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Rhode Island Energy™
a PPL company

January 26, 2023

**VIA ELECTRONIC MAIL**

Luly E. Massaro, Commission Clerk
Rhode Island Public Utilities Commission
89 Jefferson Boulevard
Warwick, RI 02888

**RE: Docket No. 22-49-EL-The Narragansett Electric Company d/b/a Rhode Island Energy Advanced Metering Functionality Business Case**
**Responses to Division Data Requests – Division Set 1**

Dear Ms. Massaro:

On behalf of The Narragansett Electric Company d/b/a Rhode Island Energy ("Rhode Island Energy" or the "Company"), attached is the electronic version of Rhode Island Energy's responses to the Division of Public Utilities & Carriers' (the "Division") First Set of Data Requests in the above-referenced matter.[1]

In serving these Data Requests, the Division issued confidential and public versions of Data Requests 1-2, 1-3, 1-5, 1-6, 1-7, 1-9, and 1-19 because they contained information the Company had designated as confidential in the BCA Narratives included in Attachment H to the AMF Business Case. The Company does not intend to press its request for confidential treatment of the information in these Data Requests and therefore does not seek confidential treatment of its responses to the Division's Set 1.

Thank you for your time and attention to this matter. If you have any questions, please contact Jennifer Brooks Hutchinson at 401-316-7429.

Very truly yours,

Jennifer Brooks Hutchinson

Enclosures

cc: Docket No. 22-49-EL Service List

[1] Per communication from Commission counsel on October 4, 2021, the Company is submitting an electronic version of this filing followed by hard copies filed with the Clerk within 24 hours of the electronic filing.

John Bell, Division
Leo Wold, Esq.

**CERTIFICATE OF SERVICE**

I certify that a copy of the within documents was forwarded by e-mail to the Service List in the above docket on the 26th day of January, 2023.

Jennifer Brooks Hutchinson, Esq.

**The Narragansett Electric Company d/b/a Rhode Island Energy**
**Docket No. 22-49-EL Advanced Meter Functionality (AMF)**
**Service list updated 1/10/2023**

| Name/Address | E-mail Distribution List | Phone |
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| | | |
|---|---|---|
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Division 1-1

Request:

In the BCA analysis, RIE makes an adjustment for 1% of customers opting out of AMF meters, requiring AMR meter readers, vehicles, etc. Does RIE plan to charge these opting-out consumers for the incremental costs of retaining the infrastructure to continue to read and process AMR meter data?

Response:

Yes. Customers who opt out of an AMF meter will be subject to an Opt-Out fee on terms and conditions consistent with the Company's current AMR Opt-Out meter reading tariff. The Company will propose any changes to this Opt-Out fee in a separate tariff advice filing with the Public Utilities Commission prior to the conclusion of AMF meter installations and will communicate the Opt-Out fee to customers within each phase of the implementation plan. Opt-Out fees are likely to include a one-time meter exchange fee and a monthly manual meter reading fee.

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Division 1-2

Request:

In the estimates of reduced meter readers and their associated vehicle costs benefits, RIE refers to the prior National Grid estimate of a reduction of 14 FTEs associated with meter readers and the RIE current estimate of 8 FTEs. Please explain RIE's reduction estimate of 8 FTEs relative to NG's estimate of 14.

Response:

Rhode Island Energy is proposing to replace electric meters only at this time while National Grid proposed to replace electric meters and upgrade gas meters. The reduction of meter readers by Rhode Island Energy reflects that meter readers would still be needed to read the existing gas meters.

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Division 1-3

Request:

In the estimate of "Non-embedded CO2 benefits: Eliminated AMR Vehicles" benefit, RIE estimates that the total number of feeder miles is driven each month for all 12 months and then multiples this mileage by 8, which presumably is the number of FTEs eliminated. Please explain why this number is multiplied by 8 to determine the mileage upon which the CO2 reduction estimates are based.

Response:

There was an error in the calculation to determine the mileage on which the CO2 reduction estimates are based: the mileage number should not have been multiplied by 8. Rather, the calculation should have been the total number of feeder miles driven once/month to determine total miles driven. The corrected benefit savings are $0.06 nominal and $0.04 NPV ($2022).

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Division 1-4

Request:

Does RIE account for future utility fleet electrification when calculating non-embedded CO2 benefits? Why or why not?

Response:

In calculating non-embedded CO2 benefits, Rhode Island Energy accounted for the reduction in vehicle usage and the accompanying CO2 reductions. The Company did not also include CO2 impacts of any vehicle electrification, including utility fleet electrification, as those benefits would be counted as part of other programs.

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Division 1-5

Request:

In the estimate of the "Reduced Meter Interventions" benefit, the estimated NPV for Field Service Representative seems to be overstated by approximately $1 million. Please explain the derivation of this estimated benefit.

Response:

There was an error in the calculations wherein the Field Service salaries, the vehicles, the phone costs, and the uniform costs were incorrect. The correct benefit values are reduced by $1.71 million nominal and $0.80 million NPV ($2022). The new benefit values are $15.4 million nominal and $6.8 million NPV ($2022).

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Division 1-6

Request:

For the "Remote Metering Capabilities" benefit, please provide a detailed explanation of the functions that the estimated 27.2 FTEs assumed to be reduced.

Response:

The types of functions being performed by the reduced employees are field meter investigations, meter exchanges, meter installs, meter removals and general meter maintenance. Rhode Island Energy estimated that 50 percent of the reduced FTEs would be Meter Oriented Services. These employees are responsible for meter exchanges, installs, removal and maintenance. Meter exchanges are primarily due to failed meters, and the volume of failed meters are anticipated to be reduced with AMF. Meter removals/installations due to move-outs/move-ins will no longer require a field visit because the AMF meters can be turned on and off remotely.

The remainder of the FTE reductions referenced above are Field Collections personnel. Field Collections involves providing notices to customers who are past due, pulling the meters for non-payment or tampering with the meter, and re-establishing service when the customer is re-instated. AMF meters are more tamper-resistant than AMR meters, and the meter itself will send alerts of potential tampering, resulting in fewer field visits to investigate tampering/theft. Although a field visit is required to notify customers that they will be shut off, the time involved will be shorter because the employee does not need to pull the meter to shut off service. In addition, re-instating service can be done remotely with AMF meters, creating less workload.

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Division 1-7

Request:

For the "Remote Metering Capabilities" benefit, please explain the need for vehicles and uniforms for non-meter reader FTEs.

Response:

The FTEs reduced in the "Remote Metering Capabilities" benefit category refer to the employees who would go out in the field to trouble-shoot issues on meters, meter bases, connections, etc. These employees require vehicles, phones, and uniforms to perform their job functions in the field and to ensure the safety of the public. With Remote Metering capabilities, these positions are reduced, as well as their associated costs.

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Division 1-8

Request:

Please provide the total number of employees for PPL-PA and for RIE individually.

Response:

PPL Corporation's Pennsylvania and Rhode Island jurisdictional employees are employed by PPL Electric Utilities and Rhode Island Energy, respectively. As of December 31, 2022, PPL Electric Utilities had 1,431 employees, and Rhode Island Energy had 1,138 employees.

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Division 1-9

Request:

For the "Electricity Theft Reduction" benefit as well as some other benefits, please explain why the benefits are phased in on a different schedule from the deployment of the AMF meters, which are scheduled to be fully deployed by 2025.

Response:

Each benefit was evaluated individually from a Benefit Achievement Rate perspective to determine how quickly benefits could be achieved. This included consideration of the time needed to develop the internal business processes to fully achieve the benefit. With respect to Electricity Theft Reduction, AMF is expected to reduce the theft of electricity. Rhode Island Energy conservatively assumed that this benefit will be phased in more slowly because time would be needed for the business process development to identify theft after AMF deployment. As noted in Section 11.6 of the AMF Business Case, the Electricity Theft Reduction is not included in the Benefit/Cost ratios.

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Division 1-10

Request:

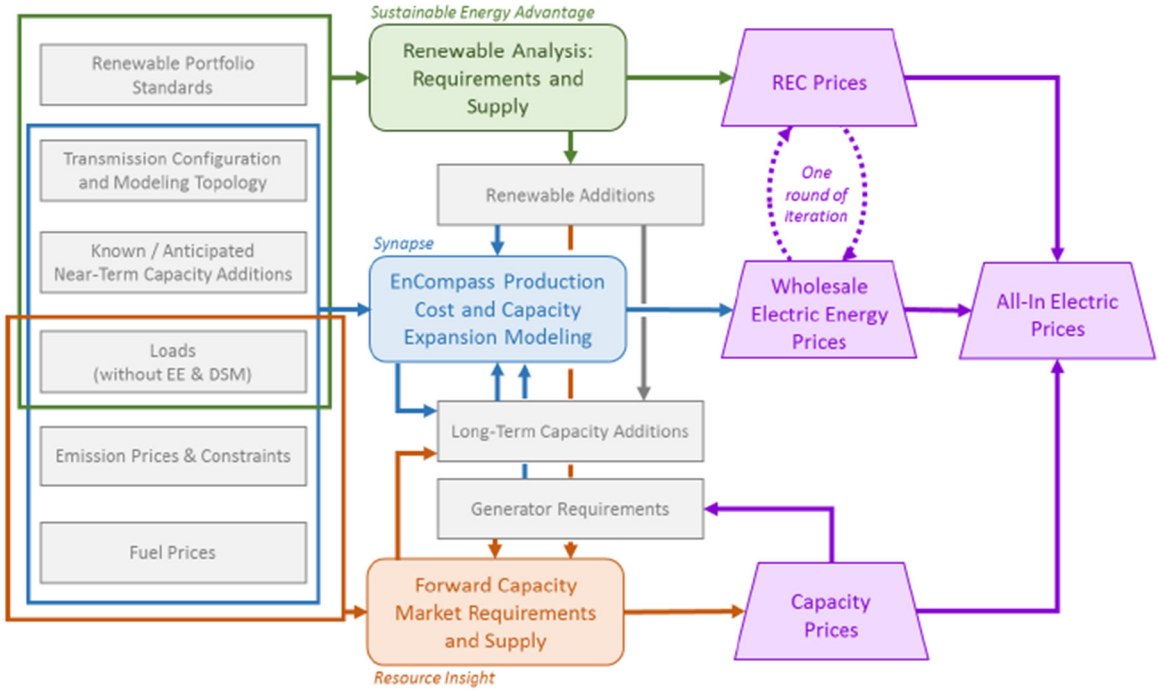
For the "Energy Benefit from VVO/AMF integration", please provide a detailed description of the AESC data used to develop these benefit estimates, including a description of how these numbers were developed. Is the AESC cost forecast data adjusted for anticipated future inflation? Do the AESC cost forecasts reflect the level of distributed energy resources installed and anticipated to be installed in Rhode Island? If not, explain how RIE plans on making an adjustment for the differences.

Response:

Rhode Island Energy used AESC's avoided energy costs as specified for Rhode Island in AESC's 2021 User Interface spreadsheet to develop the Energy Benefit from VVO/AMF integration. These energy values were developed by Synapse Energy Economics as part of their AESC 2021 analysis. Both the AESC 2021 Report and the User Interface are available online at synapse-energy.com/project/aesc-2021-materials. The electric energy avoided costs developed by Synapse Energy Economics involve several different energy forecasting models as shown below in Figure 12 from the AESC 2021 Report (AESC 2021 Report, p. 63). More information can be found in Chapter 4 of the AESC 2021 Report, Common Electric Assumptions, at pp. 58-109.

**Figure 12 highlights the interactions between the models used in AESC 2021.**

**Figure 12. AESC 2021 modeling schematic**




The AESC forecasts are adjusted for inflation. The AESC forecasts account for meeting 100 percent renewable energy by 2030.

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Division 1-11

Request:

Please provide the loss factor used to account for system losses including all assumptions, detailed calculations, and the derivation of the numbers used in the calculations in executable format.

Response:

Rhode Island Energy adopted the loss factor recommended by Synapse Energy Economics in the 2021 AESC Report to account for system losses. The loss factor for avoided energy costs is 9.0 percent, and the loss factor for system peak reductions is 16.0 percent. Rhode Island Energy used energy ($/MWh) and peak ($/MW) values that included these factors.

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Division 1-12

Request:

For the "Energy Savings – Energy Insight- Electric" benefit, there appears to be no assumption of Industrial customers gaining benefit from this. If this is correct, please discuss the reasoning behind the absence of this assumption.

Response:

Rhode Island Energy assumed that industrial customers would already be using more granular data to save energy and, thus, would not save additional energy. In addition, the largest industrial customers have MV-90 meters, which are not being replaced as part of this program; therefore, Rhode Island Energy took a conservative approach by not including industrial customers when estimating the benefits for Energy Savings from Energy Insights.

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Division 1-13

Request:

In Book 2, p. 10, Figure 1.1 shows "PPL Projected IEEE SAIFI without automation". Please elaborate how this data was generated including all underlying analysis.

Response:

The red dashed line in Figure 1.1 of the AMF Business Case represents "PPL Projected IEEE SAIFI without automation." The source of the information is the ADMS software functionality, which automatically tracks how many customer interruptions are avoided because of Fault Location Isolation and Service Restoration ("FLISR" also referred to as "FISR" at PPL Electric Utilities Corporation ("PPL Electric")). The quantity of avoided outages is not an analysis; rather, it is actual data automatically collected by the ADMS software. Automation from reclosers utilized in conjunction with FLISR avoids a substantial number of outages from being recognized in the SAIFI calculation because outages can be restored in less than 5 minutes. Because the definition of a sustained IEEE outage is an outage lasting longer than 5 minutes, the outages that are restored in 5 minutes or less are not included in IEEE SAIFI data. The automatic and ongoing tracking of avoided outages began in 2016 when ADMS was initially made available and has been applied retrospectively to the PPL Electric's operational data collected for the year prior on an ongoing basis. As a result, the red line in Figure 1.1 starts in 2015. The underlying data about the specific number of outages avoided and/or restored in 5 minutes or less was aggregated on an annual basis by the ADMS software.

To generate the data that comprises the red line in Figure 1.1, the Company needed to perform an analysis that aligns the information from the ADMS system with how IEEE SAIFI is determined by removing outages associated with Major Event Days as defined by IEEE[1]. The analysis calculated the percent of outages that would have been excluded using the IEEE Major Event Day definition from 2015 – 2022. The findings indicated that 80.2 percent of the avoided outages would have been in the IEEE SAIFI number, and 19.8 percent were eliminated because they were associated with a Major Event Day consistent with the IEEE definition. To create the red line in Figure 1.1, the IEEE avoided outages are 80 percent of the avoided customer outages where FLISR was responsible for restoration in under 5 minutes. The analysis removed the

[1] A Major Event Day is defined as "A day in which the daily system System Average Interruption Duration Index ("SAIDI") exceeds a Major Event Day threshold (TMED) value. For the purposes of calculating daily system SAIDI, any interruption that spans multiple calendar days is accrued to the day on which the interruption began. Statistically, days having a daily system SAIDI greater than TMED are days on which the energy delivery system experienced stresses beyond that normally expected (such as during severe weather). Activities that occur on Major Event Days should be separately analyzed and reported." See IEEE Standard 1366-2022 available here https://standards.ieee.org/ieee/1366/7243/

20 percent of outages which approximate the outages associated with IEEE Major Event Days each year.

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Division 1-14

Request:

If RIE were to decide to upgrade the meter data interval to periods more differentiated than 15-minute, say 5-minute intervals, how easy/difficult would the system changes be needed to effectuate that upgrade and at what cost?

Response:

The AMF system inherently includes flexibility to change the meter data intervals. To effectuate a different interval period (e.g., 5-minute intervals), operators would send a signal over the communication network to remotely reprogram the meter. The types of system changes that would be needed to effectuate this change to the meter data interval period and the associated costs depend upon if the modifications can be accomplished with the proposed AMF design or if expansions are needed. AMF design implications and the associated costs require analysis that incorporates factors such as the number of meters affected, desired interval period, data storage needs, systems analysis, and communication network bandwidth requirements. Changing the meter interval period from 15-minute to 5-minute intervals would also likely include design, implementation, testing and business process modifications costs.

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Division 1-15

Request:

In Book 2 on p. 45, RIE states: "RIE expects to achieve an incremental 0.167% VVO/CVR-based reduction in peak demand by integrating granular AMF voltage data into the VVO control schemes." Is there any incremental cost to integrate granular AMF voltage data into the VVO control schemes?

Response:

No. There are no incremental costs required to integrate granular AMF voltage data into the VVO control schemes. Rhode Island Energy included in the Benefit-Cost Analysis the costs needed to achieve the benefits that were calculated. This included the costs to integrate granular AMF data into a variety of operational software and analysis, including the integration of granular meter data to software needed to achieve VVO savings.

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Division 1-16

Request:

How much of the Backhaul, RF Mesh, Head End and billing systems installed to deploy the EDC AMF systems will be usable for the gas distribution system when RIE deploys AMF metering for gas distribution? What protocols does RIE propose to share these costs? How much of this cost is associated with getting the data out of Rhode Island and to the PPL control center and other facilities?

Response:

The Backhaul, RF Mesh, Head End and billing system interfaces proposed in the AMF Business Case are needed for the AMF electric deployment. Because these systems support the data requirements of electric AMF, the AMF Business Case proposed to recover these costs from Rhode Island Energy electric customers. The AMF communication network can potentially be used for gas meter reading in the future because the data requirements of gas meter reading are anticipated to be comparatively marginal to that of electric AMF. The Company currently does not intend to spread the costs to other areas of operations. To the extent the communication network needs to be expanded to support other operational area(s) in the future, allocation of the cost for the incremental network would be considered accordingly.

The costs associated with moving data between the AMF RF field systems and the Headend systems is included in the backhaul costs and associated monthly vendor systems SaaS fees.

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Division 1-17

Request:

Please provide the data that supports a conclusion of a 22-minute faster outage response time for AMF meters on the PPL system, along with the associated ICE calculations for Rhode Island in executable format. Also, compare the average feeder length on the PPL system with the average feeder length on the RIE system.

Response:

To clarify, Rhode Island Energy did not calculate a benefit based on a faster "outage response" time; rather, the Company calculated the benefit based on a faster notification of an outage. This benefit is discussed on pages 145-146 of the AMF Business Case. The outage response time was assumed to be unchanged. With AMR meters, the Company becomes aware of an outage when the customer calls in to report it. With AMF, outage notification is automated through the "Last Gasp" feature. Because the notification is faster with automation from AMF, the duration of the outage that a customer experiences is shorter than it would have been had it taken longer to receive notification of the outage manually from a phone call. PPL Electric Utilities Corporation ("PPL Electric") tracks all outage notifications and their source. An analysis generated from PPL Electric's OMS system for over 15,000 outages from August 2019 through July 2020 where both Last Gasp messages and customer calls were received showed an average difference of 22.5 minutes between when the "Last Gasp" notification occurs and the customer call notification occurs.

As a result, the utility can respond to the outage 22 minutes earlier even though the "outage response time" does not change. Therefore, the 22 minutes is not calculated as part of SAIDI or CAIDI, but it is a period of time where the customer would experience a power outage with AMR that will be avoided with AMF.

The Company used the Department of Energy's Interruption Cost Estimator ("ICE") to derive the customers' avoided cost of by reducing outages 22 minutes on average. The ICE calculator is available online at https://icecalculator.com. Attachment DIV 1-17, labeled ICE Calculator 22 minute Savings 040522, shows the calculations that were used to derive the benefits. Note that the average feeder length is not a variable in that was used in this analysis.

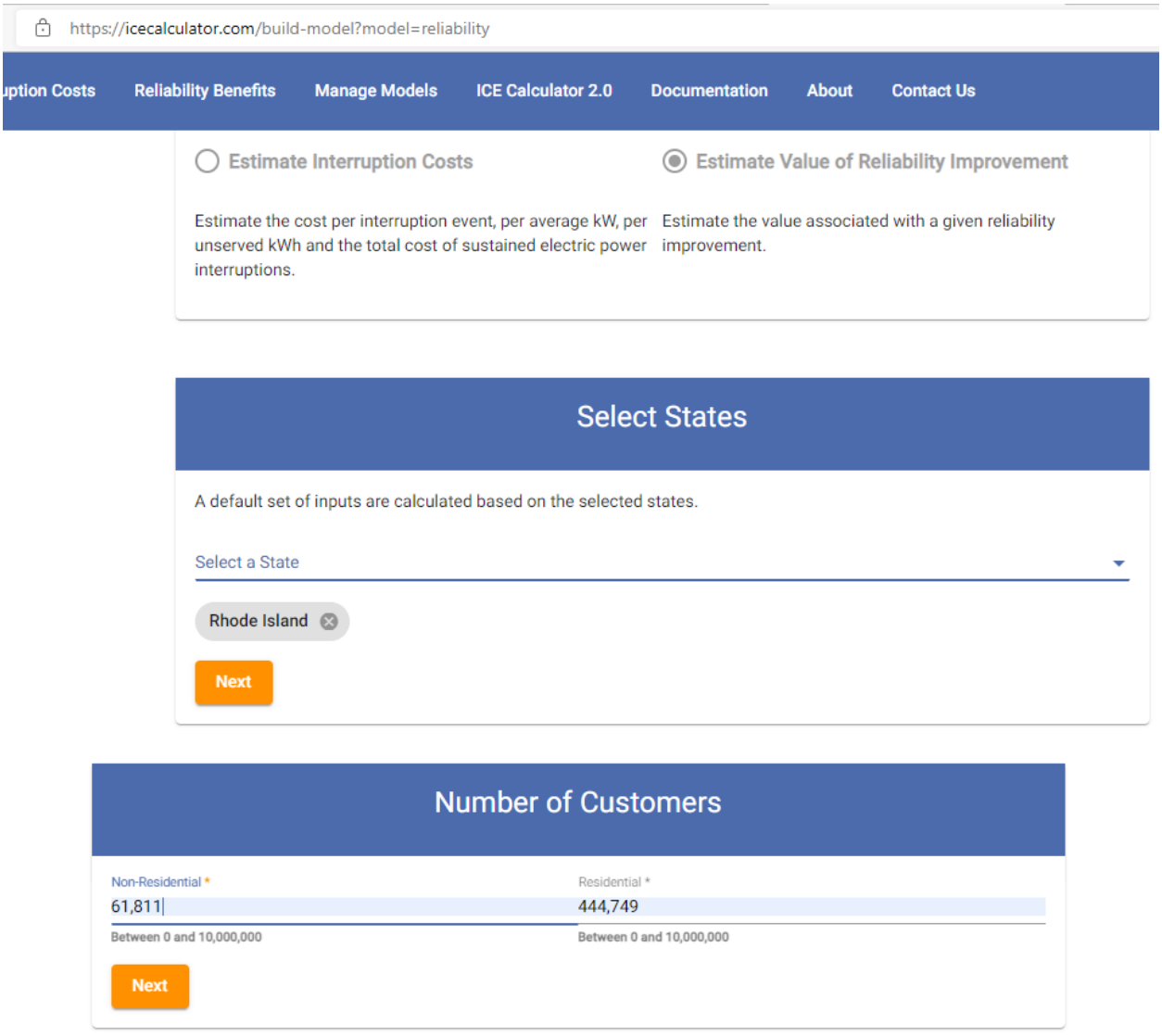
**Documentation – ICE Calculator**
**April 24, 2022**

Assumptions:

1. Use latest counts of Rhode Island Active Accounts

| Rhode Island Active Accounts March 2022 | |
|---|---|
| 444,749 | Res |
| 62,712 | C&I |
| 61,811 | C&I w/o MV90s |

2. 22- minute faster response time to outages.



# Investment Information

Initial Year of Improvement *
2022
2009 or later

Expected Lifetime of Improvement *
20 Years
Between 10 and 40

Expected Annual Inflation Rate *
0 %
Between 0 and 100

Discount Rate *
0 %
Between 0 and 100

Next

# Enter Initial Reliability Values

Enter values for **two** of the three index values for each section.

## Without Improvement

| SAIFI * | SAIDI * | CAIDI * |
|---|---|---|
| 0.840 | 75.8 | 90.2 |
| > 0 and <= 100 | >= 1 and <= 1920 | > 0 and <= 960 |

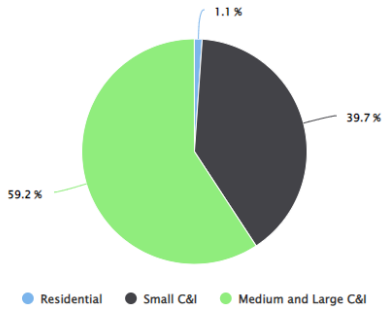
## With Improvement

| SAIFI * | SAIDI * | CAIDI * |
|---|---|---|
| 0.840 | 57.3 | 68.2 |
| > 0 and <= 100 | >= 1 and <= 1920 | > 0 and <= 960 |

Next

# Distribution of Benefits

| Sector | # of Customers | Total Benefit (2022$) | Benefit Per Customer (2022$) |
|---|---|---|---|
| Residential | 444,749 | $2,869,926.24 | $6.45 |
| Small C&I | 51,728 | $102,821,002.70 | $1,987.72 |
| Medium and Large C&I | 10,083 | $153,525,264.85 | $15,226.15 |
| **All** | **506,560** | **$259,216,193.79** | **$511.72** |



Calculation of Benefits Used in BCA:

| Recalculate the Annual Value Based on Actual Customer Count Small C&I; Medium and Large C&I; and w/o MV90 Meters* | | | |
|---|---|---|---|
| **Cust. Class** | **Customers (#)** | **Value/Cust over 20 Yrs ($)** | **Total Savings ($2022)** |
| Residential | 444,749 | $ 6.45 | $ 2,868,631 |
| Small C&I | 53,342 | $ 1,987.72 | $ 106,028,960 |
| Large C&I | 8,469 | $ 15,226.15 | $ 128,950,264 |
| **Total** | **506,560** | | **$ 237,847,856** |
| | | | |
| Per Year Average w/20 Year Life | | 20 | $ 11,892,393 |
| *Customer Counts as of March 2022; 901 MV-90 Customers removed. | | | |

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Division 1-18

Request:

In the estimation of benefits of avoided AMR meter replacement, does RIE include any stranded investment in the AMR meters that are replaced before being fully depreciated?

Response:

The Company assumed no stranded investment in the estimation of benefits of avoided AMR meter replacement. The Company proposes to address the unrecovered investment in its next depreciation study and its next base distribution rate case.

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Division 1-19

Request:

What is the basis for the AMR meter cost used in the Benefits Inputs calculation? Please reconcile the AMR meter cost utilized in the benefits calculations to RIE's meter cost of $36.25 provided in response to DIV 2-14 in Docket 22-53-EL.

Response:

Rhode Island Energy used the same values for AMR meters in its AMF Business Case as National Grid USA ("National Grid") used in its Updated AMF Business Case filed in Docket No. 5113 for the residential and commercial meters. The response in DIV 2-14 in Docket 22-53-EL ("DIV 2-14") indicates that there are "currently 5,769 meters installed in the field and another 1,485 meters in inventory at the meter shop with these same specifications." The meters referred to in DIV 2-14 are residential meters. If Rhode Island Energy substituted the $36.25 into the AMF Business Case BCA for those 7,254 residential meters, rather than using the values National Grid had originally submitted, the reduction in the benefit would be $0.26 million nominal and $0.17 million NPV ($2022), a difference of 0.5% for both nominal and NPV.

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Division 1-20

Request:

Please explain in detail the difference between "Transmission Capacity Benefits", "System Capacity Benefits" and "Distribution Capacity Benefits" used in calculating EV TVR benefits and in other benefits.

Response:

System Capacity Benefits are the benefits associated with a reduction in peak across the Company's entire system, capturing the avoided cost of the generation that would be needed to meet the peak. The Transmission Capacity Benefits are the benefits associated with not having to build transmission facilities for the avoided peak MWs. The Distribution Capacity Benefits are the benefits associated with not having to build distribution facilities for that peak. Because the transmission peaks and distribution peaks do not occur at the same time as the system peak, the peak reductions for transmission and distribution are multiplied by a transmission coincidence factor and a distribution coincidence factor, respectively.

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Division 1-21

Request:

Please explain the rationale for using the distribution revenue allocators approved in RIE's compliance filing in Docket No. 4770 to allocate the incremental AMF revenue requirements among the rate classes. Also, explain in detail why these allocators should not be recalculated based on the most recent information.

Response:

As indicated in the Joint Pre-filed Direct Testimony of Company Witnesses Stephanie A. Briggs and Bethany L. Johnson, at the next base distribution rate case filing, the Company proposes to include in rate base the depreciated value of the AMF investments that have been placed into service at that point. At the time of the next base distribution rate case, the Company would include the AMF capital and O&M costs with all other costs in the allocated cost of service study and revenue allocation processes to propose new revenue allocators. As such, the Company considers it a reasonable approach to use the distribution revenue allocators approved by the PUC in Docket No. 4770 to allocate the incremental AMF revenue requirements among the rate classes until the Company's next base distribution rate case.

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Division 1-22

Request:

In the BC analysis RIE uses a societal discount rate of 3.00% and a AESC discount rate of 2.00% and cites a source as "Internal RIE assumption". Please provide a detailed explanation of how RIE came up with these assumptions.

Response:

The 3.0 percent discount rate is based on the Biden administration's calculation of the societal cost of carbon that used a 3.0 percent discount rate when evaluating climate change policies and regulations. See: www.news.climate.columbia.edu/2021/04/01/social-cost-of-carbon/

The AESC discount rate of 2.0 percent was derived as described in Section 11.2, p.136, of the AMF Business Case: "The Company chose the 2% discount rate because the avoided cost values developed in the AESC 2021 report are shown in $2021dollars ("real" dollars) regardless of which year was being forecast. Rhode Island Energy inflated these values by 2% to develop the nominal values and discounted them by 2% to get back to the initial "real" values, adjusted to be $2022." The inflation rate was determined by looking at the inflation rate included in the AESC report (2.0% shown on page 361 of the 2021 AESC Report developed by Synapse Energy Economics) and the average U.S. inflation rate for the past 20 years. Because the AESC report values were in real values, the discount rate needed to match the inflation/escalation rate to match the real values.

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Division 1-23

Request:

When RIE estimates the benefits of Non-embedded CO2 benefit from AMF enabled programs such as VVO/CVR and Energy Insight, does it factor in any reductions in carbon emissions due to efforts to comply with Rhode Island Climate Mandate goals such as 100% renewables by 2033 and 0% carbon emissions by 2050?

Response:

Rhode Island Energy used the AESC social cost of carbon to value the non-embedded CO2 benefits calculated in the AMF BCA spreadsheet, provided as Confidential Attachment H. The AESC report included in its forecast that Rhode Island aims to become 100 percent renewable by 2030. It does not appear that the AESC report social cost of carbon factored in reductions in carbon emissions due to efforts to comply with Rhode Island Climate Mandates.

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Division 1-24

Request:

In the AMF Business Case (Book 1, p. 38), RIE's witness states: "Rhode Island Energy, with support from PPL, took a broader view of the strategic importance of the AMF investment as an essential pre-requisite and enabling platform by designing a more hardened and robust communication network that anticipates potential future opportunities for areas such as grid modernization, AMF for gas customers, DER, new energy markets and beneficial electrification." Is it RIE's intention to spread the costs of the AMF deployment over these other areas of operation as they become available and reduce the cost burden on the Rhode Island electric consumer?

Response:

No. See the Company's response to Division 1-16. Because the communication network is needed to support the data requirements of electric AMF in Rhode Island, the cost of the design as proposed will be borne by the Rhode Island electric customers. The data requirements of other potential opportunities are comparatively marginal to that of electric AMF. To the extent the communication network needs to be expanded to support the other opportunities in the future, allocation of the cost for the incremental network would be considered accordingly.

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Division 1-25

Request:

In Book 1, p. 75 (p. 31 of 84 in Walnock/Reder testimony), the witnesses state: "PPL has determined through experience that a 100% RF mesh network is the most cost effective approach to support AMF communication requirements. This conclusion has been formed after installing a 100% RF communication system that services the entire PPL service territory in Pennsylvania and another similar system that is being installed in Kentucky." Will RIE be able integrate into this existing system? Also, explain in detail how RIE evaluated the dramatically difference geographic area of a compact Rhode Island system to the much more spread out systems of Pennsylvania and Kentucky.

Response:

No. Rhode Island Energy will not be able to integrate into the existing RF communications system that services PPL's service territory in Pennsylvania and the similar system being installed in Kentucky because the AMF systems (Head End System and Meter Data Management System) proposed in the AMF Business Case are to be deployed for Rhode Island only and will be separate from the AMI systems that have been implemented in PPL's other jurisdictions. PPL's insights and how they will be leveraged to benefit Rhode Island Energy customers are discussed in Section 2 of the AMF Business Case.

The RF Network design is based on inputs that are unique to Rhode Island. These factors include the geographic and customer meter makeup of Rhode Island by using Terrain and Clutter data (buildings, land-use, et cetera), geographic meter locations, meter location attributes (indoor vs. outdoor), and RF Network transmitter and receiver properties (antenna gains/height, transmit power, receive sensitivity, endpoint hop count, router per meter, et cetera). All of these ensure that the RF Propagation Study, Design, and Deployment is unique and specific to the characteristics of Rhode Island and the Rhode Island Energy customer meter makeup and geographic distribution. See Attachment D of the AMF Business Case for a description of Rhode Island Energy's RF communication design approach.

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Division 1-26

Request:

Are there AMF systems deployed in other jurisdictions by PPL subsidiaries that can be leveraged to the benefit of RIE consumers? (see Book 1, fn 7, p. 40)

Response:

No, not with respect to the AMF systems, specifically. The AMF systems (Head End System and Meter Data Management System) proposed in the AMF Business Case are proposed for deployment in Rhode Island only. Footnote 7 in Book 1, Bates Page 40, refers to the requirement in the Amended Settlement Agreement in Docket No. 4770 to include both a Rhode Island only scenario and a Rhode Island/New York scenario in the AMF Business Case, which is not applicable to this AMF Business Case because PPL Corporation ("PPL") does not operate a utility in New York. As discussed in the Joint Pre-Filed Direct Testimony of Company Witnesses Philip J. Walnock and Wanda Reder, Rhode Island Energy will be able to leverage insights gained from PPL's AMF experience in its other jurisdictions – namely Pennsylvania and Kentucky – such as PPL's active strategic partnerships, insights to delivery, deployment management techniques, network design knowledge, IT systems knowledge and effective customer engagement (see Walnock and Reder Testimony, Bates Pages 38, 53-54). In addition, Rhode Island Energy will be able to leverage PPL's insights into systems integration, such as with ADMS and other systems that utilize AMF data, which can then be customized and scaled to Rhode Island to the benefit of Rhode Island Energy's customers (see Walnock & Reder Testimony, Bates 54-55). Section 2 of the AMF Business Case (see Book 2, Bates Pages 22-29) discusses in more detail the specific insights from PPL's AMF experience that can be leveraged to benefit customers in Rhode Island.

Prepared by or under the supervision of: Philip J. Walnock

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Division 1-27

Request:

In Book 1, p. 78, RIE plans to deploy in a geographic order based on regionally defined sectors. Has RIE taken into account any improvement in reliability for poorly performing feeders/circuits in its deployment strategy?

Response:

No. Feeder reliability was not a consideration in the Rhode Island Energy deployment strategy. The Rhode Island Energy deployment strategy is designed to enable an orderly and efficient AMF deployment process. The deployment strategy couples PPL Electric Utility Corporation's prior AMF experience with conditions and nuances that are specific to Rhode Island. The Rhode Island Energy deployment strategy and the factors considered are discussed in the AMF Business Case Attachment D in Section 3.2.1.

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Division 1-28

Request:

In Book 1, p.89, for the BCA, RIE states: "Eliminated three benefits that National Grid calculated because they could not be verified – the Bad Debt Write-off reduction, Operational benefits associated with faster storm restoration, and the Mitigation of Damage claims." Please elaborate the difficulties in verifying these benefits. Also, explain why operational benefits associated with faster storm restoration is eliminated and yet RIE has described a 22 minute faster response time to outages associated with deployment of AMF.

Response:

Rhode Island Energy was unable to verify the information and values used by National Grid USA ("National Grid") in the derivation of the Bad Debt Write-off benefit and the Mitigation of Damage Claims benefit. Because these were significant benefits in the National Grid BCA but the Company could not verify the data or the calculations, Rhode Island Energy decided not to include them in the AMF BCA. The challenges verifying the values included the following: 1) identifying the source of the value for the bad-debt write-off; 2) identifying precisely what the values for the bad-debt write-off were intended to measure; 3) verifying the source of the values for the mitigation of damage claims; and 4) verifying the kind of damage being mitigated.

For the Operational benefits associated with faster storm restoration, the Company determined that faster storm restoration is a benefit mostly attributable to Grid Modernization. While AMF data provides some positive impact, the Company did not include it in the AMF BCA to avoid double counting with the benefits captured in the Grid Modernization Plan BCA. Additionally, as described in the Company's response to DIV 1-17, the process of outage restoration is very different than the benefit associated with outage notification enhancement. The outage notification enhancement benefit is included in the AMF BCA.

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Division 1-29

Request:

For participation in the Energy Insights program, RIE assumes a 30% participation rate for residential and 25% participation for commercial. Please elaborate where these participation rates were derived.

Response:

The derivation of the participation rates is discussed in Section 11.5.4 of the AMF Business Case, Energy Insights: "The 30% residential participation and the 25% commercial participation were based on 50% participation in PPL Electric's Customer Portal, an evaluation of National Grid's Rhode Island energy efficiency programs from 2009-2015, and evaluations of Rhode Island Energy's Home Energy Reports Programs. The 1.5% savings was developed through industry research, including one report that surveyed results from 52 utilities across the U.S. who have installed AMF meters and found savings of 1-8%, and a review of the savings from Rhode Island Energy's Home Energy Reports programs."

Prepared by or under the supervision of: Flora Flygt and Wanda Reder

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Division 1-30

Request:

Other EDCs have been experiencing supply problems due to shortages of metering, metering components and contractors. Has RIE assessed the likelihood of these supply bottlenecks and factored any contingencies into its business planning, deployment timelines and BCA?

Response:

Rhode Island Energy considered direct vendor feedback on material lead times and staffing as part of its planning efforts. A continuous supply of AMF equipment to satisfy the Company's AMF deployment requirements will be dependent upon securing long-term contractual terms with suppliers so they have the ability to plan with certainty to meet delivery commitments. As discussed in the Company's response to PUC 1-31, such multi-year contracts that provide certainty to the supply of goods and services are critical to the project design and to meeting the ongoing needs of the project's deployment schedule.