will ensure adequate and reliable service.

24 **Q. Does Mr. McCawley assert that any of the presently applicable statutory**
25 **requirements that you identified do not apply to the Company’s proposed DSP V**
26 **(“Default Service Plan V”)?**

27 A. No.

28 **Q. Does Mr. McCawley offer any other general rebuttal to your testimony?**

⁴ Rábago Direct Testimony at 4:19–5:11.

⁵ 66 Pa. C.S.A. § 2807.

1 A. Yes. Broadly speaking, Mr. McCawley asserts that the Company has basically been
2 doing the same thing for about ten years, using the same general approach, and relying on
3 the same general Pennsylvania Public Utility Commission (the “Commission”) and
4 Company statements for that entire period.⁶ Mr. McCawley’s testimony in this regard
5 does not rebut my direct testimony. Rather, it reinforces it. The world, electricity markets,
6 technologies, and policies have all changed in the past ten years. The Company’s
7 approach to default service has not. As I testified, the potential benefits of procurement
8 through long-term contracting, and from renewable generation and distributed generation
9 sources in order to meet statutory requirements of adequacy, reliability, and least cost
10 have grown significantly over the past ten years. PECO has not demonstrated and cannot
11 demonstrate that its proposed procurement plan ensures adequate and reliable service at
12 least cost over time by completely ignoring entire categories of potential procurement
13 sources. As I emphasized, markets and supply options have changed significantly in the
14 last ten years. Now, the Company’s approach is out of step with the requirements of
15 Pennsylvania law and regulation and should be reviewed and rebuilt.

16 **Q. Mr. McCawley claims that you testified that the Commission should use the default**
17 **service requirement for adequate and reliable service as a mandate for the**
18 **construction of new generation.⁷ Was that your testimony?**

19 A. No. I testified that the Company’s statutory duty to ensure adequate and reliable service
20 through its DSP requires the Company to evaluate the availability and reliability
21 characteristics of different types of generation supply and to make procurement choices

⁶ McCawley Rebuttal Testimony at 5–8.

⁷ *Id.* at 9.

1 that are consistent with ensuring adequate and reliable service.⁸ I also testified that the
2 Company has offered no evidence to carry its burden of demonstrating that its proposed
3 DSP V meets the standard for ensuring adequate and reliable service at least cost over
4 time.⁹ Nowhere in my testimony do I discuss or recommend that the Company construct
5 new generation and it is telling that Mr. McCawley does not cite to any such statement. It
6 is unclear why Mr. McCawley chooses to address this issue at length in his rebuttal, but it
7 seems to function as a strawman argument for Mr. McCawley to devote his attention to in
8 order to avoid serious engagement with the flaws in PECO's procurement choices that
9 were actually raised in my testimony.

10 **Q. Does Mr. McCawley offer any response to your testimony regarding the Company's**
11 **failure to meet its duty to ensure adequate and reliable service with its DSP?**

12 In rebuttal, Mr. McCawley offers only the supply contract terms and conditions as
13 evidence that its default service procurement plan meets the legal standard of ensuring
14 adequate and reliable service.¹⁰ In so doing, Mr. McCawley appears to concede that the
15 Company has not taken any other action with respect to ensuring adequate and reliable
16 service at least cost over time.

17 **Q. Did Mr. McCawley address your testimony regarding the potential benefits of**
18 **distributed generation as part of the default service supply mix?**

19 A. Mr. McCawley's position is that the Commission has not identified any benefits of
20 distributed generation as a consideration for default service.¹¹ Of course, the obligation

⁸ Rábago Direct Testimony at 24.

⁹ *Id.* at 23.

¹⁰ McCawley Rebuttal Testimony at 9–10.

¹¹ *Id.* at 10:20–21.

1 for creating and managing the default service plan is on the Company, and not the
2 Commission. Mr. McCawley further asserts that the benefits of distributed generation are
3 outside the scope of this proceeding.¹² This position is directly at odds with the
4 Company's obligations under law—obligations which are not limited to utility-scale
5 supply resources. The Company must carry its burden of showing that its procurement
6 choices ensure adequate and reliable service, and there is no basis for the Company to
7 simply declare procurement from distributed generation to be “out of scope” because the
8 Company failed to examine such procurement and wishes to avoid its obligation to
9 evaluate the potential adequacy and reliability benefits to customers of procurement from
10 distributed generation. As I testified, procurement from distributed generation offers
11 numerous potential benefits relating to adequacy and reliability, including increased
12 resiliency and decreased reliance on transmission and distribution infrastructure.

13 **Q. Mr. McCawley states in his rebuttal testimony that the Commission expressed**
14 **disfavor with electricity distribution companies (“EDCs”) adopting a managed**
15 **portfolio approach and entering into long-term contracts in prior orders and**
16 **proceedings,¹³ including the Final Rulemaking Order in Docket No. L-2009-**
17 **2095604,¹⁴ and the Commission’s Final Order in Docket No. I-2011-2237952.¹⁵ He**
18 **makes those statements in an effort to rebut your testimony regarding changes you**
19 **recommend in the Company’s development of its proposed DSP V. What is your**
20 **response?**

¹² *Id.* at 10–11.

¹³ *Id.* at 4–8.

¹⁴ Commission, *Final Rulemaking Order - Implementation of Act 129 of October 15, 2008; Default Serv. and Retail Elec. Mkts.*, Docket No. L-2009-2095604 (Order entered Oct. 4, 2011) (“Final Rulemaking Order”).

¹⁵ Commission, *Final Order - Investigation of Pennsylvania’s Retail Elec. Mkt.: End State of Default Serv.*, Docket No. I-2011-2237952 (Order entered Feb. 15, 2013) (“Retail Markets Investigation”).

1 A. Mr. McCawley mischaracterizes both my testimony and Commission orders in an effort
2 to rebut my recommendations. To start, the fundamental problem with the Company's
3 proposed approach is that it ignores and fails to meet the clear legislative and regulatory
4 obligations it faces, and which are summarized earlier in this testimony. Mr. McCawley's
5 references to guidance language from Commission orders on procurement is unavailing
6 and does not change or abridge the Company's obligations to ensure adequate and
7 reliable service at least cost over time. Significantly, the Commission orders were far
8 more balanced and nuanced than Mr. McCawley cites in his rebuttal statement. In
9 discussing the issues with portfolio management and long-term contracts, the
10 Commission has continued to make it clear that it will approach default service plans on a
11 case-by-case basis,¹⁶ and, in spite of the fact that Mr. McCawley cites Commission
12 language pertaining to long-term alternative energy credits contracts, and not long-term
13 supply contracts, has also eschewed adopting prescriptive procurement methodologies.¹⁷

14 The principal concern under the statute is developing a procurement plan that is least cost
15 over time and ensures adequate and reliable service. Where the inclusion of long-term
16 contracts within the portfolio mix of supply contracts managed by a default service
17 provider is in the best interest of ratepayers in ensuring least cost, adequate, and reliable
18 service, the Commission orders make clear that the ratepayers' interests come first and
19 that such procurement is permissible. In my testimony, I noted that the Company is
20 entirely dependent on short-term contracts for default service supply and has failed to
21 make a credible case that it has complied with the obligation to ensure a prudent mix of

¹⁶ Final Rulemaking Order at 60.

¹⁷ Retail Markets Investigation at 100.

1 supply contracts that results in the least cost over time and the ability to continue to
2 ensure adequate and reliable service. I testified that long-term contracts, managed as part
3 of a portfolio, would help the Company meet its statutory and regulatory obligations to
4 ensure least cost over time and adequate and reliable service. Notably, Company's
5 current DSP V proposal already involves portfolio management. Specifically, the
6 Company's inflexible and excessive reliance on short-term supply contracts necessitates a
7 level of portfolio management—the staggering of the contract tenors—in order to prevent
8 default service customers from being even more exposed to short-term price volatility.
9 The Company has not articulated any evidentiary basis for its choice to categorically
10 exclude long-term contracts from the portfolio of contracts it already manages.

11 More broadly, the law and regulation have been clear for nearly a decade—the Company
12 enjoys discretion in meeting its statutory default service plan obligations but meet them it
13 must. Meeting those obligations in the context of markets that have changed profoundly
14 in the last decade looks different than it did a decade ago. As my testimony establishes—
15 and remains unrebutted by Mr. McCawley or any other Company witness—markets have
16 changed. My testimony documents the inflexible and unchanging position of the
17 Company on these issues, with the result that once again, it proposes a default service
18 plan made entirely of short-term fixed-price full requirements (“FPFR”) contracts. It is
19 past time for the Company to revisit this approach, in order to ensure that ratepayers are
20 ensured adequate and reliable service at least cost over time.

21

1 **Q. Is it possible for the Company to demonstrate that it is ensuring adequate and**
2 **reliable service at least cost over time without evaluating the adequacy and**
3 **reliability benefits and costs over time of long-term contracts, procurement from**
4 **renewable resources, and procurement from distributed energy resources?**

5 A. No. A critical problem with the Company’s insistence on maintaining the same short-
6 term contract-based procurement approach in the context of markets that have
7 substantially changed is that the Company is obligated under the statute to demonstrate
8 that it is ensuring adequate and reliable service at least cost over time. It is impossible to
9 determine whether the Company’s proposed approach is least cost over time without
10 some process of comparing it to other approaches such as those I have recommended.

11 The Company cannot demonstrate that its plan is least cost over time without evaluating
12 whether the inclusion of long-term contracts, procurement from renewable resources, and
13 procurement from distributed energy resources could lower the costs over time of
14 ensuring adequate and reliable service to ratepayers.

15 **Q. Mr. McCawley asserts that long-term contracts could present a problem of “lock-**
16 **in” to contract prices that would saddle a shrinking pool of default service**
17 **customers with cost burdens in the event that a large number of customers left**
18 **default service at any particular time. How do you respond?**

19 A. Mr. McCawley’s concerns are unrealistic and insufficient as a basis for failing to even
20 explore the benefits of long-term supply contracts, especially those built on renewable
21 energy supply. First, it would be unreasonable to rely on any one kind of contract—long-
22 or short-term—to procure supply for default service. Both pose risks associated with lack
23 of diversity in the supply portfolio. Second, the default service market has been

1 profoundly stable for more than a decade. It is hard to imagine based on any reasonable
2 evidence that sufficient exit would occur so as to impair the ability to reasonably manage
3 an existing contract portfolio. Third, the Company has considerable contract management
4 skills that it applies to short-term contracts. These skills should help it manage a supply
5 mix with long-term contracts in it as well. Mr. McCawley's concern about default service
6 customer turnover and impacts on long-term contract obligations is a red herring.

7 **Q. What weight should the Commission give to Mr. McCawley's asserted rebuttal of**
8 **your testimony regarding the Company's DSP V proposal?**

9 A. None. Mr. McCawley did not rebut the important points I made about the flaws in the
10 Company's proposal and the ways in which the proposal fails to comport with
11 Pennsylvania law and regulation in the context of markets that have changed significantly
12 since PECO developed the short-term contract-based procurement plan it continues to put
13 forth in its proposed DSP V.

14 **III. SURREBUTTAL TO THE REBUTTAL TESTIMONY OF SCOTT G. FISHER**

15 **Q. Have you reviewed the rebuttal testimony of Company witness Scott G. Fisher?¹⁸**

16 A. Yes.

17 **Q. How does Mr. Fisher attempt to rebut your direct testimony?**

18 A. The first and most fundamental step in Mr. Fisher's attempt to rebut my testimony is to
19 mischaracterize my testimony. Mr. Fisher falsely asserts that I recommended that the
20 Company "increase the share of long-term contracts in PECO's plan,"¹⁹ and that I
21 recommended "that PECO incorporate a larger share of long-term contracts in default

¹⁸ Company, *Rebuttal Test. of Scott G. Fisher*, Docket No. P-2020-3019290 (July 9, 2020) ("Fisher Rebuttal Testimony").

¹⁹ Fisher Rebuttal Testimony at 2:20–3:1.

1 service supply mix.”²⁰ I did not. Likewise, Mr. Fisher is wrong to erect a strawman
2 argument by inferring that the intent of my testimony is to recommend a requirement for
3 “a minimum quantity of long-term contracts in a default service plan.”²¹ Again, I did not.
4 Rather, my testimony pointed out that the Company relies solely upon short-term
5 contracts for default supply service and has not revisited its opposition to long-term
6 contracts since 2009.²² I pointed out how the world and electricity markets and policy
7 have changed since then.²³ I testified that long-term contracts could offer benefits to the
8 default supply mix and that PECO cannot demonstrate that its proposal ensures adequate
9 and reliable service at least cost over time while operating a procurement process that
10 completely excludes long-term contracts.²⁴ And I pointed out throughout my testimony
11 that the Company proposal does not meet the requirements of Pennsylvania law and
12 regulation.

13 To be sure, I believe based on more than 30 years of experience in the industry that if the
14 Company followed the law and pursued a true least cost over time portfolio of supply
15 contracts, it would secure some supply under long-term contracts, especially long-term
16 renewable energy contracts, as a result. But I did not propose a specific mix of contracts
17 other than one that meets the requirements of law. It is the obligation of the Company to
18 carry its burden of demonstrating that its specific proposed mix meets the requirements of
19 law to ensure adequate and reliable service at least cost over time, and I testified that their
20 categorical exclusion and failure to evaluate long-term contracts cannot be reconciled

²⁰ *Id.* at 4:19–5:1.

²¹ *Id.* at 25–26.

²² Rábago Direct Testimony at 17.

²³ *Id.* at 10–15.

²⁴ *Id.* at 17.

1 with this obligation. Because Mr. Fisher goes to such lengths to mischaracterize my
2 recommendations, it is appropriate to restate them here. My actual recommendations to
3 the Commission were:

4 “[T]hat the Commission direct the Company: (1) to develop and implement a
5 planning process aimed at constructing, through competitive processes, an
6 adequate default service supply portfolio; (2) that actively engages stakeholders
7 (meaning, at a minimum, soliciting comments from a wide range of stakeholders;
8 holding public working sessions on plan development processes, decisions, and
9 assumptions; inviting and considering stakeholder input on plan structure and
10 elements; incorporating stakeholder concepts and ideas in planning activities and
11 plans, including alternative scenarios; frequently sharing analysis on a timely,
12 transparent, and frequent basis; and accounting for stakeholder inputs in reporting
13 and submission of proposals to the Commission); (3) that transparently evaluates
14 the full range of cost and benefits associated with supply options over time; (4)
15 that includes due consideration of the factors of price stability, reduced
16 environmental compliance risk, reduced transmission and distribution costs, and
17 other factors as appropriate; (5) that accounts for current and emerging
18 Commonwealth and municipal energy and climate policy by incorporating more
19 renewable energy resources and distributed energy resources in order to secure
20 the operational, technical, economic, and financial benefits of those resources in
21 the default service plan; (6) that corrects a neglect of resource adequacy,
22 resiliency, and reliability issues that functions as a discriminatory barrier to
23 renewable energy; (7) that corrects an excessive and unreasonable focus on short-
24 term contracts that functions as a discriminatory barrier to renewable energy; and
25 (8) that demonstrates a strong likelihood, based on substantial evidence submitted
26 into the record, that it is a plan that is least cost, over time, to customers, and that
27 reflects a prudent mix of short- and long-term contracts for supply.”²⁵

28 **Q. Mr. Fisher states that you are incorrect in asserting in your testimony that the**
29 **supply procured by the Company is unrelated to customer preferences, citing**
30 **support and silence by intervenor and statutory parties in DSP proposal cases.**²⁶
31 **How do you respond?**

²⁵ *Id.* at 28–29.

²⁶ Fisher Rebuttal Testimony at 6.

1 A. Again, Mr. Fisher relies on a fundamental and false mischaracterization of my testimony.
2 In full and in context, my testimony on this issue was:²⁷

3 **“Q. Has the Company ever conducted any surveys or other research to**
4 **determine customer preferences relating to default service?**

5 A. No.²⁸ As a result, the supply procured by the Company is unrelated to
6 customer preferences and therefore is less likely to support the
7 development of competitive markets. As customers acquire greater
8 familiarity and understanding of a wide array of energy service and
9 technology options, they begin to form more specific consumption and
10 purchase preferences. These preferences should be tracked and evaluated
11 by the Company in preparing its DSP in order to support its claim that the
12 resulting supply mix is adequate and prudent. In addition, increasing
13 reflection of customer preferences in the DSP will more closely align
14 default service with the kinds of service options customer want from the
15 competitive market, thereby supporting the development of competitive
16 markets that give customers what they want. It is also worth noting that a
17 great many comments delivered by citizens and customers at the public
18 input hearing in this proceeding expressed dissatisfaction with the
19 Company’s proposed plan, further indicating the value of asking default
20 customers about what they want in default service.”²⁹

21 In addition, while I agree some parties have expressed support for the Company's default
22 service supply plans, I cannot agree that failure to voice opposition³⁰ by any actual or
23 potential intervenor party constitutes substantial evidence that the proposed program is
24 related to customer preferences, particularly where customers expressed extensive
25 opposition to the Company’s proposed default service plan at the public input hearing

²⁷ Rábago Direct Testimony at 26–27.

²⁸ Rábago Direct Testimony, Ex. KRR-3: Company Resp. to ES-I-13e.

²⁹ See, e.g., Ron Celentano, *Written Testimony to Accompany Oral Testimony at the June 9th Public Input Hearing for the PECO DSP V*, Docket No. P-2020-3019290 (June 9, 2020) (Rábago Direct Testimony, Ex. KRR-5); Linnea Bond, *Written Testimony to Accompany Oral Testimony at the June 9th Public Input Hearing for the PECO DSP V*, Docket No. P-2020-3019290 (June 9, 2020) (Rábago Direct Testimony, Ex. KRR-6); Gregory Holt, *Written Testimony to Accompany Oral Testimony at the June 9th Public Input Hearing for the PECO DSP V*, Docket No. P-2020-3019290 (June 9, 2020) (Rábago Direct Testimony, Ex. KRR-7); Julie Greenberg, *Written Testimony to Accompany Oral Testimony at the June 9th Public Input Hearing for the PECO DSP V*, Docket No. P-2020-3019290 (June 9, 2020) (Rábago Direct Testimony, Ex. KRR-8).

³⁰ Fisher Rebuttal Testimony at 6:5–7.

1 and where the Company itself admits that it has conducted no survey of customers on
2 their preferences for default service.

3 **Q. Does Mr. Fisher provide new or clearer evidence that the Company's proposed DSP**
4 **V meets the requirements of Pennsylvania law and regulation?**

5 A. No. Mr. Fisher reiterates and summarizes the evidence he provided on direct but does not
6 rebut my testimony regarding the Company's proposal.³¹ Essentially, he repeats the
7 Company position that pursuit of the lowest price supply exclusively through short-term
8 contracts best meets Pennsylvania statutory and regulatory requirements of ensuring
9 adequate and reliable service at least cost over time. This testimony does not rebut mine,
10 as it simply repeats his direct testimony.

11 **Q. Mr. Fisher testifies that he presumes that you recommend that the Company make**
12 **dedicated procurements for renewable energy supply and that such action is**
13 **unnecessary because if renewable energy supply can succeed in winning short-term**
14 **FPFR contracts then the renewable energy supply share of default supply will**
15 **increase. How do you respond?**

16 A. Again, Mr. Fisher mischaracterizes my testimony with his presumption. My
17 recommendations were as I previously stated and did not include a recommendation for
18 dedicated procurements for renewable energy supply. I would note that if the Company
19 cannot conduct a fair all-source procurement process that does not discriminate against
20 renewable energy supply, a dedicated procurement may be in order. My testimony is that
21 a procurement limited to short-term FPFR contracts does not meet standards required
22 under law and does reflect *de facto* discrimination against renewable energy supply, to

³¹ See *id.* at 7–15, 23–24.

1 the detriment of least cost for customers over time. Renewable energy resources tend to
2 perform particularly well on cost when procured through long-term contracts, which
3 allow for the full reflection of the low marginal costs associated with a lack of reliance on
4 fuel. This is why categorically excluding long-term contracts also functions to exclude
5 renewable energy resources.

6 **Q. Mr. Fisher construes your testimony as “[a]ttempting to use a utility's default**
7 **service proceeding to place restrictions on the types of generation that should be**
8 **included in the supply portfolio for the utility's default service offering[] beyond the**
9 **restrictions established in Pennsylvania law" and that it could "cause serious issues**
10 **detrimental to overall policy goals.”³² How do you respond?**

11 A. Mr. Fisher is engaging in projection as well as further mischaracterization. It is exactly
12 the Company's restrictions—short term and FPFR-only contracts—that I have identified
13 as being in contravention to Pennsylvania law and regulation. Indeed, Mr. Fisher
14 somewhat reflects my testimony about the Company's restrictions, pointing out that
15 restrictions on the types of generation that can supply default service could have negative
16 impacts on customers and rates.³³ Of course, Mr. Fisher and the Company fail to accept
17 that the Company's short-term FPFR procurement strategy is what restricts generation
18 supply and gives priority to short-term price over least cost over time. Moreover, as
19 previously described, my testimony demonstrates that it is the Company's plan that is out
20 of step with current and emerging policy, technology, and market realities.

³² *Id.* at 17:3–6.

³³ *Id.* at 17.

1 **Q. Does Mr. Fisher offer any rebuttal to your recommendations regarding a more**
2 **robust supply procurement process that meets the requirements of Pennsylvania**
3 **law and regulation and that better aligns with emerging energy and climate policy?**

4 A. No. In clinging to a short-term contracting paradigm, Mr. Fisher attempts to justify the
5 Company's position with a long discussion of hypothetical negatives that might result
6 from the Company trying and failing to procure and manage a portfolio of supply that
7 meets the requirements of Pennsylvania law and regulation.³⁴ My testimony demonstrates
8 that the current approach fails in several regards and it is certainly possible that the
9 Company could fail under a revised approach. This is the reason that I recommended that
10 the Company adopt a more robust stakeholder-informed process in developing its default
11 service proposals.

12 **Q. Mr. Fisher cites short-term wholesale market price data as evidence that renewable**
13 **energy resources could increase supply portfolio prices for a portfolio based on**
14 **short-term supply contracts only.³⁵ Does this evidence rebut your testimony?**

15 A. No. First, Mr. Fisher appears to offer the evidence in response to his presumed assertion
16 that I recommended procurements of supply based on specific resource types and only
17 under the Company's short-term contracting approach. That was not my testimony.
18 Second, and as addressed in my direct testimony,³⁶ the unrelenting fixation by Mr. Fisher
19 and the Company on short-term contracts and prices is a major part of the problem set
20 that I identified with the Company's proposal. Finally, by focusing only on short-term
21 market prices, the Company ignores the long-term benefits of renewables that could be

³⁴ *Id.* at 17–19.

³⁵ *Id.* at 20–21.

³⁶ Rábago Direct Testimony at 19–21.

1 obtained with a different procurement strategy. Doubling down on short-term prices in
2 his testimony does not mean Mr. Fisher is rebutting mine— he is reinforcing my
3 assertions.

4 **Q. Mr. Fisher takes issue with your testimony that longer-term contracts could offer**
5 **benefits to consumers by raising a host of potential problems and downsides he**
6 **identifies for long-term contracts.³⁷ Does this testimony rebut yours?**

7 A. No. Mr. Fisher basically recounts the Company’s unwavering opposition to long-term
8 contracts through a “parade-of-horribles” list of potential adverse consequences
9 associated with inappropriate or excessive reliance on long-term contracts that also
10 ignores the potential benefits from this form of supply. But I have not proposed simply
11 replacing PECO’s excessively short-term contracts mix with its mirror image in the form
12 of an excessively long-term contracts mix. I have recommended, rather, a prudent mix
13 that is based on least cost over time, which I expect would include some number of long-
14 term contracts greater than zero.

15 I will note that Mr. Fisher’s hypotheticals are all premised on a scenario in which long-
16 term contracts become excessively predominant in the default supply mix, and Mr. Fisher
17 does not offer any explanations for how or why *any integration of long-term contracts at*
18 *all* in PECO’s currently exclusively short-term mix would incur any of the risks he
19 names. Put another way, Mr. Fisher complains of dangers that would arise if DSP V were
20 comprised of 100% long-term contracts, but then does not explain how he leaps to the
21 conclusion that the proper proportion is 0%.

22 However, the point is not whether there is a risk-free strategy. The Company’s short-

³⁷ Fisher Rebuttal Testimony at 28–31.

1 term, FPFPR plan model has major risks and downsides as well, which I pointed out in my
2 testimony. The major deficiency in the Company's proposal is that it doesn't expose the
3 supply portfolio to the potential benefits of long-term contracts or renewable energy-
4 based supply because it doesn't conduct a true open-source solicitation or fairly evaluate
5 the benefits of a blended portfolio of contracts and supply.

6 **Q. Mr. Fisher states the Company's exclusively short-term contracting approach is**
7 **good because it provides the Company flexibility. How do you respond?**

8 A. As an initial matter, flexibility can be a positive, but it is not an end unto itself that can be
9 prioritized above statutory requirements and ratepayer interests. The Company is
10 obligated to provide adequate and reliable service at least cost over time, and may not
11 abrogate those responsibilities in the name of maintaining maximized flexibility for itself.
12 It is true that an ironic benefit of the Company's flawed reliance on an exclusively short-
13 term contract mix is that it provides the Company some added flexibility in correcting
14 this flaw. However, the exclusively short-term contract procurement process is one of the
15 central flaws to be corrected, and there is no basis for maintaining such a flawed mix
16 simply in the name of maximizing flexibility.

17 I also emphasize that the hypotheticals Mr. Fisher raises here are all premised on the
18 assumption the long-term contracts become excessively predominant in the supply mix.
19 Mr. Fisher does not explain how or why any integration of long-term contracts into the
20 supply mix will suddenly end the ability of the Company to implement necessary changes
21 to its procurement. Mr. Fisher praises the Company's policy of "not relying heavily on
22 long-term supply contracts,"³⁸ but this is quite an understatement, as the Company has

³⁸ *Id.* at 30.

1 proposed a mix that includes 0% long-term supply contracts. Taking such an extreme
2 approach is in no way needed to preserve necessary flexibility. A prudent mix of
3 contracts that does not include an excessive reliance on short- or long-term contracts can
4 also preserve necessary flexibility while increasing optionality.

5 **Q. What weight should the Commission give to Mr. Fisher’s asserted rebuttal of your**
6 **testimony regarding the Company’s DSP V proposal?**

7 A. None. Mr. Fisher did not rebut the important points I made about the flaws in the
8 Company’s proposal and the ways in which the proposal fails to comport with
9 Pennsylvania law and regulation. Much of Mr. Fisher’s testimony was a rebuttal to
10 assertions and recommendations that I did not make. Most of the rest was a rehashing of
11 his direct testimony and earlier-taken positions from the Company.

12 **IV. SURREBUTTAL TO THE REBUTTAL TESTIMONY OF JOSEPH A. BISTI**

13 **Q. Have you reviewed the rebuttal testimony of Company witness Joseph A. Bisti?**³⁹

14 A. Yes.

15 **Q. How does Mr. Bisti attempt to rebut your direct testimony?**

16 A. Mr. Bisti takes issue with two of my recommendations. First, Mr. Bisti objects to my
17 recommendation that the Company be required to perform a benefit-cost analysis
18 (“BCA”) to support its proposal for time-of-use (“TOU”) rates for default service
19 customers. Second, Mr. Bisti objects to my further recommendation that the Commission
20 require the Company to use a BCA framework to develop proposals for TOU pilots
21 directed at building and transportation electrification opportunities.

³⁹ Company, *Rebuttal Test. of Joseph A. Bisti*, Docket No. P-2020-3019290 (July 9, 2020) (“Bisti Rebuttal Testimony”).

1 **Q. What rebuttal does Mr. Bisti offer to your recommendation regarding a BCA for**
2 **the Company’s proposed TOU rates?**

3 A. Mr. Bisti does not effectively rebut my testimony that a BCA would support the
4 Company’s development of a well-designed TOU rate. As I noted in my testimony, a
5 BCA would inform incentive levels and help answer whether the program is likely to
6 attract sufficient participation and results to justify the expense—expenses that the
7 Company will seek to recover from customers. Mr. Bisti offers and points to no evidence
8 that the Company’s proposal will be worth it. Rather, he offers only a repeated assertion
9 that:

10 “PECO’s proposed TOU rate design incorporates the Commission’s guidance on
11 EDC TOU rate structures to satisfy Act 129 requirements, implements lessons
12 learned from the PECO Smart Time Pricing Pilot, and balances a variety of
13 objectives, including simplicity and the value proposition for enrollment.”⁴⁰

14 In other words, Mr. Bisti does not rebut my testimony at all; nor does he offer a
15 satisfactory justification for the Company’s failure to evaluate whether the TOU rates it
16 proposes are cost effective. From the perspective of Pennsylvania law, there is no way
17 that the Company or the Commission can conclude that the proposed TOU rates meet the
18 statutory requirement of default service program that is, in fact, least cost over time.⁴¹

19 Mr. Bisti also appears to take the view that in order to require the Company to evaluate
20 whether its proposed TOU rates are cost effective, it was my burden to provide examples
21 of how to evaluate the cost effectiveness of its rates.⁴² I disagree with this position and

⁴⁰ Bisti Rebuttal Testimony at 19:8–12.

⁴¹ 66 Pa. C.S.A. § 2807.

⁴² Bisti Rebuttal Testimony at 19.

1 am surprised that the Company appears to not know how to evaluate cost effectiveness
2 for rates.

3 **Q. What rebuttal does Mr. Bisti offer to your recommendation that the Commission**
4 **require the Company to use a BCA framework to develop proposals for TOU pilots**
5 **directed at building and transportation electrification opportunities?**

6 A. Mr. Bisti does not rebut my testimony that a BCA would improve the tailoring of TOU
7 rates to accomplish specific policy purposes such as building and transportation
8 electrification. Instead, Mr. Bisti offers that the Company supports transportation
9 electrification and, pending passage of current legislation, intends to do more work in that
10 area with stakeholders,⁴³ presumably also without the benefit of cost effectiveness
11 evaluations of rates aimed at advancing transportation electrification.

12 **Q. What weight should the Commission give to Mr. Bisti's asserted rebuttal of your**
13 **testimony regarding cost effectiveness evaluation of the Company's proposed and**
14 **future TOU rates for default service customers?**

15 A. None. Mr. Bisti did not rebut the important points I made about the prudence of
16 evaluating its proposed and future TOU rates with a BCA approach in order to ensure
17 that its rates were supported by substantial evidence and thereby just, reasonable, and in
18 the public interest. In the absence of such analysis, the Company's TOU rate proposal has
19 not been established to provide least cost to customers over time.

20 V. CONCLUSION

21 **Q. Does this conclude your testimony at this time?**

22 A. Yes.

⁴³ *Id.* at 20–21.

VERIFICATION

I hereby verify that the facts contained in the foregoing testimony are true and accurate to the best of my knowledge and that I am duly authorized to make this verification, and that I expect to be able to prove the same at any hearing held in this matter. I understand that the statements herein are made subject to penalties of 18 Pa. C.S. § 4904 (relating to unsworn falsification to authorities).

Dated: July 23, 2020

/s/ _____
Karl R. Rábago

EXHIBIT KRR-SR1

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ES-II-1

Please reference John J. McCawley's Rebuttal Testimony, PECO St. No. 1-R, page 4, lines 22-23. Please provide the data and calculations used to answer the following questions, and any workbooks used in their native formats with formulas intact.

- a. For DSP IV, from its start to the most recently available figures, what is the average number of default service customers that PECO has served?
- b. For DSP IV, from its start to the most recently available figures, what is the average percentage of PECO's customers that were default service customers?
- c. For DSP III, what is the average number of default service customers that PECO served?
- d. For DSP III, what is the average percentage of PECO's customers that were default service customers?
- e. For DSP II, what is the average number of default service customers that PECO served?
- f. For DSP II, what is the average percentage of PECO's customers that were default service customers?
- g. For DSP I, what is the average number of default service customers that PECO served?
- h. For DSP I, what is the average percentage of PECO's customers that were default service customers?

RESPONSE:

Please see Attachment ESC-II-1(a) for the data used to answer subparts (a) through (h) of this Interrogatory.

- a. For DSP IV through June 2020, the average number of default service customers (all procurement classes) that PECO has served is 1,117,044.
- b. The average percentage of PECO's customers that were default service customers (all procurement classes) for DSP IV through June 2020 is 68%.
- c. For DSP III, the average number of default service customers (all procurement classes) that PECO has served is 1,040,558.
- d. The average percentage of PECO's customers that were default service customers (all procurement classes) for DSP III is 64%.
- e. For DSP II, the average number of default service customers (all procurement classes) that PECO has served is 1,054,861.
- f. The average percentage of PECO's customers that were default service customers (all procurement classes) for DSP II is 66%.
- g. For DSP I, the average number of default service customers (all procurement classes) that PECO has served is 1,236,830.
- h. The average percentage of PECO's customers that were default service customers (all procurement classes) for DSP I is 75%.

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ES-II-3

Please reference John J. McCawley's Rebuttal Testimony, PECO St. No. 1-R, page 10, lines 16–22 and page 11, lines 1-2.

- a. Mr. McCawley states that assessment of the “costs and benefits of potential investments in distributed generation” is outside the scope of this proceeding. What does Mr. McCawley mean by “investments” in this sentence? Please explain in detail.
- b. Does Mr. McCawley believe that evaluation of the potential reliability benefits of procurement from distributed generation resources is within the scope of this default service proceeding? If not, please explain why not.
- c. How does Mr. McCawley differentiate resilience from reliability, such that he is able to conclude that resilience considerations are outside the scope of this proceeding?
- d. Has PECO evaluated the potential for procurement from distributed resources to reduce transmission and/or distribution costs?

RESPONSE:

- a. When Mr. McCawley said attempting to assess the costs and benefits of potential “investments” in distributed generation on PECO's distribution system was outside of the scope of this default service proceeding, he meant “capital investments” in assets by PECO or non-PECO entities.
- b. Please see Mr. McCawley's response to Question 8 in his rebuttal testimony which explains how PECO's Plan is designed to ensure adequate and reliable

service, as required by Section 2807(e)(3.4) of the Public Utility Code. Under the Competition Act, PECO is not required to assess the comparative reliability of different types of generation that may be interconnected with its distribution system as part of a default service plan.

- c. Mr. McCawley acknowledges that the electric power industry has been debating over recent years various definitions for resilience and its relationship with traditional definitions for reliability. Mr. McCawley believes that, in general, reliability refers to the extent to which the electric system operates without interruptions. Duration and frequency of interruptions are generally accepted measures of system reliability. “Resilience” generally refers to the ability of a system to return to normal operations after a disturbance. There is no resiliency requirement contained in the default service statute or regulations.
- d. For the purposes of this proceeding, PECO has not performed such an evaluation because, as I have explained, such an evaluation is not within this proceeding’s scope.

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ES-II-4

Please reference John J. McCawley's Rebuttal Testimony, PECO St. No. 1-R, page 11, lines 3-18.

- a. Please provide documents demonstrating the nature and extent of PECO's support for "a 900% increase in Pennsylvania's solar AEPS requirement over the next decade."
- b. Please provide documents demonstrating the nature and extent of PECO's support for "House Bill 1314."
- c. Has PECO opposed any legislative, regulatory, or policy initiative that would support the construction of renewable and distributed generation in its service territory? If so, please identify and explain each instance. If not, please explain why not.

RESPONSE:

- a. The current final state AEPS solar requirement is 0.5% of delivered energy. PECO supports a steady state AEPS solar requirement of 5%, which is 10 times the current requirement, or, stated another way, a 900% increase to the current 0.5% requirement. PECO has presented this proposal to a broad range of governmental, industry and environmental stakeholders since June 2019, including the Earth Quaker Action Team, the Energy Association of Pennsylvania, the City of Philadelphia, the Philadelphia Energy Authority, numerous solar developers and environmental organizations such as PennFuture, NRDC and the Sierra Club.

- b. The provisions of HB 1314 are incorporated into and promoted as part of the PECO's "Advancing Smart Energy" policy proposals. Please see Attachment ES-II-4(a) and Attachment ES-II-4(b).
- c. PECO has not supported HB 531 and SB 705 as introduced because, as written, the bills would allow subscribers to community solar programs to avoid paying distribution charges for electric energy delivered over electric distribution company distribution systems. This would result in unreasonable cost-shifting to customers who are not enrolled in such programs.

Responsible Witness: John J. McCawley

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ES-II-5

Please reference Scott G. Fisher's Rebuttal Testimony, PECO St. No. 4-R, page 6, lines 1-17.

- a. Mr. Fisher states that "PECO's carefully tailored approach incorporates stakeholder input through evidentiary proceedings..." Does the design of the DSP V reflect the stakeholder input provided at the Public Input Hearing on June 9, 2020? If so, please explain how the DSP has been changed or tailored based on that input since June 9, 2020. If not, please explain why not.
- b. Is the testimony provided at the Public Input Hearing on June 9, 2020 relevant to assessing whether or not DSP V meets customer preferences? If yes, please explain why. If not, please explain why not.
- c. Does the testimony provided at the Public Input Hearing on June 9, 2020 indicate that DSP V meets the preferences of those who testified? If yes, please explain why. If not, please explain why not.

RESPONSE:

- a. The complete sentence quoted in subpart a is as follows: "PECO's carefully designed approach incorporates stakeholder input through evidentiary proceedings as well as past Commission approvals of both PECO's tailored supply portfolios for different customer classes and the results of default service supply solicitations." Over the course of the four prior default service proceedings, stakeholder input on appropriate DSP design has been considered by the Company and the Commission and has been reflected in the final

Commission-approved DSP plans. As I explained in my direct testimony, the design of the DSP V plan is largely consistent with the Company's current Commission-approved DSP IV plan. While the stakeholder participation at the June 9, 2020 public input hearing occurred after the Company's initial DSP V filing on March 13, 2020, PECO values customer input and expects that, consistent with prior DSP proceedings, the final DSP V plan approved by the Commission will reflect input from a variety of stakeholders. PECO has not revised its plan to include additional long-term contracts for renewable energy as proposed by several speakers at the June 9, 2020 hearings for reasons discussed in the rebuttal testimony of Mr. McCawley and Mr. Fisher.

- b. Please refer to PECO's response to ES-II-5(a).
- c. Please refer to PECO's response to ES-II-5(a).

Responsible Witness: John J. McCawley

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ES-II-7

Please reference John J. McCawley's Direct Testimony, PECO St. No. 1, page 29, lines 7-19.

- a. Please identify and detail the factors evaluated by PECO in deciding how to procure AECs and SAECs for DSP V, and please explain how and why they differ from prior DSPs.
- b. Please explain in detail how PECO determined to increase the amount of SAECs to be procured to 16,000, rather than some other number? Please include discussion of how different factors and considerations were weighed against each other.
- c. Where Mr. McCawley testifies that PECO's "remaining 75% of requirements will be met through wholesale suppliers," please explain in detail if long-term contracts will have a role in this process, and if not, please explain why not.

RESPONSE:

- a. PECO believed it was important to build on its existing procurement strategy approved by the Commission and endorsed by stakeholders in prior settlements of its DSP proceedings. PECO therefore proposed to maintain its general procurement strategy of procuring AECs and solar AECs are part of its full requirements products and revise its direct solar AEC procurements to support three objectives: 1) replace expiring Commission-approved 10 year solar AEC purchase agreements with similar 10 year agreements, 2) enable AEC aggregators to join solar generator owners as bidders in order to promote the purchase of

AECs from smaller net-metered solar units and 3) promote more local solar purchases without adding costs above those of similar statewide-competitive procurements. These objectives are responsive to stakeholders who seek to support more solar in PECO's service territory, particularly more solar from PV units of residential and commercial customers.

- b. PECO is proposing to double its annual long-term solar AEC purchase amount (from 8,000 to 16,000 SAECs) in recognition of the AEPS solar requirement, which has increased over time to the steady state level of 0.5%. Doubling the SAEC procurement also enables the two-stage competitive procurement process described in Exhibit JJM-10 of Statement No.1 while still maintaining the benefits of the inclusion of AECs as part of FPFR products.
- c. Mr. McCawley was referring to the Company's proposal to meet the remaining AEPS solar AEC requirement (about 75%) through wholesale suppliers through the Supply Master Agreement and the full-requirements products listed in Statement No.1, Exhibit JJM-3. The determination of whether to procure the portion of solar AECs for which each supplier is responsible through long-term contracts is a decision made by each supplier as part of its portfolio management function, with associated benefits explained by Mr. Fisher in his testimony.

Responsible Witness: John J. McCawley

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ES-II-8

Please reference John J. McCawley's Direct Testimony, PECO St. No. 1, page 30, lines 1-2.

- a. Please explain in detail how PECO intends to procure SAECs from solar generating facilities in its solar territory.
- b. Please explain in detail how PECO intends to determine what percentage of each year's amount of SAECs to procure from solar generating facilities in its service territory. Please identify all factors to be considered, and please include discussion of how different factors are to be weighed against each other.
- c. Where Mr. McCawley states that "up to half" of SAECs may be procured from solar generating facilities in its service territory, does that mean that it is possible that zero SAECs may be procured from solar generating facilities in its service territory in a given year?
- d. Please explain in detail how PECO determined that the ceiling for procurement of SAECs from solar generating facilities in its service territory for a given year is "up to half," rather than a different number. Please identify all factors considered, and please include discussion of how different factors were weighed against each other.

RESPONSE:

- a. Please see Exhibit JJM-10 for the SAEC RFP details. The Standard Offer to Purchase ("SOTP") phase of the RFP, which follows the competitive bid phase of

each year's solicitation process, is focused on the procurement of SAECs from solar generating facilities in PECO's service territory.

- b. Please see Exhibit JJM-10 for the SAEC RFP details. PECO is not proposing to “determine what percentage of each year's amount of SAECs to procure from solar generating facilities in its service territory.” Rather PECO proposes to run the 2021 and 2022 SAEC solicitations for the total annual 16,000 SAEC 10-year contracts, assign SAECs to full-requirements tranches from its separately-procured SAEC inventory, and require the full requirements suppliers to supply the balance of the SAEC requirements associated with their default service supply tranches pursuant to the SMA.
- c. Mr. McCawley was referring to the proposed SAEC competitive procurement process which is designed to obtain 4,000 of 8,000 SAECs from local solar resources for both the 2021 and 2022 solicitations, as long as the solicitations are fully subscribed with local solar offers to sell. If the Standard Offer To Purchase phase is not fully subscribed, the percent of local solar will be less than half and would reflect the amount of local solar that was actually procured. It would only be possible that zero SAECs may be procured from solar generating facilities in the PECO service territory if zero applications were received in the SOTP phase and approved by the PaPUC. Solar resources in PECO's service territory are also permitted to bid in to the first phase of PECO's SAEC competitive procurement.
- d. PECO considered the possibility of higher prices for SAECs associated with smaller systems in its service territory in comparison to the prices that may be available from utility-scale systems in other areas of the Commonwealth. By having the RFP phase quantity of SAECs match the SOTP phase quantity of SAECs, the weighted average price from the RFP stage is an appropriate and competitively-determined price to pay for all of the SAECs in the SOTP phase.

Responsible Witness: John J. McCawley

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ES-II-9

Please reference Joseph A. Bisti's Rebuttal Testimony, PECO St. No. 2-R, page 19, lines 8-12.

- a. Please explain in detail how PECO's proposed TOU rate design incorporates the Commission's guidance.
- b. Mr. Bisti states that PECO's proposed TOU rate design "implements lessons learned from the PECO Smart Time Pricing Pilot." Please explain in detail what lessons Mr. Bisti is referring to. How does PECO's proposed TOU rate design implement those lessons?
- c. Mr. Bisti states that PECO's proposed TOU rate design "balances a variety of objectives, including simplicity and the value proposition for enrollment." What objectives does PECO's proposed TOU rate design balance? Why does the balancing of these objectives mean that a cost-benefit analysis should not be performed?

RESPONSE:

- a. As explained in PECO Statement No. 2, p. 12, by Secretarial Letter used on April 6, 2017 at Docket Nos. P-2013-2389572 and M-2016-2578051 ("April 2017 Secretarial Letter"), the PUC proposed a new TOU design for PPL Electric Utilities Corp. ("PPL") to satisfy its statutory obligation to offer TOU rates to default service customers with smart meters and noted that such design may provide future guidance to other electric distribution companies ("EDCs"). As further explained in the Bisti direct testimony (PECO St. No. 2, pp. 14-21),

the Company incorporated the following Commission recommendations from the April 2017 Secretarial Letter into its proposed TOU rate design:

- Extending TOU eligibility to all AMI-metered default service customers who are not receiving hourly-priced default service customers (i.e., the Residential and Small Commercial Classes), with limited exceptions.
- Applying existing Commission-approved limitations on customer shopping to TOU eligibility, such as exclusion of customers enrolled in PECO's Customer Assistance Program ("CAP").
- Creating on-peak and off-peak multipliers with material price differentials designed to motivate shifting of consumption from on-peak to off-peak periods.
- For TOU-eligible customer-generators, committing to separately track and calculate the value of any excess generation based on the applicable TOU rate period in which it was generated.

In addition, by Secretarial Letter issued on January 23, 2020 at Docket No. M-2019-3007101, Commission directed EDCs to explore TOU rates in the context of electric vehicle ("EV") expansion. PECO responded by incorporating a super off-peak pricing period in its TOU rate design intended to provide cost savings opportunities to customers who charge their EVs during the overnight low-priced energy hours.

- b. As explained in PECO Statement No. 2, pp. 11-12, most residential customers who participated in the Pilot shifted a portion of their usage from on-peak hours into off-peak hours and achieved bill savings as a result. Indeed, participants indicated that saving money was the primary driver of both their enrollment in and satisfaction with the Pilot. Based on this experience, PECO's proposal includes:
- The same TOU peak period employed in the Pilot.
 - Simple TOU pricing periods that remain constant on a year-round basis, as they were in the Pilot.
 - On-peak and off-peak multipliers designed to motivate shifting of consumption, in alignment with the Commission's guidance referenced in Part (a) above. The Pilot offered a peak generation rate of \$0.1595 per kWh and an off-peak generation rate of \$0.0685 per kWh.

PECO also proposes to retain the Pilot provision of allowing customers to leave the TOU rates at any time without a penalty or cancellation fee.

- c. Please see PECO Statement No. 2, pp. 13-14, for a detailed description of the underlying objectives of PECO's proposed TOU rate design. As explained in PECO Statement No. 2-R, p. 19, Mr. Rabágo's proposal to require the cost-benefit analysis referenced in this question

before implementing opt-in TOU default service rates in accordance with Act 129 of 2008 and Commission requirements is unsupported. In fact, the Commission approved PPL's voluntary TOU default service rate options without requiring such a pre-implementation cost-benefit analysis.

Responsible Witness: Joseph A. Bisti

	Data Range	Average Default Customer Count	Average Default Customer Count Percent
DSP 1	1/1/2011 - 5/31/2013	1,236,830	75.15
DSP 2	6/1/2013 - 5/31/2015	1,054,861	66.18
DSP 3	6/1/2015 - 5/31/2017	1,040,558	64.4
DSP 4	6/1/2017 - presesnt	1,117,044	67.68

DSP 1	DSP 1	DSP 1	DSP 1	DSP 1	DSP 2	DSP 2	DSP 2	DSP 2	DSP 2
DAY	Default Count Customers	EGS Count Customers	Total Customers	% Default	DAY	Default Count Customers	EGS Count Customers	Total Customers	% Default
1/31/2011	1533835	121447	1655282	92.66	6/30/2013	1059897	525046	1584943	66.87
2/28/2011	1468131	188453	1656584	88.62	7/31/2013	1061330	523026	1584356	66.99
3/31/2011	1417009	241453	1658462	85.44	8/31/2013	1064951	520145	1585096	67.19
4/30/2011	1384165	276001	1660166	83.38	9/30/2013	1065063	519867	1584930	67.20
5/31/2011	1360616	298092	1658708	82.03	10/31/2013	1063746	521460	1585206	67.10
6/30/2011	1338291	318398	1656689	80.78	11/30/2013	1062807	524394	1587201	66.96
7/31/2011	1320966	334563	1655529	79.79	12/31/2013	1055111	533337	1588448	66.42
8/31/2011	1303376	352140	1655516	78.73	1/31/2014	1049302	541695	1590997	65.95
9/30/2011	1289628	366207	1655835	77.88	2/28/2014	1046100	546530	1592630	65.68
10/31/2011	1278391	378900	1657291	77.14	3/31/2014	1048000	546636	1594636	65.72
11/30/2011	1266729	391780	1658509	76.38	4/30/2014	1051200	544417	1595617	65.88
12/31/2011	1256232	403269	1659501	75.70	5/31/2014	1052167	542569	1594736	65.98
1/31/2012	1248224	413216	1661440	75.13	6/30/2014	1053432	540527	1593959	66.09
2/29/2012	1240882	422235	1663117	74.61	7/31/2014	1054930	537995	1592925	66.23
3/31/2012	1230268	434166	1664434	73.92	8/31/2014	1057708	536224	1593932	66.36
4/30/2012	1221181	443742	1664923	73.35	9/30/2014	1055131	539599	1594730	66.16
5/31/2012	1211335	451781	1663116	72.84	10/31/2014	1054102	541834	1595936	66.05
6/30/2012	1200202	460391	1660593	72.28	11/30/2014	1053738	544059	1597797	65.95
7/31/2012	1191302	468264	1659566	71.78	12/31/2014	1051227	548210	1599437	65.72
8/31/2012	1180977	478588	1659565	71.16	1/31/2015	1049937	551731	1601668	65.55
9/30/2012	1173822	485678	1659500	70.73	2/28/2015	1051497	552407	1603904	65.56
10/31/2012	1165849	493621	1659470	70.25	3/31/2015	1052082	552953	1605035	65.55
11/30/2012	1149304	509396	1658700	69.29	4/30/2015	1052125	553451	1605576	65.53
12/31/2012	1087689	499450	1587139	68.53	5/31/2015	1051078	553517	1604595	65.50
1/31/2013	1077655	507220	1584875	68.00	AVERAGE	1,054,861			66.18
2/28/2013	1072792	514113	1586905	67.60					
3/31/2013	1070425	518371	1588796	67.37					
4/30/2013	1066862	522829	1589691	67.11					
5/31/2013	1061924	525728	1587652	66.89					
AVERAGE	1,236,830			75.15					

DSP 3	DSP 3	DSP 3	DSP 3	DSP 3
DAY	Default Count Customers	EGS Count Customers	Total Customers	% Default
6/30/2015	1049034	555024	1604058	65.40
7/31/2015	1047265	556156	1603421	65.31
8/31/2015	1046770	558104	1604874	65.22
9/30/2015	1044349	560551	1604900	65.07
10/31/2015	1046546	560349	1606895	65.13
11/30/2015	1045103	562997	1608100	64.99
12/31/2015	1044583	565155	1609738	64.89
1/31/2016	1044928	567372	1612300	64.81
2/29/2016	1044695	569442	1614137	64.72
3/31/2016	1043666	571603	1615269	64.61
4/30/2016	1042705	573522	1616227	64.51
5/31/2016	1040349	575464	1615813	64.39
6/30/2016	1036966	577991	1614957	64.21
7/31/2016	1034526	580616	1615142	64.05
8/31/2016	1033821	582569	1616390	63.96
9/30/2016	1034086	583156	1617242	63.94
10/31/2016	1034235	584552	1618787	63.89
11/30/2016	1034031	586450	1620481	63.81
12/31/2016	1034184	588577	1622761	63.73
1/31/2017	1034981	589809	1624790	63.70
2/28/2017	1036311	590003	1626314	63.72
3/31/2017	1037388	591012	1628400	63.71
4/30/2017	1040192	589539	1629731	63.83
5/31/2017	1042682	586701	1629383	63.99
AVERAGE	1,040,558			64.40

DSP 4	DSP 4	DSP 4	DSP 4	DSP 4
DAY	Default Count Customers	EGS Count Customers	Total Customers	% Default
6/30/2017	1045569	583121	1628690	64.20
7/31/2017	1048498	580000	1628498	64.38
8/31/2017	1054964	574996	1629960	64.72
9/30/2017	1059274	571530	1630804	64.95
10/31/2017	1062251	570315	1632566	65.07
11/30/2017	1065647	569070	1634717	65.19
12/31/2017	1070141	566953	1637094	65.37
1/31/2018	1074902	564170	1639072	65.58
2/28/2018	1079961	560658	1640619	65.83
3/31/2018	1083234	558930	1642164	65.96
4/30/2018	1086287	556976	1643263	66.11
5/31/2018	1090089	552829	1642918	66.35
6/30/2018	1093980	548896	1642876	66.59
7/31/2018	1097799	545189	1642988	66.82
8/31/2018	1103414	540302	1643716	67.13
9/30/2018	1108085	536754	1644839	67.37
10/31/2018	1113321	533567	1646888	67.60
11/30/2018	1117599	530689	1648288	67.80
12/31/2018	1121964	527706	1649670	68.01
1/31/2019	1126893	525031	1651924	68.22
2/28/2019	1131183	522108	1653291	68.42
3/31/2019	1135390	519638	1655028	68.60
4/30/2019	1139552	517315	1656867	68.78
5/31/2019	1141430	515282	1656712	68.90
6/30/2019	1143131	513054	1656185	69.02
7/31/2019	1145473	510306	1655779	69.18
8/31/2019	1148500	508626	1657126	69.31
9/30/2019	1150429	507675	1658104	69.38
10/31/2019	1153760	507106	1660866	69.47
11/30/2019	1157200	505835	1663035	69.58
12/31/2019	1160320	504258	1664578	69.71
1/31/2020	1164562	502379	1666941	69.86
2/29/2020	1167202	501064	1668266	69.96
3/31/2020	1168267	501415	1669682	69.97
4/30/2020	1170740	499241	1669981	70.10
5/31/2020	1173227	497109	1670336	70.24
6/30/2020	1176392	494934	1671326	70.39
AVERAGE	1,117,044			67.68

Advancing Smart Energy in PA

PA utilities are working together to deliver smart energy solutions

By ensuring that customers have access to safe, reliable, affordable, clean service, we help our communities and region grow and thrive.



Microgrids & Energy Storage

THE IDEA: Deliver customers transformational levels of reliability and resiliency by creating self-contained, small-scale power grids that maintain power to essential community infrastructure—even during severe storms.

WHAT'S NEEDED: Approval of legislation to:

- Authorize the PA PUC to consider microgrid and battery storage pilot projects.
- Create a long-term framework for microgrids in PA.
- Ensure customers retain all revenues from these projects.

Natural Gas Expansion

THE IDEA: Make PA's affordable, clean natural gas resource available to more of our customers. *It's affordable. It's local. It's clean.* Natural gas emits less carbon dioxide (CO₂) compared to heating oil and propane.

WHAT'S NEEDED: Approval of legislation to:

- Authorize PA regulators to consider new rate options to expand access.
- Ensure that rate costs are fairly shared between new and existing customers.
- Ensure that utilities maintain their commitment to safety and infrastructure enhancement.

Solar for All

THE IDEA: Develop solar power plants in our communities to cost effectively meet state environmental requirements and provide new options for all our customers.

WHAT'S NEEDED: Approval of Pennsylvania House Bill 1314 to:

- Authorize utilities to develop PA solar projects to meet their mandatory state requirements.
- Encourage development of low-income solar pilot projects.
- Allow utilities to offer incentives to solar customers to install smart connectors.
- Clarify that Pennsylvania utilities can build, own and operate solar to comply with AEPS.

Clean Transportation Network

THE IDEA: Expand the use of alternative fuel vehicles.

WHAT'S NEEDED: Approval of Pennsylvania Senate Bill 596 to:

- Establish a state goal of 50% increase in transportation electrifications by 2030.
- Direct PA utilities to sponsor development of regional transportation electrification assessments through independent experts and to submit plans to the PA PUC to cost-effectively support backbone charging networks.
- Offer electric vehicle (EV) owners opportunities for cost-saving EV charging rates.

Funding for a Reliable & Sustainable Grid

THE IDEA: Make sure that our regulatory policies keep the grid sustainable, reliable and equitable for all customers.

WHAT'S NEEDED: Approval of Pennsylvania House Bill 1782 to:

- Authorize new utility rate options to promote the long-term sustainability of our electric grid.
- Further integrate renewable energy and energy efficiency for PA customers.
- Ensure fair and equitable rates for all.

PASSED
ACT 58 of 2018



An Exelon Company

PECO Solar Update

May 30, 2019

Our Goals:

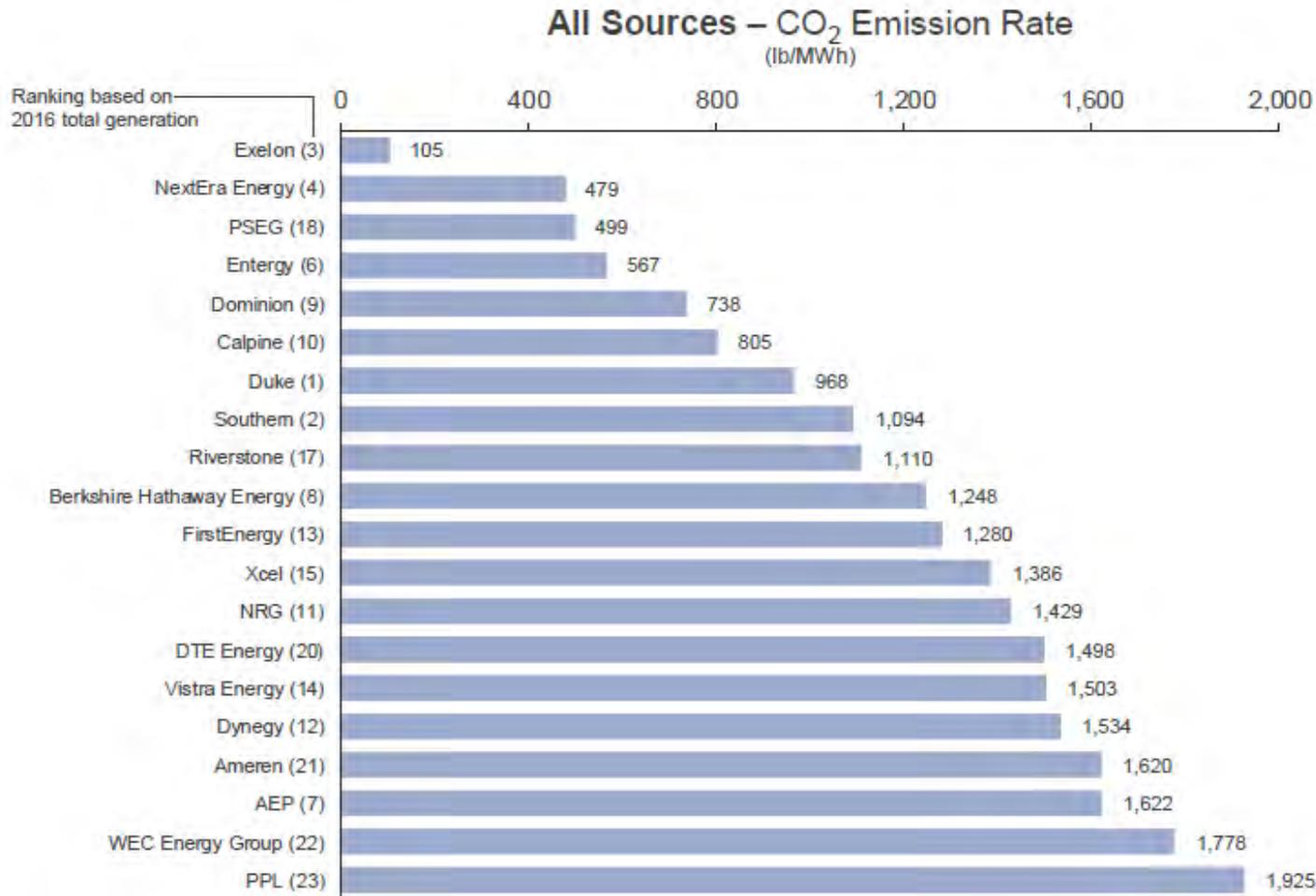
More clean energy, that is

- *More accessible to more customers*
- *More affordable and cost-effective*
 - *More socially equitable*

Agenda

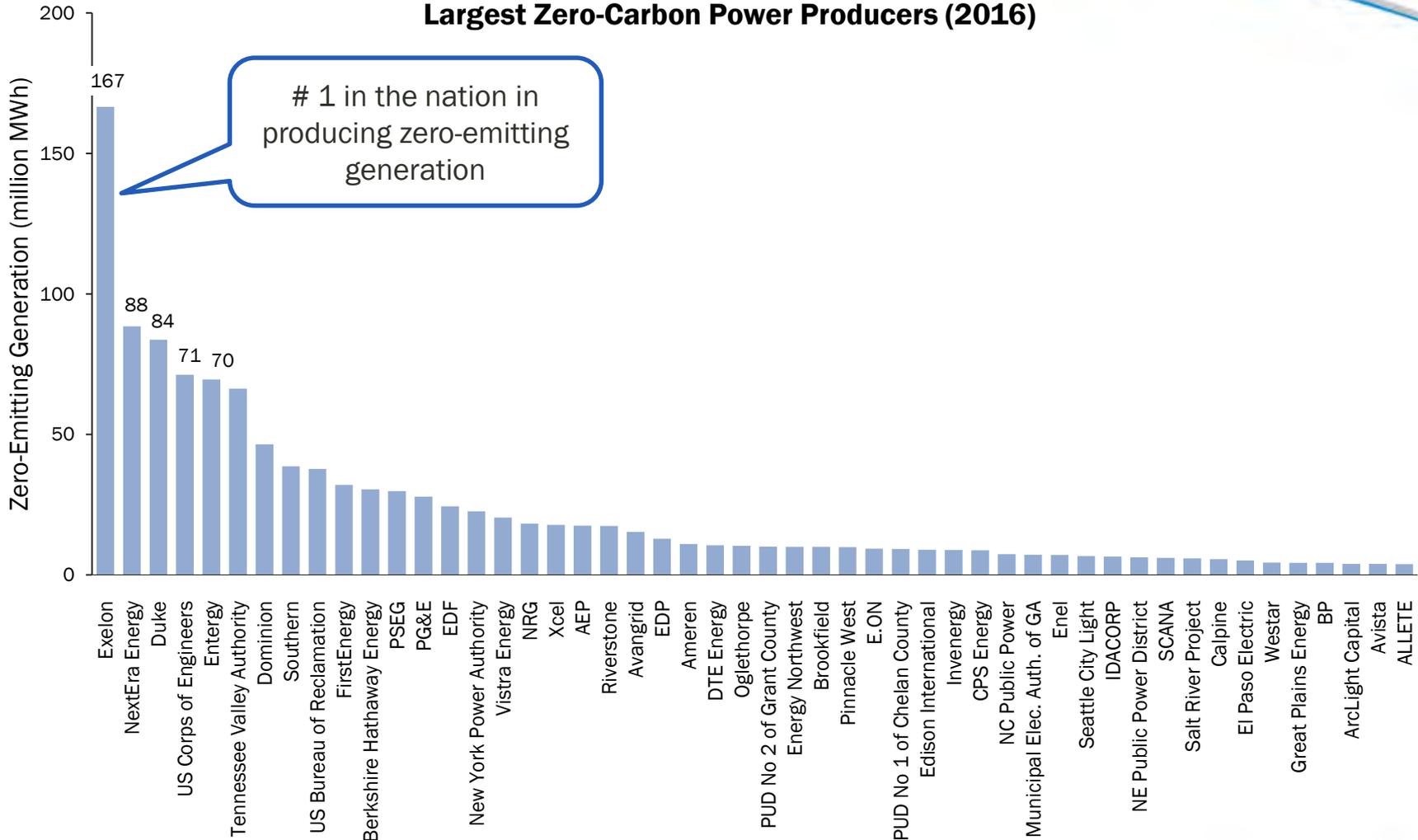
- ✓ PECO and Exelon's commitment to addressing climate change
- ✓ PECO support for local solar development
- ✓ PECO support for clean energy jobs
- ✓ PECO policies to advance solar in Pennsylvania
- ✓ Opportunities for collaboration

Exelon has Lowest CO₂ Emission Rate Among Large Producers - By Far

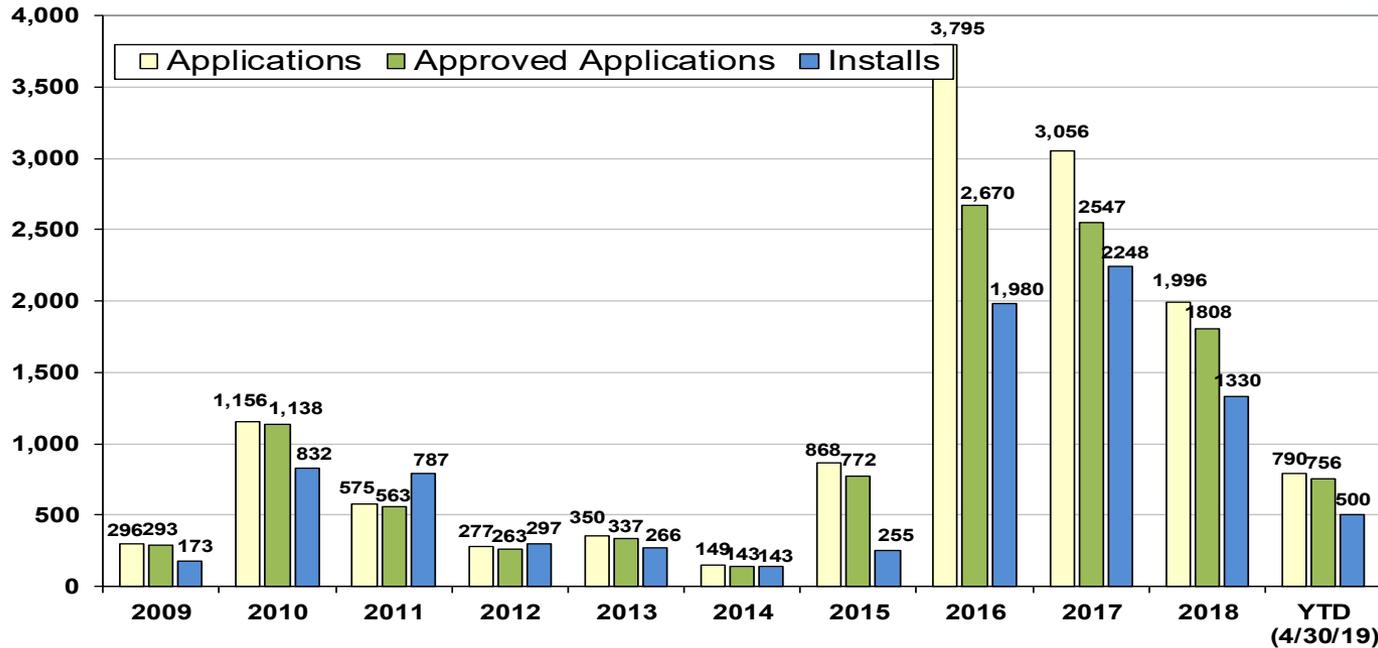


Exelon is the Largest Zero-Carbon Electricity Generator – By Far

Largest Zero-Carbon Power Producers (2016)



Customer Owned Solar Installations



Installed & Pending	
Res	12,335
SCI	425
LCI	93
Total	12,853

Year	Applications	Approved Applications	Percentage Approved
2016	3,795	2,670	70.4%
2017	3,056	2,547	83.3%
2018	1,996	1,808	90.6%
2019 (YTD – 4/30)	790	756	95.7%

PECO has made major investments in staffing and systems to support growth in solar installations

PECO Support for Clean Energy Jobs

- ✓ **Philadelphia OIC – PECO Smart Energy Technical Training Program**
 - Eight week program that prepares individuals for careers in Smart Energy trade jobs
 - Hands-on training leading to industry recognized certifications
 - Job readiness and soft skills training
 - Graduates eligible for apprenticeships and employment opportunities w/OIC partners
- ✓ **Philadelphia Energy Authority and Philadelphia Youth Network – Find Your Power**
 - Work-ready introductory program for solar installation to provide career exposure, service-learning, work experience and 20 paid internships
 - Developed in partnership with PEA and the Fund for the School District of Phila.
 - 65 high school students annually participate
- ✓ **Philadelphia Youth Network – PECO Summer Internship Program**
 - Partnership with Philadelphia Youth Network to provide STEM experience in workplace
 - In 2018, 25 students from 13 area high schools completed the program
- ✓ **Philadelphia Solar Schools initiative**
 - PECO funded the design and feasibility analysis for PEA's Solar Schools project proposal through our U.S. DOE Solar in Our Communities award
 - PECO offered a grant to the Fund for the School District of Philadelphia to cover the costs of analysis of additional sites

PECO Comprehensive Solar Strategy

- ✓ 900% increase in Pennsylvania's solar AEPS mandate
- ✓ Authorization for community solar in PA
- ✓ Authorization for supplemental bill credits for low-income subscribers in community solar projects
- ✓ Authorization for utility ownership of solar projects that primarily benefit low-income customers
- ✓ 2x multiplier for Solar RECs for PA rooftop solar systems and residential enrollments in community solar projects
- ✓ Authorization of utility long-term contracts for Solar RECs from community solar facilities
- ✓ Adoption of more solar friendly compensation for customer generators (average mid-day energy cost vs. 24-hour average)
- ✓ Transition to sustainable rate structures and elimination of cost-shifting onto vulnerable customers

Opportunities for collaboration
Discussion

Appendix

Recent Developments & Future Initiatives:

□ 2017 Initiatives:

- Created Distributed Energy Group
- Single meter solution for residential (200 Amps or less) customers
- Created the interconnection viability map
 - Determine customer circuit voltage
- Developed online tool for paperless application

□ 2018 Initiatives:

- Electronic Customer Survey
- Inverter Option Rolled Out

□ 2019 Next Steps:

- Single meter solution for residential (200 Amps or more) customers
- Electronic Developer Survey
- Solar Toolkit: Solar Calculator, Brochures, Q&A's, Videos
- Connect The Grid (backend tool)
- Online Payments.
- Solar Concierge Role



PECO's work improving internal processes, providing new on-line tools, and offering new customer solutions such as single meter capability and smart inverters reduce the costs of going solar for all customers