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Rhode Island Energy™
a PPL company

April 12, 2024

VIA ELECTRONIC MAIL

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

RE: Docket No. 24-06-EE – The Narragansett Electric Company's d/b/a Rhode Island Energy's System Reliability Procurement Investment Proposal for Electric Demand Response 2024-2026 – Connected Solutions
Responses to Division Data Requests – Set 2

Dear Ms. Massaro:

On behalf of The Narragansett Electric Company d/b/a Rhode Island Energy (the "Company"), enclosed are the Company's responses to the Division of Public Utilities and Carriers' ("Division") Second Set of Data Requests in the above-referenced matter.

Thank you for your attention to this filing. If you have any questions, please contact me at 401-784-4263.

Sincerely,

Andrew S. Marcaccio

Enclosures

cc: Docket No. 24-06-EE Service List

Division 2-1
Avoided Distribution

Request:

The Company was asked in DIV 1-1 to provide in executable format all data, evaluations, planning documents, assumptions, workpapers and any information relied upon to derive the avoided distribution infrastructure cost of $120/kW. The Company responded that it relied on the avoided cost distribution infrastructure costs used in its benefit-cost assessment models over the prior five years, ranging from approximately $80/kW per year in 2020 to approximately $170/kW per year in 2024 to derive a $120/kW value. The Company referenced dockets over the prior five years which do not appear to contain workpapers or data that can be used to evaluate inputs and calculations to derive avoided distribution. Please reference or otherwise provide in executable format all data, evaluations, planning documents, assumptions, workpapers and any information relied upon to derive the avoided distribution infrastructure cost of $80.24 for 2020 and 2021, $100.02 for 2022, $121.58 for 2023, and $174.41 for 2024. The response should identify the specific projects, investment categories, and data sources used to determine incremental investments in the distribution system caused by load growth which sum to the total distribution investment amount. For example, what specific investments or projects were assumed to derive a 2024 total distribution investment of $248,654,679 and marginal cost distribution capacity of $174.41/kW-yr (reference Attachment PUC 1-65, Docket No. 23-35-EE)?

Response:

Please see Excel Attachments DIV 2-1-1, DIV 2-1-2, DIV 2-1-3, and DIV 2-1-4 for the workbooks used to calculate the avoided distribution costs. The workbooks provide citations for sources of input data.

Please note that the workbook for 2022 shows an avoided distribution cost of $96.56.
As explained in the Company's response to PUC 1-26 (Docket No. 5189) while the text of the 2022 Energy Efficiency Plan stated an avoided distribution cost of $100.02, $96.56 is the value used in all benefit-cost analyses presented in the filed 2022 EE Plan.

Division 2-2
Avoided Distribution

Request:

In executable format, using each ISR Plan from FY 2019 to FY 2023:

a. Provide a list of each project caused by load growth that the Company planned for implementation. Identify any projects driven by both load growth and a separate factor such as contingency (N-1) issues, asset condition, etc.
b. Identify projects that were actually implemented.
c. Include the forecasted and actual spend by project for each year.
d. Identify any projects that were eliminated or deferred as a result of the demand response program.

Response:

For ISR Plans FY 2019 to FY 2023, the Excel version of Attachment DIV 2-2 includes:

a. A list of each project caused by load growth that the Company planned for implementation. Any projects driven by both load growth and a separate factor such as contingency (N-1) issues, asset condition, etc. are identified.
b. Project implementation can be determined by reviewing Part c.
c. The forecasted and actual spend by project for each year.
d. No projects were eliminated or deferred as a result of the demand response program. As explained in the Responses to Division 1-14 and 1-15, the Company's load growth factors already include reductions for distributed resources including demand response.

Division 2-3
Avoided Distribution

Request:

In executable format, using the FY 2024 ISR Plan, FY 2025 ISR Plan and Long Range Plan:

a. Provide a list of each project caused by load growth that the Company plans to implement through FY 2029. Identify any projects driven by both load growth and a separate factor such as contingency (N-1) issues, asset condition, etc.

b. Include the forecasted costs by project for each year.

c. Identify which projects will be eliminated or deferred through FY 2029 as a result of the demand response program.

Response:

For the FY 2025 ISR Plan[1] through FY 2029 ISR, the Excel version of Attachment DIV 2-3 includes:

a. A list of each project caused by load growth that the Company plans for implementation. Any projects driven by both load growth and a separate factor such as contingency (N-1) issues, asset condition, etc. are identified.

and

b. The forecasted spend by project for each year.

c. No projects were eliminated or deferred as a result of the demand response program. As explained in the Responses to Division 1-14 and 1-15, the Company's load growth factors already include reductions for distributed resources including demand response.

[1] The FY 2025 ISR Plan is aligned with the Long Range Plan. FY 2024 ISR Plan data was not specifically provided as the FY 2025 ISR Plan information included the information to answer the question and no ISR or Long Range Plan information affected the response to part d.

Division 2-4
Avoided Distribution

Request:

The Company states in response to DIV 1-1 "that the objective with ConnectedSolutions is to derive net utility system value – in terms of avoided electric bill costs – from reducing regional coincident peak demand." In order to compare the theoretical bill reduction to actual bill savings, provide for each year from 2020 to 2023:

a. Estimated bill savings attributed to avoided distribution investments (as filed), and

b. Actual bill savings based on the avoided investment costs provided in response to DIV 2-2.

Response:

a. Dividing the assumed avoided distribution infrastructure cost value of $120/kW-yr by the number of customers each year results in estimated bill savings attributed to avoided distribution investments ranging between $4-6 per year per residential customer and between $154-$182 per year commercial customer.[1]

b. There are no actual bill savings based on the avoided investment costs provided in response to DIV 2-2 because there are no avoided investments identified. As described in the response to Division 1-14, 1-15, and 2-2, the growth rate used by the Company includes reductions for various distributed resources including demand response. Therefore, the projects in any ISR, which are based on these growth rates, are already reduced for demand response.

[1] Specific calculated values are $4.05, $4.92, and $5.99 per residential customer in 2024-2026, respectively, and $154.26, $167.66, and $182.31 per commercial customer in 2024-2026, respectively.

Prepared by or under the supervision of: Ryan Constable and Lado Kurdgelashvili

Division 2-5
Avoided Distribution

Request:

The Company indicates a driving factor for increasing avoided distribution costs on a per kW basis is the decrease in incremental growth in peak demand (see DIV 1-22). Has the numerator (incremental investments caused by load growth) been steady, declining, or increasing over the same period of time? If investment levels are steady or increasing, explain how declining loads would necessitate investments due to load growth.

Response:

The numerator has increased over the same period of time, 2020 through 2024; however, "declining loads would necessitate investments due to load growth" is not an appropriate interpretation. The avoided distribution infrastructure cost value the Company has derived and used in program design is a system average. This system average obscures the heterogeneity of peak load changes over time, the variation in available loading capacity across the system, and the range of infrastructure investment required to serve feeders on which peak load grows.

The Company provides the following fictional and simplified example to illustrate. Consider a system that consists of only three feeders, and peak load growth and infrastructure investment across two years. Each feeder is further described below, including the critical variable of available loading capacity.

Feeder A has sufficient loading capacity to accommodate its peak load growth.

Feeder A – Sufficient available loading capacity				
(a) Year	(b) Available loading capacity at beginning of year (MW)	(c) Peak load growth during the year (MW)	(d) Incremental loading capacity needed (MW)	(e) Investment needed ($ millions/year)
1	5	1	0	$0
2	4	1	0	$0

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Avoided Distribution

Feeder B does not have any peak load growth.

Feeder B – No peak load growth				
(a) Year	(b) Available loading capacity at beginning of year (MW)	(c) Peak load growth during the year (MW)	(d) Incremental loading capacity needed (MW)	(e) Investment needed ($ millions/yr)
1	3	0	0	$0
2	3	0	0	$0

Feeder C does experience peak load growth, some of which is able to be accommodated through existing available loading capacity and some of which is not (i.e., the available loading capacity is used up in Year 1).

Feeder C – Peak load growth is slowing; available loading capacity gets used up				
(a) Year	(b) Available loading capacity at beginning of year (MW)	(c) Peak load growth during the year (MW)	(d) Incremental loading capacity needed (MW)	(e) Investment needed ($ millions/yr)
1	4	5	1	$2
2	0	2	2	$4

In sum, the system average that we calculate is the sum of investment divided by the sum of peak load growth. Peak load growth slows year-over-year and investment increases, resulting in an increase in avoided distribution infrastructure cost. The trend in avoided distribution infrastructure cost is more closely tied to the incremental loading capacity needed, which also increases. Although, incremental loading capacity needed is not an explicit variable in the methodology to estimate avoided distribution infrastructure cost, it is critical to explain any trends in avoided distribution infrastructure cost. The Company's response to DIV 1-22 did not adequately explain this; we hope this example clarifies the mechanics between peak load and distribution cost.

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Avoided Distribution

System Average				
(a) Year	(b) Total system peak load growth (MW)	(c) Total system incremental capacity needed (MW)	(d) Total investment needed ($ millions/yr)	(e) Avoided distribution infrastructure cost = (d)/(b) ($/kW-yr)
1	6	1	$2	$0.33
2	3	2	$4	$1.33

To provide more detail, the table below shows the magnitude of the change of each variable in the numerator and denominator referenced by DIV 2-5:

$$Avoided\ Distribution\ Infrastructure\ Cost = \frac{Cost\ (\$) * Carrying\ Cost\ (\%)}{Peak\ Load\ Growth\ (MW) * 1{,}000}$$

2020-2024	(a) Cost	(b) Carrying Cost	(c) Cost*Carrying Cost	(d) Peak Load Growth (MW)	(e) Avoided Distribution Infrastructure Cost
Difference	$ 106,451,832	-2.8%	$ 10,602,221	-98	$ 94.17
Relative Difference	75%	-17%	45%	-33%	117%

A preliminary linear regression of each variable (cost, carrying cost, and peak load) shows no evidence of statistical significance at the alpha = 0.05 level (p-values = 0.091, 0.227, and 0.124, respectively). The Company provides this information to clarify the record that these trends may show short-term changes but the data from these five years alone is not sufficient to draw conclusions about year-over-year trends and caution should be taken when interpreting the validity of these trends outside of the five-year time span investigated.

The table below compiles relevant data from the work papers in Excel version provided in response to DIV 2-1.

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Avoided Distribution

Year	Cost	Carrying Cost	Numerator = Cost*Carrying Cost	Denominator = Peak Load Growth (MW)	Avoided Distribution Infrastructure Cost
2020/2021	$ 142,202,847	16.5%	$ 23,463,469.76	293	$ 80.24
2022	$ 162,989,132	13.2%	$ 21,514,565.42	223	$ 96.56
2023	$ 248,172,575	12.2%	$ 30,277,054.15	249	$ 121.58
2024	$ 248,654,679	13.7%	$ 34,065,691.02	195	$ 174.41

Notes: All dollar values are nominal. See the Company's response to DIV 2-1 and Excel workbooks containing these values.

Division 2-6
Avoided Distribution

Request:

Please provide any assessment that RIE or its predecessor has done to assess the accuracy of the periodic Synapse Energy estimate of Capacity DRIPE.

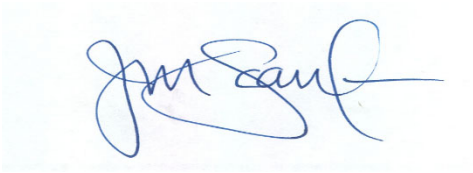
Response:

To its knowledge, the Company has not conducted any assessment of the accuracy of the periodic Synapse Energy estimate of Capacity DRIPE.

Certificate of Service

I hereby certify that a copy of the cover letter and any materials accompanying this certificate was electronically transmitted to the individuals listed below.

The paper copies of this filing are being hand delivered to the Rhode Island Public Utilities Commission and to the Rhode Island Division of Public Utilities and Carriers.



Joanne M. Scanlon

April 12, 2024
Date

Docket No. 24-06-EE – Rhode Island Energy System Reliability Procurement ("SRP") Investment Proposal for Electric Demand Response 2024-2026 – ConnectedSolutions
Service list 3/25/2024

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