

December 3, 2021

VIA ELECTRONIC MAIL

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

**RE: Docket 5189– 2022 Annual Energy Efficiency Program Plan
Responses to PUC Data Requests - Set 3 (Complete Set)**

Dear Ms. Massaro:

On behalf of The Narragansett Electric Company d/b/a National Grid (“National Grid” or the “Company”), attached, please find the electronic version of the Company’s complete batch of responses to the Public Utilities Commission’s (“PUCs”) Third Set of Data Requests (including all filed corrected and supplemental responses) in the above referenced docket. Bates stamp has been applied to the attached electronic version.

Thank you for your attention to this filing. If you have any questions or concerns, please do not hesitate to contact me at 401-784-4263.

Sincerely,



Andrew S. Marcaccio

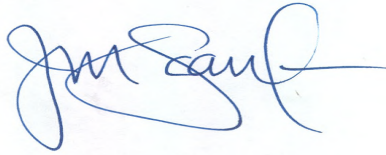
Enclosures

cc: Docket 5189 Service List
Margaret Hogan, Esq.
John Bell, Division

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

December 3, 2021
Date

**Docket No. 5189 - National Grid – 2022 Annual Energy Efficiency Program
Service list updated 11/29/2021**

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STATE OF RHODE ISLAND
PUBLIC UTILITIES COMMISSION

THE NARRAGANSETT ELECTRIC COMPANY)	
D/B/A NATIONAL GRID'S 2022 ANNUAL)	DOCKET NO. 5189
ENERGY EFFICIENCY PLAN)	

**MOTION OF THE NARRAGANSETT ELECTRIC COMPANY D/B/A
NATIONAL GRID FOR PROTECTIVE TREATMENT OF
CONFIDENTIAL INFORMATION**

The Narragansett Electric Company d/b/a National Grid (“National Grid” or the “Company”) hereby respectfully requests that the Public Utilities Commission (“PUC”) grant protection from public disclosure certain confidential information submitted by the Company in the above referenced docket. The reasons for the protective treatment are set forth herein. The Company also requests that, pending entry of that finding, the PUC preliminarily grant the Company’s request for confidential treatment pursuant to 810-RICR-00-00-1.3(H)(2).

The record that is the subject of this Motion that requires protective treatment from public disclosure is the Company’s confidential response to PUC 3-23 which was filed by the Company on November 30, 2021 in response to the Third Set of Data Requests issued by the PUC in the above-referenced docket. The Company requests protective treatment of PUC 3-23 in accordance with 810-RICR-00-00-1.3(H) and R.I. Gen. Laws § 38-2-2-(4)(B).

I. LEGAL STANDARD

For matters before the PUC, a claim for protective treatment of information is governed by the policy underlying the Access to Public Records Act (“APRA”), R.I. Gen. Laws § 38-2-1 et seq. See 810-RICR-00-00-1.3(H)(1). Under APRA, any record received or maintained by a state or local governmental agency in connection with the transaction of official business is considered

public unless such record falls into one of the exemptions specifically identified by APRA. See R.I. Gen. Laws §§ 38-2-3(a) and 38-2-2(4). Therefore, if a record provided to the PUC falls within one of the designated APRA exemptions, the PUC is authorized to deem such record confidential and withhold it from public disclosure.

II. BASIS FOR CONFIDENTIALITY

PUC 3-23, which is the subject of this Motion, is exempt from public disclosure pursuant to R.I. Gen. Laws § 38-2-2(4)(B) as “[t]rade secrets and commercial or financial information obtained from a person, firm, or corporation that is of a privileged or confidential nature.” The Rhode Island Supreme Court has held that this confidential information exemption applies where the disclosure of information is likely either (1) to impair the government’s ability to obtain necessary information in the future; or (2) to cause substantial harm to the competitive position of the person from whom the information was obtained. *Providence Journal v. Convention Center Authority*, 774 A.2d 40 (R.I. 2001).

The first prong of the test is satisfied when information is provided to the governmental agency and that information is of a kind that would customarily not be released to the public by the person from whom it was obtained. *Providence Journal*, 774 A.2d at 47. PUC 3-23 consists of financial and commercial information. National Grid would customarily not release this information to the public. The Company’s submission of PUC 3-23 stems from data requests issued by the PUC in the above-referenced docket. Accordingly, National Grid is providing PUC 3-23 to fulfil its regulatory responsibilities.

Moreover, the public disclosure of information contained in PUC 3-23 would likely cause substantial harm to the Company’s competitive position. PUC 3-23 contains commercially sensitive market information including vendor names and service costs. Disclosure of the vendor names and service costs could negatively impact the Company’s ability to negotiate with future

vendors and hinder its ability to obtain advantageous pricing for Rhode Island ratepayers. As such, the information should be protected from public disclosure.

III. CONCLUSION

For the foregoing reasons, the Company respectfully requests that the PUC grant this motion for protective treatment of PUC 3-23.

Respectfully submitted,

NATIONAL GRID
By its attorney,

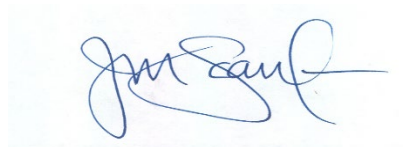


Andrew S. Marcaccio (#8168)
National Grid
280 Melrose Street
Providence, RI 02907
(401) 784-4263

Dated: November 30, 2021

CERTIFICATE OF SERVICE

I hereby certify that on November 30, 2021, I delivered a true copy of the foregoing Motion via electronic mail to the parties on the Service List for Docket No. 5189.



Joanne M. Scanlon

PUC 3-1 (Corrected)

Request:

National Grid has filed a Provisional Electric EEP with ~\$9 million dollars originally targeted at a CHP project now reallocated to other C&I New Construction projects and C&I Programs. Referencing National Grid's Provisional Plan and its response to PUC 2-17 (Please note that the Commission will refer to the Original Plan with the \$9,154,400 CHP component removed as the "**Alternative Base Plan**") and any other information relevant to this docket, please respond to the following: With respect to the \$9M of funding in the Provisional Plan that is incremental to the Alternative Base Plan, *and only those \$9M dollars within the Provisional Plan*, is National Grid's proposed use of these \$9M in the Provisional Plan

- a. Cost effective
- b. Less than the cost of supply
- c. Prudent
- d. Reliable
- e. Environmentally responsible

For each individual response to parts a-e, please explain why or why not.

Response:

This corrected response makes a correction to subsection (b).

Initial subsection (b) read as follows:

- b. Less than the cost of supply: Yes, the \$9M investment within the provisional plan is \$12,320,908 less than the cost of supply.

Corrected subsection (b) reads as follows:

- b. Less than the cost of supply: No. The \$9M investment within the provisional plan is \$1,196,596 more than the cost of supply.

In reallocating these dollars, the Company did not specifically look at the incremental cost of these savings compared to the incremental cost of supply. The Company evaluated the energy efficiency costs relative to cost of supply at the portfolio level, after reallocating the \$9M to programmatic areas where the Company felt there were additional savings to be realized that aligned with stakeholder priorities. As noted in the EERMC response to PUC 1-1 (b), the Company agrees with the EERMC's perspective

PUC 3-1 (Corrected), page 2

that the established practice is to compare energy efficiency to the cost of supply at the portfolio level, rather than comparing subsets or portions of portfolios.

Additionally, these incremental measures are also components of the larger portfolio that remains less than the cost of supply. The LCP Standards speak to energy efficiency being less than the cost of supply at a portfolio level. Assessing the cost of supply of a \$9M investment comprised of portions of programs is not contemplated by the Standards.

The full answer, with all subsections, as corrected reads as follows:

Please see Attachment PUC 1-20 for E-2, E-5, E-5 Secondary, E-5A, E-6, E-6A, E-6B, and E-8A consisting of only the reallocated \$9,154,400 in the Provisional Plan.

- a. Cost effective: Yes, the Company believes the \$9 million in incremental spend to be cost-effective. This spend has a primary B/C ratio (i.e. excluding any economic benefits) of 0.99; with any amount of economic benefits added, the benefit cost ratio would exceed 1.0. The Company bases this conclusion on the fact that, counting all economic benefits, the benefit cost ratio of this incremental spend is 4.33. These incremental measures are also components of larger programs that remain cost effective as a whole. The LCP Standards speak to cost-effectiveness at a program or portfolio level. Assessing the cost-effectiveness of a \$9M investment comprised of portions of programs is not contemplated by the Standards.
- b. Less than the cost of supply: No. The \$9M investment within the provisional plan is \$1,196,596 more than the cost of supply.

In reallocating these dollars, the Company did not specifically look at the incremental cost of these savings compared to the incremental cost of supply. The Company evaluated the energy efficiency costs relative to cost of supply at the portfolio level, after reallocating the \$9M to programmatic areas where the Company felt there were additional savings to be realized that aligned with stakeholder priorities. As noted in the EERMC response to PUC 1-1 (b), the Company agrees with the EERMC's perspective that the established practice is to compare energy efficiency to the cost of supply at the portfolio level, rather than comparing subsets or portions of portfolios.

Additionally, these incremental measures are also components of the larger portfolio that remains less than the cost of supply. The LCP Standards speak to energy efficiency being less than the cost of supply at a portfolio level. Assessing the cost of supply of a \$9M investment comprised of portions of programs is not contemplated by the Standards.

PUC 3-1 (Corrected), page 3

- c. Prudent: Yes. The incremental \$9 million is prudent because this investment will provide energy that is lower than the cost of supply for Rhode Island customers while being part of an overall portfolio of energy efficiency programs that adheres to the PUC's guidance of limiting budget growth to 5% (and managing associated 2022 rate and bill impacts to customers).
- d. Reliable: Yes, the incremental \$9 million is reliable because it contributes to meeting the state's energy needs as well as providing for stability and sustainable growth in the state's energy efficiency programs.
- e. Environmentally responsible: Yes, the incremental \$9 million is environmentally responsible because this investment reduces CO2 emissions by an additional 22,028 tons from the Alternative Base Plan and contributes directly to meeting the Act on Climate's goals.

PUC 3-1

Request:

National Grid has filed a Provisional Electric EEP with ~\$9 million dollars originally targeted at a CHP project now reallocated to other C&I New Construction projects and C&I Programs. Referencing National Grid's Provisional Plan and its response to PUC 2-17 (Please note that the Commission will refer to the Original Plan with the \$9,154,400 CHP component removed as the "**Alternative Base Plan**") and any other information relevant to this docket, please respond to the following: With respect to the \$9M of funding in the Provisional Plan that is incremental to the Alternative Base Plan, *and only those \$9M dollars within the Provisional Plan*, is National Grid's proposed use of these \$9M in the Provisional Plan

- a. Cost effective
- b. Less than the cost of supply
- c. Prudent
- d. Reliable
- e. Environmentally responsible

For each individual response to parts a-e, please explain why or why not.

Response:

Please see Attachment PUC 1-20 for E-2, E-5, E-5 Secondary, E-5A, E-6, E-6A, E-6B, and E-8A consisting of only the reallocated \$9,154,400 in the Provisional Plan.

- a. Cost effective: Yes, the Company believes the \$9 million in incremental spend to be cost-effective. This spend has a primary B/C ratio (i.e. excluding any economic benefits) of 0.99; with any amount of economic benefits added, the benefit cost ratio would exceed 1.0. The Company bases this conclusion on the fact that, counting all economic benefits, the benefit cost ratio of this incremental spend is 4.33. These incremental measures are also components of larger programs that remain cost effective as a whole. The LCP Standards speak to cost-effectiveness at a program or portfolio level. Assessing the cost-effectiveness of a \$9M investment comprised of portions of programs is not contemplated by the Standards.
- b. Less than the cost of supply: Yes, the \$9M investment within the provisional plan is \$12,320,908 less than the cost of supply.

PUC 3-1, page 2

- c. Prudent: Yes. The incremental \$9 million is prudent because this investment will provide energy that is lower than the cost of supply for Rhode Island customers while being part of an overall portfolio of energy efficiency programs that adheres to the PUC's guidance of limiting budget growth to 5% (and managing associated 2022 rate and bill impacts to customers).
- d. Reliable: Yes, the incremental \$9 million is reliable because it contributes to meeting the state's energy needs as well as providing for stability and sustainable growth in the state's energy efficiency programs.
- e. Environmentally responsible: Yes, the incremental \$9 million is environmentally responsible because this investment reduces CO2 emissions by an additional 22,028 tons from the Alternative Base Plan and contributes directly to meeting the Act on Climate's goals.

PUC 3-2

Request:

Given your response to PUC 3-1, is National Grid's entire Provisional Electric EEP on a whole, including the \$9M reallocation, prudent? Why or why not?

Response:

Yes, the Company believes that the entire Provisional Electric EEP, including the \$9M re-allocation, is prudent because this investment will provide energy that is lower than the cost of supply for Rhode Island customers while being part of an overall portfolio of energy efficiency programs that adheres to the PUC's guidance of limiting budget growth to 5% (and managing associated 2022 rate and bill impacts to customers).

PUC 3-3

Request:

Given your responses to PUC 3-1 and 3-2 and National Grid's response to PUC 2-17 illustrating their calculations of the differences in costs and benefits of the Provisional Plan and Alternative Base Plan, please answer the following:

- a. Comparing the program expenses and benefits from the Provisional Plan and the Alternative Base Plan, please indicate which plan you recommend that the PUC approve for the 2022 Annual Plan.
- b. Please explain the reasons for your recommendation.

Response:

- a. The Company respectfully requests that the PUC approve the Provisional Plan, inclusive of the \$9M in re-allocated incentive costs initially associated with the RI Grows CHP project.
- b. The Company believes that this plan best meets the Company's obligations under the LCP standards to pursue all achievable energy efficiency that is cost effective, less than the cost of supply, equitable, reliable and environmentally responsible, while also demonstrating prudence through adhering to the PUC's guidance of limiting budget growth to 5% (and managing associated 2022 rate and bill impacts to customers).

PUC 3-4

Request:

Referencing National Grid's response to PUC 2-18, please answer the following:

- a. Is it the view of National Grid that the implementation of the 2022 Annual Energy Efficiency Plan would be impacted if the design payout rates were the same as in 2021? (Please answer yes or no.)
- b. If the answer to (a) is yes, please explain in detail how the implementation of the 2022 Annual Energy Efficiency Plan would be impacted if the design payout rates were the same as in 2021.
- c. If the answer to (a) is yes, Please provide the design payout rates and total design level potential incentive and maximum potential incentive that you would recommend that the PUC approve for the 2022 Annual Plan. Please explain how you arrived at the recommended design payout rates and total design level potential incentive and maximum potential incentive.

Response:

- a. In the Company's view, the purpose of a performance incentive is to create a motivation for the Company to take actions (including the pursuit and acquisition of energy efficiency resources) that it would otherwise lack a financial incentive to pursue. Holding everything else equal, significant reductions in performance incentive earning opportunities will likely reduce the levels of Company focus, management attention and resource allocation committed to achieving specific desired programmatic outcomes, all of which could be expected to have a negative impact on program implementation activities.

A 2022 electric payout rate constant with the 2021 electric payout rate, reflected in the response to PUC 2-18, would result in an earning opportunity of \$1.94 million for the electric sector, or 35% of the proposed electric sector PIM of \$5.5M. An electric sector earning opportunity of that nominal level was last seen in 2011.

Accordingly, yes, such a reduction should be expected to impact the implementation of the 2022 plan and potentially compromise the total benefits delivered to customers.

PUC 3-4, page 2

- b. Specifically, a dramatic decrease in the Company's electric program earning opportunity would be interpreted by the Company as a signal from the Commission around the value that the Commission perceives from these programs, and, accordingly, the level of focus, prioritization and management attention that should be devoted to their successful execution. While the Company would continue to seek achievement of committed savings and benefits in 2022, the Company would have significantly reduced incentive to devote attention to addressing unforeseen circumstances or mitigating challenges in achieving these outcomes. Looking beyond 2022, the Company would also certainly incorporate the Commission's direction in designing and proposing future plans and programs.
- c. The Company continues to believe that the Design Level earning opportunities of \$5.5mln for electric programs and \$1.7mln for gas programs (with continued opportunities to earn up to 125% of each of these amounts for exemplary performance) proposed in the Company's 2022 Annual Plan filings to this point represent appropriate earning opportunities that sufficiently incentivize desired Company actions and outcomes, align with public policy goals, and meet the same standards and alignment with the PUC's LCP Guidelines and PIM Principles that have led the Commission to approve similar nominal PIM earning opportunities in recent years. The Company also notes that in keeping these nominal levels flat between 2021 and 2022, given recently observed inflation rates, the proposed earning opportunity represents a 6.2% decline in real earning opportunity relative to 2021.

Specifically:

- Nominal payout rates were determined as a function of proposed design level performance incentive earning opportunities and planned benefits of the form compensated under the PUC's approved PIM mechanism in Order 24225 in Docket 5076. Specified payout rates are not an input into this process, but rather an output.
- The Company believes that the proposed maximum earning opportunity of 125% of design level opportunity aligns with historical precedent, and with the general PIM design approved by the Commission in Order 24225 in Docket 5076, in providing incentive for the Company to pursue incremental net benefit producing savings and activities while placing a ceiling on customer exposure to paying performance incentive in any given year.

PUC 3-5

Request:

Please provide the Company’s estimate of the electric and gas incentive it expects to earn in 2021. Please provide the data and calculations used to arrive at the estimate.

Response:

Please see Table 1 below for the Company’s estimate of the electric and gas incentives expected for 2021. These estimates are based on the Company’s forecast of year-end lifetime energy savings and expenditures, with actual savings and expenditures through October. Lifetime energy savings are used as a proxy for PIM-eligible benefits for tracking purposes during the year.

Attachment PUC 3-5 is an Excel-based calculator tool the Company developed to estimate earnings for the PIM. The calculator implements the PIM Guidance and calculation steps in PUC Order 24225 in Docket 5076.

Table 1. 2021 Projected PIM and SQA Results

Ref	Fuel	Sector	Earning Forecast (PIM component)	Penalty Forecast (SQA component)	Net Earnings
	(a)	(b)	(c)	(d)	(e) = (c) - (d)
1	Electric	Residential	\$0	\$169,344	-\$169,344
2	Electric	Income Eligible	\$0	\$102,756	-\$102,756
3	Electric	Commercial & Industrial	\$5,319,143	N/A	\$5,319,143
4	Electric	Electric Subtotal (1+2+3)	\$5,319,143	\$272,100	\$5,047,043
5	Gas	Residential	\$0	\$386,750	-\$386,750
6	Gas	Income Eligible	\$0	\$145,931	-\$145,931
7	Gas	Commercial & Industrial	\$1,821,469	N/A	\$1,821,469
8	Gas	Gas Subtotal (5+6+7)	\$1,821,469	\$532,681	\$1,288,789
	Total	Total (4+8)	\$7,140,613	\$804,781	\$6,335,832

The Narragansett Electric Company
d/b/a National Grid
RIPUC Docket No. 5189
In Re: 2022 Annual Energy Efficiency Plan
Responses to the Commission's Third Set of Data Requests
Issued on November 24, 2021

Attachment PUC 3-5

Please see the Excel version of Attachment PUC 3-5.

PUC 3-6

Request:

Please explain the process and schedule used by the Company to transfer or pay the regulatory expenses of the EERMC. Include in your response a breakdown of transfers to or payments on behalf of the EERMC for 2020 and 2021 (including an estimate of the remaining payments or transfers in 2021).

Response:

The Company receives monthly invoices for EERMC payments through the RI Office of Energy Resources (OER). OER approves all the EERMC invoices in advance of submitting the invoice for payment. All the invoices paid by the Company can be viewed on Attachment PUC 3-6. The majority of the invoices are for professional services provided by the EERMC consultants and legal counsel. There are also invoices for hosting the EERMC website, printing of the EERMC Annual Report, fees incurred for the Technical Potential Study, reserves collected for a future Technical Potential Study, and a transfer of end-of-year balance from National Grid to EERMC client fund held by legal counsel.

Following are the expenses paid in 2020 and 2021 by the Company. Please note that the December 2020 invoice for Optimal Energy was paid directly by OER. The Company does not have an estimate of payments for the remainder of 2021 but would expect them to be aligned with the prior year's monthly costs or slightly higher to pay for the 2021 litigated Energy Efficiency Plan proceedings. On the September 2021 Optimal Energy Invoice there is a Billing Limit Remaining of \$81,165.00. Similar to 2020, the Company anticipates a request to transfer any end-of-year balance to the EERMC client fund.

Invoice

Number	Explanation of Services by Optimal Energy	Amount	Invoice Date
6954	Professional Services from January 1, 2020 to January 31, 2020	\$61,315.25	1/31/2020
6966	Professional Services from February 1, 2020 to February 29, 2020	\$84,272.48	2/29/2020
6987	Professional Services from March 1, 2020 to March 31, 2020	\$84,880.98	3/31/2020
7003	Professional Services from April 1, 2020 to April 30, 2020	\$91,364.98	4/30/2020
7019	Professional Services from May 1, 2020 to May 31, 2020	\$77,574.48	5/31/2020
7029	Professional Services from June 1, 2020 to June 30, 2020	\$90,849.73	6/30/2020
7045	Professional Services from July 1, 2020 to July 31, 2020	\$64,427.48	7/31/2020
7052	Professional Services from August 1, 2020 to August 31, 2020	\$82,571.73	8/31/2020
7345	Professional Services from September 1, 2020 to September 30, 2020	\$102,836.23	9/30/2020
7075	Professional Services from October 1, 2020 to October 31, 2020	\$64,302.48	10/31/2020
7097	EERMC website fees	\$300.00	11/30/2020
7094	Professional Services from November 1, 2020 to November 30, 2020	\$47,749.48	11/30/2020
7121	Professional Services from January 1, 2021 to January 31, 2021	\$43,928.25	1/31/2021
7134	Professional Services from February 1, 2020 to February 29, 2020	\$53,846.75	2/28/2021
7146	Professional Services from March 1, 2021 to March 31, 2021	\$53,995.00	4/20/2021
7160	Professional Services from April 1, 2021 to April 30, 2021	\$55,757.50	4/30/2021
7178	Professional Services from May 1, 2021 to May 31, 2021	\$73,041.50	5/31/2021
7197	Professional Services from June 1, 2020 to June 30, 2020	\$60,638.75	6/30/2021
7217	Professional Services from July 1, 2020 to July 31, 2020	\$74,118.25	7/31/2021
7234	Professional Services from August 1, 2020 to August 31, 2020	\$70,198.50	8/31/2021
7248	Professional Services from September 1, 2020 to September 30, 2020	\$64,573.50	7/30/2021

Invoice Number	Explanation of Services Submitted by the Law Office of Marisa Desautel LLC	Amount	Invoice Date
MPS-1	Market Potential Study Vendor Compensation	\$111,340.00	1/16/2020
FPS-1	Future Market Potential Study Allocation	\$40,000.00	2/11/2020
MPS-2	Market Potential Study Vendor Compensation	\$164,196.20	2/11/2020
	536 Legal Counsel to EERMC	\$1,760.50	2/12/2020
	553 Legal Counsel to EERMC	\$2,724.50	3/11/2020
	573 Legal Counsel to EERMC	\$6,521.00	4/10/2020
	584 Legal Counsel to EERMC	\$4,216.50	5/11/2020
	605 Legal Counsel to EERMC	\$962.50	6/10/2020
	619 Legal Counsel to EERMC	\$2,190.00	7/10/2020
	637 Legal Counsel to EERMC	\$2,246.17	8/17/2020
	92761 Annual Report Printing	\$956.21	8/17/2020
	652 Legal Counsel to EERMC	\$5,032.50	9/11/2020
	670 Legal Counsel to EERMC	\$4,950.50	10/12/2020
	688 Legal Counsel to EERMC	\$2,238.66	11/10/2020
	706 Legal Counsel to EERMC	\$7,672.50	12/10/2020
	EERMC 2020 end-of-year balance transfer from National Grid to the EERMC client fund held by legal counsel	\$156,786.56	12/23/2020
	726 Legal Counsel to EERMC	\$3,439.02	2/11/2021
	739 Legal Counsel to EERMC	\$2,847.50	3/10/2021
	753 Legal Counsel to EERMC	\$1,055.00	4/12/2021
	766 Legal Counsel to EERMC	\$1,132.50	5/10/2021
FPS-1	Future Market Potential Study Allocation	\$100,000.00	5/11/2021
	776 Legal Counsel to EERMC	\$1,837.50	6/11/2021
	788 Legal Counsel to EERMC	\$1,367.50	7/12/2021
	793 Legal Counsel to EERMC	\$3,372.50	8/10/2021
	803 Legal Counsel to EERMC	\$1,887.50	9/14/2021
	812 Legal Counsel to EERMC	\$3,767.50	10/12/2021
	820 Legal Counsel to EERMC	\$7,846.01	11/10/2021

PUC 3-7

Request:

Referring to the response to PUC 1-22 in docket 5076, please provide the same analysis for both the Provisional Plan and the Alternative Base Plan. Please perform the analysis in the same three ways and provide appropriate column references and row numbers, as well as appropriate footnotes on the schedules that describe the calculations and sources.

Response:

Please see the attached summary and detailed schedules for the requested variations on the electric cost of supply calculations for both the provisional plan and the alternative base plan. Attachment PUC 3-7-1 shows the cost of supply calculation at the portfolio level for both the provisional plan and alternative base plan. Attachments PUC 3-7-2 to 3-7-15 show the cost of supply calculation at the program level for both the provisional plan and alternative base plan. Attachment PUC 3-7-16 shows a summary of Attachments PUC 3-7-1 through 3-7-15. The attachments illustrate the three variants as outlined in Docket 5076, PUC 1-22 request.

To conduct this additional analysis of cost of supply the Company took several additional steps to assess cost of supply at program-level rather than portfolio-level. These additional data processing steps are described below.

Portfolio-level to Program-level – Program Implementation Costs

Distributing portfolio-level program implementation costs to programs. Some costs are defined at the portfolio level (EERMC and OER costs). These costs are allocated to programs by multiplying them by the ratio of the program's direct programmatic costs to all direct programmatic costs across all sectors. This is an approximation for the purposes of this cost of supply calculation.

Sector-level to Program-level – Program Implementation and Shareholder Incentive Costs

Distributing sector-level program implementation costs to programs. Some implementation costs are included in the plans at the sector-level. To analyze cost of supply at the program level, sector-level costs were distributed to programs by multiplying these costs by the ratio of the program's direct programmatic costs to all direct programmatic costs within the sector. This is an approximation for the purposes of this cost of supply calculation and is not necessarily reflective of the distribution of these costs in actual implementation.

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Distributing sector-level shareholder incentive costs to programs. The shareholder incentive is planned at the sector-level. To analyze cost of supply at the program level sector-level, shareholder incentive costs were distributed to programs by multiplying these costs by the ratio of the program's direct programmatic costs to all direct programmatic costs within the sector. This is an approximation for the purposes of this cost of supply calculation and is not necessarily reflective of the actual distribution of shareholder incentive. This approach does not apply to the ConnectedSolutions demand response programs, which are not eligible for the energy efficiency shareholder incentive.

The Narragansett Electric Company
d/b/a National Grid
RIPUC Docket No. 5189
Attachment PUC 3-7-1

Calculation of cost of supply compared to cost of energy efficiency for Electric Energy Efficiency and Demand Response portfolio - Part 1

Ref	Electric Energy a	2022	
		Provisional Plan b	Alternative Base Case c
1	Electric Energy Costs	\$57,441,858	\$53,629,407
2	Electric Generation Costs	\$7,017,307	\$6,554,452
3	Electric Transmission Capacity Costs	\$16,878,833	\$15,916,995
4	Electric Distribution Capacity Cost	\$16,723,214	\$15,770,244
5	Natural Gas Costs	-\$2,435,229	-\$2,330,408
6	Fuel Costs	\$19,026,386	\$19,026,114
7	Income Eligible Rate Discount	\$107,155	\$107,155
8	Arrearages	\$147,887	\$147,884
9	Price Effects	\$37,540,158	\$35,385,908
10	Non-embedded Greenhouse Gas Reduction Costs	\$47,125,440	\$44,429,486
11	Non-embedded Nitrous Oxide (NOx Costs)	\$1,271,506	\$1,240,514
12	Reliability Costs	\$1,277,883	\$1,269,946
13	Cost of supply = Sum of Rows 1 through 12	\$202,122,398	\$191,147,696
14	Program Implementation Expenses	\$117,125,459	\$107,962,060
15	Customer Contribution	\$18,802,911	\$15,795,013
16	Shareholder Incentive	\$5,500,000	\$5,500,000
17	Cost of energy efficiency = Sum of Rows 14 through 16	\$141,428,371	\$129,257,072
18	Difference = Row 13 - Row 17	\$60,694,027	\$61,890,623

Notes:

- (1) Tables E-6 and E-6B, sum of Energy columns "Winter Peak", "Winter Off-Peak", "Summer Peak" and "Summer Off-Peak."
- (2) Tables E-6 and E-6B, sum of Capacity columns "Summer Generation."
- (3) Tables E-6 and E-6B, sum of Capacity column "Trans."
- (4) Tables E-6 and E-6B, sum of Capacity column "Dist."
- (5) Table E-6, Non-electric column "Natural Gas."
- (6) Table E-6, sum of Non-electric columns "Oil", "Other Resource", "Non-Resource."
- (7) Calculations from Electric Benefit-Cost Model, 2022 Plan
- (8) Calculations from Electric Benefit-Cost Model, 2022 Plan
- (9) Tables E-6 and E-6B, sum of Capacity column "Capacity DRIPE" and Energy column "Energy DRIPE."
- (10) Tables E-6 and E-6B, Societal column "Carbon."
- (11) Table E-6, Societal column "NOx."
- (12) Tables E-6 and E-6B, Capacity column "Reliability."
- (14) Attachment 5 Tables 1-5, column "Program Implementation Expenses."
- (15) Attachment 5 Tables 1-5, column "Customer Contribution."
- (16) Attachment 5 Tables 1-5, column "Shareholder Incentive."

The Narragansett Electric Company
d/b/a National Grid
RIPUC Docket No. 5189
Attachment PUC 3-7-1

Calculation of cost of supply compared to cost of energy efficiency for Electric Energy Efficiency and Demand Response portfolio - Part 2

Ref	Electric Energy a	2022	
		Provisional Plan b	Alternative Base Case c
1	Electric Energy Costs	\$57,441,858	\$53,629,407
2	Electric Generation Costs	\$7,017,307	\$6,554,452
3	Electric Transmission Capacity Costs	\$16,878,833	\$15,916,995
4	Electric Distribution Capacity Cost	\$16,723,214	\$15,770,244
5	Price Effects	\$37,540,158	\$35,385,908
6	Cost of supply = Sum of Rows 1 through 5	\$135,601,370	\$127,257,005
7	Program Implementation Expenses	\$117,125,459	\$107,962,060
8	Customer Contribution	\$18,802,911	\$15,795,013
9	Shareholder Incentive	\$5,500,000	\$5,500,000
10	Cost of energy efficiency = Sum of Rows 7 through 9	\$141,428,371	\$129,257,072
11	Difference = Row 6 - Row 10	-\$5,827,001	-\$2,000,067

Notes:

- (1) Tables E-6 and E-6B, sum of Energy columns "Winter Peak", "Winter Off-Peak", "Summer Peak" and "Summer Off-Peak."
- (2) Tables E-6 and E-6B, sum of Capacity columns "Summer Generation."
- (3) Tables E-6 and E-6B, sum of Capacity column "Trans."
- (4) Tables E-6 and E-6B, sum of Capacity column "Dist."
- (5) Tables E-6 and E-6B, sum of Capacity column "Capacity DRIPE" and Energy column "Energy DRIPE."
- (7) Attachment 5 Tables 1-5, column "Program Implementation Expenses."
- (8) Attachment 5 Tables 1-5, column "Customer Contribution."
- (9) Attachment 5 Tables 1-5, column "Shareholder Incentive."

The Narragansett Electric Company
d/b/a National Grid
RIPUC Docket No. 5189
Attachment PUC 3-7-1

Calculation of cost of supply compared to cost of energy efficiency for Electric Energy Efficiency and Demand Response portfolio - Part 3

Ref	Electric Energy a	2022	
		Provisional Plan b	Alternative Base Case c
1	Electric Energy Costs	\$57,441,858	\$53,629,407
2	Electric Generation Costs	\$7,017,307	\$6,554,452
3	Cost of supply = Sum of Rows 1 through 5	\$64,459,164	\$60,183,858
4	Program Implementation Expenses	\$117,125,459	\$107,962,060
5	Customer Contribution	\$18,802,911	\$15,795,013
6	Shareholder Incentive	\$5,500,000	\$5,500,000
7	Cost of energy efficiency = Sum of Rows 7 through 9	\$141,428,371	\$129,257,072
8	Difference = Row 6 - Row 10	-\$76,969,206	-\$69,073,214

Notes:

- (1) Tables E-6 and E-6B, sum of Energy columns "Winter Peak", "Winter Off-Peak", "Summer Peak" and "Summer Off-Peak."
- (2) Tables E-6 and E-6B, sum of Capacity columns "Summer Generation."
- (4) Attachment 5 Tables 1-5, column "Program Implementation Expenses."
- (5) Attachment 5 Tables 1-5, column "Customer Contribution."
- (6) Attachment 5 Tables 1-5, column "Shareholder Incentive."

The Narragansett Electric Company
d/b/a National Grid
RIPUC Docket No. 5189
Attachment PUC 3-7-2

Calculation of cost of supply compared to cost of energy efficiency for Electric Energy Efficiency and Demand Response Residential New Construction - Part 1

Electric Energy		2022	
Ref	a	Provisional Plan b	Alternative Base Case c
1	Electric Energy Costs	\$1,108,384	\$1,108,403
2	Electric Generation Costs	\$48,196	\$48,199
3	Electric Transmission Capacity Costs	\$94,118	\$94,125
4	Electric Distribution Capacity Cost	\$93,250	\$93,257
5	Natural Gas Costs	\$0	\$0
6	Fuel Costs	\$1,620,543	\$1,620,543
7	Income Eligible Rate Discount	\$0	\$0
8	Arrearages	\$0	\$0
9	Price Effects	\$331,106	\$331,119
10	Non-embedded Greenhouse Gas Reduction Costs	\$833,343	\$833,358
11	Non-embedded Nitrous Oxide (NOx Costs)	\$27,508	\$27,508
12	Reliability Costs	\$535	\$535
13	Cost of supply = Sum of Rows 1 through 12	\$4,156,981	\$4,157,049
14	Program Implementation Expenses	\$1,639,124	\$1,702,915
15	Customer Contribution	\$547,173	\$547,173
16	Shareholder Incentive	\$0	\$0
17	Cost of energy efficiency = Sum of Rows 14 through 16	\$2,186,297	\$2,250,088
18	Difference = Row 13 - Row 17	\$1,970,684	\$1,906,961

Notes:

- (1) Tables E-6 and E-6B, sum of Energy columns "Winter Peak," "Winter Off-Peak", "Summer Peak" and "Summer Off-Peak."
- (2) Tables E-6 and E-6B, sum of Capacity columns "Summer Generation."
- (3) Tables E-6 and E-6B, sum of Capacity column "Trans."
- (4) Tables E-6 and E-6B, sum of Capacity column "Dist."
- (5) Table E-6, Non-electric column "Natural Gas."
- (6) Table E-6, sum of Non-electric columns "Oil", "Other Resource," "Non-Resource."
- (7) Calculations from Electric Benefit-Cost Model, 2022 Plan
- (8) Calculations from Electric Benefit-Cost Model, 2022 Plan
- (9) Tables E-6 and E-6B, sum of Capacity column "Capacity DRIPE" and Energy column "Energy DRIPE."
- (10) Tables E-6 and E-6B, Societal column "Carbon."
- (11) Table E-6, Societal column "NOx."
- (12) Tables E-6 and E-6B, Capacity column "Reliability."
- (14) Attachment 5 Tables 1-5, column "Program Implementation Expenses."
- (15) Attachment 5 Tables 1-5, column "Customer Contribution."
- (16) Attachment 5 Tables 1-5, column "Shareholder Incentive."

The Narragansett Electric Company
d/b/a National Grid
RIPUC Docket No. 5189
Attachment PUC 3-7-2

Calculation of cost of supply compared to cost of energy efficiency for Electric Energy Efficiency and Demand Response Residential New Construction - Part 2

Electric Energy		2022	
Ref	a	Provisional Plan b	Alternative Base Case c
1	Electric Energy Costs	\$1,108,384	\$1,108,403
2	Electric Generation Costs	\$48,196	\$48,199
3	Electric Transmission Capacity Costs	\$94,118	\$94,125
4	Electric Distribution Capacity Cost	\$93,250	\$93,257
5	Price Effects	\$331,106	\$331,119
6	Cost of supply = Sum of Rows 1 through 5	\$1,675,052	\$1,675,105
7	Program Implementation Expenses	\$1,639,124	\$1,702,915
8	Customer Contribution	\$547,173	\$547,173
9	Shareholder Incentive	\$0	\$0
10	Cost of energy efficiency = Sum of Rows 7 through 9	\$2,186,297	\$2,250,088
11	Difference = Row 6 - Row 10	-\$511,245	-\$574,984

Notes:

- (1) Tables E-6 and E-6B, sum of Energy columns "Winter Peak," "Winter Off-Peak", "Summer Peak" and "Summer Off-Peak."
- (2) Tables E-6 and E-6B, sum of Capacity columns "Summer Generation."
- (3) Tables E-6 and E-6B, sum of Capacity column "Trans."
- (4) Tables E-6 and E-6B, sum of Capacity column "Dist."
- (5) Tables E-6 and E-6B, sum of Capacity column "Capacity DRIPE" and Energy column "Energy DRIPE."
- (7) Attachment 5 Tables 1-5, column "Program Implementation Expenses."
- (8) Attachment 5 Tables 1-5, column "Customer Contribution."
- (9) Attachment 5 Tables 1-5, column "Shareholder Incentive."

The Narragansett Electric Company
d/b/a National Grid
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Attachment PUC 3-7-2

Calculation of cost of supply compared to cost of energy efficiency for Electric Energy Efficiency and Demand Response Residential New Construction - Part 3

Electric Energy		2022	
Ref	a	Provisional Plan b	Alternative Base Case c
1	Electric Energy Costs	\$1,108,384	\$1,108,403
2	Electric Generation Costs	\$48,196	\$48,199
3	Cost of supply = Sum of Rows 1 through 5	\$1,156,579	\$1,156,603
4	Program Implementation Expenses	\$1,639,124	\$1,702,915
5	Customer Contribution	\$547,173	\$547,173
6	Shareholder Incentive	\$0	\$0
7	Cost of energy efficiency = Sum of Rows 7 through 9	\$2,186,297	\$2,250,088
8	Difference = Row 6 - Row 10	-\$1,029,718	-\$1,093,486

Notes:

- (1) Tables E-6 and E-6B, sum of Energy columns "Winter Peak," "Winter Off-Peak", "Summer Peak" and "Summer Off-Peak."
- (2) Tables E-6 and E-6B, sum of Capacity columns "Summer Generation."
- (4) Attachment 5 Tables 1-5, column "Program Implementation Expenses."
- (5) Attachment 5 Tables 1-5, column "Customer Contribution."
- (6) Attachment 5 Tables 1-5, column "Shareholder Incentive."

The Narragansett Electric Company
d/b/a National Grid
RIPUC Docket No. 5189
Attachment PUC 3-7-3

Calculation of cost of supply compared to cost of energy efficiency for Electric Energy Efficiency and Demand Response Energy Star® HVAC - Part 1

Ref	Electric Energy a	2022	
		Provisional Plan b	Alternative Base Case c
1	Electric Energy Costs	\$5,790,552	\$5,790,280
2	Electric Generation Costs	\$182,127	\$182,084
3	Electric Transmission Capacity Costs	\$356,670	\$356,586
4	Electric Distribution Capacity Cost	\$353,382	\$353,299
5	Natural Gas Costs	\$54,266	\$54,164
6	Fuel Costs	\$1,623,024	\$1,623,024
7	Income Eligible Rate Discount	\$0	\$0
8	Arrearages	\$0	\$0
9	Price Effects	\$1,992,790	\$1,992,651
10	Non-embedded Greenhouse Gas Reduction Costs	\$3,762,405	\$3,762,157
11	Non-embedded Nitrous Oxide (NOx Costs)	\$130,685	\$130,675
12	Reliability Costs	\$1,988	\$1,988
13	Cost of supply = Sum of Rows 1 through 12	\$14,247,889	\$14,246,907
14	Program Implementation Expenses	\$5,312,908	\$4,956,553
15	Customer Contribution	\$1,848,877	\$1,848,459
16	Shareholder Incentive	\$0	\$0
17	Cost of energy efficiency = Sum of Rows 14 through 16	\$7,161,785	\$6,805,012
18	Difference = Row 13 - Row 17	\$7,086,103	\$7,441,895

Notes:

- (1) Tables E-6 and E-6B, sum of Energy columns "Winter Peak", "Winter Off-Peak", "Summer Peak" and "Summer Off-Peak."
- (2) Tables E-6 and E-6B, sum of Capacity columns "Summer Generation."
- (3) Tables E-6 and E-6B, sum of Capacity column "Trans."
- (4) Tables E-6 and E-6B, sum of Capacity column "Dist."
- (5) Table E-6, Non-electric column "Natural Gas."
- (6) Table E-6, sum of Non-electric columns "Oil", "Other Resource", "Non-Resource."
- (7) Calculations from Electric Benefit-Cost Model, 2022 Plan
- (8) Calculations from Electric Benefit-Cost Model, 2022 Plan
- (9) Tables E-6 and E-6B, sum of Capacity column "Capacity DRIPE" and Energy column "Energy DRIPE."
- (10) Tables E-6 and E-6B, Societal column "Carbon."
- (11) Table E-6, Societal column "NOx."
- (12) Tables E-6 and E-6B, Capacity column "Reliability."
- (14) Attachment 5 Tables 1-5, column "Program Implementation Expenses."
- (15) Attachment 5 Tables 1-5, column "Customer Contribution."
- (16) Attachment 5 Tables 1-5, column "Shareholder Incentive."

The Narragansett Electric Company
d/b/a National Grid
RIPUC Docket No. 5189
Attachment PUC 3-7-3

Calculation of cost of supply compared to cost of energy efficiency for Electric Energy Efficiency and Demand Response Energy Star® HVAC - Part 2

Ref	Electric Energy a	2022	
		Provisional Plan b	Alternative Base Case c
1	Electric Energy Costs	\$5,790,552	\$5,790,280
2	Electric Generation Costs	\$182,127	\$182,084
3	Electric Transmission Capacity Costs	\$356,670	\$356,586
4	Electric Distribution Capacity Cost	\$353,382	\$353,299
5	Price Effects	\$1,992,790	\$1,992,651
6	Cost of supply = Sum of Rows 1 through 5	\$8,675,520	\$8,674,900
7	Program Implementation Expenses	\$5,312,908	\$4,956,553
8	Customer Contribution	\$1,848,877	\$1,848,459
9	Shareholder Incentive	\$0	\$0
10	Cost of energy efficiency = Sum of Rows 7 through 9	\$7,161,785	\$6,805,012
11	Difference = Row 6 - Row 10	\$1,513,735	\$1,869,888

Notes:

- (1) Tables E-6 and E-6B, sum of Energy columns "Winter Peak", "Winter Off-Peak", "Summer Peak" and "Summer Off-Peak."
- (2) Tables E-6 and E-6B, sum of Capacity columns "Summer Generation."
- (3) Tables E-6 and E-6B, sum of Capacity column "Trans."
- (4) Tables E-6 and E-6B, sum of Capacity column "Dist."
- (5) Tables E-6 and E-6B, sum of Capacity column "Capacity DRIPE" and Energy column "Energy DRIPE."
- (7) Attachment 5 Tables 1-5, column "Program Implementation Expenses."
- (8) Attachment 5 Tables 1-5, column "Customer Contribution."
- (9) Attachment 5 Tables 1-5, column "Shareholder Incentive."

The Narragansett Electric Company
d/b/a National Grid
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Attachment PUC 3-7-3

Calculation of cost of supply compared to cost of energy efficiency for Electric Energy Efficiency and Demand Response Energy Star® HVAC - Part 3

Ref	Electric Energy a	2022	
		Provisional Plan b	Alternative Base Case c
1	Electric Energy Costs	\$5,790,552	\$5,790,280
2	Electric Generation Costs	\$182,127	\$182,084
3	Cost of supply = Sum of Rows 1 through 5	\$5,972,679	\$5,972,364
4	Program Implementation Expenses	\$5,312,908	\$4,956,553
5	Customer Contribution	\$1,848,877	\$1,848,459
6	Shareholder Incentive	\$0	\$0
7	Cost of energy efficiency = Sum of Rows 7 through 9	\$7,161,785	\$6,805,012
8	Difference = Row 6 - Row 10	-\$1,189,107	-\$832,648

Notes:

- (1) Tables E-6 and E-6B, sum of Energy columns "Winter Peak", "Winter Off-Peak", "Summer Peak" and "Summer Off-Peak."
- (2) Tables E-6 and E-6B, sum of Capacity columns "Summer Generation."
- (4) Attachment 5 Tables 1-5, column "Program Implementation Expenses."
- (5) Attachment 5 Tables 1-5, column "Customer Contribution."
- (6) Attachment 5 Tables 1-5, column "Shareholder Incentive."

The Narragansett Electric Company
d/b/a National Grid
RIPUC Docket No. 5189
Attachment PUC 3-7-4

Calculation of cost of supply compared to cost of energy efficiency for Electric Energy Efficiency and Demand Response EnergyWise - Part 1

Ref	Electric Energy a	2022	
		Provisional Plan b	Alternative Base Case c
1	Electric Energy Costs	\$874,652	\$874,652
2	Electric Generation Costs	\$147,687	\$147,687
3	Electric Transmission Capacity Costs	\$291,056	\$291,056
4	Electric Distribution Capacity Cost	\$288,372	\$288,372
5	Natural Gas Costs	\$0	\$0
6	Fuel Costs	\$9,126,501	\$9,126,501
7	Income Eligible Rate Discount	\$0	\$0
8	Arrearages	\$0	\$0
9	Price Effects	\$476,484	\$476,484
10	Non-embedded Greenhouse Gas Reduction Costs	\$3,604,626	\$3,604,626
11	Non-embedded Nitrous Oxide (NOx Costs)	\$458,284	\$458,284
12	Reliability Costs	\$2,072	\$2,072
13	Cost of supply = Sum of Rows 1 through 12	\$15,269,733	\$15,269,733
14	Program Implementation Expenses	\$17,113,494	\$17,415,986
15	Customer Contribution	\$530,624	\$530,624
16	Shareholder Incentive	\$0	\$0
17	Cost of energy efficiency = Sum of Rows 14 through 16	\$17,644,117	\$17,946,609
18	Difference = Row 13 - Row 17	-\$2,374,384	-\$2,676,876

Notes:

- (1) Tables E-6 and E-6B, sum of Energy columns "Winter Peak, "Winter Off-Peak", "Summer Peak" and "Summer Off-Peak."
- (2) Tables E-6 and E-6B, sum of Capacity columns "Summer Generation."
- (3) Tables E-6 and E-6B, sum of Capacity column "Trans."
- (4) Tables E-6 and E-6B, sum of Capacity column "Dist."
- (5) Table E-6, Non-electric column "Natural Gas."
- (6) Table E-6, sum of Non-electric columns "Oil", "Other Resource, "Non-Resource."
- (7) Calculations from Electric Benefit-Cost Model, 2022 Plan
- (8) Calculations from Electric Benefit-Cost Model, 2022 Plan
- (9) Tables E-6 and E-6B, sum of Capacity column "Capacity DRIPE" and Energy column "Energy DRIPE."
- (10) Tables E-6 and E-6B, Societal column "Carbon."
- (11) Table E-6, Societal column "NOx."
- (12) Tables E-6 and E-6B, Capacity column "Reliability."
- (14) Attachment 5 Tables 1-5, column "Program Implementation Expenses."
- (15) Attachment 5 Tables 1-5, column "Customer Contribution."
- (16) Attachment 5 Tables 1-5, column "Shareholder Incentive."

The Narragansett Electric Company
d/b/a National Grid
RIPUC Docket No. 5189
Attachment PUC 3-7-4

Calculation of cost of supply compared to cost of energy efficiency for Electric Energy Efficiency and Demand Response EnergyWise - Part 2

Ref	Electric Energy a	2022	
		Provisional Plan b	Alternative Base Case c
1	Electric Energy Costs	\$874,652	\$874,652
2	Electric Generation Costs	\$147,687	\$147,687
3	Electric Transmission Capacity Costs	\$291,056	\$291,056
4	Electric Distribution Capacity Cost	\$288,372	\$288,372
5	Price Effects	\$476,484	\$476,484
6	Cost of supply = Sum of Rows 1 through 5	\$2,078,251	\$2,078,251
7	Program Implementation Expenses	\$17,113,494	\$17,415,986
8	Customer Contribution	\$530,624	\$530,624
9	Shareholder Incentive	\$0	\$0
10	Cost of energy efficiency = Sum of Rows 7 through 9	\$17,644,117	\$17,946,609
11	Difference = Row 6 - Row 10	-\$15,565,867	-\$15,868,359

Notes:

- (1) Tables E-6 and E-6B, sum of Energy columns "Winter Peak, "Winter Off-Peak", "Summer Peak" and "Summer Off-Peak."
- (2) Tables E-6 and E-6B, sum of Capacity columns "Summer Generation."
- (3) Tables E-6 and E-6B, sum of Capacity column "Trans."
- (4) Tables E-6 and E-6B, sum of Capacity column "Dist."
- (5) Tables E-6 and E-6B, sum of Capacity column "Capacity DRIPE" and Energy column "Energy DRIPE."
- (7) Attachment 5 Tables 1-5, column "Program Implementation Expenses."
- (8) Attachment 5 Tables 1-5, column "Customer Contribution."
- (9) Attachment 5 Tables 1-5, column "Shareholder Incentive."

The Narragansett Electric Company
d/b/a National Grid
RIPUC Docket No. 5189
Attachment PUC 3-7-4

Calculation of cost of supply compared to cost of energy efficiency for Electric Energy Efficiency and Demand Response EnergyWise - Part 3

Ref	Electric Energy a	2022	
		Provisional Plan b	Alternative Base Case c
1	Electric Energy Costs	\$874,652	\$874,652
2	Electric Generation Costs	\$147,687	\$147,687
3	Cost of supply = Sum of Rows 1 through 5	\$1,022,339	\$1,022,339
4	Program Implementation Expenses	\$17,113,494	\$17,415,986
5	Customer Contribution	\$530,624	\$530,624
6	Shareholder Incentive	\$0	\$0
7	Cost of energy efficiency = Sum of Rows 7 through 9	\$17,644,117	\$17,946,609
8	Difference = Row 6 - Row 10	-\$16,621,778	-\$16,924,270

Notes:

- (1) Tables E-6 and E-6B, sum of Energy columns "Winter Peak, "Winter Off-Peak", "Summer Peak" and "Summer Off-Peak."
- (2) Tables E-6 and E-6B, sum of Capacity columns "Summer Generation."
- (4) Attachment 5 Tables 1-5, column "Program Implementation Expenses."
- (5) Attachment 5 Tables 1-5, column "Customer Contribution."
- (6) Attachment 5 Tables 1-5, column "Shareholder Incentive."

The Narragansett Electric Company
d/b/a National Grid
RIPUC Docket No. 5189
Attachment PUC 3-7-5

Calculation of cost of supply compared to cost of energy efficiency for Electric Energy Efficiency and Demand Response EnergyWise Multifamily - Part 1

Ref	Electric Energy	2022	
		Provisional Plan	Alternative Base Case
		b	c
	a		
1	Electric Energy Costs	\$1,527,554	\$1,531,753
2	Electric Generation Costs	\$94,008	\$94,010
3	Electric Transmission Capacity Costs	\$181,680	\$181,683
4	Electric Distribution Capacity Cost	\$180,005	\$180,008
5	Natural Gas Costs	\$0	\$0
6	Fuel Costs	\$632,054	\$632,054
7	Income Eligible Rate Discount	\$0	\$0
8	Arrearages	\$0	\$0
9	Price Effects	\$541,498	\$542,759
10	Non-embedded Greenhouse Gas Reduction Costs	\$1,002,309	\$1,004,411
11	Non-embedded Nitrous Oxide (NOx Costs)	\$42,545	\$42,574
12	Reliability Costs	\$996	\$997
13	Cost of supply = Sum of Rows 1 through 12	\$4,202,650	\$4,210,249
14	Program Implementation Expenses	\$3,535,858	\$3,613,066
15	Customer Contribution	\$532,000	\$532,000
16	Shareholder Incentive	\$0	\$0
17	Cost of energy efficiency = Sum of Rows 14 through 16	\$4,067,858	\$4,145,066
18	Difference = Row 13 - Row 17	\$134,792	\$65,183

- Notes:
(1) Tables E-6 and E-6B, sum of Energy columns "Winter Peak", "Winter Off-Peak", "Summer
(2) Tables E-6 and E-6B, sum of Capacity columns "Summer Generation."
(3) Tables E-6 and E-6B, sum of Capacity column "Trans."
(4) Tables E-6 and E-6B, sum of Capacity column "Dist."
(5) Table E-6, Non-electric column "Natural Gas."
(6) Table E-6, sum of Non-electric columns "Oil", "Other Resource", "Non-Resource."
(7) Calculations from Electric Benefit-Cost Model, 2022 Plan
(8) Calculations from Electric Benefit-Cost Model, 2022 Plan
(9) Tables E-6 and E-6B, sum of Capacity column "Capacity DRIPE" and Energy column
(10) Tables E-6 and E-6B, Societal column "Carbon."
(11) Table E-6, Societal column "NOx."
(12) Tables E-6 and E-6B, Capacity column "Reliability."
(14) Attachment 5 Tables 1-5, column "Program Implementation Expenses."
(15) Attachment 5 Tables 1-5, column "Customer Contribution."
(16) Attachment 5 Tables 1-5, column "Shareholder Incentive."

The Narragansett Electric Company
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Attachment PUC 3-7-5

Calculation of cost of supply compared to cost of energy efficiency for Electric Energy Efficiency and Demand Response EnergyWise Multifamily - Part 2

Ref	Electric Energy	2022	
		Provisional Plan	Alternative Base Case
		b	c
	a		
1	Electric Energy Costs	\$1,527,554	\$1,531,753
2	Electric Generation Costs	\$94,008	\$94,010
3	Electric Transmission Capacity Costs	\$181,680	\$181,683
4	Electric Distribution Capacity Cost	\$180,005	\$180,008
5	Price Effects	\$541,498	\$542,759
6	Cost of supply = Sum of Rows 1 through 5	\$2,524,746	\$2,530,213
7	Program Implementation Expenses	\$3,535,858	\$3,613,066
8	Customer Contribution	\$532,000	\$532,000
9	Shareholder Incentive	\$0	\$0
10	Cost of energy efficiency = Sum of Rows 7 through 9	\$4,067,858	\$4,145,066
11	Difference = Row 6 - Row 10	-\$1,543,112	-\$1,614,853

- Notes:
(1) Tables E-6 and E-6B, sum of Energy columns "Winter Peak", "Winter Off-Peak", "Summer
(2) Tables E-6 and E-6B, sum of Capacity columns "Summer Generation."
(3) Tables E-6 and E-6B, sum of Capacity column "Trans."
(4) Tables E-6 and E-6B, sum of Capacity column "Dist."
(5) Tables E-6 and E-6B, sum of Capacity column "Capacity DRIPE" and Energy column
(7) Attachment 5 Tables 1-5, column "Program Implementation Expenses."
(8) Attachment 5 Tables 1-5, column "Customer Contribution."
(9) Attachment 5 Tables 1-5, column "Shareholder Incentive."

The Narragansett Electric Company
d/b/a National Grid
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Calculation of cost of supply compared to cost of energy efficiency for Electric Energy Efficiency and Demand Response EnergyWise Multifamily - Part 3

Ref	Electric Energy	2022	
		Provisional Plan	Alternative Base Case
		b	c
	a		
1	Electric Energy Costs	\$1,527,554	\$1,531,753
2	Electric Generation Costs	\$94,008	\$94,010
3	Cost of supply = Sum of Rows 1 through 5	\$1,621,563	\$1,625,763
4	Program Implementation Expenses	\$3,535,858	\$3,613,066
5	Customer Contribution	\$532,000	\$532,000
6	Shareholder Incentive	\$0	\$0
7	Cost of energy efficiency = Sum of Rows 7 through 9	\$4,067,858	\$4,145,066
8	Difference = Row 6 - Row 10	-\$2,446,295	-\$2,519,303

- Notes:
(1) Tables E-6 and E-6B, sum of Energy columns "Winter Peak", "Winter Off-Peak", "Summer
(2) Tables E-6 and E-6B, sum of Capacity columns "Summer Generation."
(4) Attachment 5 Tables 1-5, column "Program Implementation Expenses."
(5) Attachment 5 Tables 1-5, column "Customer Contribution."
(6) Attachment 5 Tables 1-5, column "Shareholder Incentive."

The Narragansett Electric Company
d/b/a National Grid
RIPUC Docket No. 5189
Attachment PUC 3-7-6

Calculation of cost of supply compared to cost of energy efficiency for Electric Energy Efficiency and Demand Response Home Energy Reports - Part 1

Ref	Electric Energy	2022	
		Provisional Plan	Alternative Base Case
	a	b	c
1	Electric Energy Costs	\$1,610,935	\$1,610,935
2	Electric Generation Costs	\$206,866	\$206,866
3	Electric Transmission Capacity Costs	\$365,434	\$365,434
4	Electric Distribution Capacity Cost	\$362,065	\$362,065
5	Natural Gas Costs	\$0	\$0
6	Fuel Costs	\$0	\$0
7	Income Eligible Rate Discount	\$0	\$0
8	Arrearages	\$0	\$0
9	Price Effects	\$1,090,350	\$1,090,350
10	Non-embedded Greenhouse Gas Reduction Costs	\$1,736,283	\$1,736,283
11	Non-embedded Nitrous Oxide (NOx Costs)	\$23,135	\$23,135
12	Reliability Costs	\$6,368	\$6,368
13	Cost of supply = Sum of Rows 1 through 12	\$5,401,436	\$5,401,436
14	Program Implementation Expenses	\$2,885,766	\$2,917,797
15	Customer Contribution	\$0	\$0
16	Shareholder Incentive	\$0	\$0
17	Cost of energy efficiency = Sum of Rows 14 through 16	\$2,885,766	\$2,917,797
18	Difference = Row 13 - Row 17	\$2,515,670	\$2,483,639

Notes:

- (1) Tables E-6 and E-6B, sum of Energy columns "Winter Peak, "Winter Off-Peak",
- (2) Tables E-6 and E-6B, sum of Capacity columns "Summer Generation."
- (3) Tables E-6 and E-6B, sum of Capacity column "Trans."
- (4) Tables E-6 and E-6B, sum of Capacity column "Dist."
- (5) Table E-6, Non-electric column "Natural Gas."
- (6) Table E-6, sum of Non-electric columns "Oil", "Other Resource, "Non-Resource."
- (7) Calculations from Electric Benefit-Cost Model, 2022 Plan
- (8) Calculations from Electric Benefit-Cost Model, 2022 Plan
- (9) Tables E-6 and E-6B, sum of Capacity column "Capacity DRIPE" and Energy column
- (10) Tables E-6 and E-6B, Societal column "Carbon."
- (11) Table E-6, Societal column "NOx."
- (12) Tables E-6 and E-6B, Capacity column "Reliability."
- (14) Attachment 5 Tables 1-5, column "Program Implementation Expenses."
- (15) Attachment 5 Tables 1-5, column "Customer Contribution."
- (16) Attachment 5 Tables 1-5, column "Shareholder Incentive."

The Narragansett Electric Company
d/b/a National Grid
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Attachment PUC 3-7-6

Calculation of cost of supply compared to cost of energy efficiency for Electric Energy Efficiency and Demand Response Home Energy Reports - Part 2

Ref	Electric Energy	2022	
		Provisional Plan	Alternative Base Case
	a	b	c
1	Electric Energy Costs	\$1,610,935	\$1,610,935
2	Electric Generation Costs	\$206,866	\$206,866
3	Electric Transmission Capacity Costs	\$365,434	\$365,434
4	Electric Distribution Capacity Cost	\$362,065	\$362,065
5	Price Effects	\$1,090,350	\$1,090,350
6	Cost of supply = Sum of Rows 1 through 5	\$3,635,650	\$3,635,650
7	Program Implementation Expenses	\$2,885,766	\$2,917,797
8	Customer Contribution	\$0	\$0
9	Shareholder Incentive	\$0	\$0
10	Cost of energy efficiency = Sum of Rows 7 through 9	\$2,885,766	\$2,917,797
11	Difference = Row 6 - Row 10	\$749,885	\$717,853

Notes:

- (1) Tables E-6 and E-6B, sum of Energy columns "Winter Peak, "Winter Off-Peak",
- (2) Tables E-6 and E-6B, sum of Capacity columns "Summer Generation."
- (3) Tables E-6 and E-6B, sum of Capacity column "Trans."
- (4) Tables E-6 and E-6B, sum of Capacity column "Dist."
- (5) Tables E-6 and E-6B, sum of Capacity column "Capacity DRIPE" and Energy column
- (7) Attachment 5 Tables 1-5, column "Program Implementation Expenses."
- (8) Attachment 5 Tables 1-5, column "Customer Contribution."
- (9) Attachment 5 Tables 1-5, column "Shareholder Incentive."

The Narragansett Electric Company
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Calculation of cost of supply compared to cost of energy efficiency for Electric Energy Efficiency and Demand Response Home Energy Reports - Part 3

Ref	Electric Energy	2022	
		Provisional Plan	Alternative Base Case
	a	b	c
1	Electric Energy Costs	\$1,610,935	\$1,610,935
2	Electric Generation Costs	\$206,866	\$206,866
3	Cost of supply = Sum of Rows 1 through 5	\$1,817,801	\$1,817,801
4	Program Implementation Expenses	\$2,885,766	\$2,917,797
5	Customer Contribution	\$0	\$0
6	Shareholder Incentive	\$0	\$0
7	Cost of energy efficiency = Sum of Rows 7 through 9	\$2,885,766	\$2,917,797
8	Difference = Row 6 - Row 10	-\$1,067,965	-\$1,099,996

Notes:

- (1) Tables E-6 and E-6B, sum of Energy columns "Winter Peak, "Winter Off-Peak",
- (2) Tables E-6 and E-6B, sum of Capacity columns "Summer Generation."
- (4) Attachment 5 Tables 1-5, column "Program Implementation Expenses."
- (5) Attachment 5 Tables 1-5, column "Customer Contribution."
- (6) Attachment 5 Tables 1-5, column "Shareholder Incentive."

The Narragansett Electric Company
d/b/a National Grid
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Attachment PUC 3-7-7
Calculation of cost of supply compared to cost of energy efficiency for Electric Energy Efficiency and Demand Response Residential Consumer Products - Part 1

Ref	Electric Energy	2022	
		Provisional Plan	Alternative Base Case
	a	b	c
1	Electric Energy Costs	\$2,856,303	\$2,856,303
2	Electric Generation Costs	\$334,842	\$334,842
3	Electric Transmission Capacity Costs	\$751,650	\$751,650
4	Electric Distribution Capacity Cost	\$744,719	\$744,719
5	Natural Gas Costs	\$14,695	\$14,695
6	Fuel Costs	\$55,918	\$55,918
7	Income Eligible Rate Discount	\$0	\$0
8	Arrearages	\$0	\$0
9	Price Effects	\$2,215,560	\$2,215,560
10	Non-embedded Greenhouse Gas Reduction Costs	\$2,662,520	\$2,662,520
11	Non-embedded Nitrous Oxide (NOx Costs)	\$37,436	\$37,436
12	Reliability Costs	\$9,012	\$9,012
13	Cost of supply = Sum of Rows 1 through 12	\$9,682,655	\$9,682,655
14	Program Implementation Expenses	\$3,054,373	\$3,134,146
15	Customer Contribution	\$1,606,636	\$1,606,636
16	Shareholder Incentive	\$0	\$0
17	Cost of energy efficiency = Sum of Rows 14 through 16	\$4,661,008	\$4,740,782
18	Difference = Row 13 - Row 17	\$5,021,647	\$4,941,873

- Notes:
- (1) Tables E-6 and E-6B, sum of Energy columns "Winter Peak, "Winter Off-Peak", "Summer Peak" and "Summer Off-Peak."
 - (2) Tables E-6 and E-6B, sum of Capacity columns "Summer Generation."
 - (3) Tables E-6 and E-6B, sum of Capacity column "Trans."
 - (4) Tables E-6 and E-6B, sum of Capacity column "Dist."
 - (5) Table E-6, Non-electric column "Natural Gas."
 - (6) Table E-6, sum of Non-electric columns "Oil", "Other Resource, "Non-Resource."
 - (7) Calculations from Electric Benefit-Cost Model, 2022 Plan
 - (8) Calculations from Electric Benefit-Cost Model, 2022 Plan
 - (9) Tables E-6 and E-6B, sum of Capacity column "Capacity DRIPE" and Energy column "Energy DRIPE."
 - (10) Tables E-6 and E-6B, Societal column "Carbon."
 - (11) Table E-6, Societal column "NOx."
 - (12) Tables E-6 and E-6B, Capacity column "Reliability."
 - (14) Attachment 5 Tables 1-5, column "Program Implementation Expenses."
 - (15) Attachment 5 Tables 1-5, column "Customer Contribution."
 - (16) Attachment 5 Tables 1-5, column "Shareholder Incentive."

The Narragansett Electric Company
d/b/a National Grid
RIPUC Docket No. 5189
Attachment PUC 3-7-7
Calculation of cost of supply compared to cost of energy efficiency for Electric Energy Efficiency and Demand Response Residential Consumer Products - Part 2

Ref	Electric Energy	2022	
		Provisional Plan	Alternative Base Case
	a	b	c
1	Electric Energy Costs	\$2,856,303	\$2,856,303
2	Electric Generation Costs	\$334,842	\$334,842
3	Electric Transmission Capacity Costs	\$751,650	\$751,650
4	Electric Distribution Capacity Cost	\$744,719	\$744,719
5	Price Effects	\$2,215,560	\$2,215,560
6	Cost of supply = Sum of Rows 1 through 5	\$6,903,074	\$6,903,074
7	Program Implementation Expenses	\$3,054,373	\$3,134,146
8	Customer Contribution	\$1,606,636	\$1,606,636
9	Shareholder Incentive	\$0	\$0
10	Cost of energy efficiency = Sum of Rows 7 through 9	\$4,661,008	\$4,740,782
11	Difference = Row 6 - Row 10	\$2,242,065	\$2,162,292

- Notes:
- (1) Tables E-6 and E-6B, sum of Energy columns "Winter Peak, "Winter Off-Peak", "Summer Peak" and "Summer Off-Peak."
 - (2) Tables E-6 and E-6B, sum of Capacity columns "Summer Generation."
 - (3) Tables E-6 and E-6B, sum of Capacity column "Trans."
 - (4) Tables E-6 and E-6B, sum of Capacity column "Dist."
 - (5) Tables E-6 and E-6B, sum of Capacity column "Capacity DRIPE" and Energy column "Energy DRIPE."
 - (7) Attachment 5 Tables 1-5, column "Program Implementation Expenses."
 - (8) Attachment 5 Tables 1-5, column "Customer Contribution."
 - (9) Attachment 5 Tables 1-5, column "Shareholder Incentive."

The Narragansett Electric Company
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Calculation of cost of supply compared to cost of energy efficiency for Electric Energy Efficiency and Demand Response Residential Consumer Products - Part 3

Ref	Electric Energy	2022	
		Provisional Plan	Alternative Base Case
	a	b	c
1	Electric Energy Costs	\$2,856,303	\$2,856,303
2	Electric Generation Costs	\$334,842	\$334,842
3	Cost of supply = Sum of Rows 1 through 5	\$3,191,145	\$3,191,145
4	Program Implementation Expenses	\$3,054,373	\$3,134,146
5	Customer Contribution	\$1,606,636	\$1,606,636
6	Shareholder Incentive	\$0	\$0
7	Cost of energy efficiency = Sum of Rows 7 through 9	\$4,661,008	\$4,740,782
8	Difference = Row 6 - Row 10	-\$1,469,863	-\$1,549,637

- Notes:
- (1) Tables E-6 and E-6B, sum of Energy columns "Winter Peak, "Winter Off-Peak", "Summer Peak" and "Summer Off-Peak."
 - (2) Tables E-6 and E-6B, sum of Capacity columns "Summer Generation."
 - (4) Attachment 5 Tables 1-5, column "Program Implementation Expenses."
 - (5) Attachment 5 Tables 1-5, column "Customer Contribution."
 - (6) Attachment 5 Tables 1-5, column "Shareholder Incentive."

The Narragansett Electric Company
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Calculation of cost of supply compared to cost of energy efficiency for Electric Energy Efficiency and Demand Response Large Commercial New Construction - Part 1

Ref	Electric Energy a	2022	
		Provisional Plan b	Alternative Base Case c
1	Electric Energy Costs	\$14,846,715	\$12,979,284
2	Electric Generation Costs	\$1,533,995	\$1,336,299
3	Electric Transmission Capacity Costs	\$2,999,423	\$2,615,838
4	Electric Distribution Capacity Cost	\$2,971,769	\$2,591,720
5	Natural Gas Costs	-\$253,109	-\$253,109
6	Fuel Costs	\$0	\$0
7	Income Eligible Rate Discount	\$0	\$0
8	Arrearages	\$0	\$0
9	Price Effects	\$6,141,151	\$5,415,621
10	Non-embedded Greenhouse Gas Reduction Costs	\$9,013,169	\$7,897,525
11	Non-embedded Nitrous Oxide (NOx Costs)	\$116,925	\$99,865
12	Reliability Costs	\$16,411	\$14,461
13	Cost of supply = Sum of Rows 1 through 12	\$37,386,448	\$32,697,503
14	Program Implementation Expenses	\$13,904,527	\$10,462,086
15	Customer Contribution	\$1,021,478	\$742,483
16	Shareholder Incentive	\$1,173,184	\$1,173,184
17	Cost of energy efficiency = Sum of Rows 14 through 16	\$16,099,189	\$12,377,754
18	Difference = Row 13 - Row 17	\$21,287,259	\$20,319,750

Notes:

- (1) Tables E-6 and E-6B, sum of Energy columns "Winter Peak", "Winter Off-Peak", "Summer Peak" and "Summer Off-Peak."
- (2) Tables E-6 and E-6B, sum of Capacity columns "Summer Generation."
- (3) Tables E-6 and E-6B, sum of Capacity column "Trans."
- (4) Tables E-6 and E-6B, sum of Capacity column "Dist."
- (5) Table E-6, Non-electric column "Natural Gas."
- (6) Table E-6, sum of Non-electric columns "Oil", "Other Resource", "Non-Resource."
- (7) Calculations from Electric Benefit-Cost Model, 2022 Plan
- (8) Calculations from Electric Benefit-Cost Model, 2022 Plan
- (9) Tables E-6 and E-6B, sum of Capacity column "Capacity DRIPE" and Energy column "Energy DRIPE."
- (10) Tables E-6 and E-6B, Societal column "Carbon."
- (11) Table E-6, Societal column "NOx."
- (12) Tables E-6 and E-6B, Capacity column "Reliability."
- (14) Attachment 5 Tables 1-5, column "Program Implementation Expenses."
- (15) Attachment 5 Tables 1-5, column "Customer Contribution."
- (16) Attachment 5 Tables 1-5, column "Shareholder Incentive."

The Narragansett Electric Company
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Attachment PUC 3-7-8

Calculation of cost of supply compared to cost of energy efficiency for Electric Energy Efficiency and Demand Response Large Commercial New Construction - Part 2

Ref	Electric Energy a	2022	
		Provisional Plan b	Alternative Base Case c
1	Electric Energy Costs	\$14,846,715	\$12,979,284
2	Electric Generation Costs	\$1,533,995	\$1,336,299
3	Electric Transmission Capacity Costs	\$2,999,423	\$2,615,838
4	Electric Distribution Capacity Cost	\$2,971,769	\$2,591,720
5	Price Effects	\$6,141,151	\$5,415,621
6	Cost of supply = Sum of Rows 1 through 5	\$28,493,053	\$24,938,762
7	Program Implementation Expenses	\$13,904,527	\$10,462,086
8	Customer Contribution	\$1,021,478	\$742,483
9	Shareholder Incentive	\$1,173,184	\$1,173,184
10	Cost of energy efficiency = Sum of Rows 7 through 9	\$16,099,189	\$12,377,754
11	Difference = Row 6 - Row 10	\$12,393,864	\$12,561,009

Notes:

- (1) Tables E-6 and E-6B, sum of Energy columns "Winter Peak", "Winter Off-Peak", "Summer Peak" and "Summer Off-Peak."
- (2) Tables E-6 and E-6B, sum of Capacity columns "Summer Generation."
- (3) Tables E-6 and E-6B, sum of Capacity column "Trans."
- (4) Tables E-6 and E-6B, sum of Capacity column "Dist."
- (5) Tables E-6 and E-6B, sum of Capacity column "Capacity DRIPE" and Energy column "Energy DRIPE."
- (7) Attachment 5 Tables 1-5, column "Program Implementation Expenses."
- (8) Attachment 5 Tables 1-5, column "Customer Contribution."
- (9) Attachment 5 Tables 1-5, column "Shareholder Incentive."

The Narragansett Electric Company
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Calculation of cost of supply compared to cost of energy efficiency for Electric Energy Efficiency and Demand Response Large Commercial New Construction - Part 3

Ref	Electric Energy a	2022	
		Provisional Plan b	Alternative Base Case c
1	Electric Energy Costs	\$14,846,715	\$12,979,284
2	Electric Generation Costs	\$1,533,995	\$1,336,299
3	Cost of supply = Sum of Rows 1 through 5	\$16,380,710	\$14,315,583
4	Program Implementation Expenses	\$13,904,527	\$10,462,086
5	Customer Contribution	\$1,021,478	\$742,483
6	Shareholder Incentive	\$1,173,184	\$1,173,184
7	Cost of energy efficiency = Sum of Rows 7 through 9	\$16,099,189	\$12,377,754
8	Difference = Row 6 - Row 10	\$281,521	\$1,937,829

Notes:

- (1) Tables E-6 and E-6B, sum of Energy columns "Winter Peak", "Winter Off-Peak", "Summer Peak" and "Summer Off-Peak."
- (2) Tables E-6 and E-6B, sum of Capacity columns "Summer Generation."
- (4) Attachment 5 Tables 1-5, column "Program Implementation Expenses."
- (5) Attachment 5 Tables 1-5, column "Customer Contribution."
- (6) Attachment 5 Tables 1-5, column "Shareholder Incentive."

The Narragansett Electric Company
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Attachment PUC 3-7-9

Calculation of cost of supply compared to cost of energy efficiency for Electric Energy Efficiency and Demand Response Large Commercial Retrofit - Part 1

Ref	Electric Energy a	2022	
		Provisional Plan b	Alternative Base Case c
1	Electric Energy Costs	\$20,406,580	\$18,609,332
2	Electric Generation Costs	\$3,027,560	\$2,775,993
3	Electric Transmission Capacity Costs	\$6,722,217	\$6,172,380
4	Electric Distribution Capacity Cost	\$6,660,240	\$6,115,472
5	Natural Gas Costs	-\$1,935,890	-\$1,834,420
6	Fuel Costs	\$0	\$0
7	Income Eligible Rate Discount	\$0	\$0
8	Arrearages	\$0	\$0
9	Price Effects	\$16,733,839	\$15,391,643
10	Non-embedded Greenhouse Gas Reduction Costs	\$16,589,845	\$15,133,629
11	Non-embedded Nitrous Oxide (NOx Costs)	\$79,063	\$66,635
12	Reliability Costs	\$75,039	\$69,286
13	Cost of supply = Sum of Rows 1 through 12	\$68,358,493	\$62,499,950
14	Program Implementation Expenses	\$33,838,465	\$28,436,582
15	Customer Contribution	\$10,741,990	\$8,064,507
16	Shareholder Incentive	\$3,188,785	\$3,188,785
17	Cost of energy efficiency = Sum of Rows 14 through 16	\$47,769,240	\$39,689,874
18	Difference = Row 13 - Row 17	\$20,589,252	\$22,810,076

Notes:

- (1) Tables E-6 and E-6B, sum of Energy columns "Winter Peak, "Winter Off-Peak", "Summer Peak" and "Summer Off-Peak."
- (2) Tables E-6 and E-6B, sum of Capacity columns "Summer Generation."
- (3) Tables E-6 and E-6B, sum of Capacity column "Trans."
- (4) Tables E-6 and E-6B, sum of Capacity column "Dist."
- (5) Table E-6, Non-electric column "Natural Gas."
- (6) Table E-6, sum of Non-electric columns "Oil", "Other Resource, "Non-Resource."
- (7) Calculations from Electric Benefit-Cost Model, 2022 Plan
- (8) Calculations from Electric Benefit-Cost Model, 2022 Plan
- (9) Tables E-6 and E-6B, sum of Capacity column "Capacity DRIPE" and Energy column "Energy DRIPE."
- (10) Tables E-6 and E-6B, Societal column "Carbon."
- (11) Table E-6, Societal column "NOx."
- (12) Tables E-6 and E-6B, Capacity column "Reliability."
- (14) Attachment 5 Tables 1-5, column "Program Implementation Expenses."
- (15) Attachment 5 Tables 1-5, column "Customer Contribution."
- (16) Attachment 5 Tables 1-5, column "Shareholder Incentive."

The Narragansett Electric Company
d/b/a National Grid
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Attachment PUC 3-7-9

Calculation of cost of supply compared to cost of energy efficiency for Electric Energy Efficiency and Demand Response Large Commercial Retrofit - Part 2

Ref	Electric Energy a	2022	
		Provisional Plan b	Alternative Base Case c
1	Electric Energy Costs	\$20,406,580	\$18,609,332
2	Electric Generation Costs	\$3,027,560	\$2,775,993
3	Electric Transmission Capacity Costs	\$6,722,217	\$6,172,380
4	Electric Distribution Capacity Cost	\$6,660,240	\$6,115,472
5	Price Effects	\$16,733,839	\$15,391,643
6	Cost of supply = Sum of Rows 1 through 5	\$53,550,435	\$49,064,820
7	Program Implementation Expenses	\$33,838,465	\$28,436,582
8	Customer Contribution	\$10,741,990	\$8,064,507
9	Shareholder Incentive	\$3,188,785	\$3,188,785
10	Cost of energy efficiency = Sum of Rows 7 through 9	\$47,769,240	\$39,689,874
11	Difference = Row 6 - Row 10	\$5,781,195	\$9,374,946

Notes:

- (1) Tables E-6 and E-6B, sum of Energy columns "Winter Peak, "Winter Off-Peak", "Summer Peak" and "Summer Off-Peak."
- (2) Tables E-6 and E-6B, sum of Capacity columns "Summer Generation."
- (3) Tables E-6 and E-6B, sum of Capacity column "Trans."
- (4) Tables E-6 and E-6B, sum of Capacity column "Dist."
- (5) Tables E-6 and E-6B, sum of Capacity column "Capacity DRIPE" and Energy column "Energy DRIPE."
- (7) Attachment 5 Tables 1-5, column "Program Implementation Expenses."
- (8) Attachment 5 Tables 1-5, column "Customer Contribution."
- (9) Attachment 5 Tables 1-5, column "Shareholder Incentive."

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Calculation of cost of supply compared to cost of energy efficiency for Electric Energy Efficiency and Demand Response Large Commercial Retrofit - Part 3

Ref	Electric Energy a	2022	
		Provisional Plan b	Alternative Base Case c
1	Electric Energy Costs	\$20,406,580	\$18,609,332
2	Electric Generation Costs	\$3,027,560	\$2,775,993
3	Cost of supply = Sum of Rows 1 through 5	\$23,434,140	\$21,385,326
4	Program Implementation Expenses	\$33,838,465	\$28,436,582
5	Customer Contribution	\$10,741,990	\$8,064,507
6	Shareholder Incentive	\$3,188,785	\$3,188,785
7	Cost of energy efficiency = Sum of Rows 7 through 9	\$47,769,240	\$39,689,874
8	Difference = Row 6 - Row 10	-\$24,335,100	-\$18,304,549

Notes:

- (1) Tables E-6 and E-6B, sum of Energy columns "Winter Peak, "Winter Off-Peak", "Summer Peak" and "Summer Off-Peak."
- (2) Tables E-6 and E-6B, sum of Capacity columns "Summer Generation."
- (4) Attachment 5 Tables 1-5, column "Program Implementation Expenses."
- (5) Attachment 5 Tables 1-5, column "Customer Contribution."
- (6) Attachment 5 Tables 1-5, column "Shareholder Incentive."

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Calculation of cost of supply compared to cost of energy efficiency for Electric Energy Efficiency and Demand Response Small Business Direct Install - Part 1

Ref	Electric Energy a	2022	
		Provisional Plan b	Alternative Base Case c
1	Electric Energy Costs	\$3,891,087	\$3,739,391
2	Electric Generation Costs	\$261,064	\$247,510
3	Electric Transmission Capacity Costs	\$597,161	\$568,822
4	Electric Distribution Capacity Cost	\$591,655	\$563,577
5	Natural Gas Costs	-\$391,578	-\$388,112
6	Fuel Costs	\$0	\$0
7	Income Eligible Rate Discount	\$0	\$0
8	Arrearages	\$0	\$0
9	Price Effects	\$2,763,040	\$2,675,395
10	Non-embedded Greenhouse Gas Reduction Costs	\$3,352,043	\$3,226,217
11	Non-embedded Nitrous Oxide (NOx Costs)	\$15,834	\$14,327
12	Reliability Costs	\$7,730	\$7,496
13	Cost of supply = Sum of Rows 1 through 12	\$11,088,037	\$10,654,622
14	Program Implementation Expenses	\$10,866,209	\$10,148,606
15	Customer Contribution	\$1,974,133	\$1,923,130
16	Shareholder Incentive	\$1,138,031	\$1,138,031
17	Cost of energy efficiency = Sum of Rows 14 through 16	\$13,978,374	\$13,209,767
18	Difference = Row 13 - Row 17	-\$2,890,337	-\$2,555,145

Notes:

- (1) Tables E-6 and E-6B, sum of Energy columns "Winter Peak", "Winter Off-Peak", "Summer Peak" and "Summer Off-Peak."
- (2) Tables E-6 and E-6B, sum of Capacity columns "Summer Generation."
- (3) Tables E-6 and E-6B, sum of Capacity column "Trans."
- (4) Tables E-6 and E-6B, sum of Capacity column "Dist."
- (5) Table E-6, Non-electric column "Natural Gas."
- (6) Table E-6, sum of Non-electric columns "Oil", "Other Resource", "Non-Resource."
- (7) Calculations from Electric Benefit-Cost Model, 2022 Plan
- (8) Calculations from Electric Benefit-Cost Model, 2022 Plan
- (9) Tables E-6 and E-6B, sum of Capacity column "Capacity DRIPE" and Energy column "Energy DRIPE."
- (10) Tables E-6 and E-6B, Societal column "Carbon."
- (11) Table E-6, Societal column "NOx."
- (12) Tables E-6 and E-6B, Capacity column "Reliability."
- (14) Attachment 5 Tables 1-5, column "Program Implementation Expenses."
- (15) Attachment 5 Tables 1-5, column "Customer Contribution."
- (16) Attachment 5 Tables 1-5, column "Shareholder Incentive."

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Calculation of cost of supply compared to cost of energy efficiency for Electric Energy Efficiency and Demand Response Small Business Direct Install - Part 2

Ref	Electric Energy a	2022	
		Provisional Plan b	Alternative Base Case c
1	Electric Energy Costs	\$3,891,087	\$3,739,391
2	Electric Generation Costs	\$261,064	\$247,510
3	Electric Transmission Capacity Costs	\$597,161	\$568,822
4	Electric Distribution Capacity Cost	\$591,655	\$563,577
5	Price Effects	\$2,763,040	\$2,675,395
6	Cost of supply = Sum of Rows 1 through 5	\$8,104,007	\$7,794,695
7	Program Implementation Expenses	\$10,866,209	\$10,148,606
8	Customer Contribution	\$1,974,133	\$1,923,130
9	Shareholder Incentive	\$1,138,031	\$1,138,031
10	Cost of energy efficiency = Sum of Rows 7 through 9	\$13,978,374	\$13,209,767
11	Difference = Row 6 - Row 10	-\$5,874,367	-\$5,415,072

Notes:

- (1) Tables E-6 and E-6B, sum of Energy columns "Winter Peak", "Winter Off-Peak", "Summer Peak" and "Summer Off-Peak."
- (2) Tables E-6 and E-6B, sum of Capacity columns "Summer Generation."
- (3) Tables E-6 and E-6B, sum of Capacity column "Trans."
- (4) Tables E-6 and E-6B, sum of Capacity column "Dist."
- (5) Tables E-6 and E-6B, sum of Capacity column "Capacity DRIPE" and Energy column "Energy DRIPE."
- (7) Attachment 5 Tables 1-5, column "Program Implementation Expenses."
- (8) Attachment 5 Tables 1-5, column "Customer Contribution."
- (9) Attachment 5 Tables 1-5, column "Shareholder Incentive."

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Calculation of cost of supply compared to cost of energy efficiency for Electric Energy Efficiency and Demand Response Small Business Direct Install - Part 3

Ref	Electric Energy a	2022	
		Provisional Plan b	Alternative Base Case c
1	Electric Energy Costs	\$3,891,087	\$3,739,391
2	Electric Generation Costs	\$261,064	\$247,510
3	Cost of supply = Sum of Rows 1 through 5	\$4,152,150	\$3,986,901
4	Program Implementation Expenses	\$10,866,209	\$10,148,606
5	Customer Contribution	\$1,974,133	\$1,923,130
6	Shareholder Incentive	\$1,138,031	\$1,138,031
7	Cost of energy efficiency = Sum of Rows 7 through 9	\$13,978,374	\$13,209,767
8	Difference = Row 6 - Row 10	-\$9,826,223	-\$9,222,866

Notes:

- (1) Tables E-6 and E-6B, sum of Energy columns "Winter Peak", "Winter Off-Peak", "Summer Peak" and "Summer Off-Peak."
- (2) Tables E-6 and E-6B, sum of Capacity columns "Summer Generation."
- (4) Attachment 5 Tables 1-5, column "Program Implementation Expenses."
- (5) Attachment 5 Tables 1-5, column "Customer Contribution."
- (6) Attachment 5 Tables 1-5, column "Shareholder Incentive."

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Calculation of cost of supply compared to cost of energy efficiency for Electric Energy Efficiency and Demand Response Single Family - Income Eligible Services - Part 1

Ref	Electric Energy	2022	
		Provisional Plan	Alternative Base Case
	a	b	c
1	Electric Energy Costs	\$2,673,446	\$2,673,419
2	Electric Generation Costs	\$274,924	\$274,922
3	Electric Transmission Capacity Costs	\$540,599	\$540,596
4	Electric Distribution Capacity Cost	\$535,615	\$535,612
5	Natural Gas Costs	\$76,386	\$76,373
6	Fuel Costs	\$5,326,223	\$5,325,951
7	Income Eligible Rate Discount	\$65,749	\$65,748
8	Arrearages	\$46,450	\$46,448
9	Price Effects	\$1,054,627	\$1,054,609
10	Non-embedded Greenhouse Gas Reduction Costs	\$3,428,339	\$3,428,199
11	Non-embedded Nitrous Oxide (NOx Costs)	\$295,292	\$295,277
12	Reliability Costs	\$3,190	\$3,190
13	Cost of supply = Sum of Rows 1 through 12	\$14,320,840	\$14,320,344
14	Program Implementation Expenses	\$14,289,185	\$14,386,261
15	Customer Contribution	\$0	\$0
16	Shareholder Incentive	\$0	\$0
17	Cost of energy efficiency = Sum of Rows 14 through 16	\$14,289,185	\$14,386,261
18	Difference = Row 13 - Row 17	\$31,655	-\$65,917

Notes:

- (1) Tables E-6 and E-6B, sum of Energy columns "Winter Peak, "Winter Off-Peak", "Summer Peak" and "Summer Off-Peak."
- (2) Tables E-6 and E-6B, sum of Capacity columns "Summer Generation."
- (3) Tables E-6 and E-6B, sum of Capacity column "Trans."
- (4) Tables E-6 and E-6B, sum of Capacity column "Dist."
- (5) Table E-6, Non-electric column "Natural Gas."
- (6) Table E-6, sum of Non-electric columns "Oil", "Other Resource, "Non-Resource."
- (7) Calculations from Electric Benefit-Cost Model, 2022 Plan
- (8) Calculations from Electric Benefit-Cost Model, 2022 Plan
- (9) Tables E-6 and E-6B, sum of Capacity column "Capacity DRIPE" and Energy column "Energy DRIPE."
- (10) Tables E-6 and E-6B, Societal column "Carbon."
- (11) Table E-6, Societal column "NOx."
- (12) Tables E-6 and E-6B, Capacity column "Reliability."
- (14) Attachment 5 Tables 1-5, column "Program Implementation Expenses."
- (15) Attachment 5 Tables 1-5, column "Customer Contribution."
- (16) Attachment 5 Tables 1-5, column "Shareholder Incentive."

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Calculation of cost of supply compared to cost of energy efficiency for Electric Energy Efficiency and Demand Response Single Family - Income Eligible Services - Part 2

Ref	Electric Energy	2022	
		Provisional Plan	Alternative Base Case
	a	b	c
1	Electric Energy Costs	\$2,673,446	\$2,673,419
2	Electric Generation Costs	\$274,924	\$274,922
3	Electric Transmission Capacity Costs	\$540,599	\$540,596
4	Electric Distribution Capacity Cost	\$535,615	\$535,612
5	Price Effects	\$1,054,627	\$1,054,609
6	Cost of supply = Sum of Rows 1 through 5	\$5,079,211	\$5,079,159
7	Program Implementation Expenses	\$14,289,185	\$14,386,261
8	Customer Contribution	\$0	\$0
9	Shareholder Incentive	\$0	\$0
10	Cost of energy efficiency = Sum of Rows 7 through 9	\$14,289,185	\$14,386,261
11	Difference = Row 6 - Row 10	-\$9,209,974	-\$9,307,103

Notes:

- (1) Tables E-6 and E-6B, sum of Energy columns "Winter Peak, "Winter Off-Peak", "Summer Peak" and "Summer Off-Peak."
- (2) Tables E-6 and E-6B, sum of Capacity columns "Summer Generation."
- (3) Tables E-6 and E-6B, sum of Capacity column "Trans."
- (4) Tables E-6 and E-6B, sum of Capacity column "Dist."
- (5) Tables E-6 and E-6B, sum of Capacity column "Capacity DRIPE" and Energy column "Energy DRIPE."
- (7) Attachment 5 Tables 1-5, column "Program Implementation Expenses."
- (8) Attachment 5 Tables 1-5, column "Customer Contribution."
- (9) Attachment 5 Tables 1-5, column "Shareholder Incentive."

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Calculation of cost of supply compared to cost of energy efficiency for Electric Energy Efficiency and Demand Response Single Family - Income Eligible Services - Part 3

Ref	Electric Energy	2022	
		Provisional Plan	Alternative Base Case
	a	b	c
1	Electric Energy Costs	\$2,673,446	\$2,673,419
2	Electric Generation Costs	\$274,924	\$274,922
3	Cost of supply = Sum of Rows 1 through 5	\$2,948,369	\$2,948,342
4	Program Implementation Expenses	\$14,289,185	\$14,386,261
5	Customer Contribution	\$0	\$0
6	Shareholder Incentive	\$0	\$0
7	Cost of energy efficiency = Sum of Rows 7 through 9	\$14,289,185	\$14,386,261
8	Difference = Row 6 - Row 10	-\$11,340,816	-\$11,437,920

Notes:

- (1) Tables E-6 and E-6B, sum of Energy columns "Winter Peak, "Winter Off-Peak", "Summer Peak" and "Summer Off-Peak."
- (2) Tables E-6 and E-6B, sum of Capacity columns "Summer Generation."
- (4) Attachment 5 Tables 1-5, column "Program Implementation Expenses."
- (5) Attachment 5 Tables 1-5, column "Customer Contribution."
- (6) Attachment 5 Tables 1-5, column "Shareholder Incentive."

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Calculation of cost of supply compared to cost of energy efficiency for Electric Energy Efficiency and Demand Response Income Eligible Multifamily - Part 1

Ref	Electric Energy a	2022	
		Provisional Plan b	Alternative Base Case c
1	Electric Energy Costs	\$1,852,689	\$1,852,692
2	Electric Generation Costs	\$22,474	\$22,474
3	Electric Transmission Capacity Costs	\$43,054	\$43,055
4	Electric Distribution Capacity Cost	\$42,658	\$42,658
5	Natural Gas Costs	\$0	\$0
6	Fuel Costs	\$642,123	\$642,123
7	Income Eligible Rate Discount	\$41,406	\$41,407
8	Arrearages	\$101,437	\$101,437
9	Price Effects	\$572,149	\$572,151
10	Non-embedded Greenhouse Gas Reduction Costs	\$1,137,064	\$1,137,067
11	Non-embedded Nitrous Oxide (NOx Costs)	\$44,798	\$44,798
12	Reliability Costs	\$237	\$237
13	Cost of supply = Sum of Rows 1 through 12	\$4,500,090	\$4,500,100
14	Program Implementation Expenses	\$3,808,725	\$3,834,583
15	Customer Contribution	\$0	\$0
16	Shareholder Incentive	\$0	\$0
17	Cost of energy efficiency = Sum of Rows 14 through 16	\$3,808,725	\$3,834,583
18	Difference = Row 13 - Row 17	\$691,365	\$665,517

Notes:

- (1) Tables E-6 and E-6B, sum of Energy columns "Winter Peak, "Winter Off-Peak", "Summer Peak" and "Summer Off-Peak."
- (2) Tables E-6 and E-6B, sum of Capacity columns "Summer Generation."
- (3) Tables E-6 and E-6B, sum of Capacity column "Trans."
- (4) Tables E-6 and E-6B, sum of Capacity column "Dist."
- (5) Table E-6, Non-electric column "Natural Gas."
- (6) Table E-6, sum of Non-electric columns "Oil", "Other Resource, "Non-Resource."
- (7) Calculations from Electric Benefit-Cost Model, 2022 Plan
- (8) Calculations from Electric Benefit-Cost Model, 2022 Plan
- (9) Tables E-6 and E-6B, sum of Capacity column "Capacity DRIPE" and Energy column "Energy DRIPE."
- (10) Tables E-6 and E-6B, Societal column "Carbon."
- (11) Table E-6, Societal column "NOx."
- (12) Tables E-6 and E-6B, Capacity column "Reliability."
- (14) Attachment 5 Tables 1-5, column "Program Implementation Expenses."
- (15) Attachment 5 Tables 1-5, column "Customer Contribution."
- (16) Attachment 5 Tables 1-5, column "Shareholder Incentive."

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Calculation of cost of supply compared to cost of energy efficiency for Electric Energy Efficiency and Demand Response Income Eligible Multifamily - Part 2

Ref	Electric Energy a	2022	
		Provisional Plan b	Alternative Base Case c
1	Electric Energy Costs	\$1,852,689	\$1,852,692
2	Electric Generation Costs	\$22,474	\$22,474
3	Electric Transmission Capacity Costs	\$43,054	\$43,055
4	Electric Distribution Capacity Cost	\$42,658	\$42,658
5	Price Effects	\$572,149	\$572,151
6	Cost of supply = Sum of Rows 1 through 5	\$2,533,024	\$2,533,030
7	Program Implementation Expenses	\$3,808,725	\$3,834,583
8	Customer Contribution	\$0	\$0
9	Shareholder Incentive	\$0	\$0
10	Cost of energy efficiency = Sum of Rows 7 through 9	\$3,808,725	\$3,834,583
11	Difference = Row 6 - Row 10	-\$1,275,701	-\$1,301,552

Notes:

- (1) Tables E-6 and E-6B, sum of Energy columns "Winter Peak, "Winter Off-Peak", "Summer Peak" and "Summer Off-Peak."
- (2) Tables E-6 and E-6B, sum of Capacity columns "Summer Generation."
- (3) Tables E-6 and E-6B, sum of Capacity column "Trans."
- (4) Tables E-6 and E-6B, sum of Capacity column "Dist."
- (5) Tables E-6 and E-6B, sum of Capacity column "Capacity DRIPE" and Energy column "Energy DRIPE."
- (7) Attachment 5 Tables 1-5, column "Program Implementation Expenses."
- (8) Attachment 5 Tables 1-5, column "Customer Contribution."
- (9) Attachment 5 Tables 1-5, column "Shareholder Incentive."

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Calculation of cost of supply compared to cost of energy efficiency for Electric Energy Efficiency and Demand Response Income Eligible Multifamily - Part 3

Ref	Electric Energy a	2022	
		Provisional Plan b	Alternative Base Case c
1	Electric Energy Costs	\$1,852,689	\$1,852,692
2	Electric Generation Costs	\$22,474	\$22,474
3	Cost of supply = Sum of Rows 1 through 5	\$1,875,163	\$1,875,166
4	Program Implementation Expenses	\$3,808,725	\$3,834,583
5	Customer Contribution	\$0	\$0
6	Shareholder Incentive	\$0	\$0
7	Cost of energy efficiency = Sum of Rows 7 through 9	\$3,808,725	\$3,834,583
8	Difference = Row 6 - Row 10	-\$1,933,563	-\$1,959,417

Notes:

- (1) Tables E-6 and E-6B, sum of Energy columns "Winter Peak, "Winter Off-Peak", "Summer Peak" and "Summer Off-Peak."
- (2) Tables E-6 and E-6B, sum of Capacity columns "Summer Generation."
- (4) Attachment 5 Tables 1-5, column "Program Implementation Expenses."
- (5) Attachment 5 Tables 1-5, column "Customer Contribution."
- (6) Attachment 5 Tables 1-5, column "Shareholder Incentive."

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Calculation of cost of supply compared to cost of energy efficiency for Electric Energy Efficiency and Demand Response Residential Connected Solutions - Part 1

Ref	Electric Energy	2022	
		Provisional Plan	Alternative Base Case
	a	b	c
1	Electric Energy Costs	\$2,962	\$2,962
2	Electric Generation Costs	\$237,848	\$237,848
3	Electric Transmission Capacity Costs	\$728,964	\$728,964
4	Electric Distribution Capacity Cost	\$722,243	\$722,243
5	Natural Gas Costs	\$0	\$0
6	Fuel Costs	\$0	\$0
7	Income Eligible Rate Discount	\$0	\$0
8	Arrearages	\$0	\$0
9	Price Effects	\$976,650	\$976,650
10	Non-embedded Greenhouse Gas Reduction Costs	\$3,494	\$3,494
11	Non-embedded Nitrous Oxide (NOx Costs)	\$0	\$0
12	Reliability Costs	\$213,795	\$213,795
13	Cost of supply = Sum of Rows 1 through 12	\$2,885,956	\$2,885,956
14	Program Implementation Expenses	\$1,979,127	\$1,990,881
15	Customer Contribution	\$0	\$0
16	Shareholder Incentive	\$0	\$0
17	Cost of energy efficiency = Sum of Rows 14 through 16	\$1,979,127	\$1,990,881
18	Difference = Row 13 - Row 17	\$906,829	\$895,074

Notes:

- (1) Tables E-6 and E-6B, sum of Energy columns "Winter Peak", "Winter Off-Peak", "Summer Peak" and "Summer Off-Peak."
- (2) Tables E-6 and E-6B, sum of Capacity columns "Summer Generation."
- (3) Tables E-6 and E-6B, sum of Capacity column "Trans."
- (4) Tables E-6 and E-6B, sum of Capacity column "Dist."
- (5) Table E-6, Non-electric column "Natural Gas."
- (6) Table E-6, sum of Non-electric columns "Oil", "Other Resource", "Non-Resource."
- (7) Calculations from Electric Benefit-Cost Model, 2022 Plan
- (8) Calculations from Electric Benefit-Cost Model, 2022 Plan
- (9) Tables E-6 and E-6B, sum of Capacity column "Capacity DRIPE" and Energy column "Energy DRIPE."
- (10) Tables E-6 and E-6B, Societal column "Carbon."
- (11) Table E-6, Societal column "NOx."
- (12) Tables E-6 and E-6B, Capacity column "Reliability."
- (14) Attachment 5 Tables 1-5, column "Program Implementation Expenses."
- (15) Attachment 5 Tables 1-5, column "Customer Contribution."
- (16) Attachment 5 Tables 1-5, column "Shareholder Incentive."

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Calculation of cost of supply compared to cost of energy efficiency for Electric Energy Efficiency and Demand Response Residential Connected Solutions - Part 2

Ref	Electric Energy	2022	
		Provisional Plan	Alternative Base Case
	a	b	c
1	Electric Energy Costs	\$2,962	\$2,962
2	Electric Generation Costs	\$237,848	\$237,848
3	Electric Transmission Capacity Costs	\$728,964	\$728,964
4	Electric Distribution Capacity Cost	\$722,243	\$722,243
5	Price Effects	\$976,650	\$976,650
6	Cost of supply = Sum of Rows 1 through 5	\$2,668,667	\$2,668,667
7	Program Implementation Expenses	\$1,979,127	\$1,990,881
8	Customer Contribution	\$0	\$0
9	Shareholder Incentive	\$0	\$0
10	Cost of energy efficiency = Sum of Rows 7 through 9	\$1,979,127	\$1,990,881
11	Difference = Row 6 - Row 10	\$689,540	\$677,785

Notes:

- (1) Tables E-6 and E-6B, sum of Energy columns "Winter Peak", "Winter Off-Peak", "Summer Peak" and "Summer Off-Peak."
- (2) Tables E-6 and E-6B, sum of Capacity columns "Summer Generation."
- (3) Tables E-6 and E-6B, sum of Capacity column "Trans."
- (4) Tables E-6 and E-6B, sum of Capacity column "Dist."
- (5) Tables E-6 and E-6B, sum of Capacity column "Capacity DRIPE" and Energy column "Energy DRIPE."
- (7) Attachment 5 Tables 1-5, column "Program Implementation Expenses."
- (8) Attachment 5 Tables 1-5, column "Customer Contribution."
- (9) Attachment 5 Tables 1-5, column "Shareholder Incentive."

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Calculation of cost of supply compared to cost of energy efficiency for Electric Energy Efficiency and Demand Response Residential Connected Solutions - Part 3

Ref	Electric Energy	2022	
		Provisional Plan	Alternative Base Case
	a	b	c
1	Electric Energy Costs	\$2,962	\$2,962
2	Electric Generation Costs	\$237,848	\$237,848
3	Cost of supply = Sum of Rows 1 through 5	\$240,811	\$240,811
4	Program Implementation Expenses	\$1,979,127	\$1,990,881
5	Customer Contribution	\$0	\$0
6	Shareholder Incentive	\$0	\$0
7	Cost of energy efficiency = Sum of Rows 7 through 9	\$1,979,127	\$1,990,881
8	Difference = Row 6 - Row 10	-\$1,738,316	-\$1,750,071

Notes:

- (1) Tables E-6 and E-6B, sum of Energy columns "Winter Peak", "Winter Off-Peak", "Summer Peak" and "Summer Off-Peak."
- (2) Tables E-6 and E-6B, sum of Capacity columns "Summer Generation."
- (4) Attachment 5 Tables 1-5, column "Program Implementation Expenses."
- (5) Attachment 5 Tables 1-5, column "Customer Contribution."
- (6) Attachment 5 Tables 1-5, column "Shareholder Incentive."

The Narragansett Electric Company
d/b/a National Grid
RIPUC Docket No. 5189
Attachment PUC 3-7-14

Calculation of cost of supply compared to cost of energy efficiency for Electric Energy Efficiency and Demand Response Commercial Connected Solutions - Part 1

Ref	Electric Energy	2022	
		Provisional Plan	Alternative Base Case
	a	b	c
1	Electric Energy Costs	\$0	\$0
2	Electric Generation Costs	\$645,716	\$645,716
3	Electric Transmission Capacity Costs	\$3,206,807	\$3,206,807
4	Electric Distribution Capacity Cost	\$3,177,241	\$3,177,241
5	Natural Gas Costs	\$0	\$0
6	Fuel Costs	\$0	\$0
7	Income Eligible Rate Discount	\$0	\$0
8	Arrearages	\$0	\$0
9	Price Effects	\$2,650,916	\$2,650,916
10	Non-embedded Greenhouse Gas Reduction Costs	\$0	\$0
11	Non-embedded Nitrous Oxide (NOx Costs)	\$0	\$0
12	Reliability Costs	\$940,511	\$940,511
13	Cost of supply = Sum of Rows 1 through 12	\$10,621,191	\$10,621,191
14	Program Implementation Expenses	\$4,897,699	\$4,962,597
15	Customer Contribution	\$0	\$0
16	Shareholder Incentive	\$0	\$0
17	Cost of energy efficiency = Sum of Rows 14 through 16	\$4,897,699	\$4,962,597
18	Difference = Row 13 - Row 17	\$5,723,492	\$5,658,594

Notes:

- (1) Tables E-6 and E-6B, sum of Energy columns "Winter Peak," "Winter Off-Peak", "Summer Peak" and "Summer Off-Peak."
- (2) Tables E-6 and E-6B, sum of Capacity columns "Summer Generation."
- (3) Tables E-6 and E-6B, sum of Capacity column "Trans."
- (4) Tables E-6 and E-6B, sum of Capacity column "Dist."
- (5) Table E-6, Non-electric column "Natural Gas."
- (6) Table E-6, sum of Non-electric columns "Oil", "Other Resource," "Non-Resource."
- (7) Calculations from Electric Benefit-Cost Model, 2022 Plan
- (8) Calculations from Electric Benefit-Cost Model, 2022 Plan
- (9) Tables E-6 and E-6B, sum of Capacity column "Capacity DRIPE" and Energy column "Energy DRIPE."
- (10) Tables E-6 and E-6B, Societal column "Carbon."
- (11) Table E-6, Societal column "NOx."
- (12) Tables E-6 and E-6B, Capacity column "Reliability."
- (14) Attachment 5 Tables 1-5, column "Program Implementation Expenses."
- (15) Attachment 5 Tables 1-5, column "Customer Contribution."
- (16) Attachment 5 Tables 1-5, column "Shareholder Incentive."

The Narragansett Electric Company
d/b/a National Grid
RIPUC Docket No. 5189
Attachment PUC 3-7-14

Calculation of cost of supply compared to cost of energy efficiency for Electric Energy Efficiency and Demand Response Commercial Connected Solutions - Part 2

Ref	Electric Energy	2022	
		Provisional Plan	Alternative Base Case
	a	b	c
1	Electric Energy Costs	\$0	\$0
2	Electric Generation Costs	\$645,716	\$645,716
3	Electric Transmission Capacity Costs	\$3,206,807	\$3,206,807
4	Electric Distribution Capacity Cost	\$3,177,241	\$3,177,241
5	Price Effects	\$2,650,916	\$2,650,916
6	Cost of supply = Sum of Rows 1 through 5	\$9,680,680	\$9,680,680
7	Program Implementation Expenses	\$4,897,699	\$4,962,597
8	Customer Contribution	\$0	\$0
9	Shareholder Incentive	\$0	\$0
10	Cost of energy efficiency = Sum of Rows 7 through 9	\$4,897,699	\$4,962,597
11	Difference = Row 6 - Row 10	\$4,782,981	\$4,718,083

Notes:

- (1) Tables E-6 and E-6B, sum of Energy columns "Winter Peak," "Winter Off-Peak", "Summer Peak" and "Summer Off-Peak."
- (2) Tables E-6 and E-6B, sum of Capacity columns "Summer Generation."
- (3) Tables E-6 and E-6B, sum of Capacity column "Trans."
- (4) Tables E-6 and E-6B, sum of Capacity column "Dist."
- (5) Tables E-6 and E-6B, sum of Capacity column "Capacity DRIPE" and Energy column "Energy DRIPE."
- (7) Attachment 5 Tables 1-5, column "Program Implementation Expenses."
- (8) Attachment 5 Tables 1-5, column "Customer Contribution."
- (9) Attachment 5 Tables 1-5, column "Shareholder Incentive."

The Narragansett Electric Company
d/b/a National Grid
RIPUC Docket No. 5189
Attachment PUC 3-7-14

Calculation of cost of supply compared to cost of energy efficiency for Electric Energy Efficiency and Demand Response Commercial Connected Solutions - Part 3

Ref	Electric Energy	2022	
		Provisional Plan	Alternative Base Case
	a	b	c
1	Electric Energy Costs	\$0	\$0
2	Electric Generation Costs	\$645,716	\$645,716
3	Cost of supply = Sum of Rows 1 through 5	\$645,716	\$645,716
4	Program Implementation Expenses	\$4,897,699	\$4,962,597
5	Customer Contribution	\$0	\$0
6	Shareholder Incentive	\$0	\$0
7	Cost of energy efficiency = Sum of Rows 7 through 9	\$4,897,699	\$4,962,597
8	Difference = Row 6 - Row 10	-\$4,251,982	-\$4,316,881

Notes:

- (1) Tables E-6 and E-6B, sum of Energy columns "Winter Peak," "Winter Off-Peak", "Summer Peak" and "Summer Off-Peak."
- (2) Tables E-6 and E-6B, sum of Capacity columns "Summer Generation."
- (4) Attachment 5 Tables 1-5, column "Program Implementation Expenses."
- (5) Attachment 5 Tables 1-5, column "Customer Contribution."
- (6) Attachment 5 Tables 1-5, column "Shareholder Incentive."

The Narragansett Electric Company
d/b/a National Grid
RIPUC Docket No. 5189
Attachment PUC 3-7-15

Summary of Cost of Supply Calculations for Electric Portfolio and Programs

2022					
Sector	Portfolio or Program Category	Analysis Version	Cost Component	Provisional Plan	Alternative Base Case
Portfolio	Electric Portfolio	Variant 1	Cost of Supply	\$202,122,398	\$191,147,696
			Cost of Energy Efficiency	\$141,428,371	\$129,257,072
			Difference	\$60,694,027	\$61,890,623
		Variant 2	Cost of Supply	\$135,601,370	\$127,257,005
			Cost of Energy Efficiency	\$141,428,371	\$129,257,072
			Difference	-\$5,827,001	-\$2,000,067
		Variant 3	Cost of Supply	\$64,459,164	\$60,183,858
			Cost of Energy Efficiency	\$141,428,371	\$129,257,072
			Difference	-\$76,969,206	-\$69,073,214
2022					
Sector	Portfolio or Program Category	Analysis Version	Category	Provisional Plan	Alternative Base Case
Residential	Residential New Construction	Variant 1	Cost of Supply	\$4,156,981	\$4,157,049
			Cost of Energy Efficiency	\$2,186,297	\$2,250,088
			Difference	\$1,970,684	\$1,906,961
		Variant 2	Cost of Supply	\$1,675,052	\$1,675,105
			Cost of Energy Efficiency	\$2,186,297	\$2,250,088
			Difference	-\$511,245	-\$574,984
		Variant 3	Cost of Supply	\$1,156,579	\$1,156,603
			Cost of Energy Efficiency	\$2,186,297	\$2,250,088
			Difference	-\$1,029,718	-\$1,093,486
2022					
Sector	Portfolio or Program Category	Analysis Version	Category	Provisional Plan	Alternative Base Case
Residential	Energy Star® HVAC	Variant 1	Cost of Supply	\$14,247,889	\$14,246,907
			Cost of Energy Efficiency	\$7,161,785	\$6,805,012
			Difference	\$7,086,103	\$7,441,895
		Variant 2	Cost of Supply	\$8,675,520	\$8,674,900
			Cost of Energy Efficiency	\$7,161,785	\$6,805,012
			Difference	\$1,513,735	\$1,869,888
		Variant 3	Cost of Supply	\$5,972,679	\$5,972,364
			Cost of Energy Efficiency	\$7,161,785	\$6,805,012
			Difference	-\$1,189,107	-\$832,648
2022					
Sector	Portfolio or Program Category	Analysis Version	Category	Provisional Plan	Alternative Base Case
Residential	EnergyWise	Variant 1	Cost of Supply	\$15,269,733	\$15,269,733
			Cost of Energy Efficiency	\$17,644,117	\$17,946,609
			Difference	-\$2,374,384	-\$2,676,876
		Variant 2	Cost of Supply	\$2,078,251	\$2,078,251
			Cost of Energy Efficiency	\$17,644,117	\$17,946,609
			Difference	-\$15,565,867	-\$15,868,359
		Variant 3	Cost of Supply	\$1,022,339	\$1,022,339
			Cost of Energy Efficiency	\$17,644,117	\$17,946,609
			Difference	-\$16,621,778	-\$16,924,270
2022					

Sector	Portfolio or Program Category	Analysis Version	Category	Provisional Plan	Alternative Base Case
Residential	EnergyWise Multifamily	Variant 1	Cost of Supply	\$4,202,650	\$4,210,249
			Cost of Energy Efficiency	\$4,067,858	\$4,145,066
			Difference	\$134,792	\$65,183
		Variant 2	Cost of Supply	\$2,524,746	\$2,530,213
			Cost of Energy Efficiency	\$4,067,858	\$4,145,066
			Difference	-\$1,543,112	-\$1,614,853
		Variant 3	Cost of Supply	\$1,621,563	\$1,625,763
			Cost of Energy Efficiency	\$4,067,858	\$4,145,066
			Difference	-\$2,446,295	-\$2,519,303
2022					
Sector	Portfolio or Program Category	Analysis Version	Category	Provisional Plan	Alternative Base Case
Residential	Home Energy Reports	Variant 1	Cost of Supply	\$5,401,436	\$5,401,436
			Cost of Energy Efficiency	\$2,885,766	\$2,917,797
			Difference	\$2,515,670	\$2,483,639
		Variant 2	Cost of Supply	\$3,635,650	\$3,635,650
			Cost of Energy Efficiency	\$2,885,766	\$2,917,797
			Difference	\$749,885	\$717,853
		Variant 3	Cost of Supply	\$1,817,801	\$1,817,801
			Cost of Energy Efficiency	\$2,885,766	\$2,917,797
			Difference	-\$1,067,965	-\$1,099,996
2022					
Sector	Portfolio or Program Category	Analysis Version	Category	Provisional Plan	Alternative Base Case
Residential	Residential Consumer Products	Variant 1	Cost of Supply	\$9,682,655	\$9,682,655
			Cost of Energy Efficiency	\$4,661,008	\$4,740,782
			Difference	\$5,021,647	\$4,941,873
		Variant 2	Cost of Supply	\$6,903,074	\$6,903,074
			Cost of Energy Efficiency	\$4,661,008	\$4,740,782
			Difference	\$2,242,065	\$2,162,292
		Variant 3	Cost of Supply	\$3,191,145	\$3,191,145
			Cost of Energy Efficiency	\$4,661,008	\$4,740,782
			Difference	-\$1,469,863	-\$1,549,637
2022					
Sector	Portfolio or Program Category	Analysis Version	Category	Provisional Plan	Alternative Base Case
Commercial & Industrial	Large Commercial New Construction	Variant 1	Cost of Supply	\$37,386,448	\$32,697,503
			Cost of Energy Efficiency	\$16,099,189	\$12,377,754
			Difference	\$21,287,259	\$20,319,750
		Variant 2	Cost of Supply	\$28,493,053	\$24,938,762
			Cost of Energy Efficiency	\$16,099,189	\$12,377,754
			Difference	\$12,393,864	\$12,561,009
		Variant 3	Cost of Supply	\$16,380,710	\$14,315,583
			Cost of Energy Efficiency	\$16,099,189	\$12,377,754
			Difference	\$281,521	\$1,937,829
2022					
Sector	Portfolio or Program Category	Analysis Version	Category	Provisional Plan	Alternative Base Case
Commercial & Industrial	Large Commercial Retrofit	Variant 1	Cost of Supply	\$68,358,493	\$62,499,950
			Cost of Energy Efficiency	\$47,769,240	\$39,689,874
			Difference	\$20,589,252	\$22,810,076
		Variant 2	Cost of Supply	\$53,550,435	\$49,064,820
			Cost of Energy Efficiency	\$47,769,240	\$39,689,874
			Difference	\$5,781,195	\$9,374,946
		Variant 3	Cost of Supply	\$23,434,140	\$21,385,326
			Cost of Energy Efficiency	\$47,769,240	\$39,689,874
			Difference	-\$24,335,100	-\$18,304,549
2022					

Sector	Portfolio or Program Category	Analysis Version	Category	Provisional Plan	Alternative Base Case
Commercial & Industrial	Small Business Direct Install	Variant 1	Cost of Supply	\$11,088,037	\$10,654,622
			Cost of Energy Efficiency	\$13,978,374	\$13,209,767
			Difference	-\$2,890,337	-\$2,555,145
		Variant 2	Cost of Supply	\$8,104,007	\$7,794,695
			Cost of Energy Efficiency	\$13,978,374	\$13,209,767
			Difference	-\$5,874,367	-\$5,415,072
		Variant 3	Cost of Supply	\$4,152,150	\$3,986,901
			Cost of Energy Efficiency	\$13,978,374	\$13,209,767
			Difference	-\$9,826,223	-\$9,222,866

2022

Sector	Portfolio or Program Category	Analysis Version	Category	Provisional Plan	Alternative Base Case
Income Eligible	Single Family - Income Eligible Services	Variant 1	Cost of Supply	\$14,320,840	\$14,320,344
			Cost of Energy Efficiency	\$14,289,185	\$14,386,261
			Difference	\$31,655	-\$65,917
		Variant 2	Cost of Supply	\$5,079,211	\$5,079,159
			Cost of Energy Efficiency	\$14,289,185	\$14,386,261
			Difference	-\$9,209,974	-\$9,307,103
		Variant 3	Cost of Supply	\$2,948,369	\$2,948,342
			Cost of Energy Efficiency	\$14,289,185	\$14,386,261
			Difference	-\$11,340,816	-\$11,437,920

2022

Sector	Portfolio or Program Category	Analysis Version	Category	Provisional Plan	Alternative Base Case
Income Eligible	Income Eligible Multifamily	Variant 1	Cost of Supply	\$4,500,090	\$4,500,100
			Cost of Energy Efficiency	\$3,808,725	\$3,834,583
			Difference	\$691,365	\$665,517
		Variant 2	Cost of Supply	\$2,533,024	\$2,533,030
			Cost of Energy Efficiency	\$3,808,725	\$3,834,583
			Difference	-\$1,275,701	-\$1,301,552
		Variant 3	Cost of Supply	\$1,875,163	\$1,875,166
			Cost of Energy Efficiency	\$3,808,725	\$3,834,583
			Difference	-\$1,933,563	-\$1,959,417

2022

Sector	Portfolio or Program Category	Analysis Version	Category	Provisional Plan	Alternative Base Case
Residential	Residential ConnectedSolutions	Variant 1	Cost of Supply	\$2,885,956	\$2,885,956
			Cost of Energy Efficiency (Demand Response)	\$1,979,127	\$1,990,881
			Difference	\$906,829	\$895,074
		Variant 2	Cost of Supply	\$2,668,667	\$2,668,667
			Cost of Energy Efficiency (Demand Response)	\$1,979,127	\$1,990,881
			Difference	\$689,540	\$677,785
		Variant 3	Cost of Supply	\$240,811	\$240,811
			Cost of Energy Efficiency (Demand Response)	\$1,979,127	\$1,990,881
			Difference	-\$1,738,316	-\$1,750,071

2022

Sector	Portfolio or Program Category	Analysis Version	Category	Provisional Plan	Alternative Base Case
Commercial & Industrial	Commercial ConnectedSolutions	Variant 1	Cost of Supply	\$10,621,191	\$10,621,191
			Cost of Energy Efficiency (Demand Response)	\$4,897,699	\$4,962,597
			Difference	\$5,723,492	\$5,658,594
		Variant 2	Cost of Supply	\$9,680,680	\$9,680,680
			Cost of Energy Efficiency (Demand Response)	\$4,897,699	\$4,962,597
			Difference	\$4,782,981	\$4,718,083
		Variant 3	Cost of Supply	\$645,716	\$645,716
			Cost of Energy Efficiency (Demand Response)	\$4,897,699	\$4,962,597
			Difference	-\$4,251,982	-\$4,316,881

Notes:

Analysis Version Variant 1 matches to the full cost of supply requested in Part 1 of the request, Variant 2 matches to Part 2 of the Request of the request.

PUC 3-8

Request:

Referring to the response to PUC 8-1 in docket 5076 and PUC 1-117 in Docket 5189, please provide a similar chart and analysis for the 2022 Alternative Base Plan and the gas program.

Response:

Please see Table 1 which shows the components of the cost of supply calculation for the electric portfolio overall with the addition of two rows: the lifetime MWh savings from the portfolio and the calculated cost of supply in dollars per lifetime kWh.

Please also see Table 2 which shows the components of the cost of supply calculation for the gas portfolio overall with the addition of two rows: the lifetime MMBtu savings from the portfolio and the calculated cost of supply in dollars per lifetime MMBtu. The gas table is unchanged from PUC 1-117.

The Narragansett Electric Company
d/b/a National Grid
RIPUC Docket No. 5189
In Re: 2022 Annual Energy Efficiency Plan
Responses to the Commission's Third Set of Data Requests
Issued on November 24, 2021

PUC 3-8, page 2

Table 1: Alternative Base Case Electric Portfolio - Cost of Supply Components and Calculation of \$/Lifetime kWh

		2022
Ref	a	b
1	Electric Energy Costs	\$53,629,407
2	Electric Generation Costs	\$6,554,452
3	Electric Transmission Capacity Costs	\$15,916,995
4	Electric Distribution Capacity Cost	\$15,770,244
5	Natural Gas Costs	-\$2,330,408
6	Fuel Costs	\$19,026,114
7	Income Eligible Rate Discount	\$107,155
8	Arrearages	\$147,884
9	Price Effects	\$35,385,908
10	Non-embedded Greenhouse Gas Reduction Costs	\$44,429,486
11	Non-embedded Nitrous Oxide (NOx Costs)	\$1,240,514
12	Reliability Costs	\$1,269,946
13	Cost of supply = Sum of Rows 1 through 12	\$191,147,696
14	Electric Energy Savings (Lifetime MWh)	833,808
15	Cost of supply (\$/kWh) = Row 13 / (Row 14 * 1000)	\$0.2292

Notes:

- (1) Table E-6, sum of Energy columns "Winter Peak", "Winter Off-Peak", "Summer Peak" and "Summer Off-Peak.", and Table E-6B Energy columns "Summer Peak" and "Summer Off-Peak."
- (2) Table E-6 and E-6B, Capacity column "Summer Generation."
- (3) Table E-6 and E-6B, Capacity column "Trans."
- (4) Table E-6 and E-6B, Capacity column "Dist."
- (5) Table E-6, Non-electric column "Natural Gas." less Gas DRIPE included in that column.
- (6) Table E-6, sum of Non-electric columns "Natural Gas," "Oil", "Other Resource."
- (7) Calculations from Electric Benefit-Cost Model, 2022 Plan.
- (8) Calculations from Electric Benefit-Cost Model, 2022 Plan.
- (9) Table E-6 and E-6B, sum of Capacity column "Capacity DRIPE" and Energy column "Energy DRIPE." and calculation from Electric Benefit-Cost Model, 2021-2023 Plan for "Gas DRIPE."
- (10) Table E-6 and E-6B, Societal column "Carbon."
- (11) Table E-6, Societal column "NOx."
- (12) Table E-6 and E-6B, Capacity column "Reliability."
- (14) Table E-6A.

PUC 3-8, page 3

Table 2: Gas Portfolio - Cost of Supply Components and Calculation of \$/Lifetime MMBtu

		2022
Ref	a	b
1	Electric Energy Costs	\$307,573
2	Electric Generation Costs	\$106,406
3	Electric Transmission Capacity Costs	\$139,008
4	Electric Distribution Capacity Cost	\$137,727
5	Natural Gas Costs	\$32,673,794
6	Fuel Costs	\$0
7	Income Eligible Rate Discount	\$72,060
8	Arrearages	\$18,829
9	Price Effects	\$739,515
10	Non-embedded Greenhouse Gas Reduction Costs	\$27,205,242
11	Non-embedded Nitrous Oxide (NO _x Costs)	\$2,811,165
12	Reliability Costs	\$10,701
13	Cost of supply = Sum of Rows 1 through 12	\$64,222,020
14	Natural Gas Savings (Lifetime MMBtu)	4,059,902
15	Cost of supply (\$/MMBtu) = Row 13 / Row 14	\$15.82

Notes:

All values are from the Gas Benefit-Cost Model, 2022 Plan.

Rows (1)-(4) are components of the Column "Other Non-Gas Benefit" in table G-6.

Row (5) is equivalent to the column "Natural Gas" in table G-6.

Rows (6)-(12) are components of the Column "Other Non-Gas Benefit" in table G-6.

Row (14) is from table G-6.

PUC 3-9

Request:

Referring to the response to PUC 9-2 in docket 5076 and PUC 1-118 in Docket 5189, please provide similar summary tables and analysis for the 2022 Alternative Base Plan.

Response:

Please see PUC 1-118 for a detailed description on the methodology and assumptions used to produce the tables below. Note, the natural gas portfolio table is unchanged from PUC 1-118.

Electric Portfolio Alternative Base Case – Programmatic Payback Periods (Years)

Sector	Program	Part 1		Part 2	Part 3	
		Version 1: Cost of Supply ("Electric Energy Costs")	Version 2: Cost of Supply (PUC 1-116)	TRC Test BCA (Table E5A – Attachment 5 Provisional)	RI Test BCA Primary (Table E5 – Primary – Attachment 5 Provisional)	RI Test BCA Secondary (Table E5 – Secondary-Attachment 5 Provisional)
Residential	Residential New Construction	N/A	8.5	9.8	7.8	5.2
Residential	Energy Star® HVAC	N/A	7.4	9.1	6.7	4.6
Residential	EnergyWise	N/A	N/A	N/A	4.6	2.4
Residential	EnergyWise Multifamily	N/A	13.3	10.0	8.3	4.9
Residential	Home Energy Reports	N/A	0.5	0.7	0.5	0.3
Residential	Residential Consumer Products	N/A	3.3	4.2	3.0	2.1
Commercial & Industrial	Large Commercial New Construction	12.2	4.8	5.4	4.1	2.2
Commercial & Industrial	Large Commercial Retrofit	N/A	4.3	4.2	3.3	1.1
Commercial & Industrial	Small Business Direct Install	N/A	N/A	N/A	5.4	2.2
Income Eligible	Single Family - Income Eligible Services	N/A	11.0	6.6	5.6	3.9
Income Eligible	Income Eligible Multifamily	N/A	12.4	7.2	6.1	4.1
Residential	Residential ConnectedSolutions	N/A	0.7	0.6	0.6	0.4
Commercial & Industrial	Commercial ConnectedSolutions	N/A	0.5	0.4	0.4	0.2

PUC 3-9, page 2

Natural Gas Portfolio – Programmatic Payback Periods (Years)

Sector	Program	Part 1		Part 2	Part 3	
		Version 1: Cost of Supply ("Natural Gas Costs")	Version 2: Cost of Supply (PUC 1- 116)	TRC Test BCA (Table G5A – Attachment 6)	RI Test BCA Primary (Table G5 – Attachment 6)	RI Test BCA Secondary (Table G5 – Attachment 6)
Residential	Energy Star® HVAC	N/A	N/A	N/A	15.1	10.7
Residential	EnergyWise	N/A	N/A	N/A	18.1	9.9
Residential	EnergyWise Multifamily	N/A	13.3	5.6	4.7	3.4
Residential	Home Energy Reports	0.6	0.3	0.6	0.3	0.2
Residential	Residential New Construction	N/A	16.3	13.9	10.1	9.5
Commercial & Industrial	Large Commercial New Construction	8.8	4.3	3.6	2.5	2.0
Commercial & Industrial	Large Commercial Retrofit	6.6	3.2	2.4	1.7	1.3
Commercial & Industrial	Small Business Direct Install	8.8	4.5	5.9	3.5	2.6
Commercial & Industrial	Commercial & Industrial Multifamily	14.3	7.3	2.8	2.4	1.8

PUC 3-10

Request:

Referring to the response to Record Request No. 8 in docket 5076 and PUC 1-119 in Docket 5189, please provide the same information for the 2022 Alternative Base Plan and the gas program.

Response:

See Attachment PUC 3-10-1 for the electric portfolio 2022 Alternative Base Plan information.

See Attachment PUC 3-10-2 for the gas portfolio information. Note, this information is the same as represented in PUC 1-119-2.

See the tables below for participation information. Note, this information is the same as represented in PUC 1-119.

2022 Provisional Plan Electric Rate and Bill Impacts Model	Unique Participants
Residential (Model 1: HERs only)	298,076
Residential (Model 2: All Programs Except HER)	117,270
Residential (Model 3: All Programs)	415,346

2022 Gas Rate and Bill Impacts Model	Unique Participants
Residential (Model 1: HERs only)	152,324
Residential (Model 2: All Programs Except HER)	9,269
Residential (Model 3: All Programs)	161,593

The Narragansett Electric Company
d/b/a National Grid
RIPUC Docket No. 5189
Attachment PUC 3-10-1

2022 Provisional Plan Electric Rate and Bill Impacts - Expanded

Sector	Long Term Rate Impacts	Change in Bills			
			Non-Participants	Average Customer	Average Participant
Residential (Model 1: HERs only)	0.00%	Long Term Average	0.00%	-0.04%	-0.06%
		2022	0.09%	-0.84%	-1.21%
		2023	0.00%	0.00%	0.00%
		2024	0.00%	0.00%	0.00%
		2025	0.00%	0.00%	0.00%
		2026	0.00%	0.00%	0.00%
		2027	0.00%	0.00%	0.00%
		2028	0.00%	0.00%	0.00%
		2029	0.00%	0.00%	0.00%
		2030	0.00%	0.00%	0.00%
		2031	0.00%	0.00%	0.00%
		2032	0.00%	0.00%	0.00%
		2033	0.00%	0.00%	0.00%
		2034	0.00%	0.00%	0.00%
		2035	0.00%	0.00%	0.00%
		2036	0.00%	0.00%	0.00%
		2037	0.00%	0.00%	0.00%
		2038	0.00%	0.00%	0.00%
		2039	0.00%	0.00%	0.00%
		2040	0.00%	0.00%	0.00%
2041	0.00%	0.00%	0.00%		
Residential (Model 2: All Programs Except HERs)	0.12%	Long Term Average	0.12%	-0.17%	-7.10%
		2022	4.84%	4.23%	0.22%
		2023	-0.44%	-1.03%	-4.84%
		2024	-0.45%	-1.03%	-4.84%
		2025	-0.37%	-0.95%	-4.77%
		2026	-0.29%	-0.87%	-4.69%
		2027	-0.28%	-0.75%	-4.90%
		2028	-0.21%	-0.68%	-4.83%
		2029	-0.25%	-0.47%	-10.90%
		2030	-0.21%	-0.43%	-10.87%
		2031	-0.08%	-0.30%	-10.75%
		2032	-0.08%	-0.29%	-10.74%
		2033	0.05%	-0.17%	-10.63%
		2034	0.05%	-0.17%	-10.63%
		2035	0.04%	-0.17%	-10.64%
		2036	0.04%	-0.17%	-10.64%
		2037	0.03%	-0.13%	-13.75%
		2038	0.03%	-0.13%	-13.75%
		2039	0.00%	0.00%	0.00%
		2040	0.00%	0.00%	0.00%
2041	0.00%	0.00%	0.00%		

		Long Term Average	0.25%	-0.10%	-6.84%
Residential (Model 3: All Programs)	0.25%	2022	6.46%	4.84%	4.56%
		2023	-0.50%	-1.08%	-4.89%
		2024	-0.51%	-1.09%	-4.90%
		2025	-0.42%	-1.00%	-4.82%
		2026	-0.34%	-0.92%	-4.74%
		2027	-0.14%	-0.61%	-4.76%
		2028	-0.07%	-0.54%	-4.70%
		2029	0.06%	-0.16%	-10.62%
		2030	0.05%	-0.17%	-10.63%
		2031	0.05%	-0.17%	-10.63%
		2032	0.05%	-0.17%	-10.63%
		2033	0.05%	-0.17%	-10.63%
		2034	0.05%	-0.17%	-10.63%
		2035	0.04%	-0.17%	-10.64%
		2036	0.04%	-0.17%	-10.64%
		2037	0.03%	-0.13%	-13.75%
		2038	0.03%	-0.13%	-13.75%
		2039	0.00%	0.00%	0.00%
2040	0.00%	0.00%	0.00%		
2041	0.00%	0.00%	0.00%		

**The Narragansett Electric Company
d/b/a National Grid
RIPUC Docket No. 5189
Attachment PUC 3-10-2**

2022 Plan Gas Rate and Bill Impacts - Expanded

Sector	Long Term Rate Impacts	Change in Bills			
			Non-Participants	Average Customer	Average Participant
Residential (Model 1: HERs only)	0.02%	Long Term Average	0.02%	0.00%	-0.01%
		2022	0.45%	0.003%	-0.17%
		2023	0.00%	0.00%	0.00%
		2024	0.00%	0.00%	0.00%
		2025	0.00%	0.00%	0.00%
		2026	0.00%	0.00%	0.00%
		2027	0.00%	0.00%	0.00%
		2028	0.00%	0.00%	0.00%
		2029	0.00%	0.00%	0.00%
		2030	0.00%	0.00%	0.00%
		2031	0.00%	0.00%	0.00%
		2032	0.00%	0.00%	0.00%
		2033	0.00%	0.00%	0.00%
		2034	0.00%	0.00%	0.00%
		2035	0.00%	0.00%	0.00%
		2036	0.00%	0.00%	0.00%
		2037	0.00%	0.00%	0.00%
		2038	0.00%	0.00%	0.00%
		2039	0.00%	0.00%	0.00%
		2040	0.00%	0.00%	0.00%
		2041	0.00%	0.00%	0.00%
2042	0.00%	0.00%	0.00%		
2043	0.00%	0.00%	0.00%		
2044	0.00%	0.00%	0.00%		
2045	0.00%	0.00%	0.00%		

Residential (Model 2: All Programs Except HERs)	0.47%	Long Term Average	0.46%	0.26%	-4.72%
		2022	8.93%	8.62%	1.76%
		2023	0.11%	-0.17%	-6.39%
		2024	0.11%	-0.17%	-6.39%
		2025	0.11%	-0.17%	-6.39%
		2026	0.10%	-0.17%	-6.39%
		2027	0.10%	-0.16%	-6.39%
		2028	0.10%	-0.16%	-6.39%
		2029	0.10%	-0.16%	-6.40%
		2030	0.10%	-0.16%	-6.40%
		2031	0.10%	-0.16%	-6.40%
		2032	0.09%	-0.16%	-6.40%
		2033	0.09%	-0.16%	-6.40%
		2034	0.09%	-0.16%	-6.40%
		2035	0.09%	-0.16%	-6.41%
		2036	0.09%	-0.16%	-6.41%
		2037	0.08%	-0.16%	-6.41%
		2038	0.04%	-0.09%	-3.53%
		2039	0.04%	-0.09%	-3.53%
		2040	0.03%	-0.05%	-2.25%
		2041	0.03%	-0.05%	-2.25%
2042	0.03%	-0.05%	-2.25%		
2043	0.03%	-0.05%	-2.25%		
2044	0.02%	-0.05%	-2.25%		
2045	0.00%	0.00%	0.00%		
Residential (Model 3: All Programs)	0.49%	Long Term Average	0.48%	0.25%	0.15%
		2022	9.38%	8.57%	8.32%
		2023	0.11%	-0.17%	-0.26%
		2024	0.11%	-0.17%	-0.26%
		2025	0.11%	-0.17%	-0.27%
		2026	0.10%	-0.17%	-0.27%
		2027	0.10%	-0.16%	-0.27%
		2028	0.10%	-0.16%	-0.27%
		2029	0.10%	-0.16%	-0.27%
		2030	0.10%	-0.16%	-0.27%
		2031	0.10%	-0.16%	-0.28%
		2032	0.09%	-0.16%	-0.28%
		2033	0.09%	-0.16%	-0.28%
		2034	0.09%	-0.16%	-0.28%
		2035	0.09%	-0.16%	-0.28%
		2036	0.09%	-0.16%	-0.29%
		2037	0.08%	-0.16%	-0.29%
		2038	0.04%	-0.09%	-0.16%
		2039	0.04%	-0.09%	-0.16%
		2040	0.03%	-0.05%	-0.10%
		2041	0.03%	-0.05%	-0.10%
2042	0.03%	-0.05%	-0.10%		
2043	0.03%	-0.05%	-0.11%		
2044	0.02%	-0.05%	-0.11%		
2045	0.00%	0.00%	0.00%		

PUC 3-11

Request:

In its response to PUC 1-4, the Company explains that the weatherization workforce decreased to 30% of pre-Covid capacity levels in July 2020, but then recovered to 125% of pre-Covid levels by June 2021. Please provide similar assessments of historic workforce capacity (comparing pre-Covid to current capacity) for all other programs in which the Company tracks workforce capacity.

Response:

National Grid has unique insight into the EnergyWise workforce because the workforce was surveyed extensively during the Covid-19 pandemic. National Grid did not track workforce capacity for any other programs during the same time period of pre-Covid levels to current capacity.

PUC 3-12

Request:

Referencing the Company's response to PUC 1-7, please explain the following:

- a. When does the Company expect to be billed by ISO-NE for the Financial Assurance penalty?
- b. In reference to the "Rate (\$/kW)" columns in both tables, please explain what the \$/kW rate refers to and provide supporting documentation for the \$8.187/kW (FCA 14) and \$8.707/kW (FCA 15).
- c. In reference to the "Timeline Factor" columns in both tables, please explain what the timeline factor refers to and provide supporting documentation for the 2X (FCA 14) and 1X (FCA 15).
- d. For each of the following, explain what happened between the date of filing of the 2022 EE Plan and October 25, 2021 that resulted in the Company's CSO kW subject to Financial Assurance increasing:
 - i. From 0 to 1,884 kW for FCA 14
 - ii. From 28,739 kW to 38,624 kW for FCA 15
- e. On page 2 of the response to PUC 1-7, the Company writes "over the next month and a half, the penalty amount will be reduced should the Company be able to secure commercial status for additional kW from either CSO." What is the Company doing to secure commercial status for additional kW?

Response:

- a. The Company expects to be billed by the ISO-NE following withdrawal of the non-commercial capacity from ISO-NE Critical Path Schedule Monitoring. Assuming that this withdrawal happens in December 2021, the Company believes that ISO-NE will most likely bill for the financial assurance penalty in January 2022.
- b. \$8.187/kW refers to Net Cost of New Entry ("CONE") for Capacity Commitment Period 2023-24, as calculated by ISO-NE and as reported in the FCM Parameters (<https://www.iso-ne.com/markets-operations/markets/forward-capacity-market/#2023-2024>).
\$8.707/kW refers to Net Cost of New Entry ("CONE") for Capacity Commitment Period 2024-25, as calculated by ISO-NE and as reported in the FCM Parameters

PUC 3-12, page 2

<https://www.iso-ne.com/markets-operations/markets/forward-capacity-market/#2024-2025>);

- c. The Timeline Factor refers to the Financial Assurance multiplier associated with how much time has passed since the resource cleared the applicable FCA. Each year after a resource has cleared the FCA, the multiplier will increase for any non-commercial capacity remaining, thus increasing the amount of Financial Assurance required. Per the ISO-NE Financial Assurance Policy (https://www.iso-ne.com/static-assets/documents/2017/09/sect_i_ex_ia.pdf):

Section VII. ADDITIONAL PROVISIONS FOR FORWARD CAPACITY MARKETS, B. Non-Commercial Capacity, 2. Non-Commercial Capacity in Forward Capacity Auctions, b. Non-Commercial Capacity Participating in the Ninth Forward Capacity Auction and All Forward Capacity Auctions Thereafter, "Multiplier = one at the completion of the Forward Capacity Auction in which the Capacity Supply Obligation was awarded; two beginning at 8 a.m. (Eastern Time) on the tenth Business Day prior to the next Forward Capacity Auction after the Forward Capacity Auction in which the Capacity Supply Obligation was awarded; and three beginning at 8 a.m. (Eastern Time) on the tenth Business Day prior to the second Forward Capacity Auction after the Forward Capacity Auction in which the Capacity Supply Obligation was awarded.

- d. The first table in PUC 1-7 shows what the Company forecast the final financial assurance penalty to be, as of the time of the Plan filing. The second table in PUC 1-7 shows what the financial assurance obligation was forecast to be as of October 25, 2021.
- i. At the time of the filing the Company forecast was showing that its FCA14 CSO would be marked fully commercial, thus 0 kW were subject to financial assurance. On October 25, 2021, there were 1,884 kW left remaining to be marked commercial and thus were subject to financial assurance.
- ii. At the time of the filing the Company forecast was showing that 28,739 kW of its original 38,624 kW FCA15 CSO would be left non-commercial and thus subject to financial assurance. On October 25, 2021, all of the 38,624 kW FCA15 CSO was subject to financial assurance.
- e. The Company continues to install EE measures and deliver additional kW as part of its EE programs. All new eligible measures are added as they are installed, and will continue to contribute to meeting the non-commercial CSO between now and when the final penalty is determined in December.

PUC 3-13

Request:

In response to PUC 1-7, the Company provided 2 tables, one that detailed the Financial Assurance obligation as of the date of pre-filed testimony and one that detailed the Financial Assurance obligation as of 10/25/21. Both tables include the column "kW subject to FA" for FCA14 and FCA15. Please explain the following:

- a. Is the following statement accurate? The "kW subject to FA" column represents the portion (kW) of the Company's CSO that was not able to be marked as commercial by a certain date (relative to the given FCA)? If the statement is accurate, provide the specific dates by which the kW were not able to be marked as commercial for both FCA14 and FCA15. If the statement is not accurate, please correct it.
- b. For the first table, clarify the following:
 - i. For the 28,739 kW subject to FA for FCA15, in what Energy Efficiency program year did the Company originally expect those kW to become commercial?
- c. For the second table, clarify the following:
 - i. For the 1,884 kW subject to FA for FCA14, in what Energy Efficiency program year did the Company originally expect those kW to become commercial?
 - ii. For the 38,624 kW subject to FA for FCA15, in what Energy Efficiency program year did the Company originally expect those kW to become commercial?

Response:

- a. The statement is partially correct. The "kW subject to FA" column represents the portion (kW) of the Company's CSO that was not able to be marked as commercial by the date the report was calculated, not by a certain date relative to the FCA.
- b. i. The first table provided by the Company in response to PUC 1-7 was the anticipated remaining non-commercial capacity that would have to be removed from Critical Path Schedule monitoring in mid-December 2021.

At the time of FCA15 in February 2021, the Company originally planned on the entire 38,624 MW, of which 28,739 kW was a part, becoming commercial by or in program year 2024, as the capacity commitment period for FCA15 begins on June 1, 2024.

PUC 3-13, page 2

c. i. At the time of FCA14 in February 2020, the Company originally planned on the entire CSO picked up in FCA14, including the partial amount of 1,884 kW, becoming commercial by or in program year 2023, as the capacity commitment period for FCA14 begins on June 1, 2023.

c. ii. At the time of FCA15 in February 2021, the Company originally planned on the 38,624 MW CSO becoming commercial by or in program year 2024, as the capacity commitment period for FCA15 begins on June 1, 2024.

PUC 3-14

Request:

In response to part b of PUC 1-11, the Company writes “this review began after the FCM team received access to the ISO-NE Financial Assurance Management reports, which enhanced the Company’s ability to track and estimate potential differences between forecasts and delivered MW.” When did the Company “receive access” to ISO-NE’s Financial Assurance Management system, and was the Company eligible for access to the system prior to that date?

Response:

The Company’s FCM team obtained access to the Financial Assurance Management system on June 3, 2019. However, the Company received access to reports from ISONE regarding delivered MW, called Market Information Server (MIS) reports, showing actual reported performance, in the March-April 2021 timeframe. The Company’s FCM team was eligible for access to the Financial Assurance Management and the MIS reports prior to these dates. The Company will correct its response to PUC 1-11 to reflect this new information that has come to light.

PUC 3-15

Request:

In response to PUC 1-12, the Company describes a change to ISO-NE's market rules that requires new resources to be created annually, as opposed to allowing incremental capacity to be added to existing resources. When did the market rules change take effect? Please also provide a copy of ISO-NE's updated market rule that shows the change.

Response:

ISO-NE's updated Market Rule can be found at https://www.iso-ne.com/static-assets/documents/regulatory/tariff/sect_3/mr1_sec_13_14.pdf.

The ISO-NE market rule change took effect for new resources qualifying for FCA16. The relevant section of this rule reads as follows:

Section III.13.1.4.1.1.1. New Demand Capacity Resource Show of Interest Form requires new resources to be created annually, as opposed to incrementally. "For each resource that a Project Sponsor seeks to offer in the Forward Capacity Auction as a New Demand Capacity Resource, the Project Sponsor must submit to the ISO a New Demand Capacity Resource Show of Interest Form as described in this Section III.13.1.4.1.1.1 during the New Capacity Show of Interest Submission Window, as described in Section III.13.1.10. A New Demand Capacity Resource Show of Interest Form for a resource composed of Energy Efficiency measures must represent a resource with a new and unique resource identification number. The ISO may waive the submission of any information not required for evaluation of a project." (Emphasis added.)

PUC 3-16

Request:

For each annual budget for Codes and Standards Technical Support (2015-2022) included in the response to PUC 1-16, clarify how much of the annual budget was dedicated to compliance support or updating support.

Response:

The Company has not historically dedicated significant portions of the annual Codes and Standards Technical Support (CSTS) budget to updating support. The vast majority of the budget has been dedicated to compliance support.

In 2022, the Company's full CSTS budget in the original plan was intended for compliance support. The year-over-year budget increase for compliance support in 2022 is because the Company expects the State of Rhode Island to adopt a new building code in late 2021 or early 2022. This is likely to drive additional interest in (and need for) additional compliance support activities. As noted in PUC 1-17, activities include training (classroom, webinar, and in-field), a "hotline" for project specific inquiries, and development and delivery of tools and resources that help fill market gaps.

PUC 3-17

Request:

In response to PUC 1-18, the Company writes “the company is not asking for any savings credit in 2022 for Codes and Standards Updating Support because parties have not agreed to an approach for counting savings from Codes and Standards Updating Support.” What feedback has the Company received from the parties on Codes and Standards Updating Support, and for what reasons have the parties failed to agree on an approach for counting savings?

Response:

Over the course of 2020, the Company, OER, the Division and consultants to the EERMC held several discussions regarding potential mechanisms to incentivize and compensate the Company for its Codes and Standards Updating Support. The parties each saw value in advancing more stringent codes & standards as a path to achieving cost-efficient savings and recognized the Company's disincentive, under current evaluation and compensation frameworks, to pursue higher efficiency codes & standards.

However, no consensus was reached on an appropriate mechanism for compensating the Company for its efforts, and conversations ultimately were suspended as all parties focused on other, greater priorities relative to program planning.

Specific, as of yet unresolved issues related to this topic included how to measure and attribute codes and standards based savings to Company efforts, timing issues related to when Company efforts (and successful outcomes) should be compensated, relative to the longer time periods over which savings and benefits would accrue to customers, and the appropriate level of potential earnings to be realized through this mechanism as opposed to more traditional performance measurement and performance incentive mechanism compensation.

PUC 3-18 (Supplemental)

Request:

How did the Company calculate the MDC rates included in its response to PUC 1-25? Provide supporting calculations and/or formulas, as well as underlying data.

Response

(Supplemental information being added to the initial response is underlined):

Please see the Company's response to PUC 1-26 for an explanation of the calculation of the 2022 MDC rate, as well as documentation and data in Excel format. Additionally, please see the Company's response to PUC 8-1 in Docket 5010 for an explanation of the calculation of historical MDC rates, as well as documentation and data in Excel format.

The basic algorithm calculating MDC rates has been the same throughout the long historical use of the tool as described in the Company's responses to PUC 1-26 and PUC 8-1 from Docket 5010. The inputs (FERC form data, load forecasts, capital budgets, deferrable investment portion, inflation and other carrying charge assumptions, etc.) are updated periodically yielding the different results over time.

In Summary Schedule 1 of Attachment PUC 1-26, the Marginal Distribution Costs is calculated in 2021 dollars¹ as:

(Incremental investments in distribution systems caused by load growth / Incremental growth in peak demand) x Annual carrying charge of distribution capital investments

Or (Deferable Capital \$\$ / Incremental kW) * Carrying Charge

Where:

Capital \$\$ are the sum of capital investments for distribution for 2016-2020 (five historic years) and 2021-2026 (six forecast years) from Dist Invmt Schedule 2, converted to Real 2021 \$, multiplied by the NECO Percentage Assumed to be Related to Increasing Load

NECO Percentage Assumed to be Related to Increasing Load is capital budget associated with System Capacity and Performance for 2023, 2024 and 2025 divided by total capital budget in the FY2021 ISR. It is a representation of the portion of the distribution capital budget that is deferrable by energy efficiency.

PUC 3-18 (Supplemental), page 2

Incremental kW is the sum of load growth from 2015-2020 (five historic years) and load growth from 2020-2026 (six historic years) as seen in Peak Growth Schedule 4. The load growth for each of the historic and forecast periods is calculated as the delta between the maximum and minimum loads in the period.

Carrying Charge is the sum of a number of percentages: weighted average cost of capital, property tax expense rate, insurance expense rate, O&M expense rate, and income tax expense rate as seen on Carrying Charge Schedule 3.

PUC 3-18

Request:

How did the Company calculate the MDC rates included in its response to PUC 1-25? Provide supporting calculations and/or formulas, as well as underlying data.

Response:

Please see the Company's response to PUC 1-26 for an explanation of the calculation of the 2022 MDC rate, as well as documentation and data in Excel format. Additionally, please see the Company's response to PUC 8-1 in Docket 5010 for an explanation of the calculation of historical MDC rates, as well as documentation and data in Excel format.

The basic algorithm calculating MDC rates has been the same throughout the long historical use of the tool as described in the Company's responses to PUC 1-26 and PUC 8-1 from Docket 5010. The inputs (FERC form data, load forecasts, capital budgets, deferrable investment portion, inflation and other carrying charge assumptions, etc.) are updated periodically yielding the different results over time.

PUC 3-19 (Supplemental)

Request:

Does the demand reduction delivered by National Grid's Residential and Commercial ConnectedSolutions programs reduce the ISO-NE Installed Capacity Requirement (ICR)? If yes, explain how, specifically, the ConnectedSolutions programs contribute to lowering ICR.

Response:

(This supplemental response adds a page number reference in the footnote.)

Yes, demand reduction delivered by National Grid's Residential and Commercial ConnectedSolutions programs reduce the ISO-NE ICR. How reductions in peak electric use result in reduced ICR are calculated by ISO-NE and is detailed in the 2021 Avoided Energy Supply Cost study¹ and a supplement to the 2018 AESC study.²

¹ https://www.synapse-energy.com/sites/default/files/AESC%202021_20-068.pdf; Page 329, "Usage Instructions."

² https://www.synapse-energy.com/sites/default/files/The_effect_of_load_reductions_on_peak_forecasts.pdf;

PUC 3-19

Request:

Does the demand reduction delivered by National Grid's Residential and Commercial ConnectedSolutions programs reduce the ISO-NE Installed Capacity Requirement (ICR)? If yes, explain how, specifically, the ConnectedSolutions programs contribute to lowering ICR.

Response:

Yes, demand reduction delivered by National Grid's Residential and Commercial ConnectedSolutions programs reduce the ISO-NE ICR. How reductions in peak electric use result in reduced ICR are calculated by ISO-NE and is detailed in the 2021 Avoided Energy Supply Cost study¹ and a supplement to the 2018 AESC study.²

¹ <https://www.synapse-energy.com/project/aesc-2021-materials>;

² https://www.synapse-energy.com/sites/default/files/The_effect_of_load_reductions_on_peak_forecasts.pdf;

PUC 3-20

Request:

Regarding Virtual Home Energy Assessments (VHEAs), please explain the following:

- a. Even if the Company performed zero VHEAs during the 2022 program year, will there be any unavoidable fixed costs the Company will incur to preserve the VHEA offering? (ex: software licensing costs, vendor costs, etc.)
- b. Since their introduction in April 2020, how many customers who received a VHEA also received an in-person follow-up through the energy efficiency program?

Response:

- a. If the Company continues to implement VHEAs using the current 2021 process, there will not be any unavoidable fixed costs even if no VHEAs are performed in 2022.
- b. An in-person assessment was conducted for 3% of VHEAs where the customer was not comfortable with the requirements of the VHEA. For customers that signed a contract for weatherization work, 74% of those projects had a verification step at the customer home prior to the weatherization crew arriving. The most common reasons for the verification included:
 - Conduct combustion safety test of heating and water heating system and double check for other pre-weatherization barriers
 - Complexity of home – Many crawl spaces or older homes
 - Blind area – No access to a portion of the home and was not viewed during VHEA
 - Customer not familiar with current insulation levels and cannot check wall levels

PUC 3-21

Request:

In response to PUC 1-64, the Company writes “electric resistance heating customers can often be identified based on usage data.” Does the Company actually identify electric resistance heating customers using usage data? If yes, please provide an example of a customer that the Company identified as an electric resistance heating customer based on their usage data, and describe what the Company did after identifying that customer.

Response:

The Company has not identified electric resistance heating customers using usage data but has begun discussing using usage as a method to segment the population of electric heating customers for purposes of doing targeted outreach and marketing campaigns, with the goal of converting those customers to high efficiency air source heat pumps and helping those customers to realize associated electric savings and benefits.

PUC 3-22

Request:

Referencing the Company's response to PUC 1-97, please describe the DR Scaling Factor in greater detail. In your response, explain when the Company would use the DR Scaling Factor in its Benefit-Cost Model, and to which values/inputs the Company would apply the DR Scaling Factor.

Response:

Avoided costs for demand response are based on when and how often loads are curtailed in the summer months (i.e. June through September). Measures that curtail peak loads more often during this peak period have a larger DR scaling factor than measures that curtail relatively infrequently. For example, residential battery storage is called quite frequently and has a corresponding large DR scaling factor. C&I Targeted Dispatch would have the lowest scaling factor since it only has 1 to 8 events per summer. How the DR Scaling Factor is calculated is detailed in the Effect of Uncleared Capacity Load Reductions on Peak Forecasts Supplement to the 2018 AESC Study.¹

The DR scaling factor is applied to the following benefits:

- Summer Generation Benefits (\$)
- Electric Capacity DRIPE (\$)

¹ https://www.synapse-energy.com/sites/default/files/The_effect_of_load_reductions_on_peak_forecasts.pdf;

The Narragansett Electric Company
d/b/a National Grid
RIPUC Docket No. 5189
In Re: 2022 Annual Energy Efficiency Plan
Responses to the Commission’s Third Set of Data Requests
Issued on November 24, 2021

Redacted
PUC 3-23

Request:

In response to PUC 1-135, the Company writes “the device manufacturers who participate in ConnectedSolutions in the solar inverter, thermostat, battery, and pool pump measures are paid vendor fees for their work in marketing the ConnectedSolutions program and help in applying the needed setting changes.” For each of the four measures listed, please provide data that compares the total 2021 budget for that measure (actual dollars spent) to the actual cost of vendor fees paid out for that measure in 2021.

Response:

Since the full 2021 program year has not been completed and performance incentives have not been calculated and paid out for all measures, the estimated vendor fees as a % of total measure cost are being provided for 2021.

Measure	Manufacture Fee Rate	Estimated Total Device Vendor Fees	Total Measure Cost	% Vendor Fees of Total Measure Cost
Thermostats	[REDACTED]	[REDACTED]	[REDACTED]	25%
Solar Inverters for controlling batteries	[REDACTED]	[REDACTED]	[REDACTED]	2%
Solar Inverters for power factor correction	[REDACTED]	[REDACTED]	[REDACTED]	10%
Pool Pumps	Not offered in 2021	N/A	N/A	N/A

PUC 3-24

Request:

In response to PUC 1-137, the Company writes “front of the meter generating facilities, such as solar farms, are not eligible for energy efficiency program, including ConnectedSolutions.” Please confirm the specific measures (including the solar inverter direct load control demonstration) within the Residential and Commercial ConnectedSolutions programs in which front of the meter generating facilities are ineligible to participate. In your response, note whether front of the meter generation paired with another resource (e.g. battery storage) is eligible to participate.

Response:

Currently, no front of the meter generating facilities are eligible to participate in any ConnectedSolutions program (including the solar inverter direct load control demonstration), even when those facilities are paired with other resources (including battery storage).

PUC 3-25

Request:

Why does the Company require customers to weatherize their home before installing a heating system upgrade the energy efficiency program? In your response, provide specific reasons as well as supporting analysis for those reasons. Also note any differences in rationale between the different types of heating system upgrades offered through the energy efficiency program.

Response:

The Company does not require customers to weatherize their homes before installing a heating system, unless the customer is interested in receiving enhanced incentives. If a customer is interested in receiving an enhanced incentive (please see Attachment PUC 3-25-1 for 2021 incentive levels for standard incentive versus the enhanced incentive for electric resistance to electric heat pumps for heating or visit <https://www.nationalgridus.com/ri-heat-pump> where the RGGI enhanced incentives are also listed), then there is a requirement to weatherize the home as part of the heating system sizing calculation. The Company supports the U.S. Department of Energy's and U.S. Environmental Protection Agency's Home Performance with ENERGY STAR[®] program that promotes the whole-house approach for energy improvements (see Attachment PUC 3-25-2 HPwES Brochure). The rationale for the weatherization component is to reduce the drafts and air leakages in the envelope of the home to optimize efficiency.

Anecdotally, aggregate air leakages in a home can be equated to leaving a window cracked open throughout the year. Some of the benefits of installing a new heating system will be lost if the air leakages are not addressed and a new system runs excessively to compensate for the air leaks. The EnergyWise single family, multifamily, and Income Eligible programs all have energy savings associated with weatherization.

A secondary benefit of weatherizing a home before installing a new heating or cooling system is that a smaller system may be purchased to accommodate the heating/cooling load of a weatherized home. Smaller heating and cooling systems generally cost less for the customer to purchase. The Company has savings for the downsizing of cooling systems noted on page M-97 of the 2022 Program Year RI Technical Reference Manual.

Additionally, homes that are weatherized receive long lived savings. Weatherization benefits persist for decades and continue to deliver savings regardless of how a homeowner operates their heating/cooling system or if new owners move in. Weatherized homes also have non-energy impacts such as improved comfort, noise reduction, reduction in heat and cold related thermal stress, and indoor air quality benefits associated with a well weatherized home.

PUC 3-25, page 2

The benefits from weatherizing when upgrading heating systems aligns with national best practices and benefit current and future homeowners. An enhanced incentive recognizes the additional capital required by customers to address major upgrades of weatherization and heating/cooling systems at the same time. The enhanced incentive has been added to the gas heating side for 2022 where in prior years the enhanced incentive was only available for electric heating systems. For gas heating equipment, the enhanced incentive will be an additional twenty-five percent incentive for weatherization as opposed to an enhanced heating incentive. Customers still receive standard incentives when upgrading to efficient heating systems without the weatherization component.

2021 Rhode Island

Residential electric heating and cooling rebates

nationalgrid

844-615-8315 | ngrid.com/rirebates



Save energy and money, improve comfort, and make your home better with these energy savings offers for residential electric customers.

- **Central Air Conditioners**
- **Central Heat Pumps**
- **Mini-Split Heat Pumps**
- **Smart Thermostats**

These programs are funded by the energy efficiency charge on all customers' utility bills, in accordance with Rhode Island law.

Rhode Island residential electric heating and cooling rebate application
Form must be completed in its entirety.

2021

Please submit online to receive rebate faster: ngrid.com/rirebates

STANDARD REBATES

National Grid offers rebates for energy-efficient central air conditioning, central heat pump and mini-split heat pump systems. A licensed contractor must install the equipment in order to qualify for rebates (with the exception of smart thermostats, which may be self-installed by the customer). Only qualifying equipment models are eligible. See qualifying equipment and rebate amounts below.

Equipment Type	Delivery Method	Requirement*	Rebate
Central AC	Ducted	AHRI: SEER ≥ 16, EER ≥ 13	\$50 per ton
Central Heat Pump	Ducted	AHRI: SEER ≥ 15, HSPF ≥ 9	\$350 per ton
Mini-Split Heat Pump	Ducted or Mixed-Ducted	AHRI: SEER ≥ 15, HSPF ≥ 9	\$350 per ton
	Non-Ducted	NEEP**: SEER ≥ 15, HSPF ≥ 10, COP 1.75 at 5°F	\$150 per ton
Equipment Type	Requirement***		Rebate
ENERGY STAR® Smart Thermostat	ENERGY STAR certified; Wireless connections must be enabled		\$75 each

ENHANCED REBATES

National Grid offers an Enhanced Rebate for energy-efficient central and mini-split heat pumps installed in qualifying homes that heat primarily with **electric baseboard resistance heating**. To qualify for Enhanced Rebates, customer must meet the following prerequisites:

1. Valid National Grid customer must participate in a free EnergyWise Home Energy Assessment. To schedule, call 888-633-7947 and reference the Heat Pump Program for expedited scheduling.
2. Home must be fully insulated and weatherized, as recommended or verified through the EnergyWise Program.
3. Equipment must be installed by a program-approved contractor. Visit ngrid.com/ri-hvaccontractors
4. Existing heating system must be electric baseboard resistance heating.

Equipment Type	Delivery Method	Requirement*	Rebate
Central Heat Pump	Ducted	AHRI: SEER ≥ 15, HSPF ≥ 9	\$1,250 per ton
Mini-Split Heat Pump	Ducted or Mixed-Ducted	AHRI: SEER ≥ 15, HSPF ≥ 9	
	Non-Ducted	NEEP**: SEER ≥ 15, HSPF ≥ 10, COP 1.75 at 5°F	
<p>*Mini-split heat pumps that only provide cooling are not eligible. SEER–Seasonal Energy Efficiency Ratio. EER–Energy Efficiency Ratio is a measure of instantaneous cooling efficiency. HSPF–Heating Seasonal Performance Factor is a ratio of an air source heat pump’s heat output to electricity use over an average heating season. COP– Coefficient of Performance is a ratio of useful heating or cooling provided to work required. Rounding up of SEER/EER ratings is not acceptable.</p> <p>**For equipment requiring Northeast Energy Efficiency Partnerships (NEEP) listing, refer to NEEP.org.</p> <p>***Limit two smart thermostats per account. Rebate amount cannot exceed purchase price.</p>			

Rhode Island residential electric heating and cooling rebate application
Form must be completed in its entirety.

2021

TO APPLY

Standard Rebates

- Verify that the equipment you will be installing qualifies for a rebate by consulting with a licensed contractor. Qualifying equipment is noted above.
- The equipment must be installed by a licensed installer at a property with an active National Grid residential electric account.

Enhanced Rebates

- This special offer is valid only for National Grid customers whose home heats primarily with **electric baseboard resistance heating**. Replacing old or failed electric heat pump systems **DOES NOT** qualify for the Enhanced Rebate. Homes must also be fully insulated and weatherized, as verified through the EnergyWise program. Valid National Grid customer must participate in a free EnergyWise Home Energy Assessment. To schedule, call 888-633-7947 and reference the Heat Pump Program for expedited scheduling. No-cost energy-saving improvements are available to households that meet certain income guidelines. For more information, call 401-351-1800 or your local Community Action Program (CAP) agency to get started. Or visit ngrid.com/ri-income
- Verify that the equipment you will be installing qualifies for a rebate by consulting with a **program-approved contractor**. Qualifying equipment is noted above.
- Equipment must be installed by a **program-approved contractor**, at a property with an active National Grid residential electric account.
- A list of **program-approved contractors** can be found at ngrid.com/riheatpump

Rebate form and required documentation must be postmarked or submitted online within 60 days of equipment installation date, or by January 31, 2022, whichever comes first.

IMPORTANT: Photocopy your entire submission for your records. You could be required to mail these photocopies. Offer valid on equipment purchased and installed between January 1, 2021 and December 31, 2021 (subject to funding availability). From the time the application is processed and approved, please allow 6–8 weeks for payment. Payment processing will take longer if information or documentation are missing from the application. To review the status of your application, please contact us at 800-292-2032 or visit ngrid.com/rirebates

Rhode Island residential electric heating and cooling rebate application
Form must be completed in its entirety.

2021

Rebates are available to eligible residential electric customers only. One electric account number per form. Some restrictions may apply. Rebate offers are subject to change without notice. Please review Terms and Conditions.

Submit online at:
ngrid.com/rirebates
or mail completed form with all required documents to:
National Grid RI Electric Heating & Cooling Rebates
P.O. Box 2528
Manchester, CT 06045

Please make sure your invoice includes:

- Equipment installed
- Quantity installed
- Installer name and address
- Equipment and installation costs
- Model number of indoor and outdoor equipment
- Manufacturer
- "Paid in full" or "zero balance"
- Installation date and location
- AHRI rated cooling capacity in tons
- For Enhanced Rebates, ACCA-approved Manual J load calculation. Contact your contractor to obtain a copy.
- For Enhanced Rebates, provide evidence of weatherization completion and/or energy audit results

CUSTOMER/ACCOUNT HOLDER INFORMATION — FORM MUST BE COMPLETED IN ITS ENTIRETY

EXISTING HEATING FUEL TYPE: ELECTRIC RESISTANCE OIL PROPANE NATURAL GAS

ELECTRIC ACCOUNT NUMBER AT INSTALLATION ADDRESS									

ACCOUNT HOLDER FIRST NAME				ACCOUNT HOLDER LAST NAME			
INSTALL ADDRESS			CITY		STATE	ZIP	
EMAIL ADDRESS					PHONE		

PAYEE INFORMATION — ADDITIONAL PROCESSING TIME MAY BE REQUIRED IF ACCOUNT HOLDER IS DIFFERENT THAN PAYEE NAME

PAYEE FIRST NAME/COMPANY NAME (if different than above)				PAYEE LAST NAME			
MAILING ADDRESS (if different than above)			CITY		STATE	ZIP	
EMAIL ADDRESS					PHONE		

HOW DID YOU HEAR ABOUT THIS PROGRAM: (Choose the appropriate ballot box.)

- PLUMBER OR CONTRACTOR
 ENERGY ASSESSMENT
 EQUIPMENT SUPPLIER
 TRADE SHOW
 SALES REP/ACCOUNT EXECUTIVE
 PRINT ADVERTISING
 INTERNET
 RADIO/TV
 DIRECT MAIL/E-MAIL
 OTHER _____
 HOME ENERGY REPORT
 RHODE ISLAND ENERGY CHALLENGE: FIND YOUR FOUR!

CONTRACTOR INFORMATION — THIS INFORMATION MUST ALSO APPEAR ON THE CONTRACTOR INVOICE

CONTRACTOR COMPANY NAME				CONTACT NAME			
STREET ADDRESS			CITY		STATE	ZIP	
EMAIL ADDRESS					PHONE		

CUSTOMER: Please sign the Work Completion and Rebate Validation section. It is required to validate your rebate submission.

Rhode Island residential electric heating and cooling rebate application
Form must be completed in its entirety.

2021

NEW EQUIPMENT INSTALLED (CANNOT APPLY FOR MULTIPLE REBATE OFFERS FOR SAME EQUIPMENT INSTALLATION)

- New construction Replacement system Adding cooling to existing ductwork Replacing failed equipment
 New or additional ductwork and air conditioning

Pre-existing Fuel Type: Electric Oil Propane Gas None Other _____

Rebate type	Rebate Amount	Date Installed (mm/dd/yyyy)	AHRI* Reference Number	Number of Tons	Customer Rebate Amount (Rebate Amount x # of Tons)
Standard Central AC	\$50 per ton				
Standard Central Heat Pump	\$350 per ton				
Standard Non-Ducted Mini-Split Heat Pump	\$150 per ton				
Standard Ducted/Mixed-Ducted Mini-Split Heat Pump	\$350 per ton				
Enhanced Heat Pump (check equipment type that applies) <input type="checkbox"/> Central Heat Pump <input type="checkbox"/> Non-Ducted Mini-Split Heat Pump <input type="checkbox"/> Ducted/Mixed-Ducted Mini-Split Heat Pump	\$1,250 per ton				
Enhanced Heat Pump (check equipment type that applies) <input type="checkbox"/> Central Heat Pump <input type="checkbox"/> Non-Ducted Mini-Split Heat Pump <input type="checkbox"/> Ducted/Mixed-Ducted Mini-Split Heat Pump					

*AHRI = Air-Conditioning, Heating, and Refrigeration Institute

Equipment	Rebate Amount	Date Installed (mm/dd/yyyy)	Manufacturer	Model Number	Total Rebate**
ENERGY STAR Smart Thermostat	Up to \$75 each				\$

Thermostat installation completed by: Contractor Customer

Does your home have central air conditioning? Yes No

**Limit two smart thermostats per account. Rebate amount cannot exceed purchase price.

WORK COMPLETION AND REBATE VALIDATION

I hereby request a rebate for the listed work. Attached are copies of all receipts. I certify that all information above is correct to the best of my knowledge and that I have read and agree to all Terms and Conditions of this rebate. I certify that a licensed contractor has installed the listed energy-efficient equipment in accordance with Program Guidelines and Terms and Conditions as described on this form. This rebate is for the benefit of Rhode Island residential electric customers of National Grid. This rebate may not be combined with any other utility or energy efficiency service provider offer and may be subject to change without notice. I understand that some restrictions may apply. National Grid reserves the right to conduct field inspections to verify installations.

DATE	NAME (PRINT)	CUSTOMER SIGNATURE X
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Rhode Island residential electric heating and cooling rebate application
Form must be completed in its entirety.

2021

TERMS AND CONDITIONS

ENERGY STAR EQUIPMENT REQUIREMENTS

System Requirements—All rebated Heat Pump and Air Conditioning systems must be ENERGY STAR certified; listed with and certified by the Air Conditioning, Heating, and Refrigeration Institute (AHRI) ; and meet the program SEER, EER and HSPF requirements (see table on page 2). The A/C condenser and the evaporative coil must be new and replaced together. The condenser and coil are separate components in a split A/C or central heat pump system, but for rebate purposes, are considered one unit. For rebate purposes, the unit consists of outdoor condensers, indoor unit(s) and air handler(s). All units must have a thermostatic expansion valve (TXV) or electronic expansion valve (EXV) to qualify for rebate.

Sizing—Load calculation requires proper design temperatures for area. Unit installed must be within ½ ton of calculation.

Proof of Purchase—A copy of the customer's invoice itemizing the purchased equipment must accompany the rebate form. The invoice must indicate the equipment type, size, make, model, name of purchaser, installation date and location, date of purchase and total installed cost.

Information Sources to Verify ENERGY STAR Equipment—SEER and HSPF ratings for condenser, evaporator and air handler (if applicable) must be provided. The AHRI directory website at ahridirectory.org lists SEER and HSPF values; if you do not have internet access, please call 1-703-600-0384. AHRI also provides AHRI numbers. For equipment requiring Northeast Energy Efficiency Partnerships (NEEP) listing, refer to NEEP.org.

GENERAL REQUIREMENTS

Time Limit—Qualifying units for equipment rebate must be purchased and installed between January 1, 2021 and December 31, 2021. Rebate form and required documentation must be postmarked or submitted online within 60 days of equipment installation date or by January 31, 2021, whichever comes first. Program is subject to change without prior notice, including rebate levels.

Geographic Requirements—Offers valid only for residential electric customers in Rhode Island.

Application Form—This application must be filled out completely, truthfully, and accurately. The customer must date and submit the completed application along with all required documentation for specific rebates. By submitting the rebate application, the customer agrees to abide by these Terms and Conditions.

Payments—From the time the application is processed and approved, please allow 6–8 weeks for payment. Payment processing will take longer if information or documentation are missing from the application. If payee information is different from account holder information, additional processing time will be needed for payee verification.

Approval and Verification—National Grid reserves the right to verify and to have reasonable access to the residence to inspect the electric heating and cooling system installed prior to issuing rebates.

Tax Liability—National Grid will not be responsible for any tax liability that may be imposed on the customer or contractor as a result of the payment of rebates.

Endorsement—National Grid does not endorse any particular contractor, manufacturer, dealer, materials, product, system design or technology in promoting these offers.

Warranties—NATIONAL GRID DOES NOT GUARANTEE THE PERFORMANCE OF INSTALLED EQUIPMENT EXPRESSLY OR IMPLICITLY. National Grid makes no warranties or representations of any kind, whether statutory, expressed, or implied, including, without limitations, warranties or merchantability or fitness for a particular purpose regarding the electric heating and cooling equipment or services provided by a manufacturer or vendor. Contact your contractor for details regarding equipment performance and warranties.

Limitation of Liability—National Grid and the rebate administrator's liability is limited to paying the rebate specified. National Grid and the rebate administrator are not liable for: (1) the quality, safety, and/or installation of the equipment, including its fitness for any purpose; (2) the estimated energy savings of the equipment; (3) the workmanship of the installation contractor; and (4) any consequential or incidental damages or for any damages in tort connected with or resulting from participation in these offers.

Contractor Certification—Contractor certifies that installation and services performed have been in accordance with all applicable municipal, state and federal codes, standards and regulations, as well as program requirements.

Smart Thermostats—Smart thermostats need to be connected to a Wi-Fi network. Limit two per household. Must provide receipt as proof of purchase.

Payments Assignable to a Third Party— (a) The Customer may request that the rebate be paid directly to a third party by so indicating on the rebate application. Notification of third-party payment will be sent to the Customer upon submission of the rebate application for the purpose of Customer confirmation. (b) If no payment choice is made, the Company will send the rebate payment directly to the Customer at the address indicated in the rebate application.

ISO-NE Capacity Payments or Environmental Credits—Customer agrees that the Energy Efficiency Program Provider (EEPP) has the unilateral right to apply for any ISO-NE capacity payments or environmental credits resulting from this energy efficiency project, and agrees not to file for such payments or credits either directly or indirectly. Contractors agree to provide the EEPP with such further documentation as the EEPP may request to confirm the EEPP's ownership of such benefits.


ENHANCED REBATE REQUIREMENTS

Existing Heating System—The Enhanced Rebate is only eligible for homes heated primarily by electric baseboard resistance heating. Replacing old or failed electric heat pump systems does not qualify for the Enhanced Rebate.

Program-Approved Contractors—Systems applying for the Enhanced Rebate must be installed by a RI HVAC program-approved contractor. A list of program-approved contractors can be found at ngrid.com/riheatpump

Equipment Sizing—Systems applying for the Enhanced Rebate must be properly sized according an ACCA-approved Manual J load calculation completed by a RI HVAC program-approved contractor.

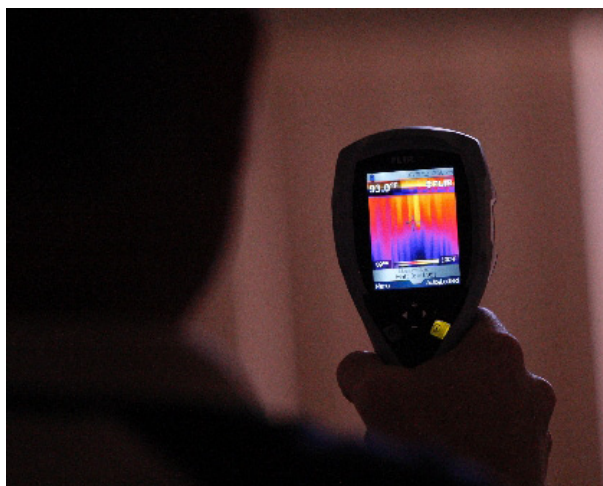
Approval and Verification—Prior to receiving the Enhanced Rebate, every project must receive a Quality Control (QC) inspection from National Grid or their agents. Applicant must provide reasonable access for these QC inspections. No Enhanced Rebates will be paid until a passing QC inspection has been completed.



U.S. Department of Energy,
in conjunction with the
U.S. Environmental Protection Agency

HOME
PERFORMANCE
WITH
ENERGY STAR





HOME PERFORMANCE WITH ENERGY STAR:

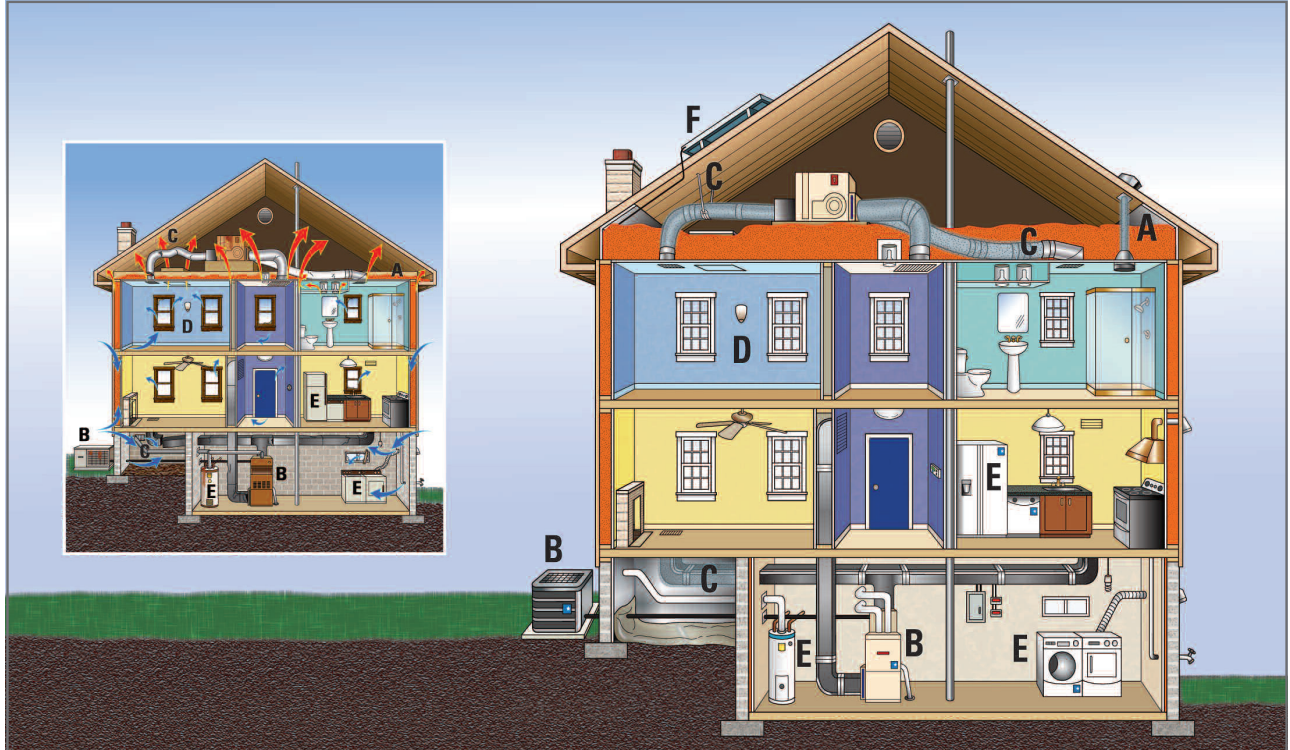
A WHOLE-HOUSE APPROACH

If you're considering making improvements to your home to lower energy bills or fix comfort problems, you should learn about Home Performance with ENERGY STAR—a whole-house approach to improving your comfort at home and energy efficiency, while helping to lower your utility bills.

Rather than focusing on a single problem, like an old heating or cooling system, not enough insulation in the attic, or leaky windows, Home Performance with ENERGY STAR helps you understand how improvements throughout the home work together so you can prioritize your investment to achieve your energy savings and comfort goals.

Benefits of Home Performance with ENERGY STAR:

- Possible utility bill savings of 20% or more
- Fewer drafts and more comfortable rooms
- Work performed by specially trained contractors
- Third-party quality assurance to make sure work gets done right
- Reduced greenhouse gas emissions to protect the environment



COMMON RECOMMENDATIONS

A participating contractor will perform diagnostic testing on your home and provide you with recommendations to improve your home's efficiency. Common improvements include:

- A. Sealing Air Leaks and Adding Insulation.** These are critical first steps to improving the energy efficiency of your home.
- B. Improving Heating and Cooling Systems.** If your furnace or air conditioner is old or damaged, your participating contractor may recommend that you replace it with a unit that has earned the ENERGY STAR label.
- C. Sealing Ductwork.** Making sure ducts are straight, properly connected, sealed, and insulated where needed, will greatly improve your home's comfort and energy efficiency.
- D. Replacing Windows.** If it's time to replace your home's windows, your participating contractor may recommend ENERGY STAR qualified models specific to your climate.
- E. Upgrading Lighting, Appliances, and Water Heating Equipment.** Energy used in these areas can account for nearly half your utility bill, so there's a big opportunity to save by installing ENERGY STAR qualified products.
- F. Installing Renewable Energy Systems.** Once energy efficiency improvements have been made to your home, your participating contractor may recommend additional measures, like installing solar panels or a solar hot water system.

WHAT MAKES HOME PERFORMANCE WITH ENERGY STAR PARTICIPATING CONTRACTORS DIFFERENT?

Knowing what energy efficiency improvements to make in a home and how they can work together requires special expertise. Participating contractors are equipped with specialized training and diagnostic tools to determine how your home is performing, and can assist you in achieving your goals, whether it's improving comfort, cutting energy costs, or protecting the environment.

WHAT IS ENERGY STAR®?

ENERGY STAR is the government-backed program that helps us all to save money and protect our environment with energy-efficient products and practices. Whether you are looking to replace old appliances, remodel your home, or buy a new house, ENERGY STAR can help.

More than 50 kinds of products, including lighting, appliances, televisions, computers, heating and cooling equipment, and even new homes, can earn the government's ENERGY STAR label. ENERGY STAR also offers best practice solutions, like Home Performance with ENERGY STAR, to make your home more comfortable and reduce your energy costs.



For more information on Home Performance with ENERGY STAR, visit www.energystar.gov/homeperformance or email homeperformance@energystar.gov

WHAT TO EXPECT FROM HOME PERFORMANCE WITH ENERGY STAR

A HOME ENERGY ASSESSMENT

The Home Performance with ENERGY STAR process starts with an interview that will help your participating contractor understand concerns you have about your home's energy use and comfort.

After the interview, the participating contractor will assess your home to determine where improvements are needed—inspecting your home inside and out, including the heating and cooling equipment, duct systems, lighting and appliances.

Your participating contractor will also inspect your attic, basement, and crawlspace; run diagnostic tests to check your home's structure for possible air leakage; or possibly use an infrared camera to find trouble spots.

Your participating contractor will also review your utility bills to compare them to similar homes in your area and determine how energy is potentially being wasted in your home.

GETTING THE WORK DONE

After the assessment, your participating contractor will prepare a detailed work proposal outlining recommended improvements and can also show you how they may qualify for special financing or other incentives, where available. Once you decide which improvements to make, your participating contractor will help you get the job done right.

When work is completed, your participating contractor will run another set of tests to show the difference the improvements have made. Their work is also spot-checked by independent third-parties, so you can have added confidence that your project will be done correctly.

TYPICAL RESULTS

The approach offered by Home Performance with ENERGY STAR will make your home more comfortable and energy efficient. Depending on the improvements you choose, you may be able to save 20% or more on your annual utility bill. And because you're using less energy, you'll also be helping to protect the environment.



U.S. DEPARTMENT OF
ENERGY



PUC 3-26

Request:

3-26. Is there any additional cost for residential HEAT loans embedded in the proposed 2022 Plan beyond the \$900,000 listed in response to PUC 1-67 and the \$25,000 for Residential ConnectedSolutions listed in response to PUC 1-74?

Response:

There are no additional costs for residential HEAT loans embedded in the proposed 2022 Plan beyond the \$900,000 listed in response to PUC 1-67 and the \$25,000 for Residential ConnectedSolutions listed in response to PUC 1-74.

PUC 3-27

Request:

Referencing the Company's response to PUC 1-74, please explain the following:

- a. are residential customers who receive a HEAT loan for a battery system required to enroll in the ConnectedSolutions program?
- b. Are residential customers who receive a HEAT loan for a battery system also eligible for the Renewable Energy Fund's energy storage adder pilot program?

Response:

- a. Yes, customers who receive a HEAT loan for a battery system are required to enroll in the ConnectedSolutions program with the battery system receiving the HEAT loan.

The Company believes the HEAT loan removes one barrier for participating in the ConnectedSolutions battery offering.

- b. Yes. As mentioned in PUC 1-74 parts b and c, customers can participate in both the Renewable Energy Fund's (REF) energy storage adder pilot and receive a HEAT loan. The Company does not have insight into REF participation.

PUC 3-28

Request:

Referencing the Company's response to PUC 1-92, please explain the following:

- a. What is the source of OER's \$1.1 million in weatherization funding?
- b. Why did OER request that the funding be available for customers of all fuel types?

Response:

The following responses were provided to the Company by the Office of Energy Resources (OER) staff.

- a. The \$1.1 million in weatherization funding from OER for small business weatherization is from RGGI auction proceeds allocated in the 2020-B plan, item 5.4.2.d. The full 2020-B RGGI allocation plan is available at:
<http://www.energy.ri.gov/documents/rggi/2020%20Plan%20Items/2020-B%20RGGI%20Allocation%20Plan%209-19-20.pdf>
- b. OER requested that funding be made available to customers of all fuel types in order to ensure these important energy efficiency upgrades are available and accessible to all small businesses in an efficient and equitable manner. Ensuring buildings are weatherized leads to energy bill savings, greenhouse gas emissions reductions, and improved buildings that are more resilient to temperature swings. Moreover, with the passage of the Act on Climate legislation, addressing climate impacts falls within the "powers, duties, and obligations" of all state agencies, and each agency (including OER and this Commission) is required as part of its existing authority to consider the purposes of Act on Climate "pertaining to climate change mitigation, adaptation, and resilience in so far as climate change affects its mission, duties, responsibilities, projects, or programs. [R.I. Gen. Laws § 42-6.2-8] Therefore, it becomes even more critical to ensure there is adequate and robust support, through all available channels, for important energy and climate measures like weatherization to have a wide, accessible reach to all customer types in Rhode Island."

PUC 3-29

Request:

Referencing the Company's response to PUC 1-108, please explain how the Company determines the annual budget for evaluation study expenditures.

Response:

Please see the Company's response to Division 2-27.

PUC 3-30

Request:

Referencing Attachments PUC 1-120-1 and PUC 1-120-2, please explain why the Actual Year-to-Date Expenditures and Projected 2021 Expenditures are negative for certain programs. In other words, what does it mean for actual and projected expenditures to be negative?

Response:

All Actual Year-to-Date Expenditures and all Projected Year-End Expenditures are non-negative.¹ An additional set of columns (k-2 and l-2) have been added to both Attachment PUC 1-120-1 Supplemental (Electric) and Attachment PUC 1-120-2 Supplemental (Gas) to demonstrate this more clearly. These are included in this response as Attachment PUC 3-30-1 (Electric) and Attachment PUC 3-30-2 (Gas).

There are some programs that have negative Projected Expenditures, though only over the November to December timeframe. These negative projections represent January to October expenditures that were initially classified to certain programs in error, but after detailed review, will be reclassified to the correct program before the end of the year. These corrections display as negative spend over the final two months in these programs, though they will appear as positive spend in the correct programs over that same time frame.

¹ One exception is the Commercial Pilots (Gas) program (this is the Gas Demand Response pilot). The forecast for this program in Attachment PUC 1-120-2 was lower than year to date actuals. In the final forecast for this program, the forecast spending will be updated so the forecast is greater than year to date actuals.

The Narragansett Electric Company
d/b/a National Grid
RIPUC Docket No. 5189
Attachment PUC 3-30-1
Approved 2021 Budget Compared to YTD and Projected Expenditures (\$000) - Electric

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(k-2)	(l)	(l-2)	(m)	(n)
	Approved Implementation Budget 2021	Actual Year-To-Date Expenditures (through October 2021)											Projected 2021 Expenditures NOV-DEC (Projection)	Projected 2021 Expenditures JAN-OCT (Actuals) NOV-DEC (Projection)	Difference (Annual Filed Budget - Projected Spend)	% Projected Spend/Annual Filed Budget
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	JAN-OCT TOTAL				
1 Residential New Construction (Electric)	\$1,611.3	\$7.5	\$7.2	\$182.6	\$10.2	\$8.3	\$226.1	\$140.7	\$6.6	\$114.8	\$29.9	\$734.0	\$870.88	\$1,604.86	\$6.5	100%
2 ENERGY STAR HVAC (Electric)	\$3,487.8	-\$100.4	\$205.3	\$518.2	\$87.3	\$400.8	\$544.6	\$382.2	\$219.3	\$51.8	\$158.7	\$2,468.0	\$1,019.8	\$3,487.8	\$0.0	100%
3 EnergyWise (Electric)	\$15,692.2	\$30.6	\$41.8	\$4,644.0	\$2,280.2	\$1,824.9	\$1,914.0	\$1,460.3	\$1,151.1	\$161.1	\$977.0	\$14,485.2	\$6,664.2	\$21,149.4	-\$5,457.3	135%
4 EnergyWise Multi Family (Electric)	\$2,804.3	\$7.8	\$144.7	\$160.6	\$135.4	\$97.9	\$137.9	\$70.6	\$36.7	\$25.9	\$68.5	\$886.0	\$1,133.1	\$2,019.1	\$785.2	72%
5 Home Energy Reports (Electric)	\$2,641.7	-\$1,331.3	\$1,698.0	\$186.8	\$355.3	\$182.0	\$186.7	\$182.0	\$183.5	\$181.6	\$2,007.3	\$305.0	\$2,312.3	\$329.4	\$88%	
6 ENERGY STAR Lighting (Electric)	\$5,274.8	\$13.8	\$63.5	\$94.6	\$838.4	\$193.6	\$685.4	\$108.4	\$397.1	\$297.7	\$702.3	\$3,394.7	\$1,880.0	\$5,274.8	\$0.0	100%
7 Residential Consumer Products (Electric)	\$2,681.2	\$9.0	\$410.6	\$323.0	\$91.1	\$79.1	\$182.0	\$380.6	\$115.1	\$148.9	\$223.0	\$1,962.3	\$718.9	\$2,681.2	\$0.0	100%
8 Residential ConnectedSolutions (Electric)	\$1,920.5	\$3.4	\$44.7	\$43.0	\$5.7	\$77.0	\$21.3	\$33.1	\$24.9	\$74.8	\$28.0	\$355.9	\$1,451.3	\$1,807.2	\$113.3	94%
9 Energy Efficiency Education Programs (Electric)	\$40.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$9.0	\$0.0	\$0.0	\$0.0	\$9.0	\$31.0	\$40.0	\$0.0	100%
10 Residential Pilots (Electric)	\$0.0	\$0.3	\$0.5	\$0.6	\$0.8	\$1.8	\$6.1	\$1.0	\$16.4	\$19.5	\$3.8	\$50.8	-\$50.8	\$0.0	\$0.0	0%
11 Community Based Initiatives - Residential (Electric)	\$226.2	\$0.1	\$13.8	\$1.6	\$0.0	\$3.1	\$0.0	\$14.9	\$9.4	\$48.2	\$24.1	\$115.2	\$110.9	\$226.2	\$0.0	100%
12 Comprehensive Marketing Residential (Electric)	\$332.7	\$0.1	\$0.2	\$0.4	\$18.4	\$6.7	\$0.3	\$41.3	\$3.7	\$0.8	\$26.2	\$98.1	\$234.6	\$332.7	\$0.0	100%
13 OTHER RESIDENTIAL PROGRAMS (Electric)	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	0%
14 Subtotal Non-Income Eligible Residential	\$36,713	-\$1,358.8	\$2,630.3	\$6,155.3	\$3,822.7	\$2,875.2	\$3,904.4	\$2,824.8	\$2,162.3	\$1,127.1	\$2,423.2	\$26,566.5	\$14,369.0	\$40,935.5	-\$4,222.8	112%
15 Single Family - Income Eligible Services (Electric)	\$12,846.1	-\$13.1	\$773.3	\$689.5	\$587.2	\$775.5	\$532.9	\$785.0	\$599.5	\$524.8	\$636.8	\$5,891.5	\$5,027.7	\$10,919.2	\$1,926.9	85%
16 Income Eligible Multifamily (Electric)	\$3,549.0	\$7.1	\$15.0	\$10.1	\$354.7	\$11.3	\$18.0	\$45.8	\$42.3	\$133.8	\$15.3	\$653.3	\$2,895.7	\$3,549.0	\$0.0	100%
17 Subtotal Income Eligible Residential	\$16,395	-\$6.0	\$788.4	\$699.6	\$941.9	\$786.7	\$551.0	\$830.8	\$641.8	\$658.6	\$652.1	\$6,544.8	\$7,923.4	\$14,468.2	\$1,926.9	88%
18 Large Commercial New Construction (Electric)	\$8,188.2	\$128.1	\$264.9	\$328.8	\$535.8	\$2,166.1	\$447.9	\$189.1	\$521.4	\$1,031.7	\$245.6	\$5,859.4	\$3,428.0	\$9,287.4	-\$1,099.2	113%
19 Large Commercial Retrofit (Electric)	\$31,565.2	\$1,016.0	-\$878.9	\$1,762.7	\$1,922.4	\$514.1	\$981.8	\$2,595.9	\$1,838.2	\$1,797.5	\$2,080.6	\$13,630.3	\$16,875.7	\$30,506.0	\$1,059.3	97%
20 Small Business Direct Install (Electric)	\$8,883.6	\$546.4	\$239.0	\$536.9	\$7.8	\$756.0	\$573.2	-\$120.4	\$1,058.0	\$244.1	\$94.8	\$3,935.7	\$4,947.8	\$8,883.6	\$0.0	100%
21 Commercial ConnectedSolutions (Electric)	\$2,990.1	\$10.5	\$12.3	\$14.5	\$14.8	\$15.2	\$12.1	\$12.4	\$10.1	\$12.1	\$62.5	\$176.5	\$2,813.6	\$2,990.1	\$0.0	100%
22 Commercial Pilots (Electric)	\$0.0	\$0.3	\$0.1	\$0.4	\$0.1	\$0.0	\$0.1	\$3.3	\$0.0	-\$0.4	-\$3.9	\$0.0	\$0.0	\$0.0	\$0.0	0%
23 Community Based Initiatives - C&I (Electric)	\$74.5	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$74.5	\$74.5	\$0.0	100%
24 Finance Costs (Electric)	\$5,000.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$5,000.0	\$5,000.0	\$0.0	100%
25 OTHER C&I PROGRAMS (Electric)	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	0%
26 Subtotal Commercial & Industrial	\$56,702	\$1,701.4	-\$362.7	\$2,643.3	\$2,480.8	\$3,451.4	\$2,014.9	\$2,680.3	\$3,427.8	\$3,085.1	\$2,479.5	\$23,601.8	\$33,139.7	\$56,741.5	-\$39.9	100%
27 TOTAL All Sectors	\$109,809	\$336.6	\$3,055.9	\$9,498.3	\$7,245.5	\$7,113.3	\$6,470.3	\$6,335.9	\$6,231.8	\$4,870.7	\$5,554.8	\$56,713.2	\$55,432.0	\$112,145.2	-\$2,335.9	102%
29 REGULATORY (Electric)	\$1,477.0	\$0.0	\$0.0	\$260.4	\$101.7	\$12.1	\$184.6	\$155.4	\$164.5	\$62.9	\$2.7	\$944.4	\$532.6	\$1,477.0	\$0.0	100%
30 OER (Electric)	\$738.5	\$0.0	\$0.0	\$184.6	\$61.5	-\$61.5	\$184.6	\$61.5	\$61.5	\$61.5	\$0.0	\$553.9	\$184.6	\$738.5	\$0.0	100%
31 EERM (Electric)	\$738.5	\$0.0	\$0.0	\$75.8	\$40.1	\$73.7	\$0.0	\$93.8	\$103.0	\$1.4	\$2.7	\$390.6	\$348.0	\$738.5	\$0.0	100%
32 OTHER COSTS NOT LISTED ABOVE (Electric)	\$0.0	\$2.2	\$1.2	\$6.4	\$0.0	-\$2.6	\$72.0	\$0.0	\$0.0	\$0.6	\$0.0	\$79.8	-\$79.8	\$0.0	\$0.0	0%

The Narragansett Electric Company
d/b/a National Grid
RIPUC Docket No. 5189
Attachment PUC 3-30-2
Approved 2021 Budget Compared to YTD and Projected Expenditures (\$000) - Gas

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(k-2)	(l)	(l-2)	(m)	(n)
Approved Implementation Budget 2021	Actual Year-To-Date Expenditures (through October 2021)											Projected 2021 Expenditures	Projected 2021 Expenditures	Difference (Annual Filed Budget - Projected Spend)	% Projected Spend/Annual Filed Budget	
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	JAN-OCT TOTAL					
																NOV-DEC (Projection)
1 Residential New Construction (Gas)	\$674.8	\$2.4	\$4.6	\$61.2	\$4.3	\$2.8	\$72.1	\$96.9	\$4.4	\$33.9	\$3.3	\$285.8	\$109.02	\$394.80	\$280.03	59%
2 ENERGY STAR HVAC (Gas)	\$3,673.0	\$8.8	\$264.0	\$288.0	\$196.7	\$408.6	\$162.8	\$199.7	\$42.4	\$19.7	\$168.5	\$1,759.3	\$1,002.3	\$2,761.6	\$911.5	75%
3 EnergyWise (Gas)	\$8,117.6	\$18.1	\$28.4	\$2,699.7	\$1,801.0	\$1,676.4	\$1,553.6	\$1,219.7	\$777.3	\$37.3	\$1,164.2	\$10,975.6	\$5,104.1	\$16,079.7	-\$7,962.1	198%
4 EnergyWise Multi Family (Gas)	\$1,491.6	\$8.5	\$29.0	\$41.2	\$330.3	\$42.3	\$176.0	\$8.0	\$21.1	\$37.4	\$9.4	\$703.3	\$1,012.1	\$1,715.3	-\$223.8	115%
5 Home Energy Reports (Gas)	\$450.9	-\$211.1	\$271.9	\$177.9	\$34.4	\$29.9	\$30.7	\$30.0	\$29.7	\$30.0	\$29.5	\$452.9	\$6.3	\$459.2	-\$8.4	102%
6 Residential Pilots (Gas)	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	0%
7 Community Based Initiatives - Residential (Gas)	\$75.8	\$0.0	\$4.5	\$0.5	\$0.0	\$1.0	\$0.0	\$5.0	\$16.4	\$11.2	\$0.0	\$38.7	\$37.1	\$75.8	\$0.0	100%
8 Comprehensive Marketing Residential (Gas)	\$64.8	\$0.0	\$0.0	\$0.2	\$3.6	\$2.4	\$0.2	\$16.1	\$1.5	\$4.3	\$16.4	\$44.7	\$20.1	\$64.8	\$0.0	100%
9 OTHER RESIDENTIAL PROGRAMS (Gas)	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	0%
10 Subtotal Non-Income Eligible Residential	\$14,548.5	-\$173.2	\$602.4	\$3,268.7	\$2,370.3	\$2,163.4	\$1,995.3	\$1,575.3	\$892.8	\$173.8	\$1,391.4	\$14,260.2	\$7,291.0	\$21,551.2	-\$7,002.7	148%
11 Single Family - Income Eligible Services (Gas)	\$5,952.3	\$84.5	\$233.5	\$235.8	\$367.1	\$297.7	\$298.6	\$290.1	\$382.4	\$236.7	\$250.7	\$2,677.1	\$2,382.4	\$5,059.5	\$892.8	85%
12 Income Eligible Multifamily (Gas)	\$3,009.4	\$4.3	\$7.4	\$8.3	\$11.9	\$5.0	\$14.1	\$18.7	\$6.3	\$208.0	\$187.5	\$471.6	\$2,477.6	\$2,949.2	\$60.2	98%
13 Subtotal Income Eligible Residential	\$8,961.8	\$88.8	\$241.0	\$244.1	\$379.0	\$302.8	\$312.8	\$308.8	\$388.7	\$444.7	\$438.2	\$3,148.7	\$4,860.0	\$8,008.7	\$953.1	89%
14 Large Commercial New Construction (Gas)	\$2,634.2	\$27.5	\$189.5	\$164.3	\$213.5	\$192.0	\$247.5	\$227.2	\$183.2	\$278.2	\$246.9	\$1,969.8	\$745.1	\$2,714.9	-\$80.7	103%
15 Large Commercial Retrofit (Gas)	\$5,054.1	\$59.4	\$120.7	\$420.6	\$350.9	\$279.9	\$214.6	\$137.2	\$160.2	\$234.5	\$224.4	\$2,202.2	\$1,399.2	\$3,601.4	\$1,452.7	71%
16 Small Business Direct Install (Gas)	\$332.7	\$9.4	\$6.3	\$2.0	\$7.7	\$6.6	\$3.4	\$2.1	\$3.5	\$4.2	\$1.6	\$46.8	\$103.2	\$150.0	\$182.7	45%
17 Commercial Pilots (Gas)	\$215.8	\$0.2	\$28.9	\$0.5	\$46.9	\$0.7	\$0.5	\$0.7	\$24.9	\$0.5	\$0.6	\$104.4	-\$0.7	\$103.8	\$112.0	48%
18 Community Based Initiatives - C&I (Gas)	\$24.8	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$24.8	\$24.8	\$0.0	100%
19 Commercial & Industrial Multifamily (Gas)	\$953.2	\$3.6	\$22.6	\$36.6	\$31.7	\$24.7	\$13.5	\$14.4	\$5.7	\$8.6	\$385.3	\$546.7	\$358.8	\$905.5	\$47.7	95%
20 Finance Costs (Gas)	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	0%
21 OTHER C&I PROGRAMS (Gas)	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	0%
22 Subtotal Commercial & Industrial	\$9,214.8	\$100.1	\$367.9	\$624.0	\$650.8	\$503.9	\$479.5	\$381.5	\$377.4	\$525.9	\$858.9	\$4,869.9	\$2,630.6	\$7,500.5	\$1,714.3	81%
TOTAL All Sectors	\$32,725	\$15.7	\$1,211.3	\$4,136.8	\$3,400.0	\$2,970.1	\$2,787.7	\$2,265.6	\$1,658.9	\$1,144.4	\$2,688.4	\$22,278.8	\$14,781.5	\$37,060.4	-\$4,335.3	113%
REGULATORY (Gas)	\$550.1	\$0.0	\$0.0	\$97.0	\$37.9	\$4.5	\$68.8	\$57.9	\$61.3	\$23.4	\$1.0	\$351.8	\$198.4	\$550.1	\$0.0	100%
24 EERMC (Gas)	\$275.1	\$0.0	\$0.0	\$28.2	\$14.9	\$27.4	\$0.0	\$35.0	\$38.4	\$0.5	\$1.0	\$145.5	\$129.6	\$275.1	\$0.0	100%
26 OER (Gas)	\$275.1	\$0.0	\$0.0	\$68.8	\$22.9	-\$22.9	\$68.8	\$22.9	\$22.9	\$0.0	\$0.0	\$206.3	\$68.8	\$275.1	\$0.0	100%
27 OTHER COSTS NOT LISTED ABOVE (Gas)	\$0.0	\$0.0	\$1.1	-\$1.1	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	0%

PUC 3-31

Request:

For any demand savings delivered in calendar year 2022 by the Residential and Commercial ConnectedSolutions programs, will the Company seek a performance incentive via the System Efficiency PIM? If yes, please reference the specific sections of the Amended Settlement Agreement from Docket No. 4770 that form the basis of the Company's response.

Response:

Yes, the Company anticipates earning a performance incentive under the System Efficiency Performance Incentive Mechanism as part of the Amended Settlement Agreement (ASA) approved by the Rhode Island Public Utilities Commission ("PUC") on August 24, 2018 in Docket No. 4770 for demand savings delivered through the Residential and Commercial ConnectedSolutions programs.

In doing so, the Company references Article (II), Section (C)(19)(a) of the ASA, which states as follows:

System Efficiency: Annual MW Capacity Savings. The metric for this performance incentive mechanism will be the mega-watts (MW) of annual peak capacity savings. This metric is intended to reflect avoided capacity coincident with the ISO-NE peak hour. The proposed list of eligible resources for Annual MW Capacity Savings includes: (i) Demand Response, which will not be eligible for an incentive under the existing energy efficiency shareholder incentive; (ii) incremental net-metered behind-the-meter PV distributed generation in excess of Company forecast levels; (iii) incremental installed energy storage capacity; and (iv) any additional actions that the Company can identify to reduce peak demand, including non-wires alternatives expected to influence system peak that are not captured already under this or other metrics, and partnerships with third parties to provide peak reduction solutions. Achievement of the target is not based on any pre-determined mix of qualifying resources, but rather a total count of MW savings across all categories. The table below sets forth the targets and maximum earnings opportunity.

Additionally, the Company references the letter agreement between the Division of Public Utilities ("Division") and Carriers and the Company dated June 28, 2021 whereby the Division consented to an extension of the Multi-Year Rate Plan pursuant to Article II, Section C.21 of the ASA beyond September 1, 2022 (i.e. the expiration of Rate Year 4).¹ Section C.21.b.i of the ASA provides that "to the extent new base distribution rates resulting from the filing of the

¹ See [National Grid's notification of agreement between the Company and the Rhode Island Division of Public Utilities and Carriers regarding an extension of the term of the Multi-Year Rate Plan](#), dated July 15, 2020 in Docket No. 4770.

The Narragansett Electric Company
d/b/a National Grid
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Company's next general rate case are not in effect by September 1, 2022 . . . [the ASA] shall remain in effect during the interim and if required, the Performance Incentive Mechanism provision shall be extended to cover the additional interim period."

PUC 3-32

Request:

Provide a table similar to the one included in the Company's response to PUC 1-103 that includes a new column that lists the Company's best estimate of technical potential (MW) for each ConnectedSolutions measure. In your response, please explain how the Company derived the technical potential estimate.

Response:

For the C&I Targeted Dispatch and Daily Dispatch measures one could define technical potential as the total C&I load at peak times. This would assume that all C&I customers could curtail all their electric load at peak times, which is not feasible. RI has an annual system peak of about 2,000MW and about 60% of the peak load is due to C&I electric use. So, the technical potential could be calculated as $2,000\text{MW} * 60\% = 1,200\text{MW}$.

For the residential demand response measures, the DR Potential Study¹ defines Achievable Potential for demand response measures as:

Achievable Potential

$$\begin{aligned} &= \text{Eligible Load}_{DR\ Sub\ Option,Segment,End\ Use,Year} \\ &* \text{Unit Impact}_{DR\ Sub\ Option,Segment,Year} \\ &* \text{Achievable Participation Rate}_{DR\ Sub\ Option,Segment,Year} \\ &* (1 - \text{Event Opt Out Rate})_{DR\ Sub\ Option,Year} \end{aligned}$$

One could define a Technical Potential for demand response measures as the *Achievable Potential* when the *Achievable Participation Rate* is assumed to be 1.0 and the *Event Opt Out Rate* is assumed to be zero. The potential study does not define a technical potential for DR measures, because participation in DR programs is very sensitive to the structure of the DR programs. Higher DR participation rates than what is presented in the proposed 2022 Energy Efficiency Plan would require at least larger incentives, more marketing, and/or more program management.

¹ <https://ma-eeac.org/wp-content/uploads/Appendix-C-Potential-Studies.pdf> Page 127

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Measure	Customer Incentive	Number of Events per Year	BCR	Estimated Unit Impact	Estimated Number of Units	Technical Potential
C&I Targeted Dispatch	\$35/kW-summer	1 to 8	5.2	N/A	N/A	1,200 MW
C&I Daily Dispatch	\$300/kW-summer	30 to 60	1.6	N/A	N/A	
Thermostats	\$25 upfront \$20 annual	13 to 17	New 4.7 Existing 10.6	0.71kW ²	26,000 ³	18 MW
Batteries	\$400/kW-summer Heat Loan	30 to 60	1.2	6.9kW ⁴	300 ⁵	2 MW
Pool Pumps	\$100 upfront \$20 annual	30 to 60	2.5	0.62 ⁶	50 ⁷	0.03 MW

² <https://ma-eeac.org/wp-content/uploads/Cost-Effectiveness-of-DR-for-Residential-End-Uses-Final-Report-2019-04-18.pdf>

³ The Company’s DERMS vendor periodically requests from the thermostat manufacturers the number of supported Wi-Fi thermostat in the Company’s service area. Historically, the Company has not broken out these numbers between MA and RI. So, this number assumes RI represents 25% of the total MA and RI thermostat numbers.

⁴ <https://ma-eeac.org/wp-content/uploads/MA19DR02-E-Storage Res-Storage-Winter-Eval wInfographic 2020-09-23.pdf>

⁵ This is the approximate number of interconnected residential battery storage systems in Rhode Island.

⁶ <https://ma-eeac.org/wp-content/uploads/2021-Cost-Effectiveness-of-ADR-for-Residential-End-Uses-Final-Report-2021-07-19 CLEAN-1.pdf>

⁷ Estimated number of supported internet-connected DR-ready pool pumps in Rhode Island.

PUC 3-33

Request:

Please updated your response to PUC 1-127 to show projected spend for 2021, not actual spend.

Response:

Please see the updated tables in Attachment PUC 3-33 showing projected spend for 2021.

Table 2. Electric Commercial and Industrial Demonstrations and Assessments								
Classification	Fuel	Name	C&I Programs	Duration	Budget	Savings Estimation	Evaluation	2021 Spend*
Demonstrations								
Industrial	Dual	Continuous Energy Improvement (CEI)	C&I Retrofit	2018-2021	\$ 380,800	900 MWh (projected for 2021)	Vendor	\$ 328,793
Lighting	Dual	Network Lighting Controls Plus HVAC (NLC+)	C&I Retrofit	2020-2021	\$ 130,252	1.44 kWh/SF	Vendor	\$ 32,371
HVAC	Dual	Kitchen Exhaust	C&I Retrofit	2020-2021	\$ 66,292	27 MWh (potential)	Vendor	\$ 5,859
	Dual	Smart Valves	C&I Retrofit	2021	\$ 177,750	300 MWh (projected for 2021)	Vendor	\$ 48,856
	Elec.	Enzyme-based HVAC Coil Cleaning	C&I Retrofit	2021	\$ 85,538	6-10% of HVAC consumption	Vendor	\$ 72,080
Innovation Pipeline	Elec.	Innovative Electric	Allocated	2020	\$ 32,401	To be estimated	To be determined	\$ -
Assessments								
Laundry	Dual	Shared Laundry Facility Clothes Washers and Dryers	C&I New Construction	2021	\$ 6,480	Unknown	Internal Review	\$ 9,285
General	Dual	Use of Submetering to Support EE Opportunities	C&I Retrofit	2021	\$ 25,921	Unknown	Internal Review	\$ 9,285
Refrigeration	Elec.	Refrigerant Leak Survey and Repair	C&I Retrofit	2021	\$ 25,921	Unknown	Internal Review	\$ 10,131
HVAC	Elec.	HVAC Automation for Demand Response	C&I New Construction	2021	\$ 25,921	Unknown	Internal Review	\$ 11,031
Total Electric C&I Demonstration					\$ 873,033			\$ 487,960
Total Electric C&I Assessments					\$ 84,242			\$ 39,732

* Projected spend through December 2021

Table 3. Gas Commercial and Industrial Pilots, Demonstrations and Assessments								
Classification	Fuel	Name	C&I Programs	Duration	Budget	Savings Estimation	Evaluation	2021 Spend*
Pilot								
Active Demand Response	Gas	Gas Demand Response Pilot	N/A	2021	\$ 215,780	27,280 Therms (projected for 2021)	Vendor	\$ 105,627
Demonstrations								
Industrial	Dual	Continuous Energy Improvement (CEI)	C&I Retrofit	2018-2021	\$ 179,200	75,000 Therms (projected for 2021)	Vendor	\$ 90,973
HVAC	Dual	Network Lighting Controls Plus HVAC (NLC+)	C&I Retrofit	2020-2021	\$ 64,154	0.012 Therms/sqft	Vendor	\$ 19,659
	Dual	Smart Valves	C&I Retrofit	2021	\$ 59,250	23,000 Therms (projected for 2021)	Vendor	\$ 16,805
	Dual	Kitchen Exhaust	C&I Retrofit	2020-2021	\$ 134,593	67,000 Therms (potential)	Vendor	\$ 10,853
	Gas	Gas Heat Pumps	C&I New Construction	2022-2022	\$ 233,287	15,000-20,000 Therms (for a 400-600 mbh unit)	Vendor	\$ 6,762
Innovation Pipeline	Gas	Innovative Gas	Allocated	2021	\$ 32,401	To be estimated	To be determined	\$ -
Assessments								
Laundry	Dual	Shared Laundry Facility Clothes Washers and Dryers	C&I New Construction	2021	\$ 19,441	Unknown	Internal Review	\$ 5,967
General	Dual	Use of Submetering to Support EE Opportunities	C&I Retrofit	2021	\$ 25,921	Unknown	Internal Review	\$ 6,762
Total Gas C&I Pilots					\$ 215,780			\$ 105,627
Total Gas C&I Demonstrations					\$ 702,885			\$ 145,051
Total Gas C&I Assessments					\$ 45,361			\$ 12,729

* Projected spend through December 2021

Table 4. Electric Residential Demonstrations and Assessments								
Classification	Fuel	Name	Residential Program	Duration	Budget	Savings Estimation	Evaluation	2021 Spend*
Demonstration								
HVAC	Dual	New Air Sealing and Insulation Products	EnergyWise	2021-2022	\$ 25,921	0.05 kWh/sqft	Vendor	\$ 25,441
Demand Response	Elec.	Solar Inverter Direct Load Control	Residential Demand Response	2021-2023	\$ 254,570	102.5 kWh/ inverter	Independent	\$ 80,221
Innovation Pipeline	Elec.	Innovation Electric	Allocated	2020	\$ 32,401	To be estimated	To be determined	\$ -
Assessments								
Whole Building	Elec.	Pre-Fab Whole House Energy Refurbishment	RNC	2021	\$ 6,480	Unknown	Internal Review	\$ 6,778
Total Electric Residential Demonstration					\$ 312,892			\$ 105,662
Total Electric Residential Assessments					\$ 6,480			\$ 6,778

* Projected spend through December 2021

Table 5. Gas Residential Demonstrations and Assessments								
Classification	Fuel	Name	Residential Program	Duration	Budget	Savings Estimation	Evaluation	2021 Spend*
Demonstrations								
HVAC	Dual	New Air Sealing and Insulation Products	EnergyWise	2021-2022	\$ 77,762	0.1 Therm/sqft	Vendor	\$ 5,967
	Gas	Gas Heat Pumps	HVAC	2021-2022	\$ 201,445	250 Therms/unit	Independent	\$ 6,762
Innovation Pipeline	Gas	Innovation Gas	Allocated	2021	\$ 32,401	To be estimated	Independent	\$ -
Assessments								
Whole Building	Dual	Pre-Fab Whole House Energy Refurbishment	RNC	2021	\$ 19,441	Unknown	Internal Review	\$ 15,877
Total Gas Residential Demonstration					\$ 311,608			\$ 12,729
Total Gas Residential Assessments					\$ 19,441			\$ 15,877

* Projected spend through December 2021

PUC 3-34

Request:

For each of the measures included in the 2022 Plan, does the Company assume a linear relationship between incremental energy savings and incremental measure installations? In other words, for a given measure, does the Company expect the same amount of energy savings from the first one deployed during the program year to the last one deployed during the program year? Please explain.

Response:

The Company tracks savings associated with implemented measures in two forms: annual savings and lifetime savings. Annual savings represent anticipated savings from each measure over the course of a full year following installation. Lifetime savings represent this annual savings expectation for each measure, multiplied by that measure's evaluated measure life, in order to produce an estimate of the total savings and benefits produced by the implementation of that measure.

For the measures included in the 2022 EE Plan as filed, the Company does assume a linear relationship between incremental measure level production and incremental measure level annual and lifetime energy savings. The Company does assume (and claim in quarterly and year end reports) the same amount of annual and lifetime energy savings for the first implementation of any given measure and the last implementation of any given measure deployed during a year. For 2022, these planned savings estimates are documented in the 2022 Rhode Island Technical Reference Manual.

The timing of measure implementation over the course of the year does not impact any reported annual or lifetime saving metrics. A measure installed in January of 2022 will of course produce more savings *during 2022* than that same measure installed in December of 2022, but in both scenarios the two measures will produce the same level of annual and lifetime savings.

PUC 3-35

Request:

For each of the measures included in the 2022 Plan, does the Company assume a linear relationship between incremental costs and incremental measure installations? In other words, for a given measure, does the Company expect the same incremental cost from the first one deployed during the program year to the last one deployed during the program year? Please explain.

Response:

For planning and budgeting purposes in the Annual Plan, the Company assumes a single average unit cost per measure that is applied to all planned measure production over the course of the program year from the first expected installation of the year to the last installation. Effectively, by using a constant average unit cost per measure, the Company does assume a linear relationship between incremental measure costs and incremental measure installations.

Throughout the year it is not uncommon that the actual incremental cost of a particular measure may differ in response to changing market conditions and customer appetite for energy efficiency services. Additionally, from a theoretical perspective, the Company would anticipate that the marginal cost of achieving incremental volumes of aggregate measure installation would increase, particularly with expectations of larger volumes. Finally, an individual customer project could have a varying number of like measures installed and experience economies of scale. With the exception of planned unit volumes, all of these possibilities are largely unknown to the Company during planning and budgeting and, therefore, using average costs is a reasonable assumption.

PUC 3-36

Request:

Please identify the 5 programs with the lowest benefit-cost ratios, per Attachment PUC 2-17-1. For those 5 programs, provide a table with the following columns of information:

- a. Program BCR from the approved 2018 Energy Efficiency Plan
- b. Program BCR from the approved 2019 Energy Efficiency Plan
- c. Program BCR from the approved 2020 Energy Efficiency Plan
- d. Program BCR from the approved 2021 Energy Efficiency Plan
- e. Program BCR from the 2022 Energy Efficiency Plan (from the Company’s response to PUC 2-17)
- f. Percent change (%) in the program’s implementation expenses between the approved 2018 Plan and the proposed 2022 Plan (from the Company’s response to PUC 2-17)
- g. Percent change (%) in the program’s customer contribution between the approved 2018 Plan and the proposed 2022 Plan (from the Company’s response to PUC 2-17)
- h. Percent change (%) in the program’s total benefits between the approved 2018 Plan and the proposed 2022 Plan (from the Company’s response to PUC 2-17)

Response:

Please see the tables below.

	a.	b.	c.	d.	e.
Program	Program BCR from approved 2018 EE Plan	Program BCR from approved 2019 EE Plan	Program BCR from approved 2020 EE Plan	Program BCR from approved 2021 EE Plan	Program BCR from 2022 EE Plan
EnergyWise	2.11	1.90	2.23	1.91	1.92
Residential ConnectedSolutions	N/A	3.24	3.68	5.88	2.43
EnergyWise Multifamily	2.56	2.94	2.79	2.35	2.78
Small Business Direct Install	2.05	2.79	3.75	3.35	2.78
Single Family - Income Eligible Services	3.28	2.81	2.75	2.66	2.80

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	f.	g.	h.
Program	Percent change (%) in implementation expenses 2018 to 2022	Percent change (%) in customer contribution 2018 to 2022	Percent change (%) in total benefits 2018 to 2022
EnergyWise	6%	-84%	-18%
Residential ConnectedSolutions	537%	n/a	377%
EnergyWise Multifamily	7%	7%	16%
Small Business Direct Install	30%	-12%	62%
Single Family - Income Eligible Services	42%	n/a	22%

Notes:

1. For comparability across years, Benefit Cost Ratios from the RI Test are shown with Economic Development benefits included. (In 2022, the version of the RI Test with economic benefits was characterized as a secondary test.)
2. Percent changes are calculated relative to 2018.
3. Percent change calculations use mixed year dollars: for example, 2018 plan expenses are in 2018 dollars and 2022 plan expenses are in 2022 dollars. Using 2018 dollars and neglecting the impact of four years of inflation slightly overstates the actual percentage change.
4. Regarding changes in total benefits, the methodology of calculating Economic Development benefits changed between the 2019 and 2020 plans. In addition, the benefit calculations are derived from different versions of the regional avoided cost study across this timeframe. 2018 used AESC 2015, 2019-2021 used AESC 2018, and 2022 uses AESC 2021. Each year also applies latest evaluation results that impact claimable savings and benefits.
5. Residential ConnectedSolutions began in 2019. Percent change calculations for that program use 2019 instead of 2018.
6. By design, there is no customer contribution for Single Family - Income Eligible Services or for Residential ConnectedSolutions.

PUC 3-37

Request:

Please provide the number of customers on Rate A-60 for electric and Rate 11 & Rate 13 for gas by month from September 1, 2018 through the present.

Response:

Please see Attachment PUC 3-37.

**The Narragansett Electric Company
2022 Annual Energy Efficiency Plan
Number of Customers on Rate A-60, Rate 11, and Rate 13**

		Electric	Gas	
		A-60	Rate 11	Rate 13
(1)	Sep-18	33,685	329	19,768
(2)	Oct-18	33,004	334	18,483
(3)	Nov-18	31,959	348	18,033
(4)	Dec-18	30,617	361	17,984
(5)	Jan-19	31,106	399	18,259
(6)	Feb-19	32,993	440	18,912
(7)	Mar-19	34,101	468	19,446
(8)	Apr-19	33,891	495	20,051
(9)	May-19	34,837	532	20,581
(10)	Jun-19	35,506	552	21,114
(11)	Jul-19	33,944	525	21,342
(12)	Aug-19	34,479	476	21,285
(13)	Sep-19	33,485	483	21,063
(14)	Oct-19	33,651	503	20,255
(15)	Nov-19	32,838	502	17,916
(16)	Dec-19	31,114	507	17,500
(17)	Jan-20	31,559	515	17,330
(18)	Feb-20	31,943	542	18,106
(19)	Mar-20	32,573	570	19,716
(20)	Apr-20	33,303	590	20,199
(21)	May-20	34,487	593	20,478
(22)	Jun-20	34,169	600	20,478
(23)	Jul-20	32,861	583	20,959
(24)	Aug-20	34,682	586	20,703
(25)	Sep-20	32,227	586	20,679
(26)	Oct-20	32,057	573	20,013
(27)	Nov-20	31,329	615	19,511
(28)	Dec-20	29,503	607	18,761
(29)	Jan-21	31,255	645	18,571
(30)	Feb-21	32,506	653	18,824
(31)	Mar-21	31,937	670	19,219
(32)	Apr-21	32,200	660	19,313
(33)	May-21	32,593	666	20,088
(34)	Jun-21	32,595	663	19,978
(35)	Jul-21	35,056	950	23,847
(36)	Aug-21	36,639	939	23,251
(37)	Sep-21	34,640	907	22,415
(38)	Oct-21	36,030	895	22,185