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August 26, 2020

VIA ELECTRONIC MAIL
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Aida Camacho-Welch
Secretary of the Board
Board of Public Utilities
44 South Clinton Avenue, 9th Floor
P.O. Box 350
Trenton, New Jersey 08625-0350

RE: In the Matter of the Petition of Atlantic City Electric Company for Approval of the Smart Energy Network Program and Cost Recovery Mechanism and Other Related Relief
BPU Docket No. _____

Dear Secretary Camacho-Welch:

On February 19, 2020, the New Jersey Board of Public Utilities (the "Board" or "BPU") issued an Order directing all New Jersey electric distribution companies to file petitions to implement Advanced Metering Infrastructure ("AMI").[1] In compliance with that directive, attached is the Certified Petition of Atlantic City Electric Company ("ACE" or the "Company") seeking Board approval of the Company's plan to deploy an AMI program, known as the Smart Energy Network (the "SEN"), throughout its service territory.[2]

The SEN is an integrated system of "smart" electronic meters, communications facilities, and data management systems that enables two-way communication between ACE and its customers. Implementation of the SEN entails the replacement of nearly all of the Company's existing meters with electronic meters, installation of a related communications network, and changes to ACE's computer systems to collect, integrate, and optimize the use of the data generated by the new electronic meters. The Company anticipates that it will take approximately

[1] *See I/M/O the Petition of Rockland Electric Company for Approval of An Advanced Metering Program; and for Other Relief*, BPU Docket No. ER16060524, Decision and Order (dated February 19, 2020 and effective on February 29, 2020) [hereinafter, "AMI Order"], at 3. Consistent with the Board's Order, AMI filings must be made no later than August 27, 2020.

[2] In light of the COVID-19 pandemic and the government directives resulting therefrom, this filing is made under Certification of a corporate officer of ACE in lieu of a Verification.

39 months to deploy the SEN fully, with implementation commencing upon the Board's approval of ACE's requests in this proceeding. In addition to its SEN implementation plan, the Company also requests approval of a related cost recovery mechanism, and to create regulatory assets to capture certain SEN implementation costs and to defer recovery of those regulatory assets to a future base rate case.

As explained in detail in the Company's Petition, implementation of the SEN is clearly in the public interest because it is a necessary step in modernizing the electric grid. Indeed, the SEN is the backbone network that will enable ACE to better support New Jersey's transition to 100 percent clean energy. Among the initiatives SEN will facilitate are transportation electrification, smart street lighting, demand response, and energy efficiency programs. The SEN will also help the Company address changing customer expectations for more detailed information about energy use, and the provision of advanced products and services. Implementation of the SEN is the necessary technology platform upon which ACE's future efforts to meet public policy goals and customers' expectations will be built. Without the SEN, those evolving needs cannot be efficiently or effectively met. Moreover, implementation of the SEN will yield millions of dollars of operational and customer benefits that far exceed the direct and indirect costs of the program. Given the substantial benefits of the SEN, ACE respectfully requests that the Board review this Petition on an expedited basis.

The Company's Petition is supported by the Direct Testimony and associated exhibits of several witnesses. The Direct Testimony of Gregg Edeson of PA Consulting contains information the Company considers to be confidential. Therefore, ACE has redacted Mr. Edeson's Direct Testimony and hereby files the redacted, public version of his Direct Testimony. Several of the same data points are also contained in Schedule (DSS)-1, the Smart Energy Network Business Case, and have been similarly redacted.[3] Confidential versions of Mr. Edeson's Direct Testimony and Schedule (DSS)-1 will be provided upon the execution of an acceptable Agreement of Non-Disclosure.

Consistent with the Order issued by the Board in connection with *In the Matter of the New Jersey Board of Public Utilities' Response to the COVID-19 Pandemic for a Temporary Waiver of Requirements for Certain Non-Essential Obligations*, BPU Docket No. EO20030254, Order dated March 19, 2020, this Petition and related documents are being electronically filed with the Secretary of the Board and the New Jersey Division of Rate Counsel. No paper copies will follow.

[3] The Smart Energy Network Business Case was prepared by PA Consulting.

Thank you for your cooperation and courtesies. Feel free to contact the undersigned with any questions.

Respectfully submitted,

Philip J. Passanante
An Attorney at Law of the
State of New Jersey

Enclosures

cc: Service List

IN THE MATTER OF THE PETITION OF ATLANTIC CITY ELECTRIC COMPANY FOR APPROVAL OF THE SMART ENERGY NETWORK PROGRAM AND COST RECOVERY MECHANISM AND OTHER RELATED RELIEF	**STATE OF NEW JERSEY BOARD OF PUBLIC UTILITIES** **BPU DOCKET NO. _____** **CERTIFIED PETITION[1]**

ATLANTIC CITY ELECTRIC COMPANY ("ACE" or the "Company"), a corporation organized and existing under the laws of the State of New Jersey, which is subject to the jurisdiction of the New Jersey Board of Public Utilities (the "Board" or "BPU"), and which maintains a regional office at 5100 Harding Highway, Mays Landing, New Jersey 08330, respectfully petitions the Board pursuant to *N.J.S.A.* 48:2-21, *N.J.S.A.* 48:2-21.1, *N.J.A.C.* 14:3-2A.1 *et seq*., and any other statute or regulation the Board deems applicable, as follows:

I. Introduction and Overview

1. ACE is a public utility engaged in the transmission and distribution of electric energy for light, heat, and power to residential, commercial, and industrial customers. The Company's service territory comprises eight counties located in southern New Jersey and includes approximately 560,000 customers. ACE is a wholly owned subsidiary of Pepco Holdings LLC ("PHI"), a limited liability company organized and existing under the laws of the State of Delaware. PHI is, in turn, a subsidiary of Exelon Corporation ("Exelon").[2]

[1] In light of exigencies created by the COVID-19 pandemic and the Executive Orders issued pursuant thereto, this Petition is being submitted under Certification in lieu of an Affidavit of Verification.

[2] *See I/M/O the Merger of Exelon Corporation and Pepco Holdings, Inc.*, BPU Docket No. EM14060581, Order Approving Stipulation of Settlement (dated March 6, 2015). The merger of Exelon and PHI closed on March 23, 2016.

2. The Board has jurisdiction over ACE for the purposes of setting ACE's retail distribution rates, and to assure the provision of safe, adequate, and proper electric distribution service.[3]

3. With this filing, ACE seeks Board approval of the Company's plan to deploy a system of Advanced Metering Infrastructure ("AMI") throughout its service territory, known as the Smart Energy Network (the "SEN"). As explained in detail in this Petition and supporting Direct Testimony, the SEN is an integrated system of smart meters, communications facilities, and data management systems that enables two-way communication between ACE and its customers. The SEN entails the replacement of nearly all of the Company's existing meters with smart electronic meters, as well as the installation of a related communications network to enable two-way communications between ACE and the customer's premises. The SEN also encompasses the necessary changes to ACE's operations, information, and billing systems to collect, integrate, and optimize the use of the data generated by the new electronic meters. In addition to approval of the plan to implement the SEN initiative, the Company requests approval of a related cost recovery mechanism. ACE also requests authority to create regulatory assets to capture certain costs related to the implementation of the SEN, and to defer recovery of those regulatory assets to a future base rate case.

4. Implementation of the SEN project is clearly in the public interest because it is a necessary step in modernizing the electric grid. The SEN is the backbone network that will enable ACE to better support New Jersey's transition to 100% clean energy by implementing the public policy initiatives set out in the 2019 Energy Master Plan ("EMP"), the Clean Energy Act ("CEA")

[3] *See e.g.*, *N.J.S.A.* 48:2-13; *N.J.S.A.* 48:2-23.

and the Board's recent Energy Efficiency Order.[4] Among the specific initiatives implementation of the SEN will support are: transportation electrification, smart street lighting, demand response, and energy efficiency programs. The SEN will also help the Company to address evolving customer needs and expectations. Today, customers are more knowledgeable about energy consumption and expect utilities to implement technology platforms, like the SEN, to provide them with transparent information about their own energy use, and to make the electric system smarter, more reliable, more resilient, and better able to support advanced products and services. Moreover, the on-going COVID-19 pandemic and the dramatic rise in work-from-home and remote learning arrangements have only served to underscore customers' need for a modern, highly reliable and resilient distribution system. Implementation of the SEN is the necessary technology platform upon which ACE's future efforts to meet public policy goals and customers' expectations will be built—without the SEN those evolving needs cannot be efficiently or effectively met.

5. Implementation of the SEN across the ACE service territory will yield operational and customer benefits that far exceed the direct and indirect costs of the program. Indeed, the Company has performed a benefits/cost analysis ("BCA") and quantified approximately $416 million in benefits, comprised of approximately $221 million of operational benefits, and approximately $195 million in customer benefits over the fifteen-year life of the AMI facilities installed through the SEN. As explained in detail by Company Witness Edeson, there are additional benefits that have not been quantified and included in the BCA calculations, which further support the conclusion that implementation of the SEN program is in the public interest.

[4] *See I/M/O the Implementation of P.L. 2018, c. 17 Regarding the Establishment of Energy Efficiency and Peak Demand Reduction Programs*, BPU Docket Nos. QO19010040, QO19060748, QO17091004, Order Directing the Utilities to Establish Energy Efficiency and Peak Demand Reduction Programs (dated June 10, 2020) [hereinafter, the "Energy Efficiency Order"].

6. When preparing its BCA, the Company estimated the cost of the SEN to be approximately $220 million, and used this estimate when comparing anticipated costs to estimated benefits in the BCA.[5] This figure, however, differs from the costs ACE seeks to recover in this proceeding in certain critical ways. Importantly, while the BCA inputs are the basis of ACE's revenue requirement calculations, in applying standard BCA practices, the direct costs detailed in the BCA do not incorporate all potential costs that the Company has identified for cost recovery. More specifically, for the purposes of cost recovery, ACE adds to the BCA inputs certain additional costs such as project contingencies and indirect costs to derive the total recoverable capital investment. As will be explained herein, the costs of the SEN project fall into three general categories: capital investments, incremental operations and maintenance ("O&M") costs, and stranded costs. In the following paragraphs and in the Direct Testimony of Company Witnesses, ACE sets out the costs it seeks to recover and the mechanisms it proposes to use to obtain that cost recovery.

7. ACE estimates that the capital investment component of the SEN will be approximately $177.0 million. The total capital investment, after consideration for 10% of similar projects pursuant to *N.J.A.C.* 14:3-2A.2(c), to be recovered through the IIP-SEN cost recovery mechanism is $159.2 million. ACE seeks authority in this Petition to recover the revenue requirement associated with that capital investment through a Rider IIP-SEN as permitted pursuant to *N.J.A.C.* 14:3-2A.6(d). The Company estimates the <u>total</u> three-year cumulative impact of Rider IIP-SEN on the monthly bill for a typical residential customer (using approximately 679 kWh/month) will be an increase of $4.27 or approximately 3.27% above present rates.

[5] As shown in the Company's BCA, when estimated SEN costs of $220 million are compared to estimated SEN benefits of $416 million, the result is approximately $196 million of net benefits, or a present value BCA ration of 1.27.

8. The Company also seeks Board approval to defer as regulatory assets $30.2 million of estimated incremental O&M costs, net of O&M savings, associated with the implementation of the SEN, as well as $46 million in estimated net stranded costs created by the early retirement of meters that are not yet fully depreciated on the Company's books. ACE proposes to defer recovery of these regulatory assets, with carrying costs, and to seek their recovery in a future base rate case filed subsequent to the Board's approval of the SEN Program.

9. The Company also seeks waivers from certain regulations regarding meter replacement and testing, and in-person customer notification in the event of a disconnection for non-payment. These requests are discussed in greater detail in Paragraphs 34 and 35 below, and in the Direct Testimony of Company Witness Brubaker.

10. Following Board approval of the Company's deployment plan, the SEN will be implemented over a period of approximately 39 months, beginning in January 2021 and concluding in early 2024, with a final cost recovery filing in May 2024. Based on the Company's anticipated deployment schedule, ACE will file its first request to implement Rider IIP-SEN on May 1, 2022, to recover the costs of the SEN facilities placed into service between January 2021 and June 2022, with the initial Rider IIP-SEN effective October 1, 2022. Thus, recovery of the SEN costs will not begin for approximately 21 months following commencement of the program. Thereafter, ACE proposes to make semi-annual cost recovery filings for the remaining duration of the SEN deployment process consistent with the provisions of *N.J.A.C.* 14:3-2A.6(a) which permit either annual or semi-annual cost recovery filings. The Company proposes to recover the incremental deferred O&M and stranded costs regulatory assets over five years, and to seek their recovery in a base rate case filed subsequent to the Board's approval of the SEN Program.

II. The Smart Energy Network

A. Background

11. On December 19, 2017, pursuant to *N.J.A.C.* 14:3-2A.1 *et seq*. (the "IIP Regulations") the Board established a regulatory mechanism to support Infrastructure Investment Programs ("IIP") by providing incentives to utilities to accelerate investment in the construction, installation, and rehabilitation of certain types of necessary non-revenue producing utility plant and facilities. Specifically, the IIP Regulations authorize accelerated investment in the installation of utility plant that enhances "safety, reliability, and/or resiliency,"[6] and that occurs in a "systematic and sustained way" for "continued system safety, reliability, resiliency, and sustained economic growth in the State of New Jersey."[7] As to the specific types of permissible investments, the IIP Regulations are expansive, and do not seek to prescribe eligible investments as, for example, in the case of the water utility Distribution System Improvement Charge.[8] Thus, the IIP Regulations require simply that the eligible investment be: 1. Related to safety, reliability, and/or resiliency; 2. Non-revenue producing; 3. Identified in an IIP petition; and 4. Approved by the Board.[9] The IIP Regulations provide various examples of IIP-eligible investments such as "electric distribution automation investments, including, but not limited to, . . . communications networks, . . . and distribution management system integration."[10] Additionally, the IIP Regulations allow a utility to accelerate recovery of qualifying incremental investments through a

[6] *See N.J.A.C.* 14:3-2A.1(a).

[7] *See N.J.A.C.* 14:3-2A.1(b).

[8] *See N.J.A.C.* 14:9-10.3(a)(setting out just five types of investments eligible to be recovered through a Distribution System Improvement Charge).

[9] *See N.J.A.C.* 14:3-2A.2(a).

[10] *See N.J.A.C.* 14:3-2A.2(b)(4).

separate clause of the utility's Board-approved tariff, subject to the terms of the IIP Regulations and any other conditions imposed by the Board in approving an individual utility's IIP.[11]

12. As explained in detail in this Petition and the Direct Testimony of Company Witness Schatz, deployment of the SEN is precisely the type of investment the Board envisioned when authorizing the IIP Regulations. The SEN is an accelerated investment in advanced technology that will enhance safety, reliability and resiliency, is non-revenue producing, and will deliver direct and measurable benefits to customers and the State of New Jersey. Indeed, as Company Witness Schatz explains, use of the IIP Regulations will allow the Company to deploy the SEN in a comprehensive, cost-effective manner, thereby providing the full benefits of AMI to customers. Simply transitioning from analog to electronic meters, without installation of the related communications network and information technology solutions, is not AMI, is not cost-effective, and will not deliver the benefits of AMI to customers.

13. On February 19, 2020, in a proceeding filed by Rockland Electric Company ("RECO"), the Board made a series of findings related to AMI, including "that AMI has the potential to benefit the distribution system, streamline and modernize utility operations, provide an enhanced customer experience, and benefit the environment."[12] Indeed, the Board reported that "AMI and Smart Meters are quickly becoming the 'norm'" in the electric utility industry.[13] The Board also found that "AMI is a means to achieve the goals provided in the EMP."[14] As a result

[11] *See N.J.A.C.* 14:3-2A.6(d).

[12] *See I/M/O the Petition of Rockland Electric Company for Approval of An Advanced Metering Program; and for Other Relief*, BPU Docket No. ER16060524, Decision and Order (dated February 19, 2020 and effective on February 29, 2020) [hereinafter, "AMI Order"], at 2.

[13] *See id.* at 2 (citing the AMI Gold Standards Report at 5.5).

[14] *See id.* at 3.

of these, and other, findings, the Board lifted a previously imposed moratorium on the pre-approval of AMI programs, and ordered all New Jersey electric distribution companies ("EDCs"), including ACE, to "file petitions for AMI implementation" within 180 days of the effective date of the AMI Order.[15] The Board also provided the EDCs with a measure of flexibility in the structuring of their filings, and further ordered that such petitions could be filed "pursuant to ***any*** applicable regulations, including *N.J.A.C.* 14:3-2A.1 *et seq.* [the IIP Regulations]."[16]

14. In compliance with the Board's AMI Order and based on the foregoing flexibility conferred by the Board, ACE has elected to make this filing pursuant to the IIP Regulations. As explained in detail in this Petition and supporting Direct Testimony, the SEN is a program of accelerated investment in non-revenue producing utility plant through which the Company will change and upgrade its *entire* meter system over the course of approximately 39 months. Among other benefits, ACE's investment in the SEN will enhance the safety, reliability and resiliency of the electric grid, consistent with the IIP Regulations, while also positioning the Company to provide advanced energy efficiency and peak demand reduction programs, for example, as contemplated in the Board's recent Energy Efficiency Order. Deployment of the SEN will also help ACE to restore service to customers more efficiently and cost-effectively.

15. **Exhibit A** to this Petition contains a listing of the Minimum Filing Requirements ("MFRs"), including proposed baseline spending, set out in *N.J.A.C.* 14:3-2A.5(b) of the IIP Regulations, and indicates where in this filing the required information may be located. As noted in Paragraph 7, the Company proposes to allocate 10% of its overall capital investment in the SEN

[15] *See id.* at 3. Consistent with the Board's Order, AMI filings must be made no later than August 27, 2020.

[16] *See id.* (emphasis added).

deployment to satisfy the "similar" project spending requirement in *N.J.A.C.* 14:3-2A.2(c), and to seek recovery of that capital investment in a future base rate case.

16. Should the Board conclude that this Petition should not proceed pursuant to the IIP Regulations, then, in the alternative, ACE respectfully requests that this Petition and supporting Direct Testimony and exhibits be considered a request for approval of a separate accelerated AMI investment plan on the terms and conditions described herein. The Company further requests that this Petition be approved by the Board on an expedited basis pursuant to the Board's plenary authority over EDCs, including, but not limited to, their capital investments to serve customers, their books and records, and their rates for utility service.

B. SEN Program Components and Deployment

17. As explained in the Direct Testimony of Company Witness Brubaker, the SEN Program is comprised of the following components:

- replacement of existing analog meters with "smart" electronic meters;
- installation of the two-way communications network necessary to capture and transmit meter data to and from the Company's operations, information and billing systems; and
- enhancement and integration of the computer systems needed to capture, analyze, and optimize meter data for operations, billing and customer service functions.

ACE asserts that these components are fully consistent with the types of eligible investments contemplated under *N.J.A.C.* 14:3-2A.2(a) and (b)(4).

18. Beginning in January 2021, ACE will cease installing legacy analog meters and will instead install AMI-capable meters. As explained in the Direct Testimony of Company Witness Schatz, the Company has taken this step in anticipation of Board approval of this Petition and to minimize stranded costs during the deployment phase of the SEN project. As noted above,

however, installation of smart meters without the other components of the SEN is not AMI, and will not deliver the benefits of the SEN to customers.

19. Once the Board has approved this application, ACE will commence a period of approximately 39 months to design, procure, and deploy the SEN facilities across its service territory. Table One in the Direct Testimony of Company Witness Brubaker provides a breakdown of the timing of each phase of the SEN deployment process. In the procurement phase, ACE will establish pricing processes, contract for, and order the necessary AMI equipment. As the equipment is delivered to the Company, ACE will begin meter testing in advance of the installation phase. Detailed deployment planning will also take place during this period, including communications network design, and information technology ("IT") integration, so that these aspects of the SEN project will be largely complete upon the start of the meter installation phase. ACE anticipates that the procurement and communications design elements of the program will take approximately 18 months to complete, while IT integration work will continue into early 2023.

20. ACE estimates that meter installation will take approximately 21 months to complete, overlapping the tail end of the procurement phase. Prior to meter deployment, the Company will install a cross region communications network[17] throughout the service territory, so that communications testing can be performed. The Company plans to divide its service territory into several regions for meter installation purposes. As the first region nears completion of meter installation, deployment for the second region will begin, and so on. Once all meter installations are complete, ACE will conduct final meter performance tests to insure the entire network is operating in an optimal fashion. The Board should be clear, however, that the SEN meters will be

[17] *See N.J.A.C.* 14:3-2A.2(b)(4) (expressly identifying "communications networks" as eligible for inclusion in an IIP).

operational and placed into service as they are installed. The Company estimates that the first SEN meters will be operational approximately 15-18 months after Board approval of this Petition.

21. As discussed in the Direct Testimony of Company Witness Schatz, ACE does not intend to offer customers the option to "opt-out" of the installation of a smart meter. Permitting customers to refuse an electronic meter creates inefficiencies and unnecessary costs, and reduces the overall operational benefits and effectiveness of SEN deployment. To facilitate customer acceptance of the SEN, the Company will implement a comprehensive communications and information strategy to engage and educate customers about the functionality and benefits of the SEN, as well as the timing of the Company's installation activities. As explained in the Direct Testimony of Company Witness Schatz, the Company believes these educational efforts are vital to achieving widespread customer understanding, engagement and support for the SEN.

C. <u>SEN Benefits</u>

22. The Company's BCA demonstrates that the SEN is a cost-effective initiative with approximately $416 million in total benefits as compared to $220 million in direct capital and incremental O&M costs. As explained in the Direct Testimony of Company Witness Edeson, ACE identified multiple business "use cases" and applied a structured approach to quantifying the benefits of the SEN implementation based on those "use cases." In this context, a "use case" is a discrete business function or process that has defined objectives, requirements, and outcomes. Among the operational benefits quantified by the Company are the following:

- saving $4.5 million annually in meter reading costs once the SEN is fully deployed;
- avoiding tens of thousands of truck rolls through remote access to AMI data, thereby saving time, money, and reducing greenhouse gas emissions;
- reduced call center volumes;
- reducing storm restoration costs by 10% once the SEN is fully deployed;
- identifying storm impacts more precisely to restore service more efficiently;

- improving estimation and communication of restoration times; and
- providing additional system visibility to support more detailed and accurate power flow models thereby facilitating adoption of distributed energy resources, solar, and transportation electrification.

To further illustrate the operational efficiencies that can be gained by the deployment of the SEN, please see the Direct Testimony of Company Witness Schatz for an example of how truck rolls could be reduced in the context of storm restoration efforts. In short, the benefits of the SEN are significant: ACE estimates that the SEN will produce operational benefits of approximately $221 million over a 15-year period.

23. While operational benefits ultimately inure to the benefit of customers, the Company has separately identified nearly $195 million in estimated customer benefits over a 15-year period, including:

- enhancing customer safety by using voltage data to identify safety concerns at a customer's premises such as hot sockets and alerting customers to those hazards;
- improving detection of meter tampering and energy theft thereby reducing those costs paid by all customers;
- enhancing customer service by improving system visibility to provide customers with more information as to the source of service problems (i.e., the customer's or the Company's side of the meter);
- increasing customer convenience by providing remote service initiation, reconnections and switches;
- enabling the creation of rate structures that give customers greater control over their energy costs, such as time-of-use rates;
- facilitating the implementation of energy efficiency and peak demand reduction programs thereby allowing customers to reduce their energy consumption; and
- enabling energy savings through the use of conservation voltage reduction.

24. ACE would also note that other PHI utilities have implemented AMI in their service territories. As such, the Company has the benefit of the substantial experience of its affiliated utilities and their successful completion of AMI roll-outs in Delaware, Maryland and the District

of Columbia. ACE has drawn on that experience as it has planned the SEN, and will continue to utilize the best practices developed by its affiliates to ensure that the SEN is implemented in an efficient and effective manner across its service territory. In their respective Direct Testimonies, Company Witnesses Schatz and Brubaker provide additional details regarding the experiences of the Company's utility affiliates with AMI deployment and the benefits achieved by those entities through AMI implementation.

D. SEN Costs and Cost Recovery

25. Implementation of the SEN entails three separate categories of costs: capital investments, incremental O&M costs, and stranded costs. ACE must recover each of these costs in order to be made whole for its investment in facilities used to provide service to customers. Therefore, as explained below and in the Direct Testimony of Company Witness McEvoy, the Company's SEN cost recovery proposal includes separate components to address each type of cost.

26. With respect to its capital investment in the SEN, ACE estimates that the SEN deployment will require direct capital investment of $159.2 million over a period of approximately 39 months. Specifically, the Company will include the following categories of costs necessary to deliver the SEN to ACE customers in its capital cost recovery mechanism: smart meter and communications network equipment and infrastructure, IT infrastructure and equipment, and capitalized deployment costs.

27. The Company proposes to recover the revenue requirement related to the SEN capital costs on a semi-annual basis through Rider IIP-SEN as permitted pursuant to *N.J.A.C.* 14:3-2A.6. As described in the Direct Testimony of Company Witness McEvoy, ACE proposes to make its first cost recovery filing on May 1, 2022, to recover the revenue requirement associated with assets placed into service between January 1, 2021 and June 30, 2022. The Company also proposes

that the Rider IIP-SEN rate identified in that filing become effective on October 1, 2022, approximately 21 months after the SEN investments begin. Thereafter, the Company will make cost recovery filings on a semi-annual basis (reflecting the costs of plant placed into service in that period) pursuant to the filing schedule contained in Company Witness McEvoy's Direct Testimony.

28. Company Witness McEvoy provides an illustrative calculation of Rider IIP-SEN in her Schedule (KMMc)-1, which includes the use of ACE's currently authorized rate of return of 7.08%[18] and other cost recovery components, as expressly permitted pursuant to *N.J.A.C.* 14:3-2A.6 of the IIP Regulations. Company Witness McEvoy also explains the Company's rate design process which will utilize the billing determinants from its most recent base rate case in the calculation of Rider IIP-SEN as required by the IIP Regulations. ACE estimates the *total* three-year cumulative impact of Rider IIP-SEN on the monthly bill for a typical residential customer (using approximately 679 kWh/month) will be an increase of $4.27 or approximately 3.27%.

29. The Company acknowledges that Rider IIP-SEN is a provisional rate pursuant to *N.J.A.C.* 14:3-2A.6(e), and that the prudence of the costs of the SEN program will be examined in the Company's future base rate cases. Should ACE file and resolve a base rate case during the term of the SEN program, then the rate of return set in that proceeding, as well as the billing determinants used to set rates, will be used to determine Rider IIP-SEN on a going-forward basis. Further, the SEN investments placed into service before, or during, that base rate case, may be reviewed and included in rate base. The Company currently anticipates filing its next base rate request within approximately nine months of the date of this Petition.

[18] *See In The Matter of the Petition of Atlantic City Electric Company for Approval of Amendments to Its Tariff to Provide for an Increase in Rates and Charges for Electric Service Pursuant to N.J.S.A. 48:2-21 and N.J.S.A. 48:2-21.1 and for Other Appropriate Relief (2018),* BPU Docket No. ER18080925, Order of Approval, (dated March 13, 2019).

30. With respect to incremental O&M cost recovery, the Company estimates it will incur incremental O&M costs of $30.2 million, net of O&M savings, over the 39 month deployment of the SEN related to the internal labor costs for work such as managing the SEN program and network, and meter integration; testing meters removed from service in accordance with the New Jersey Administrative Code; start-up costs, deploying use case capabilities; and managing change and customer information and communications. ACE requests authority to defer its SEN-related incremental O&M costs to a regulatory asset account. The Company proposes to recover those deferred costs over a five-year period, and to seek their recovery in a base rate case filed subsequent to the Board's approval of the SEN Program. The Company is also requesting authority to record a carrying charge on the unrecovered balance of the regulatory asset equal to ACE's currently authorized rate of return of 7.08%.[19] Given the size and accelerated nature of the SEN, the creation of a regulatory asset is warranted to afford the Company the opportunity to recover the prudently incurred incremental costs associated with the SEN deployment. Regulatory asset treatment also preserves the ability of the Board and other interested parties to review the prudency of these costs when the Company seeks to recover them.

31. The third cost component the Company seeks to recover are the indirect costs related to the stranded costs created by the early retirement of ACE's existing analog meters. As explained in the Direct Testimony of Company Witness Voshell, implementation of the SEN will result in the replacement of analog meters that are not yet fully depreciated on ACE's books. As required under Generally Accepted Accounting Principles and Federal Energy Regulatory Commission accounting rules, utilities must use a method of depreciation that allocates the gross plant balance of depreciable property over its service life in a systematic and rational manner. The

[19] As noted in Paragraph 29, the Company's authorized rate of return may change during the term on the SEN if the Company files and resolves a base rate case.

annual depreciation rate for the existing meters will need to increase to reflect their shorter estimated remaining service lives, resulting in an increase in the associated depreciation expense through the remainder of the period in which the assets are fully depreciated.

32. As of June 30, 2020, the gross plant value of the existing electric meters to be replaced under this program was approximately $59 million, and the accumulated depreciation was $13 million, resulting in a net plant value equal to $46 million. This amount represents costs that were prudently incurred by ACE to serve customers and assets that are used and useful. Implementation of the SEN requires the replacement of these assets on an accelerated basis with assets that can provide superior service and more value to customers. The Company is seeking recovery of the net plant value of approximately $46 million, in addition to the related cost of removal, resulting from the SEN implementation.

33. In order to recover its prudently incurred meter costs (i.e., the cost of meters presently providing service to customers), the Company proposes to defer the net increase in meter depreciation expense to a regulatory asset account. ACE proposes to recover those deferred costs over a five year period, and to seek their recovery in a base rate case filed subsequent to the Board's approval of the SEN Program. ACE is also requesting authority to record a carrying charge, equal to the Company's currently authorized rate of return of 7.08%, on the unrecovered balance of this regulatory asset. Similar to the regulatory asset treatment requested for the SEN incremental O&M costs, the creation of a deferred stranded meter cost regulatory asset is necessary to afford ACE the opportunity to recover the costs of prudently incurred investments to serve customers.

III. Other Requested Relief

34. As explained in the Direct Testimony of Company Witness Schatz, the Company requests relief from certain regulations requiring meter testing and replacement during the transition period in which smart meters are being installed throughout the ACE service territory.

As the Board is aware, *N.J.A.C.* 14:5-4.2, *N.J.A.C.* 14:5-4.3, and *N.J.A.C.* 14:5-4.5, among other provisions, impose requirements on EDCs for routine replacement of meters, testing of meters and determination of meter accuracy. ACE seeks a temporary waiver of these requirements during the implementation of the SEN (i.e., January 2021 through June 2024) in order to streamline the transition to AMI, avoid the creation of additional stranded costs, and minimize unnecessary testing, recordkeeping and administrative costs.

35. The Company also requests a permanent waiver of the "door knock" requirement contained in *N.J.A.C.* 14:3-3A.2(d)(4). This provision applies when ACE seeks to discontinue service for non-payment and requires the Company's representative to first "personally notify an adult occupant of the premises, or leave a sealed note in the event that no adult is on premises."[20] As described in the Direct Testimony of Company Witness Brubaker, service connections and disconnections are able to be accomplished remotely once the SEN is installed, obviating the need to send an employee to a customer's premises. As indicated in the Company's BCA, elimination of these truck rolls represents a significant source of operational savings and environmental benefits. If approved, ACE plans to address new communications materials and processes to ensure customer outreach is maintained when carrying out remote connects and disconnects, which includes an additional manual phone call to customers one day prior to a disconnect processing date.

36. Currently, the Company obtains meter reading services from Millennium Account Services, LLC ("Millennium"), an entity formed in 1999 as a jointly owned subsidiary of South Jersey Industries and Conectiv Solutions. Millennium was created to provide cost-effective meter reading services to ACE and South Jersey Gas. ACE anticipates that its need for meter reading

[20] *See N.J.A.C.* 14:3-3A.2(d)(4).

services will be largely phased out as the SEN is deployed across the ACE service territory. The Company is presently evaluating its need for Millennium's services and will agree to provide advance written notice to the Board (with copies to the New Jersey Division of Rate Counsel ["Rate Counsel"]) regarding any material changes in and to the relationship.

IV. Timing of This Filing

37. The Company respectfully requests that the Board retain this matter, and appoint a Commissioner to serve as the Presiding Officer at its next scheduled public agenda meeting. Given the substantial benefits to customers and the State of New Jersey, ACE requests that the Board hear this matter on an expedited schedule. The Company believes expedited review of this request is warranted by the positive impact on customers and ACE operations resulting from investment in the SEN program. Additionally, the SEN initiative supports the State's clean energy goals and programs, and will benefit the State's economy through investment and facilitation of innovation. Moreover, the Board itself has cautioned utilities to minimize the creation of new stranded costs[21] in the transition to AMI. Prompt approval of this request will facilitate achievement of that goal. To assist in the process of expedited review, ACE has proposed a procedural schedule for a fully litigated proceeding which is set out in **Exhibit B.** ACE, however, is hopeful that the parties can reach a mutually satisfactory settlement in 2020, thereby enabling the Company to commence work on January 1, 2021, if not sooner.

38. The Company acknowledges that public comment hearings are required pursuant to the IIP Regulations.[22] Due to the on-going COVID-19 pandemic, the Company respectfully requests that the Board authorize the use of *either* in-person public comment hearings or telephone

[21] RECO AMI Order, at 3.

[22] *See N.J.A.C.* 14:3-2A.5(d).

public comment hearings in this matter. Should COVID-19 gathering restrictions remain in place, telephone public comment hearings will enable the public to participate in the hearings by monitoring and/or speaking at the hearings from the safety of their homes, while also adhering to required physical distancing practices. Neighboring states, such as Pennsylvania, regularly use telephone public comment hearings, and the Board has authorized their use in some proceedings. Use of telephone public comment hearings in this matter will allow for safe public participation and timely processing of this case: they are clearly in the public interest.

V. Supporting Testimony and Minimum Filing Requirements

39. The proposals addressed in this Petition are supported by the Direct Testimony and supporting schedules of the following witnesses for the Company, each of which is attached hereto and made a part hereof:

David S. Schatz.....SEN Program Overview and Summary of Filing

Gregory W. Brubaker.....SEN Program Details, SEN Costs & Benefits, Deployment Plan, and PHI AMI experience

Kristin M. McEvoy .....Cost Recovery, Rate Design, and Bill Impacts

Andrew Voshell .....Stranded Asset Accounting

Gregg Edeson .....Benefits/Cost Analysis
PA Consulting

40. As noted previously, a table identifying each MFR and its location within this Petition is provided in **Exhibit A**, attached hereto. Further, the Company states that it currently anticipates filing its next base rate request within approximately nine months of the date of this filing.[23]

[23] *See N.J.A.C.* 14:3-2A.5(b)(5).

41. During the course of this proceeding, ACE will submit any confidential, proprietary or competitively sensitive information not covered by privilege once a mutually agreed-upon Agreement of Non-Disclosure (herein, the "NDA") has been executed by and among the Company, Board Staff, Rate Counsel and its and/or their consultants, and any permitted intervenors. A form of NDA that is consistent in form and substance with NDAs used in prior cases filed by ACE will be provided under separate cover to counsel for the parties.

42. Included in **Exhibit C** are copies of letters provided to the Company that ACE understands have been separately filed with the Board. These letters indicate support for the Company's SEN program and its deployment in the ACE service territory. The Company requests that these letters of support, as well as any other letters from members of the public, be included in the record of this proceeding.

VI. Notice

43. Notice of this filing, including a statement of the overall impact thereof on customers of the Company, will be combined with notice of the date and times of the public comment hearings to be scheduled thereon, and will appear in newspapers published and/or in general circulation in Petitioner's service area, after the date and times of such public comment hearings have been scheduled. Said notice will also be served by mail upon the municipal clerks, the clerks of the Boards of Chosen Freeholders and, where appropriate, upon the Executive Officers of all counties located within the Company's service territory. Such notice will be duly mailed following the scheduling of the hearings and will be substantially in the form of the notice attached hereto as **Exhibit D**. Information regarding this filing will also be posted on the Company's website and a reference to the hearings will be available on ACE's social media outlets, including Facebook and Twitter. In addition, ACE's monthly invoices will contain a bill message

referring customers to the Company's "Public Postings" page where the full text of the public notice can be found.

44. Notice of this filing along with all testimony, schedules, exhibits, and attachments (as appropriately redacted), shall be sent to the Department of Law and Public Safety, 25 Market Street, P.O. Box 112, Trenton, New Jersey 08625, and to the Director of Rate Counsel, 140 East Front Street, P.O. Box 003, Trenton, New Jersey 08625 by electronic mail only. Electronic copies of the Petition, along with all testimony, schedules, and attachments, shall be sent to the persons identified in the Service List attached hereto. This is consistent with the Order issued by the Board in connection with *In the Matter of the New Jersey Board of Public Utilities' Response to the COVID-19 Pandemic for a Temporary Waiver of Requirements for Certain Non-Essential Obligations*, BPU Docket No. EO20030254 (March 19, 2020).

VII. Communications

45. Communications and correspondence concerning this proceeding should be sent to the following representatives of the Company:

Philip J. Passanante, Esquire
Assistant General Counsel
Atlantic City Electric Company – 92DC42
500 North Wakefield Drive
P.O. Box 6066
Newark, Delaware 19714-6066
Telephone: 302.429.3105 (Delaware)
Telephone: 609.909.7034 (Trenton)
Telephone: 302.853.0569 (Mobile)
E-Mail: philip.passanante@pepcoholdings.com

and

Heather Hall
Manager, New Jersey Regulatory Affairs
Atlantic City Electric Company – 92DC42
500 North Wakefield Drive
P.O. Box 6066
Newark, Delaware 19714-6066
Telephone: 302.451.5323
E-Mail: heather.hall@pepcoholdings.com

VII. Conclusion

WHEREFORE, for all of the foregoing reasons, Atlantic City Electric Company respectfully requests that the Board retain jurisdiction of this matter and expeditiously issue an Order finding that:

A. the Smart Energy Network is in the public interest;

B. the Company's plan to implement the Smart Energy Network, as described in this Petition and supporting Direct Testimony and exhibits, is reasonable and prudent;

C. ACE is authorized to implement and administer its Smart Energy Network as described in detail herein;

D. the cost recovery proposal and mechanism Rider IIP-SEN set forth in this Petition will provide for the implementation of just and reasonable rates, and is approved;

E. the creation of a regulatory asset to defer, and recover in a base rate case filed subsequent to the conclusion of this proceeding, the Smart Energy Network incremental O&M costs plus a carrying charge equal to the Company's currently authorized rate of return of 7.08%, is reasonable and is approved;

F. the creation of a regulatory asset to defer, and recover in a base rate case filed subsequent to the conclusion of this proceeding, the stranded meter costs plus a carrying charge equal to ACE's currently authorized rate of return of 7.08%, is reasonable and is approved;

G. ACE may recover the revenue requirement associated with all prudently-incurred Smart Energy Network costs on an provisional basis, using the cost recovery mechanism set forth herein, while the prudence of the Smart Energy Network will be determined in a future base rate case;

H. the Company shall not be required to comply with the Board's meter replacement and testing regulations, including *N.J.A.C.* 14:5-4.2, *N.J.A.C.* 14:5-4.3, and *N.J.A.C.* 14:5-4.5, among other provisions, during the term of the SEN implementation process (i.e., January 2021 to June 2024);

I. ACE shall be relieved of its obligation to comply with the terms of *N.J.A.C.* 14:3-3A.2(d)(4) when discontinuing service for non-payment; and

J. granting such other and further relief as the Board may determine to be reasonable and appropriate.

Respectfully submitted,

ATLANTIC CITY ELECTRIC COMPANY

Dated: August 26, 2020

Philip J. Passanante
Assistant General Counsel
Atlantic City Electric Company – 92DC42
500 North Wakefield Drive
P.O. Box 6066
Newark, Delaware 19714-6066
Telephone: 302.429.3105 (Delaware)
Telephone: 609.909.7034 (Trenton)
Telephone: 302.853.0569 (Mobile)
E-Mail: philip.passanante@pepcoholdings.com

IN THE MATTER OF THE PETITION OF ATLANTIC CITY ELECTRIC COMPANY FOR APPROVAL OF THE SMART ENERGY NETWORK PROGRAM AND COST RECOVERY MECHANISM AND OTHER RELATED RELIEF	STATE OF NEW JERSEY BOARD OF PUBLIC UTILITIES

CERTIFICATION IN SUPPORT OF PETITION

KEVIN M. McGOWAN, of full age, certifies as follows:

1. I am Vice President of Regulatory Policy and Strategy of and for Atlantic City Electric Company ("ACE"), the Petitioner named in the foregoing Petition. I am duly authorized to make this Certification on ACE's behalf.

2. I hereby certify that I have read the Petition and the supporting documents thereto and find them to be true and correct to the best of my knowledge, information, and belief.

3. I further and finally certify that the foregoing statements made by me are true. I am aware that, if any of the foregoing statements made by me are willfully false, I am subject to punishment.

Dated: 8/21/20

KEVIN M. McGOWAN

Exhibit A

Minimum Filing Requirements

Smart Energy Network

ATLANTIC CITY ELECTRIC COMPANY
Minimum Filing Requirements (MFR) –
Smart Energy Network (SEN)

MFR Number	Requirement Description	Location In Filing
N.J.A.C. 14:3-2A.5 (b)1.	IIP petition shall include: Projected annual capital budgets for a five-year period, identified by major categories of expenditures;	Exhibit A Paragraph A
N.J.A.C. 14:3-2A.5 (b)2.	Actual annual capital expenditures for the previous five years, identified by major categories of expenditures;	Exhibit A Paragraph B
N.J.A.C. 14:3-2A.5 (b)3.	An engineering evaluation and report identifying the specific projects to be included in the proposed IIP, with descriptions of project objectives, detailed cost estimates, in service dates and any applicable cost-benefit analysis for each project;	Exhibit A Paragraph C Direct Testimony of Gregg Edeson and Direct Testimony of Gregory Brubaker
N.J.A.C. 14:3-2A.5 (b)4.	An IIP budget setting forth annual budget expenditures;	Exhibit A Paragraph D
N.J.A.C. 14:3-2A.5 (b)5.	A proposal addressing when the utility intends to file is next BRC;	Exhibit A Paragraph E
N.J.A.C. 14:3-2A.5 (b)6.	Proposed annual baseline spending levels - consistent with N.J.AC.A. 14:3-2A3 (above)	Exhibit A Paragraph F
N.J.A.C. 14:3-2A.5 (b)7.	The maximum amount, in aggregate, the utility seeks to recover through the IIP; and	Exhibit A Paragraph G
N.J.A.C. 14:3-2A.5 (b)8.	The estimate rate impact of the IIP on customers.	Exhibit A Paragraph H

N.J.A.C. 14:3-2A.5(b) requires that all utilities seeking approval of an IIP provide certain minimum specified information. Consistent with that requirement, ACE hereby provides the following information:

A. N.J.A.C. 14:3-2A.5(b)1: Projected annual capital expenditure budgets for a five-year period, identified by major categories of expenditures:

Table 1
Atlantic City Electric Company
2020-2024 Distribution Capital Forecast
Dollars in Millions

Budget Category	2020	2021	2022	2023	2024
Customer Driven	$ 28.3	$ 23.2	$ 24.4	$ 26.6	$ 27.6
Reliability	$115.5	$104.8	$128.7	$105.8	$145.1
Load	$ 17.7	$ 38.0	$ 23.4	$ 14.4	$ 17.3
Other	$ 53.1	$ 53.8	$ 32.3	$ 37.6	$ 30.3
Total	**$ 214.6**	**$ 219.9**	**$ 208.9**	**$ 184.6**	**$ 220.6**

B. N.J.A.C. 14:3-2A.5(b)2: Actual annual capital expenditures for the previous five years (2015 to 2019), identified by major categories of expenditures:

Table 2
2015-2019 Distribution Capital Spend
Dollars in Millions

Category	2015	2016	2017	2018	2019
Customer Driven	$ 18.8	$ 18.4	$ 20.0	$ 24.1	$ 29.5
Reliability	$ 80.7	$ 106.2	$ 113.1	$ 143.0	$ 124.0
Load	$ 7.6	$ 23.6	$ 20.8	$ 15.9	$ 16.5
Other	$ 7.4	$ 11.2	$ 17.3	$ 30.1	$ 30.4
Total	**$ 114.7**	**$ 159.5**	**$ 171.2**	**$ 213.1**	**$ 199.7**

C. N.J.A.C. 14:3-2A.5(b)3: An engineering evaluation and report identifying the specific projects to be included in the IIP, with descriptions of project objectives, detailed cost estimates, in service dates, and any applicable cost-benefit analysis for

each project:

This required information is contained in the SEN business case attached to the Direct Testimony of Company Witness Schatz (Schedule (DSS) -1) and is discussed in detail in the Direct Testimony of Company Witnesses Edeson and Brubaker.

D. N.J.A.C. 14:3-2A.5(b)4: An IIP budget setting forth annual budget expenditures:

Table 3
Atlantic City Electric Company
2021-2024 Infrastructure Investment Program Forecast
Dollars in Millions

IIP	2021	2022	2023	2024	2021-2024
Total	$14,246,535	$93,340,194	$63,583,080	$5,821,183	$176,990,992

E. N.J.A.C. 14:3-2A.5(b)5: A proposal addressing when ACE intends to file its next base rate case:

The Company currently anticipates filing its next base rate request within approximately nine months.

F. N.J.A.C. 14:3-2A.5(b)6: The proposed annual baseline spending levels:

Table 4
2020-2024 Baseline Spending Dollars in Millions

	2020	2021	2022	2023	2024
Baseline Spending	$113.6	$79.5	$54.7	$82.6	$109.3

G. N.J.A.C. 14:3-2A.5(b)7: The maximum dollar amount, in the aggregate, that ACE seeks to recover through the IIP:

ACE seeks to recover capital spending of $159.2 million through the IIP.

H. N.J.A.C. 14:3-2A.5(b)8: The estimated rate impact of the IIP on ACE's customers:

The table below shows the estimated rate impact by year for ACE's customers. It is discussed in greater detail in the Direct Testimony of Company Witness McEvoy.

Table 5
Typical Residential Incremental Bill Impact (679 kwh):

Roll-In Period	**1** May 1, 2022	**2** Nov 1, 2022	**3** May 1, 2023	**4** Nov 1, 2023	**5** May 1, 2024	**Roll-In Total**
Bill Impact ($)	$0.45	$2.57	$0.80	$0.43	$0.02	**$4.27**
Bill Impact (%)	0.34%	1.96%	0.60%	0.32%	0.01%	**3.27%**

Exhibit B

Proposed Procedural Schedule

Proposed Procedural Schedule	
August 26, 2020	Case filed.
September 2020	Discovery commences and will be on-going as noted below.
September 2020	BPU appoints presiding commissioner.
September 2020	Pre-Hearing Conference with Presiding Commissioner.
October 2, 2020	All initial discovery requests propounded on the Company's Petition and Direct Testimony.
October 16, 2020	All initial discovery responses provided by ACE.
October 30, 2020	Second round discovery responses propounded on the Company.
November 13, 2020	All discovery responses provided by ACE.
November 20, 2020	Discovery conference/Settlement discussion.
November 30, 2020	Two virtual public comment hearings (at 4:30 PM and 5:30 PM).
December 8, 2020 December 15, 2020	Discovery/settlement conferences.
January 8, 2021	Rate Counsel/Intervenor Direct Testimony is due.
January 22, 2021	Discovery propounded on Rate Counsel/Intervenor Direct Testimony.
February 11, 2021	Rate Counsel/Intervenor responses to discovery requests are due.
March 4, 2021	Rebuttal Testimony filed by parties as appropriate.
March 19, 2021	Discovery requests propounded on all Rebuttal Testimony.
April 9, 2021	Responses due to discovery on Rebuttal Testimony.
April 20, 21, 2021	Two days of evidentiary hearings.
May 21, 2021	Initial Briefs due.
June 11, 2021	Reply Briefs due.
July 2021	BPU final decision and Order issued.

Exhibit C

Letters of Support

The City of Bridgeton NJ
A Bright New Beginning

181 East Commerce Street, Bridgeton, NJ 08302

Bridgeton City Mayor
Albert B. Kelly

August 17, 2020

Joseph L. Fiordaliso, President
NJ Board of Public Utilities
44 So. Clinton Ave. 7th Floor
Trenton, NJ 08625

Dear Mr. Fiordaliso:

I am writing to you at this time in support of Atlantic City Electric's proposal now before the BPU, slated to begin in 2022, to implement a Smart Energy Network that will include many aspects, chief among them upgrading the current analog meters with smart meters as part of a larger infrastructure upgrade.

As you recall, there were widespread power outages in South Jersey in the aftermath of Hurricane Isaias and this brought home the need to create a more robust and resilient energy grid and infrastructure and it is this need and the benefits such upgrades promise to provide that prompts this letter of support.

As with all such changes, we trust that incorporating these new technologies, automations and systems will be adequately vetted by BPU to ensure that there will not be unintended consequences whether it involves more systemic fragility or creating disparate impacts among certain groups of customers.

That said, we look forward to the efficiencies and cost savings such upgrades might bring to the residents and businesses in the South Jersey service area.

Thank you for your time and consideration.

Very truly yours,

Albert B. Kelly, Mayor
City of Bridgeton

CAPE MAY COUNTY

EMERGENCY MANAGEMENT COMMUNICATIONS CENTER
{O} 609-600-5061 {F} 609-889-3590 {Email} martin.pagliughi@co.cape-may.nj.us

Gerald M. Thornton, Freeholder Martin L. Pagliughi, Director
John Edwards, Deputy Director Steven Long, Deputy Director

August 18, 2020

My name is Marty Pagliughi and I currently serve as the Director of the Cape May County Office of Emergency Management. Last week's Tropical Storm Isaias, served as another reminder, how a quick-moving storm can strike and cause a significant amount of damage to coastal and inland communities in Cape May County.

While Atlantic City Electric was in constant communication and provided prompt, safe and speedy restoration, the storm served as one more example of the need for New Jersey to hasten its efforts to install smart meters and other technologies to aid utilities in restoring electricity to customers during widespread outages.

I am writing to support Atlantic City Electric's filing for the company's Smart Energy Network Program which outlines investments in smart meters and technology to provide safe and reliable service for their customers. The Smart Energy Network will help to modernize the local energy grid and pave the way for future enhancements that will help sustain a more reliable electric grid.

Severe weather events are now a common occurrence. Investments in technology are critical in helping to keep the lights on and providing more dependable service for ACE customers. Smart meter technology would allow Atlantic City Electric the opportunity to provide the highest levels of service to their customers — especially when severe weather strikes,''

I ask the NJ Board of Public Utilities to consider Atlantic City Electric's Smart Energy Network AMI – petition request as a key step in providing the foundation for a dynamic electric grid that can pave the way for a smarter and more reliable energy future.

Sincerely,

Marty Pagliughi
Director, Cape May County
Office of Emergency Management

NJ Energy Coalition

August 21, 2020

New Jersey Board of Public Utilities
44 South Clinton Avenue, 9th Floor
P.O. Box 350
Trenton, New Jersey 08625-0350

Dear President and Commissioners:

On behalf of the New Jersey Energy Coalition, please accept this letter in support of Atlantic City Electric's (ACE) filing to modernize New Jersey's electric grid with the Smart Energy Network. Technological advancements like this bring the benefits and tools needed to provide better information and data to customers. In addition, it will help achieve the goals set forth in both the 2018 Clean Energy Act and the 2019 NJ Energy Master Plan.

The Smart Energy Network will add resilience and reliability to the overall grid. This need was highlighted by Tropical Storm Isaias that impacted approximately 230,000 ACE customers on August 4th. By deploying smart technology to the grid, ACE will have direct communication to meters and will know the status of power outages at individual customers' homes and businesses without the need for a call to the premises or a costly truck roll. The Smart Energy Network will ultimately help speed up the process of restoring power to customers who experience an outage and avoid unnecessary CO2 emissions.

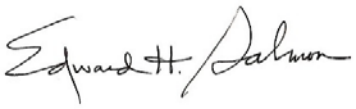
By modernizing the grid, consumers will finally be able to benefit from updated technology that has already been deployed in many other states. Energy companies across the country have avoided the unnecessary dispatch of utility trucks. Additionally, the economic benefits from an infrastructure program like this will be felt by households and businesses throughout the region through jobs creation and energy savings.

What the Smart Energy Network would be capable of:

1. Creating jobs and helping the economy.
2. Giving consumers more ability to manage their energy usage.
3. Improving customer service and satisfaction.
4. Speeding outage detection and restoration.
5. Improving billing accuracy, as smart meters will greatly reduce billing estimates.
6. Reducing green house gas emissions through more efficient operations and fewer vehicles on the road.

The Smart Energy Network presented by ACE will bring economic and environmental benefits for all. In addition, it will lead to safer, securer and more reliable service for the people of New Jersey. Thank you for your time.

Respectfully,



Dr. Edward H. Salmon, Chairman

Erick A. Ford, Executive Director

Exhibit D

Draft Public Notice

NOTICE TO CUSTOMERS OF
ATLANTIC CITY ELECTRIC COMPANY
OF FILING OF SMART ENERGY NETWORK PROGRAM PROPOSAL
AND RELATED COST RECOVERY MECHANISM
NOTICE OF PUBLIC HEARINGS AND OPPORTUNITY FOR PUBLIC COMMENTS

In the Matter of the Petition of Atlantic City Electric Company for Approval of the Smart Energy Network Program and Cost Recovery Mechanism and Other Related Relief

BPU Docket No. _____

PLEASE TAKE NOTICE that, on or about August 26, 2020, Atlantic City Electric Company ("ACE" or "Company"), a New Jersey public utility, filed a petition ("Petition") with the New Jersey Board of Public Utilities ("Board" or "BPU"), BPU Docket No. _____, seeking the Board's approval of a plan to deploy the Smart Energy Network ("SEN") throughout the Company's service territory over a period of approximately 39 months beginning in January 2021. The SEN is an integrated system of smart meters, communications facilities, and data management systems that will enable two-way communication between ACE and its customers. The SEN entails the replacement of nearly all of the Company's existing meters with smart electronic meters, as well as the installation of a related communications network, and the necessary changes to ACE's operations, information, and billing systems to collect, integrate, and optimize the use of the data generated by the new electronic meters.

The costs of the SEN program include capital investment costs of approximately $159.2 million and incremental operations and maintenance ("O&M") costs of $30.2 million. In addition, the Company estimates that deployment of the SEN will result in the early retirement of existing meters and the creation of approximately $46 million in stranded costs. In this instance, the term "stranded costs" refers to ACE's previous investment in analog meters that will be rendered redundant and replaced with the implementation of the SEN.

The Company estimates that implementation of SEN will yield operational and customer benefits that exceed the direct and indirect costs of the program. ACE has performed a benefits/cost analysis and quantified $416 million in benefits, comprised of $221 million of operational benefits, and $195 million in customer benefits over the fifteen-year life of the facilities installed as part of the SEN program.

The Company filed its Petition pursuant to the Board's Infrastructure Investment Program ("IIP") regulations, *N.J.A.C.* 14:3-2A.1 *et seq.*, an initiative that is focused on accelerated investments to bolster electric distribution system reliability, storm resiliency, and safety. In its Petition, ACE seeks Board approval of its SEN deployment plan and authority to recover the revenue requirement associated with its $159.2 million capital investment through a Rider IIP-SEN as permitted pursuant to *N.J.A.C.* 14:3-2A.6(d). The Company also requested authority to create regulatory assets for the $30.2 million in incremental O&M costs and the $46 million of stranded costs, the recovery of which will be deferred and addressed in a future base rate case.

As described in ACE's Petition, Rider IIP-SEN will be imposed gradually as the SEN facilities are installed and providing service to customers. The Company proposes that Rider IIP-SEN be implemented beginning in October 2022, and then updated every six months to reflect new investment placed into service. The Company estimates the total three-year cumulative impact of Rider IIP-SEN on the monthly bill for a typical residential customer (using approximately 679 kWh/month) will be an increase of $4.27 or approximately 3.27% above present rates. The exact amount that your bill will increase depends upon the amount of electricity you use. A chart is included with this notice to help residential customers assess the impact of the SEN and Rider IIP-SEN on their monthly bills.

The Company filed the following rate schedules with its Petition. Any final rate adjustments found by the Board to be just and reasonable may be modified and/or allocated by the Board in accordance with the provisions of *N.J.S.A.* 48:3-4, and for other good and legally sufficient reasons, to any class or classes of customers of the Company. Therefore, the rates set out below may increase or decrease based upon the Board's decision.

[insert tables]

Residential customers can compare their monthly usage with the chart below to see how the imposition of the proposed Rider IIP-SEN will affect their bills:

[insert residential chart]

The above assumes that customers receive their electric supply from the Company.

The chart below provides information as to the percentage rate change by customer class for the entire Rider IIP-SEN:

[insert percentage chart]

A copy of this Notice of Filing and Public Hearings on the Petition is being served upon the clerk, executive or administrator of each municipality and county within the Company's service territory. The Petition and this Notice have also been sent to the New Jersey Division of Rate Counsel ("Rate Counsel"), who will represent the interests of all ACE customers in this proceeding. Copies of ACE's Petition and this Public Notice are posted on ACE's website at www.atlanticcityelectric.com/PublicPostings.

PLEASE TAKE FURTHER NOTICE that due to the COVID-19 pandemic, a telephonic hearing on the Petition will be conducted at the day and times listed below by a hearing officer designated by the Board:

DATE:	**DATE:**
TIME: 4:30 P.M.	**TIME: 5:30 P.M.**
DIAL-IN NUMBER:	**DIAL-IN NUMBER:**
PASSCODE:	**PASSCODE:**

Representatives of the Company, Board Staff and Rate Counsel will participate via telephone in the public hearing. Members of the public are invited to listen and participate by phone via the above designated Dial-In Number and Passcode and may express their views on this filing. Such comments will be made a part of the final record of the proceeding to be considered by the Board. In order to encourage full participation in this opportunity for public comments, please submit any requests for needed accommodations, such as interpreters or listening devices, 48 hours prior to the above hearings to the Board's Secretary at board.secretary@bpu.nj.gov.

The Board is also accepting written and/or emailed comments. Although both will be given equal consideration, the preferred method of transmittal is via email to ensure timely receipt while the Board continues to work remotely due to the COVID-19 pandemic. Written comments may be submitted to the Board Secretary, Aida Camacho-Welch, at the Board of Public Utilities, 44 South Clinton Avenue, 9th Floor, P.O. Box 350, Trenton, NJ 08625-0350. Email comments should be submitted to: board.secretary@bpu.nj.gov. Please include the name of the Petition and BPU Docket No._____ when submitting comments.

Dated: Atlantic City Electric Company

Direct Testimony of David S. Schatz

Any information claimed to be confidential contained in the Schedules of Company Witness Schatz will be provided upon execution of an Agreement of Non-Disclosure of Information (the "NDA") by the parties to this proceeding. The NDA will follow once a docket number has been assigned.

ATLANTIC CITY ELECTRIC COMPANY

BEFORE THE NEW JERSEY
BOARD OF PUBLIC UTILITIES
DIRECT TESTIMONY OF DAVID S. SCHATZ
BPU DOCKET NO. _____

I. Introduction and Purpose

Q1. Please state your name and position.

A1. My name is David S. Schatz. I am the Director of Strategy for Pepco Holdings LLC ("PHI"). I am testifying on behalf of Atlantic City Electric Company ("ACE" or the "Company") in this matter.

Q2. What are your responsibilities in your role?

A2. As Director of Strategy, I lead regulatory initiatives that the Company pursues related to the development and deployment of new and emerging energy technologies. I have been in this position 8 months. Those initiatives involve a range of grid-connected solutions, including distributed energy resources, transportation electrification programs, and data-enabled grid components. In this role, I advance the strategic goals of the Company in implementing programs that harness these technologies to drive greater benefits for our customers and ACE.

Q3. Please state your educational background and professional experience.

A3. Prior to assuming this role at PHI, for three years I served as Director of Public Policy for ChargePoint, an electric vehicle charging network company. In that position, I managed regulatory and government affairs engagements related to transportation electrification policy in states across the Mid-Atlantic, Southeast, and Midwest United States. From 2015 to 2016, I was Deputy Director for Policy and Electricity Markets for SolarCity, a rooftop solar provider. In that role, my primary responsibilities involved advancing policy to support commercial solar applications nationally. From

2013 to 2015, I was Senior Consultant at the energy practice of Booz Allen Hamilton, where I led and assisted multiple Department of Defense components to develop and deploy advanced energy projects, including onsite backup generation and utility scale solar. My previous roles also include work at the U.S. Air Force Office of the General Counsel, Environment and Installations Division, where I conducted diligence on a vehicle-to-grid pilot and served as a researcher on energy-related topics. I hold a Master of Arts degree in Environmental Policy from American University, a Master of Arts degree in Sociocultural Anthropology from George Washington University, and a Bachelor of Arts degree from George Washington University.

Q4. What is the purpose of your testimony?

A4. The purpose of my testimony, as well as the other testimonies included in this filing, is to support ACE's proposal to implement Advanced Metering Infrastructure ("AMI"), also known as ACE's Smart Energy Network (herein referred to as the "SEN"), in its service territory. The Company will demonstrate that the technology proposed and the anticipated deployment plan and timeline are reasonable, provide numerous benefits to customers, and are cost effective. I will also provide an overview of the cost recovery mechanisms proposed, as well as demonstrate that the SEN is an eligible project under the Infrastructure Investment Program ("IIP") Regulations ("IIP Regulations) approved by the New Jersey Board of Public Utilities (the "Board" or "BPU"), and that the IIP is an appropriate mechanism for implementing the SEN and recovering a portion of its costs.

Q5. How is your testimony organized?

A5. My testimony is organized as follows. I will discuss the following topics:

(a) a summary of the Company's Proposal;

(b) implementation of the SEN in other PHI operating companies;

(c) overview of the Smart Energy Network;

(d) how the SEN supports the goals of the BPU and the State;

(e) a summary of the benefits and costs of the SEN for New Jersey customers;

(f) cost recovery proposal summary;

(g) why IIP is an appropriate mechanism for SEN implementation and cost recovery;

(h) summary of IIP requirements and Minimum Filing Requirements ("MFR"); and

(i) customer outreach.

Q6. Please summarize the testimony of the other witnesses who are filing testimony in support of this petition.

A6. The testimony in support of this filing includes my Direct Testimony and the Direct Testimony of four other witnesses, plus attachments. Those witnesses and the topics they address are as follows:

- Mr. Gregory W. Brubaker, Manager of Smart Grid and Innovation, provides testimony in support of the proposed deployment plan, the analysis of program benefits and costs, and implementation details.

- Mr. Gregg Edeson, a Partner with PA Consulting Group, provides testimony related to the background of the BCA process, including the development of costs and benefits for ACE's proposed SEN.
- Ms. Kristin McEvoy, Manager of Revenue Policy, provides testimony in support of the Company's proposed cost recovery, rate design, and customer impacts.
- Mr. Andrew Voshell, Senior Manager of Accounting, provides testimony in support of the stranded asset accounting.

II. Summary of the Company's Proposal

Q7. Please provide a summary of the Company's request in this filing.

A7. The Company is requesting that the Board approve ACE's comprehensive plan to deploy a SEN in its service territory. ACE conducted a rigorous benefit cost analysis ("BCA") demonstrating that the SEN deployment has a net-positive impact on customers. This analysis will be discussed at length by Company Witness Edeson. The total direct cost of implementation as factored into the BCA is estimated to be $220 million, which consists of $130.8 million in capital costs, and $89.2 million of incremental operations and maintenance ("O&M") costs. These costs are offset by operational benefits of $221.1 million and customer benefits of $194.7 million over the 15-year life of the smart meters. Overall, the SEN offers a variety of calculable, substantial benefits resulting in reduced or avoided costs and operational savings. With the SEN fully deployed and activated in homes, businesses, and communities, customers will see various benefits of the network, such as greater access to energy management data, faster response times to outages, and future pricing programs to encourage off-peak energy use and lower monthly bills. On a broader, system wide

scale, the SEN's extensive benefits include improved visibility into grid operations, the ability to remotely manage and maintain grid assets, maximize conservation voltage reduction, and new opportunities for the development of distributed energy resources ("DERs"). Company Witness Brubaker will describe the implementation of the network, integration into the ACE system, and expand on these and more net positive benefits. To recover the costs of the SEN deployment, ACE is requesting approval from the BPU to recover the revenue requirement associated with the capital investment in the SEN project within the context of an IIP. The Company is also requesting that the BPU allow ACE to establish a regulatory asset to capture incremental O&M costs, net of O&M savings, associated with the implementation of the SEN, as well as a regulatory asset to recover the stranded costs associated with legacy meters that will be replaced.

Q8. Is this filing made in compliance with the February 2020 order in BPU Docket No. ER16060524?

A8. Yes. On February 19, 2020, the Board issued an order in BPU Docket No. ER16060524, which is a request by Rockland Electric Company ("RECO") for approval of an Advanced Metering Program (the "AMI Order")[1]. In the AMI Order, the Board directed that its previous moratorium on pre-approval of AMI be lifted. The Board further ordered that ACE, Jersey Central Power & Light Company, and Public Service Electric and Gas Company file petitions for AMI implementation, or update previously filed petitions for AMI implementation, with the Board, within 180 days of the effective date of the AMI Order (February 29, 2020). In the AMI Order at page 2, the Board found "that AMI has the potential to benefit the distribution system,

[1] *See I/M/O of the Petition of Rockland Electric Company for Approval of an Advance Metering Program; and for Other Relief (2016)*, BPU Docket No. ER16060524, Order (dated February 19, 2020).

streamline and modernize utility operations, provide an enhanced customer experience, and benefit the environment." Pursuant to the AMI Order, ACE is filing this request for approval to implement the SEN.

The AMI Order stated that utilities may choose to file petitions, or update previously filed petitions, "pursuant to any applicable regulations, including *N.J.A.C.* 14:3-2A.1 *et. seq.*," which is a reference to the IIP Regulations. Therefore, ACE is proposing recovery of the capital portion of the costs to implement AMI through an IIP mechanism. Later in this Direct Testimony, I will discuss why the IIP is an ideal mechanism for deploying the SEN.

III. Implementation of the SEN in other PHI Operating Companies

Q9. Please summarize the experience PHI has with implementing the Smart Energy Network in its other jurisdictions.

A9. PHI has extensive experience with large-scale SEN deployments. PHI has successfully deployed the SEN in its other operating companies' territories: Potomac Electric Power Company ("Pepco") has deployed the SEN in the District of Columbia and Maryland, and Delmarva Power & Light Company ("Delmarva") has deployed the SEN in Maryland and Delaware. In each of these jurisdictions, the SEN was found to provide a multitude of benefits to customers while being cost effective, and cost recovery was approved. PHI has seen firsthand the tangible benefits for utility operations and customers – and ACE can rely on the in-house expertise and best practices identified by its affiliated companies to ensure that the deployment in its New Jersey service territory will result in a smooth transition for customers. The Direct Testimony of Company Witness Brubaker provides detail around all benefits, including storm restoration benefits and energy efficiency improvements realized in other PHI jurisdictions.

Q10. Did the other PHI companies track and report metrics to their respective regulatory bodies regarding AMI implementations?

A10. Yes, they did. Delmarva and Pepco tracked and reported metrics to the Maryland Public Service Commission. These metrics included: incremental capital costs of meters and IT; incremental O&M costs of meter installations; theft of energy (deployment only); meters deployed; number of activations; and communications and outreach associated with deployment[2].

Also, the Delmarva AMI team met with the Staff of the Delaware Public Service Commission on a quarterly basis during deployment to review certain deployment milestones and statistics.

IV. Overview of the Smart Energy Network

Q11. What is ACE's SEN?

A11. The SEN is ACE's implementation of AMI in homes, businesses, and communities across its service territory. Deployment of the SEN will upgrade the existing energy metering infrastructure with smart meters, build out a robust communications system and integrate the meters, creating a network capable of providing real-time data to both customers and the Company. With SEN infrastructure installed, customers will be able to better monitor and manage energy usage for greater efficiency, seek access to distributed energy resources, and take advantage of future rate structures for cost savings. For utility operations, use of the SEN will create a smarter energy grid with upgraded technology to allow ACE to better manage energy infrastructure, maintain or respond more quickly to storms, and integrate new and

[2] Delmarva Power & Light Company: Quarterly Advanced Metering Infrastructure Performance Metrics Report. MPSC Case No. 9207 (Mail Log 230233), Potomac Electric Power Company: Quarterly Advanced Metering Infrastructure Performance Metrics Report. MPSC Case No. 9207. (Mail Log 230235)

emerging data-driven grid technologies as described below. In unlocking the integration of new technologies that harness the network's communication functions, the SEN is critical to building a modern, reliable grid in New Jersey.

Q12. What technologies do you envision could be enabled by the SEN?

A12. The SEN will present wide-ranging opportunities to collaborate with community, municipal and industry partners to upgrade services and provide new and innovative grid solutions, harnessing digital communication, remote sensing, distributed energy resources, and the platform of smart infrastructure. ACE will be able to pursue novel smart street lighting programs, and gain enhanced data from electric vehicle infrastructure, residential based photovoltaics and micro grids, and other technologies. Each of these technologies has the potential to bring more and various benefits to New Jersey's communities.

Q13. Has ACE developed a SEN implementation plan.

A13. Yes. The details of the implementation plan and timeline are addressed in detail in the Direct Testimony of Company Witness Brubaker. ACE estimates that the deployment of the SEN will take approximately 39 months. The deployment plan provides a detailed and thorough description of actions broken down into several phases that Company Witness Brubaker describes.

V. <u>The SEN Supports the Goals of the BPU and the State</u>

Q14. Please briefly summarize the BPU's recent record on the topic of AMI.

A14. In March 2018, several severe weather events occurred within New Jersey that caused outages impacting more than 1.2 million electric utility customers and resulted in millions of dollars in property damage. Given the level of damage and the length of restoration efforts, Governor Murphy directed the Board to conduct a review of the storm responses of the New Jersey utilities. Based on its review, the BPU issued a

report identifying ways for the electric distribution companies ("EDCs") to improve the effectiveness of their post-storm system restoration efforts. One such potential tool identified was AMI. The Board ordered that the EDCs "each submit a plan and cost-benefit analysis for the implementation of AMI. The EDCs' plans should focus on the use and benefits of AMI for the purpose of reducing customer outages and outage durations during a major storm event."[3] Concurrently, the Board considered RECO's application for approval of an Advanced Metering Program.[4] A third-party consultant was hired, pursuant to the BPU's direction, to conduct an analysis of the costs and benefits associated with RECO's AMI program, as well as to provide an assessment "of the AMI smart metering landscape to identify the gold standards of advanced metering infrastructure (AMI) deployments."[5] This AMI Gold Standards Report was filed with the BPU on November 27, 2019.

Q15. Has the BPU taken a position on AMI in New Jersey?

A15. Yes. The AMI Gold Standards Report stated that "smart meters are well on their way to becoming the norm."[6] The AMI Order that I discussed earlier in my testimony also referenced this point.[7] Overall, the record shows that the Board recognizes the importance of AMI as a tested and proven feature of utility operations suitable for deployment in New Jersey.

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[3] "Staff report and recommendations on utility response and restoration to power outages during the winter storms of March 2018." New Jersey Board of Public Utilities, Division of Reliability and Security. 12 July 2018, https://nj.gov/bpu/pdf/reports/20180725-6a-winter-storm-report.pdf. "In the Matter of the Board's Review of Major Storm Events of March 2018 - order accepting staff's report requiring utilities to implement recommendations." New Jersey Board of Public Utilities, 25 July 2018, https://www.state.nj.us/bpu/pdf/boardorders/2018/20180725/7-25-18-6a.pdf.

[4] *See I/M/O of the Petition of Rockland Electric Company for Approval of an Advance Metering Program; and for Other Relief (2016)*, BPU Docket No. ER16060524, Order (dated February 19, 2020).

[5] *In re the Verified Petition of Rockland Electric Company for Approval of Changes in its Electric Rates, its Tariff for Electric Services, and its Depreciation Rates; and for Other Relief*, BPU Docket No. ER19050552, and The AMI Gold Standards Report at 1.2.

[6] AMI Gold Standards Report at 5.5.

[7] AMI Order at 2.

Q16. Please summarize the AMI business case that ACE filed in January 2019.

A16. As mentioned previously, in 2018 the Board ordered each EDC to file a benefit cost analysis and plan for AMI. ACE filed its business case on January 29, 2019 that contained a BCA output. Based on the analysis included in the January 2019 business case, the conclusion drawn was that AMI deployment in the ACE service territory resulted in benefits that would far exceed the cost of deploying the technology.

Q17. Did the January 2019 filing fulfill the requirement in Recommendation No. 12 of the Board's "Staff Report and Recommendations on Utility Response and Restoration to Power Outages During the Winter Storms of March 2018"?

A17. Yes, it did.

Q18. Has ACE refreshed the January 2019 business case?

A18. Yes, it has. As discussed above, the AMI Order directed utilities to file or to update previously filed petitions for AMI implementation, which has resulted in this instant Petition. The January 2019 business case did not request approval to implement the SEN, as this filing does. ACE contracted with PA Consulting to facilitate the process of updating its benefit cost analysis for this filing. The benefits and costs associated with the implementation of the SEN are discussed in detail in the Direct Testimony of Company Witness Edeson. The updated business case and incorporated BCA are attached to my testimony as Schedule (DSS)-1. Those benefits and costs are further expounded upon in the Direct Testimonies of Company Witnesses Brubaker and Edeson.

Q19. Does the Smart Energy Network align with the AMI Gold Standards Report?

A19. Yes, it does.

Q20. Does the Smart Energy Network align with, and help to attain, State goals?

A20. Yes. The SEN is a critical enabler for New Jersey's desired clean energy state as outlined in the Clean Energy Act, the NJ Energy Master Plan, and the Board's recent energy efficiency Order. Importantly, all of these policy foundations are focused on employing energy efficiency tools and bringing more DER onto the grid, which are primary benefits of smart meter implementation.

Q21. Discuss how this proposal supports the 2019 Energy Master Plan ("EMP") policies.

A21. On January 27, 2020 New Jersey released its 10-year plan to reach a clean energy state that promotes more efficient and renewable technologies, reduces pollution, and uses smarter infrastructure, as described in the EMP. A modern energy grid is the foundation for a clean energy future because it will "enable customers and utilities to take advantage of technology to manage energy consumption, enhance opportunities for demand response and load shifting, and respond to price signal."[8] In total the EMP has seven strategies to deliver a 100 percent clean energy economy by 2050. The Company's proposal to deploy the SEN is a direct response to support goal 5.3.1, regarding AMI deployment, and will play a supportive role in achieving goal 3.2.1, regarding peak reduction measures.[9]

The benefits of AMI as proposed in the SEN are numerous and lay the foundation for a cleaner energy future. The Company has successfully deployed AMI programs like the SEN in several other jurisdictions in large part because the technology acts as an enabler for many of the strategies laid out in the EMP. Specifically, the SEN can support the installation of additional DER generation while

[8] https://nj.gov/emp/docs/pdf/2020_NJBPU_EMP.pdf at 186
[9] https://nj.gov/emp/docs/pdf/2020_NJBPU_EMP.pdf

balancing the distribution system safely and reliably, and provide the ability to monitor and dispatch EV load and storage capability as EVs become more prevalent on the system.

The EMP acknowledges AMI's role in a modern grid by stating:

> Advanced Metering Infrastructure … can provide granular data about energy use and costs to educate customers about their consumption and enable customers to manage their demand.[10]

Furthermore, in the AMI Order discussed earlier in this testimony, the Board found that "AMI is a means to achieve the goals provided in the EMP." Therefore, this filing supports the strategies and goals of the EMP, as AMI is an essential part of New Jersey's plan to avert the impacts of climate change and support achievement of 100% clean energy by 2050.

Q22. What else does the EMP say about the potential benefits of AMI deployment?

A22. The EMP addresses many benefits of AMI for customers. It states that potential benefits "include realization of potential gains in efficiencies and cost savings, accelerated service restoration during outages, better environmental outcomes, lower operations and maintenance costs, better demand-side customer engagement, and alternative rate designs."[11] ACE believes that these benefits are reflected in this Petition for approval of the SEN.

Q23. How does implementation of the SEN support New Jersey's Clean Energy goals?

A23. In May 2018, Governor Murphy signed the Clean Energy Act which included several steps to improve and expand New Jersey's renewable energy programs and established energy reduction targets. The Clean Energy Act requires each New Jersey

[10] *Id.* at 147.
[11] *Id.* at 184.

EDC to implement energy efficiency measures to reduce electricity usage by two percent.[12] AMI is the foundational building block for many of the goals that have been set forth in the Clean Energy Act. As discussed in the EMP, AMI can provide the tools customers need to reduce energy usage, consistent with the policies underlying the Clean Energy Act.

Q24. How does the SEN relate to the Board's recent order regarding energy efficiency?

A24. The SEN will assist as ACE implements its portfolio of energy efficiency programs over the next several years. In June 2020, the Board issued an order approving the administration of energy efficiency programs going forward.[13] The SEN would enable programs that allow customers to save money by reducing their energy use on peak savings days, earning credits on their energy bill for reducing their energy use below their average energy use from the local energy grid. ACE can use smart meters to enable innovative rates that incentivize customers to reduce energy use during periods of peak energy demand. With smart meters, ACE can provide more tools and information for customers, which provide them greater control over their energy usage.

VI. Summary of the Benefits and Costs of the SEN for New Jersey Customers

Q25. Please review the overall results of the BCA.

A25. The foregoing testimony makes clear that the SEN carries many benefits for customers and the grid as a whole. The BCA extends those observations and quantifies them through identification of the incremental costs and benefits for deploying the

[12] https://nj.gov/governor/news/news/562018/approved/20180523a_cleanEnergy.shtml

[13] *See I/M/O the Implementation of P.L. 2018, c. 17 Regarding the Establishment of Energy Efficiency and Peak Demand Reduction Programs; I/M/O of the Clean Energy Act of 2018 – Utility Demographic Analysis; I/M/O Electric Public Utilities and Gas Public Utilities Offering Energy Efficiency and Conservation Programs, Investing in Class I Renewable Energy Resources and Offering Class I Renewable Energy Programs In Their Respective Service Territories On a Regulated Basis Pursuant to N.J.S.A 48:3-98.1*, BPU Docket Nos. QO19010040, QO19060748, and QO17091004, order dated June 10, 2020.

SEN. A positive BCA indicates that the benefits will have a larger impact than the initial and ongoing costs. The results of the BCA demonstrate the implementation of the SEN is cost effective, with a benefit-cost ratio of 1.27, in net present value terms. Accompanying testimony of Company Witness Edeson contains a thorough description of the BCA and supporting assumptions.

Q26. Please summarize the benefits identified in the BCA.

A26. Detailed projections of the benefits identified are summarized in the tables below and discussed in Company Witness Edeson's testimony.

SEN Operational Benefits Estimates

Operational Benefit	Total Values (2022-2036) (000s)
Meter Reading contract savings	$81,272
Avoided Truck Rolls:	
Move-Ins/Move Outs	$50,679
Connects/Reconnects	$6,289
Disconnects	$27,253
Meter Exchanges	$14,668
Meter Re-reads	$14,765
Call Backs	$535
Trouble Calls	$22,746
Avoided Call Center Calls	$2,661
Avoided Regulatory Testing during Deployment	$235
Total	**$221,101**

SEN Customer Benefits Estimates

Customer Benefit	Total Values (2022-2036) (000s)
Conservation Voltage Regulation ("CVR")	
Energy Savings (Residential)	$13,017
Energy Savings (Non-Residential)	$9,993
Capacity Savings (Residential)	$2,884
Capacity Savings (Non-Residential)	$1,701
Energy Management Tools ("EMT")	
Energy Savings (Residential)	$40,110
Energy Savings (Non-Residential)	$6,863
Capacity Savings (Residential)	$4,365
Reduction in Bad Debt Write-Offs	$65,734
Improved Storm Response	$42,580
Identification of Revenue Theft	$5,921
High Bill Alerts – Energy Savings (Residential)	$1,536
PJM Load Settlement	
*Energy Savings**	*$230,266*
*Capacity Savings**	*$14,525*
Time of Use (TOU) Rates	
*Energy Savings**	*$3,828*
*Capacity Savings**	*$3,395*
Total	**$194,703**

*Not included in total as discussed in Direct Testimony of Company Witness Edeson.

Q27. What are the cost levels included in the BCA?

A27. Detailed projections of the costs that have been identified and quantified are summarized in the table below and discussed in detail in Company Witness Edeson's testimony.

SEN Cost Estimates over life of BCA

Cost Item	Total Values (2021-2036) (000s)
Upfront	
• Meter Costs & Installation	
• Meter Costs for existing customers	$59,287
• Meter Installation Costs	$18,590
• Meter Pan / Jaw Replacement	$7,257
• Deployment Meter Testing	$799
• IT Costs	$32,877
• Communications Network	$10,406
• Customer Outreach/Education	$5,785
• Use Case Deployment Costs	$3,202
• Project Management	$14,955
• Billing Transition Staffing	$2,037
Ongoing Costs	
• Incremental Meter Costs for new customers	$3,049
• IT Costs	*$39,245*
• Communications Network	*$3,330*
• Additional Staffing	*$19,140*
Total	**$219,960**

Q28. Is the Company requesting any waivers that impact the BCA?

A28. Yes, ACE is requesting a waiver of certain regulations from the Board. First, ACE is asking for permission to test only a sample of the legacy meters upon removal during deployment, as opposed to testing all of the legacy meters that are removed. This will require a waiver of the current regulations (*N.J.A.C.* 14:5-4.2, *N.J.A.C.* 14:5-4.3, and *N.J.A.C.* 14:5-4.5, among other provisions) during implementation. The Company believes the current regulations were not put into place to address the context of a mass meter replacement and therefore should not be applicable. The sampling methodology ACE would use during implementation of the SEN would be based on the BPU-approved meter sampling plan. The BCA currently reflects the waiver of this provision, and more specifically, the significantly lower cost of sample testing legacy

meters compared to testing all meters upon removal. The sample testing process is explained in more detail in Company Witness Brubaker's testimony.

Second, ACE is requesting a permanent waiver of the requirement to "personally notify an adult occupant of the premises, or leave a sealed note in the event that no adult is on premises" prior to disconnection for non-payment but retain all other steps and customer notifications in the dunning disconnect process. This is known in the industry as the "door knock." The SEN will allow ACE to remotely connect, disconnect, and diagnose potential service issues, and these critical functionalities avoid truck rolls. ACE proposes to utilize these features of the SEN and realize significant program cost savings from those avoided truck rolls, which are incorporated into the BCA results. If approved, ACE plans to address this change in its communication materials and processes to ensure customer outreach is maintained when carrying out remote connects and disconnects, which will include an additional manual phone call to customers the day before a disconnect takes effect. Company Witness Brubaker expands upon these processes for disconnects.

Together these two waivers result in significant savings that are passed onto customers, and the Company does not believe the changes will negatively impact individual customers. These changes will require customer education and alternative procedures that ensure accountability, and ultimately will have a net positive impact on individual customers. Both waivers are currently included in the BCA, and if denied, would result in higher costs for customers.

Q29. Are there any benefits of the SEN that were not analyzed within the context of the BCA that you would like to highlight?

A29. Yes. I would like to point out that the work that will be done to install the SEN will be performed by labor resources that are local to the ACE service territory. This

will have positive economic impacts to the region. Importantly, ACE plans to use union labor to complete the installation of the meters for the SEN.

Q30. Will the Company make any changes to current meter operations to install AMI prior to approval of this petition? If not, explain why.

A30. Yes. The Company is preparing to make changes to meter procurement and deployment processes in order to begin installing AMI in the first quarter of 2021. Prior to the BPU Order lifting the moratorium on AMI petitions, ACE meter operations had planned and ordered legacy meters as part of the normal meter exchange program. As a result, ACE intends to continue with those normal meter exchanges held in inventory through the end of 2020. At the start of 2021, ACE plans to modify its meter exchange program to install AMI, covering all required meter installations in ACE territory until the full SEN deployment starts in March 2022. Importantly, those meters will not be fully integrated and communicative as part of the SEN until ACE completes the local communications network and related IT enhancements, but will be functional for basic meter reading upon installation. As a result of these operational changes, ACE's plan to eliminate legacy meter deployments beyond those already planned in 2020 will limit stranded assets and effectuate the SEN deployment nearer-term.

VII. Cost Recovery Proposal Summary

Q31. Please explain the primary sources of the capital and operational costs included in this filing.

A31. As summarized above and detailed in the Direct Testimonies of Company Witnesses Brubaker and Edeson, there are 15 main cost categories that have been identified. These costs include both capital and operational costs.

Q32. How does ACE propose to recover the SEN program costs?

A32. As further discussed in the Direct Testimony of Company Witness McEvoy, ACE is proposing to recover costs associated with the SEN implementation in two ways. First, to recover the revenue requirement related to the capital costs associated with implementation, ACE is proposing to use the IIP mechanism that was approved by the Board effective January 2018. At that time, the Board implemented regulations enabling utilities to obtain BPU approval of an IIP pursuant to *N.J.A.C.* 14:3-2A.1 *et seq*. Second, to recover incremental O&M costs net of cost savings, as well as the cost of stranded assets, ACE is proposing to establish regulatory assets for recovery of those costs to begin at the end of ACE's next future base rate case.

Q33. Why is ACE proposing to establish a regulatory asset to recover incremental O&M costs for the SEN?

A33. The SEN will empower customers to make informed decisions regarding energy use to assist them in managing their electricity use and cost. As discussed above, the SEN also supports the EMP and Clean Energy Act. The SEN is a sound investment for ACE customers, but also represents a significant financial commitment for ACE.

ACE is proposing to establish a regulatory asset so that it has a mechanism to defer and capture incremental O&M costs associated with the deployment of the SEN. The Board has approved the use of regulatory assets for ACE in the past. The creation of the regulatory asset is necessary to provide the Company the opportunity to recover costs incurred as a result of the implementation of the SEN. It also preserves the ability of BPU Staff and other interested parties to review the prudency of these costs when the Company seeks to recover them. In addition, the regulatory asset will enable the spread of the recovery of costs over a longer period of time, which provides a smoother

transition for customers as new rates take effect. Without authorization to establish a regulatory asset, ACE risks non-recovery of a significant part of its O&M costs, while the customer receives the benefits of those O&M costs.

Q34. Please summarize the proposed recovery of undepreciated meter balances.

A34. As more fully discussed in the Direct Testimony of Company Witnesses Brubaker and Voshell, the deployment of the SEN will necessitate the removal and replacement of existing meters that are not fully depreciated. The current net book value of these meters is $46 million. This amount represents costs that were prudently incurred to serve customers and that need to be recovered. When the new meters are installed, the existing meters will be retired, and ACE proposes that any undepreciated amount will be booked to the regulatory asset. The accounting treatment associated with the undepreciated meters is addressed in the Direct Testimony of Company Witness Voshell. The details of the ratemaking treatment and cost recovery are included in the Direct Testimony of Company Witness McEvoy.

Q35. What is the impact of the proposal on the typical residential customer?

A35. The Company estimates the <u>total</u> three-year cumulative impact of Rider IIP-SEN on the monthly bill for a typical residential customer (using approximately 679 kWh/month) will be an increase of $4.27, or approximately 3.27% above present rates. Company Witness McEvoy provides further explanation of this projected impact.

Q36. In this proceeding, is the Company requesting that the Board determine the costs of SEN are prudent?

A36. The prudence of the costs of SEN will be determined in a future base rate case. In this proceeding, ACE is seeking a finding that its plan to deploy SEN is prudent and that it may recover the revenue requirement associated with its capital investments in SEN on a provisional basis consistent with the IIP Regulations.

VIII. The IIP Is the Ideal Mechanism for the Recovery of Capital Costs

Q37. Please summarize the amount of investment, level of expense, and program term ACE is proposing for the IIP.

A37. ACE estimates that the capital investment component of the SEN will be approximately $177.0 million. Accounting for the proposed allocation of 10 percent of capital investments to baseline spending, the total capital investment to be recovered in the IIP-SEN recovery mechanism is approximately $159.2 million. Following Board approval of the Company's deployment plan, the SEN will be implemented over a period of approximately 39 months, beginning in January 2021 and concluding in early 2024, with a final cost recovery filing in May 2024. It is anticipated that the first roll-in filing would cover the period of capital costs incurred from January 1, 2021 to June 30, 2022. This first filing would occur in May 2022, with IIP rates effective October 1, 2022. Thereafter, the Company proposes four additional roll-in periods, each covering a six-month period of capital investment. Additional detail regarding the proposed roll-in periods for this IIP are included in the Direct Testimony of Company Witness McEvoy.

Q38. Why is the Company requesting recovery of these investments through the ACE IIP program instead of through a base rate case?

A38. ACE is making a significant capital investment to implement the SEN, and timely cost recovery is vitally important to the Company. New Jersey's approach to base rate cases (i.e., use of a historic test year with limited post-test year plant and expense recognition), however, does not align with timely cost recovery in the context of an initiative like SEN. Given existing Board policies, the Company must either file repeated base rate cases as SEN plant is placed into service, or wait until the SEN is fully deployed and incur significant costs without full or timely cost recovery. Indeed,

in that later scenario, the Company would never be made whole for its investments in SEN. In short, the base rate case process results in significant cost-recovery delay for the Company and the resulting need to file frequent base rate cases. Even with annual rate case filings, however, the Company must finance the investment and fund the monthly financing costs and depreciation expense once the asset is placed in service up until the time the asset is recovered in rates; unfortunately, this creates a permanent unrecoverable cost for the Company. By using the IIP mechanism to recover the revenue requirement related to the capital costs associated with implementation of the SEN, the IIP partially addresses these issues because it shortens the time between when the Company places an asset in service and customers begin to pay for the benefits they receive from that investment, thereby increasing the opportunity to earn the Company's authorized Return on Equity. While the ACE IIP would not completely eliminate the permanent unrecoverable cost for the Company (because recovery of assets through the IIP begins 3 - 9 months after the asset is placed in service), it is the best option available to the Company at this time.

Q39. How does building a Smart Energy Network meet the eligibility requirements set forth at *N.J.A.C.* 14:3-2A.2?

A39. This regulation establishes the criteria for IIP eligible projects. The regulation states that the projects within an IIP shall be:

1. related to safety, reliability, and/or resiliency;
2. non-revenue producing;
3. specifically identified by the utility within its petition in support of an Infrastructure Investment Program; and
4. approved by the Board for inclusion in an IIP, in response to the utility's petition.

The SEN project proposed by ACE in this filing meets all of the criteria listed above. The Direct Testimony of Company Witness Brubaker clearly demonstrates that the SEN is explicitly related to reliability and resiliency. The investments associated with the SEN are also non-revenue producing.

Further, *N.J.A.C.* 14:3-2A.2(b) provides some examples of the types of IIP projects eligible under the regulation. *N.J.A.C.* 14:3-2A.2(b)(4) expressly includes "Electric distribution automation investments, including but not limited to, supervisory control and data acquisition equipment, cybersecurity investments, relays, reclosers, voltage and reactive power control, communications networks, and distribution management system integration." The SEN that ACE is proposing establishes all elements of the communication network that enables the many different benefits described in the BCA.

In addition, ACE submits that pursuing the SEN deployment in a wholesale, territory-wide approach accelerates deployment, reduces program costs, and brings the full range of benefits to New Jersey's communities near-term. Once fully installed, the SEN network would continue to provide a foundation for sustained investment in new meter service and additional smarter, communicative grid technologies. The IIP mechanism contemplates this approach explicitly in *N.J.A.C.* 14:3-2A.1, advancing the express purpose of the IIP to accelerate utility investment to "occur in a systematic and sustained way to advance construction, installation, and rehabilitation of utility infrastructure needed for continued system safety, reliability, and resiliency, and sustained economic growth in the State of New Jersey." ACE is requesting that the Board approve its request to recover capital costs associated with building the SEN through the IIP as it is consistent with the IIP regulations and policy.

Q40. Does conversion of legacy meters to AMI-capable meters alone enable all of the benefits of AMI?

A40. No. An AMI-capable meter in and of itself does not offer functionalities or benefits beyond those of a legacy meter. In order to realize the full range of benefits of AMI, the utility must deploy substantial and widespread communication network infrastructure and complete significant IT architecture buildout. In this way the SEN deployment is a comprehensive change in the way conventional metering currently works in New Jersey and should not be conceived as a one-for-one meter exchange.

Q41. You described the SEN deployment as "a wholesale, territory-wide approach." Could ACE undertake the SEN deployment as part of its current meter exchange program, concurrent with the attrition of legacy meters?

A41. I would not recommend this approach, as it would increase program costs, take several years to complete, and delay the benefits of the SEN to New Jersey customers. Furthermore, a piecemeal approach would create uncertainty in the timeframe to deploy the communication network infrastructure to support the full SEN. Finally, installation of AMI-capable meters without an express timing or plan to deploy the communication and IT infrastructure would lead to further stranded costs for customers, as key functionalities of those meters would go unused for several years. While ACE has determined to begin installing AMI-capable meters in 2021, the Company has taken this step in anticipation of the Board's approval of the instant proceeding and in an effort to minimize the creation of additional stranded costs in the transition to SEN. The Company's decision should not be understood as a tacit recognition that piecemeal replacement of legacy meters with AMI-capable meters is either optimal or cost-effective.

Q42. Do you believe that the IIP mechanism and the accelerated deployment of SEN offers the most cost-effective, near-term, and beneficial pathway to the deployment of AMI in New Jersey?

A42. Yes. Alternative models of deployment and cost recovery of the initial SEN implementation convey more cost to ratepayers, delay benefits to customers, and create uncertainty in utility operations.

IX. Summary of IIP Requirements and Minimum Filing Requirements ("MFRs")

Q43. Will ACE meet the requirement in the IIP Regulations which states that a utility must maintain 10 percent of its capital expenditures on projects similar to those proposed within the utility's IIP?

A43. Yes. ACE proposes to allocate 10 percent of its overall capital costs associated with the SEN deployment and included in the IIP to baseline spending, which ACE will seek to recover in a future base rate case.

Q44. What are the MFRs associated with seeking accelerated recovery of infrastructure investments under the IIP regulation?

A44. *N.J.A.C.* 14:3-2A.5 provides a list of items that a utility requesting approval of an IIP must include within its filing. ACE has complied with this section of the IIP Regulations and has provided all of the relevant information.

Q45. Please describe where to locate the information required by the IIP MFRs in *N.J.A.C.* 14:3-2A.5.

A45. Exhibit A of the Petition outlines the MFRs and describes where such information may be found within ACE's application and supporting witness testimony.

Q46. Does ACE's proposal comply with the IIP Regulations related to annual baseline spending levels and program length, *N.J.A.C.* 14:3-2A.3 to 14:3-2A.4?

A46. Yes. The provisions of the IIP Regulations state that a utility must propose an annual baseline spending level that will be maintained by the utility throughout the term of the IIP. The baseline spending amounts for ACE are included in paragraph F of Exhibit A attached to the Petition.

Q47. Please summarize the basis for developing the baseline spend.

A47. The proposed baseline spend included in paragraph F of Exhibit A is based on the projected capital expenditure budget, minus the capital expenditures associated with ACE's existing IIP and PowerAhead programs.

Q48. Have you included the Company's actual capital expenditures over the past five years and projected capital expenditures over the next five years by major category?

A48. Yes, these amounts are included in Exhibit A to the Petition in Table 1 (Forecasted Spend) and Table 2 (Historical Spend).

X. Customer Outreach

Q49. How does ACE plan to engage with and support customers before, during, and after deployment of the SEN?

A49. As discussed earlier in this testimony, the other PHI operating companies have had successful AMI deployments. Success of these deployments was due in part to robust customer education and outreach plans that were implemented in each stage of deployment. Communication with customers will be a focus for ACE and the Company will undertake a comprehensive, multi-channel approach for educating customers about the SEN and engaging customers during each step of the deployment process. The Company's approach will include broad communications through

advertising and social media, and direct communications to customer homes and businesses, creating multiple touchpoints for customers to ensure communications are reaching each target audience. The Company will also emphasize reaching customers through their preferred communications channels and building on the Company's existing relationships across its service area to reach customers. Customer engagement for the SEN will be conducted across four phases, which have been designed around the physical deployment of the smart meters: Phase 1 – Research and Preparation; Phase 2 – SEN/Smart Meter Introduction; Phase 3 – Deployment; and Phase 4 – Customer Activation and Empowerment.

Q50. Has ACE developed a communications plan?

A50. The Company has developed the Customer Education and Engagement Strategy that establishes the framework for a future Customer Education and Engagement Plan. The document defines the objectives of the Company's customer engagement and outreach for its SEN and explains the strategies that will be employed to achieve these objectives. It also provides an overview of the primary audiences that will need to be reached, as well as the communications channels available to the Company to reach these audiences. The customer communications strategy is attached as Schedule (DSS)-2. The full Customer Education and Engagement Plan, including the timing of communications, proposed communications channels, and collateral materials, will be developed after Board approval of SEN implementation because key details needed to develop the plan will not be known until the program has been approved. The future Customer Education and Engagement Plan will serve as the single source of information governing community outreach and customer communications related to the SEN, including the meter exchange process.

Q51. Will customers be able to opt-out of getting a smart meter?

A51. No. ACE does not plan to offer an opt-out option to customers. There are significant cost efficiencies that would be lost if customers are given the opportunity to opt out of getting a smart meter. If ACE is required to incorporate an opt out provision in the SEN deployment, it will be more difficult to achieve the benefits and savings identified in the BCA, and the Company would need to charge those customers a higher cost to provide opt-out service.

Q52. What kind of impact will the SEN have on Low-Medium Income customers?

A52. The SEN enables tools that allow all residential customers to have greater visibility into their energy usage. This means greater understanding of and ability to manage energy consumption, and potential opportunities to participate in programs that may lower costs – such as TOU. For low-to-medium income customers, this enhanced ability to control household energy costs may be particularly beneficial.

Q53. Does this conclude your testimony?

A53. Yes, it does.

Schedule (DSS)-1
Public

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SMART ENERGY NETWORK (SEN) BUSINESS CASE

ATLANTIC CITY ELECTRIC (ACE) – AN EXELON COMPANY

August 2020

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ACRONYMS

ACE	Atlantic City Electric
ADMS	Advanced Distribution Management System
AMI	Advanced Metering Infrastructure
AMR	Automated Meter Reading
BGE	Baltimore Gas and Electric
BPU	Board of Public Utilities
CIS	Customer Information System
CPP	Critical Peak Pricing
CPR	Critical Peak Rebates
CVR	Conservation Voltage Reduction
DER	Distributed Energy Resources
DLC	Direct Load Control
DMS	Distribution Management Systems
DOE	Department of Energy
DPL	Delmarva Power and Light
EIA	Energy Information Administration
EMS	Energy Management System
ETR	Estimated Time of Restoration
EU	Exelon Utilities
EV	Electric Vehicle
FLISR	Fault Location, Isolation, and Service Restoration
HAN	Home Area Networks
HEMS	Home Energy Management Systems
HVAC	Heating, Ventilation and Air Conditioning
IHD	In-Home Displays
IoT	Internet of Things
IT/OT	Information Technology/Operational Technology
LED	Light-emitting Diodes
LIDAR	Light Detection and Ranging
MAMR	Mobile Automatic Meter Reading
MDMS	Meter Data Management System
NIST	National Institute of Standards and Technology
O&M	Operation and Maintenance (Costs)
OMS	Outage Management System
PCT	Programmable Communicating Thermostats
PECO	PECO Energy Company
PEV	Plug-In Electric Vehicle
POC	Proof of Concept
PV	Photovoltaic
RFI	Request for Information
RFP	Request for Proposal
RFQ	Request for Quotation

ROI	Return on Investment
SAIDI	System Average Interruption Duration Index
SCADA	Supervisory Control and Data Acquisition
SEN	Smart Energy Network
SGIG	Smart Grid Investment Grant
SSL	Smart Street Light
TOU	Time-of-Use
VO	Voltage Optimization
VOI	Value of Investment
VPP	Variable Peak Pricing
VVC	Volt/VAR Control
VVO	Volt/VAR Optimization

DEFINITIONS

Advanced Distribution Management System (ADMS): the software platform that supports the full suite of distribution management and optimization. An ADMS includes functions that automate outage restoration and optimize the performance of the distribution grid.

Advanced Metering Infrastructure (AMI): full measurement and collection system that includes meters at the customer site, communication networks between the customer and a service provider, (such as an electric, gas, or water utility) and data reception and management systems that make the information available to the service provider.

Agile: an approach to system and process implementation that is focused on the iterative and rapid delivery of results. It is founded on the concept of early customer involvement, with the customer represented by members integrated into the project team. Agile, replaces detailed requirements documents with an iterative discovery of detailed requirements through prototyping and rapid development activities. Agile accepts and even promotes changes in requirements through the discovery process.

Atlantic City Electric (ACE): ACE is an electric distribution utility subsidiary of Exelon with 547,000 customers in southern New Jersey.

Automated Meter Reading (AMR): technology of automatically collecting consumption, diagnostic, and status data from water or energy metering devices (gas, electric) and transferring that data to a central database for billing, troubleshooting, and analyzing.

Connected Community: communities that utilize robust communications networks to support pervasive device and IoT applications across citizens, structures, and other entities to drive economic growth, safety, and efficient interactions. Data analytics are utilized to scrutinize the data within this network to promote these objectives.

Conservation Voltage Reduction (CVR): is an energy conservation technique that reduces the incoming voltage to buildings and homes without effecting the power quality or capacity.

Critical Peak Pricing (CPP): a construct under which a utility can call a critical event and raise the rate when it anticipates or experiences high wholesale market prices or emergency system conditions.

Critical Peak Rebates (CPR): offered when a utility calls a critical event during pre-specified time periods in response to anticipated or observed high wholesale market prices or emergency system conditions.

Customer Information System (CIS): a complete customer relationship management application that allows the user to define a virtually unlimited number of fields and codes in addition to the large number of predefined information.

Department of Energy (DOE): a cabinet-level department of the United States Government concerned with the federal policies regarding energy and safety in handling nuclear material.

Direct Load Control (DLC): when a utility signals a customer appliance to stop operations (to reduce the demand for electricity).

Distributed Energy Resources (DER): distributed generation, also distributed energy, on-site generation or district/decentralized energy is electrical generation and storage performed by a variety of small, grid-connected devices referred to as distributed energy resources.

Distribution Management Systems (DMS): a collection of applications designed to monitor & control the entire distribution network efficiently and reliably.

Energy Information Administration (EIA): a principal agency of the U.S. Federal Statistical System responsible for collecting, analyzing, and disseminating energy information to promote sound policymaking, efficient markets, and public understanding of energy and its interaction with the economy and the environment.

Energy Management System (EMS): a system of computer-aided tools used by operators of electric utility grids to monitor, control, and optimize the performance of the generation and/or transmission system. The computer technology is also referred to as SCADA/EMS or EMS/SCADA.

Estimated Time of Restoration (ETR): an indication of the time at which a utility will restore service to a customer or customers experiencing an outage.

Exelon Utilities (EU)**:** a FORTUNE 100 company that works in every stage of the energy business: power generation, competitive energy sales, transmission and delivery. As the nation's leading competitive energy provider, Exelon does business in 48 states, D.C., and Canada, had 2017 revenues of $33.5 billion and employs approximately 34,000 people nationwide.

Fault Location, Isolation, and Service Restoration (FLISR): a collection of tools used for detection, location, and isolation of faults and restoration of supply for de-energized customers. FLISR can be used in manual, semi-automatic, and automatic mode.

Home Area Network (HAN): a network contained within a user's home that connects digital devices that are wired into the network, including multiple computers and their peripheral devices, telephones, VCRs, televisions, video games, home security systems, smart appliances, fax machines, and other digital devices.

Home Energy Management System (HEMS): a system which allows a user to track energy use in detail to better save energy. For instance, a user can see the energy impact of various appliances and electronic products simply by monitoring his or her EMS while switching individual devices on and off.

Heating, Ventilation and Air Conditioning (HVAC): system is used to provide heating and cooling services to buildings.

In-Home Displays (IHD): display which communicates with smart devices, giving consumers unprecedented insight into their energy usage and costs.

Information Technology/Operational Technology (IT/OT): intersection between information technology and operational technology; networks and equipment.

Internet of Things (IoT): the interconnection via the Internet of computing devices embedded in everyday objects, enabling them to send and receive data.

Light Detection and Ranging (LIDAR): a remote sensing method that uses light in the form of a pulsed laser to measure ranges (variable distances).

Light-emitting Diodes (LED): a two-lead semiconductor light source.

Meter Data Management System (MDMS): refers to software that performs long-term data storage and management for the vast quantities of data delivered by smart meter systems.

Mobile Automatic Meter Reading (MAMR): where a reading device is installed in a vehicle enabling a meter reader to obtain meter reads by driving the vehicle while the reading device automatically collects the meter readings.

National Institute of Standards and Technology (NIST): a measurement standards laboratory that is a non-regulatory agency of the United States Department of Commerce.

Operation and Maintenance (O&M): in the context of this report these are the costs to operate and maintain utility operations.

Outage Management System (OMS): a computer system used by operators of electric distribution systems to assist in restoration of power.

Photovoltaic (PV): relating to the production of electric current at the junction of two substances exposed to light.

Programmable Communicating Thermostats (PCT): programmable thermostats that can receive information wirelessly.

Proof of Concept (POC): evidence, typically derived from an experiment or pilot project, which demonstrates that a design concept, business proposal, etc., is feasible.

Return on Investment (ROI): the ratio between the net profit and cost of investment resulting from an investment of some resource.

Smart Energy Network (SEN): a network, comprised of smart meters and upgrades to the local energy grid with specialized networking equipment, that helps create a smarter energy infrastructure that serves as a common platform connecting customers and communities to smart technologies, new energy services and more choices.

Smart Grid Investment Grant (SGIG): program aimed to accelerate the modernization of the nation's electric transmission and distribution systems.

Supervisory Control and Data Acquisition (SCADA): a control system architecture that uses computers, networked data communications, and graphical user interfaces for high-level process supervisory monitoring and management, using peripheral devices such as programmable logic controllers and discrete proportional–integral–derivative controllers to interface to the process plant or machinery.

System Average Interruption Duration Index (SAIDI): a system index of average duration of interruption in the power supply indicated in minutes per customer.

Utility of the Future (UoF): A Company strategic initiative to investigate and plan the integration of next generation capabilities and technologies into customer and network operations

Time-of-Use (TOU): a rate plan where customers are charged higher rates for the energy they use during specified peak demand times.

Value of Investment (VOI): measures the total value of "customer" or intangible benefits derived from technology initiatives in addition to the "operational" benefits measured by ROI.

Variable Peak Pricing (VPP): a hybrid of time-of-use and real-time pricing where the different periods for pricing are defined in advance, but the price established for the on-peak period varies by utility and market conditions.

Voltage Optimization (VO): an energy saving technology that is used to regulate, clean, and condition the incoming power supply in order to reduce the voltage supplied to the optimum level for the on-site electrical equipment and appliances.

Volt/VAR Control (VVC): refers to the process of managing voltage levels and reactive power (VAR) throughout power distribution systems.

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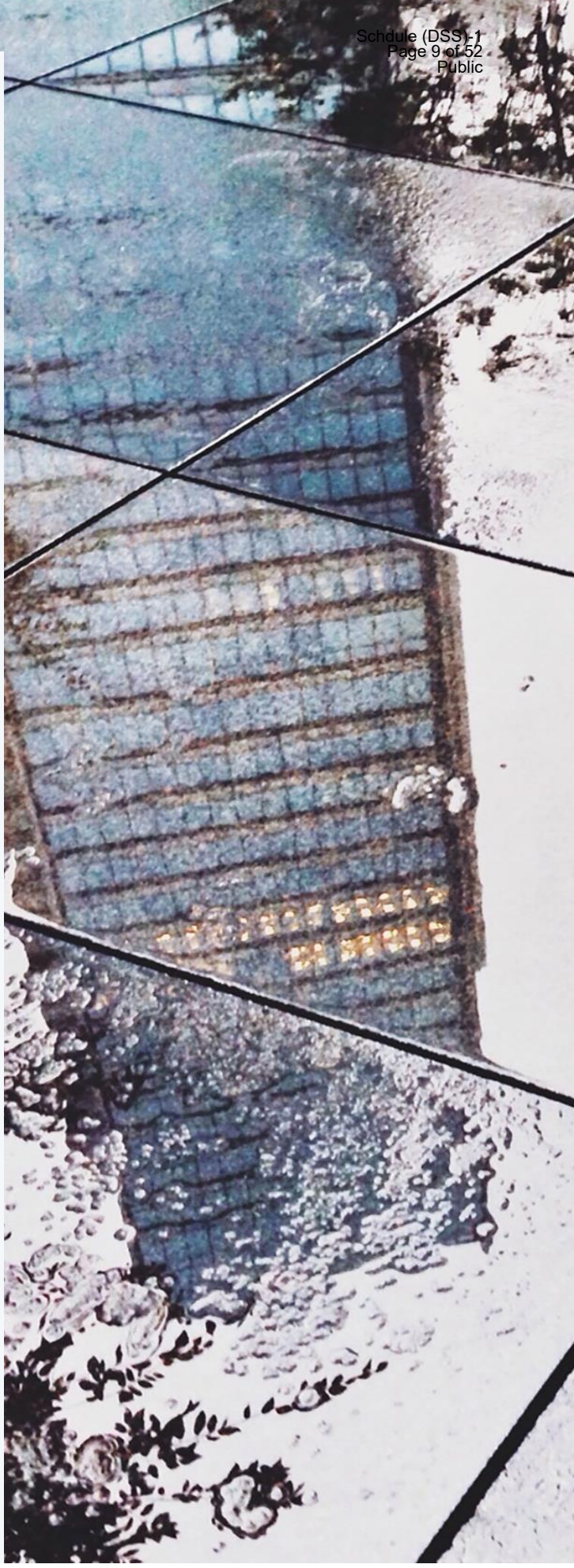
01

EXECUTIVE SUMMARY



1 EXECUTIVE SUMMARY

Atlantic City Electric (ACE) developed this business case to demonstrate that its proposal to implement a Smart Energy Network (SEN) has numerous benefits and would provide a net positive return on investment. The SEN is a network, comprised of smart meters and upgrades to the local energy grid with specialized networking equipment, that helps create a smarter energy infrastructure that serves as a common platform connecting customers and communities to smart technologies, new energy services and more choices

This business case forms part of an ACE filing in response to the February 19, 2020, Board of Public Utilities (BPU or Board) order in the Docket No. ER16060524, which is the Petition of Rockland Electric Company ("RECO") for approval of an Advanced Metering Program ("the AMI order")[1]. In that order, the Board ordered that the moratorium on pre-approval of AMI be lifted. The Board further ordered that Atlantic City Electric, Jersey Central Power and Light, and Public Service Electric and Gas file petitions for AMI implementation, or update previously filed petitions for AMI implementation with the Board, within 180 days of the effective date (February 29, 2020).

The industry landscape for distribution utilities has been evolving to adapt to and accommodate new technologies and changing expectations of customers and regulators. Utility customers have become more educated with regards to their electricity consumption and more technologically knowledgeable, resulting in increased demand for enhanced capabilities that improve reliability, resilience, engagement, efficiency, transparency, access to renewable energy and electric vehicles, and the environment. This business case highlights SEN's potential to play a critical role in achieving customers' and New Jersey's broader clean energy ambitions, equipping ACE and its customers with the information and tools to:

- Put New Jersey on a path to achieve 100% clean energy by 2050.
- Increase energy efficiency.
- Improve reliability and resilience
- Enhance customer experience
- Electrify transportation.
- Ultimately, reduce New Jersey's carbon footprint.

As the energy industry continues its transition towards a greener, smarter and more connected future, New Jersey is now positioned to lead the way and ACE is committed to making the necessary investments to enable this future while continuing to deliver on its promise to provide safe, reliable, affordable, and sustainable energy to all customers. In order to achieve the future outlined above, ACE must serve as a platform for smart energy services, one capable of safely, reliably and efficiently accommodating and communicating with diverse, intermittent and distributed energy resources (rooftop solar, storage, microgrids, EVs, etc.), as well as customers and other smart devices. The SEN – which includes smart communications networks and smart meters – serves as an essential foundation for all other elements of a reliable, resilient, smart, and modern utility system platform.

Direct benefits of the SEN include, but are not limited to:

- **Reduced Energy Consumption:** Access to more granular, real-time energy consumption information from the SEN can help customers better manage their usage, resulting in lower consumption and bills, improved energy efficiency and reductions in carbon emissions.
- **Increased Customer Engagement**: The SEN will help promote greater customer engagement and more active customer participation in energy markets by enabling faster switching and peer-to-peer distribution markets.
- **Greater Operational Efficiency**: The SEN will enable more efficient operations for both energy suppliers and network operators, resulting in operational savings.
- **More Sophisticated Tariff Structures:** Smart meter data can enable more advanced and usage tailored tariff structures and energy demand management approaches.
- **Effective integration of increasing amounts of distributed resources:** The SEN and smart grid infrastructure are crucial in facilitating the effective integration of additional DERs, such as renewables, energy storage, and demand response, that would come online as a result of the NJ Clean Energy Act and NJ EV Infrastructure bill. Additionally, the granular data provided by the SEN is beneficial in planning for, and managing, the intermittency of these distributed resources, and development of tariffs and products that will support these resources and drive the right customer behaviors.

[1] *See I/M/O of the petition of Rockland Electric Company for Approval of an Advance Metering Program; and for other Relief (2016)*, BPU Docket No. ER16060524, order dated February 19, 2020.

- **Supporting other innovative technologies:** The SEN will serve as a foundation for more advanced technologies and connectivity capabilities, such as connected communities and smart homes that would leverage SEN data and network services to enable a range of connected devices and sensors for the benefit of communities and customers.
- **Faster Outage Detection and Response:** Networks like the SEN have been shown to shorten outage durations, particularly the tail end of major storm event restoration activities.
- **Outage Avoidance:** The SEN will be able to report distribution system anomalies such as momentary outages that often presage a sustained outage. Utilities can use this information along with the more granular outage information reported by AMI to drive more cost-effective corrective plans as part of their future grid modernization efforts. AMI meters also allow the distribution system operator to utilize targeted customer disconnections during load shedding events to minimize the impact of the event.

While the SEN has many direct benefits, the additional value of the SEN becomes apparent when considering the full range of future capabilities that it unlocks. The SEN-enabled modern utility system platform would allow ACE to provide customers with a range of advanced self-service capabilities and other smart products and services. These future capabilities, in conjunction with advanced analytics and cost-effective, available technology, would allow ACE to facilitate state government plans to make New Jersey a leading state in clean technology deployment. Potential future benefits include, but are not limited to:

- **New Energy Products and Services:** The SEN lays a foundation for a range of comprehensive new energy products and services, which can further enhance consumer choice and control. Today, AMI customers in other parts of Exelon are able to benefit from dynamic pricing (e.g., Pepco's Peak Energy Savings Credit Program) and more choices (e.g., the Baltimore Gas and Electric (BGE) prepay program).
- **Advanced Utility of the Future Capabilities:** The SEN can enable utility of the future capabilities that provide stakeholders with additional channels and opportunities to make better informed energy consumption choices, support advanced technology deployments that build on the SEN on behalf of customers, communities and the state of New Jersey, and further improve utility operations by providing increasingly granular data-driven insights into the distribution network.
- **Enabling 'Connected Communities'**: The SEN enables Connected Communities by helping accommodate electrified transportation, incentivizing sustainable practices, and offering other advanced services such as smart streetlights, managing traffic lights, supporting climate sensors and detecting gunshots. ACE's goal is to deploy AMI as a foundational component of a Connected Community that benefits all parties in New Jersey and positions ACE to become a key player in the new energy future.

1.1 SUMMARY OF FINDINGS – SEN WOULD HAVE NET POSITIVE RETURNS

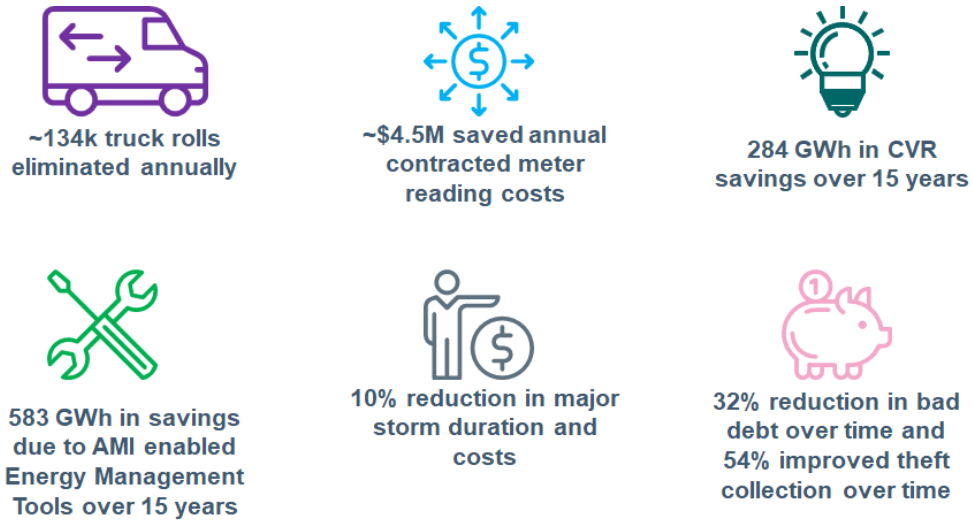
The results of a rigorous cost-benefit analysis show that the benefits of SEN deployment at ACE would significantly outweigh the costs with an estimated **net benefit of $196 million over the life of the BCA (2022-2036)** - making this a prudent and net positive investment with significant economic, social, customer, environmental, and operational benefits**.** The following table summarizes the high-level costs and benefits of SEN:

Table 1-1: Cost-Benefit Summary (2022-2036)

Business Case Overview ($000s)	
Benefits	
1. Operational Benefits	$221,101
2. Customer Benefits	$194,703
3. Total Benefits (1 + 2)	$415,805
Costs	
4. O&M Costs	$89,193
5. Capital Costs	$130,767
6. Total Costs (4 + 5 + 6)	$219,960
Net Benefits	
7. Net Benefit (3 – 7)	**$195,845**

The anticipated benefits quantified above would result from capabilities and efficiencies that would be enabled by the SEN starting in 2022 but fully realized over a period of several years. Major benefits drivers, which include reduced meter reading costs and fewer truck rolls, are summarized in Figure 1.

Figure 1-1: ACE SEN Major Benefits Drivers

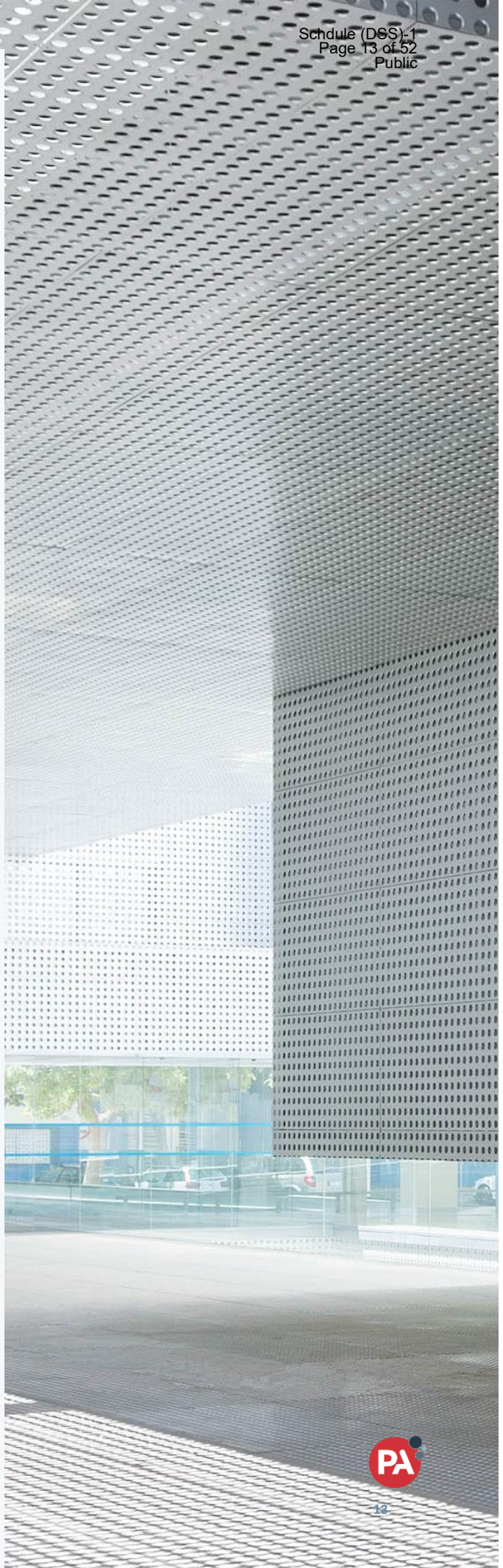


1.2 PROPOSED HIGH-LEVEL SEN DEPLOYMENT TIMELINE

ACE envisions that the implementation of SEN would take roughly 39 months. Once the foundational SEN technology is in place, ACE would quickly implement the various Use Cases, leveraging existing PHI and Exelon capabilities and functionalities where possible. While ACE would expect to start realizing some benefits shortly after deployment, it would take a few years to realize the full extent of anticipated benefits, particularly in new areas, as capability development will need to be sensitive to the people and change aspects of a program of this type.

02

INTRODUCTION



2 INTRODUCTION

ACE, a member of the Exelon family of utilities (EU), provides transmission and distribution of electric energy for light, heat, and power to approximately 565,000 residential, commercial, and industrial customers in the eight southern-most counties in New Jersey. ACE's service territory is spread across approximately 2,700 square miles and includes rural areas, shore communities, Atlantic City casinos, and diverse demographics in between. ACE is committed to *"powering a cleaner and brighter future for our customers and communities*" and strives to provide affordable energy for all customers, share best practices, improve resiliency and service reliability, be a strong community partner, and continue to play a leadership role in the economy of southern New Jersey.

This business case was developed to demonstrate ACE's proposal to implement a Smart Energy Network (SEN) has numerous benefits and would provide a net positive return on investment. The SEN is a network, comprised of smart meters and upgrades to the local energy grid with specialized networking equipment, that helps create a smarter energy infrastructure that serves as a common platform connecting customers and communities to smart technologies, new energy services and more choices.

SEN's advanced technologies will provide critical foundational infrastructure and data services that could be leveraged and potentially integrated with other advanced technologies (e.g. Internet of Thing (IoT) platforms) and data to enable the transformation of customer engagement and utility operations, consequently helping to achieve New Jersey's desired smart energy future as outlined in the Clean Energy Bill and the NJ Energy Master Plan. Regulatory support will be critical in cost-effectively achieving these goals and providing a reasonable path to cost recovery for the companies that invest in this foundational technology.

2.1 OVERVIEW OF CUSTOMER AND NEW JERSEY POLICY OBJECTIVES

The industry landscape for distribution utilities has been evolving to adapt to and accommodate new technologies and the changing expectations of its customers and regulators. Utility customers have become more educated with regards to their electricity consumption and more technologically knowledgeable, resulting in increased demand for enhanced capabilities that improve reliability, resilience, engagement, efficiency, transparency, and the environment.

The expectations and desires of customers and other stakeholders in New Jersey are evolving in line with the industry's ongoing transformation. The following developments are key factors underpinning the case for SEN in New Jersey:

1. **New Jersey Board of Public Utilities AMI Order**

   On February 19, 2020, the Board of Public Utilities (BPU or Board) issued an order in Docket No. ER16060524, the Petition of Rockland Electric Company ("RECO") for approval of an Advanced Metering Program ("the AMI order")[2]. In that order, the Board ordered that the moratorium on pre-approval of AMI be lifted. The Board further ordered that Atlantic City Electric, Jersey Central Power and Light, and Public Service Electric and Gas file petitions for AMI implementation, or update previously filed petitions for AMI implementation, with the Board, within 180 days of the effective date (February 29, 2020). The Board found that "that AMI has the potential to benefit the distribution system, streamline and modernize utility operations, provide an enhanced customer experience, and benefit the environment."

2. **New Jersey Board of Public Utilities Storm Order**

   In March 2018, NJ was hit by several severe weather events that caused outages impacting more than 1.2 million electric utility customers and resulted in millions of dollars in property damage. Given the level of damage and the lengthy restoration efforts, Governor Murphy directed the New Jersey BPU to conduct a review of the EDCs' storm responses. Based on its review, the BPU issued a report identifying ways for the EDCs to improve the effectiveness of their post-storm system restoration efforts – one potential tool identified being AMI. The BPU ordered that the NJ EDCs "*each submit a plan and cost benefit analysis for the implementation of AMI. The EDCs' plans should focus on the use and benefits of AMI for the purpose of reducing customer outages and outage*

[2] *See I/M/O of the petition of Rockland Electric Company for Approval of an Advance Metering Program; and for other Relief (2016)*, BPU Docket No. ER16060524, order dated February 19, 2020.

durations during a major storm event."[3] This business case builds on the ACE plan submitted to the BPU in January 2019 in response to that order.

3. NJ Clean Energy Act (Bill A-3723) and Executive Order 28

On May 23, 2018, the Clean Energy Act was signed into law establishing several ambitious clean energy targets and provisions for New Jersey, including:

- Renewable Energy Standard: Set a target of 21% renewable energy by 2020; 35% by 2025 and 50% by 2030.
- Solar: Enacted structural reforms to the state's solar program to ensure long-term sustainability.
- Offshore Wind: Set a target of 3,500 MW of offshore wind by 2030 and reinstated a program to provide tax credits for offshore wind manufacturing activities.
- Energy Efficiency: Required utilities to implement energy efficiency measures to reduce electricity usage by 2% and natural gas usage by 0.75%.
- Community Solar: Established a community solar energy program.
- Energy Storage: Set a target of 600 MW of energy storage by 2021 and 2,000 MW by 2030.[4]

Governor Murphy further bolstered the Bill by signing an executive order directing the development of an updated Energy Master Plan (EMP) that would lay out a blueprint for New Jersey to achieve 100% clean energy by 2050.[5]

4. NJ Grid Modernization and Customer Trends

This includes the introduction of distributed energy resources, the electrification of transportation, and changing customer expectations. New Jersey already has significant penetration of rooftop solar and has set ambitious clean energy and community solar targets that are expected to drive a further increase in distributed resources. In January 2020, Governor Murphy signed legislation (S2252) establishing goals and incentives for the increased use of plug-in electric vehicles and infrastructure in New Jersey.

2.2 HISTORY OF AMI DEPLOYMENT IN THE U.S.

AMI is the standard within the electric utility industry. As of year-end 2018, AMI had been deployed in all but four states, not including pilot programs. According to the Energy Information Administration (EIA):

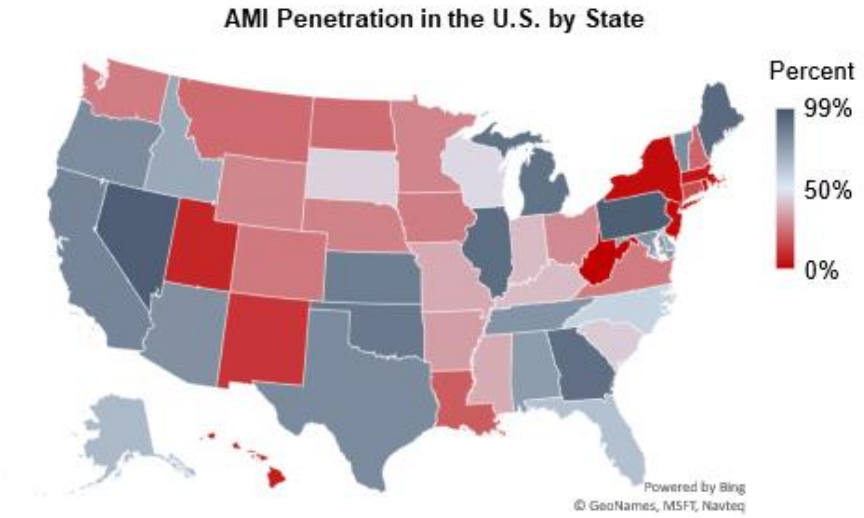
- Advanced metering infrastructure (AMI) has been deployed to approximately 52% of utility customers (>70m meters) nationwide;
- New Jersey has less than 85,000 AMI meters deployed, accounting for approximately 2.4% of all electric meters in the state and placing New Jersey in **48th place in terms of smart meter penetration in the US.**
- Within the PJM footprint, 14.5 million smart meters have been installed, which accounts for 48% of the electric meters in the region.
  - The seven largest electric distribution companies in Pennsylvania have currently deployed ~5 million AMI meters out of 5.8 million total meters and state legislation is compelling them to complete their AMI deployments by 2023.[6]
- Exelon operating companies (excluding ACE) have installed 8.1 million smart meters, which account for 89% of their electric meters.[7]
- Only three other states have **less than 2% smart meter** penetration: West Virginia, New York, and Rhode Island.

[3] "STAFF REPORT AND RECOMMENDATIONS ON UTILITY RESPONSE AND RESTORATION TO POWER OUTAGES DURING THE WINTER STORMS OF MARCH 2018." NEW JERSEY BOARD OF PUBLIC UTILITIES, DIVISION OF RELIABILITY AND SECURITY. 12 JULY 2018, HTTPS://NJ.GOV/BPU/PDF/REPORTS/20180725-6A-WINTER-STORM-REPORT.PDF.
"IN THE MATTER OF THE BOARD'S REVIEW OF MAJOR STORM EVENTS OF MARCH 2018 - ORDER ACCEPTING STAFF'S REPORT REQUIRING UTILITIES TO IMPLEMENT RECOMMENDATIONS." NEW JERSEY BOARD OF PUBLIC UTILITIES. 25 JULY 2018, HTTPS://WWW.STATE.NJ.US/BPU/PDF/BOARDORDERS/2018/20180725/7-25-18-6A.PDF.
[4] NEW JERSEY STATE, LEGISLATURE. NEW JERSEY ASSEMBLY BILL 3723. *NEW JERSEY LEGISLATURE*. 23 MAY 2018, HTTPS://LEGISCAN.COM/NJ/TEXT/A3723/2018
[5] "GOVERNOR MURPHY SIGNS MEASURES TO ADVANCE NEW JERSEY'S CLEAN ENERGY ECONOMY." 23 MAY 2018, HTTPS://NJ.GOV/GOVERNOR/NEWS/NEWS/562018/APPROVED/20180523A_CLEANENERGY.SHTML. ACCESSED 23 JAN. 2018.
[6] PENNSYLVANIA STATE GENERAL ASSEMBLY. 2008 ACT NO. 129. *PENNSYLVANIA GENERAL ASSEMBLY*. 15 OCT 2008, HTTPS://WWW.LEGIS.STATE.PA.US/CFDOCS/LEGIS/LI/UCONSCHECK.CFM?TXTTYPE=HTM&YR=2008&SESSIND=0&SMTHLWIND=0&ACT=129
"SMART METER Q&A" PENNSYLVANIA PUBLIC UTILITY COMMISSION. HTTP://WWW.PUC.STATE.PA.US/GENERAL/CONSUMER_ED/PDF/13_SMART%20METERS.PDF
[7] EIA NUMBERS CORRECTED TO REFLECT MORE RECENT INFORMATION

- However, Con Edison (NY) has been approved to deploy smart meters by 2022, PSEG-LI is set to deploy 1.1 million meters by the end of 2022 and Rhode Island recently reached a settlement with National Grid that establishes a stakeholder process around AMI.

- This potentially leaves New Jersey as one of two states that will not to have taken advantage of the customer and operational benefits gained through AMI.

Figure 2-1: EIA Smart Meter Penetration Statistics 2018



2.3 THE EXELON EXPERIENCE WITH AMI

AMI is now a well-established technology that has become the industry standard for electric utilities in the United States - smart meters and the associated AMI have been deployed through various grid modernization and enhanced customer engagement programs. Evidence from the utility industry experience both nationally and internationally illustrates the many advantages of AMI and the business case for AMI has only gotten stronger over time as technology costs go down and the number of AMI-enabled Use Cases expands.

After installing close to nine million smart meters over the past few years, other Exelon utilities, which, in addition to ACE, include Pepco, DPL, BGE, ComEd and PECO, have significant experience with AMI programs. Below is a high-level overview of the returns and benefits realized at some of these other utilities (where these are known).

Pepco - Maryland

Pepco commenced deployment of AMI meters in its Maryland service territory in June 2011. Deployment was substantially completed by the end of 2013. In testimony filed before the Maryland Public Service Commission, Pepco demonstrated that customers in Maryland are receiving approximately $3.54 in total benefits for each $1 in cost.[8] As outlined in the testimony filed, Pepco has found that “AMI applications have led to an enhanced customer experience through better and more easily accessible data about how they use electricity, more immediate feedback and customized care from customer service representatives, more efficient response to customer requests to initiate or discontinue service and improved outage restoration time during storms through use of "meter pinging" to identify when meters are on. In addition, the AMI assets the Company has installed will serve as a foundation for many other future applications such as microgrids, smart street lighting, prepaid power programs, home area networks, distributed generation and electric vehicles.”[9]

[8] MEASURED ON A PRESENT VALUE BASIS FROM JANUARY 1, 2014 THROUGH DECEMBER 31, 2023. COSTS ARE NET OF $70.5 MILLION IN ARRA GRANT. BENEFITS INCLUDE $35.9 MILLION IN ARRA GRANTS

[9] *IN THE MATTER OF THE APPLICATION OF POTOMAC ELECTRIC POWER COMPANY FOR ADJUSTMENTS TO ITS RETAIL RATES FOR THE DISTRIBUTION OF ELECTRIC ENERGY*, CASE NO. 9418, COMMISSION ORDER NO. 87884. 15 NOV. 2016. HTTPS://WWW.PSC.STATE.MD.US/SEARCH-RESULTS/?KEYWORD=9418+&SEARCH=ALL&SEARCH=CASE&X.X=18&X.Y=17

Some specific examples of benefits already realized by Pepco Maryland customers include[10]:

- By remotely "pinging" the meter to determine whether a meter is on or not, Pepco is able to more quickly and more efficiently identify outages and dispatch restoration crews, resulting in shorter outage durations.
- Detailed usage data available to customers through Pepco's Energy Management Tool and other forms of communication (e.g., alerts) allows customers to better understand how much electricity they are using and when they are using it, empowering them to manage their energy usage and conserve. Through Q3 2018, over 445,000 customer accounts had enrolled in the web-based Energy Management Tool and approximately 1.48 million had accessed the tool.
- Remote access to hourly usage data enables Pepco to more efficiently and effectively address customer complaints. In addition, this data results in fewer estimated bills (and consequently fewer billing inquiries).
- Pepco has established a form of AMI-enabled dynamic pricing - the Peak Energy Savings Credit (PESC) Program – which allows residential customers to earn $1.25 per kWh reduced during select high demand summer hours.
- In Q3 2018, nearly 387,000 customers received a dynamic pricing rebate averaging $4.33 per customer (across three dynamic pricing events).
- AMI data is a critical component of the Company's approach to system planning and decisions regarding asset management.
- The conservation impacts of Pepco's AMI, including the reductions achieved through CVR, result in energy savings for customers and supports the energy goals and policies of the State of Maryland.
- Financial savings reported through Q3 2018 have exceeded $400 million – this reflects savings from reductions in manual meter reading costs, avoided truck rolls for reconnects/disconnects, avoided capital expenditures, capacity market revenues/savings, etc.

Baltimore Gas & Electric - Maryland

BGE began installing smart meters in spring 2012 and there are currently more than 1.9 million active smart metering devices across BGE's system. In a 2015 filing with the Maryland Public Service Commission (PSC), BGE was able to demonstrate that for every dollar invested in smart grid, customers were realizing approximately $2.50 in benefits. Select smart meter benefits realized to date include:

- Between 2013 and 2015, customers with smart meters were able to earn more than $28 million in total bill credits by taking part in BGE's Smart Energy Rewards Program®, which compensates them for reducing energy use on certain high usage days.
- In Q3 2018, nearly 841,000 customers received a dynamic pricing rebate averaging $6.30 per customer (across three dynamic pricing events).
- Through Q3 2018, more than 2.3 million customers had accessed the data from their smart meters through the web-based energy management tools and over 650,000 customers had enrolled in the web-based energy management tools. These customers can review their energy use and receive tips on changes that will lower their bills.
- As of July 2015, BGE customers making use of energy management tools and tips had resulted in a 174,000 MWh reduction in energy use.
- 40% of EmPower Maryland-reported savings are achieved through AMI-enabled technologies.
- As of July 2015, remote capabilities (i.e. meter pinging and remote connect/disconnect) had enabled BGE to dispatch resources more efficiently and reduce truck rolls by 130,000.

Customers have benefited from BGE's significant smart grid investments, including AMI. In particular, BGE customers have seen a reduction in both the average frequency and duration of power service interruptions.[11]

[10] *IN THE MATTER OF THE APPLICATION OF POTOMAC ELECTRIC POWER COMPANY FOR ADJUSTMENTS TO ITS RETAIL RATES FOR THE DISTRIBUTION OF ELECTRIC ENERGY*, CASE NO. 9418, COMMISSION ORDER NO. 87884. 15 NOV. 2016. HTTPS://WWW.PSC.STATE.MD.US/SEARCH-RESULTS/?KEYWORD=9418+&SEARCH=ALL&SEARCH=CASE&X.X=18&X.Y=17
"QUARTERLY ADVANCED METERING INFRASTRUCTURE PERFORMANCE METRICS REPORT." PEPCO. 15 NOV 2018.
[11] BGE COMPLETES SMART GRID PROJECT; SAVINGS WILL EXCEED ONE AND A HALF BILLION DOLLARS." BALTIMORE GAS AND ELECTRIC. 6 NOV. 2015. HTTPS://WWW.BGE.COM/NEWS/PAGES/PRESS%20RELEASES/BGE-COMPLETES-SMART-GRID-PROJECT;-SAVINGS-WILL-EXCEED-ONE-AND-A-HALF-BILLION-DOLLARS.ASPX. ACCESSED 1 NOV. 2018.
"QUARTERLY ADVANCED METERING INFRASTRUCTURE PERFORMANCE METRICS REPORT." BGE. 15 NOV 2018.

PECO – Pennsylvania

As of late 2016, PECO had completed the installation of more than 1.7 million electric AMI meters at customer premises. Now, customers are increasingly taking advantage of, and benefiting from, AMI meter capabilities. Select benefits include:

- AMI technology has enabled PECO to reduce restoration times during major storms. Improved storm restoration efforts avoided an additional 10,000 truck rolls per year in 2016 and 2017.
- During 2017, PECO customers with smart meters accessed PECO's interactive, web based "My Usage" tool more than 1.5 million times.
- AMI's remote connect/disconnect functionality has significantly improved both customer-requested and credit-related connect/disconnect services. In 2016 and 2017, 98% of customer-requested connects and disconnects were completed remotely and 99% of credit disconnects and restorations were completed remotely. This resulted in an estimated 194,000 avoided truck rolls and 77,000 avoided Customer Care Center calls in 2016 and 2017.
- In 2016, PECO piloted over 70 Light-emitting Diodes (LED) Smart Street Lights (SSLs) in Philadelphia during the Democratic National Convention. The SSL platform allowed the City to manage and reduce energy usage, program custom lighting schedules and track the streetlights through a secure web portal. Converting traditional streetlights to LEDs alone can reduce energy usage by almost 50% and the dimming capabilities can provide additional savings.[12]

Commonwealth Edison (ComEd) - Illinois

Between 2009 and 2018, ComEd rolled out smart meters to nearly all its 4 million customers. AMI is the primary enabler allowing ComEd to achieve the following benefits (among others) [13]:

- Realize over $100 million annual savings in operating costs that are passed back to their customers by law through formula rates.
- Give customers the digital tools they need to track their energy use and participate in programs that save them energy and money.
- Implement an Hourly Pricing program that has saved customers more than $16.5 million in electricity supply charges or an average of 15% compared to ComEd's fixed-price rate.
- Implement a Peak Time Savings program where participants earn financial incentives by reducing energy usage during peak demand hours. ComEd has paid out $5.5 million in bill credits to participants since program inception in the summer of 2015 – $3.1 million this past summer alone.
- Offer high-usage alerts to customers. More than 50,000 customers have already signed up to receive these alerts via text, phone, or email.
- Build on their industry leading energy efficiency programs to help deliver a clean energy future for their customers.
- Lower outage restoration times and effort. In 2016, after having rolled out AMI to about a third of its customer-base, ComEd avoided approximately 37,000 truck rolls by pinging meters.[14] The consequent customer benefits are also undeniable - in fact, ComEd's smart meter outage reporting "pinging" functionality was named Program of the Year for Customer Engagement by DistribuTECH in 2017.
- Provide a premier customer engagement and service experience.
- Smart Grid Law investments, which include AMI, have significantly improved system reliability. These investments had resulted in 7.6 million avoided customer interruptions between 2012 and 2017 – a 44% reduction in SAIFI and 48% reduction in SAIDI.

2.4 SEN BUSINESS CASE GUIDING PRINCIPLES AND VISION

The following strategic objectives and design principles build on customer and state goals, and lie at the heart of ACE's business case for SEN, guiding the proposed program design and deployment plan:

[12] PENNSYLVANIA PUBLIC UTILITY COMMISSION V. PECO ENERGY COMPANY – ELECTRIC DIVISION. DIRECT TESTIMONY OF MICHAEL A. INNOCENZO. DOCKET NO. R-2018-3000164. 29 MARCH 2018. HTTPS://WWW.PECO.COM/SITECOLLECTIONDOCUMENTS/PECOSTATEMENTNO1MICHAELAINNOCENZO.PDF
[13] "DELIVERING ON SMART GRID: FIVE-YEAR CAPSTONE REPORT." COMMONWEALTH EDISON COMPANY. 2017. HTTPS://WWW.COMED.COM/SITECOLLECTIONDOCUMENTS/ABOUTUS/COMEDPROGRESSREPORT2017.PDF
[14] "ASSESSMENT OF DEMAND RESPONSE AND ADVANCED METERING." FEDERAL ENERGY REGULATORY COMMISSION. DEC. 2017, HTTPS://WWW.FERC.GOV/LEGAL/STAFF-REPORTS/2017/DR-AM-REPORT2017.PDF

- Put the customer at the core of all SEN capability development.
  - Ensure program and planned Utility of the Future capabilities are available to all customer segments, particularly vulnerable communities, and uphold current protections and support for these groups (e.g., winter, assistance programs).
  - Deliver improved customer service by energy suppliers, including easier switching, greater price transparency, more accurate bills, and new tariff and payment options.
  - Engage and support customers throughout deployment to help ensure recognition of the anticipated customer benefits and inspire confidence in the provisions made for data protection, access, safety, and use.
  - Promote cost-effective and environmentally beneficial energy savings, enabling all consumers to better manage their energy consumption and expenditures to experience carbon savings.
- Enable the Company and customers to achieve the decarbonization and energy efficiency goals of New Jersey:
  - Enable achievement of 100% clean energy by 2050.
  - Enable a 2% reduction in electricity usage.
  - Support establishment of community solar, energy storage and EV infrastructure.
- Improve system reliability and outage restoration performance, particularly for major storms:
  - Enhance system reliability through outage avoidance.
  - Enhance ability to locate “nested” outages to reduce outage duration.
  - Optimize storm restoration efforts, particularly in the face of major storms, to shorten outage duration and by extension decrease restoration costs and impacts on customers.
- Focus on Utility of the Future capability development (e.g., people, process, and governance) in addition to technology and data to help ensure successful business adoption.
  - Enable simplification of processes and build customer and staff capability, resulting in cost savings and service improvements.
- Ensure the SEN design considers and establishes the foundational components required to enable Utility of the Future over a 10 to 20-year horizon.
  - Facilitate anticipated changes in the electricity supply sector.
  - Promote effective competition in all relevant markets (energy supply, metering provision, energy services and home automation).
  - Ensure that timely information and suitable functionality is provided through smart devices and the associated communications architecture, where cost effective, to support development of modernized grids.
  - Ensure that potential public policy initiatives dependent on smart infrastructure and data are identified and included within the strategic business case, where they are justified in cost-benefit terms.
- Align and plan Utility of the Future capability deployment with corporate goals and initiatives around Advanced Distribution Management System (ADMS), Utility Analytics, Customer Information System (CIS), digitization, renewables, enhanced products and services, and customer engagement.
- Ensure that the business units drive and lead, with the business impact of technology always considered and factored into deployment.
  - Deliver the necessary design requirements, commercial and regulatory framework, and supporting activities to achieve timely development and cost-effective implementation.
- Adopt a program-level value-based approach to Utility of the Future strategy and roadmap governance.
- Deploy Use Case capability in a managed (Proof of Concept -> Pilot -> Production) agile manner according to the program roadmap.
- Ensure that the Utility of the Future capabilities enable operational and customer innovation yet still retain integrity and solid performance around core business needs.
  - Ensure that the communications infrastructure, devices and data management arrangements meet specified requirements for security and resilience, and they command the confidence of stakeholders.
- Adopt an optimized “best of breed” approach to Use Case solution selection and deployment.
- Leverage current technology and data capabilities where possible.
- Manage the transition to a new operating analytics capability using collaborative change management, and effective and timely communications.

03

THE CASE FOR THE SEN

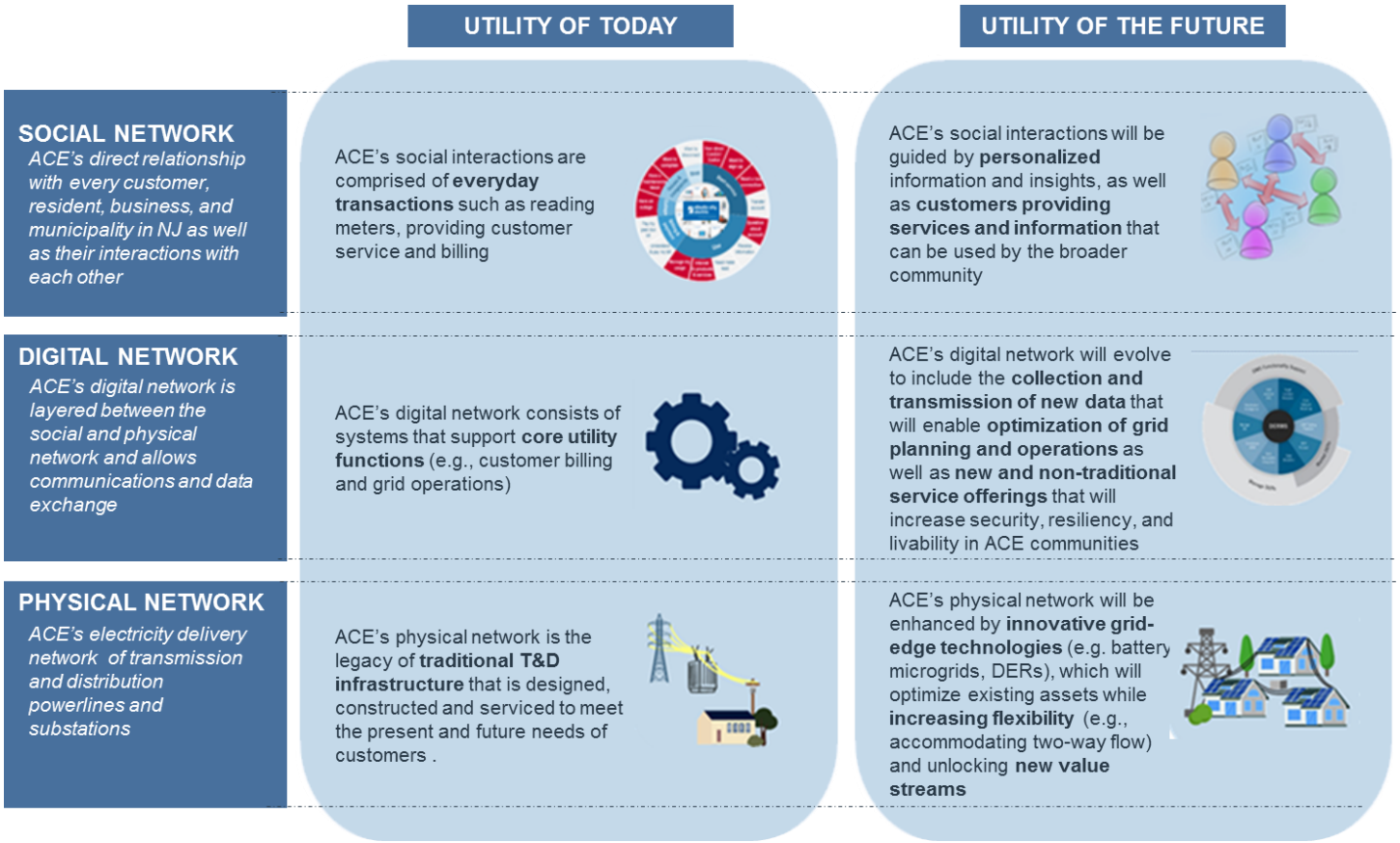
3 THE CASE FOR THE SEN

In this section ACE lays out the many uses and benefits of the SEN and AMI technology. ACE plans to continue its investments in infrastructure to ensure that the grid delivers electric energy in a manner that meets customer needs and expectations while furthering New Jersey's clean energy goals. This will lead to ongoing reliability, resiliency, and safety improvements. However, ACE recognizes that in order to do this, the Company will have to transform into a Utility of the Future (UoF) - strategically modernizing the grid to: facilitate additional amounts of DERs, including private and community-solar; enable effective and efficient energy efficiency and demand response programs; integrate growing levels of intermittent resources from large-scale renewable generation, including off-shore wind; and optimize both customer engagement and utility operations.

3.1 THE UTILITY OF THE FUTURE AND CONNECTED COMMUNITIES

The UoF is more than a static, one-way conduit for electrons. Rather, the UoF transforms the physical network, digital network and social network to build a foundational "platform" that enables dynamic, high-value, real-time exchanges between consumers and producers. In order to achieve this transformation into a Utility of the Future, ACE would have to deploy technologies like advanced sensors, two-way communication networks, IoT platforms, and customer engagement solutions – all of which would build upon the SEN. As these technologies evolve, they will enable ACE to offer an ever-growing range of products, services, capabilities, and benefits to their customers and community.

Figure 3-1: Transition to Utility of the future



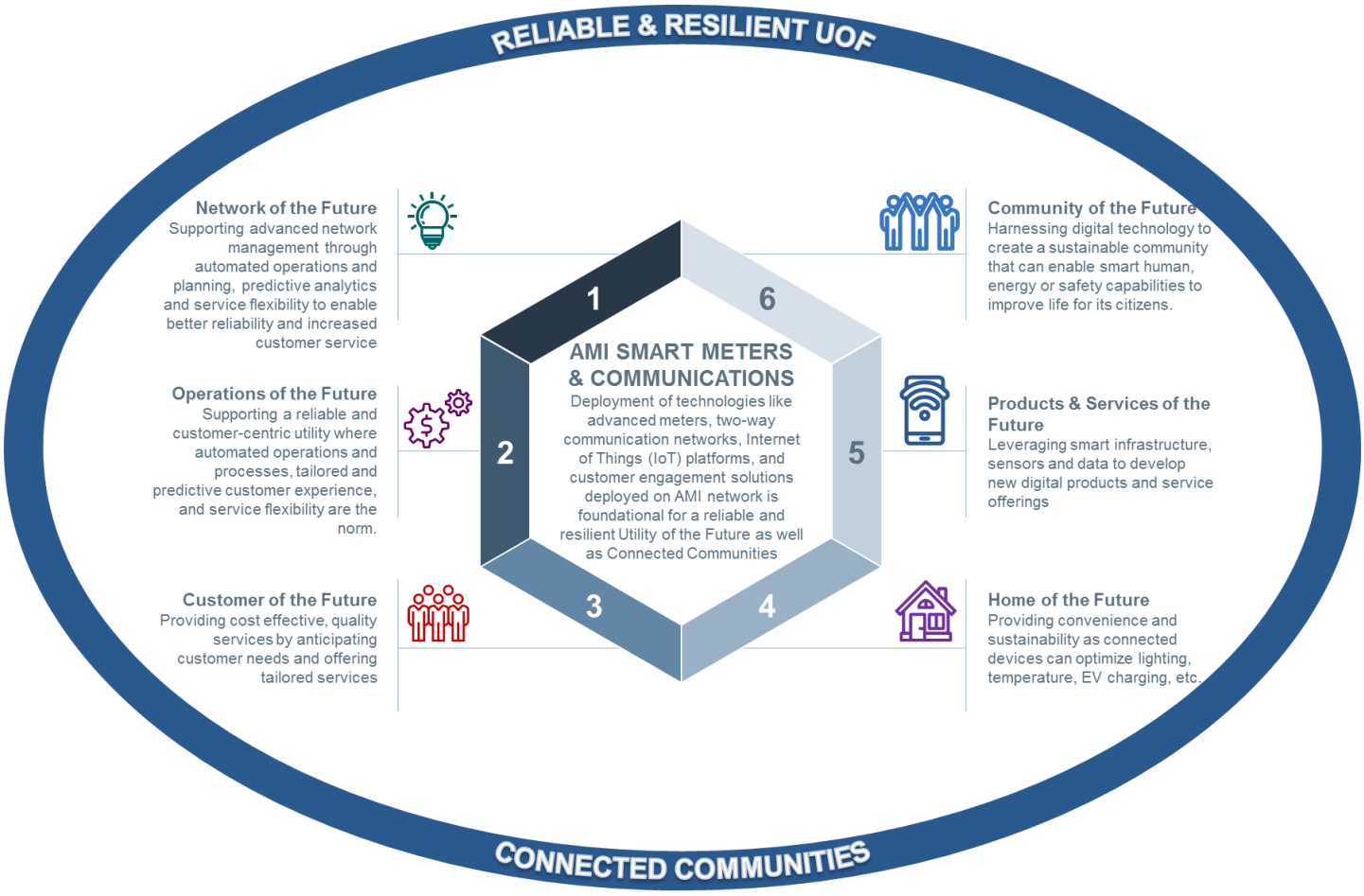
These technologies and the underlying communications network will also provide synergies that will help facilitate the evolution of Connected Communities within the ACE service territory. Connected Communities will address the integrated infrastructure and connectivity needs of citizens and commercial, civic, and other entities that will ensure they are positioned to participate in the digital economy of the now and the future and make their communities safer and more efficient. Connected Communities will rely on infrastructure and data analytics to achieve this, which in turn are reliant on having a robust communications network comprised of pervasive wireless/wi-fi coverage and capable of

supporting meaningful connectivity and IoT applications across people, structures, connected devices, etc. This will be integrated with a data analytics capability to help manage and optimize connected devices and identify trends, issues and opportunities for improvement.

3.1.1 SEN and the Utility of the Future

SEN technology will support six key capabilities that will serve as the pillars upon which ACE would evolve into a UoF. The Utility of the Future will need to operate in new ways, leveraging data and digital platforms to improve reliability, resilience, operations, and service, while empowering consumers. Several regulatory, customer, and technological trends are driving this need to adapt, and utilities need to build business capability and platforms that will enable them to succeed in this new world. These capabilities are described in greater detail below:

Figure 4-2: SEN Capabilities Supporting Utility of the Future Deployment and Connected Communities



3.1.2 SEN-Enabled Network of the Future

SEN technologies will enable continued or enhanced network operations excellence, reliability, resilience, and customer satisfaction by equipping the Company with the information and processing platforms required to better manage the increasing electric distribution system variability and complexity introduced by the proliferation of technologies such as DERs, renewables, battery storage, EVs, and microgrids. This will help ACE and New Jersey achieve their goals around renewables, energy efficiency, and transportation electrification.

This SEN-enabled Network of the Future will:

- Provide access to more detailed and accurate outage data. The utility will know exactly which locations are out at any given stage of the restoration effort, which will enable faster and more efficient restoration.
- Enable greater network visibility, which will allow the utility to better manage, integrate, and potentially leverage distributed and renewable energy sources, while maintaining high levels of reliability and power quality. This visibility, when combined with other tools (e.g., innovative rates, customer communications) and a better

understanding of the customer, can help the utility shift and offset peak demand and delay capital investments to expand distribution capacity.

- Better equip the utility to manage network load, quality, and voltage issues through optimal deployment and use of distributed intelligent devices such as smart meters, smart line/asset sensors, capacitor banks, and reclosers. This will reduce asset overloading, help proactively identify areas of concern thus preventing failures, reduce technical losses, and enable several energy efficiency and conservation programs that will reduce energy use and carbon emissions.
- Use remotely controllable smart devices to offer critical peak pricing, demand response, demand control, and advanced energy efficiency.
- Maintain a current, digital, and geo-tagged asset database, enabling advanced asset analytics that improve predictive maintenance and consequently network performance. When coupled with other advanced technologies, such as augmented reality (AR), drones, LIDAR (light detection and ranging), and learning algorithms, utilities can realize significant improvements in efficiency and safety by automating and optimizing vegetation management, inspections and storm damage assessment (e.g., by using drones and AR to locate assets and perform inspections / mark-outs).
- Perform advanced operations and distribution automation including automatic feeder sectionalizing and restoration with intelligent switches, voltage regulator monitoring and control through smart sensors and controllers.

3.1.3 SEN-Enabled Operations of the Future

SEN-enabled capabilities will increase operational visibility and automation, allowing the utility to optimize grid operations, improve reliability/resilience and better serve the customer.

SEN-enabled Operations of the Future will:

- Enable earlier detection of and better understanding of outage scope, allowing utility personnel to more efficiently allocate resources and speed up restoration.
- Increase operational efficiency and reliability through automation and remote operation of distribution assets and customer meters. By enabling remote connects/disconnects, the utility can remotely and almost instantaneously respond to customer move-in/move-out requests.
- Improve the end-to-end meter-to-cash process. SEN increases billing accuracy, decreases customer complaints/disputes, and facilitates the collections process.
- Enable customer self-service portals, proactive communications, and usage transparency. This coupled with more accurate data and billing will improve the customer experience and result in reduced call volumes.
- Equip customer service and call center representatives with real-time interval data from smart meters, enabling a 360-degree view that helps them help customers faster and more efficiently.
- Lower operating costs by increasing automation and decreasing inefficiencies/losses.

3.1.4 SEN-Enabled Customer of the Future

SEN-enabled capabilities will help the utility to better understand and engage customers through the provision of tailored new communications channels, tools, products, and services. Customers will be better informed and equipped to actively manage their consumption and lower bills, and further New Jersey's vision of a cleaner, greener and more distributed energy industry.

The SEN-enabled Customer of the Future expects:

- A more personalized and seamless customer experience that is suited to their lifestyle and delivered through multiple convenient and integrated tools and self-serve channels (e.g., mobile, web, and home-assistants).
- Real-time tracking of and insight into home energy usage, efficiency, and power quality/outage issues, which empowers them to make informed decisions around their energy portfolio.
- New products and services that address their needs, add value, and enable bi-directional or multi-directional transactions. These can include energy efficiency and savings tips, bill alerts, solar and electric vehicle support, and access to customized rate options.
- 'Prosumers' (producer-consumers) expect to be able to participate in the energy market – buying, selling, and trading surpluses with other market participants.[15]

[15] COMPANIES LIKE APPLE, WALMART, AND WHOLE FOODS ARE ALREADY SETTING UP INDEPENDENT ENERGY SOLUTIONS THAT WILL BE INTEGRATED INTO THE GRID MARKETPLACE.

Utilities can leverage smart meter data, analytics, artificial intelligence, and learning algorithms to better understand their customers' unique needs and empower customers with the information, tools, products., and services to better manage usage, bills, and carbon footprint. SEN is also foundational in enabling multi-directional transactions across the electric grid.

3.1.5 SEN-Enabled Home of the Future

The Energy Home of the Future is smart, sustainable and convenient, equipped with smart and networked appliances, devices and equipment. This Smart Home can respond to SEN-enabled usage/load data and price signals, optimizing energy usage by regulating and adjusting lighting, temperature, EV charging, high energy usage devices and other end uses of energy. SEN will enable access to many advanced services for the Home of the Future (from both the utility and third parties). These smart homes are a cornerstone of Connected Communities and will help achieve New Jersey's sustainability goals.

The SEN-enabled Energy Home of the Future will:

- Help customers interact with, analyze, understand, and adjust their energy usage and energy portfolio through convenient mediums, such as in-home monitors and smart assistants (e.g., "Alexa – what was my energy consumption in the last month?" or "Alexa – how can I increase energy efficiency?")
- Respond to usage and pricing alerts from the utility, automatically adjusting and shifting energy use through a range of smart appliances and devices that are connected through SEN and IoT networks.
- Enable local, renewable, and cost-effective energy by helping install, integrate, and manage customer sited DERs such as PVs, EVs, and battery storage.
- Enable the connection and monitoring of smart sensors that can alert the customer to potential safety concerns, such as gas, flooding, and carbon monoxide.

Home analytics that will utilize smart home sensors and data to provide interactive metrics and learning algorithms that help all customers manage their home energy and safety.

3.1.6 SEN-Enabled Products and Services of the Future

The SEN network will serve as the foundation for an open platform, which will enable the development and offering of innovative new products and services to customers by relevant stakeholders.

Potential Energy Products and Services of the Future include:

- Data as a service –leveraging SEN data and analytics to help third parties and customers manage their energy portfolios, while ensuring adherence to all appropriate access, privacy, and security controls.
- Network as a service – providing secure access to SEN network capabilities, enabling a community or customer's connectivity needs – e.g., safety/security, street lighting.
- To enable municipalities to connect their smart meters and provide smart services.
- Utility as a service – securely leveraging SEN infrastructure to offer a range of meter-to-cash services to other utilities without these capabilities (e.g., capturing or preserving meter reading synergies with a natural gas company serving similar or overlapping territories).
- New, innovative, and customized tariff structures and incentive programs, which can provide numerous benefits to both utilities and customers. For example, time of use rates (ToU) and critical peak pricing (CPP), enable the utility to incentive usage shifts from peak to non-peak times.
- Voluntary programs like prepaid energy, where customers can pay in advance for electricity, can also expand customer choices and satisfaction.
- Support for energy related services, such as appliance management, surge protection, weatherproofing, energy efficiency programs, and EV infrastructure.

"APPLE NOW GLOBALLY POWERED BY 100 PERCENT RENEWABLE ENERGY." APPLE NEWSROOM. 9 APRIL 2018. HTTPS://WWW.APPLE.COM/NEWSROOM/2018/04/APPLE-NOW-GLOBALLY-POWERED-BY-100-PERCENT-RENEWABLE-ENERGY/. ACCESSED 7 JAN 2019.
"WALMART'S APPROACH TO RENEWABLE ENERGY." WALMART. HTTPS://CDN.CORPORATE.WALMART.COM/EB/80/4C32210B44CCBAE634DDEDD18A27/WALMARTS-APPROACH-TO-RENEWABLE-ENERGY.PDF. ACCESSED 7 JAN 2019.
"ENVIRONMENTAL STEWARDSHIP: OUR GREEN MISSION." WHOLE FOODS. HTTPS://WWW.WHOLEFOODSMARKET.COM/MISSION-VALUES/ENVIRONMENTAL-STEWARDSHIP/GREEN-MISSION. ACCESSED 7 JAN 2019.

3.1.7 SEN-Enabled Community of the Future

Communities of the Future seek to harness digital technology and intelligent design in order to create sustainable and safe cities and towns that increase residents' quality of life. Data is gathered and analyzed from a multitude of sources to achieve this goal. Economies of scale are realized through the sharing of information and coordination of operations across services.

A SEN-Enabled Community of the Future is one where community officials, utilities, and residents can make smart decisions across a range of areas, from economic and environmental sustainability to business and government to people and living standards. While advanced infrastructure, such as SEN, is the foundation of the Community of the Future, utilities such as ACE can use their advanced infrastructure expertise to further positive outcomes for local communities in areas such as Environment, Sustainability, Mobility, Public Safety, and Energy.

The Community of the Future will:

- Use sensors and data to help communities achieve sustainability goals related to electric conservation, rainwater harvesting, water conservation, and greenhouse gas (GHG) detection.
- Create infrastructure for transportation and supporting eco mobility systems such as EVs, autonomous vehicles, parking/traffic management, and mass transit.
- Support applications that enhance public safety and security such as smart streetlights, incident (gunshot) detection, real-time surveillance, crowd monitoring, and real-time face recognition.
- Enable production, management, and control of clean energy and distributed energy resources supporting the long-term goal of 100% reliable, sustainable, clean energy such as utility solar, community solar, vehicle to grid, storage, and microgrids/nanogrids.

A selection of the potential benefits arising from the deployment of SEN in support of the six capabilities of the future are described in the following section.

3.2 SEN BENEFITS ASSESSMENT

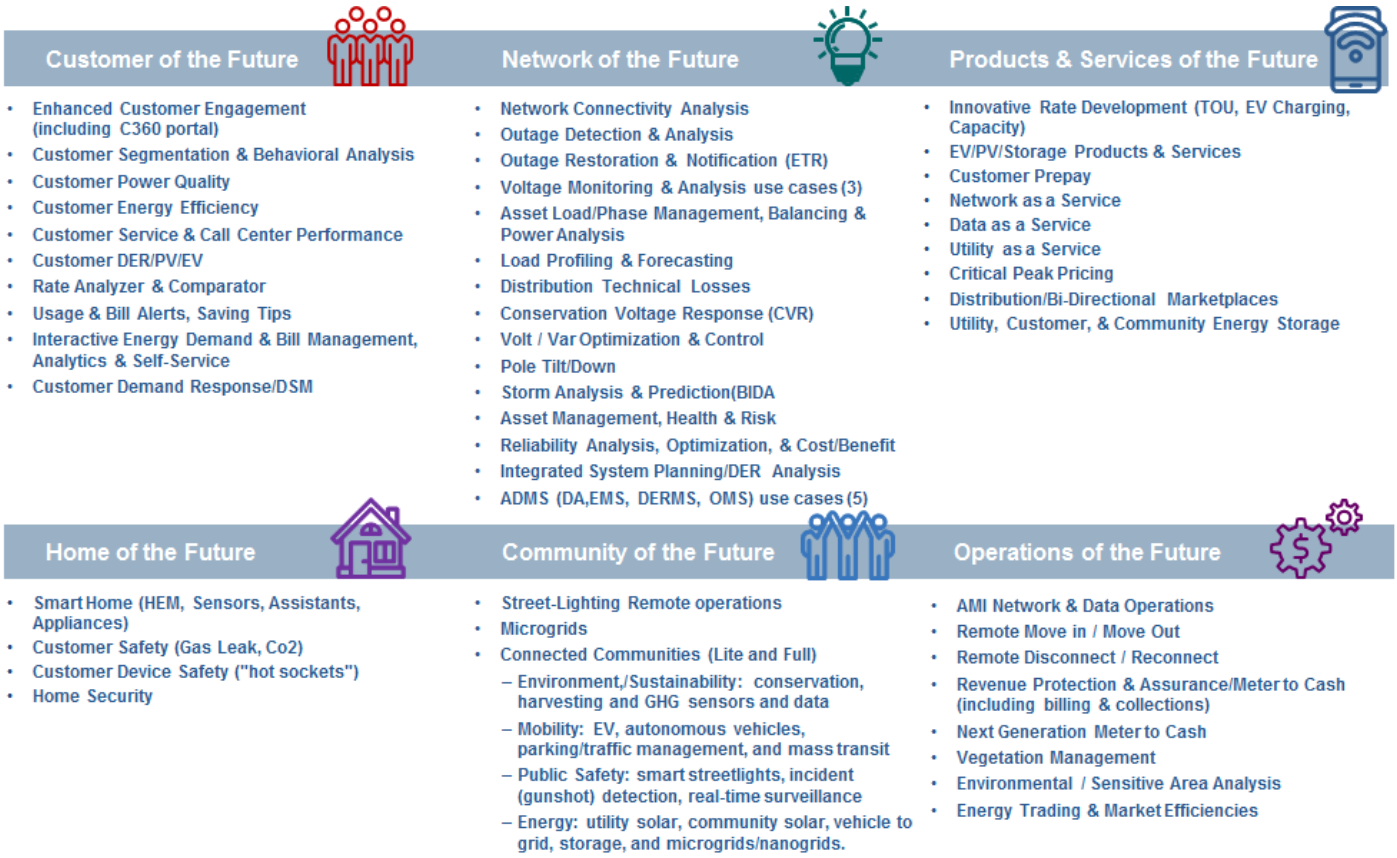
3.2.1 Study Approach

Deployment of SEN provides numerous benefits. For the purposes of this business case, ACE sought to identify and define these benefits, via a structured approach based on business "Use Cases". A Use Case in this context is a reasonably discrete business function or process that has clearly defined objectives, requirements, and outcomes. The first step of the Use Case methodology was to complete a holistic Use Case check-up, to identify which Use Cases would be most applicable to the NJ and the ACE business context and therefore candidates for inclusion in ACE's SEN deployment. Applicable Use Cases are listed in **Error! Reference source not found.**3.

A set of approximately 150 industry applicable Use Cases were considered as part of ACE's SEN business case. After a thorough review, 56 Use Cases were identified as applicable to the program based on their:

- Alignment with New Jersey Initiatives, in particular the BPU Storm Order and the NJ Clean Energy Act and NJ Energy Master Plan (EMP)
- Alignment with grid modernization and enhanced customer engagement focus.
- Applicability to ACE's business and objectives.
- Relevancy to Utility of the Future, Connected Communities, best practices, and current ACE initiatives and filings.
- Required support of SEN data or network services.
- Foundational, advanced, and long-term aspirational capability and value generation.

Figure 5-3: ACE SEN applicable Use Cases



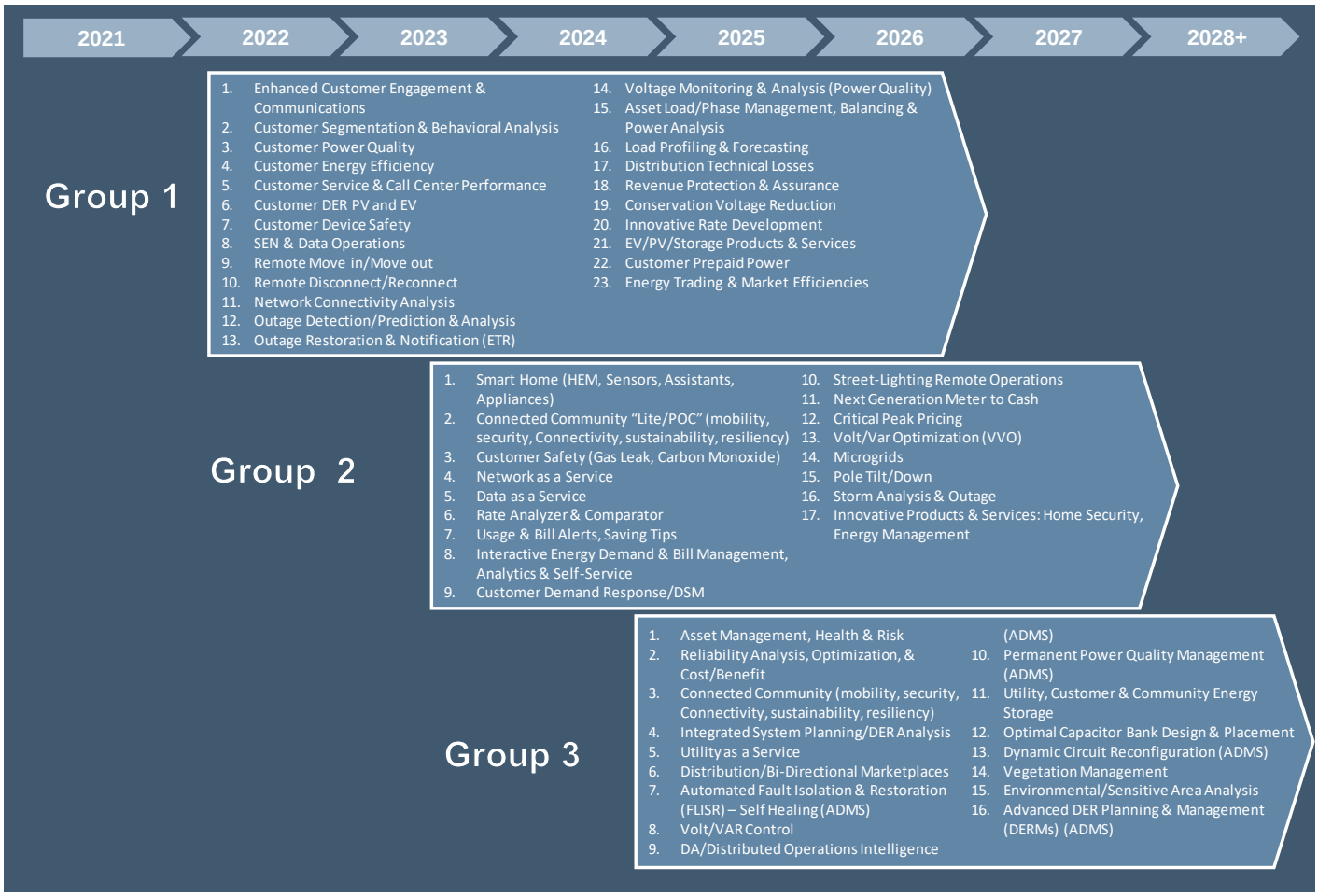
The 56 Use Cases were then divided into one of three deployment groups based on level of sophistication, the ease of deployment, and maturity of the business unit capabilities supporting the opportunity. The Use Cases were determined to be either foundational, advanced, or future-enabled based on the following criteria:

1. Foundational/Upgrade – Use Cases that can be implemented and enabled with no (or minor) upgrades and capabilities beyond SEN. These Use Cases are often dependencies for “advanced” or “future enabled” Use Cases.
2. Advanced – Use Cases that can only be implemented and enabled with some additional and more advanced capabilities (e.g., sensors, control boards, and street lighting). These Use Cases are often dependencies for “future enabled” Use Cases.
3. Future Enabled – Use Cases that are partially supported by SEN (i.e., data and network), but require additional and external capabilities (e.g., Utility Analytics, ADMS, CIS, smart community, regulatory approval) to fully realize their potential.

The following figure shows Use Case grouping. High level descriptions of each Use Case are contained the Appendix. The Use Cases identified for Group 1 are a practical mix of all Use Case types that are supported with few, if any, upgrades beyond the SEN deployment, and leverage existing ACE and Exelon capabilities where possible.

After the initial identification and prioritization of the applicable SEN Use Cases, ACE estimated the quantitative benefits associated with each SEN Use Case in Group 1 (Foundational/Upgrade) as well as the anticipated costs of enabling those Use Cases. ACE considered customer benefits, as well as financial savings to ACE. Benefits associated with Use Cases in Group 1 only have been quantified and included in this business case.

Figure 6-4: ACE Use Case Capability Roadmap



3.2.2 Group 1 Use Case Benefits

Potential benefits of the uses cases in Release Group 1 include, but are not limited to the following:

Decreased O&M Costs

SEN would result in significant reductions in O&M, particularly by enabling remote meter readings and decreasing the number of truck rolls required (for connects/disconnects, move-in/move-outs, customer side issues, etc.).

ACE currently contracts Millennium Account Services to read customer meters. The deployment of SEN would eliminate the need for physical meter readings and reduce ACE's operating costs. ACE currently spends approximately $4.8 million a year on its contracted meter reading. Remote meter reads would result in ~$81 million in contracted meter reading savings over the life of the BCA. Additionally, ACE also conducts over 18,000 re-reads through its own personnel for customers whose meters could not be read accurately the first time. The remote meter reading functionality of SEN would help save these re-read truck rolls leading to ~$14.7 million in savings over 15 years.

At present, ACE sends a metering service employee to move a customer in or out of their residence or business. With SEN, this process could be automated and performed remotely, thereby largely eliminating the need for nearly 65,000 truck rolls a year, which would decrease operating costs by ~$50 million over 15 years. Improved move in/out process efficiency should also increase customer satisfaction.

ACE currently sends a metering service employee to disconnect and reconnect customers. However, with SEN, both the disconnect and reconnect could be performed remotely and instantaneously. ACE is proposing alternate measures to ensure customer safety in lieu of a "door knock". Doing so would eliminate the need for a combined 40,00 truck rolls a year. Improved speed and process efficiency could save ~$33 million over 15 years.

Another major benefit of SEN is the ability to ping a meter to identify issues on the customer side that typically do not need a truck roll. Employing this capability, ACE could avoid ~9,000 truck rolls annually, saving ~$23 million over 15

years. Fewer truck rolls would not only decrease operating costs, but also reduce vehicle miles traveled (and consequently congestion, wear and tear, carbon emissions, etc.).

Benefit	Primary Group 1 Use Case(s)	Network of the Future	Operations of the Future	Customer of the Future	Home of the Future	Products & Services of the Future	Community of the Future
Decreased O&M Costs	SEN Network & Data Operations		✓				
	Remote Move in / Move out		✓				
	Remote Disconnect / Reconnect		✓				

Enhanced Customer Experience and Choice

Smart meters allow customers to actively engage with their energy usage data through easily accessible bi-directional portals on a close to real-time basis and thus make informed decisions and behavioral adjustments as desired. Such tools are generally well received by customers. At Pepco Maryland, for example, approximately 450,000 customer accounts have enrolled in the web-based energy management tool since the introduction of AMI. At a later date (Group 2 Use Case), ACE customers could even choose to set up alerts to notify them of usage outside normal parameters, deliver custom savings tips, etc.

The SEN would also improve utility operations in ways that would enhance the customer experience. The ability to read and control meters remotely would decrease any inconvenience or delays experienced by customers as a result of the current manual move-in/move-out, connect/re-connect, and meter reading processes. In addition, smart meters generally improve meter read accuracy, which should result in fewer billing complaints/disputes. This not only improves the customer's billing experience; it also reduces costs to the supplier.

Utilities can also use programs like Prepaid Power to improve customer choice and experience. Prepaid Power is an entirely voluntary program that allows consumers to pay in advance for utility services and would only be implemented after receiving approval from the BPU. Prepaid customers would be able to monitor their usage and account balance daily, using this information to adjust consumption and thus eliminate end of month billing surprises. Prepaid programs provide benefits for both customers and the utility. A prepaid program can help interested customers better understand their consumption and why bills may be different than expected. It can also be a valuable tool for customers that need help managing their usage and costs. Prepaid programs can also reduce or eliminate deposits, late fees and reconnection fees. Utilities benefit from improved revenue collection, lower operating costs, higher levels of customer satisfaction, and, in the long-term, decreases in future capital expenditures necessary to address load growth.

Benefit	Primary Group 1 Use Case(s)	Network of the Future	Operations of the Future	Customer of the Future	Home of the Future	Products & Services of the Future	Community of the Future
Enhanced Customer Experience & Choice	Enhanced Customer Engagement & Communications			✓			
	Customer Segmentation & Behavioral Analysis			✓			
	Customer DER/PV/EV			✓			
	Customer Prepaid Power					✓	

Greater Customer Usage Transparency and Energy Efficiency

SEN increases usage transparency by equipping customers with a detailed, real-time view of their consumption data, easily accessible through web or mobile portals. This visibility enables customers to adjust their energy consumption

habits, identify energy efficiency investments, and lower their electric bills. ACE can also use this data to design new and more targeted energy efficiency products and services.

Benefit	Primary Group 1 Use Case(s)	Network of the Future	Operations of the Future	Customer of the Future	Home of the Future	Products & Services of the Future	Community of the Future
Greater Customer Usage Transparency & Energy Efficiency	Enhanced Customer Engagement & Communications			✓			
	Customer Energy Efficiency			✓			

Improved Customer Service and Call Center Performance

By leveraging a broader range of information (including from SEN), and bringing together historical and real-time information to support customer service representatives' decisions, ACE should be able to bolster service, improve customer satisfaction, and lower costs through providing a 360-degree view of the customer. Smart meters should also increase the meter read rate and data accuracy, resulting in fewer customer calls related to billing inquiries, billing inaccuracies, billing challenges, and similar issues.

Benefit	Primary Group 1 Use Case(s)	Network of the Future	Operations of the Future	Customer of the Future	Home of the Future	Products & Services of the Future	Community of the Future
Improved Customer Service & Call Center Performance	Customer Service & Call Center Performance			✓			
	Enhanced Customer Engagement & Communications			✓			
	Customer Segmentation & Behavioral Analysis			✓			

Better Customer Segmentation, Innovative Rate Design, and Improved Marketing Efforts

AMI data allows utilities to better model and understand the energy usage of different communities, customer segments and even individual customers. ACE could use SEN data to develop customized profiles, potentially in real-time, with the objective of providing innovative rates (e.g., time of use, DER specific, market pass-through), products, and services that are better aligned with the customers' usage and needs. SEN data provides a level of transparency that allows utilities to tailor communications, e.g., showing customers' their usage in comparison to their neighbors, and optimally target marketing materials to, for example, customize energy saving program offerings based on what their neighbors are enrolled in. Better segmentation is also critical for the development of load forecasts by system planners. Better data leads to better forecasts and better plans, optimizing investments.

Benefit	Primary Group 1 Use Case(s)	Network of the Future	Operations of the Future	Customer of the Future	Home of the Future	Products & Services of the Future	Community of the Future
Better Customer Segmentation, Innovative Rate Design & Improvement	Enhanced Customer Engagement & Communications			✓			
	Customer Segmentation & Behavioral Analysis			✓			
	Asset Load/Phase Management, Balancing & Power Analysis (incl. TLM & Customer Load Curtailment/Limiting)	✓					

Benefit	Primary Group 1 Use Case(s)	Network of the Future	Operations of the Future	Customer of the Future	Home of the Future	Products & Services of the Future	Community of the Future
in Marketing Efforts	Load Profiling & Forecasting	✓					
	Innovative Rate Development					✓	

Reductions in Carbon Emissions

As discussed earlier, the ability to "ping" and remotely read/connect/disconnect SEN meters would allow the utility to avoid or eliminate unnecessary truck rolls related to meter readings/re-readings, meter reconnects, move-ins/move-outs, etc. In addition, the ability to "ping" smart meters, coupled with the increased distribution system visibility afforded by SEN, would enable the utility to identify anomalous voltage conditions or service disruptions and to verify power restoration status without rolling a truck. Avoided truck rolls in turn would allow ACE to reduce fleet miles, fuel consumption and ultimately carbon emissions.

SEN could also enable emissions reductions from electricity generation. SEN data would help develop more accurate electric consumption patterns and load profiles, which would enable more precise energy procurement by the utility and potentially reduce ramping needs and carbon emissions. In addition, SEN would enable the integration of new, low-carbon sources of energy (e.g., EV/PV). Any energy savings resulting from CVR or reductions in distribution technical losses would also result in lower emissions. Furthermore, any peak reduction or shifting achieved as a result of SEN would lessen the need to build additional, relatively high heat-rate peaking units, which would again reduce emissions.

Benefit	Primary Group 1 Use Case(s)	Network of the Future	Operations of the Future	Customer of the Future	Home of the Future	Products & Services of the Future	Community of the Future
Reductions in Carbon Emissions	Remote Move in/Move out		✓				
	Remote Disconnect/ Reconnect		✓				
	Distribution Technical Losses	✓					
	Revenue Protection & Assurance		✓				
	Conservation Voltage Reduction	✓					
	EV/PV/Storage Products & Services					✓	

Improved Customer Power Quality

SEN would enable ACE to better monitor voltage levels and improve customer power quality. Smart meters capture interval voltage levels and alerts in addition to interval consumption data. This data allows system operators to monitor and analyze delivered voltage and ensure that it is within tolerance (120V ± 5%). ACE would be able to proactively detect potential power quality issues (e.g., low/high voltage or flickering lights), conduct preliminary diagnoses, and take the appropriate corrective actions to resolve these issues (potentially before customers even notice or call in to report them).

Benefit	Primary Group 1 Use Case(s)	Network of the Future	Operations of the Future	Customer of the Future	Home of the Future	Products & Services of the Future	Community of the Future
Improved Customer Power Quality	Customer Power Quality			✓			
	Network Connectivity Analysis	✓					

Benefit	Primary Group 1 Use Case(s)	Network of the Future	Operations of the Future	Customer of the Future	Home of the Future	Products & Services of the Future	Community of the Future
	Voltage Monitoring & Analysis (PQ)	✓					

Better Load Balancing, Voltage Management, and DER Integration

Thanks to the growing adoption and integration of new technologies (which include, but are not limited to, DERs, EVs, LEDs, energy efficiency, intelligent switches, and demand automation), the historically linear electric distribution system is becoming more dynamic and complex. These advancements have changed, and in some cases enhanced, utility operations and planning. They have also increased the importance and complexity of load balancing and voltage management in maintaining grid power quality. With smart meters, ACE would be able to view load and voltage data for a particular area in real-time and record any load or voltage variations, thus enabling real-time voltage, load and phase balancing, which should reduce unplanned outages and enable more accurate issue forecasting in the future.

Benefit	Primary Group 1 Use Case(s)	Network of the Future	Operations of the Future	Customer of the Future	Home of the Future	Products & Services of the Future	Community of the Future
Better Load Balancing, Voltage Management, and DER Integration	Customer DER/PV/EV			✓			
	Asset Load/Phase Management, Balancing & Power Analysis	✓					
	Load Profiling & Forecasting	✓					
	Distribution Technical Losses	✓					
	EV/PV/Storage Products & Services					✓	

Energy Savings

CVR would enable ACE to permanently lower the voltage at which it delivers electrical power closer to the lower end of permissible distribution voltage levels, which would result in energy savings for customers without effecting power quality.

End-point voltage data from SEN would allow ACE operations staff to make CVR moves (lowering tap changer settings) and actively monitor and analyze power quality at customer meters to ensure there are no issues. ACE anticipates that the estimated energy and capacity cost savings of a CVR program would be similar to those achieved at Pepco and DPL or approximately $28 million over 15 years.

Pepco and DPL CVR Results

To date, PHI has implemented CVR programs at Pepco and DPL with a 1.5% reduction in substation voltage by adjusting the set points at substations and existing voltage regulators on the distribution system. The Pepco CVR study estimated an energy conservation impact of 1.4% and 0.9% for residential and non-residential customers, respectively, and estimated a peak impact of 1.1% and 0.9%, for residential and non-residential customers, respectively.

Benefit	Primary Group 1 Use Case(s)	Network of the Future	Operations of the Future	Customer of the Future	Home of the Future	Products & Services of the Future	Community of the Future
Energy Savings	Conservation Voltage Reduction (CVR)	✓					

Reduction of Theft/Bad Debt/Losses and Enhanced Revenue Collection

Smart meters can provide near real-time load, voltage data and event flags that can help identify and correct instances of theft sooner and more easily. This should help ACE bill an additional ~$5.9 million over 15 years directly to the

customers consuming the electricity rather than socializing these costs across the customer base. In its other jurisdictions, PHI now relies heavily on AMI data in its continuing effort to discover and stop theft - the more detailed information allows PHI to discover more instances of theft sooner in time.

Smart meter consumption data, coupled with the ability to disconnect remotely, should also help ACE improve collections. ACE would no longer have to go through the process of working with external agencies to gain access to a meter for a physical disconnect, consequently cutting down on the amount of time it takes to perform the disconnect. This would reduce consumption taking place on these meters, which would lower write-offs by $65 million over 15 years. Furthermore, the ability to remotely disconnect inactive meters should also lead to a decrease in the amount written off due to consumption on inactive meters.

Improvements in these areas should decrease the uncollectible portion of rates, which is spread out across the customer base.

Benefit	Primary Group 1 Use Case(s)	Network of the Future	Operations of the Future	Customer of the Future	Home of the Future	Products & Services of the Future	Community of the Future
Reduction of Bad Debt/ Theft/Losses & Enhanced Revenue Collection	Remote Disconnect / Reconnect		✓				
	Distribution Technical Losses	✓					
	Revenue Protection & Assurance		✓				
	SEN Network & Data Operations		✓				

Improved Asset Management and Health

SEN enables advanced asset analytics that can improve asset management capabilities. ACE would be able to better monitor, assess, and predict system health and deficiencies, thus improving operations, investments, and maintenance decisions.

Benefit	Primary Group 1 Use Case(s)	Network of the Future	Operations of the Future	Customer of the Future	Home of the Future	Products & Services of the Future	Community of the Future
Improved Asset Management and Health	Voltage Monitoring & Analysis (PQ)	✓					
	Asset Load/Phase Management, Balancing & Power Analysis	✓					
	Outage Detection/Prediction & Analysis		✓				

Peak Reduction/Shifting

During periods of peak demand on the system or at specific substations, real-time customer-level smart meter data can help utilities identify those customers that are consuming electricity. Utilities can then send messages to these customers using the channel of their choice to recommend that they shift their energy consumption outside of the peak demand window. By helping to reduce overall peak demand, which is when electricity prices are typically at their highest, customers are able to reduce their energy bills, which should also increase their level of satisfaction. This program can be implemented before new tariffs are designed and introduced to incentivize such reductions/shifts.

Benefit	Primary Group 1 Use Case(s)	Network of the Future	Operations of the Future	Customer of the Future	Home of the Future	Products & Services of the Future	Community of the Future
	Enhanced Customer Engagement & Communications			✓			

Benefit	Primary Group 1 Use Case(s)	Network of the Future	Operations of the Future	Customer of the Future	Home of the Future	Products & Services of the Future	Community of the Future
Peak Reduction/ Shifting	Customer Segmentation & Behavioral Analysis			✓			
	Asset Load/Phase Management, Balancing & Power Analysis (incl. TLM & Customer Load Curtailment/Limiting)	✓					
	Customer Energy Efficiency			✓			

Deferral/Reduction of Capital Costs

SEN data would enable ACE to better understand customer usage patterns and leverage that information to implement effective peak shifting programs. By reducing overall peak demand, ACE would potentially be able to delay capital intensive distribution projects to increase capacity, which could help to defer or even reduce capital costs.

Benefit	Primary Group 1 Use Case(s)	Network of the Future	Operations of the Future	Customer of the Future	Home of the Future	Products & Services of the Future	Community of the Future
Deferral/ Reduction of Capital Costs	Load Profiling & Forecasting	✓					
	Asset Load/Phase Management, Balancing & Power Analysis	✓					

Enhanced Contractor Safety

With SEN, meter readers would no longer have to drive to or enter a customer's property each month – the decreased truck rolls, drive time, and reduced need to enter potentially unsafe properties (and deal with potentially upset customers or animals) would increase overall contractor safety.

Benefit	Primary Group 1 Use Case(s)	Network of the Future	Operations of the Future	Customer of the Future	Home of the Future	Products & Services of the Future	Community of the Future
Enhanced Contractor Safety	SEN Network & Data Operations		✓				
	Remote Disconnect/ Reconnect		✓				
	Remote Move in/Move out		✓				

Faster and More Efficient Outage Detection and Response:

ACE's ability to detect, locate, and verify outages would improve with the deployment of SEN meters. Smart meters can send "last gasp" outage messages to a utility's OMS when there is an outage, which allows the utility to more quickly and accurately understand the extent and location of an outage and efficiently dispatch crews to restore service, even to locations, such as beach communities, where customers might not be in residence year-round.

In addition, the utility can "ping" the smart meters to verify power restoration. This allows the utility to confirm that there are no "nested outages" (secondary and service outages that are not identified or fixed during initial restoration activities, which are more focused on primary distribution circuits) without making outbound phone calls or dispatching crews to the field. The automation of this verification would reduce or eliminate the need for these outbound calls and approximately 900 investigative truck rolls a year, resulting in ~$0.5 million in savings over 15 years. The faster identification of "nested" outages can also significantly shorten restoration efforts and potentially eliminate restoration crews visiting the same area multiple times. This would help shorten the tail end of major storm events and potentially

reduce the overall system minutes of interruptions (and by extension, the System Average Interruption Duration Index, SAIDI[16]). The shortening of typical major outage events that ACE faces by even 10% can lead to savings of approximately $42 million for ratepayers over a period of 15 years.

During Hurricane Sandy and the Derecho in 2012, Pepco was able to avoid over $400,000 in storm related restoration costs. This benefit has been calculated by counting the number of avoided truck rolls and reduced crew time by improved knowledge of outages and also includes avoided support facility and personnel costs.

Thanks to these SEN-enabled capabilities and operational efficiencies, ACE should experience a lower volume of storm restoration related work (e.g., fewer investigative truck rolls, fewer repeat crew visits to the same location, fewer customer calls to report outages, fewer outbound calls to verify power restoration), which should enable ACE employees to resume their normal operations faster and reduce the backlog of work (e.g., meter reading, new services construction), which would need to be completed using overtime.

In the aftermath of Hurricane Harvey in 2017, CenterPoint Energy was able to leverage SEN to calculate bills using actual readings (rather than estimated readings) for over 98% of its customers. Without the automation made possible by SEN, a far higher number of bills would have had to be estimated, most likely resulting in a higher number of billing disputes and other customer complaints requiring additional resources to resolve.[1]

Benefit	Primary Group 1 Use Case(s)	Network of the Future	Operations of the Future	Customer of the Future	Home of the Future	Products & Services of the Future	Community of the Future
Faster More Efficient Outage Detection and Response	Outage Detection/Prediction & Analysis	✓	✓				

Outage Avoidance

Smart meter data can be used with mapping and analytical applications to help prevent power outages in the future. When coupled with distribution automation (DA) and grid reliability programs, investments in SEN will enable ACE to strengthen critical utility infrastructure while minimizing customer outages and reducing restoration costs.

SEN would provide ACE with much greater visibility into its distribution system. District operators would be able to view the operational status of the network down to the customer meter level, which would provide them with a more complete understanding of distribution system performance. The increased visibility and data would enable ACE to make more informed investment decisions, which would not only result in improved reliability and shorter outage durations but also reduce costs.

SEN could also be leveraged to monitor distribution system anomalies such as momentary outages that often presage a sustained outage. ACE could collect this information from a series of bell weather smart meters on the system to identify (predict) locations where corrective actions should be taken (i.e., trim trees or replace defective equipment) to eliminate the problem before a sustained outage is realized. ACE could use this information along with the more granular outage information reported by SEN to drive more cost-effective corrective plans as part of future grid modernization efforts.

SEN meters also allow the distribution system operator to utilize targeted customer disconnections during load shedding events to minimize the impact of the event.

Additional Customer Reliability and Outage Restoration Benefits

ACE understands that power outages are more than an inconvenience for customers. Depending on the severity and length, an outage can impact safety and cause significant hardship (sometimes financial – e.g., spoiled food, hotel stays, and lost revenues). SEN can help to reduce outage durations by more efficiently managing outage restoration

[16] OVERALL SYSTEM SAIDI (MAJOR EVENT EXCLUSIVE) REDUCTION IS EXPECTED TO BE SMALL, AS ACE ALREADY HAS HIGH DISTRIBUTION SYSTEM RELIABILITY PERFORMANCE.

crews, not only during major storms, but also during blue sky days. By shortening outage duration, SEN will help reduce economic losses to New Jersey residents. Based on the ICE Calculator, which was developed by the Department of Energy (DOE) and Lawrence Berkeley National Laboratory (LBNL), the value placed by customers on reducing the SAIDI (excluding major storms) for ACE by 5 minutes would be over $50 million. This estimate assumes that the deployment of SEN would be effectively completed by 2022, and that the benefit would be realized over the period 2023 through 2036 (please note that this benefit would be above and beyond the quantified financial benefits presented in this business case).[17]

The increased visibility provided by SEN would also enable ACE to enhance customer service. During an outage, operators would be able to view the status of any given customer and would know which customers were out and which customers had been restored already. ACE customers already receive outage notifications and updates through the ACE mobile app – however, SEN will improve the quality of the underlying outage information, including the estimated time of restoration (ETR) and by extension the quality and value of the customer communications. Proactive and accurate outage communication has benefits for both the customer and the utility. Customers will be able to easily access the information they want and make informed plans based on the current and accurate data. ACE in turn should experience a reduced volume of calls reporting outages or seeking updates.

Benefit	Primary Group 1 Use Case(s)	Network of the Future	Operations of the Future	Customer of the Future	Home of the Future	Products & Services of the Future	Community of the Future
Additional Customer Reliability and Outage Restoration Benefits	Outage Restoration & Notification (ETR)		✓	✓			

3.3 SEN BENEFIT COST ANALYSIS

The results of a rigorous benefit-cost analysis (BCA) show that the benefits of SEN deployment at ACE would significantly outweigh the costs with an estimated **net benefit of $195 million over a 15-year period (2022-2036).** Both benefits and costs come from a broad range of Use Cases, the net effect of which is a business case that is comfortably and economically viable with significant economic, social, customer, environmental and operational benefits**.** Table 4-1 summarizes the high-level costs and benefits of SEN. Individual line item costs and benefit values along with descriptions and mapping of Use Cases to quantified benefits are included in the Appendix to this report.

[17] ICE CALCULATOR. DEPARTMENT OF ENERGY AND LAWRENCE BERKELEY NATIONAL LABORATORY. HTTPS://ICECALCULATOR.COM/. ACCESSED 19 DEC. 2018.

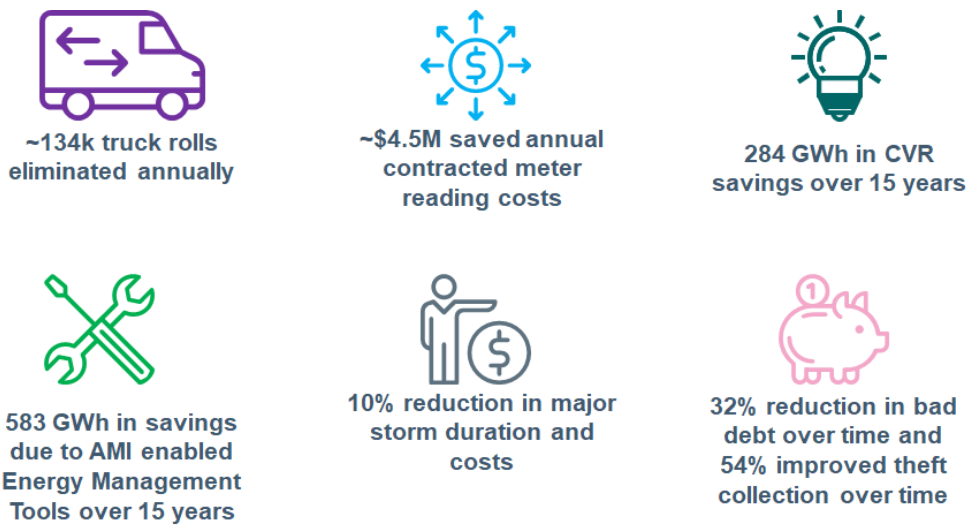
Table 3-1: Cost-Benefit Overview (15-Year horizon)[18]

Business Case Overview000s)	
Benefits	
1. Operational Benefits	$221,101
2. Customer Benefits	$194,703
3. Total Benefits (1 + 2)	$415,805
Costs	
4. O&M Costs	$89,193
5. Capital Costs	$130,767
6. Total Costs (4 + 5)	$219,960
Net Benefits	
7. Net Benefit (3 – 6)	**$195,845**
BC Ratio (Nominal)	**1.89**
BC Ratio (PV)	**1.27**

The anticipated benefits quantified above would result from capabilities and efficiencies that would be enabled by SEN starting in 2022 but fully realized over a period of several years. Major benefits drivers, which include reduced meter reading costs and fewer truck rolls, are summarized in

Figure 7-5: ACE SEN Major Benefits Drivers:

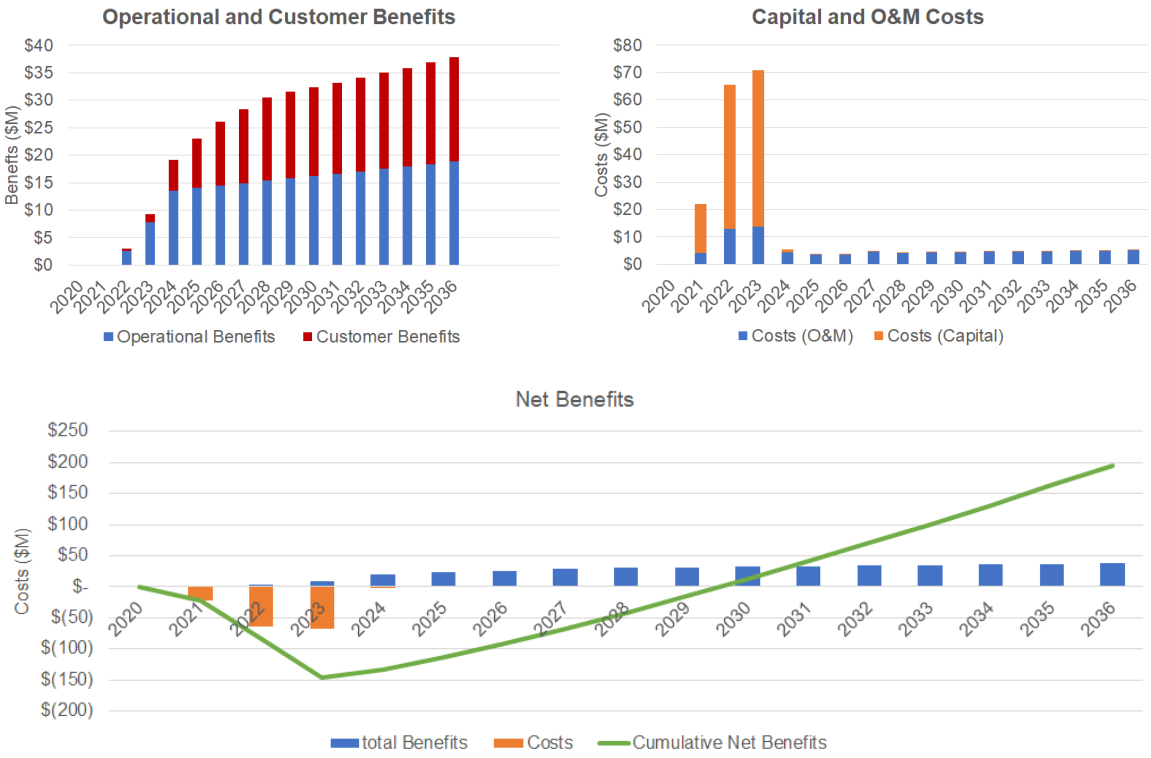
Figure 7-5: ACE SEN Major Benefits Drivers



The graphs below provide additional details regarding the assumed timing of the various costs and benefits:

[18] THE CUSTOMER BENEFITS DETAILED HERE DO NOT INCLUDE BENEFITS DUE TO IMPROVEMENT IN PJM MARKET EFFICIENCY DUE TO LOWER ENERGY AND CAPACITY PRICES DRIVEN BY REDUCTION IN PRICING HEDGE PREMIUMS- A BENEFIT ENABLED BY THE HOURLY LOAD SETTLEMENT DATA FROM AMI METERS. THESE BENEFITS WOULD ADD ANOTHER $252 MILLION TO THE CUSTOMER BENEFITS. IF THESE BENEFITS ARE INCLUDED, THE BC RATIO (NOMINAL) WOULD BE 3.04 AND BC RATIO (PV) WOULD BE 2.04

Figure 8-6: ACE SEN Business Case Benefits, Costs and Net Benefits



Additional financial details can be found in the Appendix to this report.

04

SEN DESIGN OVERVIEW

4 SEN DESIGN OVERVIEW

4.1 SCOPE OF SEN INVESTMENT

The SEN is comprised of the following elements, which together would improve reliability and resilience, provide a foundation for UoF capabilities and support the evolution of Connected Communities:

- Smart meters that record customer usage and critical network operational data.
- A secure and scalable communications network comprised of access points and repeaters.
- A secure and scalable device management system that is capable of managing multiple types of end-point devices including customer hardware.
- A secure and scalable head-end system that collects smart meter data and makes it available for other applications.
- A secure and scalable Meter Data Management System (MDMS) that stores and manages smart meter data.

The secure and scalable SEN can be leveraged and supplemented with other applications, smart devices, advanced data analytics, artificial intelligence, augmented reality, voice computing, and application development capabilities, as needed. Based on the requirements of the Use Cases identified, existing infrastructure, and initial design, ACE has estimated that the initial implementation of SEN would include the following cost components below. These numbers represent ACE's initial design and will be refined once the design is finalized.

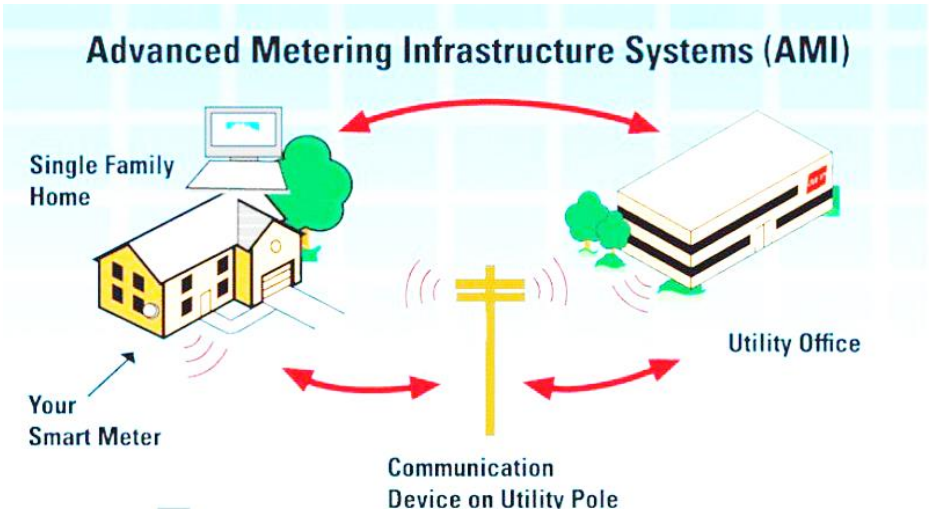
- 330 additional access points.
- 500 additional socket access points
- 1500 additional repeaters.
- 2030 batteries (for access points and repeaters).
- 565,000 smart electric meters (for existing customers).
- 45,000 – 55,000 smart electric meters (for new customers 2018-2036).
- One-time and on-going licensing costs for additional meters in UIQ (head-end).
- Meter pan/jaw replacement for old meters.
- Meter installation costs for meters.
- Sample testing costs for new smart meters.
- In-service testing costs for smart meters once deployed.
- Additional staffing for post-SEN operations.
- Staffing in meter operations (additional engineers and meter data translation specialists).

4.2 SEN DESIGN AND COMPONENTS

The SEN will operate as an end-to-end system, with a customer's interval usage data housed by the smart meter and sent over ACE's energy grid to its Meter Data Management System (MDMS) at its premises as shown in figure 4.1 below. The network will feature two-way communication, with data that can be transferred to the utility and the utility's meter data management system able to contact the meter during critical times, such as a major event.

The SEN is comprised of digital meters, hardware on the energy grid that relays information, and information technology ("IT") systems. Meters allow ACE to obtain energy usage data for all customers and provide them with relevant summaries of their usage behavior. All meters contain a network interface controller that is configured to enable communications capability with the SEN. To send the data at a customer premise to the utility, the communications are relayed via hardware on the system. Repeaters, an intermediary device between customer meters and the head-end system, collect local individual meter information in neighborhoods and relay the data to the head-end system. The head end system is a suite of software components that play important roles from the general meter manager that monitors the status all active endpoints on the mesh network to the critical operations protector software module that prevents unauthorized operation of the meters. The head end software modules extract meaningful data from the network and packages it for use by ACE's back office IT systems. Customer usage data is ultimately passed to the MDMS, which includes a historic reference and specialized logic to minimize customer billing errors.

Figure 4-1: SEN Communication Flows



The Smart Energy Network is comprised of several other IT components that assist in configuring and maintaining the security of the whole network. While the meter is widely regarded as a physical device, its behavior is governed by critical software at each layer of the system architecture. The network interface card on the meter itself hosts the local radio communication protocols and behavior in a set of firmware. Encryption of usage and control data is maintained from end to end, with keys being managed dynamically between each end point device in the field area network and the hardware security modules. Firmware running at each of the continuously powered devices – including the electric meters, smart streetlights, access points, and relays – constantly self-optimize to maximize the bandwidth and availability of the mesh and backhaul networks.

4.3 OTHER IT SYSTEMS

Other IT systems will be updated to take advantage of ACE's smart meter capabilities. The Outage Management System (OMS) will enhance outage prediction, and customer interfaces (such as the ACE website, mobile app, and outage maps) will be updated to provide a more seamless customer experience. The customer billing system will feature multiple enhancements to uniquely support SEN in New Jersey. The SEN's IT components will undergo systematic, frequent software and firmware upgrades and patching, which will maintain a secure and stable network.

With respect to the current billing system, a more robust, automated process is needed to support reliable and efficient deployment of SEN meters and the data they will produce. The replacement of monthly usage data with interval data into the billing system is a more complex process that will take additional effort to integrate. Programs will be written to generate service orders in SAP (the software billing system) based on variable criteria defined by the deployment team.

During the design phase, unique billing system configurations for New Jersey may be uncovered, and these will need to be set up in SAP and other related software programs. Once the meters are installed and the communication system is operational, the SEN functionality in the billing system will be activated. For ongoing metering and billing, customer move in/out, dunning, and invoicing, the system will be configured to have the same functionality as other utility accounts within the PHI organizational family currently have. Billing and metering structures that are specific to New Jersey rates will be created as an addition to this system.

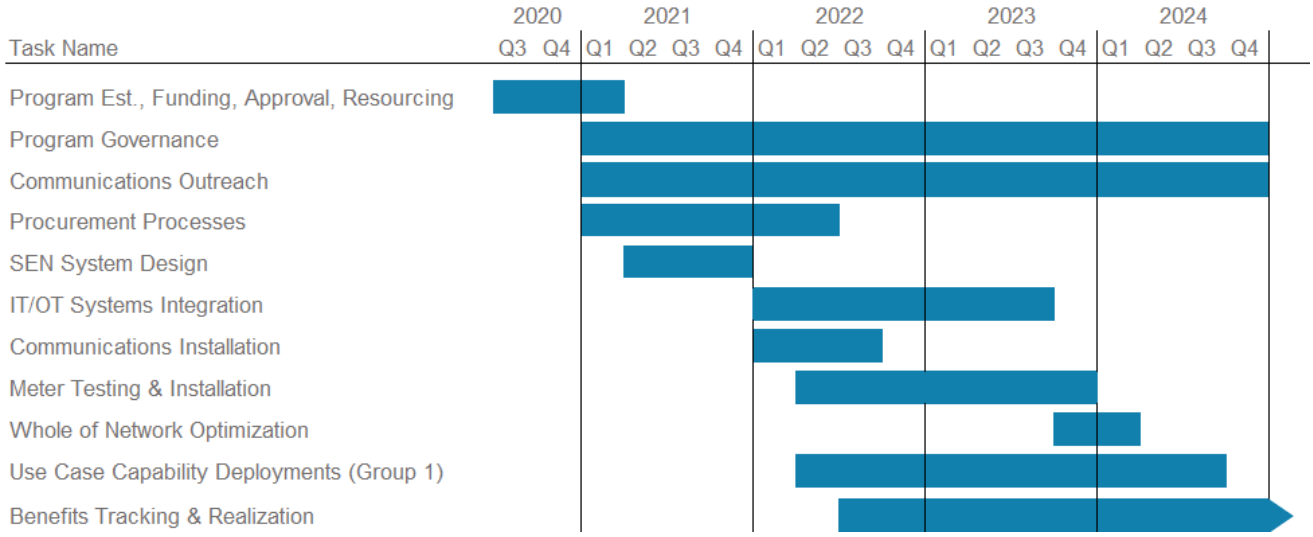
4.4 SEN TIMING

ACE will need approximately 39 months for full SEN deployment. Infrastructure deployment, including communications, IT systems and customer installations will take approximately three years to complete, with the initial meter and communications procurement phase occupying the first 12 months. During procurement ACE will formalize its current meter-related vendor contracts for deployment, confirm pricing processes over the first year, and order equipment during the final six months. As the equipment is delivered to Company facilities, ACE will begin meter testing in advance of the installation phase. Deployment design, communications network design, and IT integration

will run concurrently with equipment delivery and meter testing. They will be developed so that all deployment planning will be complete upon the start of the installation phase.

ACE estimates meter installation will take approximately two years to complete, overlapping the tail end of the procurement phase. Meter deployment will be divided into several regions, and as the first region nears completion, deployment for the second region will begin, and so on. Ahead of the meter installation ACE will deploy a cross region communications network throughout the service territory, so that communications testing can progress unabated. As meter installation nears completion, ACE will optimize meter performance and functionality. Figure 4.2 below shows ACE's SEN Deployment Timeline.

Figure 4-2: ACE SEN Draft Deployment Roadmap



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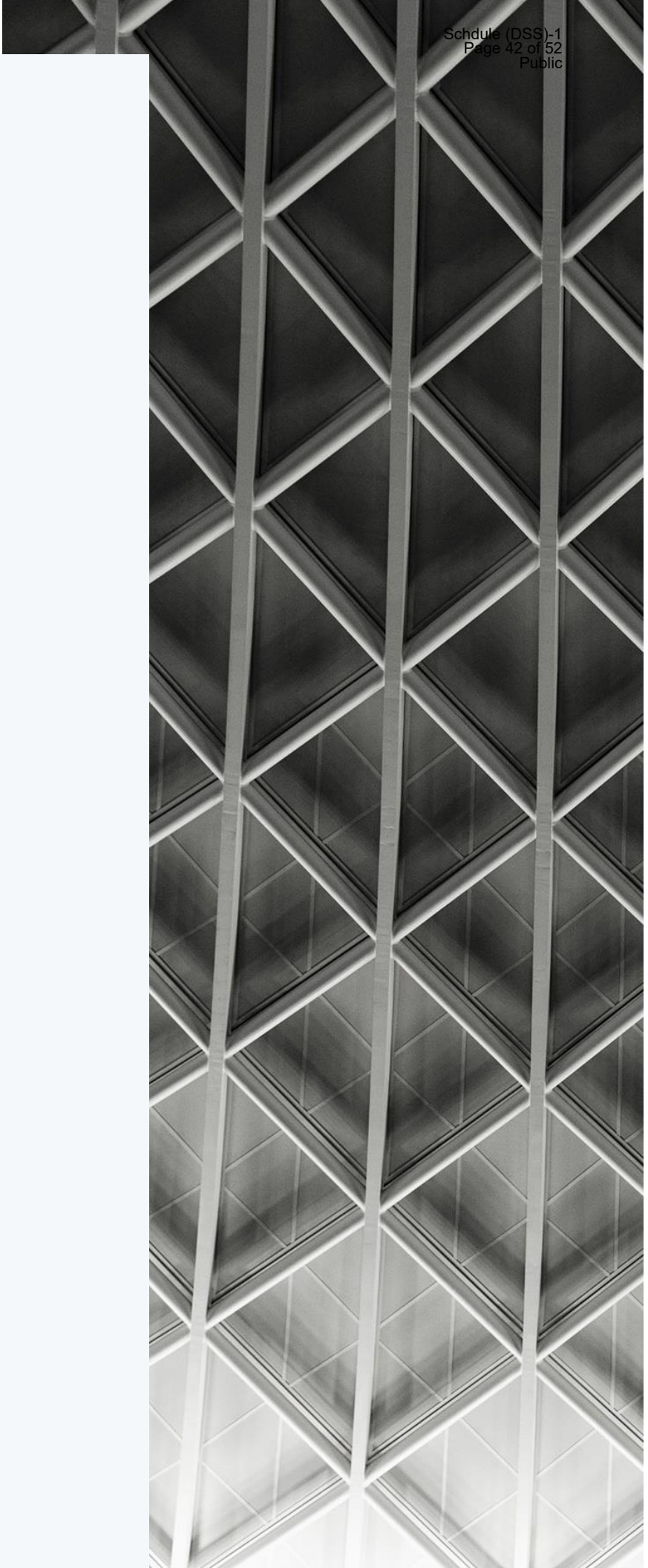
05

APPENDIX



5 APPENDIX

5.1 COSTS & BENEFITS DEFINITION

Costs Definition

Table 5-1: ACE SEN Costs in Business Case

Cost Item	Formula	Total Values (2021-2036) (000s)
Meter Costs for existing customers	Total Cost ($) = Blended meter cost x 565,000 customers	$59,287
Meter Installation Costs	Total Cost ($) = Meter install cost x 565,000 customers	$[redacted]
Meter Pan / Jaw Replacement	Total Cost ($) = Meter pan/jaw repair cost x 2% of meters x 565,000 customers	$7,257
Deployment Meter Testing	Total Cost ($) = $1,028 per lot x 56 lots + $690,000 (T-rated testing cost)	$[redacted]
Incremental Meter Costs for new customers	Total Cost ($) = $76 additional cost per meter x new customers (2020-2036)	$3,049
IT Costs	Total Cost ($) estimate based on Exelon experience	$32,877
Communications Network	Total Cost ($) estimate based on vendor discussions	$10,406
Customer Outreach/Education	Total Cost ($) estimate build-up reflecting activities in customer outreach strategy	$5,785
Use Case Deployment Costs	Total Cost ($) estimate based on 4.6 FTEs p.a. (internal and external) over 3 years	$3,202
Project Management	Total Cost ($) estimate based on Exelon experience	$14,955
Billing Transition Staffing	Total Cost ($) = 12 employees x 24 months x labor cost	$2,037
IT Costs (Ongoing)	Annual Cost ($) = ~$2.3M per year	*$39,245*
Communications Network (Ongoing)	Annual Cost ($) = monthly cost per access point x ~830 access points	*$3,330*
Additional Staffing (Ongoing)	Annual Cost ($) = ~$1.1 million (8 additional FTEs)	*$19,140*
Total		**$219,960**

Benefits Mapping

Table 5-2: ACE SEN Benefits to Use Case Mapping

Use Case	Quantified Operational Benefit	Quantified Customer Benefit
1-2. Customer Segmentation & Behavioral Analysis		TOU – Energy Savings* TOU – Capacity Savings*
1-4. Customer Energy Efficiency		EMT - Energy Savings (Residential) EMT - Energy Savings (Non-Residential) EMT - Capacity Savings (Residential) High Bill Alerts (Residential)
1-5. Customer Service & Call Center Performance	Avoided call center calls related to outages	
1-8. AMI Network & Data Operations	Avoided meter reading contract savings Avoided truck rolls for meter re-reads Avoided legacy meter exchanges	
1-9. Remote Move in/Move out	Avoided truck rolls for move ins/ move outs	
1-10. Remote Disconnect/Reconnect	Avoided truck rolls for reconnects/connects Avoided truck rolls for disconnects	Reduction in Bad Debt Write-Offs
1.12. Outage Detection/Prediction & Analysis	Avoided truck rolls related to call backs Avoided truck rolls for trouble outages	Improved Storm Response
1.18. Revenue Protection & Assurance		Identification & Recovery of Revenue Theft
1.19. Conservation Voltage Reduction		CVR-Energy Savings (Residential) CVR-Energy Savings (Non-residential) CVR-Capacity Savings (Residential) CVR-Capacity Savings (Non-Residential)
1.23. Energy Trading & Market Efficiencies		Improved PJM load settlement process Energy Savings* Improved PJM load settlement process Capacity Savings*
Additional Benefits (not associated with a Use Case)	Avoided In-Service Testing (2022 & 2023)	

*Calculated but not included in BCA Total

Operational Benefits

Table 5-3: ACE SEN Business Case Operational Benefits

Operational Benefit	Benefit Formula	Total Values (2021-2036) (000s)
Meter Reading contract savings	Annual Benefit ($) = Millennium Meter Reading Costs x Expected Reduction (Benefit) %	$81,272
Move-Ins/Move Outs	Annual Benefit ($) = Volume of Truck Rolls x Cost of Truck Rolls x Time per Truck Roll x Expected Reduction (Benefit) %	$50,679
Connects/Reconnects		$6,289
Disconnects		$27,253
Meter Re-reads		$14,765
Call Backs		$535
Trouble Calls		$22,746
Meter Exchanges	Annual Benefit ($) = Volume of Truck Rolls x ((Cost of Truck Rolls x Time per Truck Roll) + Meter Cost) x Expected Reduction (Benefit) %	$14,668
Avoided Call Center Calls	Annual Benefit ($) = Volume of Outage Calls x Cost per Call x Expected Reduction (Benefit) %	$2,661
Avoided Regulatory Testing during Deployment	Total Benefit ($) = Annual Required Truck Rolls) x 2 years x Cost of Truck Rolls x Time per Truck Roll x Expected Reduction (Benefit) %	$235
Total		**$221,101**

Customer Benefits

Table 5-4: ACE SEN Customer Benefits

Customer Benefit	Benefit Formula	Total Values (2021-2036) (000s)
CVR Energy Savings (Residential)	Annual Energy Benefit ($) = Energy Costs ($/MWh) x Residential CVR Savings x Residential Electric MWh Volume x Substation Coverage	$13,017
CVR Energy Savings (Non-Residential)	Annual Energy Benefit ($) = Energy Costs ($/MWh) x Non-Residential CVR Savings x Non-Residential Electric MWh Volume x Substation Coverage	$9,993
CVR Capacity Savings (Residential)	Annual Capacity Benefit ($) = Capacity Costs ($/MW-day) x 365 Days x CVR Residential Capacity Savings (%) x Residential PLC (MW)	$2,884
CVR Capacity Savings (Non-Residential)	Annual Capacity Benefit ($) = Capacity Costs ($/MW-day) x 365 Days x CVR Non-Residential Capacity Savings (%) x Non-Residential PLC (MW)	$1,701
EMT Energy Savings (Residential)	Annual Energy Benefit ($) = Energy Costs ($/MWh) x [{Residential EMT Savings (%) x Residential Electric MWh Sales} – Current NJ Behavioral Program MWh Savings] x Expected Reduction %	$40,110
EMT Energy Savings (Non-Residential)	Annual Energy Benefit ($) = Energy Costs ($/MWh) x [{Non-Residential EMT Savings (%) x Non-Residential Electric MWh Sales} – Current NJ Behavioral Program MWh Savings] x Expected Reduction %	$6,863
EMT Capacity Savings (Residential)	Annual Capacity Benefit ($) = Capacity Costs ($/MW-day) x 365 days x [{Residential EMT Peak Savings x Residential load after system losses (MW)} – Current NJ Behavioral Program MW Savings] x Expected Reduction %	$4,365
Reduction in Bad Debt Write-Offs	Expected reduction in average annual net write-offs from $15.5 to $10.5 million	$65,734
Improved Storm Response	Annual Benefit ($) = Average Major Storm Cost per Day x Reduction in storm duration x Average Duration of Storms (days) x Average annual frequency of storms	$42,580
Identification of Revenue Theft	Annual Benefit ($) = Average Annual Identified Revenue Theft ($) x (Expected Improvement (%))	$5,921
High Bill Alerts – Energy Savings (Residential)	Annual Benefit ($) = Annual Savings (MWh) x Energy Costs ($/MWh) x Expected Reduction (%)	$1,536
PJM Load Settlement - Energy Savings*	Annual Energy Benefit ($) = Total Electric MWH Volume (MWh) x Energy Costs ($/MWh) x Improvement Factor % x Expected Reduction %	$230,266
PJM Load Settlement - Capacity Savings*	Annual Capacity Benefit ($) = Total Electric PLC (MW) x Capacity Costs ($/MW-day) x 365 days x Expected Reduction %	$14,525
TOU - Energy Savings*	Annual Energy Benefit ($) = Energy Costs ($/MWh) x Residential TOU Savings (%) x Residential Electric MWH Sales x Program participation (%)	$3,828
TOU Capacity Savings*	Annual Capacity Benefit ($) = Annual Benefit = Capacity Costs ($/MW-day) x 365 days x TOU Peak Savings (%) x Residential load after system losses (MW)	$3,395
Total	**(excl. TOU and Load Settlement)**	**$194,703**

*Not included in BCA total.

5.2 USE CASE DESCRIPTIONS

Table 5-5: ACE Applicable Use Case Inventory Definitions by Deployment Group

#	Use Case	Use Case Overview
Group 1		
1	**Enhanced Customer Engagement & Communications**	A set of customer-benefiting functions and analytic applications that provide visualizations and information to customers, through bi-directional communications channels, including mobile and web portals, Home Area Networks (HAN), etc. Other features connected to interfaces would include: Neighbor/Peer Gaming & Loyalty Programs. These Use Cases are enabled in part by expanded use and volumes of AMI data combined with the communications network.
2	**Customer Segmentation & Behavioral Analysis**	Provides the ability to develop highly targeted customer segmentation models based on more granular energy usage data and customer interactions to improve customer service, marketing, rate offerings, new products and services, and planning load forecasts.
3	**Customer Power Quality**	Capability that allows ACE to obtain voltage, load, and alert data directly from the meter to analyze customer power quality issues (flicker, sag, swell), without the need for further instrumentation, and can also help ensure appropriate corrective actions are taken (utility or customer side of the meter).
4	**Customer Energy Efficiency**	SEN data gives the customer the ability to make more educated energy efficiency related decisions, change energy consumption habits, and ultimately lower utility bills. This is enabled by providing customers with detailed SEN data through web or mobile portals, smart devices and in-home devices. ACE can also use this SEN data to design and offer energy efficiency products and services.
5	**Customer Service & Call Center Performance**	Enables the use of broader range of information to increase call center knowledge, improve service, improve customer satisfaction, and lower customer costs by bringing together historical and real-time information to support decision analysis and improve the customer experience.
6	**Customer DER/PV/EV**	Services and systems that will use SEN data to help assist customers with DER (solar, EV, energy storage) installations and the management of any power quality issues that occur as a result of variable DER load
7	**Customer Device Safety (Hot Sockets)**	Enhances customer safety by using SEN data, such as alerts and voltage data to detect safety issues relating to customer meters and power connections such as hot sockets and fallen wires and provide alerts to customers and ACE.
8	**SEN Network & Data Operations**	Back office processes and systems that manage the initial SEN infrastructure deployment and the ongoing and updated Meter Operations business function including acquisition, warehousing, testing, installation, maintenance, configuration, data streams and quality, alarm management, and meter data management. It would also include, over-the-air (OTA) programming which would eliminate the need to physically swap the meter out each time a NEM customer was added to the system.
9	**Remote Move in/Move out**	ACE currently sends a metering service employee to move a customer in or out for a variety of reasons. With the SEN, the turn on functions and on demand read functions to support these processes can be automated and performed remotely and instantaneously, thereby increasing customer satisfaction and efficiency across various customer processes.
10	**Remote Disconnect/ Reconnect**	ACE currently sends a metering service or collections employee to connect or disconnect the meter for a variety of reasons. With the SEN, the reconnect/disconnect functions to support these processes can be automated and performed remotely and instantaneously, thereby increasing customer satisfaction and efficiency across various customer processes.
11	**Network Connectivity Analysis**	ACE's electricity network is complex, covers a large area, and provides power to different customers at different voltage levels. Ensuring that the required sources and end-use loads are correctly represented in operations systems is often very difficult. The SEN end-point meters can extend the network model and enable a high level of accuracy of connections and phasing, which in turn results in better planning and operations performance, and enables many other network dependent Use Cases.
12	**Outage Detection/Prediction & Analysis**	Uses outage data from operations systems and SEN meters to identify and verify possible outage locations, as well as identify network sections and specific customers (and numbers) that are out of power. This data is provided and displayed in real-time, to allow analysis, fast response and crew dispatch to the precise location (down to meter) with information on the potential cause of the outage in order to quickly restore power and ensure all customers are restored.

#	Use Case	Use Case Overview
13	**Outage Restoration & Notification (ETR)**	Use SEN outage data to calculate and communicate reasonable, more accurate and acceptable outage status and restoration times to customers in real time. This largely eliminates one of the most common customer complaints about utility service, i.e., inaccurate estimated restoration times. Messaging solutions within scope of this Use Case include IVR, web portals, text messaging, social media, mobile applications, and press releases.
14	**Voltage Monitoring & Analysis (PQ)**	Using SEN data and other network data sources, voltage readings are captured, visualized, and system-wide analysis is run to determine locations where voltage violations exist both above and below nominal voltage. Utilities can utilize this information for accurate analysis of voltage issues and a base for voltage planning and optimization across the network. Further, this information can help planners identify strategic locations for deployment of Volt/VAR optimization equipment.
15	**Asset Load/Phase Management, Balancing & Power Analysis (incl. TLM & Customer Load Curtailment/Limiting)**	Using SEN data and other network data sources, load data is imported, aggregated, and visualized. Power flow analysis is run to examine and monitor loading profiles of every network asset along the feeder from the substation to the smart meter. This Use Case gives visibility of loading profiles and load flows of all network assets and customers with real-time or overnight SEN data updates. This information can be used by planners and operators to determine areas of overloading of assets on the system, plan responses to major events, execute asset balancing, and customer load curtailment.
16	**Load Profiling & Forecasting**	Capability that would enhance load profiles and forecasts by using SEN data in combination with network, customer billing or other data (e.g., weather) to perform more detailed usage analysis. This is beneficial to customers and ACE planners by supporting optimized planning of load growth, which in turn leads to optimized capital spending and reliability of the network.
17	**Distribution Technical Losses**	Distribution losses can be identified by comparing the SEN end-point meter usage data with usage data at the distribution entry point (i.e. substation). Areas of high losses or network sections with particularly high losses can be identified through the analysis. Further analysis on the causes of the high losses will shed light into the different types of corrective/mitigating actions that can be taken to reduce the technical losses. Technical losses are spread across the customer base so any improvement in this area could reduce customer bills.
18	**Revenue Protection & Assurance (includes meter to cash)**	Revenue protection refers to the prevention, detection, and recovery of losses caused by interference with or theft of utility service. This use case will leverage smart meter consumption, as well as voltage and event data, to detect energy theft and meter tampering by employing multiple screening techniques, including cross-service correlations. Energy theft is spread across the customer base, so any improvement reduces customer bills.
19	**Conservation Voltage Reduction**	CVR is a technique for improving the efficiency of the electrical network by reducing voltage on the lines that runs from substations to homes and businesses. CVR is a program that permanently lowers the voltage at which electrical power is delivered, which in turn yields energy savings for customers without effecting power quality. SEN can play an important role in CVR by providing end-point voltage data to help analyze, lower and then monitor voltage levels
20	**Innovative Rate Development**	Using customer segmentation, smart meter and market data - use pricing simulations to design and implement innovative rates that suit the regulated revenue frame, next generation and customer expectations. - time of use, demand, DER specific pricing, market pass through, etc. This would also include support for new products and services and is heavily dependent on Customer Segmentation.
21	**EV/PV/Storage Products & Services**	Using interval SEN usage and voltage data, alongside other data, to develop services, products, rates and systems that will help assist customers with DER (solar, EV, energy storage) decisions, cost estimates, savings, installations and the implications of any power quality issues that occur as a result of this type of variable DER load.
22	**Customer Prepaid Power**	Prepaid energy service allows consumers to pay in advance for utility services, to monitor their usage and account balance daily, and to manage their usage in a manner that is consistent with their household or property usage profile. Access to daily information can facilitate direct customer energy management. Prepaid also allows customers the choice of when to consume in the case of transient properties – RV Parks, Marinas, lake houses, etc. The spread of smart meters has resulted in opportunities for these new services.
23	**Energy Trading & Market Efficiencies**	Through the deployment of AMI meters, energy market settlements are carried out at the hourly level using actual metered data compared to the previous practice of using class load profile data. These hourly energy load market settlements improve wholesale market efficiency, which in tum results in reduced pricing hedge premiums and lower prices for customers.
Group 2		

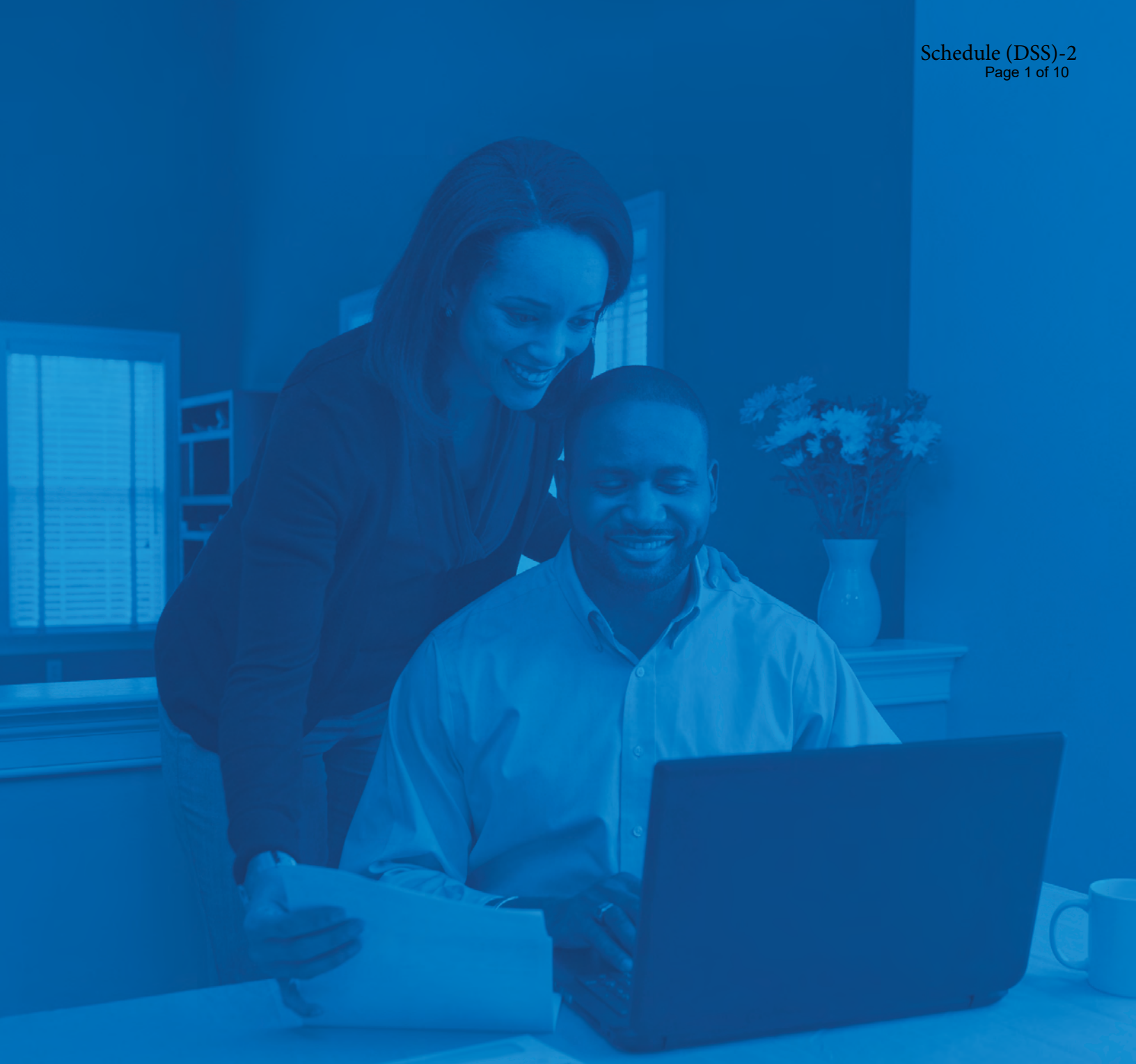
#	Use Case	Use Case Overview
1	**Smart Home (HEM, Sensors, Assistants, Appliances)**	This Use Case relates to potential contribution of SEN data and infrastructure to support Home Energy Management Systems (HEMS) and more broadly the Smart Home. This objective is to utilize SEN meter data in combination with other behind the meter communications and smart devices - outlets, home Assistants (Alexa, Google Home, Home Pad), thermostats, appliances, etc., in combination with advanced analytics and visualizations that help the customer better engage with and manage their energy usage and other smart home functions (security, internet, etc.). The SEN could be leveraged here as long as capacity and connectivity are available. In the event of a demand response request from the Utility, this would also include potential infrastructural support for optimal control/scheduling of DERs and automatic control of smart devices/appliances (thermostats, dishwasher/washing machines, water heaters, etc.)
2	**Connected Community "Lite/POC" (mobility, security, Connectivity, sustainability, resiliency)**	Pilot Projects: this Use Case is intended to cover the SEN data and infrastructure support contribution for any NJ or ACE Connected Community/Smart City initiatives. A Connected Community/Smart City is an urban area that uses different types of electronic data collection sensors to supply information which is used to support assets, people and resources efficiently. This includes data collected from citizens, devices, IOT, and assets that is processed and analyzed to monitor and manage traffic and transportation systems, gunshots, environmental issues, power plants, water supply networks, waste management, law enforcement, information systems, schools, libraries, hospitals, parking, lighting, floods, and other community services.
3	**Customer Safety (Gas Leak, Carbon Monoxide)**	This use case assesses reliability, service and safety impacts at a customer or meter/sensor level (gas leaks, flooding, carbon monoxide, etc.). It allows proactive identification of premise level reliability and safety concerns, directs grid investments to customers with the greatest outages, and cost effectively monitors reliability and safety goals. With SEN systems, customer service representatives at the call center may be able to ping a customer's meter to determine whether or not it has voltage or there is any safety issue. This allows the representative to offer better advice on what to do in the current situation. SEN can sense and report issues when no one is present on premises. Utilities can use this information to notify customers of interruptions, in a manner of the customer's choice.
4	**Network as a Service**	This Use Case is intended to cover new business opportunities that could leverage the capabilities of the SEN data and infrastructure in an "as a service" mode to customers, other utilities, municipalities, communities or cities. Network as a Service – provision of the ACE SEN capabilities to enable municipalities to connect their smart meters and provide smart services.
5	**Data as a Service**	This Use Case is intended to cover new business opportunities that could leverage the capabilities of the SEN data and infrastructure in an "as a service" mode to customers, other utilities, municipalities, communities or cities. Data as a Service – provide SEN network and data services that manage both the smart meter device and meter data on behalf of the municipality.
6	**Rate Analyzer & Comparator**	The ability to analyze customer's usage profile and provide rate options that would fit that profile and meets customer needs for green outcomes, reduced bills, etc.
7	**Usage & Bill Alerts, Saving Tips**	Alerts that would be set by the customer and ACE to warn or notify customers of usage outside normal parameters, tips within their current rates to reduce bills, etc.
8	**Interactive Energy Demand & Bill Management, Analytics & Self-Service**	Customer analytics and self-service capabilities that allow the customer to interrogate their energy and billing profile with the aim of the customer becoming informed and engaged, and then be able to leverage the Use Cases above to make required changes.
9	**Customer Demand Response/DSM**	ACE's SEN infrastructure can provide information on energy use as well as alerts and updates and price signals, which, in conjunction with customer displays, the internet, cell phones, email, and text can alert customers and control devices (thermostats, smart appliances, water heaters) based on their demand response set-up. This Use Case also deals with the analytics around calculating the real-time energy information (usage, pricing, etc.) to participating customers to enable better demand decisions. The information can also be used in home or commercial/industrial building automation applications. In this case ACE would send dynamic pricing or device signals (perhaps real-time) to respond to a variety of drivers (carbon dioxide, feeder loading, major event, etc.) to request a customer's response or curtailment service. This Use Case is designed to contribute to energy, fossil fuel and carbon reductions.

#	Use Case	Use Case Overview
10	**Street-Lighting Remote Operations**	This Use Case leverages the SEN to enable: - Remote control of lumens output of networked streetlights allows for the streetlight operators to remotely increase or decrease the lumens output of streetlights depending on various operational considerations. For example, perimeter lights around malls may be dimmed after hours to save energy and reduce light pollution complaints. Conversely, lights around stadiums or popular late-night meeting spots may be increased / strobed to assist in crowd control. Motion activated perimeter lights may also provide a certain level of deterrence against potential intrusions. - Remote monitoring of health leverages the communications capabilities of smart streetlights to allow operators to remotely determine the operating status of a streetlight without having to resort to either sending out nighttime patrol crews or depending on customers to report particular outages.
11	**Next Generation Meter to Cash**	With more granular and quality SEN data available, alongside numerous other internal data sources, ACE can optimize and re-invent their meter-to-cash processes and drive out inefficiencies, increase service, and reduce costs. The SEN data is significantly more accurate at the source and by mapping the data from the SEN to its end use, leakage can be detected more easily. The cost of these losses is spread across the customer-base, so any improvement ultimately reduces customer bills. • Billing cost reduction due to a decline of billing irregularities and analysis work. • Collection cost reduction due to a decline of back-office collection workload. • Reduction in bad debt due to improvement in field collections. Being able to remotely detect and disconnect will reduce the occurrence.
12	**Critical Peak Pricing**	• Critical Peak Pricing (CPP): is a construct under which a utility can call a critical event when it anticipates or experiences high wholesale market prices or emergency system conditions and raise the rate. CPP rates can be fixed at a predetermined rate for each critical event or vary based on system demand during the critical event. CPP rates are designed to reduce a customer's consumption on a limited number of days when critical events occur. • Critical Peak Rebates (CPR): these are offered when a utility calls a critical event during pre-specified time periods (e.g., 3 pm - 6 pm summer weekday afternoons) in response to anticipated or observed high wholesale market prices or emergency system conditions. The price for electricity remains the same during these periods, but the customer is refunded at a single, predetermined value for any reduction in consumption as determined by the difference in what the utility deemed the customer was expected to consume and their actual consumption.
13	**Volt/Var Optimization (VVO)**	VVO relies on real or near-real time information from strategic locations along the circuit to optimize system-wide voltage levels and reactive power flow. VVO is an extension of CVR in that it is the dynamic management and optimization of voltage. Where CVR is focused on conservation and involves permanent changes, VVO is focused on getting more efficient voltage outcomes, so that power is delivered at the optimal voltage for the load, whilst staying within required technical and safety limits. VVO is far more dynamic in nature and uses both increases and decreases in voltage to obtain optimum voltage. VVO is usually supported by some level of distribution automation and can provide the monitoring and adjusting role for CVR which would allow a more aggressive reduction approach (given some level of automation).
14	**Microgrids**	This Use Case is intended to cover the SEN data and infrastructure support contribution for microgrid initiatives, which has data and infrastructure needs and dependencies far broader than SEN. A microgrid is a localized group of electricity sources and loads that normally operates connected to and synchronous with the traditional centralized electrical grid (macrogrid) but can also disconnect to "island mode" and function autonomously as physical and/or economic conditions dictate.
15	**Pole Tilt/Down**	In this Use Case, pole sensors enable utilities to improve reliability through expedited post-storm damage assessments, and optimized supply chain logistics, all while leveraging the utilities' investment in its network architecture. Pole sensors mounted on utility poles can sense pole characteristics such as tilt, orientation, impact from hazardous events etc., allowing operators to monitor and predict their structural integrity and take necessary action when required. This Use Case enables utilities to recover more efficiently, and quickly, from natural disasters and other events that knock down utility poles, speeding service restoration for customers.
16	**Storm Analysis & Outage (Utility Analytics)**	This Use Case leverages investments in AMI Infrastructure that give utilities near-real-time readings on the health of their electric grid. The capability to use this and storm/lightning data in causal and predictive analysis can equip utility engineers and dispatchers to predict which assets will be affected by storms while optimizing the placement of crews, thus decreasing outage restoration times. Combined with geospatial visualization weather data and integrated statistical algorithms, the utility can be more prepared and shorten outages from weather events and identify weak points in the electrical distribution system thus preventing future outages.

#	Use Case	Use Case Overview
17	**Innovative Products & Services: Home Security, Energy Management**	The enablement of potential new innovative products/services that are either new, or an improved version of current offerings. These new ACE products and services will leverage SEN data and network and look to deliver these in the key areas of Customer, Home and City areas.
Group 3		
1	**Asset Management, Health & Risk**	This Use Case uses advanced asset analytics to enable smart asset management capabilities and become increasingly more focused on monitoring and predicting system health and deficiencies to ensure that all operations, investments and maintenance decisions are correct based on in-depth analysis and evaluation of detailed asset-level health and risk data. Being able to manage assets and integrated data (asset, condition, load, voltage, maintenance, etc.) in real time from a health and risk point of view is now a significant area of development in the industry. Predictive maintenance is a key component of a maintenance regime that involves using software for real-time monitoring of equipment health and comparing its current operational state to a model that defines normal or ideal operating conditions. Predictive analytics software uses advanced algorithms to detect subtle operational variances for each piece of equipment, which often warn of impending problems that might have gone unnoticed otherwise.
2	**Reliability Analysis, Optimization, & Cost/Benefit**	Reliability analysis and optimization uses the network model, outage and SEN data to provide planning and upgrade advice to improve system reliability. It provides the ability to analyze outages over specified timeframes, jurisdictions, asset hierarchy (substation, main line conductor or trunk, switches, transformers, laterals, fuses, meters, etc.), and outage types, to review the impacts of outages on SAIDI, SAIFI, provide improvement options based on cost or risk, and cost benefit analysis.
3	**Connected Community (mobility, security, Connectivity, sustainability, resiliency)**	This Use Case is intended to cover the SEN data and infrastructure support contribution for any NJ or ACE Connected Community/Smart City initiatives. A Connected Community/Smart City is an urban area that uses different types of electronic data collection sensors to supply information, which is used to support assets, people and resources efficiently. This includes data collected from citizens, devices, IOT, and assets that is processed and analyzed to monitor and manage traffic and transportation systems, gunshots, environmental issues, power plants, water supply networks, waste management, law enforcement, information systems, schools, libraries, hospitals, parking, lighting, floods, and other community services.
4	**Integrated System Planning/DER Analysis**	Integrated System Planning is a core part of a utility's business and would be deployed in the planning and development of the distribution networks. This Use Case and its analytics would use SEN data with other information to cater for the growth in DER connections and help manage/optimize the capital investment program to ensure that the electricity networks remain fully compliant with the technical and regulatory requirements. The objectives here are to continuously improve the safety, security, reliability and capacity of the distribution networks, optimize the performance and condition of the existing assets, analyze the capability of the network to accommodate both demand and high volume of generation connections, provide innovative technical solutions, and produce analytic outputs (plans, cost/benefits) to support design and delivery teams and ensure the network is developed in the most economic, efficient and coordinated manner to meet customer requirements.
5	**Utility as a Service**	Utility as a service that leverages ACE SEN infrastructure and systems to offer a range of meter-to-cash services for other utilities without these capabilities.
6	**Distribution/Bi-Directional Marketplaces**	Support of a transparent and unified distribution (or peer-to-peer) market for customers, DERs and other third-party products and services across the state that are animated and fully transactive. The extent to which ACE can use its SEN platform to support these new markets will largely depend on the strength of its foundational capabilities to better understand customers and communities.
7	**Automated Fault Isolation & Restoration (FLISR) – Self Healing (ADMS)**	This Use Case isolates faults, performs automated switching actions to isolate faults and restore maximum number of customers. It ensures switching actions during restoration are safe and do not cause overloads or extreme voltage conditions in the system. It generates and displays ranked, ordered restoration, system restoration solutions, together with specific sequenced steps in real-time. It integrates DER and storage dispatch with system constraints, and safe operations objectives, for a safer, more complete system restoration decision-making process. FLISR/ADMS allows for any combination of decentralized and centralized automation.
8	**Volt/VAR Control**	Volt-VAR Control or VVC refers to the process of managing voltage levels and reactive power throughout the power distribution system. Benefits include: minimized feeder loss, maximized feeder power factor, minimize feeder voltage profile for variable consumption, and VAR support for the transmission system. Volt Var application monitors system to determine if its operating efficiently, and automatically operates field equipment to bring the system back into an optimized state if it goes out of the bounds set by the operator.

#	Use Case	Use Case Overview
9	**DA/Distributed Operations Intelligence (ADMS)**	The extension of intelligent monitoring and control over electrical power grid functions to the lowest network level (i.e., the SEN meter). The goal of Advanced Distribution Automation is real-time adjustment to changing loads, generation, and failure/outage conditions of the distribution system, usually without operator intervention. This necessitates control of field devices, which implies enough information technology (IT) development to enable automated decision making in the field and relaying of critical information to the utility control center. The IT infrastructure includes real-time data acquisition and communication with utility databases and other automated systems. Accurate modeling of distribution operations supports optimal decision making at the control center and in the field. Demand Response Control is the automation of control functions that control DR mechanisms and devices in the field (with appropriate oversight). It is heavily dependent on the Demand Response Planning.
10	**Permanent Power Quality Management (ADMS)**	The purpose of the permanent power quality measurement enterprise activity is to provide long-term and continuous monitoring in order to provide reliability and benchmarking statistics. Many customers which can include utilities and large consumers of electric power have a need for an installed permanent power quality measurement system. Historically, power quality meters were portable and installed on a temporary basis in order to capture, diagnose and solve a specific problem that might be occurring in the facility. However, with increased demands for power quality and reliability benchmarking, power quality contracts, billing and energy use verification, predictive maintenance and others, the need and demand for permanent power quality monitoring has increased dramatically in recent years.
11	**Utility, Customer & Community Energy Storage**	Grid energy storage (also called large-scale energy storage) is a collection of methods used to store electrical energy on a large scale within an electrical power grid. Electrical energy is stored during times when production (especially from intermittent (utility and customer) power plants such as renewable electricity sources such as wind power and solar power) exceeds consumption and returned to the grid when production falls below consumption. SEN data and sensors can be utilized to manage and optimize the bi-directional flows inherent with this DER technology.
12	**Optimal Capacitor Bank Design & Placement**	This Use Case determines optimal location of capacitor banks for deployment on the network to minimize voltage swells / sags. Optimization routine should be able to maximize cost/benefit, or other voltage stability metrics. The problem of capacitor placement on a network system has a variety of complex multi-variable solution algorithms. The location, type, and size of capacitors, voltage constraints, and load variations are considered. The objective of capacitor placement is peak power and energy loss reduction, considering the cost of the capacitors. The power flows in the system are explicitly represented, and the voltage constraints are incorporated. The master plan is used to determine the optimal location of the capacitors. Master plan sub-details lay out the type and size of the capacitors placed on the system.
13	**Dynamic Circuit Reconfiguration (ADMS)**	By polling the various smart devices, the ADMS is able to perform a fault isolation calculation to isolate the fault. The ADMS then sends a device command to the isolation device, which acknowledges the command and performs the functions needed to isolate the fault by dynamically reconfiguring the network. These events are monitored in operations through regular polling of the devices. The ADMS eventually calculates the reconfiguration scenario and sends the commands to the reconfiguration device, which acknowledges the commands. After the reconfiguration device functions, it sends an update to the ADMS which sends all equipment status updates to operations.
14	**Vegetation Management**	"Predictive maintenance for trees". Factors such as annual growth rates, tree species, feeder construction type, and network configuration can be considered to achieve optimal reliability.
15	**Environmental/Sensitive Area Analysis**	Analytics that assist the mapping of environmentally sensitive areas (flora, fauna, etc.) in combination with SEN for other key planning functions (reliability, voltage, etc.)
16	**Advanced DER Planning & Management (DERMs) (ADMS)**	The advanced distribution automation system function performs a) data gathering, along with data consistency checking and correcting; b) integrity checking of the distribution power system model; c) periodic and event-driven system modeling and analysis; d) current and predictive alarming; e) contingency analysis; f) coordinated Volt/VAR optimization; g) fault location, isolation, and service restoration; h) multi-level feeder reconfiguration; i) pre-arming of RAS and coordination of emergency actions in distribution; j) pre-arming of restoration schemes and coordination of restorative actions in distribution; and k) logging and reporting. These processes are performed through direct interfaces with different databases and systems, (EMS, OMS, CIS, MOS, SCADA, AM/FM/GIS, AMS and WMS), comprehensive near real-time simulations of operating conditions, near real-time predictive optimization, and actual real-time control of distribution operations.

Schedule (DSS)-2



Smart Energy Network

Customer Education & Engagement Strategy

August 2020

atlantic city electric®

An Exelon Company

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INTRODUCTION

Atlantic City Electric is proposing to build a Smart Energy Network across South Jersey, including installing smart meters and upgrading the local energy grid with specialized networking equipment. Together, these upgrades will enhance the system's reliability and resiliency, improve customer service, and support new tools and programs to help customers save money and energy. The Customer Education & Engagement Strategy establishes the framework for a future Customer Education & Engagement Plan that will outline a comprehensive, multi-channel approach for educating customers about the Smart Energy Network. This work will support the successful deployment of the Smart Energy Network, help customers realize the benefits of the network, and build awareness of how the energy grid is being upgraded into a common platform connecting customers to new energy services and choices.

The company will employ a multi-layered approach, including broader communications through advertising and social media and direct communications to customer homes and businesses, creating multiple touchpoints for customers to ensure communications reach each target audience. The strategy also emphasizes reaching customers through their preferred communications channels and building on the company's existing relationships across its service area to reach customers. The future Customer Education & Engagement Plan will serve as the single source of information governing community outreach and customer communications related to the Smart Energy Network, including the meter exchange process.

Based on the smart grid and smart meter experiences of its sister companies and lessons learned from energy companies across the country, Atlantic City Electric understands the foundational importance of a comprehensive customer education and engagement strategy. As the company's 2019 *Advanced Metering Infrastructure (AMI) Business Case* highlighted, communications with customers will be critical to the successful installation of smart meters across the service area. Furthermore, research shows that ongoing customer engagement is not only critical for deployment, but also for realizing the long-term benefits of a smarter energy infrastructure. As the U.S. Department of Energy noted in its *Voices of Experience | Insights on Smart Grid Customer Engagement*, "the success of the Smart Grid will depend in part on consumers taking a more proactive role in managing their energy use."

This document defines the objectives of the company's customer engagement and outreach for its Smart Energy Network and explains the strategies the company will use to achieve these objectives. It also provides an overview of the primary audiences the company will need to reach, as well as the communications channels available to the company to reach these audiences.

Atlantic City Electric will conduct customer engagement for the Smart Energy Network across four phases designed around the physical deployment of the smart meters: **Phase 1 –** Research & Preparation, **Phase 2 –** Smart Energy Network/Smart Meter Introduction, **Phase 3 –** Deployment, **Phase 4 –** Customer Activation & Empowerment.

Following approval by the New Jersey Board of Public Utilities (BPU), Atlantic City Electric will convene an internal, cross-functional Customer/Community Outreach Group, including representatives from Governmental & External Affairs, Corporate Communications, Customer Advocate, Legal, Regulatory, Large Customer Services, Customer Care and Customer Operations. This group will develop the Customer Education & Engagement Plan to support a successful Smart Energy Network rollout across the service area. During the deployment phase, the company will also set up a smaller Customer Response Team to manage any customer concerns that may arise during the meter exchange process. A full-time contractor will serve as the Customer/ Community Outreach Lead to manage the overall execution of the plan, with support

from third-party vendors and the internal Customer/ Community Outreach Group.

PURPOSE & OBJECTIVES

The Customer Education & Engagement Strategy provides a high-level overview of how to best educate the public about the benefits of building a Smart Energy Network and how to successfully engage customers throughout the meter exchange process. All communications and outreach efforts will ultimately strive to empower customers with the information they need to take control of their energy usage and take advantage of new tools and programs the Smart Energy Network enables. A successful deployment will include:

- Building broad awareness in South Jersey of the value and benefits of the Smart Energy Network and smart meters.
- Educating customers to make them aware of new online tools and customer service benefits.
- Ensuring a smooth installation experience for each customer and providing simple and clear communications about the meter exchange process.
- Addressing any customer concerns related to the installation of equipment, the technology deployed and the use of customer data.
- Enhancing customer experience by providing actionable and easy-to-access information to capture smart meter benefits as quickly as possible, especially to produce immediate savings.

CUSTOMER INSIGHTS AND LESSONS LEARNED

Pepco Holdings has conducted extensive customer research and industry research related to customer education for smart grid technology and smart meter installations. The advanced metering infrastructure (AMI) rollouts for both Pepco and Delmarva Power serve as examples of effective educational approaches. A summary of some the key lessons learned are provided below.

Given the demographic differences in each region, it is important to build on the lessons from prior rollouts with new research and incorporate the processes, channels and messaging tactics that have proved successful in more recent programs and education campaigns. Therefore, to develop the Customer Education and Engagement Plan for Atlantic City Electric's Smart Energy Network, the company will conduct new customer research and initial stakeholder outreach to assess the differences in perceptions and messages; review communications and outreach lessons learned from across Pepco Holdings and Exelon, as well as the industry as a whole; and assess current best practices for communicating with Atlantic City Electric customers. The company will analyze these inputs to shape the final plan.

Consumer awareness of the benefits of smart meters has increased over the last several years, as consumers have become more aware of the reliability and resiliency benefits, new capabilities enabled with energy use information and customer service improvements. Concerns about climate change and resiliency during storms have also increased the focus on the technological capabilities of the smart grid and outage restoration enhancements. Despite these trends, there are groups that continue to spread misinformation and take advantage of customer concerns and questions. This reinforces the need to measure and track changes in customer perceptions during the proposed rollout.

Some of the key lessons learned from earlier rollouts, in addition to ongoing research, include:

- Multiple channels and repeated messages are required to increase awareness and ensure messages are retained.
- Customer communication preferences vary by segment, but a multi-channel and multi-layer approach to communications helps ensure customers are aware of ways to have their questions answered.
- Ongoing tracking of customer perceptions provides an opportunity for the company to monitor and address any

emerging concerns stemming from the installation, the installation contractor or the educational campaign.
- Some customers want a more technical explanation of smart meters and smart grid improvements, while others show less interest. A "frequently asked questions" document – both printed and online – can help address these needs.
- Customers consider the benefits of the smart grid, including reliability benefits and energy information, to be important to them.
- Customers want to see an image of the new smart meter since many do not know what their existing meter looks like.
- Most customers surveyed during rollouts do not have any concerns about smart meters. Among those who are concerned, questions typically relate to increased bills due to inaccurate usage measurement and privacy concerns.
- Ongoing communications over time is required to increase awareness of the energy management tools and prompt customers to take action to enroll in My Account and Usage Alerts. Some customers may not enroll until they have a need (such as unusual usage).

STRATEGY

The following strategies will guide the company's approach to communications and outreach throughout the Smart Energy Network rollout and meter exchange process to achieve the objectives noted above.

- Communicate early and often throughout the Smart Energy Network rollout.
- Coordinate a comprehensive, multi-channel approach with tailored but consistent messaging across all channels.
- Create multiple touchpoints for customers through a multi-layered approach, including mass communications through advertising and social media and direct communications to customer homes, to ensure communications reach target audiences.
- Collaborate with community partners to reach different customer segments.
- Inform and engage county, municipal and legislative officials, the media and employees to broaden reach and impact of communications activities.
- Implement a phased approach that allows for continual refinements based on feedback from the previous phases.
- Leverage research to understand customer preferences and develop effective customer messaging.
- Develop messaging and tactics that help minimize customer concerns up-front and quickly address any concerns that arise.

PRIMARY AUDIENCES

The primary audiences will be the focus of the company's communications and outreach strategy. A broader plan may further segment these audience groups to allow for more targeted messaging, channels and collateral based on research and collaboration with community partners.

- **Customers –** The company's communications to customers will likely be segmented to ensure tailored messaging for different customer groups, including residential, commercial and industrial, and low- and moderate-income, among others.
- **Public officials and community leaders –** The company will engage key stakeholders early in the process to inform them about the rollout schedule and benefits for the local community, businesses and households, as well as any potential impacts. These stakeholders can also provide valuable feedback on the process and potential needs for outreach and communications in their communities.
- **Media –** The company will engage with print and broadcast outlets, as well as non-traditional outlets such as social media influencers and online community forums, to provide broader information about the Smart Energy Network, customer benefits and other important information.

- **Employees and contractors –** The company will educate employees and contractors to create informal ambassadors throughout South Jersey communities and maintain exceptional customer service throughout the meter exchange process.

EXTERNAL COMMUNICATIONS CHANNELS

Atlantic City Electric will balance communications across three different communication channel layers throughout each phase to ensure important information reaches customers. These include:

1) **Community Channels** that provide broad communications across a community or region;
2) **Digital Channels** that reach customers and the public through social media and other online platforms; and
3) **Direct Customer Channels** that deliver information directly to customers based on contact information previously provided to the company.

Community Channels

- Advertising – Radio, TV, Print, Out-of-home, etc.
- Community Advisory Groups
- Community Focus eNewsletter
- Community Outreach Team
  - Community Group Presentations & Open Houses
  - Collateral (Fact Sheets, FAQs, Palm Cards, Booth Displays)
  - Event Tabling & Sponsorship
- Employee Engagement
- Media Relations
- Stakeholder Briefings
- Third-Party Channels

Digital Channels

- ACE Mobile App
- ACE Social Media Channels – Facebook, Twitter, LinkedIn
- ACE Website
- Digital Advertising – Web, Social Media, etc.
- The Source

Direct Customer Channels

- Call Center/IVR
- Customer Bills Insert
- Customer Response Team
- LINES Customer Newsletter (print)
- eNewsletter/Email
- Letters, Direct Mail & Doorhangers
- My Account
- Outbound Calls

Atlantic City Electric will select specific media and communications based on customer research, past effectiveness for other campaigns, media reach data, initial feedback from stakeholders and community leaders, and lessons learned from other energy companies.

Community outreach will strive to reach all customers. Initial research and community partners will be critical in identifying communities where a more targeted and specific outreach effort may be needed to engage with a hard-to-reach population within the community. As needed, the company will develop specific collateral, messaging or other tactics to reach these customers. The company will also translate community presentations and educational materials, as needed, to reach non-English speaking customers.

Empowering employees, contractors and stakeholders to be informal ambassadors will also be critical to success. Throughout the early phases, the company will take steps to engage and educate employees, contractors, elected officials and community leaders so they are prepared to inform and support any customers who have questions regarding the process and benefits. Early engagement with stakeholders and community partners will also provide an opportunity to discuss any changes to the company's standard processes and procedures. For example, if the company implements a process of remote disconnection due to non-payment, early outreach with community partners can help inform how the company educates customers about these changes and how it updates individual communications with customers during a disconnection process.

During Phase 3 (Deployment), Atlantic City Electric will take several steps to ensure a smooth installation experience for each customer. In addition to proactive communications, the company will set up a unique number for calls related to the meter exchange process. This number will also be available through the company's up-front IVR for customer calling the company's main number. The company's Customer Care Department will also establish a special group to handle

customer concerns related to the process, such as billing questions, misreads, etc. The company will also establish a special Customer Response Team to support the company's existing processes for promptly addressing customer concerns from the field, call center, local officials or other channel. The team will help review concerns, coordinate responses, and provide additional analysis to proactively identify and address any trending concerns.

TIMELINE

The four phases of customer engagement are designed to build up to and support the meter exchange process and then empower customers to take advantage of the Smart Energy Network's benefits. The company's approach begins with undertaking the appropriate research to understand customer preferences and obtain feedback on messaging. Next the company will undertake communications and outreach that will help build broad awareness across South Jersey. As the company approaches installation in each of the four deployment regions, communications and outreach will shift to focus on targeted community engagement in those regions, as well as direct communications with customers who have upcoming meter exchanges. Following installations, the company will encourage customers to take advantage of new tools to manage their energy use through a balance of community-wide and direct-to-customer communications channels. From start to finish, an online information hub will provide up-to-date information, including engaging visual media and content and in-depth resources, for customers and stakeholders.

TIMELINE

PHASE 1
RESEARCH & PREPARATION

PHASE 2
SMART ENERGY NETWORK/ SMART METER INTRODUCTION

PHASE 3
DEPLOYMENT

PHASE 4
CUSTOMER ACTIVATION & EMPOWERMENT

PHASE 1
RESEARCH & PREPARATION

Timing
15 months–6 months to deployment

Objectives
1. Determine appropriate communications channels for key audiences; understand which customer groups may benefit from tailored communications materials
2. Understand additional needs for each deployment region
3. Gain understanding of customer awareness and concerns
4. Develop effective direct customer communications and collateral materials

Research Methods
1. Initial briefings with key stakeholders and community leaders
2. Focus groups with customers to obtain feedback on materials and messages
3. Online surveys to assess initial awareness and concerns
4. Review of communications and outreach lessons learned

PHASE 2
SMART ENERGY NETWORK/SMART METER INTRODUCTION

Timing
6 months–60 days to deployment

Objectives
1. Build broad public awareness
2. Gather input for outreach and communications during deployments

Key Messages
1. Value and benefits of the Smart Energy Network and smart meters
2. Commitment to ongoing customer outreach and education
3. Introduction to installation process and timeline

Research Methods
Customer survey measuring customer awareness and perceptions

Communications by Key Audience

Customers
- ACE Mobile App
- ACE Online Information Hub
- ACE Social Media Channels
- Advertising
- Call Center/IVR
- Community Advisory Group
- Community Outreach Team
  - Community Group Presentations & Open Houses
  - Event Tabling & Sponsorship
- Customer Bill Insert
- LINES Customer Newsletter (print)
- *The Source*

Key Stakeholders:
- Community Focus eNewsletter
- Stakeholder Briefings (one-on-one and affiliated group meetings)

Media:
- Media Briefings
- News Releases
- Pitch Opportunities

Employees & Contractors:
- Inside Source eNewsletter and Intranet
- Internal Presentations (key departments, facilities and contractors)
- Internal Talking Points
- Supervisor Update eNewsletter
- Video Message from Leadership

PHASE 3

DEPLOYMENT

Timing

45-0 days to deployment
**Deployment spans 21 months; occurring in four regional phases*

Objectives

1. Inform customers and stakeholders of upcoming meter exchanges
2. Facilitate meter exchanges at customer premises
3. Respond to customer concerns

Key Messages

1. Value and benefits of the Smart Energy Network and smart meters
2. How the Smart Energy Network and smart meters work
3. Safety and security of customer data
4. Installation process and information

Research Methods

One to two customer surveys to measure customer experience during deployment

Communications by Key Audience

Customers

- ACE Mobile App
- ACE Online Information Hub
- ACE Social Media Channels
- Advertising
- Call Center/IVR
- Community Outreach Team
  - Community Group Presentations & Open Houses
  - Event Tabling & Sponsorship
- Customer Bill Insert
- Customer Response Team
- eNewsletter/Email
- Installation Direct Mail/Collateral
- Doorhanger
- Outbound Calls
- Postcard (+30 days)
- Pre-deployment Letter (+10 days)
- LINES Customer Newsletter (print)
- Misc. Customer Letters (as needed)
- My Account
- *The Source*

Key Stakeholders:

- Community Focus eNewsletter
- Stakeholder Briefings

Media:

- News Releases (community targeted)
- Media Briefings (one-on-one with local outlets)
- Pitch Opportunities

Employees & Contractors:

- Inside Source eNewsletter and Intranet
- Internal Talking Points
- Supervisor Update eNewsletter

PHASE 4

CUSTOMER ACTIVATION & EMPOWERMENT

Timing

0-1 year after deployment

Objectives

1. Ensure a premier customer experience by effectively responding to customer and stakeholder concerns and completing reactive issues management
2. Empower customers with information and resources to save money and energy
3. Increase awareness and use of new online tools and programs

Key Messages

1. Value and benefits of the Smart Energy Network and smart meters
2. Control and savings through smart meter-enabled tools & programs
3. Safety and security of customer data

Research Methods

1. Focus groups to test communications materials
2. Two customer surveys measuring customer awareness

Communications by Key Audience

Customers
- ACE Mobile App
- ACE Online Information Hub
- ACE Social Media Channels
- Advertising
- Call Center/IVR
- Community Outreach Team
  - Community Group Presentations & Open Houses
  - Event Tabling & Sponsorship
- Customer Bill Insert
- Direct Mail (welcome packet and postcard)
- eNewsletter/Email
- LINES Customer Newsletter (print)
- Misc. Customer Letters (as needed)
- My Account

Key Stakeholders:
- Community Focus eNewsletter
- Stakeholder Briefings
- Targeted Op-eds or Advertorials

Media:
- News Releases
- Pitch Opportunities

Employees & Contractors:
- Inside Source eNewsletter and Intranet
- Internal Presentations (key departments, facilities and contractors)
- Internal Talking Points
- Supervisor Update eNewsletter
- Video Message from Leadership

KEY METRICS

Atlantic City Electric will use multiple metrics to track customer sentiment and public perception throughout the customer education process. The company will work to adjust strategy, tactics, messaging, materials and communications channels based on a regular review of these metrics with the cross-functional Customer/Community Outreach Group established to guide the execution of the Customer Education & Engagement Plan. The company can provide a report on any of these metrics to the BPU on a semi-annual basis.

- Customer surveys will measure customer awareness and qualitative studies will help understand customer perceptions.
- Feedback from the BPU and formal complaints filed with the BPU.
- Executive and government official complaints submitted on behalf of constituents.
- Feedback from annual check-in meetings with elected officials, e.g. Greenboard meetings.
- Call center metrics, from both the company's call center and the deployment vendor's call center, will track call volume, customer sentiment and key concerns.
- My Account metrics will track customer awareness and usage of the online tools and energy alerts.
- Google Analytics of the company's online information hub will track topics and interest levels.
- Media metrics for news stories, including volume and tonality, will help shape understanding of public perceptions.
- Internal eNewsletters to employees will track volume of ongoing employee engagement.
- Social media metrics from Twitter, Facebook and LinkedIn will help monitor customer sentiment and interest.
- Tracking the volume of communications, including eNewsletters, direct mail, etc.

CONCLUSION

Atlantic City Electric understands the importance of a comprehensive communications and outreach program in the success of its Smart Energy Network, including completing a smooth meter exchange process across its service area and empowering customers with the information they need to benefit from exciting new tools and programs. The company is confident that by using the framework provided by this Customer Education & Engagement Strategy, a cross-functional team can build an effective Customer Education & Engagement Plan that will successfully guide the company's efforts to reach all customers.

Atlantic City Electric is excited to have the opportunity to educate customers about the important benefits of upgrading energy infrastructure, including greater reliability and resiliency, enhanced customer service, and new customer tools and programs. This outreach will also lay the groundwork for helping customers understand the importance of building a smarter energy infrastructure that serves as a reliable common platform connecting them to new energy services and choices that will improve their lives and create more sustainable, vibrant and livable communities.

atlantic city electric

Direct Testimony of Gregory W. Brubaker

ATLANTIC CITY ELECTRIC COMPANY

BEFORE THE NEW JERSEY
BOARD OF PUBLIC UTILITIES
DIRECT TESTIMONY OF GREGORY W. BRUBAKER
BPU DOCKET NO. _____

Q1. Please state your name and position.

A1. My name is Gregory W. Brubaker. I am the Manager of Smart Grid & Technology for Atlantic City Electric Company ("ACE" or the "Company").

Q2. On whose behalf are you submitting Direct Testimony in this case?

A2. I am submitting Direct Testimony on behalf of ACE, the Petitioner in this case.

Q3. What are your responsibilities as Manager of Smart Grid & Technology?

A3. I am responsible for leading, directing and organizing the need in ACE for technical and regulatory coordination as well as Operations integration of emerging smart grid technologies, programs, and reliability-based initiatives.

Q4. Mr. Brubaker, please describe your educational and professional background and experience?

A4. I earned a bachelor's degree in Electrical Engineering Technology from Southern Illinois University at Carbondale and a Master of Business Administration from the University of Phoenix. I am also a registered Professional Engineer in New Jersey licensed in 1996. I have worked in the electric utility industry for over 30 years and have held various positions in transmission and distribution engineering, including more than 20 years of engineering leadership. Prior to my current role, I was the Manager of Engineering & Design for ACE where I was responsible for oversight of all distribution design activities, including the New Business and Facility Relocation process and the day-to-day reliability of the distribution system.

Q5. What is the purpose of your Direct Testimony?

A5. The purpose of my testimony is to discuss how the implementation of the SEN ("SEN") will (1) improve ACE's operations; (2) provide significant operational and customer benefits; (3) enhance ACE's storm response; (4) provide new opportunities for the development of distributed energy resources ("DER"); and (5) provide the base technology to support many of the goals of the New Jersey Energy Master Plan ("EMP"). I will also discuss the proposed SEN deployment timeline and discuss how other PHI utilities have achieved operations improvements with the SEN.

Q6. How is your testimony organized?

A6. My testimony is organized as follows. I will discuss:

I. technical components of the SEN;

II. ACE's SEN deployment timeline;

III. operational and customer benefits;

IV. storm restoration benefits;

V. DER benefits;

VI. how it is supportive of the EMP; and

VII. benefits of the SEN implementation experienced by other PHI utilities.

This testimony and accompanying exhibits were prepared by me or under my direct supervision and control. The sources for my testimony and exhibits are Company records, public documents, and analysis in support of the Company's application. I also rely upon my personal knowledge and experience.

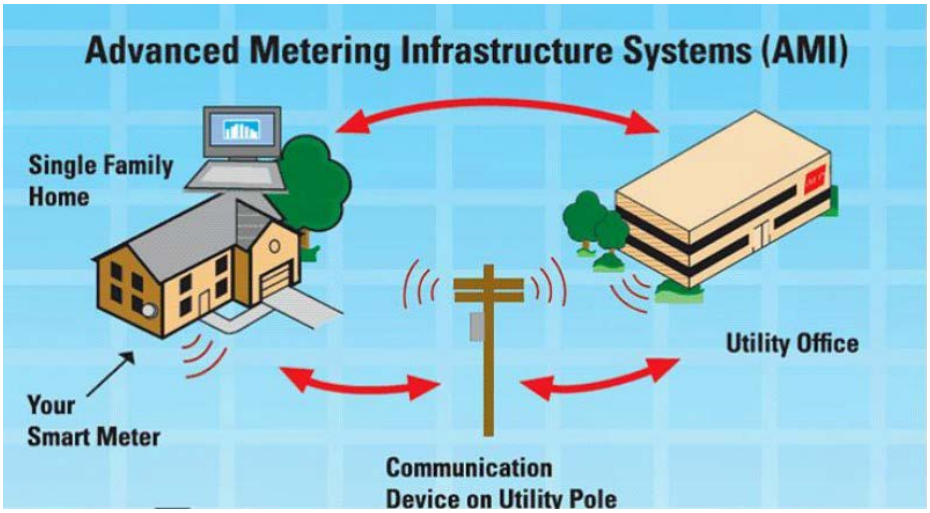
I. Technical Components of the SEN

Q7. Please describe how the SEN system operates.

A7. The SEN will modernize ACE's distribution system by enabling automated tracking of usage data that will allow the Company and its customers to benefit from the grid of the 21st century. As information has been digitized across industries, the SEN will create, collect, and store energy data in smaller time intervals. Not only will customers be able to better track their usage behavior, the SEN will lay the groundwork for a whole host of additional energy tools and applications and provide the conduit for the development of advanced energy technologies.

The SEN will operate as an end-to-end system. The smart meters deployed will collect customer interval usage data and send that data over the Company's energy grid to ACE's meter data management system ("MDMS"). This communication pathway is shown in Graphic 1. The network will feature two-way communication capabilities, allowing the utility to transfer data to-and-from the smart meters at customer's sites. Using those two-way communications, the utility can improve operations, especially during critical grid events and major storms. This bilateral flow of information can also enable customers to analyze their energy data using applications, including hourly and daily usage, and manage advanced technologies at their premises. The SEN will help both the customer and the utility graduate to a 21st century level of data management across New Jersey's energy grid.

Graphic 1



Q8. Please describe the components of the SEN.

A8. The SEN is comprised of three primary components (1) digital meters, (2) communication infrastructure to relay meter data, and (3) information technology ("IT") systems. Digital meters enable the Company to record energy usage data for all customers and provide them with relevant and useful summaries of their usage behavior. All of these meters contain a network interface controller ("NIC") that is configured to provide communications capability with the Company's SEN. The Company will use communications infrastructure placed around the ACE service territory to relay the data from a customer premise to the utility. These repeaters serve as an intermediary device between customer meters and the head-end system, collect local individual meter information in neighborhoods, and relay the data to the head-end system. Together, these components make up a mesh network for communications across the service territory.

The head-end system is a suite of software components that play important roles; from general operations, to security monitoring. The head-end comprises the general meter manager that monitors the status of all active endpoints on the mesh network, and also

contains the critical operations protector software module that prevents unauthorized operation of the meters. The head-end software modules extract meaningful data from the network and packages it for use in ACE's back office IT systems. Customer usage data is ultimately passed to the MDMS, which includes a historic reference and specialized logic to minimize customer billing errors.

The SEN is comprised of several other IT components that assist in configuring and maintaining the security of the whole network. While the meter is widely regarded as a physical device, its behavior is governed by critical software at each layer of the system architecture. The meter's NIC hosts the local radio communication protocols and behavior in a set of firmware. Encryption of usage and control data is maintained from end to end, with keys being managed dynamically between each end point device in the field area network and the hardware security modules hosted in the Itron data center. Firmware running at each of the continuously powered devices – including the electric meters, smart streetlights, access points, and relays – constantly self-optimize to maximize the bandwidth and availability of the mesh and backhaul networks.

Once the SEN is deployed and operational, other IT systems will be updated and enabled to take advantage of ACE's smart meter capabilities. The Outage Management System will leverage SEN data to enhance outage identification and prediction, and customer interfaces, such as the ACE website, mobile app, and outage maps, will be updated to incorporate SEN data and provide a more seamless customer experience. The customer billing system (see question 10 below) will feature multiple enhancements to uniquely support the SEN in ACE. Once implemented, the SEN's IT components will

undergo systematic, frequent software and firmware upgrades and patching, which will maintain a secure and stable network.

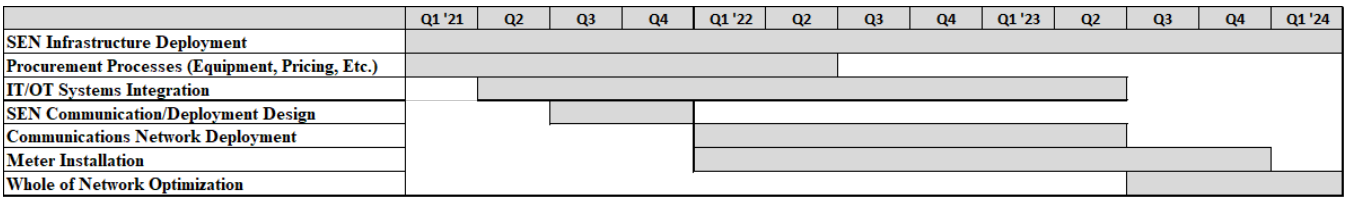
II. ACE's SEN Deployment Timeline

Q9. Describe how ACE will plan and implement the SEN deployment.

A9. Upon approval by the New Jersey Board of Public Utilities (the "Board" or "BPU"), ACE will require approximately 39 months for the full SEN deployment. Infrastructure deployment, including communications, IT systems, and customer installations will take approximately three years to complete, with the initial meter and communications procurement phase taking place over the first 18 months. During the procurement phase, ACE will formalize its current meter-related vendor contracts for deployment, confirm pricing processes, and order equipment. As the equipment is delivered to Company facilities, ACE will begin meter testing in advance of the installation phase. Deployment design, communications network design, and IT integration will run concurrently with equipment delivery and meter testing. They will be developed so that all deployment planning will be complete upon the start of the installation phase.

ACE estimates meter installation will take two years to complete, overlapping the tail end of the procurement phase. Meter deployment will be divided into several regions, and as the first region nears completion, deployment for the second region will begin, and so on. Ahead of the meter installation ACE will deploy a cross-region communications network throughout the service territory, so that communications testing can progress unabated. As meter installation nears completion, ACE will optimize meter performance and functionality. See Table 1 for an illustration of ACE's SEN Deployment Timeline.

Table 1



Q10. Does ACE need to make changes to its billing system to accommodate the SEN deployment?

A10. Yes. In assessing the current billing system, a more robust, automated process is needed to integrate and make use of the more granular data produced by the SEN meters. The replacement of monthly usage data with interval data into the billing system is a more complex process that will take additional effort to integrate. Programs will be written to generate service orders in SAP, the software billing system, based on variable criteria defined by the deployment team.

During the design phase, unique billing system configurations for ACE may be uncovered, and these will need to be set up in SAP and other related software programs. Once the meters are installed and the communication system is operational, the SEN functionality in the billing system will be activated. For ongoing metering and billing, customer move in/out, dunning, and invoicing, the system will be configured to have the same functionality as other utility accounts within the PHI utilities have currently. Billing and metering structures that are specific to ACE rates will be created as an addition to this system.

Q11. Explain what the Company is anticipating with respect to the labor resources involved in the deployment of the SEN?

A11. The Company anticipates there will be approximately 92 people involved in the deployment of the SEN. For meter exchange deployment, ACE will require approximately 50 field technicians along with managerial and support resources for a total of 55 labor personnel. For the network installation, the Company anticipates there will be approximately seven communication technicians. IT resources will require eight labor personnel, and the project management level will require 10 labor personnel. In addition, ACE will engage an additional 12 personnel to assist with billing inquiries for a period of 24 months to answer customer queries and ensure the smooth transition to billing based on SEN data.

Q12. Describe how ACE will test new meters prior to deployment.

A12. ACE plans to use the American National Standards Institute ("ANSI") Z1.9 for the statistical sampling plan for removed meters during meter deployment. The ANSI Z1.9 statistical sampling plan is already in place and approved by the BPU for use for in-service self-contained meters. ACE plans to extend this same plan and methodology for meters removed during meter deployment by randomly selecting a population of meters in accordance with the plan prior to the exchange and return those meters to the Meter Shop for final testing. In addition, any premise/meter with an outstanding billing inquiry or a scheduled witness test will be separated out for final testing.

Q13. Has ACE finalized plans for contractors performing meter reading duties?

A13. No. ACE currently has a partnership with South Jersey Industries ("SJI") called Millennium Account Services ("Millennium") and is in communication with SJI as to how

the SEN will impact the partnership. Millennium provides personnel to read meters for ACE, with Millennium personnel splitting their duties between ACE and South Jersey Gas ("SJG"). ACE is currently identifying potential and additional needs for these meter readers upon the implementation of the SEN, though the exact plan has not yet been agreed with SJI. The Company will take a gradual approach with respect to this contract, only ramping down Millennium's services as more and more meters are communicating and read remotely. Further, ACE must provide 120 days written notice before concluding its Millennium contract, which the Company does not anticipate happening until at least two years into deployment. Given the observed turnover rate at Millennium, the proposed plan would also assume that contractors who leave their jobs would not be refilled, mitigating the need for reductions and relying on the voluntary reduction of personnel. Once the SEN is fully operational, all remaining meter reading personnel would be performing work solely on behalf of SJG.

III. Operational and Customer Benefits

Q14. Please provide an overview of the proposed SEN deployment costs and benefits.

A14. The results of a rigorous benefit cost analysis ("BCA") show that the benefits of the SEN deployment at ACE would significantly outweigh the costs with an estimated net benefit of $196 million over a 15-year period, making this a prudent and net positive investment with significant economic, social, customer, environmental, and operational benefits. The BCA and its approach and assumptions are discussed in detail in the Direct Testimony of Company Witness Edeson. The following table summarizes the high-level costs and benefits of the SEN.

Table 2

Benefit Cost Analysis *in ($000s)*	
Benefits	
1. Operational Benefits	$221,101
2. Customer Benefits	$194,703
3. Total Benefits (1 + 2)	$415,805
Costs	
4. One-Time O&M Costs	$27,477
5. One-Time Capital Costs	$127,718
6. Ongoing O&M Costs	$61,716
6. Ongoing Capital Costs	$3,049
7. Total Costs (4 + 5 + 6+7)	$219,960

Q15. Please provide an overview of the operational benefits of the proposed SEN deployment.

A15. ACE has adopted a Use Case Approach to identify benefits and in particular several operational benefits owing to the deployment of the SEN. Where benefits are quantifiable in dollar terms, these have been calculated. More than 80 percent of the $221 million of operational benefits calculated derive from reduced truck rolls and avoided meter reading savings. Overall, these reduced truck rolls result from the core capability of the SEN to remotely read, service, and communicate with the digital meter. Reduced truck rolls provide significant, wide-ranging operational savings and carry benefits associated with reducing the carbon footprint of metering operations.

Another important operational benefit related to changes in customer accounts provides ACE not only with substantial savings, but it alleviates an inconvenience some customers may face. When customers move in or move out of a residence or business space, they may need to contact ACE to perform account changes, which ACE must perform manually. The SEN will remove hurdles in making account changes and reduce

wait times, enabling the use of the turn-on functions and on-demand read functions necessary to initiate electric service. Unlike the current manual processes for move ins and move outs, these SEN features are automated, performed remotely and instantaneously. With the SEN, ACE will be able to immediately switch out customers moving out of and moving into properties, eliminating the wait associated with transitioning service from the old customer account to a new one. The Company will realize an operational savings of $50.7 million with this benefit.

In addition, the SEN's functionalities to remotely perform meter re-reads will save significant time and drive operational efficiencies. The Company believes that accurate meter reading is essential and makes extensive efforts to verify that reads are accurate upon customer request and promptly correct any errors should they be discovered. Instead of initiating a truck roll for every meter re-read requested, the SEN will provide remote meter re-reads, significantly reducing costs. This simpler meter re-read process will provide operational savings of $14.8 million.

Other operational benefits include savings from avoided legacy meter change-outs, avoided calls related to single and "nested" outages, and reductions in customer billing exceptions. ACE estimates it will save $5.4 million per year in meter reading costs due to the ability to remotely access any needed SEN data (customer usage, power on/off). Specifically, when addressing meter-related issues, the SEN will give ACE the ability to remotely check the meter. This remote check capability will avoid truck rolls to customer premises if the issue relates to the customer side of the meter or if the meter data would need to be re-read for accuracy or a customer billing inquiry. Further, ACE will also have the ability to remotely reconnect customers to the meter (if they have been previously

disconnected for any reason) and will avoid "door knock" truck rolls for credit disconnects. See the following table for a list of operational savings related to truck rolls.

Table 3

Savings from Avoided Truck Rolls *in ($000s)*	
Call Backs	$535
Move-In/Move-Outs	$50,679
Reconnects/Connects	$6,289
Disconnects	$27,253
Meter Exchanges	$14,668
Trouble Outages	$22,746
Meter Re-Reads	$14,765
Total	**$136,935**

Q16. What steps does ACE propose in lieu of a door knock as part of the Credit Process?

A16. ACE takes the Credit Process very seriously and attempts to provide as many opportunities as possible to reach and communicate with customers. In lieu of the door knock, ACE proposes to add an additional manual phone call to the customer one day prior to the disconnect being processed. This manual call will be attempted on 30 days after Due Date. This manual call will follow on the heels of the New Jersey regulated outbound calls on 25 days and 29 days after Due Date, which is in addition to the two reminder calls occurring on 2 days and 10 days after Due Date. This process lines up with the actions the Company takes in other jurisdictions where remote disconnects have been approved.

Q17. Please provide an overview of the customer benefits associated with the proposed SEN deployment.

A17. Customers will experience many benefits with the installation of the SEN. ACE's call center will have a better set of data to share with customers, integrating both historical and current SEN data into support of several types of customer decisions analysis. ACE

will be able to engage customers with greater information on billing, rate choices, and usage patterns and how customers might become more energy efficient in their homes, which also comes with associated environmental benefits. Customers are likely to see the value of increased awareness of call center personnel and points of data to provide to customers, improving overall customer service and satisfaction.

Q18. What other benefits will the SEN provide that are customer oriented?

A18. SEN data will enhance customer/public safety and protection. ACE can use the network's provided voltage data to detect issues relating to customer meters and power connections, specifically possible broken meter sockets, and alert customers of a potential hazard. The voltage data can also detect energy theft and meter tampering by employing multiple, real time screening techniques, including illegal-service correlations, to ensure customer protection. This enhanced ability will reduce customer bills because energy theft usage is spread across the customer base.

Q19. Please provide an overview of the energy savings benefits attributable to the proposed SEN deployment.

A19. The SEN will yield energy savings for customers through the use of conservation voltage reduction ("CVR"). ACE estimates it will save 20 GWh of energy on an annualized basis over 15 years from this program. CVR reduces voltage on the lines that run from substations to customers' homes and businesses without effecting power quality, which improves the efficiency of the electrical network. The SEN provides end-point voltage data to accurately lower and monitor voltage levels. By effectively lowering voltage without degrading service, ACE can reduce customer bills from the energy savings CVR achieves.

Q20. Are there any other benefits associated with the SEN deployments?

A20. Yes. While ACE will integrate the SEN with the energy grid, the existing IT systems associated with the SEN have already been deployed in other PHI jurisdictions and fully depreciated as of this filing. As a result, this existing IT system will be leveraged for the SEN at no additional cost to ACE customers.

IV. Storm Restoration Benefits

Q21. Will the deployment of the SEN improve restoration efforts during major events?

A21. Yes. Reducing the customer outage impact from a major event is a primary objective of a utility. The SEN increases visibility of the energy grid and the customers on it, enabling enhanced customer service during a weather event. System operators will be able to view the status of any given customer and will know which customers are out of service and which customers have been restored. This ability will improve the quality of the underlying outage information and provide a more informed estimated time of restoration ("ETR"). It will also help ACE avoid unnecessary truck rolls to feeders and areas that have already been restored, preserving valuable crew resources and helping to more efficiently manage outage restoration crews post-storm events. The SEN is estimated to reduce storm restoration costs by 10 percent following full deployment.

The SEN will also enhance situational awareness for customers during an outage. Customers can better access the information they want and make informed plans based on the most current and accurate data. Specifically, the online and customer available storm map will be updated continuously and more accurately with SEN meter data. The storm map will update ETRs and crew locations relative to their location. There is also a specific, calculable value to customers associated with reduced outage times. Based on the

Customer Interruption Cost Evaluator ("ICE") Calculator, which the United States Department of Energy and Lawrence Berkeley National Laboratory developed, customer value of reducing the duration of outages (customer minutes interrupted and system average interruption duration index) for ACE customers by five minutes would be over $50 million.[1]

ACE can also "ping" the smart meters to verify power has been restored to customers. Meter pinging allows the utility to confirm that there are no nested outages, which are unidentified secondary and service outages that are not restored during initial restoration activities. Initial restoration efforts are more focused on primary distribution circuits and may not identify nested outages, but meter pinging can provide the necessary backstop to help identify all affected customers in the area.

Q22. Will the SEN deployment help ACE predict and provide insight for potential infrastructure challenges before a storm occurs?

A22. Yes. The Exelon Utilities Analytics ("EU Analytics") capabilities enabled by the SEN will prove particularly helpful in improving ACE's storm response. EU Analytics gives utilities near-real-time readings on the health of their electric grid (voltage and load related). Combining EU Analytics with predicted and historical storm/lightning data in causal and predictive analysis modeling can equip utility engineers and dispatchers with tools to identify likely assets that are most vulnerable to certain types of storms. The Company can proactively upgrade equipment or mitigate their potential failure prior to storms. This analysis avoids truck rolls that would otherwise be needed to respond to

[1] ICE Calculator. Department of Energy and Lawrence Berkley National Laboratory. https://icecalculator.com/. Accessed June 2, 2020.

outage orders pertaining to failed equipment, thereby providing ACE with better system intelligence and operational efficiencies. A reduction in the number of these types of orders will improve the overall restoration time following an event. With the use of EU Analytics as part of the SEN, ACE will identify weak points in the energy grid before a major event, more accurately and effectively prepare for storms, and potentially shorten outages from weather events after they occur.

EU Analytics also provides support in the day-to-day monitoring of equipment with respect to load management. The data can provide valuable information on when equipment will need replacement to account for additional load placed on the network. This analysis will address pockets of load deficiencies before they affect the SEN and help to proactively avoid equipment failure.

Q23. Does ACE have any data on recent storms that demonstrate the potential benefits of the SEN over current legacy meters?

A23. Yes. Tropical Storm Isaias and additional storms caused outages the week of August 3, 2020, affecting thousands of customers. ACE sought to confirm the outage status of approximately 3,217 customers, and consistent with the current legacy meter capabilities, ACE placed over 5,400 phone calls to those customers. As ACE was unable to reach many of those customers, the Company required a truck roll to those sites to determine outage status. As a result, ACE performed truck rolls to 1,203 customer sites where power had already been restored. In other PHI service territories with SEN capabilities fully deployed, the utilities are able to remotely ping customer meters to make this determination in real time, saving truck rolls and creating tangible operational efficiencies. This recent example

demonstrates how the SEN will have a significant impact in avoiding unnecessary truck rolls to customer sites and contribute to an efficient and effective major storm response.

V. DER Benefits

Q24. Please explain why the SEN is integral to promote the development of DERs.

A24. As the development of distributed energy resources gains momentum, utilities need robust tools to effectively manage this wholesale change in the energy industry. Accounting for all the data transfers across the energy system is essential to the management of MWhs DERs produce. With the SEN deployed, ACE must monitor the communication and transmission of that data, ensuring safe and secure operations, storage, and compilation for broader insights. Effective storage, cataloguing, and interpretation of this data can further enhance ACE's load management to accommodate ever expanding DERs interconnections to the energy grid, provide customers with meaningful insight into their DER behavior, and foster use of more sophisticated applications. All of these forward-looking benefits are based on and around the capabilities of the SEN. Just as the construction of the U.S. interstate highway system was the necessary foundation to modernize the transportation system for cars and trucks, so the SEN provides the same kind of backbone needed for a fully functioning advanced energy grid in the 21st century.

Q25. Will the SEN implementation help the expansion, management and enablement of DERs?

A25. Yes. As customers begin to more widely adopt advanced technologies, hourly and discreet patterns of energy usage data will become more critical to utility operations. The SEN will provide customer hourly voltage and load data, which will aid the Company in managing additional impacts created by customer adoption of DERs. The hourly voltage

data will allow insight and data to provide more detailed, accurate power flow models. ACE will be able to study feeders at a more granular level and enable the Company to address infrastructure upgrades to accommodate added impact of DER load. This accurate and timely engineering and data-based feedback loop will support customer adoption of DERs without the concern to the Company or to other customers that such a decision will have a negative impact on power delivery or the energy grid as a whole.

Q26. Will the SEN implementation promote the development of solar power adoption in New Jersey?

A26. Yes. Adoption of photovoltaic systems is steadily increasing in the state. ACE has more than 30,000 customers with solar installations, and the number is growing. In order to dispatch their excess generation across the grid, these installations will require the energy grid to accommodate reverse power flow capabilities. Not all residential solar is absorbed or used at a customer site at any given time. At times when excess energy is generated, the energy grid has to be able to absorb or dispatch it into the overall system. The SEN will assist distribution operators in understanding those flows, help engineers design for any impacts, and balance the system accordingly with appropriate infrastructure changes when required. As this industry grows, it is imperative for ACE to oversee feeder loads to maintain appropriate levels of voltage and load balance. The more granular the data available, the more effective the Company's operation of the energy grid. The SEN hourly voltage data is the linchpin to understanding how ACE's load will change and the corresponding infrastructure upgrades that will be needed, to support the State's solar energy portfolio growth with minimal disruption to the energy gird.

Q27. Will the SEN implementation promote the development of plug-in vehicles ("PIVs") adoption in New Jersey?

A27. Yes. As with residential solar, customers in New Jersey are adopting electric vehicles in increasing numbers. The number of PIVs registered in the ACE service territory and currently in operation totals approximately 2,500, and the SEN will provide the ability to accommodate and promote PIV development to meet the State's goal of supporting the deployment of 330,000 PIVs by 2025.[2] [3] In addition, ACE has a Voluntary Program for Plug-In Vehicle Charging pending with the BPU. This multi-year, $42.1 million program for PIV charging initiatives is designed to:

> be responsive to its customers' needs and to address critical adoption barriers for PIV transportation by providing infrastructure solutions to reduce range anxiety; to encourage environmentally friendly mobility options in public spaces, along transit corridors, and at workplaces; and to incentivize at-home and off-peak charging and energy use management through PIV-friendly rate designs and incentives for smart charger installations.[4]

SEN deployment will be indispensable in providing the communication network needed to make the program's objectives a reality.

Each PIV is projected to potentially increase energy load by the equivalent of one additional house on the network system, and therefore, knowledge of a customer's hourly

[2] EPRI monthly results of registered PIVs in ACE service territory.
[3] State of New Jersey Board of Public Utilities, BPU Docket No. EO18020190, "Verified Amended Petition for Approval of a Voluntary Program for Plug-In Vehicle Charging," at 5.
[4] BPU Docket No. EO18020190, "Verified Amended Petition for Approval of a Voluntary Program for Plug-In Vehicle Charging,"at 1-2.

voltage and load data is key to managing added load as with other DERs. Deploying the SEN enables ACE to separate the whole-house energy usage data from PIV usage data, enabling programs that shift load peak loads and helping to ensure the reliability of the grid even as PIV growth expands. ACE can use PIV usage data to help incentivize customers to optimize their charging patterns in order to minimize system load peaks and reduce overall strain on the grid. Awareness of these peaks, coupled with the ability to adjust customer charging behavior in reducing them, could delay the need for additional infrastructure upgrades to accommodate the increased load. Further, PIV owners can use SEN data via a platform or an app to educate themselves about their usage and how to create the most optimal charging habits for respective lifestyles.

Q28. Will the SEN help ACE enable energy efficiency benefits?

A28. Yes. The SEN digital meters will enable ACE customers to participate in direct load control programs. The utility will be able to cycle on and off customers' air conditioning on designated peak event days with the use of a direct load control switch as the Company does in other PHI jurisdictions. Once those programs are offered, customers will receive bill credits for the reduction in kWhs as a result of this energy efficiency program. Customers will also be able to use smart home features and products through the use of the SEN. Apps on customers' phones will be able to sync with their smart meters to track relevant and useful energy data. The SEN will also allow energy engineers to provide in-depth analysis of a customer's energy bill following a home audit. The analysis, which is in part based on average usage curves for homes and appliances, will enable customers to optimize problem points in their residential energy usage, further increasing their energy efficiency.

Q29. Will the SEN help ACE enable implementation of new technologies, such as Smart light-emitting diode ("LED") Streetlights?

A29. Yes. The SEN will enable the Company to install Smart LED Streetlights and achieve the benefits associated with this technology. The integrated smart nodes affixed to Smart LED Streetlights will provide a connection point to ACE's communications network to enable enhanced visibility and management of each installed streetlight. Once installed, the Smart LED Streetlights will immediately allow for the increased visibility into energy usage and maintenance status for all LEDs. Connection to the SEN will upgrade ACE's management of streetlights by way of remote on-off control, dimming, and scheduling functions. ACE can set a flexible schedule for each streetlight's operation and manage the output intensity of the fixture instantly, dimming the LED to a lower percentage of its maximum output at appropriate times. In addition to these operational benefits, sensors can be added to the LEDs' smart nodes to retrieve other valuable data. For example, sensors that can measure air quality and traffic flow or collect security data, such as gun-shot detection, can be readily accommodated. These capabilities exist in currently available sensors.

Q30. Does the SEN implementation offer other long-term benefits?

A30. Yes. Other long-term benefits of the SEN include giving customers pricing options to suit their day-to-day needs beyond EV charging. The load profile data collected by smart meters can be used for more advanced rate structures, such as time-of-use or real-time pricing. The load profile data is also provided to customers through ACE's "My Account" access, giving them better insight into their energy use so that they can make

more informed decisions and potentially improve their energy efficiency. The SEN will allow them to adopt the type of rate that best fits their energy needs.

VI. Supportive of the New Jersey Energy Master Plan

Q31. Please provide an overview of the proposed SEN benefits specific to the EMP?

A31. The New Jersey Energy Master Plan includes seven key strategies to meet its various objectives, many of which are dependent fully or in part on the SEN.

The EMP notes that Advanced Metering Infrastructure ("AMI") installation is a prerequisite of many additional clean energy objectives. Furthermore, the EMP cites both operational and customer benefits that are expected to accrue from AMI implementation. Some of the key factors and elements in the EMP that the SEN directly supports include the reduction of energy usage and emissions from transportation, support of EV adoption, maximization of energy efficiency, and peak demand reduction to name a few. For additional discussion about how the SEN fits into the goals of the EMP and the goals of the State of New Jersey, please reference the Direct Testimony of Company Witness Schatz.

Q32. Can you provide some additional specifics to the points raised above?

A32. Yes. As the SEN will result in reduced truck rolls, this program will support emissions reduction from transportation. Further, the SEN will allow the further penetration of EVs and DERs without significantly impacting the existing electrical infrastructure's capability of meeting and optimizing their impacts. This will only add to customer acceptance of these new technologies and carbon free assets. Finally, ACE will utilize the SEN to track data on current and planned energy efficiency programs for customers for effectiveness, customer uptake, and overall sustainability. CVR will be

facilitated and attributable to the SEN's functionalities and its positive impacts on energy usage via monitored and controlled voltage level manipulation.

Q33. Please summarize the SEN's influence/impact on the achievement of EMP goals?

A33. The SEN is the base technology and future technology enabler. The SEN will provide discrete data on discrete points of the distribution electrical system to allow the integration and acceleration of EVs and DERs and customer value added technologies. It will provide the data and insight to enhance the customer experience, inform the customer's situational awareness during storms, and address day-to-day energy usage questions, billing issues, and energy efficiency investments.

VII. Benefits of the SEN Implementation Experienced by Other PHI Utilities

Q34. Has PHI succeeded in previously implementing a cost-effective SEN deployment?

A34. Yes. PHI has shown its previous SEN investments in other jurisdictions to be cost-effective and provide added customer value. In testimony filed before the Maryland Public Service Commission, Potomac Electric Power Company ("Pepco") demonstrated that customers in Maryland are receiving approximately $3.54 in total benefits for each $1 in cost.[5] As of two years ago, the financial savings related to SEN investments have exceeded $400 million, reflecting savings from reductions in manual meter reading costs, avoided truck rolls for reconnects/disconnects, avoided capital expenditures, capacity market revenues/savings, etc.[6]

[5] Measured on a present value basis from January 1, 2014 through December 31, 2023. Costs are net of $70.5 million in ARRA Grants. Benefits include $35.9 million in ARRA Grants.

[6] *In the Matter of the Application of Potomac Electric Power Company for Adjustments to its Retail Rates for the Distribution of Electric Energy*, Case No. 9418, Commission Order No. 87884. 15 Nov. 2016.

Q35. Has the SEN implementation provided benefits for other Exelon utilities with respect to storm restoration?

A35. Yes. SEN technology has had significant benefits for Exelon utilities with respect to storm restoration. Improved storm restoration efforts owing to the SEN has enabled PECO to avoid an additional 10,000 truck rolls per year in 2016 and 2017.[7] The use of the SEN proved helpful in 2018 during Winter Storms Riley and Quinn. These two successive major events caused the largest number of service interruptions over the last three years in the ACE service territory as well as the mid-Atlantic region. The storms provided a good example of how ACE would have benefitted with the use of SEN meters as there were other Exelon and PHI utilities experiencing a similar degree of service interruptions. Many unnecessary responses by operations personnel for pending outage orders were resolved remotely by pinging customers' SEN meters. The following table shows the number of outage orders that were resolved by virtue of meter pinging during Winter Storm Riley. While the number of interruption resolutions vary, the utilities all avoided at least 1,000 truck rolls simply by pinging the meters following the event.

Table 4

Exelon Utility	Interruption Orders Resolved by Pinging	Total Number of Interruption Orders
Pepco	4,241	39,822
Delmarva Power	1,061	2,068
PECO	8,807	13,324

[7] Pennsylvania Public Utility Commission v. PECO Energy Company ("PECO") – Electric Division. Direct Testimony of Michael A. Innocenzo. Docket No. R-2018-3000164. 29 March 2018.

Q36. Has the SEN implementation helped other PHI utilities realize energy efficiency improvements?

A36. Yes. In addition, the SEN has enabled PHI utilities to reduce customer energy usage through participation in energy efficiency programs that the SEN can track. Pepco Maryland and Delmarva Power & Light Company Maryland both participate in EmPower Maryland, a program designed to lower the per capita energy use of customers in the state. In the most recent two-year period of the program, Pepco Maryland has reduced energy usage by approximately 30,000 MWh per year through its demand response programs. The SEN has enabled other PHI utilities to be more robust in its restoration and resiliency efforts, as well as more dynamic in attaining advanced energy goals for the 21st century. Finally, the SEN can help track utility programs with data on customer uptake and sustainability.

Q37. Describe how PHI's experience with the SEN will help ACE with its deployment.

A37. ACE will benefit from existing resources, business readiness, and employee experience with all components of installation and operation of the SEN. The PHI employees currently working on the tasks, day-to-day maintenance, and challenges associated with the SEN in other jurisdictions will apply their extensive experience to ACE following deployment. This institutional knowledge will provide a smooth transition in managing this new infrastructure. Building out the communications system associated with the SEN—comprised of the mesh network, head-end system, and repeaters—will be a more efficient ramp-up period than if the Company was installing the SEN for the first time. Rather than being an infrastructure build from the ground up, the deployment work will be an extension of the pre-existing network.

Q38. Does this conclude your testimony?

A38. Yes, it does.

Direct Testimony of Kristin M. McEvoy

ATLANTIC CITY ELECTRIC COMPANY

BEFORE THE NEW JERSEY
BOARD OF PUBLIC UTILITIES
DIRECT TESTIMONY OF KRISTIN M. MCEVOY
BPU DOCKET NO. _____

Q1. Please state your name and position.

A1. My name is Kristin M. McEvoy. My title is Manager, Revenue Policy in the Regulatory Policy and Strategy Department of Pepco Holdings LLC ("PHI"). I am testifying on behalf of Atlantic City Electric Company ("ACE", or the "Company").

Q2. What are your responsibilities in your role as Manager, Revenue Policy?

A2. Some of my responsibilities include the coordination of revenue requirement, cost allocation, and rate determinations for ACE in New Jersey, and Delmarva Power & Light Company in Delaware and Maryland ("Delmarva Power"), as well as coordinating various other regulatory compliance matters.

Q3. Please state your educational and professional qualifications.

A3. I hold a Bachelor of Science degree in Finance and a Masters of Business Administration degree from Rowan University. I have been employed by PHI since October 2006, serving in various accounting, finance, and regulatory functions.

In September 2019, I was promoted within the Regulatory Affairs Department to my current position. In my previous Regulatory Affairs roles, I was the Manager of Revenue Requirements for Atlantic City Electric and Delmarva Power, where my responsibilities included the coordination of revenue requirement determinations in New Jersey, Delaware and Maryland. Prior to that role, I was responsible for filings related to the Delaware Standard Offer Service Program, Renewable Portfolio Standard, Qualified Fuel Cell Provider, Demand Side Management, Environmental

Surcharge, Gas Cost Rate, Maryland EmPower Program, and other related activities. In my prior accounting and finance role, I was responsible for recording all regulated revenues and managing multiple deferral accounting mechanisms for Potomac Electric Power Company, leading numerous projects and serving as an interim supervisor providing oversight and coordination of other team members' responsibilities.

Prior to joining PHI, I was employed by a manufacturing company for eight years, holding various accounting and finance positions with increasing levels of responsibility.

Q4. What is the purpose of your Direct Testimony?

A4. The purpose of my testimony is to describe the cost recovery mechanisms the Company seeks for expenditures related to its proposed Smart Energy Network ("SEN") Program, as described in the Direct Testimony of Company Policy Witness Schatz and Operations Witness Brubaker.

This testimony and the associated schedules and workpapers were prepared by me or under my direct supervision. The source documents for my testimony are Company records, public documents, and my personal knowledge and experience. The Minimum Filing Requirement I sponsor in this Direct Filing is shown in Paragraph H of Exhibit A.

The SEN Program Associated Costs and Proposed Cost Recovery

Q5. Please explain the capital costs associated with the SEN deployment.

A5. As discussed in the Direct Testimony of Company Policy Witness Schatz and Operations Witness Brubaker, the SEN Program centers on the deployment of advanced metering infrastructure ("AMI"), comprised of approximately 565 thousand electric "smart" meters, as well as communications infrastructure, data, and system that

provide scalable, secure, safe, reliable bi-directional data and communication network services. The overall SEN project deployment will have capital costs and various incremental Operations and Maintenance ("O&M") costs associated with its development, completion and operations going forward.

As explained further in the Direct Testimony of the Company's Benefit Cost Analysis ("BCA") Witness Edeson, total SEN project costs and the breakdown of segregated project costs, are derived from ACE's updated BCA, and includes estimates for labor and materials to design the network, install new smart meters and network communications infrastructure, and remove the legacy, non-advanced meters.

Also discussed in the Direct Testimony of Company Policy Witness Schatz and Operations Witness Brubaker, the overall SEN Program deployment of the meter and communication network will take place over approximately 39 months, extending from January 2021 to March 2024. During this deployment phase, ACE proposes to commit approximately $159.2 million in capital investments, which, when adjusted for the Distribution portion, estimated to be 90%, of General Plant, is approximately $153.5 million, and the project will require a total of approximately $30.2 million of incremental O&M expenses, net of O&M savings.

The overall SEN Program deployment budget includes all identified costs necessary to deliver the Program, including smart meter and communications infrastructure, use case deployment, customer education, information technology ("IT"), administration, change management, program management, evaluations, and quality assurance/quality control efforts.

Q6. Please briefly describe ACE's proposed SEN Program cost recovery methodology.

A6. As previously mentioned, the Company is proposing to recover, on a semi-annual basis, a maximum of approximately $159.2M of capital investments in the same manner as the Infrastructure Investment Program ("IIP") cost recovery mechanism permitted under N.J.A.C. 14:3-2A.6, provided the minimum spending requirements contained in N.J.A.C. 14:3-2A.6(b) have been met. The Company would make a filing for recovery of actual investment after the first 18 months for the initial roll-in, then every 6 months for each subsequent roll-in thereafter. Pursuant to the requirements of N.J.A.C. 14:3-2A.6(d), the Company proposes that the ACE SEN Program investments be recovered through a separate tariff rider, Rider "IIP-SEN". The Company further proposes that changes to the rates specified in Rider IIP-SEN rates become effective 90 days after the end of each individual recovery period. Table 1, below, provides a proposed filing schedule for the ACE SEN Program (subject to change, based on proceedings):

Table 1

Roll-In	Filing Date	Recovery Period	Effective Date
1	May 1, 2022	Jan 1, 2021 – Jun 30, 2022	Oct 1, 2022
2	Nov 1, 2022	Jul 1, 2022 – Dec 31, 2022	April 1, 2023
3	May 1, 2023	Jan 1, 2023 – Jun 30, 2023	Oct 1, 2023
4	Nov 1, 2023	Jul 1, 2023 – Dec 31, 2023	April 1, 2024
5	May 1, 2024	Jan 1, 2024 – Jun 30, 2024	Oct 1, 2024

Q7. Please describe how the revenue requirement is calculated.

A7. The revenue requirement and calculation of Rider IIP-SEN rates are calculated using actual cost data, including, but not limited to: the actual costs of engineering, design, construction, property acquisition, actual labor, materials, and Allowance for Funds Used During Construction ("AFUDC") transferred to Plant In Service. The Company will track the capital investments individually for each project in a

Construction Work in Progress ("CWIP") account and record a monthly accrual of AFUDC which will be included in the CWIP balance. Pursuant to N.J.A.C.14:3-2A.4(e), the Company will stop accruing AFUDC once the investment has been placed in service.

The revenue requirement includes a return on investment and return of investment through depreciation based on the level of the ACE SEN Program investment. The adjustment to Rider IIP-SEN would be effective 60 days after the Company's filing. Pursuant to N.J.A.C. 14:3-2A.6(e), rate adjustments established in the semi-annual electric filings will be provisional and subject to refund subject to prudency review in a base rate case.

An illustrative calculation showing the development of the SEN Program revenue requirements for projected roll-in periods is provided in Schedule (KMMc)-1, and the associated revenue allocation is provided in Schedule (KMMc)-2.

Q8. Will any CWIP balances be included in the Revenue Requirement calculation of the SEN IIP?

A8. No. Pursuant to the requirements of N.J.A.C. 14:3-2A.6(a), only Plant In Service, meaning plant that is functioning for its intended purpose, is included in the calculation.

Q9. Please describe how the ACE SEN Program rate base is calculated.

A9. The rate base is calculated as the SEN Program investments less accumulated depreciation and deferred income taxes.

Q10. What was the rate of return used to calculate the revenue requirement?

A10. The rate of return ("ROR") used is 7.08%. This is the same ROR that was

approved by the BPU in ACE's last base rate case.[1]

Q11. Please explain the O&M expense associated with the SEN Program deployment.

A11. As explained in the Direct Testimony of Company Witnesses Edeson and Brubaker, the internal labor costs are estimated by ACE for work such as managing the Program, the SEN network, and meter integration; testing meters removed from service in accordance with the New Jersey Administrative Code; start-up costs, deploying use case capabilities; and managing change and communications.

Q12. Is the Company seeking to establish a Regulatory Asset related to the SEN Program deployment and the associated O&M costs?

A12. Yes, in addition to the above proposed capital cost recovery mechanism, as previously mentioned and as discussed in the Direct Testimony of Company Policy Witness Schatz and Operations Witness Brubaker, deployment of ACE's SEN Program will require approximately $30.2 million in incremental O&M expenses, net of O&M savings, over the deployment period. ACE proposes to defer recovery of these regulatory assets, including carrying costs equal to 7.08%, which is the ROR authorized by the BPU in ACE's last base rate case, and to amortize them over a five-year period and to seek their recovery in a base rate case filed subsequent to the Board's approval of the SEN Program.

The approval of Regulatory Assets is not uncommon and has precedent in New Jersey. The creation of a regulatory asset is necessary to afford ACE the opportunity to recover prudently incurred costs associated with the SEN Program deployment. It

[1] In The Matter of the Petition of Atlantic City Electric Company for Approval of Amendments to Its Tariff to Provide for an Increase in Rates and Charges for Electric Service Pursuant to N.J.S.A. 48:2-21 and N.J.S.A. 48:2-21.1 and for Other Appropriate Relief (2018), OAL Docket No. PUC 14569-2018S (2018), and BPU Docket No. ER18080925 (March 13, 2019).

also preserves the ability of BPU Staff and other interested parties to review the prudency of those costs when the Company seeks to recover them.

Q13. Please discuss your proposed treatment of the existing meters that will be replaced before being fully depreciated.

A13. As discussed in the Direct Testimony of Company Witness Voshell, as of June 30, 2020, the net plant value is $46 million.

Similar to the treatment of the SEN Program O&M costs discussed above, ACE proposes to defer recovery of these regulatory assets, with carrying costs equal to 7.08%, which is the ROR authorized by the BPU in ACE's last base rate case, and to amortize them over a five-year period and to seek their recovery in a base rate case filed subsequent to the Board's approval of the SEN Program. Absent the explicit approval from the BPU to recover this regulatory asset, the retirement of the existing electrical meters will result in a significant adverse financial impact to the Company.

Similar to the Company's incremental O&M cost regulatory asset proposal, the creation of a deferred stranded meter cost regulatory asset is necessary to afford ACE the opportunity to recover prudently incurred costs associated with the deployment of its proposed SEN Program. It also preserves the ability of BPU Staff and other interested parties to review the prudency of those costs when the Company seeks to recover them.

Rate Design

Q14. Please describe the investment and what rate schedules utilize meters.

A14. All customer classes utilize a meter except for rate schedules Street Lighting ("SPL" and "CSL") and Distribution Direct Connection customers ("DDC"). This includes, Residential, Monthly General Service Secondary and Primary, Annual

General Service Secondary and Primary, and Transmission.

Q15. Does the Company have customers that will not receive new AMI meters?

A15. Yes. The following rate schedules are unmetered and are not being included in the revenue allocation for IIP-SEN: DDC, SPL/CSL.

Q16. Please describe the proposed revenue allocation.

A16. The revenue allocation is based on the cost of AMI meters by service classification times the number of meters required to serve those customers. This method takes into consideration the cost difference for meters servicing residential customers versus commercial and industrial ("C&I") customers. This is similar to the meter study utilized for class cost of service purposes in a base rate case proceeding. Using this allocation approach, ACE fairly and equitably allocates the revenue requirement to customer classes based on cost causation and is consistent in methodology with ACE's current cost of service study methods.

Q17. How are meters classified in the cost of service study?

A17. Meters are classified as customer-related (as opposed to demand or energy-related). The cost of meters varies with the number of customers served and consistent with cost causation principles that are classified as customer-related.

Q18. How does the Company propose to change rates to collect the revenue requirement?

A18. Utilizing the billing determinants from the last rate case, the Company proposes to collect the revenue requirement through each customer class's customer charge. This is in line with developing cost-based rates since the meters are classified as customer-related.

Q19. What are the estimated bill impacts associated with ACE's SEN Petition?

A19. Estimated bill impacts are based on the estimated revenue requirement proposed in this SEN Program Filing. The estimated bill impacts are detailed in Schedule (KMMc)-3, pages 1 – 15. The estimated bill impact of the entire ACE SEN Program through the IIP recovery mechanism for a typical residential customer using 679 kWh is $4.27 or 3.27%. Table 2 below illustrates – for each of the 5 proposed SEN Program recovery roll-ins, as shown above in Table 1 – the projected bill impact for a typical residential customer using 679 kWh, as follows:

Table 2: Residential Projected Bill Impact Per Roll-In Period

Roll-In Period	**1** May 1, 2022	**2** Nov 1, 2022	**3** May 1, 2023	**4** Nov 1, 2023	**5** May 1, 2024	**Roll-In Total**
Bill Impact ($)	$0.45	$2.57	$0.80	$0.43	$0.02	**$4.27**
Bill Impact (%)	0.34%	1.96%	0.60%	0.32%	0.01%	**3.27%**

Q20. Are there proposed tariffs?

A20. Yes, the proposed tariff, Rider IIP-SEN is attached as Schedule (KMMc)-4. This rider is to recover the capital that is going to be recovered through the IIP mechanism.

Q21. Does this conclude your testimony.

A21. Yes.

Schedule (KMMc)-1

Atlantic City Electric Company
Development of SEN IIP Revenue Requirements

	Filing Date: / Recovery Period:	May 1, 2022 *Jan 2021 - June 2022* ***Roll-In 1***	November 1, 2022 *July 2022 - Dec 2022* ***Roll-In 2***	May 1, 2023 *Jan 2023 - June 2023* ***Roll-In 3***	November 1, 2023 *July 2023 - Dec 2023* ***Roll-In 4***	May 1, 2024 *Jan 2024 - June 2024* ***Roll-In 5***	Total *Jan 2021 - June 2024*
	Rate Base:						
1	Gross Plant	$ 19,022,746	$ 72,989,355	$ 34,723,354	$ 21,551,670	$ 5,172,706	$ 153,459,832
2	Accumulated Depreciation	$ 996,301	$ 3,521,088	$ 6,316,826	$ 7,254,503	$ 7,651,585	$ 25,740,304
3	Deferred Taxes	$ 323,563	$ 332,828	$ 315,667	$ 204,742	$ 49,191	$ 1,225,992
4	Net Rate Base	**$ 17,702,881**	**$ 69,135,439**	**$ 28,090,861**	**$ 14,092,425**	**$ (2,528,070)**	**$ 126,493,536**
	Operating Income:						
5	Depreciation	$ 1,258,486	$ 9,914,898	$ 2,503,318	$ 1,426,808	$ 342,274	$ 15,445,784
6	SIT-Current	$ (253,345)	$ (1,141,391)	$ (384,261)	$ (223,010)	$ (41,344)	$ (2,043,350)
7	FIT-Current	$ (537,936)	$ (2,423,553)	$ (815,915)	$ (473,524)	$ (87,787)	$ (4,338,714)
8	Deferred Tax Expense	$ 323,563	$ 332,828	$ 315,667	$ 204,742	$ 49,191	$ 1,225,992
9	Total Operating Expenses	$ 790,769	$ 6,682,782	$ 1,618,809	$ 935,017	$ 262,335	$ 10,289,711
10	Return Required	$ 1,253,364	$ 4,894,789	$ 1,988,833	$ 997,744	$ (178,987)	$ 8,955,742
11	Required Oper. Income	**$ 2,044,133**	**$ 11,577,571**	**$ 3,607,642**	**$ 1,932,761**	**$ 83,347**	**$ 19,245,453**
12	Revenue Conversion Factor	1.39501	1.39501	1.39501	1.39501	1.39501	1.39501
13	**Revenue Requirement**	**$ 2,851,584**	**$ 16,150,819**	**$ 5,032,694**	**$ 2,696,219**	**$ 116,270**	**$ 26,847,587**

Schedule (KMMc)-2

Atlantic City Electric Company
Development of Proposed Distribution Rate
Rate Class Allocation of Distribution Revenue Requirements

Revenue Requirement - AMI Filing	$	26,847,587
Revenue Requirement	$	26,847,587

Rate Schedule Specific Revenue Increase Allocation

1	2	3	4	5	6	7	8	9	10	11
Rate Schedule	Total	RESIDENTIAL	MONTHLY GENERAL SERV SECONDARY	MONTHLY GENERAL SERV PRIMARY	ANNUAL GENERAL SERV SECONDARY	ANNUAL GENERAL SERV PRIMARY	TRANSMISSION GENERAL SERV SUB -TRANSMISSION	TRANSMISSION GENERAL SERV TRANSMISSION	STREET LIGHTING SERVICE	DIRECT DISTRIBUTION CONNECTION
Meter Study Allocator	100.00%	87.56%	11.20%	0.04%	1.12%	0.05%	0.02%	0.02%	0%	0%
Revenue Change ($) - AMI[2]	$ 26,847,587	$ 23,507,130	$ 3,006,270	$ 11,128	$ 299,422	$ 12,928	$ 6,368	$ 4,341	$ -	$ -
Proposed Revenue	$ 26,847,588	$ 23,507,131	$ 3,006,271	$ 11,128	$ 299,422	$ 12,928	$ 6,368	$ 4,341	$ -	$ -

Atlantic City Electric Company
Development of Proposed Distribution Rate
Rate Design Worksheet

Rate Schedule		**RS**
Distribution Functional Revenue Requirements Total (w/o SUT)	$	23,507,130
Distribution Functional Revenue Requirements Total (w/ SUT)	$	25,064,477

1	2	3	4	5	6	7 = 2 x (4+6)	8	9	10	11 = 2 x (8+10)	12	13 = 2 x (9+12)	14
Blocks	**Normalized Billing Determinants**	**Current Distribution Rates (including SUT)**	**Current Distribution Rates (w/o SUT)**	**EDIT Credit (including SUT)**	**EDIT Credit (w/o SUT)**	**Calculated Rate Class Revenue under Current Distribution Rates (w/o SUT)**	**Proposed Incremental Distribution Rates (w/o SUT)**	**EDIT Credit (including SUT)**	**EDIT Credit (w/o SUT)**	**Recovery under Proposed Incremental Distribution Rates (w/o SUT)**	**Proposed Incremental Distribution Rates (including SUT)**	**Recovery under Proposed Incremental Distribution Rates (including SUT)**	**Revenue Change %**
CUSTOMER	5,874,548	$ 5.77	$ -	$ -	$ -	$ -	$ 4.00			$ 23,507,130	$ 4.27	$ 25,084,320	
SUM 'First 750 KWh	1,042,134,494	$ 0.065821	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
SUM '> 750 KWh	659,045,318	$ 0.076566	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
WIN	2,281,974,074	$ 0.060269	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
TOTAL ENERGY	3,983,153,885					$ -				$ -		$ -	
TOTAL REVENUE						**$ -**				**$ 23,507,130**		**$ 25,084,320**	

-

Atlantic City Electric Company
Development of Proposed Distribution Rate
Rate Design Worksheet

Rate Schedule **MGS SECONDARY**
Distribution Functional Revenue Requirements Total (w/o SUT) $ 3,006,270
Distribution Functional Revenue Requirements Total (w/ SUT) $ 3,205,436

1	2	3	4	5	6	7 = 2 x (4+6)	8	9	10	11 = 2 x (8+10)	12	13 = 2 x (9+12)	14
BLOCK	**Billing Determinants**	**Current Distribution Rates (including SUT)**	**Current Distribution Rates (w/o SUT)**	**EDIT Credit (including SUT)**	**EDIT Credit (w/o SUT)**	**Calculated Rate Class Revenue under Current Distribution Rates (w/o SUT)**	**Proposed Incremental Distribution Rates (w/o SUT)**	**EDIT Credit (including SUT)**	**EDIT Credit (w/o SUT)**	**Recovery under Proposed Incremental Distribution Rates (w/o SUT)**	**Proposed Incremental Distribution Rates (including SUT)**	**Recovery under Proposed Incremental Distribution Rates (including SUT)**	**Revenue Change %**
CUSTOMER													
Single Phase Service	448,562	$ 9.96				$ -	$ 4.94			$ 2,217,185	$ 5.27	$ 2,363,922	
3 Phase Service	159,641	$ 11.59				$ -	$ 4.94			$ 789,085	$ 5.27	$ 841,308	
DEMAND CHARGE - All kWs													
Summer	2,183,636	$ 2.69				$ -	$ -			$ -	$ -	$ -	
Winter	3,281,892	$ 2.21				$ -	$ -			$ -	$ -	$ -	
REACTIVE DEMAND	49,310	$ 0.58				$ -	$ -			$ -	$ -	$ -	
ENERGY CHARGE													
Summer	505,480,023	$ 0.057677				$ -	$ -	$ -	$ -	$ -	$ -	$ -	
Winter	756,777,190	$ 0.051527				$ -	$ -	$ -	$ -	$ -	$ -	$ -	
TOTAL	**1,262,257,212**					**$ -**				**$ 3,006,270**		**$ 3,205,230**	

Atlantic City Electric Company
Development of Proposed Distribution Rate
Rate Design Worksheet

Rate Schedule	**MGS PRIMARY**	
Distribution Functional Revenue Requirements Total (w/o SUT)	$	11,128
Distribution Functional Revenue Requirements Total (w/ SUT)	$	11,865

1	2	3	4	5	6	7 = 2 x (4+6)	8	9	10	11 = 2 x (8+10)	12	13 = 2 x (9+12)	14
BLOCK	**Billing Determinants**	**Current Distribution Rates (including SUT)**	**Current Distribution Rates (w/o SUT)**	**EDIT Credit (including SUT)**	**EDIT Credit (w/o SUT)**	**Calculated Rate Class Revenue under Current Distribution Rates (w/o SUT)**	**Proposed Incremental Distribution Rates (w/o SUT)**	**EDIT Credit (including SUT)**	**EDIT Credit (w/o SUT)**	**Recovery under Proposed Incremental Distribution Rates (w/o SUT)**	**Proposed Incremental Distribution Rates (including SUT)**	**Recovery under Proposed Incremental Distribution Rates (including SUT)**	**Revenue Change %**
CUSTOMER													
Single Phase Service	558	$ 14.70				$ -	$ 9.84			$ 5,490	$ 10.49	$ 5,853	
3 Phase Service	573	$ 15.97				$ -	$ 9.84			$ 5,638	$ 10.49	$ 6,011	
DEMAND CHARGE													
SUM > 3 KW	60,159	$ 1.58				$ -	$ -			$ -	$ -	$ -	
WIN > 3 KW	97,120	$ 1.23				$ -	$ -			$ -	$ -	$ -	
REACTIVE DEMAND	53,681	$ 0.43				$ -	$ -			$ -	$ -	$ -	
ENERGY CHARGE													
SUM < 300KWh	11,180,577	$ 0.044428				$ -	$ -	$ -	$ -	$ -	$ -	$ -	
WIN < 300 KWh	21,445,422	$ 0.043155				$ -	$ -	$ -	$ -	$ -	$ -	$ -	
TOTAL	**32,625,999**					**$ -**				**$ 11,128**		**$ 11,864**	

Atlantic City Electric Company
Development of Proposed Distribution Rate
Rate Design Worksheet

Rate Schedule **AGS SECONDARY**
Distribution Functional Revenue Requirements Total (w/o SUT) $ 299,422
Distribution Functional Revenue Requirements Total (w/ SUT) $ 319,259

1	2	3	4	5	6	7	8	9	10	11	12	13	14
BLOCK	**Billing Determinants**	**Current Distribution Rates**	**Current Distribution Rates (w/o SUT)**	**EDIT Credit (including SUT)**	**EDIT Credit (w/o SUT)**	**Calculated Rate Class Revenue under Current Distribution Rates (w/o SUT)**	**Proposed Incremental Distribution Rates (w/o SUT)**	**EDIT Credit (w/o SUT)**	**EDIT Credit (including SUT)**	**Recovery under Proposed Incremental Distribution Rates (including SUT)**	**Proposed Incremental Distribution Rates (w/o SUT)**	**Recovery under Proposed Incremental Distribution Rates (including SUT)**	**Revenue Change**
													%
CUSTOMER	40,934	$ 193.22				$ -	$ 7.31	$ 299,422	$ 7.80			$ 319,285	
DEMAND CHARGE	5,438,743	$ 11.13				$ -		$ -	$ -			$ -	
REACTIVE DEMAND	418,768	$ 0.86				$ -		$ -	$ -			$ -	
ENERGY CHARGE	1,882,328,532					$ -		$ -		$ -	$ -	$ -	
TOTAL REVENUE						**$ -**		**$ 299,422**				**$ 319,285**	0.0%
								$ -					

Atlantic City Electric Company
Development of Proposed Distribution Rate
Rate Design Worksheet

Rate Schedule **AGS PRIMARY**
Distribution Functional Revenue Requirements Total (w/o SUT) $ 12,928
Distribution Functional Revenue Requirements Total (w/ SUT) $ 13,784

1	2	3	4	5	6	7	8	9	10	11	12	13	14
BLOCK	**Billing Determinants**	**Current Distribution Rates**	**Current Distribution Rates (w/o SUT)**	**EDIT Credit (including SUT)**	**EDIT Credit (w/o SUT)**	**Calculated Rate Class Revenue under Current Distribution Rates (w/o SUT) (See Note 1)**	**Proposed Incremental Distribution Rates (w/o SUT)**	**EDIT Credit (w/o SUT)**	**EDIT Credit (including SUT)**	**Recovery under Proposed Incremental Distribution Rates (including SUT)**	**Proposed Incremental Distribution Rates (w/o SUT)**	**Recovery under Proposed Incremental Distribution Rates (including SUT)**	**Revenue Change %**
CUSTOMER	1,498	$ 744.15				$ -	$ 8.63	$ 12,928	$ 9.20			$ 13,782	
DEMAND CHARGE	1,351,130	$ 8.86				$ -	$ -	$ -	$ -			$ -	
REACTIVE DEMAND	247,802	$ 0.67				$ -	$ -	$ -	$ -			$ -	
ENERGY CHARGE	583,524,109					$ -		$ -		$ -	$ -	$ -	
TOTAL REVENUE						**$ -**		**$ 12,928**				**$ 13,782**	
								$ -					

Atlantic City Electric Company
Development of Proposed Distribution Rate
Rate Design Worksheet

Rate Schedule **TGS SUB TRANSMISSION**
Distribution Functional Revenue Requirements Total (w/o SUT) $ 6,368
Distribution Functional Revenue Requirements Total (w/ SUT) $ 6,789

1	2	3	4	5	6	7	8	9	10	11	12	13	14
BLOCK	**Billing Determinants**	**Current Distribution Rates**	**Current Distribution Rates (w/o SUT)**	**EDIT Credit (including SUT)**	**EDIT Credit (w/o SUT)**	**Calculated Rate Class Revenue under Current Distribution Rates (w/o SUT) (See Note 1)**	**Proposed Incremental Distribution Rates (w/o SUT)**	**EDIT Credit (w/o SUT)**	**EDIT Credit (including SUT)**	**Recovery under Proposed Incremental Distribution Rates (including SUT)**	**Proposed Incremental Distribution Rates (w/o SUT)**	**Recovery under Proposed Incremental Distribution Rates (including SUT)**	**Revenue Change**
													%
CUSTOMER													
<5000 KW	317	$ 131.75				$ -	$ 14.77	$ 4,683	$ 15.75			$ 4,993	
5000 - 9000 KW	75	$ 4,363.57				$ -	$ 14.77	$ 1,108	$ 15.75			$ 1,181	
>9000 KW	39	$ 7,921.01				$ -	$ 14.77	$ 576	$ 15.75			$ 614	
DEMAND CHARGE													
<5000 KW	449,777	$ 3.80				$ -	$ -	$ -	$ -			$ -	
5000 - 9000 KW	392,725	$ 2.93				$ -	$ -	$ -	$ -			$ -	
>9000 KW	316,183	$ 1.47				$ -	$ -	$ -	$ -			$ -	
REACTIVE DEMAND													
<5000 KW	113,948	$ 0.52				$ -	$ -	$ -	$ -			$ -	
5000 - 9000 KW	71,151	$ 0.52				$ -	$ -	$ -	$ -			$ -	
>9000 KW	60,239	$ 0.52				$ -	$ -	$ -	$ -			$ -	
ENERGY CHARGE	575,156,494					$ -		$ -		$ -	$ -	$ -	
TOTAL REVENUE						**$ -**		**$ 6,368**				**$ 6,788**	
								$ -					

Atlantic City Electric Company
Development of Proposed Distribution Rate
Rate Design Worksheet

Rate Schedule **TGS TRANSMISSION**
Distribution Functional Revenue Requirements Total (w/o SUT) $ 4,341
Distribution Functional Revenue Requirements Total (w/ SUT) $ 4,629

1	2	3	4	5	6	7	8	9	10	11	12	13	14
BLOCK	**Billing Determinants**	**Current Distribution Rates**	**Current Distribution Rates (w/o SUT)**	**EDIT Credit (including SUT)**	**EDIT Credit (w/o SUT)**	**Calculated Rate Class Revenue under Current Distribution Rates (w/o SUT) (See Note 1)**	**Proposed Incremental Distribution Rates (w/o SUT)**	**EDIT Credit (w/o SUT)**	**EDIT Credit (including SUT)**	**Recovery under Proposed Incremental Distribution Rates (including SUT)**	**Proposed Incremental Distribution Rates (w/o SUT)**	**Recovery under Proposed Incremental Distribution Rates (including SUT)**	**Revenue Change**
													%
CUSTOMER													
<5000 KW	75	$ 128.21				$ -	$ 23.72	$ 1,779	$ 25.30			$ 1,898	
5000 - 9000 KW	57	$ 4,246.42				$ -	$ 23.72	$ 1,352	$ 25.30			$ 1,442	
>9000 KW	51	$ 19,316.15				$ -	$ 23.72	$ 1,210	$ 25.30			$ 1,290	
DEMAND CHARGE													
<5000 KW	223,373	$ 2.96				$ -	$ -	$ -	$ -			$ -	
5000 - 9000 KW	221,139	$ 2.29				$ -	$ -	$ -	$ -			$ -	
>9000 KW	337,169	$ 0.16				$ -	$ -	$ -	$ -			$ -	
REACTIVE DEMAND													
<5000 KW	86,421	$ 0.50				$ -	$ -	$ -	$ -			$ -	
5000 - 9000 KW	71,851	$ 0.50				$ -	$ -	$ -	$ -			$ -	
>9000 KW	110,424	$ 0.50				$ -	$ -	$ -	$ -			$ -	
ENERGY CHARGE	466,202,972					$ -		$ -		$ -	$ -	$ -	
TOTAL REVENUE						**$ -**		**$ 4,341**				**$ 4,630**	
								$ -					

Schedule (KMMc)-3

ATLANTIC CITY ELECTRIC COMPANY
RESIDENTIAL SERVICE ("RS")
8 WINTER MONTHS (October Through May)

Present Rates
vs.
Proposed Rates

Monthly Usage (kWh)	Present Delivery ($)	Present Supply+T ($)	Present Total ($)	New Delivery ($)	New Supply+T ($)	New Total ($)	Difference Delivery ($)	Difference Supply+T ($)	Total Difference ($)	(%)
0	$ 5.77	$ -	$ 5.77	$ 10.04	$ -	$ 10.04	$ 4.27	$ -	$ 4.27	74.00%
25	$ 7.81	$ 2.57	$ 10.38	$ 12.08	$ 2.57	$ 14.65	$ 4.27	$ -	$ 4.27	41.14%
50	$ 9.85	$ 5.13	$ 14.98	$ 14.12	$ 5.13	$ 19.25	$ 4.27	$ -	$ 4.27	28.50%
75	$ 11.89	$ 7.70	$ 19.59	$ 16.16	$ 7.70	$ 23.86	$ 4.27	$ -	$ 4.27	21.80%
100	$ 13.92	$ 10.27	$ 24.19	$ 18.19	$ 10.27	$ 28.46	$ 4.27	$ -	$ 4.27	17.65%
150	$ 18.00	$ 15.40	$ 33.40	$ 22.27	$ 15.40	$ 37.67	$ 4.27	$ -	$ 4.27	12.78%
200	$ 22.08	$ 20.54	$ 42.62	$ 26.35	$ 20.54	$ 46.89	$ 4.27	$ -	$ 4.27	10.02%
250	$ 26.16	$ 25.67	$ 51.83	$ 30.43	$ 25.67	$ 56.10	$ 4.27	$ -	$ 4.27	8.24%
300	$ 30.23	$ 30.81	$ 61.04	$ 34.50	$ 30.81	$ 65.31	$ 4.27	$ -	$ 4.27	7.00%
350	$ 34.31	$ 35.94	$ 70.25	$ 38.58	$ 35.94	$ 74.52	$ 4.27	$ -	$ 4.27	6.08%
400	$ 38.39	$ 41.08	$ 79.47	$ 42.66	$ 41.08	$ 83.74	$ 4.27	$ -	$ 4.27	5.37%
450	$ 42.46	$ 46.21	$ 88.67	$ 46.73	$ 46.21	$ 92.94	$ 4.27	$ -	$ 4.27	4.82%
500	$ 46.54	$ 51.34	$ 97.88	$ 50.81	$ 51.34	$ 102.15	$ 4.27	$ -	$ 4.27	4.36%
600	$ 54.70	$ 61.61	$ 116.31	$ 58.97	$ 61.61	$ 120.58	$ 4.27	$ -	$ 4.27	3.67%
679	**$ 61.14**	**$ 69.73**	**$ 130.87**	**$ 65.41**	**$ 69.73**	**$ 135.14**	**$ 4.27**	**$ -**	**$ 4.27**	**3.26%**
700	$ 62.85	$ 71.88	$ 134.73	$ 67.12	$ 71.88	$ 139.00	$ 4.27	$ -	$ 4.27	3.17%
750	$ 66.93	$ 77.02	$ 143.95	$ 71.20	$ 77.02	$ 148.22	$ 4.27	$ -	$ 4.27	2.97%
800	$ 71.00	$ 82.15	$ 153.15	$ 75.27	$ 82.15	$ 157.42	$ 4.27	$ -	$ 4.27	2.79%
900	$ 79.16	$ 92.42	$ 171.58	$ 83.43	$ 92.42	$ 175.85	$ 4.27	$ -	$ 4.27	2.49%
1000	$ 87.31	$ 102.69	$ 190.00	$ 91.58	$ 102.69	$ 194.27	$ 4.27	$ -	$ 4.27	2.25%
1200	$ 103.62	$ 123.23	$ 226.85	$ 107.89	$ 123.23	$ 231.12	$ 4.27	$ -	$ 4.27	1.88%
1500	$ 128.08	$ 154.03	$ 282.11	$ 132.35	$ 154.03	$ 286.38	$ 4.27	$ -	$ 4.27	1.51%
2000	$ 168.85	$ 205.38	$ 374.23	$ 173.12	$ 205.38	$ 378.50	$ 4.27	$ -	$ 4.27	1.14%
2500	$ 209.63	$ 256.72	$ 466.35	$ 213.90	$ 256.72	$ 470.62	$ 4.27	$ -	$ 4.27	0.92%
3000	$ 250.40	$ 308.06	$ 558.46	$ 254.67	$ 308.06	$ 562.73	$ 4.27	$ -	$ 4.27	0.76%
3500	$ 291.17	$ 359.41	$ 650.58	$ 295.44	$ 359.41	$ 654.85	$ 4.27	$ -	$ 4.27	0.66%
4000	$ 331.94	$ 410.75	$ 742.69	$ 336.21	$ 410.75	$ 746.96	$ 4.27	$ -	$ 4.27	0.57%

ATLANTIC CITY ELECTRIC COMPANY
RESIDENTIAL SERVICE ("RS")
4 SUMMER MONTHS (June Through September)

Present Rates
vs.
Proposed Rates

Monthly Usage (kWh)	Present Delivery ($)	Present Supply+T ($)	Present Total ($)	New Delivery ($)	New Supply+T ($)	New Total ($)	Difference Delivery ($)	Difference Supply+T ($)	Total Difference ($)	Total Difference (%)
0	$ 5.77	$ -	$ 5.77	$ 10.04	$ -	$ 10.04	$ 4.27	$ -	$ 4.27	74.00%
25	$ 7.95	$ 2.38	$ 10.33	$ 12.22	$ 2.38	$ 14.60	$ 4.27	$ -	$ 4.27	41.34%
50	$ 10.12	$ 4.76	$ 14.88	$ 14.39	$ 4.76	$ 19.15	$ 4.27	$ -	$ 4.27	28.70%
75	$ 12.30	$ 7.14	$ 19.44	$ 16.57	$ 7.14	$ 23.71	$ 4.27	$ -	$ 4.27	21.97%
100	$ 14.48	$ 9.52	$ 24.00	$ 18.75	$ 9.52	$ 28.27	$ 4.27	$ -	$ 4.27	17.79%
150	$ 18.83	$ 14.29	$ 33.12	$ 23.10	$ 14.29	$ 37.39	$ 4.27	$ -	$ 4.27	12.89%
200	$ 23.19	$ 19.05	$ 42.24	$ 27.46	$ 19.05	$ 46.51	$ 4.27	$ -	$ 4.27	10.11%
250	$ 27.54	$ 23.81	$ 51.35	$ 31.81	$ 23.81	$ 55.62	$ 4.27	$ -	$ 4.27	8.32%
300	$ 31.90	$ 28.57	$ 60.47	$ 36.17	$ 28.57	$ 64.74	$ 4.27	$ -	$ 4.27	7.06%
350	$ 36.25	$ 33.34	$ 69.59	$ 40.52	$ 33.34	$ 73.86	$ 4.27	$ -	$ 4.27	6.14%
400	$ 40.61	$ 38.10	$ 78.71	$ 44.88	$ 38.10	$ 82.98	$ 4.27	$ -	$ 4.27	5.42%
450	$ 44.96	$ 42.86	$ 87.82	$ 49.23	$ 42.86	$ 92.09	$ 4.27	$ -	$ 4.27	4.86%
500	$ 49.32	$ 47.62	$ 96.94	$ 53.59	$ 47.62	$ 101.21	$ 4.27	$ -	$ 4.27	4.40%
600	$ 58.03	$ 57.15	$ 115.18	$ 62.30	$ 57.15	$ 119.45	$ 4.27	$ -	$ 4.27	3.71%
679	**$ 64.91**	**$ 64.67**	**$ 129.58**	**$ 69.18**	**$ 64.67**	**$ 133.85**	**$ 4.27**	**$ -**	**$ 4.27**	**3.30%**
700	$ 66.74	$ 66.67	$ 133.41	$ 71.01	$ 66.67	$ 137.68	$ 4.27	$ -	$ 4.27	3.20%
750	$ 71.09	$ 71.43	$ 142.52	$ 75.36	$ 71.43	$ 146.79	$ 4.27	$ -	$ 4.27	3.00%
800	$ 75.98	$ 76.69	$ 152.67	$ 80.25	$ 76.69	$ 156.94	$ 4.27	$ -	$ 4.27	2.80%
900	$ 85.77	$ 87.21	$ 172.98	$ 90.04	$ 87.21	$ 177.25	$ 4.27	$ -	$ 4.27	2.47%
1000	$ 95.55	$ 97.73	$ 193.28	$ 99.82	$ 97.73	$ 197.55	$ 4.27	$ -	$ 4.27	2.21%
1200	$ 115.12	$ 118.76	$ 233.88	$ 119.39	$ 118.76	$ 238.15	$ 4.27	$ -	$ 4.27	1.83%
1500	$ 144.47	$ 150.31	$ 294.78	$ 148.74	$ 150.31	$ 299.05	$ 4.27	$ -	$ 4.27	1.45%
2000	$ 193.39	$ 202.89	$ 396.28	$ 197.66	$ 202.89	$ 400.55	$ 4.27	$ -	$ 4.27	1.08%
2500	$ 242.31	$ 255.48	$ 497.79	$ 246.58	$ 255.48	$ 502.06	$ 4.27	$ -	$ 4.27	0.86%
3000	$ 291.23	$ 308.06	$ 599.29	$ 295.50	$ 308.06	$ 603.56	$ 4.27	$ -	$ 4.27	0.71%
3500	$ 340.15	$ 360.65	$ 700.80	$ 344.42	$ 360.65	$ 705.07	$ 4.27	$ -	$ 4.27	0.61%
4000	$ 389.07	$ 413.23	$ 802.30	$ 393.34	$ 413.23	$ 806.57	$ 4.27	$ -	$ 4.27	0.53%

ATLANTIC CITY ELECTRIC COMPANY
RESIDENTIAL SERVICE ("RS")
Annual Average

Present Rates
vs.
Proposed Rates

Monthly Usage (kWh)	Present Delivery ($)	Present Supply+T ($)	Present Total ($)	New Delivery ($)	New Supply+T ($)	New Total ($)	Difference Delivery ($)	Difference Supply+T ($)	Total Difference ($)	Total Difference (%)
0	$ 5.77	$ -	$ 5.77	$ 10.04	$ -	$ 10.04	$ 4.27	$ -	$ 4.27	74.00%
25	$ 7.86	$ 2.51	$ 10.37	$ 12.13	$ 2.51	$ 14.64	$ 4.27	$ -	$ 4.27	41.18%
50	$ 9.94	$ 5.01	$ 14.95	$ 14.21	$ 5.01	$ 19.22	$ 4.27	$ -	$ 4.27	28.56%
75	$ 12.03	$ 7.51	$ 19.54	$ 16.30	$ 7.51	$ 23.81	$ 4.27	$ -	$ 4.27	21.85%
100	$ 14.11	$ 10.02	$ 24.13	$ 18.38	$ 10.02	$ 28.40	$ 4.27	$ -	$ 4.27	17.70%
150	$ 18.28	$ 15.03	$ 33.31	$ 22.55	$ 15.03	$ 37.58	$ 4.27	$ -	$ 4.27	12.82%
200	$ 22.45	$ 20.04	$ 42.49	$ 26.72	$ 20.04	$ 46.76	$ 4.27	$ -	$ 4.27	10.05%
250	$ 26.62	$ 25.05	$ 51.67	$ 30.89	$ 25.05	$ 55.94	$ 4.27	$ -	$ 4.27	8.26%
300	$ 30.79	$ 30.06	$ 60.85	$ 35.06	$ 30.06	$ 65.12	$ 4.27	$ -	$ 4.27	7.02%
350	$ 34.96	$ 35.07	$ 70.03	$ 39.23	$ 35.07	$ 74.30	$ 4.27	$ -	$ 4.27	6.10%
400	$ 39.13	$ 40.09	$ 79.22	$ 43.40	$ 40.09	$ 83.49	$ 4.27	$ -	$ 4.27	5.39%
450	$ 43.29	$ 45.09	$ 88.38	$ 47.56	$ 45.09	$ 92.65	$ 4.27	$ -	$ 4.27	4.83%
500	$ 47.47	$ 50.10	$ 97.57	$ 51.74	$ 50.10	$ 101.84	$ 4.27	$ -	$ 4.27	4.38%
600	$ 55.81	$ 60.12	$ 115.93	$ 60.08	$ 60.12	$ 120.20	$ 4.27	$ -	$ 4.27	3.68%
679	**$ 62.40**	**$ 68.04**	**$ 130.44**	**$ 66.67**	**$ 68.04**	**$ 134.71**	**$ 4.27**	**$ -**	**$ 4.27**	**3.27%**
700	$ 64.15	$ 70.14	$ 134.29	$ 68.42	$ 70.14	$ 138.56	$ 4.27	$ -	$ 4.27	3.18%
750	$ 68.32	$ 75.16	$ 143.48	$ 72.59	$ 75.16	$ 147.75	$ 4.27	$ -	$ 4.27	2.98%
800	$ 72.66	$ 80.33	$ 152.99	$ 76.93	$ 80.33	$ 157.26	$ 4.27	$ -	$ 4.27	2.79%
900	$ 81.36	$ 90.68	$ 172.04	$ 85.63	$ 90.68	$ 176.31	$ 4.27	$ -	$ 4.27	2.48%
1000	$ 90.06	$ 101.04	$ 191.10	$ 94.33	$ 101.04	$ 195.37	$ 4.27	$ -	$ 4.27	2.23%
1200	$ 107.45	$ 121.74	$ 229.19	$ 111.72	$ 121.74	$ 233.46	$ 4.27	$ -	$ 4.27	1.86%
1500	$ 133.54	$ 152.79	$ 286.33	$ 137.81	$ 152.79	$ 290.60	$ 4.27	$ -	$ 4.27	1.49%
2000	$ 177.03	$ 204.55	$ 381.58	$ 181.30	$ 204.55	$ 385.85	$ 4.27	$ -	$ 4.27	1.12%
2500	$ 220.52	$ 256.31	$ 476.83	$ 224.79	$ 256.31	$ 481.10	$ 4.27	$ -	$ 4.27	0.90%
3000	$ 264.01	$ 308.06	$ 572.07	$ 268.28	$ 308.06	$ 576.34	$ 4.27	$ -	$ 4.27	0.75%
3500	$ 307.50	$ 359.82	$ 667.32	$ 311.77	$ 359.82	$ 671.59	$ 4.27	$ -	$ 4.27	0.64%
4000	$ 350.98	$ 411.58	$ 762.56	$ 355.25	$ 411.58	$ 766.83	$ 4.27	$ -	$ 4.27	0.56%

ATLANTIC CITY ELECTRIC COMPANY
MONTHLY GENERAL SERVICE SECONDARY ("MGS Secondary")
8 WINTER MONTHS (October Through May)

Present Rates vs. Proposed Rates

Demand (kW)	Load Factor (%)	Energy (kWh)	Dist kW	Trans kW	Present Distribution ($)	Present BGS and Other Charges ($)	Present Total ($)	New Distribution ($)	New BGS and Other Charges ($)	New Total ($)	Difference Distribution ($)	Difference BGS and Other Charges ($)	Total Difference ($)	Total Difference (%)
5	20	730	5.00	2	$ 55.13	$ 81.83	$ 136.96	$ 60.40	$ 81.83	$ 142.23	$ 5.27	$ -	$ 5.27	3.85%
5	30	1,095	5.00	2	$ 72.19	$ 119.19	$ 191.38	$ 77.46	$ 119.19	$ 196.65	$ 5.27	$ -	$ 5.27	2.75%
5	40	1,460	5.00	2	$ 89.25	$ 156.55	$ 245.80	$ 94.52	$ 156.55	$ 251.07	$ 5.27	$ -	$ 5.27	2.14%
5	50	1,825	5.00	2	$ 106.31	$ 193.92	$ 300.22	$ 111.58	$ 193.92	$ 305.49	$ 5.27	$ -	$ 5.27	1.76%
5	60	2,190	5.00	2	$ 123.37	$ 231.28	$ 354.65	$ 128.64	$ 231.28	$ 359.92	$ 5.27	$ -	$ 5.27	1.49%
5	70	2,555	5.00	2	$ 140.43	$ 268.64	$ 409.07	$ 145.70	$ 268.64	$ 414.34	$ 5.27	$ -	$ 5.27	1.29%
5	80	2,920	5.00	2	$ 157.48	$ 306.01	$ 463.49	$ 162.75	$ 306.01	$ 468.76	$ 5.27	$ -	$ 5.27	1.14%
10	20	1,460	10.00	7	$ 100.30	$ 174.30	$ 274.60	$ 105.57	$ 174.30	$ 279.87	$ 5.27	$ -	$ 5.27	1.92%
10	30	2,190	10.00	7	$ 134.42	$ 249.03	$ 383.45	$ 139.69	$ 249.03	$ 388.72	$ 5.27	$ -	$ 5.27	1.37%
10	40	2,920	10.00	7	$ 168.53	$ 323.76	$ 492.29	$ 173.80	$ 323.76	$ 497.56	$ 5.27	$ -	$ 5.27	1.07%
10	50	3,650	10.00	7	$ 202.65	$ 398.48	$ 601.14	$ 207.92	$ 398.48	$ 606.41	$ 5.27	$ -	$ 5.27	0.88%
10	60	4,380	10.00	7	$ 236.77	$ 473.21	$ 709.98	$ 242.04	$ 473.21	$ 715.25	$ 5.27	$ -	$ 5.27	0.74%
10	70	5,110	10.00	7	$ 270.89	$ 547.94	$ 818.83	$ 276.16	$ 547.94	$ 824.10	$ 5.27	$ -	$ 5.27	0.64%
10	80	5,840	10.00	7	$ 305.01	$ 622.66	$ 927.67	$ 310.28	$ 622.66	$ 932.94	$ 5.27	$ -	$ 5.27	0.57%
20	20	2,920	20.00	17	$ 190.63	$ 359.26	$ 549.89	$ 195.90	$ 359.26	$ 555.16	$ 5.27	$ -	$ 5.27	0.96%
20	30	4,380	20.00	17	$ 258.87	$ 508.71	$ 767.58	$ 264.14	$ 508.71	$ 772.85	$ 5.27	$ -	$ 5.27	0.69%
20	40	5,840	20.00	17	$ 327.11	$ 658.16	$ 985.27	$ 332.38	$ 658.16	$ 990.54	$ 5.27	$ -	$ 5.27	0.53%
20	50	7,300	20.00	17	$ 395.35	$ 807.61	$ 1,202.96	$ 400.62	$ 807.61	$ 1,208.23	$ 5.27	$ -	$ 5.27	0.44%
20	60	8,760	20.00	17	$ 463.58	$ 957.07	$ 1,420.65	$ 468.85	$ 957.07	$ 1,425.92	$ 5.27	$ -	$ 5.27	0.37%
20	70	10,220	20.00	17	$ 531.82	$ 1,106.52	$ 1,638.34	$ 537.09	$ 1,106.52	$ 1,643.61	$ 5.27	$ -	$ 5.27	0.32%
20	80	11,680	20.00	17	$ 600.06	$ 1,255.97	$ 1,856.03	$ 605.33	$ 1,255.97	$ 1,861.30	$ 5.27	$ -	$ 5.27	0.28%
30	20	4,380	30.00	27	$ 280.97	$ 544.21	$ 825.18	$ 286.24	$ 544.21	$ 830.45	$ 5.27	$ -	$ 5.27	0.64%
30	30	6,570	30.00	27	$ 383.33	$ 768.39	$ 1,151.72	$ 388.60	$ 768.39	$ 1,156.99	$ 5.27	$ -	$ 5.27	0.46%
30	40	8,760	30.00	27	$ 485.68	$ 992.57	$ 1,478.25	$ 490.95	$ 992.57	$ 1,483.52	$ 5.27	$ -	$ 5.27	0.36%
30	50	10,950	30.00	27	$ 588.04	$ 1,216.75	$ 1,804.79	$ 593.31	$ 1,216.75	$ 1,810.06	$ 5.27	$ -	$ 5.27	0.29%
30	60	13,140	30.00	27	$ 690.40	$ 1,440.93	$ 2,131.32	$ 695.67	$ 1,440.93	$ 2,136.59	$ 5.27	$ -	$ 5.27	0.25%
30	70	15,330	30.00	27	$ 792.75	$ 1,665.11	$ 2,457.86	$ 798.02	$ 1,665.11	$ 2,463.13	$ 5.27	$ -	$ 5.27	0.21%
30	80	17,520	30.00	27	$ 895.11	$ 1,889.28	$ 2,784.39	$ 900.38	$ 1,889.28	$ 2,789.66	$ 5.27	$ -	$ 5.27	0.19%
50	20	7,300	50.00	47	$ 461.65	$ 914.11	$ 1,375.76	$ 466.92	$ 914.11	$ 1,381.03	$ 5.27	$ -	$ 5.27	0.38%
50	30	10,950	50.00	47	$ 632.24	$ 1,287.75	$ 1,919.99	$ 637.51	$ 1,287.75	$ 1,925.26	$ 5.27	$ -	$ 5.27	0.27%
50	40	14,600	50.00	47	$ 802.83	$ 1,661.38	$ 2,464.21	$ 808.10	$ 1,661.38	$ 2,469.48	$ 5.27	$ -	$ 5.27	0.21%
50	50	18,250	50.00	47	$ 973.43	$ 2,035.01	$ 3,008.44	$ 978.70	$ 2,035.01	$ 3,013.71	$ 5.27	$ -	$ 5.27	0.18%
50	60	21,900	50.00	47	$ 1,144.02	$ 2,408.64	$ 3,552.67	$ 1,149.29	$ 2,408.64	$ 3,557.94	$ 5.27	$ -	$ 5.27	0.15%
50	70	25,550	50.00	47	$ 1,314.62	$ 2,782.28	$ 4,096.89	$ 1,319.89	$ 2,782.28	$ 4,102.16	$ 5.27	$ -	$ 5.27	0.13%
50	80	29,200	50.00	47	$ 1,485.21	$ 3,155.91	$ 4,641.12	$ 1,490.48	$ 3,155.91	$ 4,646.39	$ 5.27	$ -	$ 5.27	0.11%
75	30	16,425	75.00	72	$ 943.38	$ 1,936.95	$ 2,880.33	$ 948.65	$ 1,936.95	$ 2,885.60	$ 5.27	$ -	$ 5.27	0.18%
75	40	21,900	75.00	72	$ 1,199.27	$ 2,497.39	$ 3,696.67	$ 1,204.54	$ 2,497.39	$ 3,701.94	$ 5.27	$ -	$ 5.27	0.14%
75	50	27,375	75.00	72	$ 1,455.16	$ 3,057.84	$ 4,513.00	$ 1,460.43	$ 3,057.84	$ 4,518.27	$ 5.27	$ -	$ 5.27	0.12%
75	60	32,850	75.00	72	$ 1,711.05	$ 3,618.29	$ 5,329.34	$ 1,716.32	$ 3,618.29	$ 5,334.61	$ 5.27	$ -	$ 5.27	0.10%
75	70	38,325	75.00	72	$ 1,966.94	$ 4,178.74	$ 6,145.68	$ 1,972.21	$ 4,178.74	$ 6,150.95	$ 5.27	$ -	$ 5.27	0.09%
75	80	43,800	75.00	72	$ 2,222.83	$ 4,739.19	$ 6,962.02	$ 2,228.10	$ 4,739.19	$ 6,967.29	$ 5.27	$ -	$ 5.27	0.08%
75	90	49,275	75.00	72	$ 2,478.72	$ 5,299.64	$ 7,778.36	$ 2,483.99	$ 5,299.64	$ 7,783.63	$ 5.27	$ -	$ 5.27	0.07%
100	30	21,900	100.00	97	$ 1,254.52	$ 2,586.14	$ 3,840.67	$ 1,259.79	$ 2,586.14	$ 3,845.94	$ 5.27	$ -	$ 5.27	0.14%
100	40	29,200	100.00	97	$ 1,595.71	$ 3,333.41	$ 4,929.12	$ 1,600.98	$ 3,333.41	$ 4,934.39	$ 5.27	$ -	$ 5.27	0.11%
100	50	36,500	100.00	97	$ 1,936.90	$ 4,080.67	$ 6,017.57	$ 1,942.17	$ 4,080.67	$ 6,022.84	$ 5.27	$ -	$ 5.27	0.09%
100	60	43,800	100.00	97	$ 2,278.08	$ 4,827.94	$ 7,106.02	$ 2,283.35	$ 4,827.94	$ 7,111.29	$ 5.27	$ -	$ 5.27	0.07%
100	70	51,100	100.00	97	$ 2,619.27	$ 5,575.20	$ 8,194.47	$ 2,624.54	$ 5,575.20	$ 8,199.74	$ 5.27	$ -	$ 5.27	0.06%
100	80	58,400	100.00	97	$ 2,960.46	$ 6,322.47	$ 9,282.93	$ 2,965.73	$ 6,322.47	$ 9,288.20	$ 5.27	$ -	$ 5.27	0.06%
100	90	65,700	100.00	97	$ 3,301.65	$ 7,069.73	$ 10,371.38	$ 3,306.92	$ 7,069.73	$ 10,376.65	$ 5.27	$ -	$ 5.27	0.05%
200	30	43,800	200.00	197	$ 2,499.08	$ 5,182.94	$ 7,682.02	$ 2,504.35	$ 5,182.94	$ 7,687.29	$ 5.27	$ -	$ 5.27	0.07%
200	40	58,400	200.00	197	$ 3,181.46	$ 6,677.47	$ 9,858.93	$ 3,186.73	$ 6,677.47	$ 9,864.20	$ 5.27	$ -	$ 5.27	0.05%
200	50	73,000	200.00	197	$ 3,863.83	$ 8,172.00	$ 12,035.83	$ 3,869.10	$ 8,172.00	$ 12,041.10	$ 5.27	$ -	$ 5.27	0.04%
200	60	87,600	200.00	197	$ 4,546.21	$ 9,666.52	$ 14,212.73	$ 4,551.48	$ 9,666.52	$ 14,218.00	$ 5.27	$ -	$ 5.27	0.04%
200	70	102,200	200.00	197	$ 5,228.58	$ 11,161.05	$ 16,389.64	$ 5,233.85	$ 11,161.05	$ 16,394.91	$ 5.27	$ -	$ 5.27	0.03%
200	80	116,800	200.00	197	$ 5,910.96	$ 12,655.58	$ 18,566.54	$ 5,916.23	$ 12,655.58	$ 18,571.81	$ 5.27	$ -	$ 5.27	0.03%
200	90	131,400	200.00	197	$ 6,593.33	$ 14,150.11	$ 20,743.44	$ 6,598.60	$ 14,150.11	$ 20,748.71	$ 5.27	$ -	$ 5.27	0.03%

ATLANTIC CITY ELECTRIC COMPANY
MONTHLY GENERAL SERVICE SECONDARY ("MGS Secondary")
4 SUMMER MONTHS (June Through September)

Present Rates vs. Proposed Rates

Demand (kW)	Load Factor (%)	Energy (kWh)	Dist kW	Trans kW	Present Distribution ($)	Present BGS and Other Charges ($)	Present Total ($)	New Distribution ($)	New BGS and Other Charges ($)	New Total ($)	Difference Distribution ($)	Difference BGS and Other Charges ($)	Total Difference ($)	Total Difference (%)
5	20	730	5.00	2	$ 62.02	$ 82.35	$ 144.37	$ 67.29	$ 82.35	$ 149.64	$ 5.27	$ -	$ 5.27	3.65%
5	30	1,095	5.00	2	$ 81.32	$ 119.60	$ 200.92	$ 86.59	$ 119.60	$ 206.19	$ 5.27	$ -	$ 5.27	2.62%
5	40	1,460	5.00	2	$ 100.63	$ 156.84	$ 257.47	$ 105.90	$ 156.84	$ 262.74	$ 5.27	$ -	$ 5.27	2.05%
5	50	1,825	5.00	2	$ 119.93	$ 194.09	$ 314.02	$ 125.20	$ 194.09	$ 319.29	$ 5.27	$ -	$ 5.27	1.68%
5	60	2,190	5.00	2	$ 139.23	$ 231.33	$ 370.57	$ 144.50	$ 231.33	$ 375.84	$ 5.27	$ -	$ 5.27	1.42%
5	70	2,555	5.00	2	$ 158.54	$ 268.58	$ 427.12	$ 163.81	$ 268.58	$ 432.39	$ 5.27	$ -	$ 5.27	1.23%
5	80	2,920	5.00	2	$ 177.84	$ 305.83	$ 483.67	$ 183.11	$ 305.83	$ 488.94	$ 5.27	$ -	$ 5.27	1.09%
10	20	1,460	10.00	7	$ 114.08	$ 176.49	$ 290.57	$ 119.35	$ 176.49	$ 295.84	$ 5.27	$ -	$ 5.27	1.81%
10	30	2,190	10.00	7	$ 152.68	$ 250.98	$ 403.67	$ 157.95	$ 250.98	$ 408.94	$ 5.27	$ -	$ 5.27	1.31%
10	40	2,920	10.00	7	$ 191.29	$ 325.48	$ 516.77	$ 196.56	$ 325.48	$ 522.04	$ 5.27	$ -	$ 5.27	1.02%
10	50	3,650	10.00	7	$ 229.90	$ 399.97	$ 629.87	$ 235.17	$ 399.97	$ 635.14	$ 5.27	$ -	$ 5.27	0.84%
10	60	4,380	10.00	7	$ 268.51	$ 474.46	$ 742.97	$ 273.78	$ 474.46	$ 748.24	$ 5.27	$ -	$ 5.27	0.71%
10	70	5,110	10.00	7	$ 307.12	$ 548.95	$ 856.07	$ 312.39	$ 548.95	$ 861.34	$ 5.27	$ -	$ 5.27	0.62%
10	80	5,840	10.00	7	$ 345.73	$ 623.44	$ 969.17	$ 351.00	$ 623.44	$ 974.44	$ 5.27	$ -	$ 5.27	0.54%
20	20	2,920	20.00	17	$ 218.19	$ 364.78	$ 582.97	$ 223.46	$ 364.78	$ 588.24	$ 5.27	$ -	$ 5.27	0.90%
20	30	4,380	20.00	17	$ 295.41	$ 513.76	$ 809.17	$ 300.68	$ 513.76	$ 814.44	$ 5.27	$ -	$ 5.27	0.65%
20	40	5,840	20.00	17	$ 372.63	$ 662.74	$ 1,035.37	$ 377.90	$ 662.74	$ 1,040.64	$ 5.27	$ -	$ 5.27	0.51%
20	50	7,300	20.00	17	$ 449.84	$ 811.72	$ 1,261.57	$ 455.11	$ 811.72	$ 1,266.84	$ 5.27	$ -	$ 5.27	0.42%
20	60	8,760	20.00	17	$ 527.06	$ 960.71	$ 1,487.77	$ 532.33	$ 960.71	$ 1,493.04	$ 5.27	$ -	$ 5.27	0.35%
20	70	10,220	20.00	17	$ 604.28	$ 1,109.69	$ 1,713.96	$ 609.55	$ 1,109.69	$ 1,719.23	$ 5.27	$ -	$ 5.27	0.31%
20	80	11,680	20.00	17	$ 681.49	$ 1,258.67	$ 1,940.16	$ 686.76	$ 1,258.67	$ 1,945.43	$ 5.27	$ -	$ 5.27	0.27%
30	20	4,380	30.00	27	$ 322.31	$ 553.06	$ 875.37	$ 327.58	$ 553.06	$ 880.64	$ 5.27	$ -	$ 5.27	0.60%
30	30	6,570	30.00	27	$ 438.13	$ 776.53	$ 1,214.67	$ 443.40	$ 776.53	$ 1,219.94	$ 5.27	$ -	$ 5.27	0.43%
30	40	8,760	30.00	27	$ 553.96	$ 1,000.01	$ 1,553.97	$ 559.23	$ 1,000.01	$ 1,559.24	$ 5.27	$ -	$ 5.27	0.34%
30	50	10,950	30.00	27	$ 669.78	$ 1,223.48	$ 1,893.26	$ 675.05	$ 1,223.48	$ 1,898.53	$ 5.27	$ -	$ 5.27	0.28%
30	60	13,140	30.00	27	$ 785.61	$ 1,446.96	$ 2,232.56	$ 790.88	$ 1,446.96	$ 2,237.83	$ 5.27	$ -	$ 5.27	0.24%
30	70	15,330	30.00	27	$ 901.43	$ 1,670.43	$ 2,571.86	$ 906.70	$ 1,670.43	$ 2,577.13	$ 5.27	$ -	$ 5.27	0.20%
30	80	17,520	30.00	27	$ 1,017.26	$ 1,893.90	$ 2,911.16	$ 1,022.53	$ 1,893.90	$ 2,916.43	$ 5.27	$ -	$ 5.27	0.18%
50	20	7,300	50.00	47	$ 530.54	$ 929.62	$ 1,460.17	$ 535.81	$ 929.62	$ 1,465.44	$ 5.27	$ -	$ 5.27	0.36%
50	30	10,950	50.00	47	$ 723.58	$ 1,302.08	$ 2,025.66	$ 728.85	$ 1,302.08	$ 2,030.93	$ 5.27	$ -	$ 5.27	0.26%
50	40	14,600	50.00	47	$ 916.62	$ 1,674.54	$ 2,591.16	$ 921.89	$ 1,674.54	$ 2,596.43	$ 5.27	$ -	$ 5.27	0.20%
50	50	18,250	50.00	47	$ 1,109.67	$ 2,046.99	$ 3,156.66	$ 1,114.94	$ 2,046.99	$ 3,161.93	$ 5.27	$ -	$ 5.27	0.17%
50	60	21,900	50.00	47	$ 1,302.71	$ 2,419.45	$ 3,722.16	$ 1,307.98	$ 2,419.45	$ 3,727.43	$ 5.27	$ -	$ 5.27	0.14%
50	70	25,550	50.00	47	$ 1,495.75	$ 2,791.91	$ 4,287.66	$ 1,501.02	$ 2,791.91	$ 4,292.93	$ 5.27	$ -	$ 5.27	0.12%
50	80	29,200	50.00	47	$ 1,688.79	$ 3,164.37	$ 4,853.16	$ 1,694.06	$ 3,164.37	$ 4,858.43	$ 5.27	$ -	$ 5.27	0.11%
75	30	16,425	75.00	72	$ 1,080.40	$ 1,959.02	$ 3,039.41	$ 1,085.67	$ 1,959.02	$ 3,044.68	$ 5.27	$ -	$ 5.27	0.17%
75	40	21,900	75.00	72	$ 1,369.96	$ 2,517.70	$ 3,887.66	$ 1,375.23	$ 2,517.70	$ 3,892.93	$ 5.27	$ -	$ 5.27	0.14%
75	50	27,375	75.00	72	$ 1,659.52	$ 3,076.39	$ 4,735.91	$ 1,664.79	$ 3,076.39	$ 4,741.18	$ 5.27	$ -	$ 5.27	0.11%
75	60	32,850	75.00	72	$ 1,949.08	$ 3,635.07	$ 5,584.15	$ 1,954.35	$ 3,635.07	$ 5,589.42	$ 5.27	$ -	$ 5.27	0.09%
75	70	38,325	75.00	72	$ 2,238.64	$ 4,193.76	$ 6,432.40	$ 2,243.91	$ 4,193.76	$ 6,437.67	$ 5.27	$ -	$ 5.27	0.08%
75	80	43,800	75.00	72	$ 2,528.20	$ 4,752.44	$ 7,280.65	$ 2,533.47	$ 4,752.44	$ 7,285.92	$ 5.27	$ -	$ 5.27	0.07%
75	90	49,275	75.00	72	$ 2,817.77	$ 5,311.13	$ 8,128.90	$ 2,823.04	$ 5,311.13	$ 8,134.17	$ 5.27	$ -	$ 5.27	0.06%
100	30	21,900	100.00	97	$ 1,437.21	$ 2,615.95	$ 4,053.16	$ 1,442.48	$ 2,615.95	$ 4,058.43	$ 5.27	$ -	$ 5.27	0.13%
100	40	29,200	100.00	97	$ 1,823.29	$ 3,360.87	$ 5,184.16	$ 1,828.56	$ 3,360.87	$ 5,189.43	$ 5.27	$ -	$ 5.27	0.10%
100	50	36,500	100.00	97	$ 2,209.37	$ 4,105.78	$ 6,315.15	$ 2,214.64	$ 4,105.78	$ 6,320.42	$ 5.27	$ -	$ 5.27	0.08%
100	60	43,800	100.00	97	$ 2,595.45	$ 4,850.69	$ 7,446.15	$ 2,600.72	$ 4,850.69	$ 7,451.42	$ 5.27	$ -	$ 5.27	0.07%
100	70	51,100	100.00	97	$ 2,981.54	$ 5,595.61	$ 8,577.14	$ 2,986.81	$ 5,595.61	$ 8,582.41	$ 5.27	$ -	$ 5.27	0.06%
100	80	58,400	100.00	97	$ 3,367.62	$ 6,340.52	$ 9,708.14	$ 3,372.89	$ 6,340.52	$ 9,713.41	$ 5.27	$ -	$ 5.27	0.05%
100	90	65,700	100.00	97	$ 3,753.70	$ 7,085.44	$ 10,839.14	$ 3,758.97	$ 7,085.44	$ 10,844.41	$ 5.27	$ -	$ 5.27	0.05%
200	30	43,800	200.00	197	$ 2,864.45	$ 5,243.69	$ 8,108.15	$ 2,869.72	$ 5,243.69	$ 8,113.42	$ 5.27	$ -	$ 5.27	0.06%
200	40	58,400	200.00	197	$ 3,636.62	$ 6,733.52	$ 10,370.14	$ 3,641.89	$ 6,733.52	$ 10,375.41	$ 5.27	$ -	$ 5.27	0.05%
200	50	73,000	200.00	197	$ 4,408.78	$ 8,223.35	$ 12,632.13	$ 4,414.05	$ 8,223.35	$ 12,637.40	$ 5.27	$ -	$ 5.27	0.04%
200	60	87,600	200.00	197	$ 5,180.95	$ 9,713.18	$ 14,894.13	$ 5,186.22	$ 9,713.18	$ 14,899.40	$ 5.27	$ -	$ 5.27	0.04%
200	70	102,200	200.00	197	$ 5,953.11	$ 11,203.00	$ 17,156.12	$ 5,958.38	$ 11,203.00	$ 17,161.39	$ 5.27	$ -	$ 5.27	0.03%
200	80	116,800	200.00	197	$ 6,725.28	$ 12,692.83	$ 19,418.11	$ 6,730.55	$ 12,692.83	$ 19,423.38	$ 5.27	$ -	$ 5.27	0.03%
200	90	131,400	200.00	197	$ 7,497.44	$ 14,182.66	$ 21,680.10	$ 7,502.71	$ 14,182.66	$ 21,685.37	$ 5.27	$ -	$ 5.27	0.02%

ATLANTIC CITY ELECTRIC COMPANY
MONTHLY GENERAL SERVICE SECONDARY ("MGS Secondary")
Annual Average

Present Rates vs. Proposed Rates

Demand (kW)	Load Factor (%)	Energy (kWh)	Dist kW	Trans kW	Present Distribution ($)	Present BGS and Other Charges ($)	Present Total ($)	New Distribution ($)	New BGS and Other Charges ($)	New Total ($)	Difference Distribution ($)	Difference BGS and Other Charges ($)	Total Difference ($)	Total Difference (%)
5	20	730	5.00	2	$ 57.43	$ 82.00	$ 139.43	$ 62.70	$ 82.00	$ 144.70	$ 5.27	$ -	$ 5.27	3.78%
5	30	1,095	5.00	2	$ 75.23	$ 119.33	$ 194.56	$ 80.50	$ 119.33	$ 199.83	$ 5.27	$ -	$ 5.27	2.71%
5	40	1,460	5.00	2	$ 93.04	$ 156.65	$ 249.69	$ 98.31	$ 156.65	$ 254.96	$ 5.27	$ -	$ 5.27	2.11%
5	50	1,825	5.00	2	$ 110.85	$ 193.97	$ 304.82	$ 116.12	$ 193.97	$ 310.09	$ 5.27	$ -	$ 5.27	1.73%
5	60	2,190	5.00	2	$ 128.66	$ 231.30	$ 359.95	$ 133.93	$ 231.30	$ 365.22	$ 5.27	$ -	$ 5.27	1.46%
5	70	2,555	5.00	2	$ 146.46	$ 268.62	$ 415.09	$ 151.73	$ 268.62	$ 420.36	$ 5.27	$ -	$ 5.27	1.27%
5	80	2,920	5.00	2	$ 164.27	$ 305.95	$ 470.22	$ 169.54	$ 305.95	$ 475.49	$ 5.27	$ -	$ 5.27	1.12%
10	20	1,460	10.00	7	$ 104.89	$ 175.03	$ 279.92	$ 110.16	$ 175.03	$ 285.19	$ 5.27	$ -	$ 5.27	1.88%
10	30	2,190	10.00	7	$ 140.51	$ 249.68	$ 390.19	$ 145.78	$ 249.68	$ 395.46	$ 5.27	$ -	$ 5.27	1.35%
10	40	2,920	10.00	7	$ 176.12	$ 324.33	$ 500.45	$ 181.39	$ 324.33	$ 505.72	$ 5.27	$ -	$ 5.27	1.05%
10	50	3,650	10.00	7	$ 211.74	$ 398.98	$ 610.71	$ 217.01	$ 398.98	$ 615.98	$ 5.27	$ -	$ 5.27	0.86%
10	60	4,380	10.00	7	$ 247.35	$ 473.63	$ 720.98	$ 252.62	$ 473.63	$ 726.25	$ 5.27	$ -	$ 5.27	0.73%
10	70	5,110	10.00	7	$ 282.97	$ 548.27	$ 831.24	$ 288.24	$ 548.27	$ 836.51	$ 5.27	$ -	$ 5.27	0.63%
10	80	5,840	10.00	7	$ 318.58	$ 622.92	$ 941.50	$ 323.85	$ 622.92	$ 946.77	$ 5.27	$ -	$ 5.27	0.56%
20	20	2,920	20.00	17	$ 199.82	$ 361.10	$ 560.92	$ 205.09	$ 361.10	$ 566.19	$ 5.27	$ -	$ 5.27	0.94%
20	30	4,380	20.00	17	$ 271.05	$ 510.39	$ 781.44	$ 276.32	$ 510.39	$ 786.71	$ 5.27	$ -	$ 5.27	0.67%
20	40	5,840	20.00	17	$ 342.28	$ 659.69	$ 1,001.97	$ 347.55	$ 659.69	$ 1,007.24	$ 5.27	$ -	$ 5.27	0.53%
20	50	7,300	20.00	17	$ 413.51	$ 808.98	$ 1,222.50	$ 418.78	$ 808.98	$ 1,227.77	$ 5.27	$ -	$ 5.27	0.43%
20	60	8,760	20.00	17	$ 484.74	$ 958.28	$ 1,443.02	$ 490.01	$ 958.28	$ 1,448.29	$ 5.27	$ -	$ 5.27	0.37%
20	70	10,220	20.00	17	$ 555.97	$ 1,107.58	$ 1,663.55	$ 561.24	$ 1,107.58	$ 1,668.82	$ 5.27	$ -	$ 5.27	0.32%
20	80	11,680	20.00	17	$ 627.20	$ 1,256.87	$ 1,884.08	$ 632.47	$ 1,256.87	$ 1,889.35	$ 5.27	$ -	$ 5.27	0.28%
30	20	4,380	30.00	27	$ 294.75	$ 547.16	$ 841.91	$ 300.02	$ 547.16	$ 847.18	$ 5.27	$ -	$ 5.27	0.63%
30	30	6,570	30.00	27	$ 401.60	$ 771.10	$ 1,172.70	$ 406.87	$ 771.10	$ 1,177.97	$ 5.27	$ -	$ 5.27	0.45%
30	40	8,760	30.00	27	$ 508.44	$ 995.05	$ 1,503.49	$ 513.71	$ 995.05	$ 1,508.76	$ 5.27	$ -	$ 5.27	0.35%
30	50	10,950	30.00	27	$ 615.29	$ 1,218.99	$ 1,834.28	$ 620.56	$ 1,218.99	$ 1,839.55	$ 5.27	$ -	$ 5.27	0.29%
30	60	13,140	30.00	27	$ 722.13	$ 1,442.94	$ 2,165.07	$ 727.40	$ 1,442.94	$ 2,170.34	$ 5.27	$ -	$ 5.27	0.24%
30	70	15,330	30.00	27	$ 828.98	$ 1,666.88	$ 2,495.86	$ 834.25	$ 1,666.88	$ 2,501.13	$ 5.27	$ -	$ 5.27	0.21%
30	80	17,520	30.00	27	$ 935.83	$ 1,890.82	$ 2,826.65	$ 941.10	$ 1,890.82	$ 2,831.92	$ 5.27	$ -	$ 5.27	0.19%
50	20	7,300	50.00	47	$ 484.61	$ 919.28	$ 1,403.90	$ 489.88	$ 919.28	$ 1,409.17	$ 5.27	$ -	$ 5.27	0.38%
50	30	10,950	50.00	47	$ 662.69	$ 1,292.52	$ 1,955.21	$ 667.96	$ 1,292.52	$ 1,960.48	$ 5.27	$ -	$ 5.27	0.27%
50	40	14,600	50.00	47	$ 840.76	$ 1,665.77	$ 2,506.53	$ 846.03	$ 1,665.77	$ 2,511.80	$ 5.27	$ -	$ 5.27	0.21%
50	50	18,250	50.00	47	$ 1,018.84	$ 2,039.01	$ 3,057.85	$ 1,024.11	$ 2,039.01	$ 3,063.12	$ 5.27	$ -	$ 5.27	0.17%
50	60	21,900	50.00	47	$ 1,196.92	$ 2,412.25	$ 3,609.16	$ 1,202.19	$ 2,412.25	$ 3,614.43	$ 5.27	$ -	$ 5.27	0.15%
50	70	25,550	50.00	47	$ 1,374.99	$ 2,785.49	$ 4,160.48	$ 1,380.26	$ 2,785.49	$ 4,165.75	$ 5.27	$ -	$ 5.27	0.13%
50	80	29,200	50.00	47	$ 1,553.07	$ 3,158.73	$ 4,711.80	$ 1,558.34	$ 3,158.73	$ 4,717.07	$ 5.27	$ -	$ 5.27	0.11%
75	30	16,425	75.00	72	$ 989.05	$ 1,944.30	$ 2,933.36	$ 994.32	$ 1,944.30	$ 2,938.63	$ 5.27	$ -	$ 5.27	0.18%
75	40	21,900	75.00	72	$ 1,256.17	$ 2,504.16	$ 3,760.33	$ 1,261.44	$ 2,504.16	$ 3,765.60	$ 5.27	$ -	$ 5.27	0.14%
75	50	27,375	75.00	72	$ 1,523.28	$ 3,064.02	$ 4,587.31	$ 1,528.55	$ 3,064.02	$ 4,592.58	$ 5.27	$ -	$ 5.27	0.11%
75	60	32,850	75.00	72	$ 1,790.40	$ 3,623.88	$ 5,414.28	$ 1,795.67	$ 3,623.88	$ 5,419.55	$ 5.27	$ -	$ 5.27	0.10%
75	70	38,325	75.00	72	$ 2,057.51	$ 4,183.75	$ 6,241.26	$ 2,062.78	$ 4,183.75	$ 6,246.53	$ 5.27	$ -	$ 5.27	0.08%
75	80	43,800	75.00	72	$ 2,324.62	$ 4,743.61	$ 7,068.23	$ 2,329.89	$ 4,743.61	$ 7,073.50	$ 5.27	$ -	$ 5.27	0.07%
75	90	49,275	75.00	72	$ 2,591.74	$ 5,303.47	$ 7,895.21	$ 2,597.01	$ 5,303.47	$ 7,900.48	$ 5.27	$ -	$ 5.27	0.07%
100	30	21,900	100.00	97	$ 1,315.42	$ 2,596.08	$ 3,911.50	$ 1,320.69	$ 2,596.08	$ 3,916.77	$ 5.27	$ -	$ 5.27	0.13%
100	40	29,200	100.00	97	$ 1,671.57	$ 3,342.56	$ 5,014.13	$ 1,676.84	$ 3,342.56	$ 5,019.40	$ 5.27	$ -	$ 5.27	0.11%
100	50	36,500	100.00	97	$ 2,027.72	$ 4,089.04	$ 6,116.76	$ 2,032.99	$ 4,089.04	$ 6,122.03	$ 5.27	$ -	$ 5.27	0.09%
100	60	43,800	100.00	97	$ 2,383.87	$ 4,835.52	$ 7,219.40	$ 2,389.14	$ 4,835.52	$ 7,224.67	$ 5.27	$ -	$ 5.27	0.07%
100	70	51,100	100.00	97	$ 2,740.03	$ 5,582.00	$ 8,322.03	$ 2,745.30	$ 5,582.00	$ 8,327.30	$ 5.27	$ -	$ 5.27	0.06%
100	80	58,400	100.00	97	$ 3,096.18	$ 6,328.48	$ 9,424.66	$ 3,101.45	$ 6,328.48	$ 9,429.93	$ 5.27	$ -	$ 5.27	0.06%
100	90	65,700	100.00	97	$ 3,452.33	$ 7,074.97	$ 10,527.30	$ 3,457.60	$ 7,074.97	$ 10,532.57	$ 5.27	$ -	$ 5.27	0.05%
200	30	43,800	200.00	197	$ 2,620.87	$ 5,203.19	$ 7,824.06	$ 2,626.14	$ 5,203.19	$ 7,829.33	$ 5.27	$ -	$ 5.27	0.07%
200	40	58,400	200.00	197	$ 3,333.18	$ 6,696.15	$ 10,029.33	$ 3,338.45	$ 6,696.15	$ 10,034.60	$ 5.27	$ -	$ 5.27	0.05%
200	50	73,000	200.00	197	$ 4,045.48	$ 8,189.11	$ 12,234.60	$ 4,050.75	$ 8,189.11	$ 12,239.87	$ 5.27	$ -	$ 5.27	0.04%
200	60	87,600	200.00	197	$ 4,757.79	$ 9,682.07	$ 14,439.86	$ 4,763.06	$ 9,682.07	$ 14,445.13	$ 5.27	$ -	$ 5.27	0.04%
200	70	102,200	200.00	197	$ 5,470.09	$ 11,175.04	$ 16,645.13	$ 5,475.36	$ 11,175.04	$ 16,650.40	$ 5.27	$ -	$ 5.27	0.03%
200	80	116,800	200.00	197	$ 6,182.40	$ 12,668.00	$ 18,850.40	$ 6,187.67	$ 12,668.00	$ 18,855.67	$ 5.27	$ -	$ 5.27	0.03%
200	90	131,400	200.00	197	$ 6,894.70	$ 14,160.96	$ 21,055.66	$ 6,899.97	$ 14,160.96	$ 21,060.93	$ 5.27	$ -	$ 5.27	0.03%

ATLANTIC CITY ELECTRIC COMPANY
MONTHLY GENERAL SERVICE PRIMARY ("MGS Primary")
8 WINTER MONTHS (October Through May)

Present Rates vs. Proposed Rates

Demand (kW)	Load Factor (%)	Energy (kWh)	Dist kW	Trans kW	Present Distribution ($)	Present BGS and Other Charges ($)	Present Total ($)	New Distribution ($)	New BGS and Other Charges ($)	New Total ($)	Difference Distribution ($)	Difference BGS and Other Charges ($)	Total Difference ($)	Total Difference (%)
5	20	730	5.00	2	$ 52.35	$ 82.93	$ 135.28	$ 62.84	$ 82.93	$ 145.77	$ 10.49	$ -	$ 10.49	7.75%
5	30	1,095	5.00	2	$ 68.10	$ 122.35	$ 190.45	$ 78.59	$ 122.35	$ 200.94	$ 10.49	$ -	$ 10.49	5.51%
5	40	1,460	5.00	2	$ 83.86	$ 161.77	$ 245.63	$ 94.35	$ 161.77	$ 256.12	$ 10.49	$ -	$ 10.49	4.27%
5	50	1,825	5.00	2	$ 99.61	$ 201.19	$ 300.80	$ 110.10	$ 201.19	$ 311.29	$ 10.49	$ -	$ 10.49	3.49%
5	60	2,190	5.00	2	$ 115.36	$ 240.62	$ 355.97	$ 125.85	$ 240.62	$ 366.46	$ 10.49	$ -	$ 10.49	2.95%
5	70	2,555	5.00	2	$ 131.11	$ 280.04	$ 411.15	$ 141.60	$ 280.04	$ 421.64	$ 10.49	$ -	$ 10.49	2.55%
5	80	2,920	5.00	2	$ 146.86	$ 319.46	$ 466.32	$ 157.35	$ 319.46	$ 476.81	$ 10.49	$ -	$ 10.49	2.25%
10	20	1,460	10.00	7	$ 90.01	$ 171.97	$ 261.98	$ 100.50	$ 171.97	$ 272.47	$ 10.49	$ -	$ 10.49	4.00%
10	30	2,190	10.00	7	$ 121.51	$ 250.82	$ 372.32	$ 132.00	$ 250.82	$ 382.81	$ 10.49	$ -	$ 10.49	2.82%
10	40	2,920	10.00	7	$ 153.01	$ 329.66	$ 482.67	$ 163.50	$ 329.66	$ 493.16	$ 10.49	$ -	$ 10.49	2.17%
10	50	3,650	10.00	7	$ 184.52	$ 408.51	$ 593.02	$ 195.01	$ 408.51	$ 603.51	$ 10.49	$ -	$ 10.49	1.77%
10	60	4,380	10.00	7	$ 216.02	$ 487.35	$ 703.37	$ 226.51	$ 487.35	$ 713.86	$ 10.49	$ -	$ 10.49	1.49%
10	70	5,110	10.00	7	$ 247.52	$ 566.20	$ 813.72	$ 258.01	$ 566.20	$ 824.21	$ 10.49	$ -	$ 10.49	1.29%
10	80	5,840	10.00	7	$ 279.03	$ 645.04	$ 924.07	$ 289.52	$ 645.04	$ 934.56	$ 10.49	$ -	$ 10.49	1.14%
20	20	2,920	20.00	17	$ 165.31	$ 350.06	$ 515.37	$ 175.80	$ 350.06	$ 525.86	$ 10.49	$ -	$ 10.49	2.04%
20	30	4,380	20.00	17	$ 228.32	$ 507.75	$ 736.07	$ 238.81	$ 507.75	$ 746.56	$ 10.49	$ -	$ 10.49	1.43%
20	40	5,840	20.00	17	$ 291.33	$ 665.44	$ 956.77	$ 301.82	$ 665.44	$ 967.26	$ 10.49	$ -	$ 10.49	1.10%
20	50	7,300	20.00	17	$ 354.33	$ 823.13	$ 1,177.46	$ 364.82	$ 823.13	$ 1,187.95	$ 10.49	$ -	$ 10.49	0.89%
20	60	8,760	20.00	17	$ 417.34	$ 980.82	$ 1,398.16	$ 427.83	$ 980.82	$ 1,408.65	$ 10.49	$ -	$ 10.49	0.75%
20	70	10,220	20.00	17	$ 480.34	$ 1,138.51	$ 1,618.86	$ 490.83	$ 1,138.51	$ 1,629.35	$ 10.49	$ -	$ 10.49	0.65%
20	80	11,680	20.00	17	$ 543.35	$ 1,296.20	$ 1,839.55	$ 553.84	$ 1,296.20	$ 1,850.04	$ 10.49	$ -	$ 10.49	0.57%
30	20	4,380	30.00	27	$ 240.62	$ 528.15	$ 768.77	$ 251.11	$ 528.15	$ 779.26	$ 10.49	$ -	$ 10.49	1.36%
30	30	6,570	30.00	27	$ 335.13	$ 764.69	$ 1,099.81	$ 345.62	$ 764.69	$ 1,110.30	$ 10.49	$ -	$ 10.49	0.95%
30	40	8,760	30.00	27	$ 429.64	$ 1,001.22	$ 1,430.86	$ 440.13	$ 1,001.22	$ 1,441.35	$ 10.49	$ -	$ 10.49	0.73%
30	50	10,950	30.00	27	$ 524.15	$ 1,237.76	$ 1,761.90	$ 534.64	$ 1,237.76	$ 1,772.39	$ 10.49	$ -	$ 10.49	0.60%
30	60	13,140	30.00	27	$ 618.66	$ 1,474.29	$ 2,092.95	$ 629.15	$ 1,474.29	$ 2,103.44	$ 10.49	$ -	$ 10.49	0.50%
30	70	15,330	30.00	27	$ 713.17	$ 1,710.83	$ 2,423.99	$ 723.66	$ 1,710.83	$ 2,434.48	$ 10.49	$ -	$ 10.49	0.43%
30	80	17,520	30.00	27	$ 807.68	$ 1,947.36	$ 2,755.04	$ 818.17	$ 1,947.36	$ 2,765.53	$ 10.49	$ -	$ 10.49	0.38%
50	20	7,300	50.00	47	$ 391.23	$ 884.33	$ 1,275.56	$ 401.72	$ 884.33	$ 1,286.05	$ 10.49	$ -	$ 10.49	0.82%
50	30	10,950	50.00	47	$ 548.75	$ 1,278.56	$ 1,827.30	$ 559.24	$ 1,278.56	$ 1,837.79	$ 10.49	$ -	$ 10.49	0.57%
50	40	14,600	50.00	47	$ 706.26	$ 1,672.78	$ 2,379.05	$ 716.75	$ 1,672.78	$ 2,389.54	$ 10.49	$ -	$ 10.49	0.44%
50	50	18,250	50.00	47	$ 863.78	$ 2,067.01	$ 2,930.79	$ 874.27	$ 2,067.01	$ 2,941.28	$ 10.49	$ -	$ 10.49	0.36%
50	60	21,900	50.00	47	$ 1,021.29	$ 2,461.23	$ 3,482.53	$ 1,031.78	$ 2,461.23	$ 3,493.02	$ 10.49	$ -	$ 10.49	0.30%
50	70	25,550	50.00	47	$ 1,178.81	$ 2,855.46	$ 4,034.27	$ 1,189.30	$ 2,855.46	$ 4,044.76	$ 10.49	$ -	$ 10.49	0.26%
50	80	29,200	50.00	47	$ 1,336.33	$ 3,249.68	$ 4,586.01	$ 1,346.82	$ 3,249.68	$ 4,596.50	$ 10.49	$ -	$ 10.49	0.23%
75	30	16,425	75.00	72	$ 815.77	$ 1,920.89	$ 2,736.67	$ 826.26	$ 1,920.89	$ 2,747.16	$ 10.49	$ -	$ 10.49	0.38%
75	40	21,900	75.00	72	$ 1,052.04	$ 2,512.23	$ 3,564.28	$ 1,062.53	$ 2,512.23	$ 3,574.77	$ 10.49	$ -	$ 10.49	0.29%
75	50	27,375	75.00	72	$ 1,288.32	$ 3,103.57	$ 4,391.89	$ 1,298.81	$ 3,103.57	$ 4,402.38	$ 10.49	$ -	$ 10.49	0.24%
75	60	32,850	75.00	72	$ 1,524.59	$ 3,694.91	$ 5,219.50	$ 1,535.08	$ 3,694.91	$ 5,229.99	$ 10.49	$ -	$ 10.49	0.20%
75	70	38,325	75.00	72	$ 1,760.87	$ 4,286.25	$ 6,047.11	$ 1,771.36	$ 4,286.25	$ 6,057.60	$ 10.49	$ -	$ 10.49	0.17%
75	80	43,800	75.00	72	$ 1,997.14	$ 4,877.59	$ 6,874.73	$ 2,007.63	$ 4,877.59	$ 6,885.22	$ 10.49	$ -	$ 10.49	0.15%
75	90	49,275	75.00	72	$ 2,233.41	$ 5,468.92	$ 7,702.34	$ 2,243.90	$ 5,468.92	$ 7,712.83	$ 10.49	$ -	$ 10.49	0.14%
100	30	21,900	100.00	97	$ 1,082.79	$ 2,563.23	$ 3,646.03	$ 1,093.28	$ 2,563.23	$ 3,656.52	$ 10.49	$ -	$ 10.49	0.29%
100	40	29,200	100.00	97	$ 1,397.83	$ 3,351.68	$ 4,749.51	$ 1,408.32	$ 3,351.68	$ 4,760.00	$ 10.49	$ -	$ 10.49	0.22%
100	50	36,500	100.00	97	$ 1,712.86	$ 4,140.14	$ 5,852.99	$ 1,723.35	$ 4,140.14	$ 5,863.48	$ 10.49	$ -	$ 10.49	0.18%
100	60	43,800	100.00	97	$ 2,027.89	$ 4,928.59	$ 6,956.48	$ 2,038.38	$ 4,928.59	$ 6,966.97	$ 10.49	$ -	$ 10.49	0.15%
100	70	51,100	100.00	97	$ 2,342.92	$ 5,717.04	$ 8,059.96	$ 2,353.41	$ 5,717.04	$ 8,070.45	$ 10.49	$ -	$ 10.49	0.13%
100	80	58,400	100.00	97	$ 2,657.95	$ 6,505.49	$ 9,163.44	$ 2,668.44	$ 6,505.49	$ 9,173.93	$ 10.49	$ -	$ 10.49	0.11%
100	90	65,700	100.00	97	$ 2,972.98	$ 7,293.94	$ 10,266.92	$ 2,983.47	$ 7,293.94	$ 10,277.41	$ 10.49	$ -	$ 10.49	0.10%
200	30	43,800	200.00	197	$ 2,150.89	$ 5,132.59	$ 7,283.48	$ 2,161.38	$ 5,132.59	$ 7,293.97	$ 10.49	$ -	$ 10.49	0.14%
200	40	58,400	200.00	197	$ 2,780.95	$ 6,709.49	$ 9,490.44	$ 2,791.44	$ 6,709.49	$ 9,500.93	$ 10.49	$ -	$ 10.49	0.11%
200	50	73,000	200.00	197	$ 3,411.02	$ 8,286.39	$ 11,697.41	$ 3,421.51	$ 8,286.39	$ 11,707.90	$ 10.49	$ -	$ 10.49	0.09%
200	60	87,600	200.00	197	$ 4,041.08	$ 9,863.29	$ 13,904.37	$ 4,051.57	$ 9,863.29	$ 13,914.86	$ 10.49	$ -	$ 10.49	0.08%
200	70	102,200	200.00	197	$ 4,671.14	$ 11,440.20	$ 16,111.34	$ 4,681.63	$ 11,440.20	$ 16,121.83	$ 10.49	$ -	$ 10.49	0.07%
200	80	116,800	200.00	197	$ 5,301.20	$ 13,017.10	$ 18,318.30	$ 5,311.69	$ 13,017.10	$ 18,328.79	$ 10.49	$ -	$ 10.49	0.06%
200	90	131,400	200.00	197	$ 5,931.27	$ 14,594.00	$ 20,525.27	$ 5,941.76	$ 14,594.00	$ 20,535.76	$ 10.49	$ -	$ 10.49	0.05%

ATLANTIC CITY ELECTRIC COMPANY
MONTHLY GENERAL SERVICE PRIMARY ("MGS Primary")
4 SUMMER MONTHS (June Through September)

Present Rates vs. Proposed Rates

Demand (kW)	Load Factor (%)	Energy (kWh)	Dist kW	Trans kW	Present Distribution ($)	Present BGS and Other Charges ($)	Present Total ($)	New Distribution ($)	New BGS and Other Charges ($)	New Total ($)	Difference Distribution ($)	Difference BGS and Other Charges ($)	Total Difference ($)	Total Difference (%)
5	20	730	5.00	2	$ 55.03	$ 88.28	$ 143.31	$ 65.52	$ 88.28	$ 153.80	$ 10.49	$ -	$ 10.49	7.32%
5	30	1,095	5.00	2	$ 71.25	$ 130.04	$ 201.29	$ 81.74	$ 130.04	$ 211.78	$ 10.49	$ -	$ 10.49	5.21%
5	40	1,460	5.00	2	$ 87.46	$ 171.80	$ 259.26	$ 97.95	$ 171.80	$ 269.75	$ 10.49	$ -	$ 10.49	4.05%
5	50	1,825	5.00	2	$ 103.68	$ 213.55	$ 317.24	$ 114.17	$ 213.55	$ 327.73	$ 10.49	$ -	$ 10.49	3.31%
5	60	2,190	5.00	2	$ 119.90	$ 255.31	$ 375.21	$ 130.39	$ 255.31	$ 385.70	$ 10.49	$ -	$ 10.49	2.80%
5	70	2,555	5.00	2	$ 136.11	$ 297.07	$ 433.19	$ 146.60	$ 297.07	$ 443.68	$ 10.49	$ -	$ 10.49	2.42%
5	80	2,920	5.00	2	$ 152.33	$ 338.83	$ 491.16	$ 162.82	$ 338.83	$ 501.65	$ 10.49	$ -	$ 10.49	2.14%
10	20	1,460	10.00	7	$ 95.36	$ 183.70	$ 279.06	$ 105.85	$ 183.70	$ 289.55	$ 10.49	$ -	$ 10.49	3.76%
10	30	2,190	10.00	7	$ 127.80	$ 267.21	$ 395.01	$ 138.29	$ 267.21	$ 405.50	$ 10.49	$ -	$ 10.49	2.66%
10	40	2,920	10.00	7	$ 160.23	$ 350.73	$ 510.96	$ 170.72	$ 350.73	$ 521.45	$ 10.49	$ -	$ 10.49	2.05%
10	50	3,650	10.00	7	$ 192.66	$ 434.25	$ 626.91	$ 203.15	$ 434.25	$ 637.40	$ 10.49	$ -	$ 10.49	1.67%
10	60	4,380	10.00	7	$ 225.09	$ 517.77	$ 742.86	$ 235.58	$ 517.77	$ 753.35	$ 10.49	$ -	$ 10.49	1.41%
10	70	5,110	10.00	7	$ 257.53	$ 601.28	$ 858.81	$ 268.02	$ 601.28	$ 869.30	$ 10.49	$ -	$ 10.49	1.22%
10	80	5,840	10.00	7	$ 289.96	$ 684.80	$ 974.76	$ 300.45	$ 684.80	$ 985.25	$ 10.49	$ -	$ 10.49	1.08%
20	20	2,920	20.00	17	$ 176.03	$ 374.53	$ 550.56	$ 186.52	$ 374.53	$ 561.05	$ 10.49	$ -	$ 10.49	1.91%
20	30	4,380	20.00	17	$ 240.89	$ 541.57	$ 782.46	$ 251.38	$ 541.57	$ 792.95	$ 10.49	$ -	$ 10.49	1.34%
20	40	5,840	20.00	17	$ 305.76	$ 708.60	$ 1,014.36	$ 316.25	$ 708.60	$ 1,024.85	$ 10.49	$ -	$ 10.49	1.03%
20	50	7,300	20.00	17	$ 370.62	$ 875.64	$ 1,246.26	$ 381.11	$ 875.64	$ 1,256.75	$ 10.49	$ -	$ 10.49	0.84%
20	60	8,760	20.00	17	$ 435.49	$ 1,042.67	$ 1,478.16	$ 445.98	$ 1,042.67	$ 1,488.65	$ 10.49	$ -	$ 10.49	0.71%
20	70	10,220	20.00	17	$ 500.35	$ 1,209.71	$ 1,710.06	$ 510.84	$ 1,209.71	$ 1,720.55	$ 10.49	$ -	$ 10.49	0.61%
20	80	11,680	20.00	17	$ 565.22	$ 1,376.75	$ 1,941.96	$ 575.71	$ 1,376.75	$ 1,952.45	$ 10.49	$ -	$ 10.49	0.54%
30	20	4,380	30.00	27	$ 256.69	$ 565.37	$ 822.06	$ 267.18	$ 565.37	$ 832.55	$ 10.49	$ -	$ 10.49	1.28%
30	30	6,570	30.00	27	$ 353.99	$ 815.92	$ 1,169.91	$ 364.48	$ 815.92	$ 1,180.40	$ 10.49	$ -	$ 10.49	0.90%
30	40	8,760	30.00	27	$ 451.29	$ 1,066.47	$ 1,517.76	$ 461.78	$ 1,066.47	$ 1,528.25	$ 10.49	$ -	$ 10.49	0.69%
30	50	10,950	30.00	27	$ 548.59	$ 1,317.03	$ 1,865.61	$ 559.08	$ 1,317.03	$ 1,876.10	$ 10.49	$ -	$ 10.49	0.56%
30	60	13,140	30.00	27	$ 645.88	$ 1,567.58	$ 2,213.47	$ 656.37	$ 1,567.58	$ 2,223.96	$ 10.49	$ -	$ 10.49	0.47%
30	70	15,330	30.00	27	$ 743.18	$ 1,818.13	$ 2,561.32	$ 753.67	$ 1,818.13	$ 2,571.81	$ 10.49	$ -	$ 10.49	0.41%
30	80	17,520	30.00	27	$ 840.48	$ 2,068.69	$ 2,909.17	$ 850.97	$ 2,068.69	$ 2,919.66	$ 10.49	$ -	$ 10.49	0.36%
50	20	7,300	50.00	47	$ 418.02	$ 947.04	$ 1,365.06	$ 428.51	$ 947.04	$ 1,375.55	$ 10.49	$ -	$ 10.49	0.77%
50	30	10,950	50.00	47	$ 580.19	$ 1,364.63	$ 1,944.81	$ 590.68	$ 1,364.63	$ 1,955.30	$ 10.49	$ -	$ 10.49	0.54%
50	40	14,600	50.00	47	$ 742.35	$ 1,782.22	$ 2,524.57	$ 752.84	$ 1,782.22	$ 2,535.06	$ 10.49	$ -	$ 10.49	0.42%
50	50	18,250	50.00	47	$ 904.51	$ 2,199.81	$ 3,104.32	$ 915.00	$ 2,199.81	$ 3,114.81	$ 10.49	$ -	$ 10.49	0.34%
50	60	21,900	50.00	47	$ 1,066.67	$ 2,617.40	$ 3,684.07	$ 1,077.16	$ 2,617.40	$ 3,694.56	$ 10.49	$ -	$ 10.49	0.28%
50	70	25,550	50.00	47	$ 1,228.84	$ 3,034.98	$ 4,263.82	$ 1,239.33	$ 3,034.98	$ 4,274.31	$ 10.49	$ -	$ 10.49	0.25%
50	80	29,200	50.00	47	$ 1,391.00	$ 3,452.57	$ 4,843.57	$ 1,401.49	$ 3,452.57	$ 4,854.06	$ 10.49	$ -	$ 10.49	0.22%
75	30	16,425	75.00	72	$ 862.93	$ 2,050.51	$ 2,913.44	$ 873.42	$ 2,050.51	$ 2,923.93	$ 10.49	$ -	$ 10.49	0.36%
75	40	21,900	75.00	72	$ 1,106.17	$ 2,676.90	$ 3,783.07	$ 1,116.66	$ 2,676.90	$ 3,793.56	$ 10.49	$ -	$ 10.49	0.28%
75	50	27,375	75.00	72	$ 1,349.42	$ 3,303.28	$ 4,652.70	$ 1,359.91	$ 3,303.28	$ 4,663.19	$ 10.49	$ -	$ 10.49	0.23%
75	60	32,850	75.00	72	$ 1,592.66	$ 3,929.66	$ 5,522.32	$ 1,603.15	$ 3,929.66	$ 5,532.81	$ 10.49	$ -	$ 10.49	0.19%
75	70	38,325	75.00	72	$ 1,835.90	$ 4,556.05	$ 6,391.95	$ 1,846.39	$ 4,556.05	$ 6,402.44	$ 10.49	$ -	$ 10.49	0.16%
75	80	43,800	75.00	72	$ 2,079.15	$ 5,182.43	$ 7,261.58	$ 2,089.64	$ 5,182.43	$ 7,272.07	$ 10.49	$ -	$ 10.49	0.14%
75	90	49,275	75.00	72	$ 2,322.39	$ 5,808.81	$ 8,131.20	$ 2,332.88	$ 5,808.81	$ 8,141.69	$ 10.49	$ -	$ 10.49	0.13%
100	30	21,900	100.00	97	$ 1,145.67	$ 2,736.40	$ 3,882.07	$ 1,156.16	$ 2,736.40	$ 3,892.56	$ 10.49	$ -	$ 10.49	0.27%
100	40	29,200	100.00	97	$ 1,470.00	$ 3,571.57	$ 5,041.57	$ 1,480.49	$ 3,571.57	$ 5,052.06	$ 10.49	$ -	$ 10.49	0.21%
100	50	36,500	100.00	97	$ 1,794.32	$ 4,406.75	$ 6,201.07	$ 1,804.81	$ 4,406.75	$ 6,211.56	$ 10.49	$ -	$ 10.49	0.17%
100	60	43,800	100.00	97	$ 2,118.65	$ 5,241.93	$ 7,360.58	$ 2,129.14	$ 5,241.93	$ 7,371.07	$ 10.49	$ -	$ 10.49	0.14%
100	70	51,100	100.00	97	$ 2,442.97	$ 6,077.11	$ 8,520.08	$ 2,453.46	$ 6,077.11	$ 8,530.57	$ 10.49	$ -	$ 10.49	0.12%
100	80	58,400	100.00	97	$ 2,767.30	$ 6,912.29	$ 9,679.58	$ 2,777.79	$ 6,912.29	$ 9,690.07	$ 10.49	$ -	$ 10.49	0.11%
100	90	65,700	100.00	97	$ 3,091.62	$ 7,747.47	$ 10,839.09	$ 3,102.11	$ 7,747.47	$ 10,849.58	$ 10.49	$ -	$ 10.49	0.10%
200	30	43,800	200.00	197	$ 2,276.65	$ 5,479.93	$ 7,756.58	$ 2,287.14	$ 5,479.93	$ 7,767.07	$ 10.49	$ -	$ 10.49	0.14%
200	40	58,400	200.00	197	$ 2,925.30	$ 7,150.29	$ 10,075.58	$ 2,935.79	$ 7,150.29	$ 10,086.07	$ 10.49	$ -	$ 10.49	0.10%
200	50	73,000	200.00	197	$ 3,573.94	$ 8,820.64	$ 12,394.59	$ 3,584.43	$ 8,820.64	$ 12,405.08	$ 10.49	$ -	$ 10.49	0.08%
200	60	87,600	200.00	197	$ 4,222.59	$ 10,491.00	$ 14,713.59	$ 4,233.08	$ 10,491.00	$ 14,724.08	$ 10.49	$ -	$ 10.49	0.07%
200	70	102,200	200.00	197	$ 4,871.24	$ 12,161.36	$ 17,032.60	$ 4,881.73	$ 12,161.36	$ 17,043.09	$ 10.49	$ -	$ 10.49	0.06%
200	80	116,800	200.00	197	$ 5,519.89	$ 13,831.71	$ 19,351.60	$ 5,530.38	$ 13,831.71	$ 19,362.09	$ 10.49	$ -	$ 10.49	0.05%
200	90	131,400	200.00	197	$ 6,168.54	$ 15,502.07	$ 21,670.61	$ 6,179.03	$ 15,502.07	$ 21,681.10	$ 10.49	$ -	$ 10.49	0.05%

ATLANTIC CITY ELECTRIC COMPANY
MONTHLY GENERAL SERVICE PRIMARY ("MGS Primary")
Annual Average

Present Rates vs. Proposed Rates

Demand (kW)	Load Factor (%)	Energy (kWh)	Dist kW	Trans kW	Present Distribution ($)	Present BGS and Other Charges ($)	Present Total ($)	New Distribution ($)	New BGS and Other Charges ($)	New Total ($)	Difference Distribution ($)	Difference BGS and Other Charges ($)	Total Difference ($)	Total Difference (%)
5	20	730	5.00	2	$ 53.25	$ 84.71	$ 137.96	$ 63.74	$ 84.71	$ 148.45	$ 10.49	$ -	$ 10.49	7.60%
5	30	1,095	5.00	2	$ 69.15	$ 124.91	$ 194.06	$ 79.64	$ 124.91	$ 204.55	$ 10.49	$ -	$ 10.49	5.41%
5	40	1,460	5.00	2	$ 85.06	$ 165.11	$ 250.17	$ 95.55	$ 165.11	$ 260.66	$ 10.49	$ -	$ 10.49	4.19%
5	50	1,825	5.00	2	$ 100.97	$ 205.31	$ 306.28	$ 111.46	$ 205.31	$ 316.77	$ 10.49	$ -	$ 10.49	3.42%
5	60	2,190	5.00	2	$ 116.87	$ 245.51	$ 362.39	$ 127.36	$ 245.51	$ 372.88	$ 10.49	$ -	$ 10.49	2.89%
5	70	2,555	5.00	2	$ 132.78	$ 285.72	$ 418.49	$ 143.27	$ 285.72	$ 428.98	$ 10.49	$ -	$ 10.49	2.51%
5	80	2,920	5.00	2	$ 148.68	$ 325.92	$ 474.60	$ 159.17	$ 325.92	$ 485.09	$ 10.49	$ -	$ 10.49	2.21%
10	20	1,460	10.00	7	$ 91.79	$ 175.88	$ 267.67	$ 102.28	$ 175.88	$ 278.16	$ 10.49	$ -	$ 10.49	3.92%
10	30	2,190	10.00	7	$ 123.61	$ 256.28	$ 379.89	$ 134.10	$ 256.28	$ 390.38	$ 10.49	$ -	$ 10.49	2.76%
10	40	2,920	10.00	7	$ 155.42	$ 336.68	$ 492.10	$ 165.91	$ 336.68	$ 502.59	$ 10.49	$ -	$ 10.49	2.13%
10	50	3,650	10.00	7	$ 187.23	$ 417.09	$ 604.32	$ 197.72	$ 417.09	$ 614.81	$ 10.49	$ -	$ 10.49	1.74%
10	60	4,380	10.00	7	$ 219.04	$ 497.49	$ 716.53	$ 229.53	$ 497.49	$ 727.02	$ 10.49	$ -	$ 10.49	1.46%
10	70	5,110	10.00	7	$ 250.86	$ 577.89	$ 828.75	$ 261.35	$ 577.89	$ 839.24	$ 10.49	$ -	$ 10.49	1.27%
10	80	5,840	10.00	7	$ 282.67	$ 658.29	$ 940.96	$ 293.16	$ 658.29	$ 951.45	$ 10.49	$ -	$ 10.49	1.11%
20	20	2,920	20.00	17	$ 168.88	$ 358.22	$ 527.10	$ 179.37	$ 358.22	$ 537.59	$ 10.49	$ -	$ 10.49	1.99%
20	30	4,380	20.00	17	$ 232.51	$ 519.02	$ 751.53	$ 243.00	$ 519.02	$ 762.02	$ 10.49	$ -	$ 10.49	1.40%
20	40	5,840	20.00	17	$ 296.14	$ 679.83	$ 975.96	$ 306.63	$ 679.83	$ 986.45	$ 10.49	$ -	$ 10.49	1.07%
20	50	7,300	20.00	17	$ 359.76	$ 840.63	$ 1,200.40	$ 370.25	$ 840.63	$ 1,210.89	$ 10.49	$ -	$ 10.49	0.87%
20	60	8,760	20.00	17	$ 423.39	$ 1,001.44	$ 1,424.83	$ 433.88	$ 1,001.44	$ 1,435.32	$ 10.49	$ -	$ 10.49	0.74%
20	70	10,220	20.00	17	$ 487.01	$ 1,162.24	$ 1,649.26	$ 497.50	$ 1,162.24	$ 1,659.75	$ 10.49	$ -	$ 10.49	0.64%
20	80	11,680	20.00	17	$ 550.64	$ 1,323.05	$ 1,873.69	$ 561.13	$ 1,323.05	$ 1,884.18	$ 10.49	$ -	$ 10.49	0.56%
30	20	4,380	30.00	27	$ 245.98	$ 540.56	$ 786.53	$ 256.47	$ 540.56	$ 797.02	$ 10.49	$ -	$ 10.49	1.33%
30	30	6,570	30.00	27	$ 341.42	$ 781.76	$ 1,123.18	$ 351.91	$ 781.76	$ 1,133.67	$ 10.49	$ -	$ 10.49	0.93%
30	40	8,760	30.00	27	$ 436.85	$ 1,022.97	$ 1,459.83	$ 447.34	$ 1,022.97	$ 1,470.32	$ 10.49	$ -	$ 10.49	0.72%
30	50	10,950	30.00	27	$ 532.29	$ 1,264.18	$ 1,796.47	$ 542.78	$ 1,264.18	$ 1,806.96	$ 10.49	$ -	$ 10.49	0.58%
30	60	13,140	30.00	27	$ 627.73	$ 1,505.39	$ 2,133.12	$ 638.22	$ 1,505.39	$ 2,143.61	$ 10.49	$ -	$ 10.49	0.49%
30	70	15,330	30.00	27	$ 723.17	$ 1,746.60	$ 2,469.77	$ 733.66	$ 1,746.60	$ 2,480.26	$ 10.49	$ -	$ 10.49	0.42%
30	80	17,520	30.00	27	$ 818.61	$ 1,987.80	$ 2,806.41	$ 829.10	$ 1,987.80	$ 2,816.90	$ 10.49	$ -	$ 10.49	0.37%
50	20	7,300	50.00	47	$ 400.16	$ 905.23	$ 1,305.40	$ 410.65	$ 905.23	$ 1,315.89	$ 10.49	$ -	$ 10.49	0.80%
50	30	10,950	50.00	47	$ 559.23	$ 1,307.25	$ 1,866.47	$ 569.72	$ 1,307.25	$ 1,876.96	$ 10.49	$ -	$ 10.49	0.56%
50	40	14,600	50.00	47	$ 718.29	$ 1,709.26	$ 2,427.55	$ 728.78	$ 1,709.26	$ 2,438.04	$ 10.49	$ -	$ 10.49	0.43%
50	50	18,250	50.00	47	$ 877.36	$ 2,111.27	$ 2,988.63	$ 887.85	$ 2,111.27	$ 2,999.12	$ 10.49	$ -	$ 10.49	0.35%
50	60	21,900	50.00	47	$ 1,036.42	$ 2,513.29	$ 3,549.71	$ 1,046.91	$ 2,513.29	$ 3,560.20	$ 10.49	$ -	$ 10.49	0.30%
50	70	25,550	50.00	47	$ 1,195.49	$ 2,915.30	$ 4,110.79	$ 1,205.98	$ 2,915.30	$ 4,121.28	$ 10.49	$ -	$ 10.49	0.26%
50	80	29,200	50.00	47	$ 1,354.55	$ 3,317.31	$ 4,671.86	$ 1,365.04	$ 3,317.31	$ 4,682.35	$ 10.49	$ -	$ 10.49	0.22%
75	30	16,425	75.00	72	$ 831.49	$ 1,964.10	$ 2,795.59	$ 841.98	$ 1,964.10	$ 2,806.08	$ 10.49	$ -	$ 10.49	0.38%
75	40	21,900	75.00	72	$ 1,070.09	$ 2,567.12	$ 3,637.21	$ 1,080.58	$ 2,567.12	$ 3,647.70	$ 10.49	$ -	$ 10.49	0.29%
75	50	27,375	75.00	72	$ 1,308.68	$ 3,170.14	$ 4,478.83	$ 1,319.17	$ 3,170.14	$ 4,489.32	$ 10.49	$ -	$ 10.49	0.23%
75	60	32,850	75.00	72	$ 1,547.28	$ 3,773.16	$ 5,320.44	$ 1,557.77	$ 3,773.16	$ 5,330.93	$ 10.49	$ -	$ 10.49	0.20%
75	70	38,325	75.00	72	$ 1,785.88	$ 4,376.18	$ 6,162.06	$ 1,796.37	$ 4,376.18	$ 6,172.55	$ 10.49	$ -	$ 10.49	0.17%
75	80	43,800	75.00	72	$ 2,024.47	$ 4,979.20	$ 7,003.68	$ 2,034.96	$ 4,979.20	$ 7,014.17	$ 10.49	$ -	$ 10.49	0.15%
75	90	49,275	75.00	72	$ 2,263.07	$ 5,582.22	$ 7,845.29	$ 2,273.56	$ 5,582.22	$ 7,855.78	$ 10.49	$ -	$ 10.49	0.13%
100	30	21,900	100.00	97	$ 1,103.75	$ 2,620.95	$ 3,724.71	$ 1,114.24	$ 2,620.95	$ 3,735.20	$ 10.49	$ -	$ 10.49	0.28%
100	40	29,200	100.00	97	$ 1,421.88	$ 3,424.98	$ 4,846.86	$ 1,432.37	$ 3,424.98	$ 4,857.35	$ 10.49	$ -	$ 10.49	0.22%
100	50	36,500	100.00	97	$ 1,740.01	$ 4,229.01	$ 5,969.02	$ 1,750.50	$ 4,229.01	$ 5,979.51	$ 10.49	$ -	$ 10.49	0.18%
100	60	43,800	100.00	97	$ 2,058.14	$ 5,033.03	$ 7,091.18	$ 2,068.63	$ 5,033.03	$ 7,101.67	$ 10.49	$ -	$ 10.49	0.15%
100	70	51,100	100.00	97	$ 2,376.27	$ 5,837.06	$ 8,213.33	$ 2,386.76	$ 5,837.06	$ 8,223.82	$ 10.49	$ -	$ 10.49	0.13%
100	80	58,400	100.00	97	$ 2,694.40	$ 6,641.09	$ 9,335.49	$ 2,704.89	$ 6,641.09	$ 9,345.98	$ 10.49	$ -	$ 10.49	0.11%
100	90	65,700	100.00	97	$ 3,012.53	$ 7,445.12	$ 10,457.64	$ 3,023.02	$ 7,445.12	$ 10,468.13	$ 10.49	$ -	$ 10.49	0.10%
200	30	43,800	200.00	197	$ 2,192.81	$ 5,248.37	$ 7,441.18	$ 2,203.30	$ 5,248.37	$ 7,451.67	$ 10.49	$ -	$ 10.49	0.14%
200	40	58,400	200.00	197	$ 2,829.07	$ 6,856.42	$ 9,685.49	$ 2,839.56	$ 6,856.42	$ 9,695.98	$ 10.49	$ -	$ 10.49	0.11%
200	50	73,000	200.00	197	$ 3,465.32	$ 8,464.48	$ 11,929.80	$ 3,475.81	$ 8,464.48	$ 11,940.29	$ 10.49	$ -	$ 10.49	0.09%
200	60	87,600	200.00	197	$ 4,101.58	$ 10,072.53	$ 14,174.11	$ 4,112.07	$ 10,072.53	$ 14,184.60	$ 10.49	$ -	$ 10.49	0.07%
200	70	102,200	200.00	197	$ 4,737.84	$ 11,680.58	$ 16,418.42	$ 4,748.33	$ 11,680.58	$ 16,428.91	$ 10.49	$ -	$ 10.49	0.06%
200	80	116,800	200.00	197	$ 5,374.10	$ 13,288.64	$ 18,662.74	$ 5,384.59	$ 13,288.64	$ 18,673.23	$ 10.49	$ -	$ 10.49	0.06%
200	90	131,400	200.00	197	$ 6,010.36	$ 14,896.69	$ 20,907.05	$ 6,020.85	$ 14,896.69	$ 20,917.54	$ 10.49	$ -	$ 10.49	0.05%

ATLANTIC CITY ELECTRIC COMPANY
ANNUAL GENERAL SERVICE SECONDARY ("AGS Secondary")
8 WINTER MONTHS (October Through May)

Present Rates vs. Proposed Rates

Demand (kW)	Load Factor (%)	Energy (kWh)	Metered kW	Billed kW	Present Distribution ($)	Present BGS and Other Charges ($)	Present Total ($)	New Distribution ($)	New BGS and Other Charges ($)	New Total ($)	Difference Distribution ($)	Difference BGS and Other Charges ($)	Total Difference ($)	Total Difference (%)
25	20	3,650	25	25	$ 471.47	$ 457.75	$ 929.22	$ 479.27	$ 457.75	$ 937.02	$ 7.80	$ -	$ 7.80	0.84%
25	30	5,475	25	25	$ 471.47	$ 636.13	$ 1,107.60	$ 479.27	$ 636.13	$ 1,115.40	$ 7.80	$ -	$ 7.80	0.70%
25	40	7,300	25	25	$ 471.47	$ 814.50	$ 1,285.97	$ 479.27	$ 814.50	$ 1,293.77	$ 7.80	$ -	$ 7.80	0.61%
25	50	9,125	25	25	$ 471.47	$ 992.88	$ 1,464.35	$ 479.27	$ 992.88	$ 1,472.15	$ 7.80	$ -	$ 7.80	0.53%
25	60	10,950	25	25	$ 471.47	$ 1,171.25	$ 1,642.72	$ 479.27	$ 1,171.25	$ 1,650.52	$ 7.80	$ -	$ 7.80	0.47%
25	70	12,775	25	25	$ 471.47	$ 1,349.63	$ 1,821.10	$ 479.27	$ 1,349.63	$ 1,828.90	$ 7.80	$ -	$ 7.80	0.43%
25	80	14,600	25	25	$ 471.47	$ 1,528.00	$ 1,999.47	$ 479.27	$ 1,528.00	$ 2,007.27	$ 7.80	$ -	$ 7.80	0.39%
50	20	7,300	50	50	$ 749.72	$ 915.50	$ 1,665.22	$ 757.52	$ 915.50	$ 1,673.02	$ 7.80	$ -	$ 7.80	0.47%
50	30	10,950	50	50	$ 749.72	$ 1,272.25	$ 2,021.97	$ 757.52	$ 1,272.25	$ 2,029.77	$ 7.80	$ -	$ 7.80	0.39%
50	40	14,600	50	50	$ 749.72	$ 1,629.00	$ 2,378.72	$ 757.52	$ 1,629.00	$ 2,386.52	$ 7.80	$ -	$ 7.80	0.33%
50	50	18,250	50	50	$ 749.72	$ 1,985.76	$ 2,735.48	$ 757.52	$ 1,985.76	$ 2,743.28	$ 7.80	$ -	$ 7.80	0.29%
50	60	21,900	50	50	$ 749.72	$ 2,342.51	$ 3,092.23	$ 757.52	$ 2,342.51	$ 3,100.03	$ 7.80	$ -	$ 7.80	0.25%
50	70	25,550	50	50	$ 749.72	$ 2,699.26	$ 3,448.98	$ 757.52	$ 2,699.26	$ 3,456.78	$ 7.80	$ -	$ 7.80	0.23%
50	80	29,200	50	50	$ 749.72	$ 3,056.01	$ 3,805.73	$ 757.52	$ 3,056.01	$ 3,813.53	$ 7.80	$ -	$ 7.80	0.20%
100	20	14,600	100	100	$ 1,306.22	$ 1,831.00	$ 3,137.22	$ 1,314.02	$ 1,831.00	$ 3,145.02	$ 7.80	$ -	$ 7.80	0.25%
100	30	21,900	100	100	$ 1,306.22	$ 2,544.51	$ 3,850.73	$ 1,314.02	$ 2,544.51	$ 3,858.53	$ 7.80	$ -	$ 7.80	0.20%
100	40	29,200	100	100	$ 1,306.22	$ 3,258.01	$ 4,564.23	$ 1,314.02	$ 3,258.01	$ 4,572.03	$ 7.80	$ -	$ 7.80	0.17%
100	50	36,500	100	100	$ 1,306.22	$ 3,971.51	$ 5,277.73	$ 1,314.02	$ 3,971.51	$ 5,285.53	$ 7.80	$ -	$ 7.80	0.15%
100	60	43,800	100	100	$ 1,306.22	$ 4,685.01	$ 5,991.23	$ 1,314.02	$ 4,685.01	$ 5,999.03	$ 7.80	$ -	$ 7.80	0.13%
100	70	51,100	100	100	$ 1,306.22	$ 5,398.51	$ 6,704.73	$ 1,314.02	$ 5,398.51	$ 6,712.53	$ 7.80	$ -	$ 7.80	0.12%
100	80	58,400	100	100	$ 1,306.22	$ 6,112.02	$ 7,418.24	$ 1,314.02	$ 6,112.02	$ 7,426.04	$ 7.80	$ -	$ 7.80	0.11%
300	20	43,800	300	300	$ 3,532.22	$ 5,493.01	$ 9,025.23	$ 3,540.02	$ 5,493.01	$ 9,033.03	$ 7.80	$ -	$ 7.80	0.09%
300	30	65,700	300	300	$ 3,532.22	$ 7,633.52	$ 11,165.74	$ 3,540.02	$ 7,633.52	$ 11,173.54	$ 7.80	$ -	$ 7.80	0.07%
300	40	87,600	300	300	$ 3,532.22	$ 9,774.02	$ 13,306.24	$ 3,540.02	$ 9,774.02	$ 13,314.04	$ 7.80	$ -	$ 7.80	0.06%
300	50	109,500	300	300	$ 3,532.22	$ 11,914.53	$ 15,446.75	$ 3,540.02	$ 11,914.53	$ 15,454.55	$ 7.80	$ -	$ 7.80	0.05%
300	60	131,400	300	300	$ 3,532.22	$ 14,055.04	$ 17,587.26	$ 3,540.02	$ 14,055.04	$ 17,595.06	$ 7.80	$ -	$ 7.80	0.04%
300	70	153,300	300	300	$ 3,532.22	$ 16,195.54	$ 19,727.76	$ 3,540.02	$ 16,195.54	$ 19,735.56	$ 7.80	$ -	$ 7.80	0.04%
300	80	175,200	300	300	$ 3,532.22	$ 18,336.05	$ 21,868.27	$ 3,540.02	$ 18,336.05	$ 21,876.07	$ 7.80	$ -	$ 7.80	0.04%
500	20	73,000	500	500	$ 5,758.22	$ 9,155.02	$ 14,913.24	$ 5,766.02	$ 9,155.02	$ 14,921.04	$ 7.80	$ -	$ 7.80	0.05%
500	30	109,500	500	500	$ 5,758.22	$ 12,722.53	$ 18,480.75	$ 5,766.02	$ 12,722.53	$ 18,488.55	$ 7.80	$ -	$ 7.80	0.04%
500	40	146,000	500	500	$ 5,758.22	$ 16,290.04	$ 22,048.26	$ 5,766.02	$ 16,290.04	$ 22,056.06	$ 7.80	$ -	$ 7.80	0.04%
500	50	182,500	500	500	$ 5,758.22	$ 19,857.55	$ 25,615.77	$ 5,766.02	$ 19,857.55	$ 25,623.57	$ 7.80	$ -	$ 7.80	0.03%
500	60	219,000	500	500	$ 5,758.22	$ 23,425.06	$ 29,183.28	$ 5,766.02	$ 23,425.06	$ 29,191.08	$ 7.80	$ -	$ 7.80	0.03%
500	70	255,500	500	500	$ 5,758.22	$ 26,992.57	$ 32,750.79	$ 5,766.02	$ 26,992.57	$ 32,758.59	$ 7.80	$ -	$ 7.80	0.02%
500	80	292,000	500	500	$ 5,758.22	$ 30,560.08	$ 36,318.30	$ 5,766.02	$ 30,560.08	$ 36,326.10	$ 7.80	$ -	$ 7.80	0.02%
750	30	164,250	750	750	$ 8,540.72	$ 19,083.80	$ 27,624.52	$ 8,548.52	$ 19,083.80	$ 27,632.32	$ 7.80	$ -	$ 7.80	0.03%
750	40	219,000	750	750	$ 8,540.72	$ 24,435.06	$ 32,975.78	$ 8,548.52	$ 24,435.06	$ 32,983.58	$ 7.80	$ -	$ 7.80	0.02%
750	50	273,750	750	750	$ 8,540.72	$ 29,786.33	$ 38,327.05	$ 8,548.52	$ 29,786.33	$ 38,334.85	$ 7.80	$ -	$ 7.80	0.02%
750	60	328,500	750	750	$ 8,540.72	$ 35,137.59	$ 43,678.31	$ 8,548.52	$ 35,137.59	$ 43,686.11	$ 7.80	$ -	$ 7.80	0.02%
750	70	383,250	750	750	$ 8,540.72	$ 40,488.86	$ 49,029.58	$ 8,548.52	$ 40,488.86	$ 49,037.38	$ 7.80	$ -	$ 7.80	0.02%
750	80	438,000	750	750	$ 8,540.72	$ 45,840.12	$ 54,380.84	$ 8,548.52	$ 45,840.12	$ 54,388.64	$ 7.80	$ -	$ 7.80	0.01%
750	90	492,750	750	750	$ 8,540.72	$ 51,191.39	$ 59,732.11	$ 8,548.52	$ 51,191.39	$ 59,739.91	$ 7.80	$ -	$ 7.80	0.01%
1000	30	219,000	1,000	1,000	$ 11,323.22	$ 25,445.06	$ 36,768.28	$ 11,331.02	$ 25,445.06	$ 36,776.08	$ 7.80	$ -	$ 7.80	0.02%
1000	40	292,000	1,000	1,000	$ 11,323.22	$ 32,580.08	$ 43,903.30	$ 11,331.02	$ 32,580.08	$ 43,911.10	$ 7.80	$ -	$ 7.80	0.02%
1000	50	365,000	1,000	1,000	$ 11,323.22	$ 39,715.10	$ 51,038.32	$ 11,331.02	$ 39,715.10	$ 51,046.12	$ 7.80	$ -	$ 7.80	0.02%
1000	60	438,000	1,000	1,000	$ 11,323.22	$ 46,850.12	$ 58,173.34	$ 11,331.02	$ 46,850.12	$ 58,181.14	$ 7.80	$ -	$ 7.80	0.01%
1000	70	511,000	1,000	1,000	$ 11,323.22	$ 53,985.14	$ 65,308.36	$ 11,331.02	$ 53,985.14	$ 65,316.16	$ 7.80	$ -	$ 7.80	0.01%
1000	80	584,000	1,000	1,000	$ 11,323.22	$ 61,120.16	$ 72,443.38	$ 11,331.02	$ 61,120.16	$ 72,451.18	$ 7.80	$ -	$ 7.80	0.01%
1000	90	657,000	1,000	1,000	$ 11,323.22	$ 68,255.18	$ 79,578.40	$ 11,331.02	$ 68,255.18	$ 79,586.20	$ 7.80	$ -	$ 7.80	0.01%
2000	30	438,000	2,000	2,000	$ 22,453.22	$ 50,890.12	$ 73,343.34	$ 22,461.02	$ 50,890.12	$ 73,351.14	$ 7.80	$ -	$ 7.80	0.01%
2000	40	584,000	2,000	2,000	$ 22,453.22	$ 65,160.16	$ 87,613.38	$ 22,461.02	$ 65,160.16	$ 87,621.18	$ 7.80	$ -	$ 7.80	0.01%
2000	50	730,000	2,000	2,000	$ 22,453.22	$ 79,430.20	$ 101,883.42	$ 22,461.02	$ 79,430.20	$ 101,891.22	$ 7.80	$ -	$ 7.80	0.01%
2000	60	876,000	2,000	2,000	$ 22,453.22	$ 93,700.24	$ 116,153.46	$ 22,461.02	$ 93,700.24	$ 116,161.26	$ 7.80	$ -	$ 7.80	0.01%
2000	70	1,022,000	2,000	2,000	$ 22,453.22	$ 107,970.28	$ 130,423.50	$ 22,461.02	$ 107,970.28	$ 130,431.30	$ 7.80	$ -	$ 7.80	0.01%
2000	80	1,168,000	2,000	2,000	$ 22,453.22	$ 122,240.32	$ 144,693.54	$ 22,461.02	$ 122,240.32	$ 144,701.34	$ 7.80	$ -	$ 7.80	0.01%
2000	90	1,314,000	2,000	2,000	$ 22,453.22	$ 136,510.36	$ 158,963.58	$ 22,461.02	$ 136,510.36	$ 158,971.38	$ 7.80	$ -	$ 7.80	0.00%

ATLANTIC CITY ELECTRIC COMPANY
ANNUAL GENERAL SERVICE SECONDARY ("AGS Secondary")
4 SUMMER MONTHS (June Through September)

Present Rates vs. Proposed Rates

Demand (kW)	Load Factor (%)	Energy (kWh)	Metered kW	Billed kW	Present Distribution ($)	Present BGS and Other Charges ($)	Present Total ($)	New Distribution ($)	New BGS and Other Charges ($)	New Total ($)	Difference Distribution ($)	Difference BGS and Other Charges ($)	Total Difference ($)	Total Difference (%)
25	20	3,650	25	25	$ 471.47	$ 460.13	$ 931.60	$ 479.27	$ 460.13	$ 939.40	$ 7.80	$ -	$ 7.80	0.84%
25	30	5,475	25	25	$ 471.47	$ 639.69	$ 1,111.16	$ 479.27	$ 639.69	$ 1,118.96	$ 7.80	$ -	$ 7.80	0.70%
25	40	7,300	25	25	$ 471.47	$ 819.25	$ 1,290.72	$ 479.27	$ 819.25	$ 1,298.52	$ 7.80	$ -	$ 7.80	0.60%
25	50	9,125	25	25	$ 471.47	$ 998.82	$ 1,470.29	$ 479.27	$ 998.82	$ 1,478.09	$ 7.80	$ -	$ 7.80	0.53%
25	60	10,950	25	25	$ 471.47	$ 1,178.38	$ 1,649.85	$ 479.27	$ 1,178.38	$ 1,657.65	$ 7.80	$ -	$ 7.80	0.47%
25	70	12,775	25	25	$ 471.47	$ 1,357.95	$ 1,829.42	$ 479.27	$ 1,357.95	$ 1,837.22	$ 7.80	$ -	$ 7.80	0.43%
25	80	14,600	25	25	$ 471.47	$ 1,537.51	$ 2,008.98	$ 479.27	$ 1,537.51	$ 2,016.78	$ 7.80	$ -	$ 7.80	0.39%
50	20	7,300	50	50	$ 749.72	$ 920.25	$ 1,669.97	$ 757.52	$ 920.25	$ 1,677.77	$ 7.80	$ -	$ 7.80	0.47%
50	30	10,950	50	50	$ 749.72	$ 1,279.38	$ 2,029.10	$ 757.52	$ 1,279.38	$ 2,036.90	$ 7.80	$ -	$ 7.80	0.38%
50	40	14,600	50	50	$ 749.72	$ 1,638.51	$ 2,388.23	$ 757.52	$ 1,638.51	$ 2,396.03	$ 7.80	$ -	$ 7.80	0.33%
50	50	18,250	50	50	$ 749.72	$ 1,997.64	$ 2,747.36	$ 757.52	$ 1,997.64	$ 2,755.16	$ 7.80	$ -	$ 7.80	0.28%
50	60	21,900	50	50	$ 749.72	$ 2,356.76	$ 3,106.48	$ 757.52	$ 2,356.76	$ 3,114.28	$ 7.80	$ -	$ 7.80	0.25%
50	70	25,550	50	50	$ 749.72	$ 2,715.89	$ 3,465.61	$ 757.52	$ 2,715.89	$ 3,473.41	$ 7.80	$ -	$ 7.80	0.23%
50	80	29,200	50	50	$ 749.72	$ 3,075.02	$ 3,824.74	$ 757.52	$ 3,075.02	$ 3,832.54	$ 7.80	$ -	$ 7.80	0.20%
100	20	14,600	100	100	$ 1,306.22	$ 1,840.51	$ 3,146.73	$ 1,314.02	$ 1,840.51	$ 3,154.53	$ 7.80	$ -	$ 7.80	0.25%
100	30	21,900	100	100	$ 1,306.22	$ 2,558.76	$ 3,864.98	$ 1,314.02	$ 2,558.76	$ 3,872.78	$ 7.80	$ -	$ 7.80	0.20%
100	40	29,200	100	100	$ 1,306.22	$ 3,277.02	$ 4,583.24	$ 1,314.02	$ 3,277.02	$ 4,591.04	$ 7.80	$ -	$ 7.80	0.17%
100	50	36,500	100	100	$ 1,306.22	$ 3,995.27	$ 5,301.49	$ 1,314.02	$ 3,995.27	$ 5,309.29	$ 7.80	$ -	$ 7.80	0.15%
100	60	43,800	100	100	$ 1,306.22	$ 4,713.53	$ 6,019.75	$ 1,314.02	$ 4,713.53	$ 6,027.55	$ 7.80	$ -	$ 7.80	0.13%
100	70	51,100	100	100	$ 1,306.22	$ 5,431.78	$ 6,738.00	$ 1,314.02	$ 5,431.78	$ 6,745.80	$ 7.80	$ -	$ 7.80	0.12%
100	80	58,400	100	100	$ 1,306.22	$ 6,150.03	$ 7,456.25	$ 1,314.02	$ 6,150.03	$ 7,464.05	$ 7.80	$ -	$ 7.80	0.10%
300	20	43,800	300	300	$ 3,532.22	$ 5,521.53	$ 9,053.75	$ 3,540.02	$ 5,521.53	$ 9,061.55	$ 7.80	$ -	$ 7.80	0.09%
300	30	65,700	300	300	$ 3,532.22	$ 7,676.29	$ 11,208.51	$ 3,540.02	$ 7,676.29	$ 11,216.31	$ 7.80	$ -	$ 7.80	0.07%
300	40	87,600	300	300	$ 3,532.22	$ 9,831.05	$ 13,363.27	$ 3,540.02	$ 9,831.05	$ 13,371.07	$ 7.80	$ -	$ 7.80	0.06%
300	50	109,500	300	300	$ 3,532.22	$ 11,985.81	$ 15,518.03	$ 3,540.02	$ 11,985.81	$ 15,525.83	$ 7.80	$ -	$ 7.80	0.05%
300	60	131,400	300	300	$ 3,532.22	$ 14,140.58	$ 17,672.80	$ 3,540.02	$ 14,140.58	$ 17,680.60	$ 7.80	$ -	$ 7.80	0.04%
300	70	153,300	300	300	$ 3,532.22	$ 16,295.34	$ 19,827.56	$ 3,540.02	$ 16,295.34	$ 19,835.36	$ 7.80	$ -	$ 7.80	0.04%
300	80	175,200	300	300	$ 3,532.22	$ 18,450.10	$ 21,982.32	$ 3,540.02	$ 18,450.10	$ 21,990.12	$ 7.80	$ -	$ 7.80	0.04%
500	20	73,000	500	500	$ 5,758.22	$ 9,202.54	$ 14,960.76	$ 5,766.02	$ 9,202.54	$ 14,968.56	$ 7.80	$ -	$ 7.80	0.05%
500	30	109,500	500	500	$ 5,758.22	$ 12,793.81	$ 18,552.03	$ 5,766.02	$ 12,793.81	$ 18,559.83	$ 7.80	$ -	$ 7.80	0.04%
500	40	146,000	500	500	$ 5,758.22	$ 16,385.09	$ 22,143.31	$ 5,766.02	$ 16,385.09	$ 22,151.11	$ 7.80	$ -	$ 7.80	0.04%
500	50	182,500	500	500	$ 5,758.22	$ 19,976.36	$ 25,734.58	$ 5,766.02	$ 19,976.36	$ 25,742.38	$ 7.80	$ -	$ 7.80	0.03%
500	60	219,000	500	500	$ 5,758.22	$ 23,567.63	$ 29,325.85	$ 5,766.02	$ 23,567.63	$ 29,333.65	$ 7.80	$ -	$ 7.80	0.03%
500	70	255,500	500	500	$ 5,758.22	$ 27,158.90	$ 32,917.12	$ 5,766.02	$ 27,158.90	$ 32,924.92	$ 7.80	$ -	$ 7.80	0.02%
500	80	292,000	500	500	$ 5,758.22	$ 30,750.17	$ 36,508.39	$ 5,766.02	$ 30,750.17	$ 36,516.19	$ 7.80	$ -	$ 7.80	0.02%
750	30	164,250	750	750	$ 8,540.72	$ 19,190.72	$ 27,731.44	$ 8,548.52	$ 19,190.72	$ 27,739.24	$ 7.80	$ -	$ 7.80	0.03%
750	40	219,000	750	750	$ 8,540.72	$ 24,577.63	$ 33,118.35	$ 8,548.52	$ 24,577.63	$ 33,126.15	$ 7.80	$ -	$ 7.80	0.02%
750	50	273,750	750	750	$ 8,540.72	$ 29,964.54	$ 38,505.26	$ 8,548.52	$ 29,964.54	$ 38,513.06	$ 7.80	$ -	$ 7.80	0.02%
750	60	328,500	750	750	$ 8,540.72	$ 35,351.44	$ 43,892.16	$ 8,548.52	$ 35,351.44	$ 43,899.96	$ 7.80	$ -	$ 7.80	0.02%
750	70	383,250	750	750	$ 8,540.72	$ 40,738.35	$ 49,279.07	$ 8,548.52	$ 40,738.35	$ 49,286.87	$ 7.80	$ -	$ 7.80	0.02%
750	80	438,000	750	750	$ 8,540.72	$ 46,125.26	$ 54,665.98	$ 8,548.52	$ 46,125.26	$ 54,673.78	$ 7.80	$ -	$ 7.80	0.01%
750	90	492,750	750	750	$ 8,540.72	$ 51,512.17	$ 60,052.89	$ 8,548.52	$ 51,512.17	$ 60,060.69	$ 7.80	$ -	$ 7.80	0.01%
1000	30	219,000	1,000	1,000	$ 11,323.22	$ 25,587.63	$ 36,910.85	$ 11,331.02	$ 25,587.63	$ 36,918.65	$ 7.80	$ -	$ 7.80	0.02%
1000	40	292,000	1,000	1,000	$ 11,323.22	$ 32,770.17	$ 44,093.39	$ 11,331.02	$ 32,770.17	$ 44,101.19	$ 7.80	$ -	$ 7.80	0.02%
1000	50	365,000	1,000	1,000	$ 11,323.22	$ 39,952.72	$ 51,275.94	$ 11,331.02	$ 39,952.72	$ 51,283.74	$ 7.80	$ -	$ 7.80	0.02%
1000	60	438,000	1,000	1,000	$ 11,323.22	$ 47,135.26	$ 58,458.48	$ 11,331.02	$ 47,135.26	$ 58,466.28	$ 7.80	$ -	$ 7.80	0.01%
1000	70	511,000	1,000	1,000	$ 11,323.22	$ 54,317.80	$ 65,641.02	$ 11,331.02	$ 54,317.80	$ 65,648.82	$ 7.80	$ -	$ 7.80	0.01%
1000	80	584,000	1,000	1,000	$ 11,323.22	$ 61,500.34	$ 72,823.56	$ 11,331.02	$ 61,500.34	$ 72,831.36	$ 7.80	$ -	$ 7.80	0.01%
1000	90	657,000	1,000	1,000	$ 11,323.22	$ 68,682.89	$ 80,006.11	$ 11,331.02	$ 68,682.89	$ 80,013.91	$ 7.80	$ -	$ 7.80	0.01%
2000	30	438,000	2,000	2,000	$ 22,453.22	$ 51,175.26	$ 73,628.48	$ 22,461.02	$ 51,175.26	$ 73,636.28	$ 7.80	$ -	$ 7.80	0.01%
2000	40	584,000	2,000	2,000	$ 22,453.22	$ 65,540.34	$ 87,993.56	$ 22,461.02	$ 65,540.34	$ 88,001.36	$ 7.80	$ -	$ 7.80	0.01%
2000	50	730,000	2,000	2,000	$ 22,453.22	$ 79,905.43	$ 102,358.65	$ 22,461.02	$ 79,905.43	$ 102,366.45	$ 7.80	$ -	$ 7.80	0.01%
2000	60	876,000	2,000	2,000	$ 22,453.22	$ 94,270.52	$ 116,723.74	$ 22,461.02	$ 94,270.52	$ 116,731.54	$ 7.80	$ -	$ 7.80	0.01%
2000	70	1,022,000	2,000	2,000	$ 22,453.22	$ 108,635.60	$ 131,088.82	$ 22,461.02	$ 108,635.60	$ 131,096.62	$ 7.80	$ -	$ 7.80	0.01%
2000	80	1,168,000	2,000	2,000	$ 22,453.22	$ 123,000.69	$ 145,453.91	$ 22,461.02	$ 123,000.69	$ 145,461.71	$ 7.80	$ -	$ 7.80	0.01%
2000	90	1,314,000	2,000	2,000	$ 22,453.22	$ 137,365.77	$ 159,818.99	$ 22,461.02	$ 137,365.77	$ 159,826.79	$ 7.80	$ -	$ 7.80	0.00%

ATLANTIC CITY ELECTRIC COMPANY
ANNUAL GENERAL SERVICE SECONDARY ("AGS Secondary")
Annual Average

Present Rates
vs.
Proposed Rates

Demand (kW)	Load Factor (%)	Energy (kWh)	Metered kW	Billed kW	Present Distribution ($)	Present BGS and Other Charges ($)	Present Total ($)	New Distribution ($)	New BGS and Other Charges ($)	New Total ($)	Difference Distribution ($)	Difference BGS and Other Charges ($)	Total Difference ($)	Total Difference (%)
25	20	3,650	25.00	22	$ 471.47	$ 458.54	$ 930.01	$ 479.27	$ 458.54	$ 937.81	$ 7.80	$ -	$ 7.80	0.84%
25	30	5,475	25.00	22	$ 471.47	$ 637.31	$ 1,108.78	$ 479.27	$ 637.31	$ 1,116.58	$ 7.80	$ -	$ 7.80	0.70%
25	40	7,300	25.00	22	$ 471.47	$ 816.09	$ 1,287.56	$ 479.27	$ 816.09	$ 1,295.36	$ 7.80	$ -	$ 7.80	0.61%
25	50	9,125	25.00	22	$ 471.47	$ 994.86	$ 1,466.33	$ 479.27	$ 994.86	$ 1,474.13	$ 7.80	$ -	$ 7.80	0.53%
25	60	10,950	25.00	22	$ 471.47	$ 1,173.63	$ 1,645.10	$ 479.27	$ 1,173.63	$ 1,652.90	$ 7.80	$ -	$ 7.80	0.47%
25	70	12,775	25.00	22	$ 471.47	$ 1,352.40	$ 1,823.87	$ 479.27	$ 1,352.40	$ 1,831.67	$ 7.80	$ -	$ 7.80	0.43%
25	80	14,600	25.00	22	$ 471.47	$ 1,531.17	$ 2,002.64	$ 479.27	$ 1,531.17	$ 2,010.44	$ 7.80	$ -	$ 7.80	0.39%
50	20	7,300	50.00	47	$ 749.72	$ 917.09	$ 1,666.81	$ 757.52	$ 917.09	$ 1,674.61	$ 7.80	$ -	$ 7.80	0.47%
50	30	10,950	50.00	47	$ 749.72	$ 1,274.63	$ 2,024.35	$ 757.52	$ 1,274.63	$ 2,032.15	$ 7.80	$ -	$ 7.80	0.39%
50	40	14,600	50.00	47	$ 749.72	$ 1,632.17	$ 2,381.89	$ 757.52	$ 1,632.17	$ 2,389.69	$ 7.80	$ -	$ 7.80	0.33%
50	50	18,250	50.00	47	$ 749.72	$ 1,989.72	$ 2,739.44	$ 757.52	$ 1,989.72	$ 2,747.24	$ 7.80	$ -	$ 7.80	0.28%
50	60	21,900	50.00	47	$ 749.72	$ 2,347.26	$ 3,096.98	$ 757.52	$ 2,347.26	$ 3,104.78	$ 7.80	$ -	$ 7.80	0.25%
50	70	25,550	50.00	47	$ 749.72	$ 2,704.80	$ 3,454.52	$ 757.52	$ 2,704.80	$ 3,462.32	$ 7.80	$ -	$ 7.80	0.23%
50	80	29,200	50.00	47	$ 749.72	$ 3,062.34	$ 3,812.06	$ 757.52	$ 3,062.34	$ 3,819.86	$ 7.80	$ -	$ 7.80	0.20%
100	20	14,600	100.00	97	$ 1,306.22	$ 1,834.17	$ 3,140.39	$ 1,314.02	$ 1,834.17	$ 3,148.19	$ 7.80	$ -	$ 7.80	0.25%
100	30	21,900	100.00	97	$ 1,306.22	$ 2,549.26	$ 3,855.48	$ 1,314.02	$ 2,549.26	$ 3,863.28	$ 7.80	$ -	$ 7.80	0.20%
100	40	29,200	100.00	97	$ 1,306.22	$ 3,264.34	$ 4,570.56	$ 1,314.02	$ 3,264.34	$ 4,578.36	$ 7.80	$ -	$ 7.80	0.17%
100	50	36,500	100.00	97	$ 1,306.22	$ 3,979.43	$ 5,285.65	$ 1,314.02	$ 3,979.43	$ 5,293.45	$ 7.80	$ -	$ 7.80	0.15%
100	60	43,800	100.00	97	$ 1,306.22	$ 4,694.52	$ 6,000.74	$ 1,314.02	$ 4,694.52	$ 6,008.54	$ 7.80	$ -	$ 7.80	0.13%
100	70	51,100	100.00	97	$ 1,306.22	$ 5,409.60	$ 6,715.82	$ 1,314.02	$ 5,409.60	$ 6,723.62	$ 7.80	$ -	$ 7.80	0.12%
100	80	58,400	100.00	97	$ 1,306.22	$ 6,124.69	$ 7,430.91	$ 1,314.02	$ 6,124.69	$ 7,438.71	$ 7.80	$ -	$ 7.80	0.10%
300	20	43,800	300.00	297	$ 3,532.22	$ 5,502.52	$ 9,034.74	$ 3,540.02	$ 5,502.52	$ 9,042.54	$ 7.80	$ -	$ 7.80	0.09%
300	30	65,700	300.00	297	$ 3,532.22	$ 7,647.77	$ 11,179.99	$ 3,540.02	$ 7,647.77	$ 11,187.79	$ 7.80	$ -	$ 7.80	0.07%
300	40	87,600	300.00	297	$ 3,532.22	$ 9,793.03	$ 13,325.25	$ 3,540.02	$ 9,793.03	$ 13,333.05	$ 7.80	$ -	$ 7.80	0.06%
300	50	109,500	300.00	297	$ 3,532.22	$ 11,938.29	$ 15,470.51	$ 3,540.02	$ 11,938.29	$ 15,478.31	$ 7.80	$ -	$ 7.80	0.05%
300	60	131,400	300.00	297	$ 3,532.22	$ 14,083.55	$ 17,615.77	$ 3,540.02	$ 14,083.55	$ 17,623.57	$ 7.80	$ -	$ 7.80	0.04%
300	70	153,300	300.00	297	$ 3,532.22	$ 16,228.81	$ 19,761.03	$ 3,540.02	$ 16,228.81	$ 19,768.83	$ 7.80	$ -	$ 7.80	0.04%
300	80	175,200	300.00	297	$ 3,532.22	$ 18,374.07	$ 21,906.29	$ 3,540.02	$ 18,374.07	$ 21,914.09	$ 7.80	$ -	$ 7.80	0.04%
500	20	73,000	500.00	497	$ 5,758.22	$ 9,170.86	$ 14,929.08	$ 5,766.02	$ 9,170.86	$ 14,936.88	$ 7.80	$ -	$ 7.80	0.05%
500	30	109,500	500.00	497	$ 5,758.22	$ 12,746.29	$ 18,504.51	$ 5,766.02	$ 12,746.29	$ 18,512.31	$ 7.80	$ -	$ 7.80	0.04%
500	40	146,000	500.00	497	$ 5,758.22	$ 16,321.72	$ 22,079.94	$ 5,766.02	$ 16,321.72	$ 22,087.74	$ 7.80	$ -	$ 7.80	0.04%
500	50	182,500	500.00	497	$ 5,758.22	$ 19,897.15	$ 25,655.37	$ 5,766.02	$ 19,897.15	$ 25,663.17	$ 7.80	$ -	$ 7.80	0.03%
500	60	219,000	500.00	497	$ 5,758.22	$ 23,472.58	$ 29,230.80	$ 5,766.02	$ 23,472.58	$ 29,238.60	$ 7.80	$ -	$ 7.80	0.03%
500	70	255,500	500.00	497	$ 5,758.22	$ 27,048.01	$ 32,806.23	$ 5,766.02	$ 27,048.01	$ 32,814.03	$ 7.80	$ -	$ 7.80	0.02%
500	80	292,000	500.00	497	$ 5,758.22	$ 30,623.44	$ 36,381.66	$ 5,766.02	$ 30,623.44	$ 36,389.46	$ 7.80	$ -	$ 7.80	0.02%
750	30	164,250	750.00	747	$ 8,540.72	$ 19,119.44	$ 27,660.16	$ 8,548.52	$ 19,119.44	$ 27,667.96	$ 7.80	$ -	$ 7.80	0.03%
750	40	219,000	750.00	747	$ 8,540.72	$ 24,482.58	$ 33,023.30	$ 8,548.52	$ 24,482.58	$ 33,031.10	$ 7.80	$ -	$ 7.80	0.02%
750	50	273,750	750.00	747	$ 8,540.72	$ 29,845.73	$ 38,386.45	$ 8,548.52	$ 29,845.73	$ 38,394.25	$ 7.80	$ -	$ 7.80	0.02%
750	60	328,500	750.00	747	$ 8,540.72	$ 35,208.87	$ 43,749.59	$ 8,548.52	$ 35,208.87	$ 43,757.39	$ 7.80	$ -	$ 7.80	0.02%
750	70	383,250	750.00	747	$ 8,540.72	$ 40,572.02	$ 49,112.74	$ 8,548.52	$ 40,572.02	$ 49,120.54	$ 7.80	$ -	$ 7.80	0.02%
750	80	438,000	750.00	747	$ 8,540.72	$ 45,935.17	$ 54,475.89	$ 8,548.52	$ 45,935.17	$ 54,483.69	$ 7.80	$ -	$ 7.80	0.01%
750	90	492,750	750.00	747	$ 8,540.72	$ 51,298.31	$ 59,839.03	$ 8,548.52	$ 51,298.31	$ 59,846.83	$ 7.80	$ -	$ 7.80	0.01%
1,000	30	219,000	1,000.00	997	$ 11,323.22	$ 25,492.58	$ 36,815.80	$ 11,331.02	$ 25,492.58	$ 36,823.60	$ 7.80	$ -	$ 7.80	0.02%
1,000	40	292,000	1,000.00	997	$ 11,323.22	$ 32,643.44	$ 43,966.66	$ 11,331.02	$ 32,643.44	$ 43,974.46	$ 7.80	$ -	$ 7.80	0.02%
1,000	50	365,000	1,000.00	997	$ 11,323.22	$ 39,794.31	$ 51,117.53	$ 11,331.02	$ 39,794.31	$ 51,125.33	$ 7.80	$ -	$ 7.80	0.02%
1,000	60	438,000	1,000.00	997	$ 11,323.22	$ 46,945.17	$ 58,268.39	$ 11,331.02	$ 46,945.17	$ 58,276.19	$ 7.80	$ -	$ 7.80	0.01%
1,000	70	511,000	1,000.00	997	$ 11,323.22	$ 54,096.03	$ 65,419.25	$ 11,331.02	$ 54,096.03	$ 65,427.05	$ 7.80	$ -	$ 7.80	0.01%
1,000	80	584,000	1,000.00	997	$ 11,323.22	$ 61,246.89	$ 72,570.11	$ 11,331.02	$ 61,246.89	$ 72,577.91	$ 7.80	$ -	$ 7.80	0.01%
1,000	90	657,000	1,000.00	997	$ 11,323.22	$ 68,397.75	$ 79,720.97	$ 11,331.02	$ 68,397.75	$ 79,728.77	$ 7.80	$ -	$ 7.80	0.01%
2,000	30	438,000	2,000.00	1997	$ 22,453.22	$ 50,985.17	$ 73,438.39	$ 22,461.02	$ 50,985.17	$ 73,446.19	$ 7.80	$ -	$ 7.80	0.01%
2,000	40	584,000	2,000.00	1997	$ 22,453.22	$ 65,286.89	$ 87,740.11	$ 22,461.02	$ 65,286.89	$ 87,747.91	$ 7.80	$ -	$ 7.80	0.01%
2,000	50	730,000	2,000.00	1997	$ 22,453.22	$ 79,588.61	$ 102,041.83	$ 22,461.02	$ 79,588.61	$ 102,049.63	$ 7.80	$ -	$ 7.80	0.01%
2,000	60	876,000	2,000.00	1997	$ 22,453.22	$ 93,890.33	$ 116,343.55	$ 22,461.02	$ 93,890.33	$ 116,351.35	$ 7.80	$ -	$ 7.80	0.01%
2,000	70	1,022,000	2,000.00	1997	$ 22,453.22	$ 108,192.05	$ 130,645.27	$ 22,461.02	$ 108,192.05	$ 130,653.07	$ 7.80	$ -	$ 7.80	0.01%
2,000	80	1,168,000	2,000.00	1997	$ 22,453.22	$ 122,493.78	$ 144,947.00	$ 22,461.02	$ 122,493.78	$ 144,954.80	$ 7.80	$ -	$ 7.80	0.01%
2,000	90	1,314,000	2,000.00	1997	$ 22,453.22	$ 136,795.50	$ 159,248.72	$ 22,461.02	$ 136,795.50	$ 159,256.52	$ 7.80	$ -	$ 7.80	0.00%

ATLANTIC CITY ELECTRIC COMPANY
ANNUAL GENERAL SERVICE PRIMARY ("AGS Primary")
8 WINTER MONTHS (October Through May)

Present Rates vs. Proposed Rates

Demand (kW)	Load Factor (%)	Energy (kWh)	Metered kW	Billed kW	Present Distribution ($)	Present BGS and Other Charges ($)	Present Total ($)	New Distribution ($)	New BGS and Other Charges ($)	New Total ($)	Difference Distribution ($)	Difference BGS and Other Charges ($)	Total Difference ($)	Total Difference (%)
25	20	3,650	25	25	$ 965.65	$ 435.49	$ 1,401.14	$ 974.85	$ 435.49	$ 1,410.34	$ 9.20	$ -	$ 9.20	0.66%
25	30	5,475	25	25	$ 965.65	$ 602.24	$ 1,567.89	$ 974.85	$ 602.24	$ 1,577.09	$ 9.20	$ -	$ 9.20	0.59%
25	40	7,300	25	25	$ 965.65	$ 768.99	$ 1,734.64	$ 974.85	$ 768.99	$ 1,743.84	$ 9.20	$ -	$ 9.20	0.53%
25	50	9,125	25	25	$ 965.65	$ 935.73	$ 1,901.38	$ 974.85	$ 935.73	$ 1,910.58	$ 9.20	$ -	$ 9.20	0.48%
25	60	10,950	25	25	$ 965.65	$ 1,102.48	$ 2,068.13	$ 974.85	$ 1,102.48	$ 2,077.33	$ 9.20	$ -	$ 9.20	0.44%
25	70	12,775	25	25	$ 965.65	$ 1,269.23	$ 2,234.88	$ 974.85	$ 1,269.23	$ 2,244.08	$ 9.20	$ -	$ 9.20	0.41%
25	80	14,600	25	25	$ 965.65	$ 1,435.97	$ 2,401.62	$ 974.85	$ 1,435.97	$ 2,410.82	$ 9.20	$ -	$ 9.20	0.38%
50	20	7,300	50	50	$ 1,187.15	$ 870.99	$ 2,058.14	$ 1,196.35	$ 870.99	$ 2,067.34	$ 9.20	$ -	$ 9.20	0.45%
50	30	10,950	50	50	$ 1,187.15	$ 1,204.48	$ 2,391.63	$ 1,196.35	$ 1,204.48	$ 2,400.83	$ 9.20	$ -	$ 9.20	0.38%
50	40	14,600	50	50	$ 1,187.15	$ 1,537.97	$ 2,725.12	$ 1,196.35	$ 1,537.97	$ 2,734.32	$ 9.20	$ -	$ 9.20	0.34%
50	50	18,250	50	50	$ 1,187.15	$ 1,871.47	$ 3,058.62	$ 1,196.35	$ 1,871.47	$ 3,067.82	$ 9.20	$ -	$ 9.20	0.30%
50	60	21,900	50	50	$ 1,187.15	$ 2,204.96	$ 3,392.11	$ 1,196.35	$ 2,204.96	$ 3,401.31	$ 9.20	$ -	$ 9.20	0.27%
50	70	25,550	50	50	$ 1,187.15	$ 2,538.45	$ 3,725.60	$ 1,196.35	$ 2,538.45	$ 3,734.80	$ 9.20	$ -	$ 9.20	0.25%
50	80	29,200	50	50	$ 1,187.15	$ 2,871.95	$ 4,059.10	$ 1,196.35	$ 2,871.95	$ 4,068.30	$ 9.20	$ -	$ 9.20	0.23%
100	20	14,600	100	100	$ 1,630.15	$ 1,741.97	$ 3,372.12	$ 1,639.35	$ 1,741.97	$ 3,381.32	$ 9.20	$ -	$ 9.20	0.27%
100	30	21,900	100	100	$ 1,630.15	$ 2,408.96	$ 4,039.11	$ 1,639.35	$ 2,408.96	$ 4,048.31	$ 9.20	$ -	$ 9.20	0.23%
100	40	29,200	100	100	$ 1,630.15	$ 3,075.95	$ 4,706.10	$ 1,639.35	$ 3,075.95	$ 4,715.30	$ 9.20	$ -	$ 9.20	0.20%
100	50	36,500	100	100	$ 1,630.15	$ 3,742.93	$ 5,373.08	$ 1,639.35	$ 3,742.93	$ 5,382.28	$ 9.20	$ -	$ 9.20	0.17%
100	60	43,800	100	100	$ 1,630.15	$ 4,409.92	$ 6,040.07	$ 1,639.35	$ 4,409.92	$ 6,049.27	$ 9.20	$ -	$ 9.20	0.15%
100	70	51,100	100	100	$ 1,630.15	$ 5,076.90	$ 6,707.05	$ 1,639.35	$ 5,076.90	$ 6,716.25	$ 9.20	$ -	$ 9.20	0.14%
100	80	58,400	100	100	$ 1,630.15	$ 5,743.89	$ 7,374.04	$ 1,639.35	$ 5,743.89	$ 7,383.24	$ 9.20	$ -	$ 9.20	0.12%
300	20	43,800	300	300	$ 3,402.15	$ 5,225.92	$ 8,628.07	$ 3,411.35	$ 5,225.92	$ 8,637.27	$ 9.20	$ -	$ 9.20	0.11%
300	30	65,700	300	300	$ 3,402.15	$ 7,226.88	$ 10,629.03	$ 3,411.35	$ 7,226.88	$ 10,638.23	$ 9.20	$ -	$ 9.20	0.09%
300	40	87,600	300	300	$ 3,402.15	$ 9,227.84	$ 12,629.99	$ 3,411.35	$ 9,227.84	$ 12,639.19	$ 9.20	$ -	$ 9.20	0.07%
300	50	109,500	300	300	$ 3,402.15	$ 11,228.80	$ 14,630.95	$ 3,411.35	$ 11,228.80	$ 14,640.15	$ 9.20	$ -	$ 9.20	0.06%
300	60	131,400	300	300	$ 3,402.15	$ 13,229.76	$ 16,631.91	$ 3,411.35	$ 13,229.76	$ 16,641.11	$ 9.20	$ -	$ 9.20	0.06%
300	70	153,300	300	300	$ 3,402.15	$ 15,230.71	$ 18,632.86	$ 3,411.35	$ 15,230.71	$ 18,642.06	$ 9.20	$ -	$ 9.20	0.05%
300	80	175,200	300	300	$ 3,402.15	$ 17,231.67	$ 20,633.82	$ 3,411.35	$ 17,231.67	$ 20,643.02	$ 9.20	$ -	$ 9.20	0.04%
500	20	73,000	500	500	$ 5,174.15	$ 8,709.86	$ 13,884.01	$ 5,183.35	$ 8,709.86	$ 13,893.21	$ 9.20	$ -	$ 9.20	0.07%
500	30	109,500	500	500	$ 5,174.15	$ 12,044.80	$ 17,218.95	$ 5,183.35	$ 12,044.80	$ 17,228.15	$ 9.20	$ -	$ 9.20	0.05%
500	40	146,000	500	500	$ 5,174.15	$ 15,379.73	$ 20,553.88	$ 5,183.35	$ 15,379.73	$ 20,563.08	$ 9.20	$ -	$ 9.20	0.04%
500	50	182,500	500	500	$ 5,174.15	$ 18,714.66	$ 23,888.81	$ 5,183.35	$ 18,714.66	$ 23,898.01	$ 9.20	$ -	$ 9.20	0.04%
500	60	219,000	500	500	$ 5,174.15	$ 22,049.59	$ 27,223.74	$ 5,183.35	$ 22,049.59	$ 27,232.94	$ 9.20	$ -	$ 9.20	0.03%
500	70	255,500	500	500	$ 5,174.15	$ 25,384.52	$ 30,558.67	$ 5,183.35	$ 25,384.52	$ 30,567.87	$ 9.20	$ -	$ 9.20	0.03%
500	80	292,000	500	500	$ 5,174.15	$ 28,719.46	$ 33,893.61	$ 5,183.35	$ 28,719.46	$ 33,902.81	$ 9.20	$ -	$ 9.20	0.03%
750	30	164,250	750	750	$ 7,389.15	$ 18,067.19	$ 25,456.34	$ 7,398.35	$ 18,067.19	$ 25,465.54	$ 9.20	$ -	$ 9.20	0.04%
750	40	219,000	750	750	$ 7,389.15	$ 23,069.59	$ 30,458.74	$ 7,398.35	$ 23,069.59	$ 30,467.94	$ 9.20	$ -	$ 9.20	0.03%
750	50	273,750	750	750	$ 7,389.15	$ 28,071.99	$ 35,461.14	$ 7,398.35	$ 28,071.99	$ 35,470.34	$ 9.20	$ -	$ 9.20	0.03%
750	60	328,500	750	750	$ 7,389.15	$ 33,074.39	$ 40,463.54	$ 7,398.35	$ 33,074.39	$ 40,472.74	$ 9.20	$ -	$ 9.20	0.02%
750	70	383,250	750	750	$ 7,389.15	$ 38,076.79	$ 45,465.94	$ 7,398.35	$ 38,076.79	$ 45,475.14	$ 9.20	$ -	$ 9.20	0.02%
750	80	438,000	750	750	$ 7,389.15	$ 43,079.18	$ 50,468.33	$ 7,398.35	$ 43,079.18	$ 50,477.53	$ 9.20	$ -	$ 9.20	0.02%
750	90	492,750	750	750	$ 7,389.15	$ 48,081.58	$ 55,470.73	$ 7,398.35	$ 48,081.58	$ 55,479.93	$ 9.20	$ -	$ 9.20	0.02%
1000	30	219,000	1,000	1,000	$ 9,604.15	$ 24,089.59	$ 33,693.74	$ 9,613.35	$ 24,089.59	$ 33,702.94	$ 9.20	$ -	$ 9.20	0.03%
1000	40	292,000	1,000	1,000	$ 9,604.15	$ 30,759.46	$ 40,363.61	$ 9,613.35	$ 30,759.46	$ 40,372.81	$ 9.20	$ -	$ 9.20	0.02%
1000	50	365,000	1,000	1,000	$ 9,604.15	$ 37,429.32	$ 47,033.47	$ 9,613.35	$ 37,429.32	$ 47,042.67	$ 9.20	$ -	$ 9.20	0.02%
1000	60	438,000	1,000	1,000	$ 9,604.15	$ 44,099.18	$ 53,703.33	$ 9,613.35	$ 44,099.18	$ 53,712.53	$ 9.20	$ -	$ 9.20	0.02%
1000	70	511,000	1,000	1,000	$ 9,604.15	$ 50,769.05	$ 60,373.20	$ 9,613.35	$ 50,769.05	$ 60,382.40	$ 9.20	$ -	$ 9.20	0.02%
1000	80	584,000	1,000	1,000	$ 9,604.15	$ 57,438.91	$ 67,043.06	$ 9,613.35	$ 57,438.91	$ 67,052.26	$ 9.20	$ -	$ 9.20	0.01%
1000	90	657,000	1,000	1,000	$ 9,604.15	$ 64,108.78	$ 73,712.93	$ 9,613.35	$ 64,108.78	$ 73,722.13	$ 9.20	$ -	$ 9.20	0.01%
2000	30	438,000	2,000	2,000	$ 18,464.15	$ 48,179.18	$ 66,643.33	$ 18,473.35	$ 48,179.18	$ 66,652.53	$ 9.20	$ -	$ 9.20	0.01%
2000	40	584,000	2,000	2,000	$ 18,464.15	$ 61,518.91	$ 79,983.06	$ 18,473.35	$ 61,518.91	$ 79,992.26	$ 9.20	$ -	$ 9.20	0.01%
2000	50	730,000	2,000	2,000	$ 18,464.15	$ 74,858.64	$ 93,322.79	$ 18,473.35	$ 74,858.64	$ 93,331.99	$ 9.20	$ -	$ 9.20	0.01%
2000	60	876,000	2,000	2,000	$ 18,464.15	$ 88,198.37	$ 106,662.52	$ 18,473.35	$ 88,198.37	$ 106,671.72	$ 9.20	$ -	$ 9.20	0.01%
2000	70	1,022,000	2,000	2,000	$ 18,464.15	$ 101,538.10	$ 120,002.25	$ 18,473.35	$ 101,538.10	$ 120,011.45	$ 9.20	$ -	$ 9.20	0.01%
2000	80	1,168,000	2,000	2,000	$ 18,464.15	$ 114,877.82	$ 133,341.97	$ 18,473.35	$ 114,877.82	$ 133,351.17	$ 9.20	$ -	$ 9.20	0.01%
2000	90	1,314,000	2,000	2,000	$ 18,464.15	$ 128,217.55	$ 146,681.70	$ 18,473.35	$ 128,217.55	$ 146,690.90	$ 9.20	$ -	$ 9.20	0.01%

ATLANTIC CITY ELECTRIC COMPANY
ANNUAL GENERAL SERVICE PRIMARY ("AGS Primary")
4 SUMMER MONTHS (June Through September)

Present Rates
vs.
Proposed Rates

Demand (kW)	Load Factor (%)	Energy (kWh)	Metered kW	Billed kW	Present Distribution ($)	Present BGS and Other Charges ($)	Present Total ($)	New Distribution ($)	New BGS and Other Charges ($)	New Total ($)	Difference Distribution ($)	Difference BGS and Other Charges ($)	Total Difference ($)	Total Difference (%)
25	20	3,650	25	25	$ 965.65	$ 443.74	$ 1,409.39	$ 974.85	$ 443.74	$ 1,418.59	$ 9.20	$ -	$ 9.20	0.65%
25	30	5,475	25	25	$ 965.65	$ 614.61	$ 1,580.26	$ 974.85	$ 614.61	$ 1,589.46	$ 9.20	$ -	$ 9.20	0.58%
25	40	7,300	25	25	$ 965.65	$ 785.48	$ 1,751.13	$ 974.85	$ 785.48	$ 1,760.33	$ 9.20	$ -	$ 9.20	0.53%
25	50	9,125	25	25	$ 965.65	$ 956.36	$ 1,922.01	$ 974.85	$ 956.36	$ 1,931.21	$ 9.20	$ -	$ 9.20	0.48%
25	60	10,950	25	25	$ 965.65	$ 1,127.23	$ 2,092.88	$ 974.85	$ 1,127.23	$ 2,102.08	$ 9.20	$ -	$ 9.20	0.44%
25	70	12,775	25	25	$ 965.65	$ 1,298.10	$ 2,263.75	$ 974.85	$ 1,298.10	$ 2,272.95	$ 9.20	$ -	$ 9.20	0.41%
25	80	14,600	25	25	$ 965.65	$ 1,468.97	$ 2,434.62	$ 974.85	$ 1,468.97	$ 2,443.82	$ 9.20	$ -	$ 9.20	0.38%
50	20	7,300	50	50	$ 1,187.15	$ 887.48	$ 2,074.63	$ 1,196.35	$ 887.48	$ 2,083.83	$ 9.20	$ -	$ 9.20	0.44%
50	30	10,950	50	50	$ 1,187.15	$ 1,229.23	$ 2,416.38	$ 1,196.35	$ 1,229.23	$ 2,425.58	$ 9.20	$ -	$ 9.20	0.38%
50	40	14,600	50	50	$ 1,187.15	$ 1,570.97	$ 2,758.12	$ 1,196.35	$ 1,570.97	$ 2,767.32	$ 9.20	$ -	$ 9.20	0.33%
50	50	18,250	50	50	$ 1,187.15	$ 1,912.71	$ 3,099.86	$ 1,196.35	$ 1,912.71	$ 3,109.06	$ 9.20	$ -	$ 9.20	0.30%
50	60	21,900	50	50	$ 1,187.15	$ 2,254.45	$ 3,441.60	$ 1,196.35	$ 2,254.45	$ 3,450.80	$ 9.20	$ -	$ 9.20	0.27%
50	70	25,550	50	50	$ 1,187.15	$ 2,596.20	$ 3,783.35	$ 1,196.35	$ 2,596.20	$ 3,792.55	$ 9.20	$ -	$ 9.20	0.24%
50	80	29,200	50	50	$ 1,187.15	$ 2,937.94	$ 4,125.09	$ 1,196.35	$ 2,937.94	$ 4,134.29	$ 9.20	$ -	$ 9.20	0.22%
100	20	14,600	100	100	$ 1,630.15	$ 1,774.97	$ 3,405.12	$ 1,639.35	$ 1,774.97	$ 3,414.32	$ 9.20	$ -	$ 9.20	0.27%
100	30	21,900	100	100	$ 1,630.15	$ 2,458.45	$ 4,088.60	$ 1,639.35	$ 2,458.45	$ 4,097.80	$ 9.20	$ -	$ 9.20	0.23%
100	40	29,200	100	100	$ 1,630.15	$ 3,141.94	$ 4,772.09	$ 1,639.35	$ 3,141.94	$ 4,781.29	$ 9.20	$ -	$ 9.20	0.19%
100	50	36,500	100	100	$ 1,630.15	$ 3,825.42	$ 5,455.57	$ 1,639.35	$ 3,825.42	$ 5,464.77	$ 9.20	$ -	$ 9.20	0.17%
100	60	43,800	100	100	$ 1,630.15	$ 4,508.91	$ 6,139.06	$ 1,639.35	$ 4,508.91	$ 6,148.26	$ 9.20	$ -	$ 9.20	0.15%
100	70	51,100	100	100	$ 1,630.15	$ 5,192.39	$ 6,822.54	$ 1,639.35	$ 5,192.39	$ 6,831.74	$ 9.20	$ -	$ 9.20	0.13%
100	80	58,400	100	100	$ 1,630.15	$ 5,875.88	$ 7,506.03	$ 1,639.35	$ 5,875.88	$ 7,515.23	$ 9.20	$ -	$ 9.20	0.12%
300	20	43,800	300	300	$ 3,402.15	$ 5,324.91	$ 8,727.06	$ 3,411.35	$ 5,324.91	$ 8,736.26	$ 9.20	$ -	$ 9.20	0.11%
300	30	65,700	300	300	$ 3,402.15	$ 7,375.36	$ 10,777.51	$ 3,411.35	$ 7,375.36	$ 10,786.71	$ 9.20	$ -	$ 9.20	0.09%
300	40	87,600	300	300	$ 3,402.15	$ 9,425.81	$ 12,827.96	$ 3,411.35	$ 9,425.81	$ 12,837.16	$ 9.20	$ -	$ 9.20	0.07%
300	50	109,500	300	300	$ 3,402.15	$ 11,476.27	$ 14,878.42	$ 3,411.35	$ 11,476.27	$ 14,887.62	$ 9.20	$ -	$ 9.20	0.06%
300	60	131,400	300	300	$ 3,402.15	$ 13,526.72	$ 16,928.87	$ 3,411.35	$ 13,526.72	$ 16,938.07	$ 9.20	$ -	$ 9.20	0.05%
300	70	153,300	300	300	$ 3,402.15	$ 15,577.17	$ 18,979.32	$ 3,411.35	$ 15,577.17	$ 18,988.52	$ 9.20	$ -	$ 9.20	0.05%
300	80	175,200	300	300	$ 3,402.15	$ 17,627.63	$ 21,029.78	$ 3,411.35	$ 17,627.63	$ 21,038.98	$ 9.20	$ -	$ 9.20	0.04%
500	20	73,000	500	500	$ 5,174.15	$ 8,874.84	$ 14,048.99	$ 5,183.35	$ 8,874.84	$ 14,058.19	$ 9.20	$ -	$ 9.20	0.07%
500	30	109,500	500	500	$ 5,174.15	$ 12,292.27	$ 17,466.42	$ 5,183.35	$ 12,292.27	$ 17,475.62	$ 9.20	$ -	$ 9.20	0.05%
500	40	146,000	500	500	$ 5,174.15	$ 15,709.69	$ 20,883.84	$ 5,183.35	$ 15,709.69	$ 20,893.04	$ 9.20	$ -	$ 9.20	0.04%
500	50	182,500	500	500	$ 5,174.15	$ 19,127.11	$ 24,301.26	$ 5,183.35	$ 19,127.11	$ 24,310.46	$ 9.20	$ -	$ 9.20	0.04%
500	60	219,000	500	500	$ 5,174.15	$ 22,544.53	$ 27,718.68	$ 5,183.35	$ 22,544.53	$ 27,727.88	$ 9.20	$ -	$ 9.20	0.03%
500	70	255,500	500	500	$ 5,174.15	$ 25,961.95	$ 31,136.10	$ 5,183.35	$ 25,961.95	$ 31,145.30	$ 9.20	$ -	$ 9.20	0.03%
500	80	292,000	500	500	$ 5,174.15	$ 29,379.38	$ 34,553.53	$ 5,183.35	$ 29,379.38	$ 34,562.73	$ 9.20	$ -	$ 9.20	0.03%
750	30	164,250	750	750	$ 7,389.15	$ 18,438.40	$ 25,827.55	$ 7,398.35	$ 18,438.40	$ 25,836.75	$ 9.20	$ -	$ 9.20	0.04%
750	40	219,000	750	750	$ 7,389.15	$ 23,564.53	$ 30,953.68	$ 7,398.35	$ 23,564.53	$ 30,962.88	$ 9.20	$ -	$ 9.20	0.03%
750	50	273,750	750	750	$ 7,389.15	$ 28,690.67	$ 36,079.82	$ 7,398.35	$ 28,690.67	$ 36,089.02	$ 9.20	$ -	$ 9.20	0.03%
750	60	328,500	750	750	$ 7,389.15	$ 33,816.80	$ 41,205.95	$ 7,398.35	$ 33,816.80	$ 41,215.15	$ 9.20	$ -	$ 9.20	0.02%
750	70	383,250	750	750	$ 7,389.15	$ 38,942.93	$ 46,332.08	$ 7,398.35	$ 38,942.93	$ 46,341.28	$ 9.20	$ -	$ 9.20	0.02%
750	80	438,000	750	750	$ 7,389.15	$ 44,069.06	$ 51,458.21	$ 7,398.35	$ 44,069.06	$ 51,467.41	$ 9.20	$ -	$ 9.20	0.02%
750	90	492,750	750	750	$ 7,389.15	$ 49,195.20	$ 56,584.35	$ 7,398.35	$ 49,195.20	$ 56,593.55	$ 9.20	$ -	$ 9.20	0.02%
1000	30	219,000	1,000	1,000	$ 9,604.15	$ 24,584.53	$ 34,188.68	$ 9,613.35	$ 24,584.53	$ 34,197.88	$ 9.20	$ -	$ 9.20	0.03%
1000	40	292,000	1,000	1,000	$ 9,604.15	$ 31,419.38	$ 41,023.53	$ 9,613.35	$ 31,419.38	$ 41,032.73	$ 9.20	$ -	$ 9.20	0.02%
1000	50	365,000	1,000	1,000	$ 9,604.15	$ 38,254.22	$ 47,858.37	$ 9,613.35	$ 38,254.22	$ 47,867.57	$ 9.20	$ -	$ 9.20	0.02%
1000	60	438,000	1,000	1,000	$ 9,604.15	$ 45,089.06	$ 54,693.21	$ 9,613.35	$ 45,089.06	$ 54,702.41	$ 9.20	$ -	$ 9.20	0.02%
1000	70	511,000	1,000	1,000	$ 9,604.15	$ 51,923.91	$ 61,528.06	$ 9,613.35	$ 51,923.91	$ 61,537.26	$ 9.20	$ -	$ 9.20	0.01%
1000	80	584,000	1,000	1,000	$ 9,604.15	$ 58,758.75	$ 68,362.90	$ 9,613.35	$ 58,758.75	$ 68,372.10	$ 9.20	$ -	$ 9.20	0.01%
1000	90	657,000	1,000	1,000	$ 9,604.15	$ 65,593.60	$ 75,197.75	$ 9,613.35	$ 65,593.60	$ 75,206.95	$ 9.20	$ -	$ 9.20	0.01%
2000	30	438,000	2,000	2,000	$ 18,464.15	$ 49,169.06	$ 67,633.21	$ 18,473.35	$ 49,169.06	$ 67,642.41	$ 9.20	$ -	$ 9.20	0.01%
2000	40	584,000	2,000	2,000	$ 18,464.15	$ 62,838.75	$ 81,302.90	$ 18,473.35	$ 62,838.75	$ 81,312.10	$ 9.20	$ -	$ 9.20	0.01%
2000	50	730,000	2,000	2,000	$ 18,464.15	$ 76,508.44	$ 94,972.59	$ 18,473.35	$ 76,508.44	$ 94,981.79	$ 9.20	$ -	$ 9.20	0.01%
2000	60	876,000	2,000	2,000	$ 18,464.15	$ 90,178.13	$ 108,642.28	$ 18,473.35	$ 90,178.13	$ 108,651.48	$ 9.20	$ -	$ 9.20	0.01%
2000	70	1,022,000	2,000	2,000	$ 18,464.15	$ 103,847.82	$ 122,311.97	$ 18,473.35	$ 103,847.82	$ 122,321.17	$ 9.20	$ -	$ 9.20	0.01%
2000	80	1,168,000	2,000	2,000	$ 18,464.15	$ 117,517.50	$ 135,981.65	$ 18,473.35	$ 117,517.50	$ 135,990.85	$ 9.20	$ -	$ 9.20	0.01%
2000	90	1,314,000	2,000	2,000	$ 18,464.15	$ 131,187.19	$ 149,651.34	$ 18,473.35	$ 131,187.19	$ 149,660.54	$ 9.20	$ -	$ 9.20	0.01%

ATLANTIC CITY ELECTRIC COMPANY
ANNUAL GENERAL SERVICE PRIMARY ("AGS Primary")
Annual Average

Present Rates
vs.
Proposed Rates

Demand (kW)	Load Factor (%)	Energy (kWh)	Metered kW	Billed kW	Present Distribution ($)	Present BGS and Other Charges ($)	Present Total ($)	New Distribution ($)	New BGS and Other Charges ($)	New Total ($)	Difference Distribution ($)	Difference BGS and Other Charges ($)	Total Difference ($)	Total Difference (%)
25	20	3,650	25.00	22	$ 965.65	$ 438.24	$ 1,403.89	$ 974.85	$ 438.24	$ 1,413.09	$ 9.20	$ -	$ 9.20	0.66%
25	30	5,475	25.00	22	$ 965.65	$ 606.36	$ 1,572.01	$ 974.85	$ 606.36	$ 1,581.21	$ 9.20	$ -	$ 9.20	0.59%
25	40	7,300	25.00	22	$ 965.65	$ 774.49	$ 1,740.14	$ 974.85	$ 774.49	$ 1,749.34	$ 9.20	$ -	$ 9.20	0.53%
25	50	9,125	25.00	22	$ 965.65	$ 942.61	$ 1,908.26	$ 974.85	$ 942.61	$ 1,917.46	$ 9.20	$ -	$ 9.20	0.48%
25	60	10,950	25.00	22	$ 965.65	$ 1,110.73	$ 2,076.38	$ 974.85	$ 1,110.73	$ 2,085.58	$ 9.20	$ -	$ 9.20	0.44%
25	70	12,775	25.00	22	$ 965.65	$ 1,278.85	$ 2,244.50	$ 974.85	$ 1,278.85	$ 2,253.70	$ 9.20	$ -	$ 9.20	0.41%
25	80	14,600	25.00	22	$ 965.65	$ 1,446.97	$ 2,412.62	$ 974.85	$ 1,446.97	$ 2,421.82	$ 9.20	$ -	$ 9.20	0.38%
50	20	7,300	50.00	47	$ 1,187.15	$ 876.49	$ 2,063.64	$ 1,196.35	$ 876.49	$ 2,072.84	$ 9.20	$ -	$ 9.20	0.45%
50	30	10,950	50.00	47	$ 1,187.15	$ 1,212.73	$ 2,399.88	$ 1,196.35	$ 1,212.73	$ 2,409.08	$ 9.20	$ -	$ 9.20	0.38%
50	40	14,600	50.00	47	$ 1,187.15	$ 1,548.97	$ 2,736.12	$ 1,196.35	$ 1,548.97	$ 2,745.32	$ 9.20	$ -	$ 9.20	0.34%
50	50	18,250	50.00	47	$ 1,187.15	$ 1,885.21	$ 3,072.36	$ 1,196.35	$ 1,885.21	$ 3,081.56	$ 9.20	$ -	$ 9.20	0.30%
50	60	21,900	50.00	47	$ 1,187.15	$ 2,221.46	$ 3,408.61	$ 1,196.35	$ 2,221.46	$ 3,417.81	$ 9.20	$ -	$ 9.20	0.27%
50	70	25,550	50.00	47	$ 1,187.15	$ 2,557.70	$ 3,744.85	$ 1,196.35	$ 2,557.70	$ 3,754.05	$ 9.20	$ -	$ 9.20	0.25%
50	80	29,200	50.00	47	$ 1,187.15	$ 2,893.94	$ 4,081.09	$ 1,196.35	$ 2,893.94	$ 4,090.29	$ 9.20	$ -	$ 9.20	0.23%
100	20	14,600	100.00	97	$ 1,630.15	$ 1,752.97	$ 3,383.12	$ 1,639.35	$ 1,752.97	$ 3,392.32	$ 9.20	$ -	$ 9.20	0.27%
100	30	21,900	100.00	97	$ 1,630.15	$ 2,425.46	$ 4,055.61	$ 1,639.35	$ 2,425.46	$ 4,064.81	$ 9.20	$ -	$ 9.20	0.23%
100	40	29,200	100.00	97	$ 1,630.15	$ 3,097.94	$ 4,728.09	$ 1,639.35	$ 3,097.94	$ 4,737.29	$ 9.20	$ -	$ 9.20	0.19%
100	50	36,500	100.00	97	$ 1,630.15	$ 3,770.43	$ 5,400.58	$ 1,639.35	$ 3,770.43	$ 5,409.78	$ 9.20	$ -	$ 9.20	0.17%
100	60	43,800	100.00	97	$ 1,630.15	$ 4,442.91	$ 6,073.06	$ 1,639.35	$ 4,442.91	$ 6,082.26	$ 9.20	$ -	$ 9.20	0.15%
100	70	51,100	100.00	97	$ 1,630.15	$ 5,115.40	$ 6,745.55	$ 1,639.35	$ 5,115.40	$ 6,754.75	$ 9.20	$ -	$ 9.20	0.14%
100	80	58,400	100.00	97	$ 1,630.15	$ 5,787.89	$ 7,418.04	$ 1,639.35	$ 5,787.89	$ 7,427.24	$ 9.20	$ -	$ 9.20	0.12%
300	20	43,800	300.00	297	$ 3,402.15	$ 5,258.91	$ 8,661.06	$ 3,411.35	$ 5,258.91	$ 8,670.26	$ 9.20	$ -	$ 9.20	0.11%
300	30	65,700	300.00	297	$ 3,402.15	$ 7,276.37	$ 10,678.52	$ 3,411.35	$ 7,276.37	$ 10,687.72	$ 9.20	$ -	$ 9.20	0.09%
300	40	87,600	300.00	297	$ 3,402.15	$ 9,293.83	$ 12,695.98	$ 3,411.35	$ 9,293.83	$ 12,705.18	$ 9.20	$ -	$ 9.20	0.07%
300	50	109,500	300.00	297	$ 3,402.15	$ 11,311.29	$ 14,713.44	$ 3,411.35	$ 11,311.29	$ 14,722.64	$ 9.20	$ -	$ 9.20	0.06%
300	60	131,400	300.00	297	$ 3,402.15	$ 13,328.74	$ 16,730.89	$ 3,411.35	$ 13,328.74	$ 16,740.09	$ 9.20	$ -	$ 9.20	0.05%
300	70	153,300	300.00	297	$ 3,402.15	$ 15,346.20	$ 18,748.35	$ 3,411.35	$ 15,346.20	$ 18,757.55	$ 9.20	$ -	$ 9.20	0.05%
300	80	175,200	300.00	297	$ 3,402.15	$ 17,363.66	$ 20,765.81	$ 3,411.35	$ 17,363.66	$ 20,775.01	$ 9.20	$ -	$ 9.20	0.04%
500	20	73,000	500.00	497	$ 5,174.15	$ 8,764.86	$ 13,939.01	$ 5,183.35	$ 8,764.86	$ 13,948.21	$ 9.20	$ -	$ 9.20	0.07%
500	30	109,500	500.00	497	$ 5,174.15	$ 12,127.29	$ 17,301.44	$ 5,183.35	$ 12,127.29	$ 17,310.64	$ 9.20	$ -	$ 9.20	0.05%
500	40	146,000	500.00	497	$ 5,174.15	$ 15,489.71	$ 20,663.86	$ 5,183.35	$ 15,489.71	$ 20,673.06	$ 9.20	$ -	$ 9.20	0.04%
500	50	182,500	500.00	497	$ 5,174.15	$ 18,852.14	$ 24,026.29	$ 5,183.35	$ 18,852.14	$ 24,035.49	$ 9.20	$ -	$ 9.20	0.04%
500	60	219,000	500.00	497	$ 5,174.15	$ 22,214.57	$ 27,388.72	$ 5,183.35	$ 22,214.57	$ 27,397.92	$ 9.20	$ -	$ 9.20	0.03%
500	70	255,500	500.00	497	$ 5,174.15	$ 25,577.00	$ 30,751.15	$ 5,183.35	$ 25,577.00	$ 30,760.35	$ 9.20	$ -	$ 9.20	0.03%
500	80	292,000	500.00	497	$ 5,174.15	$ 28,939.43	$ 34,113.58	$ 5,183.35	$ 28,939.43	$ 34,122.78	$ 9.20	$ -	$ 9.20	0.03%
750	30	164,250	750.00	747	$ 7,389.15	$ 18,190.93	$ 25,580.08	$ 7,398.35	$ 18,190.93	$ 25,589.28	$ 9.20	$ -	$ 9.20	0.04%
750	40	219,000	750.00	747	$ 7,389.15	$ 23,234.57	$ 30,623.72	$ 7,398.35	$ 23,234.57	$ 30,632.92	$ 9.20	$ -	$ 9.20	0.03%
750	50	273,750	750.00	747	$ 7,389.15	$ 28,278.22	$ 35,667.37	$ 7,398.35	$ 28,278.22	$ 35,676.57	$ 9.20	$ -	$ 9.20	0.03%
750	60	328,500	750.00	747	$ 7,389.15	$ 33,321.86	$ 40,711.01	$ 7,398.35	$ 33,321.86	$ 40,720.21	$ 9.20	$ -	$ 9.20	0.02%
750	70	383,250	750.00	747	$ 7,389.15	$ 38,365.50	$ 45,754.65	$ 7,398.35	$ 38,365.50	$ 45,763.85	$ 9.20	$ -	$ 9.20	0.02%
750	80	438,000	750.00	747	$ 7,389.15	$ 43,409.14	$ 50,798.29	$ 7,398.35	$ 43,409.14	$ 50,807.49	$ 9.20	$ -	$ 9.20	0.02%
750	90	492,750	750.00	747	$ 7,389.15	$ 48,452.79	$ 55,841.94	$ 7,398.35	$ 48,452.79	$ 55,851.14	$ 9.20	$ -	$ 9.20	0.02%
1,000	30	219,000	1,000.00	997	$ 9,604.15	$ 24,254.57	$ 33,858.72	$ 9,613.35	$ 24,254.57	$ 33,867.92	$ 9.20	$ -	$ 9.20	0.03%
1,000	40	292,000	1,000.00	997	$ 9,604.15	$ 30,979.43	$ 40,583.58	$ 9,613.35	$ 30,979.43	$ 40,592.78	$ 9.20	$ -	$ 9.20	0.02%
1,000	50	365,000	1,000.00	997	$ 9,604.15	$ 37,704.29	$ 47,308.44	$ 9,613.35	$ 37,704.29	$ 47,317.64	$ 9.20	$ -	$ 9.20	0.02%
1,000	60	438,000	1,000.00	997	$ 9,604.15	$ 44,429.14	$ 54,033.29	$ 9,613.35	$ 44,429.14	$ 54,042.49	$ 9.20	$ -	$ 9.20	0.02%
1,000	70	511,000	1,000.00	997	$ 9,604.15	$ 51,154.00	$ 60,758.15	$ 9,613.35	$ 51,154.00	$ 60,767.35	$ 9.20	$ -	$ 9.20	0.02%
1,000	80	584,000	1,000.00	997	$ 9,604.15	$ 57,878.86	$ 67,483.01	$ 9,613.35	$ 57,878.86	$ 67,492.21	$ 9.20	$ -	$ 9.20	0.01%
1,000	90	657,000	1,000.00	997	$ 9,604.15	$ 64,603.72	$ 74,207.87	$ 9,613.35	$ 64,603.72	$ 74,217.07	$ 9.20	$ -	$ 9.20	0.01%
2,000	30	438,000	2,000.00	1997	$ 18,464.15	$ 48,509.14	$ 66,973.29	$ 18,473.35	$ 48,509.14	$ 66,982.49	$ 9.20	$ -	$ 9.20	0.01%
2,000	40	584,000	2,000.00	1997	$ 18,464.15	$ 61,958.86	$ 80,423.01	$ 18,473.35	$ 61,958.86	$ 80,432.21	$ 9.20	$ -	$ 9.20	0.01%
2,000	50	730,000	2,000.00	1997	$ 18,464.15	$ 75,408.57	$ 93,872.72	$ 18,473.35	$ 75,408.57	$ 93,881.92	$ 9.20	$ -	$ 9.20	0.01%
2,000	60	876,000	2,000.00	1997	$ 18,464.15	$ 88,858.29	$ 107,322.44	$ 18,473.35	$ 88,858.29	$ 107,331.64	$ 9.20	$ -	$ 9.20	0.01%
2,000	70	1,022,000	2,000.00	1997	$ 18,464.15	$ 102,308.00	$ 120,772.15	$ 18,473.35	$ 102,308.00	$ 120,781.35	$ 9.20	$ -	$ 9.20	0.01%
2,000	80	1,168,000	2,000.00	1997	$ 18,464.15	$ 115,757.72	$ 134,221.87	$ 18,473.35	$ 115,757.72	$ 134,231.07	$ 9.20	$ -	$ 9.20	0.01%
2,000	90	1,314,000	2,000.00	1997	$ 18,464.15	$ 129,207.43	$ 147,671.58	$ 18,473.35	$ 129,207.43	$ 147,680.78	$ 9.20	$ -	$ 9.20	0.01%

Schedule (KMMc)-4

ATLANTIC CITY ELECTRIC COMPANY
BPU NJ No. 11 Electric Service - Section IV Ninety-Sixth Revised Sheet Replaces Ninety-Fifth Revised Sheet No. x

RIDER IIP-SEN
Infrastructure Investment Program – Smart Energy Network (SEN)

APPLICABILITY:

This rider is applicable to Rate Schedules RS, MGS Secondary, MGS Primary, AGS Secondary, AGS Primary, and TGS.

This charge provides for the full and timely recovery of revenue requirements associated with the Infrastructure Improvement Program Smart Energy Network relating to the installation of the SEN projects which includes but is not limited to advanced metering infrastructure (AMI) meters, communications network, and associated hardware and software, subject to the Infrastructure Investment and Recovery rules, codified at N.J.A.C. 14:3-2A.1 et seq., as approved by the NJ Board of Public Utilities.

This charge recovers actual investments for the five roll-in periods approved for the SEN.

The following table provides the rates for the IIP, including Sales and Use Tax. For billing presentation purposes these rates are to be added to the base distribution rates for each Rate Schedule. This applies to the distribution charges for the Rate Schedules on the following Tariff Sheets: 5, 11, 14, 17, 19, 29, 29a, 31, 36, 37,37a, 40, and 44. These rates are subject to all other applicable charges and taxes in accordance with the underlying rate schedule's distribution rates.

RATE SCHEDULE	IIP-SEN Rate	Billing Units
RS	$ x.xx	Per Customer
MGS Secondary	$ x.xx	Per Customer
MGS Primary	$ x.xx	Per Customer
AGS Secondary	$ x.xx	Per Customer
AGS Primary	$ x.xx	Per Customer
TGS Sub Transmission	$ x.xx	Per Customer
TGS Transmission	$ x.xx	Per Customer

Date of Issue: xxxxxxxx **Effective Date: xxxxxx**

Issued by: David M. Velazquez, President and Chief Executive Officer – Atlantic City Electric Company

Direct Testimony of Andrew Voshell

ATLANTIC CITY ELECTRIC COMPANY

BEFORE THE NEW JERSEY
BOARD OF PUBLIC UTILITIES
DIRECT TESTIMONY OF ANDREW P. VOSHELL
BPU DOCKET NO. _____

Q1. Please state your name and position.

A1. My name is Andrew Voshell. I serve as Senior Manager of Accounting, Pepco Holdings LLC ("PHI"). I am testifying on behalf of Atlantic City Electric Company ("ACE" or the "Company").

Q2. What are your responsibilities in your role as Senior Manager of Accounting, PCS Controller?

A2. I am responsible for specific accounting-related projects as well as PHI accounting close, reporting, and control activities for PHI's utility operations, which includes ACE.

Q3. Please state your educational background and professional experience.

A3. I received a Bachelor's Degree in Accountancy from Elizabethtown College and a Master of Business Administration from Villanova University. I am a Certified Public Accountant. Upon graduation, I joined PricewaterhouseCoopers ("PwC") as an auditor in Philadelphia. After 3 years at PwC, I began employment with Exelon Corporation in 2011. Since then, I have held various financial accounting and managerial positions at Exelon Generation, Constellation, and PECO. In 2020, I assumed my current position at PHI.

Q4. What is the purpose of your Direct Testimony?

A4. The purpose of my testimony is to support the Company's accounting and proposed regulatory treatment for the incurred costs related to the implementation of the Smart Energy Network ("SEN"). My testimony will discuss:

1. how the Company accounts for capital assets and their related retirements;

2. how the proposed deployment of Advanced Metering Infrastructure ("AMI") requires special accounting and regulatory treatment, and the Company's request that this treatment be specifically approved;
3. the operations and maintenance ("O&M") costs related to the AMI program and the Company's request to defer these costs; and
4. the depreciation lives proposed by the Company for the AMI program.

The Company's Accounting for Assets and Retirements

Q5. Please explain the accounting for a regulated utility's Capital Assets.

A5. As a regulated public utility, the Company accounts for property, plant, and equipment ("PPE") in compliance with generally accepted accounting principles ("GAAP") and the Federal Energy Regulatory Commission ("FERC"). When PPE is installed, the cost of materials and labor to install the asset increases the gross plant balance on the utility's balance sheet.

To recognize the periodic cost of this asset over time, the asset is depreciated over an average service life as approved by the utility's regulator and periodically updated through service life (or depreciation) studies. The periodic cost charged or debited to the income statement is recorded as "depreciation expense" with an offsetting credit to the accumulated depreciation reserve. The accumulated depreciation reserve is reported as a contra asset (or offset) to the gross plant balance on the Company's balance sheet.

Q6. Please describe the accounting for related retirements associated with a regulated utility's Capital Assets.

A6. When PPE are replaced and retired from service, the accounting entry removes the original cost from both the gross plant and the accumulated depreciation balances. The

accumulated depreciation reserve is evaluated periodically as part of a service life study, which serves to reset the useful service life of the asset group.

Proposed Deployment of AMI Requires Special Accounting and Regulatory Treatment

Q7. Please explain the accounting impact for atypical mass retirements such as the Company's proposed replacement of its legacy meters associated with the SEN over the next 5 years.

A7. As required under GAAP and FERC, utilities must use a method of depreciation that allocates, in a systematic and rational manner, the gross plant balance of depreciable property over its estimated service life. The annual depreciation rate for the existing electric meters will need to increase to reflect their shorter estimated remaining service lives, resulting in an increase to the depreciation expense through the remainder of the period in which the assets are fully depreciated.

As of June 30, 2020, the gross plant value of the electric meters to be replaced under this program (*i.e.*, the existing meters) was approximately $59 million, and the accumulated depreciation was $13 million, making the net plant value equal $46 million. This amount represents costs that were prudently incurred associated with installing and removing the PPE (*i.e.*, the existing meters) that are used and useful and not yet recovered by the Company. The Company is proposing to replace these PPE assets on an accelerated basis with assets that can provide more value to customers and superior service.

The Company seeks approval to defer as a regulatory asset the incremental depreciation expense not currently recovered in customer rates.

Q8. Please discuss the Company's proposal to recover the remaining undepreciated book value of the existing meters that will be retired with the deployment of the advanced meters.

A8. In order to recover its prudently incurred existing meter costs as previously discussed, the Company is seeking recovery of the incremental depreciation expense associated with the net plant value as of June 30, 2020 totaling approximately $46 million over 5 years as outlined in Company Witness Kristin M. McEvoy's Direct Testimony. Absent the explicit approval from the New Jersey Board of Public Utilities ("BPU") to recover this regulatory asset, the retirement of the existing electrical meters will result in a significant adverse financial impact to the Company.

Q9. Is the accounting treatment proposed by the Company in accordance with GAAP?

A9. Yes. GAAP and FERC specifically discuss the appropriate accounting treatment for the Company's proposal, *i.e.*, when a regulator takes action designed to protect a utility from the effects of regulatory lag or a gap in the timing of cost recovery. U.S. GAAP Topic 980 of the Financial Accounting Standard Board's ("FASB") Accounting Standards Codification ("ASC") covers the accounting guidance for regulated operations. Costs associated with regulatory lag can be capitalized for accounting purposes, provided the provisions of ASC 980-340-25-1 are met. The guidance states:

> *Rate actions of a regulator can provide reasonable assurance of the existence of an asset. An enterprise shall capitalize all or part of an incurred cost that would otherwise be charged to expense if both of the following criteria are met:*
>
> *(a) It is probable (as defined in Topic 450) that future revenue in an amount at least equal to the capitalized cost will result from inclusion of that cost in allowable costs for rate-making purposes,*

> *(b) Based on available evidence, the future revenue will be provided to permit recovery of the previously incurred cost rather than to provide for expected levels of similar future costs. If the revenue will be provided through an automatic rate adjustment clause, this criterion requires that the regulator's intent clearly be to permit recovery of the previously incurred cost.*
>
> *A cost that does not meet these asset recognition criteria at the date the cost is incurred shall be recognized as a regulatory asset when it does meet those criteria at a later date.*

For the Company to recognize the proposed regulatory asset, it must be probable that such costs will be recovered through customer rates in future periods. To satisfy the prescribed probability standard, the Company requests that the BPU order in this proceeding specific approval of the accounting and recovery mechanism as proposed. Failure to do so will result in a significant adverse financial impact to the Company as previously noted.

O&M Costs Associated with Deployment of AMI

Q10. Please explain the capital costs associated with the deployment of the AMI meters.

A10. During the period the AMI meters are deployed and in subsequent years, the Company will follow its standard accounting practices when deciding which costs incurred qualify as capital or O&M.

Based on a preliminary review of the costs, the majority of the program spending is associated with the procurement and installation of meter and network communication equipment and therefore would qualify as a capital expenditure. As discussed in the Direct Testimony of Company Witness David S. Schatz, the Company plans to spend $159.2 million of capital expenditures during the deployment through 2024.

Q11. Please explain the O&M expense associated with the deployment.

A11. Although the majority of costs related to the program are estimated to be capital in nature, the Company is also expected to incur O&M expenses during the deployment. These incremental O&M costs primarily include customer communications and education activities, employee training, and meter testing. The Company anticipates spending an additional $64.8 million of O&M costs during the deployment through 2024.

Q12. Please describe the Company's request for establishment of a regulatory asset to defer the O&M costs associated with the deployment of the SEN.

A12. Even though the costs described in the question above are O&M costs, they are incremental in nature as outlined in the Direct Testimony of Company Witness McEvoy and are incurred solely due to the SEN deployment. As a result, these costs are integral to and inseparably linked to the project and are part of the total costs of the project. Therefore, the Company requests authority to defer the O&M costs associated with deployment to a regulatory asset, and to recover those costs over 5 years. Under this proposal, the regulatory asset will be recorded as the O&M costs are incurred. The Company seeks approval from the BPU to undertake this accounting treatment that is permissible under GAAP and FERC and receive the full and timely recovery through customer rates in subsequent periods.

Book Depreciation Lives proposed by the Company

Q13. What book depreciable lives is the Company proposing for the program costs?

A13. Please see Figure 1 below for a summary of the depreciation life proposed by the Company:

Figure 1

Asset Type	Book Life
AMI Meters	15 years

The proposed service life of the AMI meters is 15 years. The Company requests approval from the BPU to set the depreciation rate consistent with the proposed service life.

Q14. Does this conclude your Direct Testimony?

A14. Yes, it does.

Direct Testimony of Gregg F. Edeson

Any information claimed to be confidential contained in the Direct Testimony of Company Witness Edeson will be provided upon execution of an Agreement of Non-Disclosure of Information (the "NDA") by the parties to this proceeding. The NDA will follow once a docket number has been assigned.

ATLANTIC CITY ELECTRIC COMPANY

BEFORE THE NEW JERSEY
BOARD OF PUBLIC UTILITIES
DIRECT TESTIMONY OF GREGG F. EDESON
BPU DOCKET NO. _____

I. Introduction and Purpose

Q1 Please state your name, job title, business address and party for whom you are filing testimony.

A1. My name is Gregg Edeson, I am a Partner with PA Consulting Group ("PA"). My business address is 501 West 5th Street, Suite 910, Los Angeles, CA 90071. I am testifying on behalf of Atlantic City Electric Company ("ACE" or "the Company").

Q2. What are your responsibilities in your role as Partner at PA Consulting Group?

A2. I have been with PA since 1997. PA has over 2,500 consultants globally. We are headquartered in the United Kingdom. Our United States headquarters is in New York City. I am in the Energy and Utilities practice and am responsible for a number of programs and utility client offerings within the practice including but not limited to; ReliabilityOne™, iPredict™, our Asset Management offering, Smart Grid inclusive of Advanced Metering Infrastructure ("AMI") initiatives and benchmarking/best practices across the Customer Service, Transmission, and Distribution utility value chains.

Q3. Please state your educational background and professional experience.

A3. I have worked in the electric utility sector for over 50 years. I previously worked with Southern California Edison (SCE) prior to the start of my consulting career which began in 1997. I have an undergraduate degree in Business from the University of Redlands in California and an MBA from Pepperdine University also in

California. I worked across all areas of the Distribution value chain while at SCE including lineman, planning engineer and executive roles over electric operations, planning, construction, customer service, regulatory and labor. Since joining PA Consulting, I have worked with clients in all areas of the utility value chain and disciplines including but not limited to; utility operations, planning, reliability and smart grid/AMI implementation.

Q4. What is the purpose of your testimony?

A4. The purpose of my testimony is to provide background into the benefit cost analyses ("BCA") process including the development of costs and benefits for the proposed Smart Energy Network ("SEN") at ACE.

Q5. Does PA Consulting Group have experience conducting BCAs of AMI investments at other utilities?

A5. Yes. PA has worked with other clients to successfully identify the costs and benefits of AMI including two other Pepco Holdings LLC ("PHI") operating companies, Potomac Electric Power Company ("Pepco") in Maryland and the District of Columbia, and Delmarva Power & Light Company ("Delmarva") in Maryland.

Q6. How is your testimony organized?

A6. My testimony is organized as follows. I will:

(a) Describe the BCA Approach

(b) Describe the major BCA assumptions including:

a. Meter Useful Life

b. BCA Time Horizon

c. Inflation

d. Discount Rate

e. Stranded Assets

f. Opt-Out

g. Expected Cost Reduction %

(c) Describe role of Use Cases in BCA approach

(d) Describe the method used for calculating each benefit estimate

(e) Describe the method used for calculating each cost estimate

(f) Describe the results of the BCA

(g) Describe the main differences with the BCA submitted by ACE as part of its 2019 BCA report.

BCA Approach & Assumptions

Q7. Please describe the approach used to conduct a BCA to evaluate deploying the SEN at ACE.

A7. In constructing the BCA, ACE has sought to identify all incremental costs and benefits from deploying the SEN in its service territory for the expected 15-year useful life of the meter hardware. On the cost side, the BCA has identified both capital and Operation and Maintenance ("O&M") costs involved in the deployment of the SEN. It also captures both ongoing capital and O&M costs involved in supporting the O&M of the SEN over the timeframe of the BCA. In all cases, the BCA identifies only the incremental costs. The BCA costs include those where ACE is seeking recovery through this filing, as well as other costs that are expected to be recovered through the normal rate making process.

Q8. Describe the major assumptions used in constructing the BCA.

A8. Several overall quantitative based assumptions were made when constructing of the BCA, including discount rate, inflation, time horizon, etc. Values for each of the assumptions are provided below with explanations on why they are appropriate.

(a) *Meter Useful Life:* For the purposes of the BCA, an assumed life of 15 years was selected. This time period is consistent with that selected in other PHI jurisdictions specifically, Maryland, Delaware and the District of Columbia. It is also consistent with the recommendations of the Navigant Gold Standards Report, although that report also left the door open for longer duration timeframes, noting that a useful life of 20 years has been proposed and accepted in New Jersey and other jurisdictions.[1]

(b) *BCA Time Horizon:* For consistency with the assumed useful life of the physical meter, the BCA is calculated over a 15-year time horizon, starting the first year that meters are expected to be deployed (2022) and extending to 2036.

(c) Inflation: In the BCA model, nominal cost and benefit values are obtained by applying an assumed annual inflation rate of 2.5% to 2020 values. This rate is consistent with Exelon Utilities' corporate indices.

(d) Discount Rate: In the BCA model, an assumed discount rate of 7.08% is applied to convert future costs and benefits to Present Value (PV) for purposes of calculating a PV BCA ratio. This assumed discount rate is

[1] https://www.bpu.state.nj.us/bpu/pdf/boardorders/2019/20191220/12-20-19-2H.pdf

consistent with the allowed rate of return from the most recent ACE rate case.

(e) Stranded Assets: The remaining book value of the legacy meters have not been included in the BCA analysis. The BCA looks at the incremental costs and benefits associated with deploying the SEN at this present time. The degree to which prior investments in analogue meters have been depreciated should not factor into this comparison.

(f) Opt-Out: The BCA analysis assumes that all customers will receive an AMI meter. The decision not to offer an opt-out to customers is discussed in the Direct Testimony of Company Witness David Schatz.

(g) Expected Cost Reduction %: Where operating costs reductions are projected due to the SEN, the analysis includes an expected reduction percentage that reflects either the experience at other PHI operating companies that have implemented AMI or are the result of benefit specific analysis by ACE employees. With the exception of avoided meter testing during deployment and avoided meter exchanges, expected reduction is capped at 95% to reflect the likelihood that all costs cannot be eliminated.

Q9. Describe the role of Use Cases in the BCA approach.

A9. To identify and define the benefits of the SEN, ACE applied a structured approach based on industry proven business "Use Cases". A Use Case in this context is a reasonably discrete business function or process that has clearly defined objectives, requirements, and outcomes. ACE identified a total of 56 Use Cases associated with

deployment of the SEN. Of these the Company plans to initially deploy the 23 Use Cases identified in Group 1 with expected deployment of Group 2 and 3 Use Cases at a future date. Group 1 Use Cases are those that can be implemented and enabled with no (or minor) upgrades and capabilities beyond AMI. Implementation of Group 1 Use Cases is expected to deliver both operational and customer benefits. Where this value is quantifiable, we have done so with the results included in the BCA. In some instances, a Use Case will have more than one quantifiable benefit. All Use Cases are expected to deliver either operational or customer benefits, however, 12 Use Cases in Group 1, the expected benefits have not been quantified, either due to a lack of data or an acceptable methodology. The list below shows which of the 23 Use Cases has a quantified benefit included in the BCA (identified with an Asterisk ("*")). A list of Group 1 Use Cases and corresponding operational and customer benefits, along with a description of all 56 Use Cases is contained in the Direct Testimony of Company Witness Schatz as Schedule (DSS)-1. Group 1 Use Cases are as follows:

1) Enhanced Customer Engagement & Communications
2) Customer Segmentation & Behavioral Analysis
3) Customer Power Quality
4) Customer Energy Efficiency*
5) Customer Service & Call Center Performance*
6) Customer Distributed Energy Resources ("DER"), Solar Photovoltaic ("SPV") and Electric Vehicles ("EV")
7) Customer Device Safety*
8) SEN & Data Operations*

9) Remote Move in/Move out*
10) Remote Disconnect/Reconnect*
11) Network Connectivity Analysis
12) Outage Detection/Prediction & Analysis*
13) Outage Restoration & Notification (Estimated Time of Restoration)*
14) Voltage Monitoring & Analysis (Power Quality)*
15) Asset Load/Phase Management, Balancing & Power Analysis
16) Load Profiling & Forecasting
17) Distribution Technical Losses
18) Revenue Protection & Assurance (includes meter to cash)*
19) Conservation Voltage Reduction*
20) Innovative Rate Development*
21) EV/SPV/Storage Products & Services
22) Customer Prepaid Power
23) Energy Trading & Market Efficiencies*

Q10. Please explain what benefits are not included in the BCA, the reasons behind these and how this might impact the overall BCA ratio.

A10. Of the 23 Use Cases in Group 1, 12 do not have a quantified benefit, either in terms of operational benefits or customer benefits. This is not because these Use Cases lack real benefits per se, but rather the challenge associated with accurately quantifying this benefit due to either a lack of data or absence of a consensus estimation methodology. For example, while the BCA includes a quantification of the savings associated with reduced restoration time after a major event, no attempt has been made

to quantify the customer value associated with faster restoration due to a lack of industry consensus around the true value to customers of an avoided outage and/or interruption. Similarly, while reduced truck rolls provide environmental benefits in terms of reduced emissions and traffic congestion, no attempt has been made to quantify this benefit by, for example, applying emissions prices to expected reductions given a lack of consensus on whether market prices reflect the true cost of emissions.

Operational Benefits

Q11. Please describe the expected operational benefits contained in the BCA.

A11. The BCA contains 10 quantified operational benefits, totaling $221.1 million dollars in nominal value over the life of the BCA. Values for each operational benefit are provided in Table A below.

Table A

SEN Operational Benefits Estimates

Operational Benefit	Total Values (2022-2036) (000s)
Meter Reading contract savings	$81,272
Avoided Truck Rolls:	
Move-Ins/Move Outs	$50,679
Connects/Reconnects	$6,289
Disconnects	$27,253
Meter Exchanges	$14,668
Meter Re-reads	$14,765
Call Backs	$535
Trouble Calls	$22,746
Avoided Call Center Calls	$2,661
Avoided Regulatory Testing during Deployment	$235
Total	**$221,101**

Q12. Please describe the methodology used to calculate the expected contract savings associated with the Millennium Account Services.

A12. ACE currently pays approximately $4.8 million each year to Millennium Account Services for meter reading services. The ability to remote read AMI meters eliminates the need to contract for this function. The value of this saving is calculated assuming an expected annual benefit of 95% of the current annual payments to Millennium using the formula below.

Annual Benefit ($) = Millennium Meter Reading Costs X Expected Reduction (Benefit) %

Q13. Please describe the methodology used to calculate the expected benefit from avoided truck rolls related to move-ins/move-outs, reconnects/connects, disconnects, meter re-reads, exchanges, periodic testing, call backs and outages.

A13. The BCA includes seven quantified operational benefits associated with reduced truck rolls. In total, approximately 134 thousand truck rolls each year will be avoided with the SEN. These benefits are facilitated by AMI's remote read, connect/disconnect and remote pinging capabilities. This functionality eliminates either in part or in full the need to dispatch ACE personnel (truck rolls) to perform various functions. The approach used to calculate the annual value of these benefits is as follows:

Annual Benefit ($) = Volume of Truck Rolls x Cost of Truck Rolls x Time per Truck Roll x Expected Reduction (Benefit) %

Values for number of truck rolls and time per truck roll were obtained from historical ACE operating data. ACE expects to achieve a reduction in truck rolls for these specific job types once the SEN is deployed. The type of personnel involved in performing particular roles is reflected in the estimates, as a result, avoided costs associated with Call Backs and Outages are higher on a per hour basis.

The SEN implementation is also expected to cause a reduction in meter exchanges to enable customer participation in the solar program. An estimated 5,781 meters per year are exchanged for those capable of capturing flows of power from the customer into the distribution grid. AMI meters have this capability, therefore eliminating the need for these types of exchanges. In addition to the labor savings associated with these meter exchanges, the avoided cost of solar capable meters is also included as a benefit. Table B below shows other assumptions:

Table B

Avoided Truck Roll Benefits Inputs

Type of Job	Avg. Annual Truck Rolls	Cost per hour (2020)	Avg. Duration (hrs.)	Expected Reduction
Move-In/Move-Out	64,142	$69	0.67	95%
Reconnects/Connects	7,960	$69	0.67	95%
Disconnects	34,493	$69	0.67	95%
Meter Re-reads	18,687	$69	0.67	95%
Meter Exchanges*	5,781	$69	0.67	100%
Call Backs	892	$96	0.75	46%
Trouble Calls	25,443	$96	1.5	35%

*Benefit also includes avoided cost of meter hardware: $29/meter

Q14. Please describe the methodology used to quantify the expected financial benefit from reduced call center volume due to implementation of the SEN.

A14. When coupled with customer available self-service options and proactive communication regarding outages, the SEN is expected to reduce outage related call center call volume. The expected annual benefit from this reduction is calculated in the formula below:

Annual Benefit ($) = Volume of Outage Calls x Cost per Call x Expected Reduction (Benefit) %

Call center volume and cost per call values were based on historical data. These expected reductions are in line with those attained by other PHI operating companies through the introduction of AMI.

Q15. Please describe the methodology used to quantify the Avoided In-Service Regulatory Testing of Legacy Meters.

A15. While ACE expects to continue to perform periodic testing of in-service meters post deployment of the SEN, during two deployment years, 2022 and 2023, ACE expects that the regulatory testing requirement will be met as part of the exchange and sample testing of legacy meters. The expected avoided costs are calculated by multiplying the total number of annual meter exchanges by the cost per hour, expected duration and reduction (%). The formula is shown below.

Total Benefit ($) = Annual Required Truck Rolls) x 2 years x Cost of Truck Rolls x Time per Truck Roll x Expected Reduction (Benefit) %

Customer Benefits

Q16. Please describe the expected customer benefits contained in the BCA.

A16. The BCA contains 15 quantified customer benefits, totaling $194.7 million dollars in nominal value over the life of the BCA. Values for each customer benefit are provided in Table C below. Note that the 4 benefits associated with PJM Load Settlement and Time of Use ("TOU") rates are calculated but not included in the BCA total as discussed later in this testimony.

Table C

SEN Customer Benefits Estimates

Customer Benefit	Total Values (2022-2036) (000s)
Conservation Voltage Regulation ("CVR")	
Energy Savings (Residential)	$13,017
Energy Savings (Non-Residential)	$9,993
Capacity Savings (Residential)	$2,884
Capacity Savings (Non-Residential)	$1,701
Energy Management Tools ("EMT")	
Energy Savings (Residential)	$40,110
Energy Savings (Non-Residential)	$6,863
Capacity Savings (Residential)	$4,365
Reduction in Bad Debt Write-Offs	$65,734
Improved Storm Response	$42,580
Identification of Revenue Theft	$5,921
High Bill Alerts – Energy Savings (Residential)	$1,536
PJM Load Settlement	
*Energy Savings**	*$230,266*
*Capacity Savings**	*$14,525*
Time of Use (TOU) Rates	
*Energy Savings**	*$3,828*
*Capacity Savings**	*$3,395*
Total	**$194,703**

*Not included in total.

Q17. Please describe the methodology used to calculate CVR energy savings for residential and non-residential customers.

A17. CVR allows ACE to reduce voltage to a lower level, thereby reducing energy use by all customers where the technology is installed. The SEN will play an important role in enabling CVR by providing end-point voltage data to help analyze, lower and then monitor and maintain appropriate customer voltage levels. The BCA includes benefits for both energy and capacity savings from CVR. The formulas below show how these values were estimated for residential customers. The value of CVR for non-residential customers is calculated using the same formula but with appropriate values substituted.

Annual Energy Benefit ($) = Energy Costs ($/MWh) x Residential CVR Savings x Residential Electric MWh Volume x Substation Coverage

Annual Capacity Benefit ($) = Capacity Costs ($/MW-day) x 365 Days x CVR Residential Capacity Savings (%) x Residential PLC (MW)

Q18. Please describe the methodology used to calculate EMT energy and capacity savings for ACE customers.

A18. SEN enabled EMT are expected to deliver both energy and capacity savings to ACE customers by empowering them with information and tools to better manage their energy use. The formula below was used to calculate this energy benefit for residential customers. The same formula was used to estimate the energy impacts for C&I

customers. Expected energy costs were sourced from PJM, and the estimated energy savings (%) reflect the results of a study of PHI Maryland customers. To ensure only incremental benefits from the SEN are included, the savings from the current NJ Behavioral Program are netted out. The current NJ Behavioral Program provides customers with individualized messaging about their energy usage via print and email reports.

Annual Energy Benefit ($) = Energy Costs ($/MWh) x [{Residential EMT Savings (%) x Residential Electric MWh Sales} – Current NJ Behavioral Program MWh Savings] x Expected Reduction %

Annual residential capacity benefits of the EMT program were estimated using the formula below. Here, capacity costs are sourced from PJM and expected peak savings reflect PHI's experience in Maryland. Again, the savings from the current NJ Behavioral Program are netted out. Due to insufficient information, the potential capacity benefits for C&I customers were not quantified.

Annual Capacity Benefit ($) = Capacity Costs ($/MW-day) x 365 days x [{Residential EMT Peak Savings x Residential load after system losses (MW)} – Current NJ Behavioral Program MW Savings] x Expected Reduction %

Q19. Please describe the methodology used to calculate the expected reduction in bad debt due to deployment of the SEN

A19. The SEN's remote connect and disconnect capability provides the ability to reduce annual bad debt write-offs for ACE through more efficient collections. In estimating the expected benefit in this area, ACE examined the annual write-offs in other PHI operating companies. The current net write offs at ACE were then compared with expected net write-offs once SEN is implemented to determine the expected incremental benefit.

Q20. Please describe the methodology used to calculate the expected benefit from improved storm response due to deployment of the SEN.

A20. The SEN will have the ability to identify nested outages during major storm restoration, resulting in reduced storm outage duration and lower overall costs. It is assumed that a 10% duration reduction can be achieved with an equivalent cost reduction. Costs saved include internal and external mutual aid crews. Average annual storm frequency and daily cost are based on actual ACE experience for the years 2011-2018. The formula for calculating this benefit is shown below.

Annual Benefit ($) = Average Major Storm Cost per Day x Reduction in storm duration x Average Duration of Storms (days) x Average annual frequency of storms

Q21. Please describe the methodology used to calculate the expected benefit from enhanced Revenue Theft identification.

A21. The SEN will provide enhanced identification of Revenue Theft. Being able to remote analyze meter load and event data will improve the theft identified and billed. For example, in the period 2018-2019, for Delmarva, the average percentage of theft

cases attributable to AMI alarms was approximately 55%. The formula for calculating this benefit for ACE is shown below:

Annual Benefit ($) = Average Annual Identified Revenue Theft ($) x Expected Improvement (%)

Q22. Please describe the methodology used to calculate the expected benefit from High Bill Alerts for Residential Customers

A22. The SEN will enable residential customers to receive High Bill Alerts, a communication that their bill is projected to be higher than usual part way through their billing cycle. Customers can then be advised and directed towards energy saving behaviors and options and act rather than waiting until their bill arrives. Approximately, 100,000 ACE customers are expected to sign-up for High Bill Alerts, which will deliver energy savings of approximately 0.25% or 1,550MWh per year. The annual financial benefit is calculated using PJM energy prices and calculated using the formula below.

Annual Benefit ($) = Annual Savings (MWh) x Energy Costs ($/MWh) x Expected Reduction (%)

Q23. Please explain when each of the benefits is expected to accrue to customers and/or result in tangible operating cost reductions for ACE. How is this reflected in the BCA?

A23. The timing of when each of the expected operational and customer benefits will be realized is factored into the construction of the BCA. In some instances, these benefits begin to appear during deployment, while others will not begin to be realized until both physical deployment of the SEN and accompanying process or technology changes have been implemented. Almost all benefits are phased in over time. In some instances, a lag occurs between Use Case deployment and benefit realization, for example, due to PJM market rules. Tables D and E below shows the timing associated with realization of each of the expected operational and customer benefits.

Table D

SEN Operational Benefits Timing

Benefit	**Benefit Timing**
Meter Reading savings	10% in 2022, 50% in 2023, 100% starting 2024
Avoided truck rolls related to call backs	
Avoided truck rolls for move ins / move outs	
Avoided truck rolls for reconnects / connects	
Avoided truck rolls for disconnects	
Avoided truck rolls for trouble outages	
Avoided truck rolls for meter re-reads	
Avoided call center calls related to outages	50% in 2025, 100% starting 2026
Avoided legacy meter exchanges	100% starting 2022
Avoided In-Service Regulatory Testing of Legacy Meters	100% during deployment years 2022 and 2023

Table E

SEN Customer Benefits Timing

Customer Benefit	Benefit Timing
CVR-Energy Savings (Residential Customers)	40% in 2024, 60% in 2025, 100% starting 2026
CVR-Energy Savings (Non-residential)	40% in 2024, 60% in 2025, 100% starting 2026
CVR-Capacity Savings (Residential)	40% in 2027, 60% in 2028, 100% starting 2029
CVR-Capacity Savings (Non-Residential)	40% in 2027, 60% in 2028, 100% starting 2029
EMT-Energy Savings	33% in 2024, 67% in 2025, 100% starting 2026
EMT-Capacity Savings	6% in 2027, additional 6% every year starting 2028 (17-year lag in addition to the Base Residual Auction (BRA) lag))
Reduction in Net Write-Offs	25% in 2025, 50% in 2026, 75% in 2027, 100% starting 2028
Better major storm response	10% in 2022, 50% in 2023, 100% starting 2024
Identification of Revenue Theft attributed to AMI	10% in 2022, 50% in 2023, 100% starting 2024
Improved PJM load settlement process Energy Savings	100% starting 2024
Improved PJM load settlement process Capacity Savings	100% starting 2025
High Bill Alerts - Energy Savings (Residential Customers)	100% starting 2024
EMT – C&I Customers - Energy Savings	33% in 2024, 67% in 2025, 100% starting 2026
Voluntary Residential TOU Rates - Energy Savings	33% of benefit realized in 2024, rising to 67% in 2025 and 100% starting 2026
Voluntary Residential TOU Rates - Peak / Capacity Savings	6% in 2027, additional 6% every year starting 2028 (17-year lag in addition to the Base Residual Auction (BRA) lag))

Q24. Please explain the benefits specifically associated with the PJM Load Settlement Process that are not included in the BCA.

A24. Once theSEN is implemented, energy market settlements can be performed using actual customer-level hourly metered data rather than using class load profile

data. This results in improved wholesale market efficiency and reduced uncertainty for energy suppliers. Using the formulas below, energy savings and capacity savings of $230.3 million and $14.5 million respectively were calculated for the life of the BCA. These values were not included in the BCA however, due to the uncertainty associated with the extent to which energy suppliers will pass these savings on to ACE customers in the form of lower prices.

Annual Energy Benefit ($) = Total Electric MWH Volume (MWh) x Energy Costs ($/MWh) x Improvement Factor % x Expected Reduction %

Annual Capacity Benefit ($) = Total Electric PLC (MW) x Capacity Costs ($/MW-day) x 365 days x Expected Reduction %

Q25. Please explain the benefits specifically associated with the SEN enabled TOU rates for residential customers that are not included in the BCA.

A25. The SEN will allow ACE to offer innovate rates programs including optional TOU programs to residential customers. Participation in the SEN enabled TOU programs is expected to deliver both energy and capacity savings to residential customers. The estimated values of each were included in the BCA and calculated per the formulas below. Using these formulas, and assuming a 10% participation rate, total energy benefits of $3.8 million and capacity benefits of $3.4 million are expected over the life of the BCA. Due to uncertainties over the actual rates of participation, program design and costs required to achieve these benefits, ACE has chosen not to include these values in the BCA total.

Annual Energy Benefit ($) = Energy Costs ($/MWh) x Residential TOU Savings (%) x Residential Electric MWH Sales x Program participation (%)

Annual Capacity Benefit ($) = Annual Benefit = Capacity Costs ($/MW-day) x 365 days x TOU Peak Savings (%) x Residential load after system losses (MW)

Costs

Q26. Please describe the expected costs of implementing the SEN included in the BCA.

A26. The BCA seeks to capture all upfront and ongoing costs associated with deployment and maintenance of the SEN for the life of the BCA. It includes both capital and O&M costs. Table F provides estimated value for each cost category. The major costs categories and the methods used to estimate their value are below.

Table F

SEN Cost Estimates over life of BCA

Cost Item	Total Values (2021-2036) (000s)
Upfront	
• Meter Costs & Installation	
• Meter Costs for existing customers	$59,287
• Meter Installation Costs	$18,590
• Meter Pan / Jaw Replacement	$7,257
• Deployment Meter Testing	$799
• IT Costs	$32,877
• Communications Network	$10,406
• Customer Outreach/Education	$5,785
• Use Case Deployment Costs	$3,202
• Project Management	$14,955
• Billing Transition Staffing	$2,037
Ongoing Costs	
• Incremental Meter Costs for new customers	$3,049
• IT Costs	*$39,245*
• Communications Network	*$3,330*
• Additional Staffing	*$19,140*
Total	**$219,960**

Q27. Please describe the method used to calculate the expected cost of physically deploying the AMI meters.

A27. The cost of deploying AMI meters for ACE's current customers comprises four parts (1) Meter Hardware (2) Meter Installation and (3) Meter Pan Replacement, and (4) Sample Testing. The estimation for each of these are as follows:

Meter Hardware: ACE is currently in negotiations with different potential AMI meter providers. Based on these discussions, an average cost per meter of $[redacted] has been included in the BCA for meter hardware resulting in a total meter cost estimate of $59 million.

Meter Installation: ACE expects to engage an outside vendor to conduct installation of AMI meters for its existing customers. In April 2020, a request for proposal ("RFP") was issued to a select group of vendors. Based on responses to this RFP, a total cost of $18.6 million has been included in the BCA for meter installation. This cost reflects an expectation that union labor will be used for meter installation.

Meter Pan/Jaw Replacement: ACE estimates that approximately 2% of AMI meter installations will also require replacement of the meter pan/jaw. For these installations, a further $600 per meter for in meter pan/jaw replacement cost is included in the BCA. The actual percentage of installations requiring meter pan replacement will be unknown until implementation is completed. The 2% figure is based on the number of meter pan replacements required during AMI deployment in Delmarva, adjusted for the ACE service territory's coastal location and relative higher age of meters.

Deployment Meter Testing: ACE proposes to test a sample of those legacy meters exchanged for AMI meters during deployment. Vendor pricing has been obtained for conducting this sample testing suggesting a total cost of $[redacted]. This represents a saving of $[redacted] million relative to the cost estimate of $3.02 million for testing all meters removed during deployment.

Q28. Please describe the method used to calculate the other expected costs of implementing the SEN.

A28. In addition to the costs associated with the physical deployment of meters, several other costs were captured in the BCA. These are described below along with a description of methodologies used to estimate their value.

New Customer Meters: ACE will continue to install new meters as the number of electric distribution customers increase. The incremental cost of equipping new customers with AMI meters rather than analogue meters is captured in the BCA. Using five-year ACE annual meter growth of .33% and an incremental cost of $76 per meter, this sums to $3.1 million over the life of the BCA.

IT Costs: Based on experience with the Pepco and Delmarva implementations, internal estimates were developed for the expected level of work and cost required to implement and support AMI over the BCA time horizon. Initial IT costs of $32.9 million have been estimated that includes both internal and external labor, hardware, licenses, and vendor services. In addition, total incremental IT spend associated with supporting the SEN have been estimated at $39.2 million over the life of the BCA.

Communications Network: The BCA included estimated hardware and installation costs for access points and repeaters / relays along with costs for supporting equipment such as mounting kits, antennas, photocells, etc. Based on discussions with vendors, hardware costs are estimated at $5.4 million. Installation of the communications network and vendor support is estimated at an additional $5 million. In addition, the BCA includes ongoing costs for supporting the access points across the SEN communications network. These are calculated on a monthly fee per access point.

Customer Education: ACE has developed a customer education and communication strategy to convey important information about what the SEN deployment means for customers. The $5.79 million cost estimate for implementing this strategy equates to approximately $10 per customer and has been developed by ACE leveraging experience in other PHI jurisdictions and discussions with vendors.

Additional Staffing post SEN deployment: Ongoing costs related to additional back-office (meter translation specialists, business analysts, revenue compliance) and engineering staff to support operations post SEN deployment were developed by ACE using current labor rates by role. The fully loaded annual cost of these employees is approximately $1.11 million, which sum to $19.14 million over the life of the BCA.

Use Case Deployment Costs: The BCA includes an estimate for the cost for internal and external labor associated with deploying the Group 1 Use Cases described at $3.2 million.

Project Management Costs: The BCA includes an internally developed estimate for $14.95 million in project management costs based on an assessment of resources required.

Billing Transition Staffing: The BCA includes costs of $2.04 million for additional temporary Billing staff that will support transition and answer customer queries during a 24-month period covering physical deployment of meters.

Q29. Please describe how risk and contingency is treated in the BCA?

A29. The cost estimates in the BCA are based on results of discussions with vendors and in some cases, responses to formal RFPs. Other costs reflect utility experience in implementing AMI in other jurisdictions. In cost areas that typically exhibit more variability, for example IT integration, item-specific contingency has been included in the BCA. As a result, ACE believes that the cost values included in the BCA represent the most likely estimates of actual costs. Nonetheless, to account for unforeseen costs, the impact of including a further program level contingency of 15% on upfront costs

was calculated to determine its impact. When included, estimated total costs in the BCA rise from $220 million to $243 million.

II. BCA Results

Q30. Please describe the results of the BCA.

A30. The results of the BCA show a net positive value from deployment of the SEN at ACE. Total upfront costs of $155.2 million, plus total ongoing costs of $64.8 million over the life of the BCA equates to a total of $220 million which compares to total expected operating benefits of $221.1 million and customer benefits of $194.7 million. On a nominal basis this provides a Benefit to Cost ratio of 1.89. The BCA ratio was also calculated on a PV basis, using the discount rate of 7.08% per Q8 above. On a PV basis, the BCA yields as ratio of 1.27.

Q31. Please describe the impact on the BCA of including an additional 15% in upfront costs to account for program level risk?

A31. The impact of adding a further 15% in upfront costs to reflect unforeseen costs is to reduce the nominal Benefit to Cost ratio from 1.89 to 1.71 and the PV Benefit to Cost ratio from 1.27 to 1.13. Therefore, under this scenario with higher than expected costs, the SEN still generates a positive BCA.

Q32. Please describe the main differences with the BCA submitted by ACE as part of its 2019 BCA report.

A32. In January 2019, ACE submitted Advanced Metering Infrastructure (AMI) Business Case ("The 2019 BCA Report") in compliance with Recommendation RQ-BPU-2 (Recommendation No. 12 on page 13 of the Board of Public Utilities' (the "Board") Order Accepting Staff's Report Requiring Utilities to Implement Recommendations. The 2019 BCA Report included estimates of costs and benefits

associated with deploying AMI. The BCA presented in this testimony builds on that foundation. In early 2020, PA began working with ACE to review and update the costs and benefits in that original report. We believe that the result is both a more accurate and precise estimate of values. The PV BCA ratio presented in the 2019 BCA Report was 1.39, relative to the 1.27 ratio presented here. The primary differences between the two analyses are as follows:

1. *BCA Time Horizon:* The time horizon of the BCA has been shortened from 20 years to 15 years beginning (as noted above in Q8), which will commence when the first AMI meters are installed in 2022. The selection of a 15-year useful life is consistent with the proposals in the other PHI jurisdictions and is believed to be more in line with the actual life a smart meter. While costs are largely unaffected, the removal of five years from the BCA reduces the overall calculated benefits.
2. *Stranded Assets:* The 2019 BCA included the undepreciated value of legacy meters as a cost in the BCA, but this BCA does not include Stranded Assets in the calculation. Per the response in Q8 above, when using BCA to assess the cost effectiveness of an investment decision, this value should be omitted. This change reduced the total cost estimate.
3. *Cost Estimates:* Negotiations with vendors and suppliers have advanced, since the 2019 BCA Report was prepared, and as a result, several cost items have been updated to reflect more precise estimates of actual costs based on additional analysis and examination. In addition, further work has been conducted to more precisely estimate the level of support required from both ACE and external resources. In particular, additional effort has gone into identifying and quantifying incremental ongoing costs

necessary to support the SEN post implementation. This change increased the total cost estimate.

4. *Benefits Estimates:* Since the 2019 BCA Report was prepared, review of methodology, inputs, and assumptions regarding expected benefits have been conducted to reflect more precise estimates of expected benefits. This change reduced the total benefits estimate.

Q33. Does this concluded your testimony?

A33. Yes.

IN THE MATTER OF THE PETITION OF ATLANTIC CITY ELECTRIC COMPANY FOR APPROVAL OF THE SMART ENERGY NETWORK PROGRAM AND COST RECOVERY MECHANISM AND OTHER RELATED RELIEF	**STATE OF NEW JERSEY** **BOARD OF PUBLIC UTILITIES**

CERTIFICATION OF SERVICE

PHILIP J. PASSANANTE, of full age, certifies as follows:

1. I am an attorney at law of the State of New Jersey and serve as Assistant General Counsel to Atlantic City Electric Company, the Petitioner in the within matter, with which I am familiar.

2. I hereby certify that, on the date below, I caused the within Petition and the supporting attachments and exhibits thereto, to be filed with the New Jersey Board of Public Utilities through its eFiling Portal. I also caused an electronic copy to be sent to the Board Secretary's office at board.secretary@bpu.state.nj.us.

3. I further certify that, on the date below, I caused a complete copy of the Petition and the supporting attachments and exhibits thereto, to be sent by electronic mail to each of the parties listed in the attached Service List, including the Division of Law and the New Jersey Division of Rate Counsel.

4. Consistent with the Order issued by the Board in connection with *In the Matter of the New Jersey Board of Public Utilities' Response to the COVID-19 Pandemic for a Temporary Waiver of Requirements for Certain Non-Essential Obligations*, BPU Docket No. EO20030254, Order dated March 19, 2020, only electronic copies of this filing will be served on persons on the Service List.

5. I further and finally certify that the foregoing statements made by me are true. I am aware that, if any of the foregoing statements made by me are willfully false, I am subject to punishment.

Dated: August 26, 2020

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IMO the Petition of Atlantic City Electric Company for Approval of the Smart Energy Network Program and Cost Recovery Mechanism and Other Related Relief
BPU Docket No. _____

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