Second Draft

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
PUBLIC UTILITIES COMMISSION

In Re: The Narragansett Electric Company d/b/a National Grid Annual Energy Efficiency Plan for 2020	**Docket No. _____**

ANNUAL ENERGY EFFICIENCY PLAN FOR 2020

SETTLEMENT OF THE PARTIES

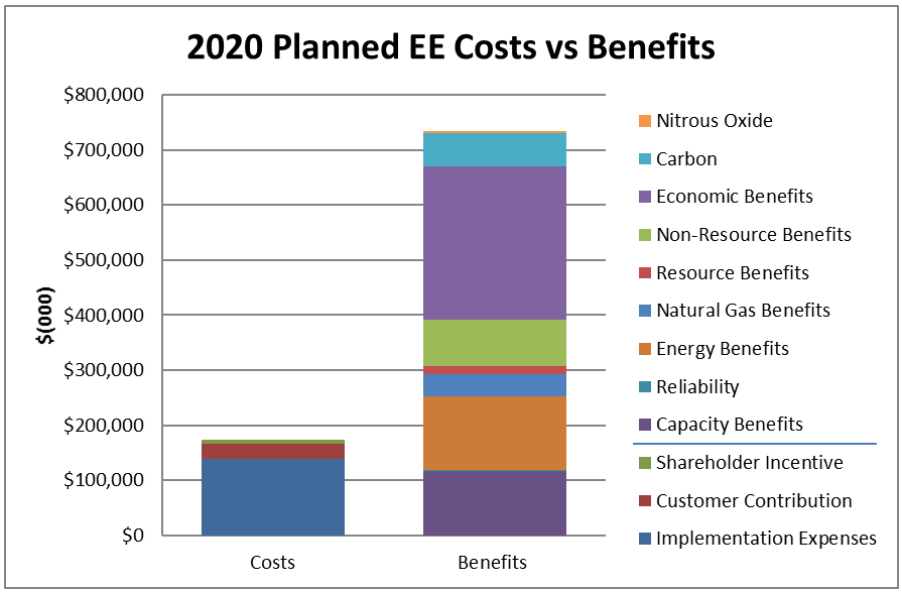
October 15, 2019

Executive Summary

Commented [RM1]: To be revised for 3rd draft.

National Grid's 2020 Annual Energy Efficiency Plan (~~2020 Plan or~~ Plan) includes a suite of services to provide all customers with the tools needed to take control of their energy usage and lower their ~~bills~~costs. In addition to lowering costs to customers that participate in the Company's energy efficiency programs, energy savings from the Plan will help to displace electricity generation and avoid investments in the installation, upgrade, or replacement of transmission and distribution infrastructure, which in turn provides cost savings to all customers, including customers who do not directly participate in these programs.

Figure 1. 2020 Energy Efficiency Plan Costs Compared to Benefits



The Plan is submitted in accordance with the Least Cost Procurement law, R.I. Gen. Laws § 39-1-27.7, the basis for which is the Comprehensive Energy Conservation, Efficiency, and Affordability Act of 2006, R.I. Gen. Laws § 39-2-1.2, and the Least Cost Procurement Standards (Standards), as approved by the PUC at an Open Meeting on September 6, 2018 in Docket 4684. The Standards guide how energy efficiency services are ~~must be~~ delivered ~~–~~in a manner that is optimally cost-effective, reliable, prudent, and environmentally responsible.

As noted in the 2020 Bill Impact analysis included in Attachment 7 of this Plan, over the lifetime of the 2020 programs, the average Rhode Island customer's bill will be less than if there were no energy efficiency programs.

Commented [TJ2]: Bill Impact analysis pending – to be included in Third Draft

The Plan will create significant benefits to Rhode Island. The electric and delivered fuels portion of the Plan will save 176,340 annual MWh, 29,439 annual kW, and 5,049,644 lifetime all-fuels (electric, gas, oil, propane) MMBtu over the lifetime of the installed energy efficiency measures. ~~.~~ ~~The~~ natural gas portion of the plan will save 445,802 annual MMBtu and 4,802,932 lifetime MMBtu over the lifetime of installed natural gas measures. Investments made in energy efficiency to achieve these savings will add ~~$ 280.6~~$ 279.0 million to Rhode Island's state gross domestic product (GDP). ~~Supporting these savings goals in 2020 is t~~Through this Plan the Company ~~'s~~continues its commitment to support the State's ongoing priorities; electrification of space and water heating and active demand reduction. The ~~efforts~~ Plan includes ~~through~~ expanded investments in air source – and ground source – ~~-~~heat pump market transformation efforts and driving customer adoption of these technologies, and continued development of demand response.~~.~~

The projected lifetime energy savings from this Plan will ~~also~~ avoid 1.05 million tons of carbon, the equivalent of removing ~~199,718~~ 224,558 passenger vehicles from the road for one year. In total, the ~~2020~~ Plan is expected to create over ~~$746~~ $742 million in benefits over the life of the installed electric, demand response, and natural gas energy efficiency measures. Energy savings and benefits are measured and verified by third-party evaluation firms.

The Plan represents the third year of the 2018-2020 Three-Year Plan. In this context, the Plan includes several enhancements over previous years, while also continuing proven, nation-leading customer services. Specifically, t~~T~~he Company has developed new customer engagement strategies, a ~~more aggressive~~ bolstered approach to ~~decarbonization~~ electrification of heat, and the utilization of new online tools to offer even more value to customers.

Further, this plan was the product of an even more robust stakeholder[1] engagement process than in prior years~~.~~ . Beginning in March 2019, members of the Energy Efficiency Technical Working Group (TWG)[2], formerly called the Collaborative, gave presentations[3] on their priorities for the ~~2020~~ Plan, and the Company provided a Plan Outline Memorandum in June that provided direction for the key anticipated changes between

[1] In this Plan, ~~-~~stakeholders ~~in this Plan~~ are defined as parties that have an interest in the outcome of the energy efficiency Plan and engage with the Company during the annual planning process. Stakeholders may represent ratepayers, members of their organization, or environmental interests, etc~~.~~ . Stakeholders are not required to be members of the Energy Efficiency Technical Working Group, but just need to engage with the Company regarding the outcome of the Plan.

[2] Previously called the "Collaborative"

[3] Please see the Sec.1 "Introduction and Summary" for more information on the stakeholder engagement process in 2019.

2019 and 2020 based on stakeholder input. The Company believes that its commitment to stakeholder engagement in 2019 has aided in the creation of a holistic and innovative ~~2020~~ Plan that is responsive to ~~customer~~ stakeholder needs~~.~~ .

The Plan demonstrates National Grid's commitment to energy efficiency and customer energy management and balances pursuing energy and cost savings from current technologies and programs while also identifying new technologies and programs to continue delivering savings to Rhode Island customers for years to come.

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2. 2020 Commercial and Industrial (C&I) Energy Efficiency Solutions and Programs
3. 2020 Evaluation, Measurement, and Verification Plan
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9. 2020 Cross-Program Summary
10. Energy Efficiency Definitions

Commented [RJ3]: Will be shared with 3rd draft

Commented [HR4]: Will be shared with 3rd draft

1. Introduction and Summary

The Narragansett Electric Company d/b/a National Grid (National Grid or Company) is pleased to submit this 2020 Annual Energy Efficiency Plan (~~Annual Plan or~~ Plan) to the Rhode Island Public Utilities Commission (PUC)~~.~~. This Plan has been developed by National Grid in collaboration with the ~~Energy Efficiency Collaborative (Collaborative)~~TWG and endorsed by the Energy Efficiency and Resource Management Council (EERMC).[4]

Commented [RM5]: To be updated upon final endorsement by EERMC

This Plan is submitted in accordance with the Least Cost Procurement law, R.I. Gen. Laws § 39-1-27.7, the basis for which is the Comprehensive Energy Conservation, Efficiency, and Affordability Act of 2006, R.I. Gen. Laws § 39-2-1.2, and the Least Cost Procurement Standards (Standards), as approved by the PUC at an Open Meeting on September 6, 2018 in Docket 4684. ~~The Company anticipates that T~~this Plan is ~~will~~This Plan is ~~be~~being jointly submitted as a Stipulation and Settlement, entered into by ~~-~~ _____and National Grid (collectively, the Parties), and addresses issues raised by members of the public, members of the ~~Collaborative~~TWG, and the EERMC concerning the Company's electric and natural gas energy efficiency (EE) programs for calendar year 2020.

Commented [RM6]: Parties to be named in final draft.

During the 2020 Annual Planning season, from January 2019 to June 2019, stakeholder engagement was a top priority for the Company. ~~Early in~~In the first quarter of 2019, the Company created a set of guidelines for participation in the ~~Energy Efficiency Technical Working Group~~TWG to better define the roles of parties in the Plan creation process and be clear about the Company's responsibilities and deliverables. Soon thereafter, the Company created a new website for the ~~Energy Efficiency Technical Working Group (Working Group~~ TWG~~),~~ ~~the monthly gathering of stakeholders formerly known as The Collaborative, in~~ in order to post the location and agendas for upcoming meetings ~~and~~ in an effort to engage more public interaction. Feedback from these TWG meetings ~~were~~ was reported to the EERMC by the EERMC ~~consulting team~~Consultant Team to ensure the EERMC was aware of current discussions.

[4] Since 1991, a collaborative group has been meeting regularly to analyze and inform the Company's electric and gas energy efficiency programs~~.~~. The name of this group was modified in 2019 to the Energy Efficiency Technical Working Group (TWG) to better reflect the roles of the parties~~.~~. Presently, members of the ~~Working~~ TWG~~group~~ include: ~~the~~The Company, the Division and the Division's consultant, Synapse Energy Economics (Synapse), The City of Providence, Green Energy Consumers Alliance, TEC-RI, the Office of Energy Resources, and Acadia Center~~.~~. In addition, the George Wiley Center, The Center for Justice, the Rhode Island Infrastructure Bank (RIIB), ~~,~~and several EERMC members and representatives from the EERMC's Consulting Team participate in the ~~Working group~~TWG~~.~~. Since 1991, membership in the TWG~~Working Group~~ has varied because some organizations have withdrawn and others have joined. Further information available at: www.ngrid.com/rieetechgroup

To ensure a wide array of views and customer representation, the Company made several adjustments to the annual plan ~~planning~~ schedule. Notably, in ~~April~~ March and ~~May~~ April of 2019, stakeholders presented to the Company on their organization's or constituents' priorities for inclusion in the ~~Annual~~ Plan and invited new members to attend meetings for balanced and helpful feedback. In total over 107 priorities were put forward and influenced the subsequent Plan Outline Memorandum and drafts of the Plan. The majority of these comments focused on ~~strategic~~ electrification of heat, income eligible programs, and changes to savings goals and/or incentives.

Table 1. Examples of Stakeholder Comments by Topic

1-4 Comments	5-9 Comments	10+ Comments
• Finance • Pilots • Benefits • Electric Vehicles • Participation • Workforce • Data	• Cross Docket Coordination • Demand Response • Gas Programs • General Comments • Commercial Programs	• Electrification • Incentives, Goals and Metrics • Income Eligible Programs

~~Figure : Examples of stakeholder comments by topic~~

Moreover, the schedule for review of the Plan was ~~moved up~~adjusted to provide additional ~~more~~ time for external review as the Company heard from stakeholders that more time for review and comment was needed. ~~and to incorporate suggestions.~~ To accommodate this request, the company made ~~Some of these schedule adjustments include~~the ~~below~~following adjustments to the schedule:

- ~~Creating~~ Delivering a Plan Outline Memorandum on June 10~~9~~th ~~-~~that provide~~s~~d high-level insights into the areas of focus for the upcoming Plan ~~in order to~~to give stakeholders and idea of what to expect in the coming first draft and an indication of where stakeholder comments would be addressed.
- Sending the first draft of the Plan to stakeholders one month earlier, on July 16th, instead of the traditional mid-August date.
- Adding a second draft on August 23rd to incorporate stakeholder feedback from the first draft into the text~~.~~.

The result of the above stakeholder process is the Plan that is presented in this document and attachments. ~~–~~The Plan satisfies the statutory requirements for Least Cost Procurement and is consistent with the Three-Year Energy Efficiency Procurement Plan

(Three-Year Plan) for 2018-2020.[5] The Annual Plan is cost-effective and has a cost that is lower than the cost of energy supply for both electricity and natural gas, satisfying the requirements prescribed in R.I. Gen. Laws § 39-1-27.7 (a)(2) and the Standards. The Plan also satisfies PUC Order No. 22851 by demonstrating how it advances the Docket 4600 principles and goals for the electric system detailed in Section 11.[6]

The primary goal of the Plan is to create energy and economic cost savings for Rhode Island consumers through energy efficiency, as required by R.I. Gen. Laws § 39-1-27.7. To that end, the electric portion of the Plan ~~Plan~~ will create electric and delivered fuels savings of ~~173,322~~ 176,340 net ~~A~~annual MWhs, equivalent to ~~and 5,175,928~~ 5,049,644 net lifetime MMBtus, and 29,439 net annual kW. The natural gas portion of the ~~P~~plan will create~~, and natural gas~~ savings of ~~436,981~~ ~~4444~~5,802 net ~~A~~annual MMBtus and ~~4,705,432~~ ~~44,~~802,932 net lifetime MMBtus. The Plan will generate benefits of more than ~~$746~~ $742 million over the life of the measures. Of these total benefits,~~(with $605~~ $599 million ~~in benefits coming~~come from electric and delivered fuels efficiency, ~~and~~ passive demand response, and active demand response. ~~, and $141~~ $143 million in benefits from natural gas efficiency~~),~~. The total benefits ~~which~~represent ~~represents~~ a ~~large and urgently needed~~significant benefit for Rhode Island's residential, commercial, industrial, and income eligible energy customers. Table 2 ~~Table 1~~ provides a high level summary of the Electric and Natural Gas portions of the Plan, while Table 3 gives a summary of the active Demand Response component.

[5] The Company submitted the Three-Year Plan to the PUC on August 30, 2017 in Docket 4684.
[6] PUC Report and Order No. 22851 accepting the Stakeholder Report. Written Order issued July 31, 2017.

Table 2. 2020 Energy Efficiency Program Plan Summary

~~Table 1: 2020 Energy Efficiency Program Plan Summary~~

Electric Programs by Sector	Implementation Spending ($000)	Customer Contribution ($000)	Annual Savings (MWh)	Lifetime Savings (MWh)	Lifetime Savings (MMBtu)	¢/lifetime kWh	Summer Annual Demand Savings (kW)	Demand Response (kW)	Total Benefits ($000)	RI Test B/C Ratio	Participants
Non-Income Eligible Residential	$43,718	$732	77,651	340,183	1,654,870	13.1	11,691	1,746	$145,430	3.12	623,695
Income Eligible Residential	$15,963	$0	5,734	71,225	506,164	22.4	697		$42,644	2.54	7,950
Commercial and Industrial	$43,986	$17,740	92,955	1,092,639	2,888,610	5.6	17,051	49,000	$411,050	6.44	3,469
Regulatory	$1,858										
Electric Subtotal	**$105,525**	**$18,472**	**176,340**	**1,504,046**	**5,049,644**	**8.2**	**29,439**	**50,746**	**$599,124**	**4.64**	**635,114**
Gas Programs by Sector	**Implementation Spending ($000)**	**Customer Contribution ($000)**	**Annual Savings (MMBtu)**		**Lifetime Savings (MMBtu)**	**$/lifetime MMBtu**			**Total Benefits ($000)**	**RI Test B/C Ratio**	**Participants**
Non-Income Eligible Residential	$13,408	$6,623	189,872		1,525,498	13.13			$43,035	2.07	162,711
Income Eligible Residential	$8,653	$0	34,049		640,700	13.51			$33,615	3.68	4,361
Commercial and Industrial	$10,354	$2,782	221,881		2,636,735	4.98			$67,142	4.92	958
Regulatory	$746										
Gas Subtotal	**$33,161**	**$9,405**	**445,802**		**4,802,932**	**8.86**			**$143,792**	**3.25**	**168,030**
Total for Plan	**$138,686**	**$27,877**			**9,852,577**				**$742,916**	**4.31**	**803,144**

(1) Implementation spending does not include customer contributions, shareholder incentive, or commitments.
(2) Regulatory Includes contributions to OER and EERMC.
(3) In addition to Income Eligible Residential programs, Income Eligible customers can participate in all Non-Income Eligible Residential programs.

Table 1: 2020 Energy Efficiency Program Plan Summary

Electric Programs by Sector	Implementation Spending ($000)	Customer Contribution ($000)	Annual Savings (MWh)	Lifetime Savings (MWh)	Lifetime Savings (MMBtu)	¢/lifetime kWh	Summer Annual Demand Savings (kW)	Demand Response (kW)	Total Benefits ($000)	RI Test B/C Ratio	Participants
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Regulatory	$1,858										
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Total for Plan	**$138,686**	**$27,877**			**9,852,577**				**$742,916**	**4.31**	**803,144**

(1) Implementation spending does not include customer contributions, shareholder incentive, or commitments.
(2) Regulatory Includes contributions to OER and EERMC.
(3) In addition to Income Eligible Residential programs, Income Eligible customers can participate in all Non-Income Eligible Residential programs.

~~Table 2:~~ Table ~~3~~3. 2020 ConnectedSolutions (Active Demand Response) Summary Table

Programs	Implementation Spending ($000)	Customer Contribution ($000)	Demand Response (kW)	Total Benefits ($000)	RI Test B/C Ratio
Residential ConnectedSolutions	$ 455	-	1,746	$ 1,888	4.15
Commercial ConnectedSolutions	$ 2,078	-	49,000	$ 27,031	13.01
Total	$ 2,534	-	50,746	$ 28,919	11.41

(1) All Residential electric customers (including Income Eligible customers) are eligible to participate in the Residential ConnectedSolutions program if they have the necessary equipment – a smart thermostat and central air conditioning, or a behind the meter battery.

Table 2: 2020 ConnectedSolutions Summary Table

Programs	Implementation Spending ($000)	Customer Contribution ($000)	Demand Response (kW)	Total Benefits ($000)	RI Test B/C Ratio
Residential ConnectedSolutions	$ 455	-	1,746	$ 1,888	4.15
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Total	$ 2,534	-	50,746	$ 28,919	11.41

(1) All Residential electric customers (including Income Eligible customers) are eligible to participate in the Residential ConnectedSolutions program if they have the necessary equipment – a smart thermostat and central air conditioning, or a behind the meter battery.

The energy savings that will result from this Plan will provide a meaningful contribution to the Resilient Rhode Island Act (the Act). Under the Act, the State of Rhode Island set forth the goal to reduce greenhouse gas (GHG) emissions to 80% below 1990 levels by 2050.[7] The Rhode Island Greenhouse Gas Emissions Reduction Plan (GHG Plan) identifies energy efficiency as an important component for achieving the GHG targets set forth in the Act.[8] The electric, gas, and ~~oil~~ delivered fuel energy efficiency measures proposed in this Plan will avoid over 1.0~~3~~5 million tons of carbon over the lifetime of the installed

[7] R.I. Gen. Laws § 42-6.2.
[8] Rhode Island Greenhouse Gas Emissions Reduction Plan, December 2016.

measures.[9] This is the equivalent of removing ~~199,718~~ 224,558 passenger vehicles from the road for one year.[10]

In addition to providing customers with cost-savings and contributing to the state's carbon reduction goals, the Plan will also create significant economic benefits in Rhode Island. The Company expects that investments made in energy efficiency under this Plan will add $ 280.6 million to Rhode Island's state gross domestic product (GDP).[11] The vast majority of jobs associated with the Annual Plan's energy efficiency investments are local because they are tied to the installation of equipment and other materials. An analysis of National Grid's 2018 energy efficiency programs found that 73% of companies involved in the Company's energy efficiency programs ~~were located~~ have a presence in Rhode Island.[12] Investments in energy efficiency contribute to Rhode Island's economy overall and benefit business owners and their employees who deliver these programs and services.

The savings in the Plan meet the requirements for cost-effectiveness. As defined by the Standards in Docket 4684, the Plan's RI Test benefit-cost ratio - the ratio of Total Benefits to Total Costs – must be greater than 1.0.[13] The overall electric EE Program RI Test ratio is 4.63, and the overall natural gas EE Program RI Test ratio is 3.27. This means that for each $1 spent on energy efficiency, electric and delivered fuels programs will create $4.63 of benefits over the lifetime of the investment, and natural gas programs will create $3.27 in benefits over the lifetime of the investments. Figure 2 and Figure 3 detail the RI Test costs and benefits for the electric and gas portfolios, respectively. A detailed summary of the benefits and costs included in the RI Test is included in Attachment 4.

Figure 2. Annual Plan Total Benefits and Total Costs (RI Test) for the Electric Portfolio

~~**Figure 2. The Standards further require the Company to show a comparison between the RI Test and the Total Resource Cost (TRC) Test. The overall electric EE Program TRC Test ratio is 2.46, and the overall natural gas EE Program TRC Test ratio is 1.80. The**~~

[9] Takes into account the net impact of EE measures on carbon emissions. The marginal carbon emission rates are from "Avoided Energy Supply Components in New England: 2018 Report" Appendix K. pages 368-370.

[10] https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator

[11] Macroeconomic multipliers for the economic growth and job creation benefits of investing in cost-effective energy efficiency from "Review of RI Test and Proposed Methodology" prepared for National Grid by the Brattle Group, January 31, 2019.

[12] Peregrine Energy Group, "Analysis and Recommendations regarding the Current and Future Workforce associated with Rhode Island Energy Efficiency Programs", May 5, 2019 (filed as part of National Grid's 2018 Year-End Report).

[13] Standards, Section 1.4(C).

~~TRC Test comparison is included in Table E-5A and G-5A. Graph 1 details the 2020 costs and benefits for the electric and gas portfolios. A detailed summary of the benefits and costs included in the RI Test is included in Attachment 4.~~

~~TableGraph 1. Annual Plan Total Benefits and Total Costs (RI Test)~~[14]

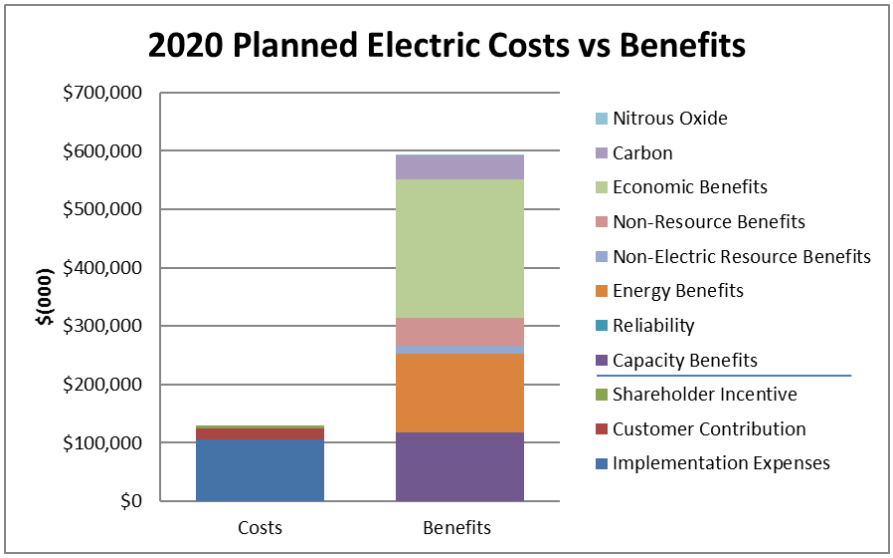
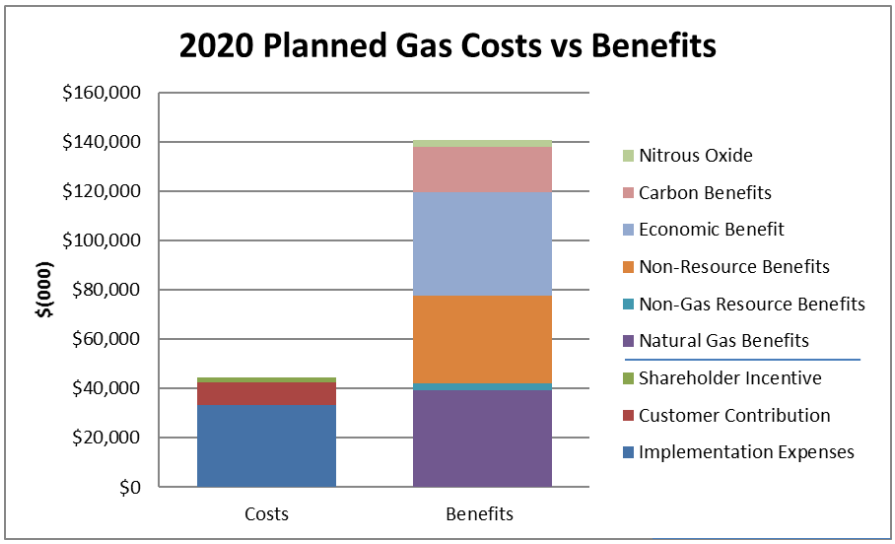


Figure ~~3~~2. Annual Plan Total Benefits and Total Costs (RI Test) for the Natural Gas Portfolio

[14] For more information on how and why these costs and benefits are calculated and included, see Attachment 4 Rhode Island Test Description. For more information on the costs and expenses summarized here see Attachments 5 and 6.



The Standards further require the Company to show a comparison between the RI Test and the Total Resource Cost (TRC) Test. The TRC is a more conservative test than the RI Test that divides energy, capacity, and resource benefits by the same set of costs as the RI Test. The overall electric EE Program TRC Test ratio is 2.47, and the overall natural gas EE Program TRC Test ratio is 1.75. The TRC Test results are included in Tables E-5A and G-5A.

In addition to satisfying the primary statutory requirement of cost-effectiveness, the Plan satisfies the additional requirement that the cost of energy efficiency procured be less expensive than the cost of supply as detailed in Section 3. The cost of procuring 1,472,474 MWh lifetime electric energy efficiency savings through the Plan is $192.9 million less than if that electric load was met by purchasing additional electric supply~~—~~. The cost of procuring 4,705,432 MMBtu lifetime natural gas energy efficiency savings through the Plan is $20.6 million less than if that natural gas load was met by purchasing additional natural gas supply.[15]

Over time, the benefits of procuring energy efficiency at a cost less than supply accrue to customers. From 2009 to projected year-end 2020, electric energy efficiency programs will have saved an estimated ~~xxxx~~ TK million MWh. This number represents the cumulative energy savings for just those energy efficiency measures installed since 2009

Commented [RJ7]: Will be updated in the third draft

[15] For more information on how this was calculated, see section 3 of the Main Text, "Cost of Annual Plan Compared to the Cost of Energy Supply"

(the first year of programs implemented under Least Cost Procurement). Because the average measure life of energy efficiency measures is 10 years, the Company expects that measures installed in 2009 are still providing the same level of energy savings through 2019. This is also true for those measures installed after 2009.[16] The only exception is the savings from Home Energy Reports. This program only has a one-year measure life, and is counted as such, because it connects with customers annually to prompt them to continue taking energy saving actions. The cumulative ~~xxx~~ TK million MWh in savings were procured at a cost lower than the cost of supply. Without these energy savings, Rhode Island customers would have had to purchase ~~XX~~TK% more energy at a higher cost.

This cost-effective Plan includes an investment of $~~114~~ 110.6 million for the electric energy efficiency portfolio in 2020. If approved, this will be funded by $17.4 million in proceeds from the ISO New England (ISO-NE) Forward Capacity Market (FCM), revenues from the existing energy efficiency program charge of $0.01121 per kWh, plus revenues from a fully reconciling mechanism of $~~0.00325~~ $0.00222 per kWh pursuant to R.I. Gen. Laws § 39-1-27.7(c)(5)to fully fund the cost-effective electric energy efficiency programs for 2020.[17]

This Plan also includes a ~~$35~~ $34.7 million investment in cost-effective natural gas energy efficiency. If approved, this investment will be funded by revenues from the existing energy efficiency program charge of $0.715 per dekatherm for residential customers and $0.420 per dekatherm for non-residential customers plus revenues from a fully reconciling mechanism of ~~0.362~~ $0.289 per dekatherm for residential customers and plus ~~$0.422~~ $0.362 per dekatherm for non-residential customers pursuant to R.I. Gen. Laws § 39-1-27.7(c)(5) to fully fund the cost-effective natural gas energy efficiency programs for 2020.[18]

For context for these gas rate adjustments, the residential and commercial charges are closer to charges seen in the 2017 and 2018 energy efficiency annual plan than in the 2019 annual plan. The proposed residential charge for 2020 is $1.004, per dekatherm compared to $0.898 in 2018 and $0.888 in 2017. The proposed non-residential charge for 2020 is $0.782 per dekatherm, compared to $0.727 in 2018 and $0.726 in 2017.

All Rhode Island electric and gas customers will benefit from lower supply and transmission and distribution costs due to investments in energy efficiency whether they participate or not. The Company determines these savings through the Bill Impact analysis that is detailed in Attachment 7~~.~~. The savings that customers will realize from

[16] Actual lifetime varies by measure but is not included in ~~Graph~~Figure 3 for ease of illustration. When the Company report s out on savings to ISO-NE it takes into account impact of each measure's life.
[17] See Attachment 5, Table E-1 for list of funding sources and calculation of the charge.
[18] See Attachment 6, Table G-1 for list of funding sources and calculation of the charge.

participating in the energy efficiency programs will offset the energy efficiency program charge~~.~~. The Bill Impact analyses of the gas and electric programs show that the average participant will save more than they invest in the energy efficiency program charge. As detailed in Attachment 7, the average participant will see the following annual reductions in their combined electric and gas bills over the lifetime of the installed measures when compared to not having the 2020 energy efficiency program charge: Residential (0.89%, $22.53); Low Income (2.40%, $58.24); Small C&I (17.50%, $1,439.17); Medium C&I; (10.59%, $2,532.16); Large C&I (3.05%, $17,091.45). In addition to environmental and economic benefits not reflected on customers' bills, non-participants also benefit from energy efficiency due to reductions in capacity demand and avoided investment in infrastructure that is reflected in rates~~.~~. When the impacts on both participants and non-participants are averaged, the analysis shows that, on average, the typical Rhode Island customer sees bill savings from energy efficiency. One of National Grid's objectives is to reach as many customers as possible to increase participation and overall bill savings in Rhode Island.

Commented [RJ8]: To be updated for the 3rd Draft.

2. ~~New~~ Savings Goals in 2020 Plan

Compared to 2019, in 2020 the Company proposes to maintain the same savings goal metrics for the majority of the Electric Portfolio and identical savings goal metrics for the Natural Gas Portfolio.

i. Electric Portfolio Savings Goals

Within the Electric Portfolio the Company proposes to continue tracking Net Annual MWh and Annual kW for most programs and measures. The Company proposes to separately track Net A~~a~~nnual all-fuel MMBtu (electric, gas, oil, and propane) of heat pump installations and weatherization that involve fuel~~-~~switching from delivered fuels to electricity.

The shift to N~~n~~et ~~a~~Annual all-fuel savings (MMBtu) for fuel-switching weatherization and heat pump installations would fully capture the net effect of all-fuel savings efforts (electric, gas, oil, and propane), as well as the impact of fuel conversions that result in overall lower energy use. This change will allow the Company to better incorporate strategies that support electrification of the thermal energy sector and better support State and Company greenhouse gas reduction goals for the future while removing a disincentive to promote electrification.

The Company proposes to modify its performance incentive calculation from that used in 2019 to account for each of these savings metrics. The proposed performance incentive is detailed in Section 14 of this Plan.

For heat pump conversions from delivered fuels and weatherization of homes heated by delivered fuels, the Company proposes to use the following calculation steps to arrive at total Net Annual MMBtu from all-fuels.

1. To first convert electric energy savings in MWh to MMBtu, the Company proposes to multiply MWh by an industry standard conversion factor of 3.412 MMBtu per MWh.[19] This conversion applies only to electric energy savings. Savings from natural gas and delivered fuel are tracked in MMBtu.

Equation 11. Illustrative MWh to MMBtu Calculation

$$MMBtu_{Electric} = MWh_{Electric} \times 3.412\ MMBtu/MWh$$

$$34.12\ MMBtu_{Electric} = 10\ MWh_{Electric} \times 3.412\ MMBtu/MWh$$

2. Next, Net Annual MMBtu savings values for all electricity, natural gas, and delivered fuels are summed to calculate Net Annual All-Fuel savings.

Equation 22. Illustrative Net All-Fuel MMBtu Calculation for an Electric Savings Measure

$$MMBtu_{All\ Fuel} = MMBtu_{Electric} + MMBtu_{Natural\ Gas} + MMBtu_{Delivered\ Fuels}$$

$$50\ MMBtu_{All\ Fuel} = -100\ MMBtu_{Electric} + 0\ MMBtu_{Natural\ Gas} + 150\ MMBtu_{Delivered\ Fuels}$$

ii. Natural Gas Portfolio Savings Goals

For the natural gas portfolio, the Company proposes to continue to have its energy goal in Net Annual MMBtu, as in 2019. The Company proposes to maintain the same Performance Incentive calculation for the natural gas portfolio as in 2019.

~~The Company proposes to create two changes to the savings goals in 2020. For the electric portfolio, the Company proposes to move from Net Annual MWh and Annual kW to a Net lifetime all-fuel savings (MMBtu) goal to fully capture the net effect of all-fuel savings efforts (electric, gas, oil, and propane), as well as the impact of fuel conversions that result in overall lower energy use. This change will allow the Company to better incorporate strategies that support the strategic electrification of the energy sector and better support State and Company greenhouse gas reduction goals for the future. For the natural gas portfolio, the Company proposes to move from Net Annual MMBtu to Net Lifetime MMBtu.~~

[19] The conversion factor of 3.412 MMBtu/MWh is a constant value. Energy Information Agency, EIA: https://www.eia.gov/totalenergy/data/monthly/pdf/sec13_7.pdf

The change to lifetime savings for both the electric and natural gas portfolio will better align the Company's incentives to total customer, environmental and system benefits. This change will encourage the Company to develop programs and customer offerings that provide greater overall value than can be achieved by relying on measures with shorter measure lives. As this transition is made, the Company is still committed to reporting savings in annual and lifetime MWh, MW, oil, and carbon for comparison to prior years and the Three-Year plan.

Additionally, these proposed changes to new savings goals are in alignment with the Company's statement in Docket No. 4684 *National Grid 2018-2020 Energy Efficiency and System Reliability Procurement Plan*, that "[G]iven the growing importance of aligning energy efficiency plans with the state's goals for power sector transformation and greenhouse gas emissions reduction, the Company will work with the OER, the DPUC, the EERMC, and the Collaborative TWG to consider new performance metrics to promote these complementary policy goals." Further, these proposed changes support the Docket 4600 Objective of "aligning distribution, utility, customer and policy objectives and interests through the regulatory framework, including rate design, cost recovery, and incentive."

To convert MWh savings to MMBtus, the Company proposes to use an industry standard conversion factor of 3.412 MMBtu per MWh to calculate site MMBtus.[20] Measures that behave more like generation assets For more traditional efficiency measures, site savings are an appropriate savings metric because they align with the realized energy and bill savings that customers see through their adoption of energy efficiency measures. – namely, Combined Heat and Power (CHP) – leverage different conversion factors that consider the generation fuels used to produce the electricity those measures displace. CHPs provide benefits that are unique among energy efficiency measures, including greater electric and thermal efficiency, environmental benefits, and grid benefits.[21] Using a modified conversion factor for CHP savings compares the gas required to operate a CHP unit with the generation mix required to generate the source electricity it displaces. This method is in alignment with the method proposed for use by Massachusetts Program Administrators (PAs) to convert to source MMBtu for CHP in its 2019-2021 Three-Year Plan.[22] For more traditional efficiency

[20] The conversion factor of 3.412 MMBtu/MWh is a constant value. Energy Information Agency, EIA: https://www.eia.gov/totalenergy/data/monthly/pdf/sec13_7.pdf

[21] U.S. EPA, CHP Benefits https://www.epa.gov/chp/chp_benefits

[22] See Massachusetts DPU 18-118, Exhibit DPU-Comm 4-1, Pages 1-2. https://fileservice.eea.comacloud.net/FileService.Api/file/FileRoom/10054828 and Massachusetts DPU 18-110 through 18-118, 2019-2021 Three-Year Energy Efficiency Plans Order, Pages 156 – 159. https://www.mass.gov/files/documents/2019/01/31/2019-2021%20Three-Year%20Energy%20Efficiency%20Plans%20Order_1.29.19.pdf. The Massachusetts PAs plan to study the

measures, site savings are an appropriate savings metric because they align with the realized energy and bill savings that customers see through their adoption of energy efficiency measures.

The conversion factor to convert CHP savings from "site" to "source" was derived by comparing the CO_2 emissions factor for calculating greenhouse gas ("GHG") reductions from electric sector generation (0.494 tons CO_2/MWh) to the emissions factor for natural gas combustion (0.0585 tons/MMBtu).[23] The factor for electric sector generation represents the CO_2 emissions that are not emitted, on a per MWh basis, because of the reduced generation load due to energy efficiency. Therefore, the ratio between that number and the standard natural gas emissions factor (a ratio equal to 2.355) is the imputed efficiency of the electric grid, and in conjunction with the standard MWh to MMBtu conversion factor is what is used to convert MWh savings from "site" to "source" MMBtu for CHP. This method is in alignment with the method proposed for use by Massachusetts Program Administrators (PAs) to convert to source MMBtu for CHP in its 2019-2021 Three-Year Plan.[24]

To determine annual and lifetime MMBtu savings included in the Plan for the electric portfolio, the Company summed the following components.

- Electric energy savings (except for CHP measures and any energy usage associated with active demand reduction): all kWh realized at a customer's site, including the negative impacts of any increased kWh due to fuel switching, are converted into MMBtus using the standard conversion of 3.412 MMBtu per MWh.
- Electric energy savings from CHP: all kWh energy savings are converted to source MMBtu as described above.
- Gas: all gas energy savings/gas usage increases are converted from therms to MMBtu.
- Oil: all oil energy savings/oil usage increased included as MMBtu.
- Propane: all propane energy savings/propane usage increased included as MMBtu.

Section 14, below, describes how the savings goal will be tied to the shareholder incentive.

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method employed for converting CHP savings from site to source during the 2019 – 2021 plan period per the Massachusetts DPU's order.

[23] Emissions factors used in this calculation are derived from the Avoided Energy Supply Components in New England 2018 report. http://www.ripuc.org/eventsactions/docket/9.%20AESC-2018-17-080-Oct-ReRelease.pdf

[24] See Massachusetts DPU 18-118, Exhibit DPU-Comm 4-1, Pages 1-2. https://fileservice.eea.comacloud.net/FileService.Api/file/FileRoom/10054828 and Massachusetts DPU 18-110 through 18-118, 2019-2021 Three-Year Energy Efficiency Plans Order, Pages 156 – 159. https://www.mass.gov/files/documents/2019/01/31/2019-2021%20Three-Year%20Energy%20Efficiency%20Plans%20Order_1.29.19.pdf. The Massachusetts PAs plan to study the method employed for converting CHP savings from site to source during the 2019 – 2021 plan period per the Massachusetts DPU's order.

~~14.~~3. Cost of Annual Plan Compared to the Cost of Energy Supply

In accordance with the Standards the Company assessed the cost of energy supply and the cost of energy efficiency using all applicable costs enumerated in the Rhode Island Benefit Cost Framework (Framework) approved by the PUC in Docket No. 4600 A and the Rhode Island Test as described in Attachment 4 of the Plan. This method is the same as that used in the 2019 Plan.

The RI Test is an appropriate ~~starting point~~ mechanism to determine which costs to include in this assessment. The RI Test, as detailed in Attachment 4, captures the aspects of the Framework that pertain to energy efficiency programs. The source for many of these values is the "Avoided Energy Supply Components in New England: 2018 Report" (2018 AESC Study) prepared by Synapse Energy Economics for the AESC 2018 Study Group, June 1, 2018. The benefits in the RI Test are associated with the cost savings to Rhode Island from investing in energy efficiency instead of investing in additional energy supply. For the purpose of the RI Test, these values are described as a benefit of energy efficiency in the form of avoided costs. The avoided cost values can also be applied as the costs of procuring additional energy supply for the purpose of this assessment. The RI Test also details what is considered a cost of energy efficiency. These are costs incurred by the utility to implement the Plan and the expense borne by the customer for its share of the energy efficiency measure cost~~—~~.

The Company proposes to use the costs described in Table 4 ~~Table 2~~ to compare the cost of energy efficiency to the cost of energy supply~~—~~. The categories listed in this table are all used in the RI Test, as proposed in Attachment 4 of the Plan. As directed by the Standards, the Company provides an explanation for why cost categories are either appropriate or not appropriate for inclusion in the assessment of the cost of energy supply compared to the cost of energy efficiency~~—~~.

~~Table 2.~~ Table ~~4~~6. List of the Costs of Energy Efficiency and Costs of Energy Supply

Cost of Energy Efficiency		
Cost	**Included**	**Explanation**
Utility Costs	Yes	These costs are incurred to achieve implementation of energy efficiency measures and programs. Includes all costs in Tables E-2 and G-2.

Cost of Energy Efficiency		
Cost	**Included**	**Explanation**
Participant Costs	Yes	Customer contribution to the installation cost of the efficient measure. Customer costs included in Tables E-5 and G-5.
~~**Cost of Energy Supply**~~		
~~**Cost**~~	~~**Included**~~	~~**Explanation**~~
Electric Energy Costs	Yes	Represents the cost of purchasing electric energy supply.
Electric Generation Costs	Yes	Represents cost of generation capacity in ISO-NE.
Electric Transmission Capacity Costs	Yes	Represents Pool Transmission Facilities (PTF) cost.
Electric Distribution Capacity Costs	Yes	Represents the cost of distribution capacity related to increased load.
Natural Gas Costs	Yes	Represents the cost of purchasing natural gas supply.
~~Fuel Costs~~Fuel Costs	Yes	Non-regulated delivered fuels are an energy supply cost to customers that utilize these fuels for heating. The fuel costs in this category are separate from those embedded in the cost of the electric market. While not a direct cost of electric energy supply, National Grid includes incentives for delivered fuel energy efficiency measures in its electric portfolio. Therefore, to achieve symmetry with costs associated with electric energy efficiency, delivered fuels costs should be included in this comparison.
Water and Sewer Costs	No	While avoided water and sewer costs are a benefit of installing certain energy efficiency measures, they are not a direct cost of energy supply.
Non-Energy Impact Costs	No*	*Unless listed below. While non-energy impacts are a benefit of installing certain energy efficiency measures, they are not a direct cost of energy supply.
a) Income Eligible Rate Discount	Yes	Costs associated with energy being sold at the ~~low income~~ income eligible rate.

Cost of Energy Efficiency		
Cost	**Included**	**Explanation**
b) Arrearages	Yes	Costs associated with arrearage carrying costs as a result of customers not being able to pay their energy bills.
Price Effects	Yes	Represents costs associated with the impact of demand reduction on ISO-NE energy and capacity markets.
Non-embedded Greenhouse Gas Reduction Costs	Yes	Represents the social cost of carbon~~.~~. The social cost of carbon is the cost associated with meeting the Resilient Rhode Island Act. Carbon emissions come from the production of energy and should be considered a cost of supplying that energy.
Economic Development	No	While economic development is a benefit of investment in energy efficiency measures it is not a direct cost of energy supply.
Non-embedded NOx Costs	Yes	NOx emissions come from the production of energy and therefore the health impacts of NOx emissions should be considered part of the cost of supplying that energy.
Reliability Costs	Yes	Increased energy demand can lead to declining reserve margins and decrease reliability so should be associated with the cost of energy.

For the assessment, the Company applies the above costs of supply to the lifetime energy, demand, and natural gas savings for each measure included in the Plan in present value terms. The costs of the 2020 ~~energy efficiency plan~~Plan occur ~~in the first year of the Plan~~ only in 2020 and are therefore not discounted~~.~~.

Applying this methodology, based on the Company's calculation, the total cost of energy efficiency for the electric portfolio is ~~$130.7~~ $129.0 million and the total cost of electric supply is ~~$323.6~~ $322.3 million. This is a total savings of ~~$192.9~~$193.3 over the life of the installed energy efficiency measures from investing in energy efficiency instead of electric supply. The total cost of energy efficiency for the natural gas portfolio is ~~$43.0~~ $44.2 million and the total cost of natural gas supply is $~~63.6~~ 64.3 million. This is a total savings of ~~$ 20.6~~ $20.1 million over the life of the installed energy efficiency measures from investing in energy efficiency instead of natural gas supply.

~~16.~~4. Annual Plan Compared to Three-Year Plan for Year 2020

The energy and cost savings for the 2020 program year are consistent with the objectives and requirements of Least Cost Procurement. ~~In 2020 the Company is proposing to move to net lifetime MMBtu goals as described in section 2 above. However, the Company will continue to track and report on the annual targets set in the Three-Year plan for 2020.~~

Cumulatively, the Three-Year Plan illustrated a path of achieving ~~-~~564,154 Annual MWh, and 1,186,718 Annual MMBtu of savings over the three years. ~~-~~This Annual Plan delivers on that vision based on past and projected performance~~.~~ . With strong performance in 2018 and projected 2019 savings, ~~this~~ the present Plan has ~~2020 plans on~~ savings goals that are ~~-~~9,954 above the Three-Year Annual MWh target and 180,090 ~~-~~above the Annual Natural Gas MMBTu target. Proposing an Annual Plan that will deliver electric and natural savings above the cumulative Three-Year Plan goal demonstrates National Grid's continued commitment to planning the most aggressive and nation-leading savings that are achievable in practice, a principle described in the Three-Year Plan. Table 5 and Table 6 provide detail on the Plan's performance in context of 2018, 2019, and the Three-Year Plan.

Table 5~~7~~. Comparison of 2020 Plan Electric Portfolio to 2018 Actuals, 2019 Planned, and Cumulative Three Year Plan Goals

Electric				
	2018	2019	2020	Cumulative 2018-2020 Annual Savings
Annual Goal, Three-Year Plan (MWh)	179,968	194,677	189,509	564,154
Annual Achieved/Projected (MWh)	206,209	192,516	176,340	575,065
Absolute Difference	26,241	-2,161	-13,169	10,911
Percent of Annual Goal Achieved/Planned	115%	99%	93%	102%
2019 achieved/projected is based on a portfolio level projection from the 2019 Second quarter report, Table 1				

Table 6~~8~~. Comparison of 2020 Plan Natural Gas Portfolio to 2018 Actuals, 2019 Planned, and Cumulative Three Year Plan Goals

Gas				
	2018	2019	2020	Cumulative 2018-2020 Annual Savings
Annual Goal, Three-Year Plan (MMBtu)	384,486	396,859	405,373	1,186,718
Annual Achieved/Projected (MMBtu)	497,119	453,478	445,802	1,396,400
Absolute Difference	112,633	56,619	40,429	209,682
Percent of Annual Goal Achieved/Planned	129%	114%	110%	118%
2019 achieved/projected is based on a portfolio level projection from the 2019 Second quarter report, Table 2				

The annual electric savings proposed for 2020 is ~~173,322~~ 176,340 MWh, or ~~2.31~~ 2.36% of the referenced 2015 load. The Company has proposed ~~aggressive~~ goals consistent with Least Cost Procurement, however the 2020 annual savings ~~fall short~~differ from ~~of~~ the Three-Year illustration for three reasons~~.~~ . First, evaluations have found decreased attribution of savings, namely due to the successful transformation of the lighting market and more is described in Section 4.A, below~~.~~ . Second, the Company ~~is~~ has focused on longer-life, all fuel savings for customers, not just electric, as evidenced by increased promotion and participation in delivered fuel savings measures such as weatherization and heat pumps. The Company plans to serve more customers and save more MMBtu than was planned in the Three-Year Plan and that is not reflected in the Annual MWh target. . The Three-Year Plan illustration assumed that 16% of the 2020 Annual savings and 29%~~%~~ of the lifetime savings would come from Combined Heat and Power (CHP)~~.~~ . The Company worked with several customers on large projects that do not currently appear to be possible given current project statuses and required minimum lead times and no large-scale CHP project is planned for completion in 2020~~.~~ . The Three-Year Plan highlighted the challenges in predicting large CHP projects and noted that annual target illustrations depended on these projects. Lastly, there are several end-uses and customer opportunities where the Company has planned to achieve higher savings than those projected in the Three-Year Plan or created initiatives or pilots that were not envisioned at the time of the Three-Year Plan, examples are described below. These examples demonstrate the Company's pursuit of maximum achievable savings.

The annual natural gas savings for 2020 is ~~436,981~~ 445,802 MMBtu, or ~~1.07~~ 1.09% of 2015 natural gas load~~.~~ . The annual gas savings are ~~8~~10% higher than illustrated for 2020 in the Three Year Plan and this demonstrates the Company's commitment to proposing maximum achievable savings~~.~~ . The Annual savings are higher than the Three-Year Plan due primarily to evaluation results increasing attribution of savings, described more fully in section 4.A below, and higher customer savings from Home Energy Reports.

Table 7 and Table 8 ~~The following table~~ compare~~s~~ the Annual Plan components to the Three-Year Plan for the electric and natural gas portfolios, respectively.

Table 7~~9~~. ~~Table 3: Annual~~ Plan Electric Portfolio ~~c~~Compared to Three-Year ~~Plan for Year 2020~~Plan

Electric Programs	2020 3 Year Plan	2020 Annual Plan	% Change
Annual Savings (MWh)	189,509	176,340	-7%
Lifetime Savings (MWh)	2,160,318	1,504,046	-30%
Annual Savings (MMBtu)		512,384	N/A
Lifetime Savings (MMBtu)		5,049,644	N/A
Annual Summer Demand Savings (kW)	34,224	29,439	-14%
Total Benefits	$ 451,782,884	$ 599,123,906	33%
Total Spending	$ 109,090,025	$ 110,559,691	1%
Benefit Cost Ratio (RI Test)	3.23	4.64	44%
Cost/Lifetime kWh	$ 0.062	$ 0.082	32%
EE Program Charge per kWh	$ 0.01193	$ 0.01343	13%

Table 8~~10~~. Plan Natural Gas Portfolio Compared to Three-Year Plan

Gas Programs	2020 3 Year Plan	2020 Annual Plan	% Change
Annual Savings (MMBtu)	405,373	445,802	10%
Lifetime Savings (MMBtu)	4,682,906	4,802,932	3%
Cost/Lifetime MMBtu	$ 8.68	$ 8.86	2%
Total Benefits	$ 104,184,334	$ 143,791,639	38%
Total Spending	$ 31,846,313	$ 34,775,539	9%
Benefit Cost Ratio (RI Test)	2.47	3.25	31%
C&I EE Program Charge per Dth	$ 0.758	$ 0.782	3%
Residential EE Program Charge per Dth	$ 0.928	$ 1.004	8%

As noted in previous PUC dockets, Annual Plans may contain budgets and energy efficiency program charges that vary from those contained in the Three-Year Plan.[25] The Three-Year Plan creates savings targets and illustrative budgets to guide the Company in the development and long-term strategy of its Annual Plans over the upcoming three-year period. After the Company files the Three-Year Plan, there are numerous factors that may lead to changes in funding needs and savings availability. These factors include: updates to the ~~a~~Avoided Energy C~~c~~ost S~~s~~tudy, electric and gas sales, available fund balance, ISO-NE's FCM auction proceeds, evaluation results, market conditions, customer preferences, and changes in legislation.

[25] PUC Order No. 21781 approving National Grid's September 2, 2014 Energy Efficiency and System Reliability Procurement Plan for three-year period 2015-2017. Written Order issued 12/19/14.

For the Annual Plan, the electric and natural gas energy efficiency portfolio savings, benefits, budgets, and energy efficiency program charges differ compared to the illustration presented in the Three-Year Plan. There are several factors contributing to this difference.

~~i.~~

i. **Evaluation Results**

Table 9. Changes from 2018 – 2020 Three Year Plan to the 2020 Annual Plan

Electric Program	Changes from 3YP to 2020 Plan	
	Annual MWh	%
C&I Total	**(8,960)**	**-7%**
Large Commercial New Construction	1,505	8%
Large Commercial Retrofit	(10,618)	-11%
Small Business Direct Install	152	2%
	-	-
Income Eligible Total	**(1,542)**	**-20%**
Income Eligible Single Family	(1,542)	-37%
Income Eligible Multifamily	-	0%
	-	-
Residential Total	**(7,769)**	**-14%**
Residential New Construction	88	12%
Energy Star HVAC	151	5%
EnergyWise	(1,588)	-29%
EnergyWise Multifamily	-	0%
Home Energy Reports	(3,787)	-15%
Energy Star Lighting	(2,373)	-15%
Energy Star Products	(259)	-11%
		-
Grand Total	**(18,271)**	**-10%**

Commented [RJ9]: Will be updated with 3rd draft.

Evaluation results impact the portion of gross savings that the Company can claim as attributable to its energy efficiency programs.

~~The evaluation of several programs (i.e.~~Several evaluations such as C&I Upstream HVAC~~, and~~ C&I Upstream Lighting impact~~, t~~ and net-to-gross studies, Residential Lighting and Products net-to-gross studies, and Income Eligible Services Single Family Program Impact ~~Evaluation) showed that programs generated~~found lower electric savings for participants or measures than initially anticipated. The application of these evaluation findings results in lowered annual and lifetime electric savings that can be attributed to the energy efficiency programs in the proposed 2020 Annual Plan compared to 2020 in the Three-Year Plan. As a result of these evaluation studies, the Company estimates it will claim 18,721 annual MWh less in the 2020 annual plan than was planned for 2020 in the three-

year plan. –More information about specific evaluation results is included in Attachment 3.

For gas, C&I Custom impact studies and the C&I Free Ridership and Spillover Study showed that programs generated higher gas savings for participants than originally estimated. In addition, higher savings per participant in the gas Home Energy Report program has also led to higher claimable savings. The application of these evaluation findings and the higher savings per participant for the gas Home Energy Report program resulted in the Company setting higher annual and lifetime gas savings goals in the Annual Plan than in the Three-Year Plan.

Table 10. Evaluation Result Changes from the 2018 – 2020 Three-Year Plan to the 2020 Plan, Natural Gas Programs

Gas Programs	Change from 3YP to 2020 Plan	
	MMBtu	%
C&I Total	**3,559**	**2%**
Large Commercial New Construction	446	1%
Large Commercial Retrofit	3,064	2%
Small Business Direct Install	49	2%
Commercial & Industrial Multifamily	-	0%
	-	
Income Eligible Total	**(5,289)**	**-18%**
Income Eligible Single Family	(5,289)	-40%
Income Eligible Multifamily	-	0%
	-	
Residential Total	**35,714**	**23%**
Energy Star Heating System	488	2%
EnergyWise Multifamily	-	0%
Home Energy Reports	35,381	46%
Residential New Construction	(154)	-4%
EnergyWise Single Family	-	0%
Grand Total	**33,984**	**8%**

ii. Updated Sales and Fund Balance Projections

The energy efficiency program charge for electric and gas customers varies from the Three-Year Plan to 2020 the Annual Plan for several reasons, including updates to the sales projections, fund balance projections, and program budgets, which are all factors in

the calculation of the charge. These values could change further when the Company files an updated fund balance on December 2, 2019 as proposed in Section 6(a).

The combination of a decrease in the electric sales forecast since the Three-Year Plan was filed, a higher electric budget, lower revenue from the ISO-NE Forward Capacity Market, and a negative projected year-end 2019 fund balance of ~~$6.1~~ $2.6 million have increased the electric energy efficiency program charge from $0.01193 per kWh in the Three-Year Plan to ~~$0.01449~~ $0.01343 per kWh in the Annual Plan.

The natural gas energy efficiency program charge increased from $0.928 per Dth in the Three-Year Plan to ~~$1.077~~ $1.004 per Dth in the Annual Plan for residential customers and from $0.758 per Dth to ~~$0.842~~ $0.782 per Dth for C&I customers. The increase in these charges is primarily driven by a negative projected 2019 year-end fund balance of ~~$3.3~~ $2.6 million~~.~~

iii. Lifetime Savings and Benefits

In the proposed 2020 Annual Plan, ~~E~~electric ~~l~~Lifetime MWh savings are lower than in the Three-Year Plan due to the reduction of the portion of gross savings attributed to the programs as detailed in section A above. In addition, more of the annual electric MWh savings are coming from the residential sector, specifically ENERGYSTAR ~~nergyStar~~ lighting, than was anticipated at the time of the Three-Year Plan filing. Residential measures on average have fewer lifetime MWh savings than C&I measures and lighting lifetimes savings across all residential programs are impacted due to the federal Energy Independence and Security Act (EISA) lighting standards~~.~~. As stated in section 4, the Three-Year Plan illustrated annual and lifetime MWh, kW and benefits if a large CHP was installed in 2020 and that some large CHP opportunities have been deferred and will not move forward within the three year time frame.

Gas lifetime savings are slightly higher. This is primarily driven by increases in lifetime MMBtu goals driven by the income eligible multifamily gas program than was planned in the three-year plan.

Total benefits increased in the electric and gas sectors due to the application of updated avoided cost values from the "Avoided Energy Supply Components in New England: 2018 Report" (2018 AESC Study). The 2018 AESC Study found higher avoided costs for fuel oil and values for electric capacity demand reduction induced price effect (DRIPE) and oil DRIPE, which were estimated to be non-existent or were not calculated in the AESC 2015 Study ~~shown in Table 5 below~~ shown in 2018 dollars in Table 11.

Table 11~~13~~. 2018 AESC Study DRIPE Values Relative to 2015 AESC Study[26]

~~Table 5. 2018 AESC Study DRIPE Values Relative to 2015 AESC Study[27]~~

	AESC 2015 cents/kWh	AESC 2018 cents/kWh	% Difference
Capacity DRIPE	0.00	0.91	-
Energy DRIPE	1.24	1.91	54%
Subtotal: DRIPE	**1.24**	**2.81**	**128%**

The study also quantified new benefits for non-embedded NOx reduction benefits, value of improved reliability, and avoided pool transmission facilities (PTF) costs. The macroeconomic multipliers for the economic benefits of investing in cost-effective energy efficiency were also updated from a recent study "Review of RI Test and Proposed Methodology" prepared for National Grid by the Brattle Group, January 31, 2019~~—~~. Due to all these factors the benefits have increased in 2020 when compared to 2020 in the Three-Year Plan.

iv. Increased Savings or Customer Offerings beyond Three-Year Plan

The Company has strived for innovative or increased savings beyond those projected in the Three-Year Plan~~—~~. For example, the 2020 plan proposes a significant increase in residential lighting products compared to what was illustrated in the Three-Year Plan: 2.8 million versus 1 million. The Company also proposes to serve approximately 50,000 more homes with home energy reports than in the Three-Year Plan. Additionally, the 2020 Plan plans to serve more customers through Income Eligible Single Family, Residential New Construction and Small Business Direct Install. Although the evaluation changes and lack of large-scale CHP, described above, make the Three-Year electric savings targets harder to achieve, the Company has continued the pursue maximum achievable savings by finding ways to serve more customers~~—~~. This includes launching new go-to-market strategies like the hospitality and grocery initiatives, described in Attachment 2.

[26] Values from 2018 Avoided Cost Study ES-Table 1.
[27] ~~Values from 2018 Avoided Cost Study ES-Table 1.~~

~~18.~~5. Strategies to Achieve Goals

The primary goal of the Annual Plan is to create[28] cost-effective energy savings for Rhode Island electric and gas customers through energy efficiency. This Plan has sought to balance pursuing energy and financial savings from current technologies and programs while also seeking to identify new technologies, finance channels, and programs to continue delivering savings to Rhode Island customers for years to come. The Plan achieves the goals laid out above by implementing the following key priorities, introduced in Docket 4684:

1. **Customers** - Deliver comprehensive energy efficiency services that encompass all market segments and customers. Such services will enable customers to control their energy use, manage their peak energy use, reduce their bills, and help support their financial well-being.
2. **Least Cost** - Deliver energy efficiency services as cost-effectively as possible through optimizing finance and promoting upstream initiatives. Continuing to deliver cost-effective energy savings under Least-Cost Procurement will create cost savings to all customers, while creating economic benefits that create and maintain local jobs and businesses~~.~~.
3. **Environment** - Provide solutions that minimize greenhouse gas emissions and contribute to Rhode Island's clean energy policy goals, including the Resilient Rhode Island Act~~.~~.
4. **Future** - Innovate to capture savings from new technologies and strategies to position energy efficiency programs for the future including the integration of energy efficiency with active demand response, electrification of heat and hot water, renewable energy, and smart grid technologies. This includes incorporating outcomes from the Rhode Island Power Sector Transformation Initiative and Docket 4600~~.~~.

~~19.~~6. Delivering 2020 Goals

National Grid will build on its almost ~~thirty~~ 30 years of experience to deliver the energy and cost savings goals in this Plan.[29] Below are some key considerations ~~that~~

[28] Please see Sec. 1 Introduction and Summary for an overview of the stakeholder process that was undertaken to create this 2020 Annual Plan.

[29] Throughout the program year, the Parties may consider additional enhancements beyond those identified in this Plan as more information becomes available to support an informed review of those potential changes~~.~~. As part of this process of identifying additional enhancements, in addition to continuing to meet with the ~~Collaborative~~TWG, the Company will continue its work sessions with the EERMC's consultants~~.~~.

~~impacted~~impacting ~~how programs were planned to be delivered in~~in the planning of 2020 energy ~~efficiencte~~efficient programs. These key considerations include:

- Customer Strategy, Segmentation Insights and Feedback
- Electrification of Heat
- Commitment to Active Demand Response
- Natural Gas Program Offerings
- The Future of Lighting

~~as well as~~as Also included is an explanation of the Residential and Commercial and Industrial programs, and a high level summary of what has changed for the 2020 program year.

i. **Customer Strategy, ~~and~~ Segmentation Insights, and Feedback**

Today's customers are enjoying new and higher levels of service and convenience thanks to the application of advanced technology, digitalization, and big data across industries. While safety, reliability and affordability remain the foundation of the Company's services for its customers, the Company is expanding its efforts to respond to a growing range of personalized customer needs for visibility, control, choice, and convenience in their energy experience. Based on recent surveys and industry intelligence, National Grid customers:

- Expect their energy experience to be affordable;
- Show a willingness to alter energy use to achieve savings;
- Want to easily access their energy usage data from a variety of channels;
- Use connected devices for greater control of the power coming into their homes;
- Request tailored, personalized choices for energy consumption options; and
- Need convenient energy services and solutions.

~~National Grid~~The Company also recognizes that maximizing customer engagement requires a deeper understanding of who the Company's customers are, what they need, and what they want. To better understand how those needs and desires differ across customers, the Company recently completed a deep needs-based customer segmentation analysis of residential and commercial customers across its territory, based on surveys around needs, attitudes, product awareness and interest. Through this process, the Company identified six residential and five commercial segments, each of which contains in-depth profiles of energy-related attitudes, products and services customers are interested in, engagement preferences and favored means of interaction. As a result of this work, the Company is well positioned to engage customers on relevant energy efficiency program offerings.

Further, the Company is constantly in contact with customers and works diligently to address customer concerns and implement recommendations that lead to a better customer experience. Some avenues customers use to provide feedback to the Company include the contact center, vendors, surveys, letters to management, and the website~~.~~ —. The Company's program managers work through all ~~of~~ these avenues to ensure that the feedback provided is actionable and the customer receives a response when appropriate. In many circumstances, programs have been modified to better align with the customer needs based on feedback gathered through these channels.

In 2018, the Company held a "Customer Listening Forum" in downtown Providence at the Omni Hotel to present information on energy efficiency programs and solicit open and honest feedback~~.~~ —. A white paper summarizing the outcomes of this event was provided as Attachment 9 to the 2019 Energy Efficiency Plan. The Company will use learnings gathered from this event, such as focusing on improving data quality and marketing programs in new and innovative ways, to improve the program experience in 2020. For the next three-year planning cycle to being in 2020, the Company intends to hold another Customer Listening Forum.

ii. Electrification of Heat~~:~~

Electrification of heat is a key pillar in the support of RI's carbon reduction goals, the Revised Standards and National Grid's Northeast 80 x 50 Pathway[30] an integrated strategy to reduce greenhouse gas emissions deeply below 1990 levels while supporting economic growth and maintaining affordability and customer choice. At the end of 2018, a small number of high efficiency air source heat pumps were introduced as a heating solution for customers with electric resistance, oil and propane heat to transition to a more energy ~~efficiencienty~~efficient and less carbon intensive heating option. In 2019, this heating option was broadened by increased quantities and delivered through a larger number of approved contractors.

In 2020, ~~The~~ the Company is proposing to ~~increase~~ nearly double the number of homes to be incentivized to displace their existing oil, propane, or electric resistance heat with high efficiency electric heat provided by air source heat pumps. This growth will be supported by a growing number of approved contractors to design and install the systems, and through improved financing processes. In 2020, the Company will continue to improve the electrification of heat offer based on lessons learned and ongoing program improvements to increase adoption of this heating solution.

[30] https://news.nationalgridus.com/2018/06/national-grid-releases-northeast-80x50-pathway/

~~Electrification of heating supports the goals of RI state policy, the Revised Standards and National Grid's Northeast 80 x 50 Pathway.~~

Increasing the number of homes proposed for electrification of heat will be reflected in the market rate, multifamily, and income eligible markets to help customers save energy and money on their bills and to also provide a meaningful contribution to the state's climate goals. Through the existing electric HVAC program, the Company has strong vendor networks, training capabilities, and access to data that will help identify homes where air source heat pumps would be an ideal solution for displacing/replacing oil, propane or electric resistance.

Coordination and collaboration among the Company, RI OER, RI Division, RI EERMC, Oil Heat Institute, Northeast Energy Efficiency Partnerships (NEEP) and other stakeholders will ~~strive~~ drive the anticipated~~to effectively~~ ~~accelerate~~ acceleration of electrification strategies across RI.

The ~~program~~ electrification of heat offer will continue to concentrate on the following program elements:

- ~~Establishing~~ Working with RI OER and Division to support Executive Order 19-06 and the development of a comprehensive approach for a lower-carbon heating future~~.a plan for accelerating electric heat adoption to meet State and utility greenhouse gas goals.~~
- Training contractors on accurate sizing, installation and customer education
- Educating customer pre-purchase and post-installation~~.~~
- Coordinating ~~with~~ across National Grid business units to identify opportunities to advance electrification of heat~~.Regulatory Strategy and the RI System Reliability Plan on locational benefits and incentives.~~
- Supporting ~~the~~ manufacturers as they advance~~ment of~~ the effectiveness ~~integrated~~of integrated controls for optimizing use of electric heat and the ability to support demand response capabilities~~.~~
- Supporting the development of customer-facing tools for choosing heating type~~.~~
- Collaborating with stakeholders (the Company, RI OER, RI Division, RI Oil Heat Institute, NEEP and manufacturers) to accelerate the ~~decarbonization~~ electrification of the residential heating sector by reducing barriers ~~(The Company, RI OER, RI Oil Heat Institute, NEEP and manufacturers)~~. This may be in the form of a state-wide and/or regional forum~~.~~
- Incorporating high efficiency electric heat as a metric in the Community Program (see Attachment 1)~~Challenge.~~
- Supporting the development of – or transition to - low load and net zero energy homes heated by energy efficient air source heat pumps~~.~~

iii. Commitment to Active Demand Response:

In this Plan, the Company is proposing to grow the active demand response offerings and expand them into new technologies. For over 3 years the company has offered active demand response programs. These programs were offered as demonstrations in 2017 and 2018. These active demand response programs, residential and commercial, proved to cost effectively reduce peak loads and were converted into standard programs in 2019.

Initially, the active demand response programs focused on customer-initiated demand response for commercial and industrial customers and thermostat-based demand response for residential customers. Using this as a base, the Company has expanded this to include battery storage on the residential side and is proposing to further expand the program to battery storage on the commercial and industrial side as well as iconcorporating electric vehicles.

The Company has discovered some hurdtles that could slow the growth of battery-enabled active demand response in the Net Metering and RE-Growth programs. The Company is working proactively with stak. The Companyeholders to adapt these programs to allow paired solar + storage facilities greater than 25kW.,.

Natural Gas Program Offerings: ~~Natural Gas Program Offerings:~~

For more than a decade ~~National Grid~~the Company has helped customers reduce their natural gas consumption and associated costs and carbon footprint ~~save gas~~ through energy efficiency. ~~that has helped customers reduce costs, decrease their carbon footprint, reduce environmental impacts and support system reliability independent of customer fuel choice.~~ While Rhode Island ~~considers~~ pursues the Heating Sector Transformation per Executive Order 19-06~~transformation of heating~~,[31]~~,~~ there are near term customer and environmental benefits to be gained from ~~the continued customer~~ energy efficiency. Consistent with the Comprehensive Energy Conservation, Efficiency, and Affordability Act of 2006, R.I. Gen. Laws § 39-2-1.2, and the Least Cost Procurement Standards, ~~National~~ the Company~~Grid~~ will continue to offer cost effective natural gas energy efficiency in 2020 and has set ~~ambitious~~ targets~~,~~ above the 2018 – 2020 Three Year Plan~~,~~ in order to achieve these savings and benefits.

[31] http://www.governor.ri.gov/documents/orders/Executive%20Order%2019-06.pdf

Additionally, ~~in~~in 2020, the Company will expand the Commercial and Industrial Gas Demand Response (DR) pilot that was launched in 2018-2019 winter to address grid constraints and help provide reliable service to our customers. The pilot will be statewide and initial outreach will focus in areas of high value. With this pilot the Company will continue to learn about the reduction of gas system peak demand via a reduction in overall natural gas consumption, customer adoption of gas DR as well as incentive levels to drive participation. An in-depth study will also be completed to quantify winter demand benefits, more information is available in Attachment 3. ~~Testing~~ Piloting gas DR will allow the Company to understand the impact on gas and electric systems, as well as understanding if National Grid's role in the market influences rates of adoption. More information is available in Attachment 8.~~–~~

Looking forward to the 2021 – 2023 Three Year Plan, the Company will assess gas energy efficiency incentives to determine customer needs while satisfying the goals of Executive Order 19-06, Heating Sector Transformation in Rhode Island.

~~iv.~~

iv. **Future of Lighting**~~As a result of the successful transformation of the residential lighting market, savings per bulb have been reduced to reflect natural adoption in the marketplace. Shelf stocking studies show a reduction in square footage allocated to lighting products due to the expanded lifetime of the product. Retail partners describe how they have changed their floor plans and how that useful square footage is now accommodating other products. At the same time, RI program efforts have resulted in larger ENERGY STAR LED sales as well as lower non-ENERGY STAR LED sales as compared to states that do not offer residential lighting programs. While the success of the program has resulted in a nearly transformed market, there remains residential lighting opportunities in 2020 that will be supported during these transition years to a fully transformed market. There has been an increasing focus on supporting hard-to-reach areas including the RI Food Banks which will continue during 2020. A refreshed online marketplace was introduced in 2019 which may appeal to younger renters and homeowners. The Company is also increasing both the EnergyWise and Income Eligible Programs to move funding spent on residential lighting~~

The ~~original~~2018-2020 ~~three-year Energy Efficiency plan~~3YP had 2020 slated as a transition year where the majority of residential lighting products would be required to meet the Energy Independence and Security Act (EISA) 2007 legislation that granted the

Department of Energy (DOE) the authority to improve the efficiency of light products. EISA, as originally designed, would have made the majority of lighting products in the residential lighting program the baseline product and no longer eligible for lighting incentives.

However, in early July of 2019, DOE sent its final rule on the general service lamp (GSL) definition which withdraws seven categories of lightbulbs from the GSL category. The Office of Management and Budget has up to 90 days to review and release the final rule. The policy update indicates that there is uncertainty in the specific federal ruling for efficient lighting with a definitive ruling unavailable during the 2020 planning timeline.

Given the uncertainty on the regulatory level, the Company still views residential lighting as an important offering in capturing all cost-effective savings. Even with savings reduced to account for the market transformation of efficient lighting, the ENERGY STAR® Lighting program is still the most cost-effective residential offering. Efficient lighting makes electric bills more cost effective and the low cost offered by energy efficiency programs make efficient lighting accessible to all. The Company will be following the federal policy and will work to adapt the programs to serve customers, capture all cost-effective savings, and support local retailers. Evaluations (explained in more detail in the ENERGY STAR Lighting section in Attachment 1) identify that opportunities still exist with specialty bulbs and for lighting that is much brighter than 60-Watt incandescent bulbs or low-level lights that produce less illumination than a 40-Watt incandescent bulb.

Looking beyond 2020, lighting will be supported in accordance with least cost procurement. While the savings available through residential lighting continue to decline, resources will be redirected to other residential areas and to new technologies or processes that may yield new energy savings ~~opportunites~~opportunities.

~~into longer term energy savings areas.~~

v. Residential Programs

In 2020, the ~~Parties~~ Company ~~agree to~~will continue the residential programs offered in 2019.~~.~~ The ~~Parties~~ Company also agrees to ~~offer new programs and demonstrate~~examine the potential of ~~the development of~~ new technologies for ~~potential~~ inclusion in programs in future years~~.~~. The programs are summarized in Table 12 below and described in ~~further~~ greater detail in Attachment 1~~, along with descriptions of what is new in 2020.~~.

~~The description of each program includes proposed changes from 2019 that are intended to help meet the savings targets for 2020.~~

Table 12~~14~~. Overview of Residential Energy Efficiency Programs

~~Table 6. Residential Energy Efficiency Programs~~		
Program Name	**Program Description**	**Changes for 2020**
EnergyWise Program (Funded by Electric and Gas)	Energy*Wise* offers single-family customers (buildings with 1-4 dwelling units) home energy assessments and information regarding their actual energy usage. Participants in this program receive energy efficiency recommendations and technical assistance as well as financial incentives to replace items such as inefficient lighting fixtures, appliances, thermostats, and insulation levels with models that are more energy efficient. The program addresses base load electric use and heating and cooling energy loads in all residential buildings. The program recommends efficient products that are delivered through National Grid's various programs as well as solar opportunities provided through statewide solar initiatives. The program will continue to deliver finance opportunities to customers such as the Heat Loan and the Rhode Island Infrastructure Bank's residential financing opportunities, when available.	• Energy*Wise* is ~~planning with~~proposing the largest participation ~~number of home energy assessments and weatherization~~ goal~~s for this program~~ in the history of the program. In planning to overcome the reduction of savings from the ENERGY STAR® Lighting program, Energy*Wise* ~~is one strategic offering that~~ will look for longer term energy savings opportunities.
EnergyWise Multifamily Program~~s~~ Income Eligible, Residential and Commercial sectors (Funded by Electric and Gas)	Comprehensive energy services for market-rate multifamily customers (buildings with 5+ dwelling units) include energy assessments, incentives for heating and domestic hot water systems, cooling equipment, lighting, and appliances. Coordinated services will be offered for all types of multifamily properties. An approach tailored for multifamily properties designates a primary point-of-contact to manage and coordinate services offered	• In 2020 the Company will review and assess multifamily marketing efforts to identify how the program can make improvements in its marketing efforts. ~~Included in this will be outreach to Community Development Corporations (CDCs) to see how the Company and its vendor can best work with these~~

~~Table 6. Residential Energy Efficiency Programs~~		
Program Name	**Program Description**	**Changes for 2020**
	through the Company's existing portfolio, including EnergyWise, C&I Retrofit, Residential New Construction, Income Eligible, and the ENERGY STAR® HVAC programs~~.~~.	~~organizations to identify additional project sites.~~
~~**Income Eligible Single Family** (Funded by Electric and Gas)~~	~~Income Eligible Single (IES) Family Services are delivered by local Community Action Program (CAP) agencies with oversight provided by a Lead Industry Partner. Three levels of home energy assessments are offered: (1) lighting and appliance, (2) heating and weatherization, and (3) comprehensive. Customers who qualify for LIHEAP are eligible to receive all services and equipment upgrades at no cost.~~	~~• Work with the National Grid Customer Service Center efforts to encourage income-eligible customers to register for the income-eligible rates and sign up for no-cost IES energy efficiency services.~~ ~~• Collaborate with the CAPS and DHS to increase the number of qualified AMP/weatherization and heating auditors to meet the needs for anticipated growth in EE services.~~ ~~• Incorporate improvements based on the learnings from the 2018 process evaluation.~~ ~~• Engage with local and national stakeholders and thought-leaders to discuss the interplay of benefits between energy efficiency, healthcare and renewable energy industries.~~
Residential New Construction and Building Energy Code and Appliance Standards (Funded by	The Residential New Construction (RNC) program promotes the construction of high-performing energy efficient single family, multifamily, and ~~low~~ income eligible~~income~~ homes, as well as the education of builders, ~~tradesmen~~tradespeople, designers, and code officials.	• New incentive for all-electric homes to promote fossil-fuel free new construction. ~~High Efficiency all-electric incentive path coupled with stringent air tightness standards and high efficiency heating, cooling and hot water equipment.~~ • New air tightness requirements will be added

~~Table 6. Residential Energy Efficiency Programs~~		
Program Name	**Program Description**	**Changes for 2020**
Electric and Gas)		to the existing tiered incentive structure for Tier 2 and above. • Provide technical guidance during the state's upcoming 2018 IECC code adoption process to help increase the efficiency of the State's next energy code.
Residential Home Energy Report Program (Funded by Electric and Gas)	The Home Energy Reports (HER) program is the Company's key program to achieve energy savings through changes in customer behavior by presenting personalized energy usage data and encouraging desired behaviors to reduce energy consumption. The Company will continue to deliver Home Energy Reports that offer enhanced feedback tools to inspire customers to take actions that reduce their energy consumption and also increase their participation in other energy efficiency programs.	• The Company will launch a Target Rank campaign over six months showing customers their energy use rank compared to similar neighbors. Target Rank reports are designed to encourage consistently high users to lower their energy use by providing an alternative experience and an achievable goal • Context-aware tips and personalized tip savings estimates will be provided in 2020.
ENERGY STAR® Lighting (Funded by Electric Only)	This program is implemented jointly with other regional utilities~~.~~ . It provides discounts to customers for the purchase of ENERGY STAR® lighting through instant rebates, special promotions at retail stores, pop-up retailer, and social marketing campaigns.	• The Company will focus on tracking policy changes to residential lighting standards and the market to adapt the ENERGY STAR lighting program appropriately. The goal is to support the market as needed without a negative impact to market transformation as incentives decline and ultimately are no longer required. As in prior years, the food banks and hard-to-reach opportunities

~~Table 6. Residential Energy Efficiency Programs~~		
Program Name	**Program Description**	**Changes for 2020**
		will continue to be supported.
Residential Consumer Products (Funded by Electric Only)	This program is run in collaboration with other regional utilities to promote the purchase of high efficiency household appliances, including kitchen appliances and electronics. These appliances carry an ENERGY STAR® label~~.~~. The program also offers refrigerator recycling, which promotes more efficient refrigerators while removing non-efficient units from the market~~.~~.	• In 2020, National Grid is planning to test instant consumer rebates. Consumers will be able to prequalify for a retailer's in store coupon and have the incentive applied during the sale transaction of select consumer products. • The benefit is that post purchase consumer incentives will not be required along with the wait time that results with post purchase processing. The Company will also be continuing the low-e storm windows effort that began in late-2019. • The Online Marketplace, which was refreshed in 2019, will include modules that assist the consumer in selecting more efficient consumer products.
ENERGY STAR® HVAC Program (Funded by Electric and Gas)	This program promotes the installation of high efficiency central air conditioners for electric customers and new energy efficient natural gas related equipment including boilers, furnaces, water heating equipment, thermostats, boiler reset controls. Incentives for energy efficient air source heat pumps for space and water heating equipment are available for customers with oil, propane or electric resistance heating/hot water.~~, and furnaces equipped with high efficiency fans.~~ . The program provides training of contractors to increase	• The new Online Marketplace will promote the following energy efficient HVAC equipment: Thermostats, Water Savings Equipment, heat pump ~~Water~~ water ~~Heater~~heaters.

~~Table 6. Residential Energy Efficiency Programs~~		
Program Name	**Program Description**	**Changes for 2020**
	accurate installation practices, testing of the high efficiency systems, tiered rebates for new ENERGY STAR® systems, and incentives for checking new and existing systems~~.~~. ~~The program also includes oil and propane heating equipment rebates.~~	
~~**Community Based Initiatives** (C&I and Residential, Funded by Electric and Gas)~~	~~The initiative is designed to leverage trusted community partnerships and develop targeted marketing strategies in order to promote all energy efficiency programs, residential and commercial, in specific targeted communities or businesses.~~	~~• Increased focus will be placed on the promotion of new technologies within the communities such as cold climate mini split heat pumps, Wi-Fi Thermostats, and demand response offerings and locational incentives will be considered.~~ ~~• More emphasis will be placed on the small business component of the program with "Main Street" direct install initiatives occurring in 2020.~~
Residential Connected- Solutions (Demand Response) (Funded by Electric)	Residential ConnectedSolutions focuses on reducing peak load through the use of wi-fi thermostats and other eligible technologies which may include batteries, lighting, water heaters, pool pumps, electric vehicles, and other devices.	• The electric vehicle program will be new for 2020 if the data reporting element can be accomplished. This offering was scoped in 2019 but was not feasible due to limited manufacturer data reporting. • The program also grows by looking to add additional product manufacturers into the program.
Residential Pilots (Funded by Electric and Gas)	In 2020, the Company will continue the Zero Energy Home pilot to help accelerate the zero energy home market in Rhode Island. In 2020 the pilot will focus on four main areas: Education and Awareness, Workforce Development, Project Incentives, and Marketing.	• The Company will continue the Zero Energy Home pilot to help accelerate the zero energy home market in Rhode Island. In 2020 the pilot will focus on four main areas: Education and Awareness, Workforce

~~Table 6. Residential Energy Efficiency Programs~~		
Program Name	**Program Description**	**Changes for 2020**
		Development, Project Incentives, and Marketing.
Education Programs (Funded by Electric Only)	The Company promotes energy education to private and public schools and youth groups through the National Energy Education Development (N.E.E.D) Program. This program provides curriculum materials and training to students and teachers in grades K-12.	

vi. **Residential Income Eligible Programs**

The Company and the Parties want customers who have a high energy burden and/or difficulty paying their electric bills to participate in, and benefit from, the Company's energy efficiency programs~~.~~. Therefore, this segment of the customer base is designated as a unique sector, and funding for this sector will be subsidized by both ~~non-low-income~~residential customers who do not qualify for income-eligible services ~~residential customers~~ and commercial and industrial customers using 15% of total implementation funding for the electric programs, and 26% for natural gas programs~~.~~.

Commented [RL10]: 3rd version: This value will be compared to last year's value and to the number of people served to provide context if it is a high, low or average value.

In addition to the Income Eligible Single Family and Multifamily programs, the Residential New Construction Program also works with housing authorities and developers to build energy-efficient multifamily properties~~.~~. Additional details about the services offered to customers who are economically disadvantaged ~~customers~~ are described in the residential programs in Attachment 1. ~~P~~Please see Table 13 below for an overview of the Company's Income Eligible Programs.

Table 13~~15~~. Overview of Income Eligible Programs

Program Name	**Program Description**	**Changes for 2020**
Income Eligible Single Family (Funded by	Income Eligible Single (IES) Family Services are delivered by local Community Action Program (CAP) agencies with oversight provided by a Lead Industry Partner~~.~~. Three levels of home energy assessments are offered:	• Work with the National Grid Customer Service Center efforts to encourage income-eligible customers to register for the income-eligible rates

Program Name	Program Description	Changes for 2020
Electric and Gas)	(1) lighting and appliance, (2) heating and weatherization, and (3) comprehensive. Customers who qualify for the A-60 rate and for Low-Income Home Energy Assistance Program (LIHEAP) are eligible to receive all services and equipment upgrades at no cost.	and sign up for no-cost IES energy efficiency services. • Collaborate with the CAPS and RI Department of Human Services (DHS) to increase the number of qualified AMP/weatherization and heating auditors to meet the needs for anticipated growth in EE services. • Incorporate improvements based on the learnings from the 2018 process evaluation. • Engage with local and national stakeholders and thought-leaders to discuss the interplay of benefits between energy efficiency, healthcare and renewable energy industries.
Income Eligible Multifamily Program Income Eligible (Funded by Electric and Gas)	Comprehensive energy services for multifamily customers (buildings with 5+ dwelling units) that also meet the criteria for "income eligible" as defined in the Attachment 1 section titled "Multifamily". These services include energy assessments, incentives for heating and domestic hot water systems, Air Source Heat Pumps, cooling equipment, lighting, and appliances. There are no costs to the customer for these services as all income eligible upgrades are covered at 100%.	• Included in this will be outreach to Community Development Corporations (CDCs) to see how the Company and its vendor can best work with these organizations to identify additional project sites.

vii. Commercial and Industrial Programs

In 2020, the ~~Parties~~ Company agree~~s~~ to continue the commercial and industrial programs offered in 2019 and assess new technologies for potential inclusion in programs in future years~~.~~. These programs are summarized in Table 14 ~~the table~~ ~~Table 4~~ below. For greater detail on the program, please see Attachment 2.

Table 14~~16~~. Overview of Commercial and Industrial Energy Efficiency Programs

~~Table 7. Commercial and Industrial Energy Efficiency Programs~~		
Program Name	**Program Description**	**Changes for 2020**
Large Commercial New Construction and Building Energy Code and Appliance Standards (Funded by Electric and Gas)	This program promotes energy efficient design and construction practices in new and renovated commercial, industrial, and institutional buildings~~.~~. The program promotes and incentivizes the installation of high efficiency equipment in existing facilities during building remodeling and at the time of equipment failure and replacement~~.~~. Large Commercial New Construction aims to prevent or mitigate lost opportunities because a customer who does not install energy efficient equipment at the time of new construction or equipment replacement will likely never make the investment for that equipment or will make the investment at a much greater cost at a later time. The program also promotes energy efficient building design for new construction projects and for major renovations. The program provides both technical and design assistance to help customers identify efficiency opportunities in their new building designs and to help them refine their designs to pursue these opportunities. Incentives are also offered to owner's design teams for their time and effort to meet program requirements. Operations Verification or quality assurance is also offered to ensure that the equipment and systems operate as intended. The program also promotes compliance with the building	• Rhode Island is currently using the code IECC 2012; the State of Rhode Island will adopt the IECC 2015 code in November of 2019. The Company has revised the program incentive structure and set the level of performance above code for incentives at 10% or 15%, depending on building size~~XXXX~~, based on an internal study conducted in 2019~~.~~. • ~~Conditional to stakeholder agreement on near and long-term pathways for claiming savings for advancing the state's adoption of more efficient energy codes, T~~the Company will provide technical guidance during the state's upcoming~~next~~ 2018 IECC code ~~building code update~~adoption process to help increase the efficiency of the State's next energy code.~~(IECC 2018) in 2020.~~

~~Table 7. Commercial and Industrial Energy Efficiency Programs~~		
Program Name	**Program Description**	**Changes for 2020**
	energy code and increased use of the Stretch Code to support the State's goals and objectives. In addition, it provides technical assistance in advancing the development and adoption of minimum efficiency standards for appliances and equipment. Finally, the program supports the States Zero Energy Building (ZEB) goals through engagement and development of ZEB programs in the future.	
Large ~~Commercial Retrofit~~Commercial Retrofit (Funded by Electric and Gas)	Large Commercial Retrofit is a comprehensive retrofit program designed to promote the installation of energy efficient equipment such as lighting, motors, and heating, ventilation and air conditioning (HVAC) systems, thermal envelope measures, and custom measures in existing buildings~~.~~. All commercial, industrial, and institutional customers are eligible to participate~~.~~. The Company offers technical assistance to customers to help them identify cost-effective efficiency ~~opportunities, and~~opportunities and pays incentives to assist in defraying part of the material and labor costs associated with the energy efficient measures~~.~~. The Company also offers education and training, such as the building operator certification (BOC) training, to support the implementation and adoption of energy efficiency.	• In 2020 the Company will use a targeted approach for chain restaurants (not participating in the National Chain Restaurant SEMP initiative), in Rhode Island. • The Company will provide a targeted offering for the Lodging/Hospitality customer segment for more comprehensive energy efficiency savings than has previously been achieved by this segment. • K-12 schools will be part of the State SEMP in 2020. • New Lighting and HVAC demonstrations have been proposed in the 2020 that include, a high efficiency kitchen exhaust demonstration, enVerid, air filtration technology for HVAC savings and a comprehensive HVAC and

~~Table 7. Commercial and Industrial Energy Efficiency Programs~~		
Program Name	**Program Description**	**Changes for 2020**
		Lighting controls demonstration.
Small Business Direct Install (Funded by Electric and Gas)	The Small Business Direct Install Program provides direct installation of energy efficient lighting, non-lighting retrofit measures, and gas efficiency measures~~.~~ Electric customers who consume less than 1,000,000 kWh per year are eligible to participate~~.~~ There is no eligibility criterion for gas consumption. The program's lighting and non-refrigeration measures are delivered through one labor and one product vendor selected through a competitive bidding process~~.~~ The Customer share of the total project cost of a retrofit is discounted 15% for a lump sum payment or the customer has the option of spreading the payments over a two-year period, interest free~~.~~	• The Company will also explore the door to door direct install/audit scheduling model in municipalities not participating in the Community Initiative with areas dense enough to support this type of effort. • In 2020, the Company will be working with community leaders and stakeholders to set appropriate goals for serving businesses in areas that have with lower incomes and those in Environmental Justice zones. A number of tools will be used in this effort including past participation data and EPA's Environmental Justice Screening and Mapping Tool
Commercial Pilots (Funded by Electric and Gas)	In 2020, the Company will expand the Commercial and Industrial Demand Response gas pilot that was launched in 2018-2019 winter, to address grid constraints and help provide reliable service to our customers. In addition, the Company will continue the Zero Energy Buildings pilot in 2020 and	• In 2020, the Company will expand the Commercial and Industrial Gas Demand Response pilot that was launched in 2018-2019 winter to address grid constraints and help provide reliable service to our customers.

~~Table 7. Commercial and Industrial Energy Efficiency Programs~~		
Program Name	**Program Description**	**Changes for 2020**
	focus on such areas as: training and education for the building industry, benchmarking and building energy labeling effort. The Company will also look to partner with building owners and developers on potential Zero Energy Building projects in 2020.	• The Company will continue the Zero Energy Buildings pilot in 2020 and focus on such areas as: training and education for the building industry, benchmarking and building energy labeling effort. The Company will also look to partner with building owners and developers on potential Zero Energy Building projects in 2020.
C&I ConnectedSolutions (Demand Response) (Funded by Electric)	C&I Connected Solutions is technology agnostic and provides an incentive to C&I customers for verifiable shedding of load in response to a signal or communication from the Company. In 2020 the program has a goal of ~~enrolling 49~~enrolling 49 MW.	• In 2020 the program has a goal of enrolling 49 MW. In 2020 the Company will incent the performance of customers adopting innovative and emerging demand reduction technologies, like battery storage.
C&I Multifamily Program Commercial sector (Funded by Gas)	Comprehensive energy services for market-rate multifamily customers (buildings with 5+ dwelling units) include energy assessments and incentives for heating and domestic hot water systems and weatherization. Coordinated services will be offered for all types of multifamily properties. An approach tailored for multifamily properties designates a primary point-of-contact to manage and coordinate services offered through the Company's existing portfolio, including EnergyWise, C&I Retrofit, Residential New Construction, Income Eligible, and the ENERGY STAR® HVAC programs~~.~~.	• In 2020 the Company will review and assess multifamily marketing efforts to identify how the program can make improvements in its marketing efforts.

~~viii. Attachment 2 includes descriptions of these programs, along with what is new in 2020. Included in the description of each program are proposed changes from 2019 that are intended to help meet the savings targets for 2020.~~

~~ix.~~viii. **Portfolio-Wide Strategies**

~~x.~~ix. Community-Based Initiative

The Rhode Island Community-Based Initiative is the Company's energy efficiency awareness campaign that drives program participation by deep municipal engagement with residents and small businesses through the advocacy of local officials. The Company provides goals to the municipality to drive end-customer adoption of efficiency measures and small business program projects. These municipalities, in turn, work to achieve the goals with the help of volunteers and promotions at local events~~.~~. Small businesses are invited to workshops organized in conjunction with the local chamber of commerce or other local business organizations~~.~~. These workshops will inform customers about the National Grid Small Business Direct Install Program, Commercial Property Assessed Clean Energy (C-PACE) financing, and demand response~~.~~.

~~Start-up funding is provided to the municipality, along with C~~comprehensive marketing toolkits are provided to the municipality, along with ~~and~~ trainings empowering ~~employees to~~employees to ~~have a discussion about~~discuss energy efficiency with their residents and small businesses. Frequent check-in calls allow the communities to speak with the Company regarding progress and share tactics and ideas with other participating municipalities. Events are staffed throughout the campaign at various events and school functions. At the end of the year, municipalities earn grant monies ~~directly correlated to the~~based on achieving the agreed percentage increase in ~~volume of the~~ the identified goal. These funds are then utilized for energy saving projects on a municipal property, or on educational energy programs for community members.

In the first quarter of 2020, the Company will recruit Rhode Island municipalities based on ~~historical performance~~opportunities for increases ~~of~~ in residential and small business program participation as well as possible demand response opportunities. As the Company has run this successful effort since 2013, prior participating communities may again be invited to take part. The initiative will continue to coordinate with the System Reliability Procurement (SRP) team to determine ~~if~~ whether the RI System Data Portal (Portal) which was developed in 2018 could be a valuable tool for the use of educating towns, as well as the company in recruiting municipal participation~~.~~.

A continued focus for 2020 will be the promotion of new technologies within the communities such as cold climate ~~mini~~air source ~~split~~ heat pumps, Wi-Fi Thermostats, and demand response offerings. The Company will also consider including locational program incentives to drive increased participation in a measure that may be

underrepresented within that community. Examples could include ~~(e.g. A~~ special flash-sales for a measure such as a Wi-Fi thermostat, or a promotional increase in ~~the~~an incentive from $75 to $100~~)~~. ~~–~~Any increase in incentive would be determined by the Company considering budget, cost-effectiveness~~–~~. The purpose of this may be for driving community participation, meeting energy efficiency goals, creating equity~~–~~. If it is a part of SRP, it would follow SRP considerations noted in section 7.ii and the SRP Plan.

Small Business project promotions were included in the prior year and an increased focus will be placed on recruiting small business participation in 2020. Specifically, the company will utilize the "Main Street" approach through which the Company's lead vendor for the ~~SMB~~ Small Business program will go door to door in the community's main section of storefront to offer direct install measures on-site and propose larger energy saving opportunities upon a follow up visit.

x. Building Energy Code Support

The Company will provide two distinct types of technical guidance – code compliance support and code development support – to the residential and commercial construction markets.

First, the state's new building energy code, which is based on the 2015 International Energy Conservation Code (2015 IECC), will go into full effect in fall 2019. The Company has supported improved compliance with the energy code since 2013 and will continue its support as the state updates to a new code version.
Second, the State plans to finalize a subsequent energy code update to the 2018 IECC in 2020. The Company will – for the first time – provide technical guidance to the state code update process to help increase the efficiency of the state energy code.

1) Code Compliance Support

The Code Compliance Enhancement Initiative (CCEI) includes robust stakeholder engagement and industry group outreach, in-person classroom and hands-on trainings, project-specific technical assistance circuit riding, development and dissemination of documentation/compliance tools, and other services. CCEI will also continue to provide information to promote market awareness and uptake of the R.I. Stretch Code as well as high-level technical support for projects pursuing use of this voluntary standard. CCEI focuses on ground-up new construction for residential and commercial buildings but also addresses additions, renovations, and retrofits.

2) Codes and Standards Development Support

Supporting the development and adoption of more efficient minimum energy efficiency requirements for buildings and the energy-using products within them is a significant untapped energy savings opportunity. Presently, the state receives only 5.5 of the 11 points available for Codes & Standards in the ACEEE scoring, which holds Rhode Island back from increasing its rank.

The Company is uniquely qualified to help deliver statewide energy savings from providing technical guidance that advances adoption of more efficient codes and standards. The Company's repository of energy efficiency program data and significant financial resources for R&D provide a unique and well-supported perspective on the technical specifications inherent in establishing new codes and standards. In addition, the Company's vast network of relationships with product manufacturers, construction industry players, and other relevant stakeholders enables deep outreach that ensures any new requirements not only save energy but are practical in local markets. Furthermore, the Company proposes to only claim savings for its role in supporting successfully adopted codes and standards, which provides the State with uncommon risk mitigation: other potential service providers would likely require payment regardless of whether new requirements are adopted or not.

The Company will provide technical guidance during the State's upcoming 2018 IECC code adoption process to help increase the efficiency of the State's next energy code. Specifically, the Company will prepare energy code change proposals and backup analysis, engage relevant new construction market stakeholders to refine these proposals, and provide technical guidance to the State's Building Code Standards Committee throughout their review of the proposals.

Furthermore, Tthe Company will coordinate with stakeholders to develop an evaluation framework that may facilitate savings claims in the 2021-2023 Plan years for successfully adopted codes and standards. See Attachment 3 for further details. There is typically a multi-year time lag between when new codes and standards are proposed for adoption by the State, when they become effective, and when the buildings constructed under these codes are completed. Due to this time lag, no savings are expected to come to maturity from this potential effort until 2021 at the earliest.

xi. Workforce Development

National Grid is committed to promoting leadership in the community, various market sectors, trade organizations and associations by providing and sponsoring initiatives and outreach efforts for education, training and workforce development~~.~~.

As in previous years, the Company will continue to support opportunities to inform customers and trade allies/vendors/contractors, which serve various market sectors, about existing and new or emerging energy efficient technologies, building systems and design, building energy codes and standards, improved installation practices, and up-to-date operation and maintenance (O&M) procedures. By integrating local, regional, and national educational and training initiatives throughout National Grid's various C&I and Residential programs, the Company ~~hopes~~ strives to build awareness about the benefits of energy efficient technologies, market National Grid's energy efficiency programs, support ~~provide expertise and experience on the need for~~ integrated design, and improve construction and installation practices for ~~an~~ existing or new construction building projects. ~~Both t~~The C&I and Residential energy efficiency programs cross promote and, at times, ~~sometimes~~ ~~This includes~~ co-sponsor training opportunities with organizations including~~, including~~~~ship of~~ the Electrical League of Rhode Island, ~~and~~ ASHRAE, TEC-RI~~'s~~ and Rhode Island Builder Association ~~training sessions~~. ~~Information about National Grid's energy efficiency programs is also presented to members of several professional organizations including the Electrical League of Rhode Island and ASHRAE. Deeper energy savings, as well as other non-energy benefits, can be achieved for any given customer project when the customer, designer/engineer, or contractor/installer is able to express or share knowledge about an energy efficient technology, the associated costs, and energy savings potential.~~

~~-~~Energy Efficiency Jobs: One of the most evident economic benefits from energy ~~efficiency programs~~efficiency programs in Rhode Island is the number of associated jobs in the energy sector. Each year, ~~National Grid~~the Company is required to report~~s~~ on the number of jobs associated with ~~-~~its energy efficiency programs in the annual Rhode Island Jobs Report. The report is included in National Grid's Year-End Report, which is submitted to the PUC, and available on the Council's website. The 2018 report found that ~~the energy efficiency programs supported~~ 804 full-time equivalent (FTE) workers were associated with National Grid expenditures in 2018. These workers were spread across 1,109 different firms, 73% of which were located in Rhode Island~~.~~.

~~National Grid~~the Company has conducted ~~a number of~~several workforce development activities throughout the state that it will continue in 2020~~.~~. To help our contractors develop the skills needed to effectively deliver ~~our~~ Rhode Island's energy efficiency programs, the Company conducts code training for residential new construction; in-field technical training for residential new construction; weatherization training for our

Community Action Agency pPartners and their weatherization staff; and technical training for HVAC contractors. Additionally, the Company offers professional certifications for facility managers through a Building Operator Certification course, which teaches energy efficient techniques for optimizing energy management. As the heating market moves away from the use of fossil fuels for heating, oil and propane dealers will need opportunities for re-training in the professions serving energy efficiency as well as electrification of heat. In 2020, the Company will support the Rhode Island Oil Heat Institute as it offers energy efficiency and air source heat pump training and certification programs to oil and propane dealers. Additional details of these offerings are included in Attachments 1 and 2.

The workforce report filed in the 2018 year-end report included a recommendation to "commission a comprehensive study of workforce labor and training needs for all future programs, including issues and barriers and strategies to mitigate them." The Company is committed to supporting a study on future workforce development. The completion of the 2021 - 2026 Potential Study in early 2020 will provide much needed evidence regarding anticipated programmatic and measure shifts needed for the next three-year plan. After the completion of the potential study, followed by programmatic and strategy planning for the three-year plan, anticipated shifts in the energy efficiency market should then be more closely studied through a forward-looking workforce study after the completion of the three-year plan. .

1) Building Operator Certification Training (BOC)

BOC Levels I & II include HVAC, lighting and building controls. Students gain knowledge of their own building by completing projects involving documentation of building equipment, systems and controls, benchmarking the building's performance by using ENERGY STAR® Portfolio Manager™, updating occupancy profiles, reviewing HVAC systems and operation, and mapping the facility's electrical distribution system. In addition, the course addresses maintenance of building systems, equipment troubleshooting, preventive maintenance, advanced electrical diagnostics, HVAC optimization, and information on National Grid's energy efficiency programs.

In 2020, the Company plans to support Building Operator Certification (BOC) training by holding at least two one Level I BOC classes in Rhode Island and one Level II BOC class in Massachusetts. Classes will be held in the spring and the fall. The audience includes facility managers, operating engineers, building technicians, and maintenance mechanics. The course provides a core foundation across the various building systems and maintenance practices of a typical commercial building – class instructors encourage class participation. In addition to the knowledge gained by listening to the instructors and completing both in classroom as well as out of classroom projects, the participants benefit from

networking and learning from each other's experiences with building maintenance and energy efficiency~~.~~. Survey results have shown that s~~S~~tudent satisfaction with the BOC training is high in that they would recommend it to others and their companies are likely to engage~~-~~ utility energy efficiency incentives for energy projects~~.~~. The average class size usually ranges for 20-30 students.

In addition to the classroom training, National Grid also sponsors BOC webinars for customers and staff~~.~~. The webinars are on specific topics of interest to facility managers~~.~~ .

2) Code Compliance Enhancement Initiative (CCEI) Training

As mentioned in the preceding Building Energy Code support section, CCEI includes in-person classroom and hands-on trainings, webinar presentations, project-specific technical assistance circuit riding, and development and dissemination of documentation/compliance tools. ~~such as residential field guide, residential and commercial FAQs, technical bulletins, and case studies. CCEI focuses on ground up new construction for residential and commercial buildings but also addresses additions, renovations, and retrofits. More details on this training are included in the Large Commercial and Industrial Energy Efficiency Section under Building Energy Code and Appliance Standards.~~

3) Advanced Workforce & Channel Development

Online Trade Ally Training on Advanced Lighting Systems

Online Trade Ally targeted training, for Performance Lighting PLUS program, consolidates the best-of-class subject-matter expertise into one common platform with an electronic learning training program built to track the progress of participants. This online, on-demand learning platform complements face-to-face and webinar based education and is a proven way to meet the time demands of all trade allies~~.~~. This online learning platform will provide efficient and effective education on Advanced Lighting Systems including controls and design. This online training is developed to increase program participation and improve program process. This training will target trade allies (ESCOs contractors), internal sales teams, venders, architects, designers, manufacturers' representatives, distributors and customers~~.~~. The Online Trade Ally training platform was launched in 2019 and will continue in 2020. The platform is managed by a vendor, who will also track participation through the online training platform~~.~~.

Table 15~~17~~. Overview of Online Trade Ally Training Platform

Utility Benefits	Trade Ally Benefits
• Automates onboarding tasks	• Offers training access organization-wide
• Deploys program changes faster	• Educates all staff to increase project sales
• Pushes fresh content to engage allies	• Affords on-demand training when needed
• Provides metrics for ally tiering programs	• Offers accredited CEU and certifications
• Shares in industry-provided content	• Aligns real-time trainings with program changes
• Uses portal customized with utility branding	• Recognizes achievement with rewards
• Increased energy savings from knowledgeable trade allies	• Reports real-time metrics to track progress

4~~.~~) **Developing Workforce for Electrification**

HVAC Check Training~~-~~, offered through the Rhode Island Heating and Cooling program, trains ~~provides~~ technicians with skills to calculate proper airflow and charge protocols and to ensure that electric heating/cooling equipment operates according to manufacturer's specifications. These skills are essential for the success of the electrification of the heating sector~~, also referred to as the decarbonization of the heating sector, also referred to as electrification of the heating sect.or.~~

Through the ~~RI EE~~ Residential EE HVAC program, HVAC Check training is offered to contractors and trade schools that are interested in being approved to install heat pumps and being listed on the program's Heating and Cooling Program Approved Contractor List~~.~~. The training provides participants with skills to calculate accurate equipment sizing, installation best practices and verification, distribution system improvement, quality control and customer education.

In addition to heating and cooling equipment training, the ~~Decarbonization~~ electrification of the ~~Heating~~ heating ~~Sector~~ sector relies heavily on other RI EE program services including, Home Energy Assessment and weatherization, both of which require trained professionals. Therefore, as we anticipate the growth of the electric heat market, we are planning to match that growth with the professional resources needed to complete the prerequisites of the electric heat program.

The Company will continue to assess and identify electrification of heat workforce development opportunities by coordinating and collaborating with RI OER, the Division, RI Oil Heat Institute, Northeast Energy Efficiency Partnerships (NEEP), ~~,~~and other stakeholders. Specifically, the Company will work with RI Oil Heat Institute to support their Real-Jobs Grant, issued through the Department of Labor. that will support the necessary training for oil and propane contractors to transition to electric HVAC contractors.

xii. **Participation**

Commented [RJ11]: Updated. Tables E-7 and G-7 now also have participation goals. Pie charts to be updated for 3rd draft.

Each program described in this Plan seeks to drive customer participation to deliver the benefits of energy efficiency to customers throughout Rhode Island. The Plan is designed to provide equitable access to savings and programs across sectors and market segments. For 2020, the Company will continue to plan and report participation in 'net' terms, which takes into account free-ridership and spillover, which are commonly referred to as net-to-gross factors. This method of accounting for participants aligns participation numbers with energy savings numbers, which are already recorded in net terms. This approach provides a more accurate connection between energy savings and the number of customers who benefit from efficiency programs~~.~~. Planned participation estimates are included in Attachment 5, Table E-7 and Attachment 6, Table G-7.

The following table describes the definitions for how National Grid projects, tracks, and reports participation in the efficiency programs.

~~Table 8:~~ Table 16~~18~~. Participation Definitions

Fuel	Sector	Program	Participation Unit
Gas	Commercial & Industrial	Large Commercial New Construction	Unique Billing Account
		Large Commercial Retrofit	Unique Billing Account
		Small Business Direct Install	Unique Billing Account
		C&I Multifamily	Housing Units
	Income Eligible Residential	Single Family – Income Eligible Services	Unique Billing Account
		Income Eligible Multifamily	Housing Units
	Residential	ENERGY STAR® HVAC ~~Energy Star® HVAC~~	Unique Billing Account
		EnergyWise	Unique Billing Account
		EnergyWise Multifamily	Housing Units
		Home Energy Reports	Unique Billing Account
		Residential New Construction	Housing Units
Electric	Commercial & Industrial	Large Commercial New Construction	Unique Billing Account
		Large Commercial Retrofit	Unique Billing Account +

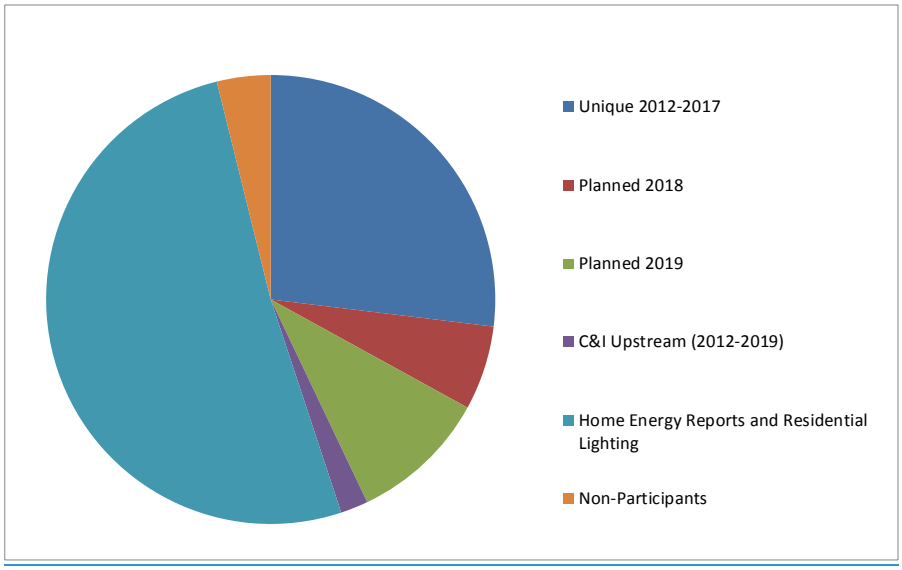
Fuel	Sector	Program	Participation Unit
			Unique Customer names from Upstream Lighting
		Small Business Direct Install	Unique Billing Account
	Income Eligible Residential	Single Family – Income Eligible Services	Unique Billing Account
		Income Eligible Multifamily	Housing Units
	Residential	~~Energy Star® HVAC~~ ENERGY STAR® HVAC	Unique Billing Account
		EnergyWise	Unique Billing Account
		EnergyWise Multifamily	Housing Units
		Home Energy Reports	Unique Billing Account
		Residential New Construction	Housing Units
		ENERGY STAR® Lighting	Estimated Housing Units
		ENERGY STAR® Products	Number of Rebates

The Company will estimate the number of unique participants for each program. For some programs such as ENERGY STAR® Lighting and ENERGY STAR® HVAC, one measure does not necessarily equal one participant. This is because a customer can purchase more than one measure. Therefore, the Company also considers the previous year's unique accounts to savings ratio in order to estimate the planned unique participants in 2020. This method allows for a better estimation of unique participants but can make it more difficult to compare planned numbers across years.

In 2020, the Company will continue to drive participation through two main pathways – targeted programs and broad-based programs. Targeted programs include the Company's retrofit, new construction, product rebate, and small business initiatives. These programs serve to drive deeper savings to targeted customer segments and offer a wide array of energy efficiency measures. The Company also reaches broad participation by promoting products upstream and through Home Energy Reports. These broader based programs provide value by reaching a wide and diverse set of customers, helping to provide more customers with access to energy savings, as well as acting as a gateway to drive participation in other ~~National Grid~~ Company energy efficiency programs.

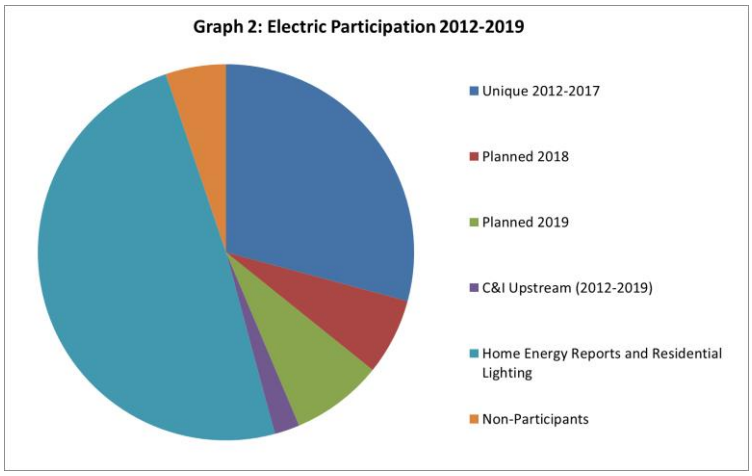
An analysis of unique participation since 2012 is detailed in ~~Graph~~Figures 2 and 3 below. These graphs highlight that the Company has made steady progress with reaching new participants each year. From 2012-2018 the Company served approximately 34% of its electric customers and 24% of its gas customers from its targeted programs at least once (these graphs have removed duplicate participation across programs and across years from 2012-2018). When Home Energy Reports and C&I upstream lighting participation are added to these counts, a total of 88% of electric customers and 76% of gas customers participated over this period.[32] Home Energy Reports are included here because the program offers significant savings and benefits to customers as well as drives customers to participate in other energy efficiency programs.[33] Planned 2019 and 2020 participants are also included in these graphs for illustrative purposes. Importantly, planned participants in 2019 and 2020 may have participated in prior years. In the 2019 Year-End report, the Company will remove any participation overlap to report unique 2019 participants.

Figure 4. ~~Table~~Electric Energy Efficiency Portfolio Participation, 2012 - 2017

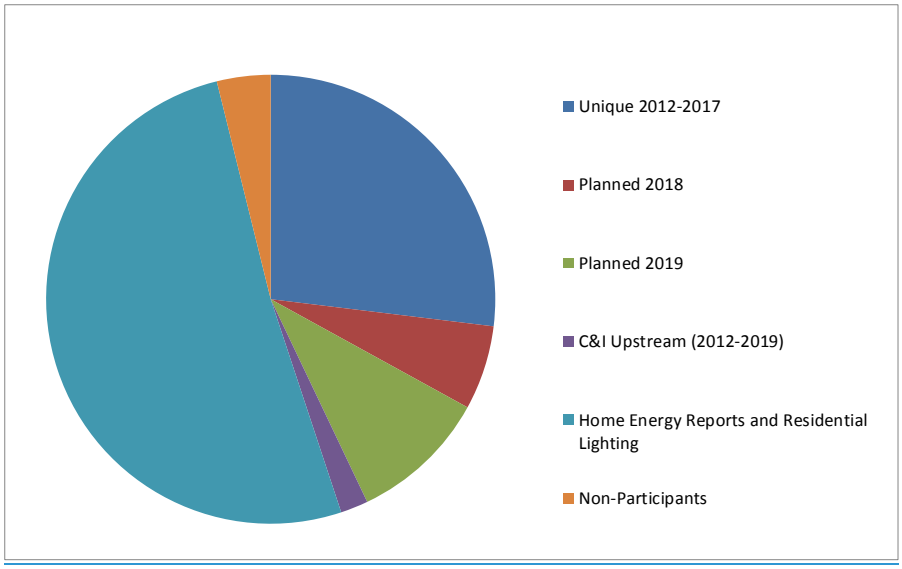


[32] It is not possible to track residential lighting participation by customer ~~account~~account, but it is assumed that there is overlap between Home Energy Report participants and residential lighting participants. Therefore, for the purpose of estimating unique participation for illustration in these graphs, only ~~include~~ Home Energy Report participation is included in the 80%.

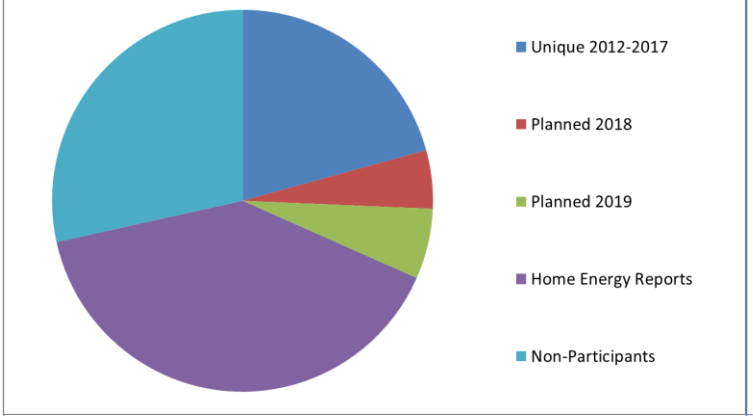
[33] The full participation analysis can be found in Docket 4755 - National Grid Electric and Gas Energy Efficiency Programs 2018 Year-End Report, filed May 15, 2019.



~~Table~~Figure 5. Natural Gas Energy Efficiency Portfolio Participation, 2012 - 2017



Graph 3: Gas Participation 2012-2019



Commented [HR12]: Graph to be updated in the 3rd draft

Commented [TJ13R12]: Graph -> Figure in next edit

In 2020, the Company will continue its efforts to reach customers that have never participated in its energy efficiency programs. The Company will also continue its efforts to reach customers that have previously participated in its energy efficiency programs but who can still benefit from the installation of additional energy efficiency measures. Many of the unique participants captured above are still eligible for additional programs. For example, a participant in the EnergyWise Single Family program may participate in the HVAC program. In 2020, the Company will enhance the Customer Call Service experience to promote energy efficiency programs to customers.

The Company will continue to deliver innovative strategies to increase customer participation and reach customer segments that are historically underrepresented. Also, the Company will continue to track participation trends and will again provide a detailed analysis in its 2019 Year-End Report showing additive and cumulative portfolio participation.

xiii. **Equity**

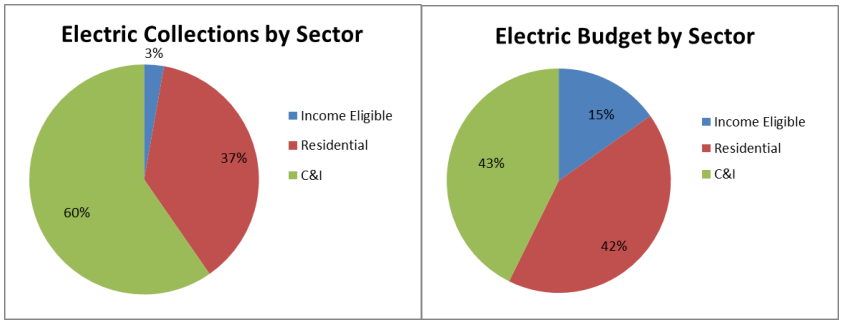
Commented [RJ14]: Updated for the 2nd draft.

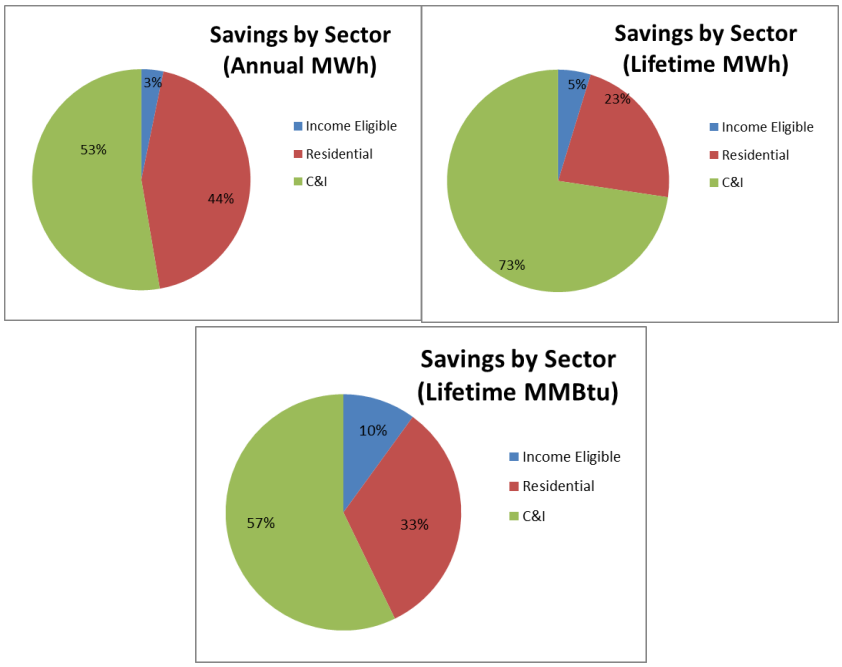
The Annual Plan is designed to reach as many customers as possible and to provide energy efficiency services to all customer classes. Since each customer pays into the energy efficiency programs, the Company designs programs to allow for all customers to participate and receive benefits. All customers, regardless of participation, benefit from energy efficiency because of lower future costs of energy, as demonstrated through the bill impact analysis as described in detail in Attachment 7.

The pie charts below are a graphical representation of Attachments 5 and 6, Tables E-1 and G-1. The Company first provided these charts at the 2017 Annual Plan hearing and has since included them in Annual Plans to better display the difference between customer class rates, budgets, and savings.

As shown in Figure 6~~Graph 4~~, there is approximate parity between the collections by a customer class and its resulting budget and savings in the electric portfolio. The only exception is the income-eligible sector where there is an established agreement amongst the Parties that the residential and C&I customer classes use part of its collections to help cover the income-eligible sector funding needs. The income-eligible budget is higher compared to its savings due to several factors: incentives are 100% of the cost, the programs are more expensive because they are delivered in-home (compared to at retail sites or via rebates) which requires more labor and management, and the programs have fewer economies of scale (compared to C&I)~~.~~.

~~Graph 4: Table~~Figure 6. 2020 Graphical representation of Attachment 5 Table E-1 and total Electric Savings by Sector, Cumulative

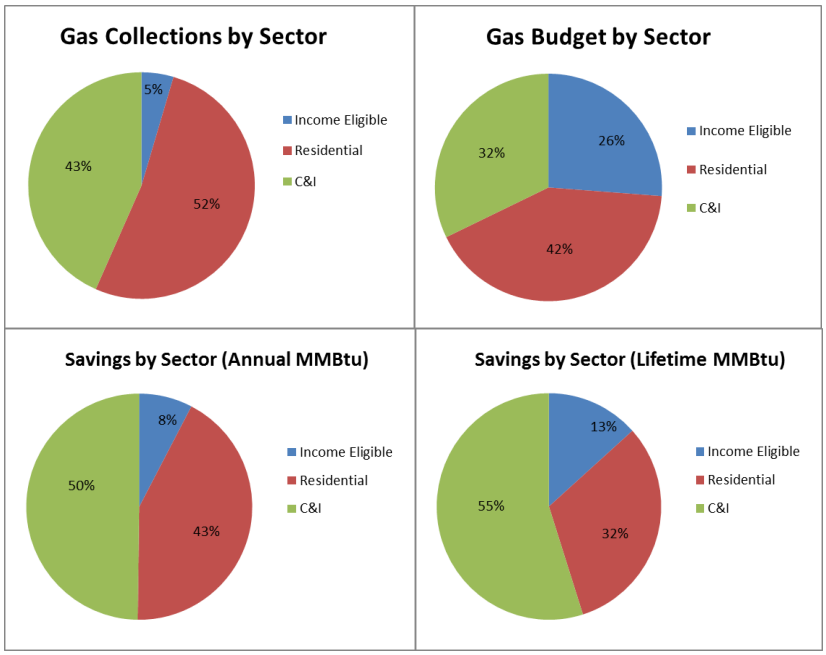




For the gas portfolio, there is also parity between the collections by a customer class and the resulting savings. There is less parity between budgets and savings. This is due to several factors. First, the energy efficiency program charge varies by customer segment, which changes collections. Second, C&I projects tend to create more savings per dollar~~.~~. This is due to larger economies of scale, larger projects, different delivery channels that require less labor or management and are more cost-effective, evaluation factors such as free-ridership and spillover, and different customer opportunities~~.~~.

Figure 7.

~~TableGraph 5: 2020~~ Graphical representation of Attachment 6 Table G-1 and total Electric Savings by Sector Cumulative



xiv. **Pilots, Demonstrations and Assessments**

In accordance with Docket No. 4600-A PUC Guidance Document, the Plan includes a description of Commercial, Industrial and Residential pilots, demonstrations and assessments for ~~-~~in Attachment 8.~~ Descriptions of demonstrations and assessments can be found in Attachment 2 for Commercial and Industrial programs.~~ ~~At this time~~In 2020, the Company has~~does~~ not ~~have~~proposed any Residential Demonstration and Assessments~~.~~.

As defined in the Docket 4600-A Guidance Document, "A pilot is a small scale, targeted program that is limited in scope, time, and spending and is designed to test the feasibility of a future program or rate design. It is incumbent upon the proponent of a pilot to define these limits in a proposal for PUC review. Ideally, a pilot can provide net benefits and achieve goals, but the primary design and value of a pilot is to test rather than to achieve."[34]

For actions in the Plan that do not fall under the Docket 4600-A definition of pilots, the Company includes demonstrations within the programs because the Company expects that demonstrations will contribute savings to the programs in which they are offered

[34] Docket No. 4600-A PUC Guidance Document, October 27, 2017. Section V. Pilots.

and are included in costs, benefits, and savings and in the calculation of the ~~shareholder incentive~~performance incentive. A demonstration tests a new technology or solution that is delivered as part of an existing program. An ~~technical~~ assessment has estimated the savings and determined that the measure is likely to be cost effective. An assessment tests a measure, a bundle of measures, or a solution, that can be delivered as part of existing program where the savings are not known but will be explored as part of the assessment. Assessments do not contribute to savings of the programs in which they are offered and are not included in the ~~costs,~~ benefits~~,~~ and savings nor~~and~~ in the calculation of the ~~shareholder incentive~~performance incentive. Costs for managing and implementing an assessment are included in the program budget.

~~The Company in~~In 2019, as part of its commitment to innovation, the Company has a new dedicated team called the Customer Energy Management Growth team~~, that~~which oversees all innovation for energy efficiency. This new team

~~In 2019 the Company is establishing a dedicated team within the Customer group that~~ will be responsible for testing new technologies, go-to market strategies, and enhancements within established programs. The goal of the team is to test, ~~develo~~develop, and determine scalability of new energy efficiency and demand response solutions for customers and achieve savings targets in the future~~.~~.

The Customer Energy Management Growth~~new~~ team will lead all energy efficiency and demand response demonstrations, assessments, and pilots in Rhode Island. They will develop concepts, plan and design, test and coordinate evaluations for the demonstrations, assessments and pilots. The Customer Energy Management Growth team will work closely with the OER, EERMC and DPUC on these efforts.

The evaluation pathway for demonstrations, assessments and pilots is based on each demonstration, assessment, or pilot's scale, budget, type, and the availability of external data. The Company's evaluation team is engaged early on at the concept stage and determines whether the demonstration, assessment, pilot, needs and independent evaluation, a vendor evaluation or no evaluation at all. The purpose of the evaluation is to determine impact and process learnings such that they can be used to establish a new measure, go-to market strategy or new program.

~~20.~~7. Cross Docket Coordination

i. **Coordination with the Grid Modernization Plan (GMP) and Advanced Metering Functionality (AMF)**

The Company is progressing toward filing a Grid Modernization Plan (GMP) as well as an updated Advanced Metering Functionality (AMF) business case as directed to do so in the Docket 4770 Amended Settlement agreement. In late 2018 and throughout 2019, the Company engaged a subcommittee as part of the PST Advisory Group in order to derive valuable input from stakeholders as it progressed the development of both the GMP and the updated AMF Business case.

Through this process, the Company's GMP and AMF team ~~has~~ have worked closely[35] with the Energy Efficiency team to ensure that the Company has a comprehensive view of the benefits and impacts of the roll out of grid modernization and AMF~~.~~. Specifically, the Company ~~worked~~ is working to ensure that the benefits estimated in the GMP and AMF Benefit-Cost Analyses (BCA) would constitute a new baseline of savings upon which future energy efficiency goals are based and to ensure energy savings are not double counted. Future Energy Efficiency programs ~~will~~ would benefit from the increased visibility into customer usage from AMF and insights to the constrains of the local distribution system from grid modernization.~~.~~ This visibility ~~will~~ would allow for improved marketing, ~~more increased personalized~~increased personalized energy-saving offers for customers, ~~and~~ more targeted energy-saving measure deployment, and optimization of demand side resources. ~~.~~

In addition to the calculation of benefits, the Company also examined the overlap of costs. After ~~the~~ a potential launch of AMF, the Company still anticipates energy efficiency programs ~~will~~ would continue to offer customer incentives for in-home/in-business technologies, such as Wi-Fi programmable thermostats and smart appliances to drive the achievement of additional incremental energy savings to meet annual energy savings targets. The Company recognizes that the future energy efficiency Plans ~~will~~ would include the total participant costs (i.e., ratepayer-funded rebates and customer contribution costs) associated with such measures in its BCA methodology.

While the Energy Efficiency, GMP and AMF teams have been coordinating closely through this filing process, the need to bifurcate savings and costs associated with these plans ~~will~~ would not arise until any actual grid modernization and AMF deployment begins and data is collected and visualized for customers in later years. Therefore, should the PUC approve the AMF Plan ~~presented, the~~presented, the important overlap and distinction between GMP, AMF and the energy efficiency Plans ~~will~~ would most likely not arise until the Company's next 3-year EE Plan (2021-2023), when the Company anticipates a more robust discussion of evaluation methodologies and other key considerations. In the

[35] At the May 2019 Energy Efficiency Technical Working Group, the AMF team presented to energy efficiency stakeholders so that they were aware of the coming technology and possible benefits and impacts to energy efficiency plans.

interim, the Company will continue to work with the Energy Efficiency Technical Working Group to ensure all stakeholders are aware of ~~this~~ any future transition.

ii. System Reliability Procurement

In a contemporaneous filing, the Company is submitting its System Reliability Procurement (SRP) Annual Report for 2020 for the PUC's review and consideration~~.~~. The SRP Annual Report describes the strategies, goals, and funding request for SRP in 2020. The SRP ~~Factor~~ funding charge is included as part of the total energy efficiency program charge shown on line 14 of Table E-1 in Attachment 5. For 2020, the charge is ~~negative~~ ~~XXXX~~ $~~xxxx~~ TK due to a positive SRP fund balance.

Commented [RJ15]: To be updated in 3rd draft.

The purpose of SRP is to identify targeted alternative solutions for customer-side and grid-side opportunities that are cost-effective, reliable, prudent and environmentally responsible and provide the path to lower supply and delivery costs to customers in Rhode Island~~.~~. The SRP Plan and its Non- Wires Alternative (NWA) NWA proposals are separate and unique from the Energy Efficiency Program Plan customer measures because NWA projects are targeted solutions for electric grid reliability ~~, in contrast~~as compared to energy efficiency's goal of bulk energy savings from customers for the regional electric grid~~.~~. These two main differences are illustrated by a difference in scope of area, feeder- or substation-level for SRP and state or regional for ~~EEP~~energy efficiency, and in scope of intent, electric grid reliability for SRP via NWA projects and energy savings for EEP via energy efficiency measures and programs.

The Company continues coordination between SRP and customer offerings in the Energy Efficiency Program Plan (EE Plan) to ensure that efforts, projects, and programs are optimal and not duplicated~~.~~. ~~The Company coordinates among SRP and EE.~~ As is the practice now and going forward, energy efficiency and demand response will be examined for future non-wires alternatives before the Company seeks other solutions and it may be deployed as part of a solution so long as the targeted energy efficiency or demand response solutions are least-cost, cost-effective, reliable and feasible for the electric system need. As energy efficiency is the least-cost resource, the Company will look for opportunities where it can target energy efficiency to create multi-dimensional benefits for customers. For example, the Company can utilize the increased visibility from the

Rhode Island System Data Portal[36] to target energy efficiency and demand response in areas that would benefit from load reduction.~~The Company continues coordination between SRP and customer offerings in the Annual Plan to ensure that efforts, projects, and programs are optimal and not duplicated. The Company coordinates SRP and energy efficiency planning efforts so that opportunities for targeted energy efficiency is considered in Non-Wires Alternative (NWA) opportunity development.~~ Other e~~E~~xamples ~~could~~ may include enhanced or targeted community initiatives or enhanced marketing for ConnectedSolutions, the Company's demand response program.

Additionally, t~~T~~he Company also coordinates communications between the SRP Technical Working Group ~~to~~ and the Energy Efficiency Technical Working Group. The Company will also work with these groups and the PUC ~~on~~regarding changes in filing schedules to better align the SRP filing with the Infrastructure, Safely and Reliability (ISR) filing~~.~~.

~~21.~~8. Advancing Docket 4600 Principles and Goals

Along with the quantitative benefits detailed in the Plan, as measured by the RI Test, the energy efficiency investments and innovation planned for 2020 also advance the Docket 4600 principles and goals.[37]

The Docket 4600-A Guidance Document directed that "the proposing party must provide accompanying evidence that addresses how the proposal advances, detracts from, or is neutral to each of the stated goals of the electric system."[38]

To meet this directive, the Company describes how the Plan either advances, detracts, or remains neutral on achieving the Docket 4600 goals for the electric system in ~~Table 9~~ Table 17.

[36] Rhode Island System Data Portal. *National Grid US*, National Grid USA Service Company, Inc., 2018, www.nationalgridus.com/Business-Partners/RI-System-Portal.
[37] PUC Report and Order No. 22851 accepting the Stakeholder Report. Written Order issued July 31, 2017.
[38] Approved final clean version of Guidance Document 10/27/17.

Table 1723. ~~Table 9:~~ Docket 4600 Goals for the Electric System

4600 Goals for Electric System	Advances/Detracts/Neutral
Provide reliable, safe, clean, and affordable energy to Rhode Island customers over the long term.	Advances: The Plan gives customers tools to reduce their energy consumption. ~~The safest, most reliable, most affordable energy,~~The safest, most reliable, most affordable energy is energy that is never used. Lowering energy consumption avoids investments in the installation, upgrade, or replacement of transmission and distribution infrastructure, and reduces strain on the system.
Strengthen the Rhode Island economy, support economic competitiveness, retain and create jobs by optimizing the benefits of a modern grid and attaining appropriate rate design structures.	Advances: The Plan will create significant economic benefits in Rhode Island. The Company expects that investments made in energy efficiency under this Plan will add ~~280.6~~ 279.0 million to Rhode Island's state gross domestic product (GDP)
Address the challenge of climate change and other forms of pollution.	Advances: The Plan will avoid over 1.05 ~~1.03~~ million tons of carbon over the lifetime of the installed measures as well as reduce other pollutants associated with the generation and combustion of electricity, natural gas, and delivered fuels~~.~~ .
Prioritize and facilitate increasing customer investment in their facilities (efficiency, distributed generation, storage, responsive demand, and the electrification of vehicles and heating) where that investment provides recognizable net benefits.	Advances: The Plan provides incentives for customers to invest in cost-effective energy efficiency measures in their facilities and participate in demand response programs.
Appropriately compensate distributed energy resources for the value they provide to the electricity system, customers, and society.	Neutral
Appropriately charge customers for the cost they impose on the grid.	Neutral
Appropriately compensate the distribution utility for the services it provides.	Advances: The ~~shareholder incentive~~performance incentive contained in this Plan compensates the Company for achieving the energy savings goals through

4600 Goals for Electric System	Advances/Detracts/Neutral
	delivering cost-effective energy efficiency programs to customers.
Align distribution utility, customer, and policy objectives and interests through the regulatory framework, including rate design, cost recovery, and incentive.	Advances: The Plan aligns Company, customer, and policy objectives and interests by incentivizing energy savings measures that enable customers to manage and reduce their energy consumption, which in turn contributes to the greenhouse gas reduction goals of the Resilient Rhode Island Act of 2014, and Power Sector Transformation goals, while allowing the Company to earn a ~~shareholder incentive~~performance incentive.

~~24.~~9. Funding and Budgets

Funding, budgets, goals, and cost-effectiveness information is provided in Attachment 5 for the proposed electric energy efficiency programs and in Attachment 6 for the proposed natural gas energy efficiency programs~~—~~.

i. **Annual Plan Funding Sources**

The sources of funding and the amounts of the funding proposed for the cost-effective 2020 EE Programs are shown in Table E-1 for electric programs and Table G-1 for natural gas programs~~—~~.

The sources of funding for the 2020 electric programs are shown in Attachment 5, Table E-1. To collect these funding sources for the 2020 cost-effective programs, the Company proposes: (1) one line on the customers' bill labeled "Energy Efficiency Charge" at ~~$0.01449~~ $0.01343 per kWh, as calculated in Attachment 5, Table E-1 (composed of the existing energy efficiency program charge of $0.01121 per kWh plus a fully reconciling funding mechanism charge of ~~$0.00325~~ $0.00222 per kWh in accordance with the requirements of R.I. Gen. Laws § 39-1-27.7); (2) projected Large C&I commitments from 2019, if any; (3) projected carryover of the year-end 2018 fund balance, as applicable, including interest at the rate in effect for customer deposits; (4) forecast revenue generated by ISO-NE's Forward Capacity Market (FCM); and (5) other potential

~~anticipated~~ outside revenue~~s~~ sources, ~~–~~including but not limited to those generated through RGGI permit auctions. Funding sources do not include revolving loan funds~~.~~.

The sources of funding for the 2020 natural gas programs are shown in Attachment 6, Table G-1. The Company proposes that the 2020 budget should be funded from the following sources: (1) one line on the customers' bill labeled "Energy Efficiency Charge" at ~~$1.077~~ $1.004 per dekatherm for residential customers and ~~$0.842~~ $0.782 per dekatherm for non-residential customers as calculated in Attachment 6, Table G-1 (composed of the existing energy efficiency program charge of $0.715 per dekatherm plus a fully reconciling funding mechanism of ~~$0.362~~ $0.289 per dekatherm for residential customers and the existing energy efficiency program charge of $0.420 per dekatherm plus a fully reconciling funding mechanism of ~~$0.422~~ $0.362 for non-residential customers in accordance with the requirements of R.I. Gen. Laws § 39-1-27.7); (2) projected carryovers or under-recoveries of the year-end ~~2018~~ 2019 fund balance, including interest at the rate in effect for customer deposits; and (3) low income weatherization funding in base rates~~.~~. Funding sources do not include revolving loan funds~~.~~.

For context for these gas rate adjustments, the residential and commercial charges are closer to charges seen in the 2017 and 2018 energy efficiency annual plan than in the 2019 annual plan. The proposed residential charge for 2020 is $1.004, per dekatherm compared to $0.898 in 2018 and $0.888 in 2017. The proposed non-residential charge for 2020 is $0.782 per dekatherm, compared to $0.727 in 2018 and $0.726 in 2017.

The 2020 budgets for cost-effective electric and natural gas efficiency investments are dependent on a number of projections that inform the amount of funding, including projections of electricity and natural gas sales, year-end 2019 large C&I program commitments, capacity payments received from ISO-NE (electric only), and year-end 2019 spending. The Company estimates that the electric projected fund balance at year-end 2019 will be negative ~~$6.1~~ $2.6 million, as shown in Attachment 5, Table E-1; the gas fund balance at year-end 2019 is estimated to be negative ~~$3.3~~ $2.6 million, as shown in Attachment 6, Table G-1~~.~~.

It is likely that the actual year-end 2019 fund balance will be higher or lower than the dollar amounts projected in this Plan. To ensure that the 2020 Energy Efficiency Charge reflects the most current fund balance projections possible, the Company proposes to submit revised Tables E-1 and G-1 on December 2, 201~~8~~9 to include several additional months of actual expenses and revenues in the calculation of the Charge. The Company proposes to submit revised tables on December 2, 201~~8~~9 and not at the end of the year to provide the PUC with time to review the Company's proposed charges in advance of the Annual Plan hearing. This would allow the charges, if approved, to have an effective

date of January 1, 2020. This will allow the Company to begin collecting the most accurate charge possible at the start of the program year and avoid any market confusion surrounding the status and implementation of the 2020 energy efficiency programs. If the actual year-end 2019 fund balance as filed in the Year-End Report on May 1, 2020 is higher or lower than that amount projected in the December 3, 2019 revised Tables E-1 and G-1, any deviation will be fully reconciled in the next program year in accordance with the requirements of R.I. Gen. Laws § 39-1-27.7.

Other considerations regarding funding sources include:

ii. ISO-NE Capacity Market Revenue

Consistent with the PUC's Standards, Annual Plan, and PUC decisions regarding Annual Plans since 2008, the Company and the Parties agree that kW-demand savings achieved via the electric energy efficiency and Combined Heat and Power programs continue to participate in the FCM as Passive On-Peak Demand Resources. The Company will manage and direct the revenues by bidding the demand savings attributed to energy efficiency measures and Combined Heat and Power facilities in the FCM and managing the associated capacity resources to maximize the resulting FCM revenue~~.~~. The revenues from measures installed through this Plan, as well as all previous Plans, will continue to be reinvested in energy savings for the life of the measure~~.~~.

The Parties fully agree that the Company should recover all prudently incurred FCM expenses from ISO-NE capacity-payment revenue generated by the demand savings from efficiency programs represented by the Company~~.~~. The Company expects that capacity payments received from the ISO-NE will exceed its administrative and Evaluation, Measurement and Verification (EM&V) compliance costs of participation in the ~~FCM, and~~FCM and will result in additional funds being made available to fund efficiency programs for customers~~.~~. If these participation costs exceed the capacity payments, the Parties agree that the Company may recover its prudently incurred costs from the energy efficiency program fund~~.~~. The Parties reserve the right to examine the actions and expenses of the Company to ensure that only prudently incurred expenses are deducted from ISO-NE capacity payments or the energy efficiency program fund~~.~~.

In addition, as part of the FCM, all qualified auction participants are required to post Financial Assurance to provide security that the promised resource will deliver the promised MW at the promised time. If, as a result of circumstances beyond the Company's control,[39] the Company is unable to provide all or a portion of the megawatts

[39] Such circumstances may include legislative action to alter the EE Program Charge or discontinue the Company's authority to implement the energy efficiency programs underlying the Qualifications Package

of capacity proposed in its qualification packages and capacity auction bids, some or all of the financial assurance monies would be forfeited.

iii. Exceptions to the Natural Gas Energy Efficiency Program Charge

All natural gas used for distributed generation projects approved since 2014 will be subject to the natural gas energy efficiency surcharge.[40]

The 2006 Act allows the PUC to exempt natural gas used for manufacturing processes from the energy efficiency surcharge where the customer has established a self-directed program to invest in and achieve best effective energy efficiency in accordance with a plan approved by the PUC and subject to periodic review and approval by the PUC~~.~~. Consistent with prior PUC decisions, the Parties have developed recommendations for a process under which a manufacturer may submit its self-directed program and the required annual reports for approval~~.~~. The Parties recognize that this process may need to be reviewed and modified after the PUC has accumulated sufficient experience with these programs~~.~~. Any customer that receives this exemption from the natural gas energy efficiency program charge will not be eligible to receive natural gas energy efficiency program services.

iv. Budgets

The Parties agree that the portfolio of energy efficiency programs and services for 2020 will have an overall budget of approximately ~~$114.4~~ $110.6 million for electric programs and $34.8 million for natural gas programs. The Parties agree to segment the budget into three sectors: residential income eligible, residential non-income eligible, and commercial and industrial (C&I)~~.~~. Proposed sector and program budgets are provided in Attachment 5, Table E-2 and Attachment 6, Table G-2. The derivations of the spending budget and implementation expenses are illustrated in Attachment 5, Table E-3 and Attachment 6, Table G-3. A comparison of these proposed budgets to the 2019 budget is provided in Attachment 5, Table E-4 and Attachment 6, Table G-4~~.~~.

The Parties agree to review the status of budgets regularly to assess whether they are likely to be fully utilized. If not being utilized, the Parties agree to review the advisability

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or a PUC decision limiting the Company's role in bidding the demand savings acquired through program efforts into the FCM~~.~~.

[40] Natural gas used for distributed generation (excluding natural gas used by emergency generators) for distributed generation projects approved under the energy efficiency programs in 2013 and prior years - independent of the date those facilities become commercially operable – are not subject to the energy efficiency surcharge when natural gas used for that purpose can be clearly identified through uniquely metered use and when so requested in writing by the customer~~.~~.

of transferring funds to other programs where the money could be more effectively used~~.~~ . Fund transfer guidelines are presented in Section C, below.

The Company ~~proposes~~ will ~~to~~ continue the practice of funding commitments ~~that were~~ established in the 2014 Plan, Docket 4451. ~~Namely~~Specifically, the Company will continue to make funding commitments for projects with a projected incentive in excess of $3 million. For all other projects, except those with incentives greater than $3 million, there would be no commitment budget. ~~and the Company will fund and pay all incentives in the year in which they are completed. There are no commitments in the 2020~~

v. **Transferring Funds**

The Parties will regularly review the amount of funds needed and available for each program (as well as any changes to the overall fund balance, as discussed in Section III.A above) and will transfer monies as needed. Transfers during the program year may occur as follows:

1. Transfers within a Sector: For transfers of less than 20% of the originating program's budget, the Company can transfer funds from one program to another program or pilot in the same sector. For transfers of 20% or more of the originating program or pilot's budget, the Company can transfer funds from one program to another program in the same sector with the Division's prior approval~~.~~ . Upon seeking the Division's approval, the Company shall simultaneously notify the EERMC and OER. For all transfers in a sector, the Company will reflect changes in the quarterly report(s) following the transfer and the year-end report.

2. Transfers between Sectors~~.~~ . The Company can transfer funds from one sector to another sector with the Division's prior approval. Upon seeking the Division's approval, the Company shall simultaneously notify the EERMC and OER. If a transfer reduces the originating sector's budget by more than 20% in aggregate over the course of the program year, the transfer will also require PUC approval. For all transfers between sectors, the Company will reflect changes in the quarterly report(s) following the transfer and the year-end report.

3. Transfers among residential retrofit programs. The Company can transfer among EnergyWise, EnergyWise Multifamily, Income Eligible Multifamily, and C&I Multifamily (which are in different sectors) programs in order to achieve the overall savings goals of all programs~~.~~ . Although these are listed as separate lines in the program tables, they are essentially one program from an implementation standpoint~~.~~ . For all transfers between residential retrofit programs, the Company

will reflect changes in the quarterly report(s) following the transfer and the year-end report.

4. For transfers requiring Division and/or EERMC, but not PUC approval, the Parties will inform the PUC of the transfers, both between sectors and within sectors, in a timely fashion.

5. The Company will not be permitted to adjust its goals or incentive target calculations as a result of any transfers between sector budgets~~.~~ . However, after any budget transfers between sectors are made, the sector spending budgets will be recalculated for the purposes of the ~~shareholder incentive~~performance incentive calculation. Any changes will be communicated and reported consistent with 9.c.1 Transfers between Sector, above.~~.~~

vi. **Budget Management**

It is possible that there could be deviations from the planned budget for 2020 that could occur during the program year. The Parties contemplate three scenarios, and have agreed to address them as follows:

1. The Company's expenditures and commitments for 2020 may exceed the total budget by up to 15% so long as a written explanation is provided to the EERMC and the PUC for any deviation and the expenditures and commitments are reasonably consistent with the original Annual Plan.

2. The Company agrees that, during 2020, if the Company anticipates that continued operation of its programs is likely to result in actual expenditures and commitments exceeding the total budget by more than 15%, the Company will seek a vote of approval from the EERMC at its next meeting. Following EERMC action, the Company will be required to obtain approval from the PUC for expenditures in excess of 15% higher than the total budget, which would be collected through reconciliation in the next year's energy efficiency program charge.

3. During a program year, if the Company did not anticipate that its actual expenditures and commitments would exceed the total budget by more than 15%, but actual expenditures and commitments do exceed such threshold, the Company will bear the burden of demonstrating the reasonableness of its actions, including an explanation of why the over-spending occurred and how the expenditures and commitments are reasonably consistent with the original plan. Such demonstration would be required to be part of the 2020 Year-End Report, if not sooner.

In each of these three instances, the PUC retains its traditional ratemaking authority to review the prudency and reasonableness of the Company's actions.

vii. ~~c.~~ **Notification of large customer incentives**

The Company ~~will~~ shall ~~notify~~ inform the PUC, DPUC, OER, ~~Division~~ and EERMC in writing of any energy efficiency incentive annual offer in excess of $3 million ~~per for~~ a measure. The Company shall inform the DPUC, OER, and EERMC in writing of any CHP project with a net output of 1 MW or greater (where net is the nameplate MW output minus CHP auxiliary kW)~~.~~. The process for notification of CHP projects is described in Attachment 2. ~~The notification will occur after the cost benefit screening and before the offer letter is finalized. The notification will include a detailed explanation of the customer's measure, including cost benefit screening, minimum requirements documents and a technical assessment study, if available. The purpose of the notification is to transparently present the Company's due diligence on the measure in accordance with the standards for Energy Efficiency. Additionally, a description of the notification process for CHP is included in Attachment 2.~~

To prevent customer delays and to facilitate the Company's ability to meet customer expectation and annual energy savings targets, the OER, EERMC and Division agree to ask questions and provide comments on ~~any~~ non-CHP energy efficiency incentive annual offer in excess of $3 million ~~the project~~ within thirty days. The Company through its own discretion may proceed with an incentive offer~~.~~. The incentive, and any other related proposals will be authorized to proceed after thirty days from the date on which the Company notified the PUC, OER, Division, and EERMC of the incentive unless the PUC suspends the filing and/or issues an order within such 30-day period to extend the time for purposes of further review.

~~25.~~10. Goals and Cost-Effectiveness

The Company has projected cost-effectiveness for the proposed 2020 programs using the RI Test as required by the Standards. The RI Test requires that the total lifetime savings from the efficiency measures will exceed the total costs of the measures (i.e., program and customers' costs).

As provided for under the Standards, benefits include primary fuel energy savings (electricity and natural gas), the value of other resource (fuel and water) benefits, price effects, non-embedded greenhouse gas reduction benefits, economic development benefits, non-embedded NO_x reduction benefits, value of improved reliability and non-energy impacts (NEIs). Costs include all projects costs, program planning and administration, sales, technical assistance and training, evaluation, and the ~~shareholder~~

~~incentive~~performance incentive. To illustrate the detailed components of the RI Test as well as the sources of the values, the Company has provided Attachment 4.

Two key supporting documents for cost effectiveness are the Technical Reference Manual (TRM) and the Avoided Cost Study. For the Annual Plan, the Company developed the 2020 Rhode Island Technical Reference Manual ~~(TRM)~~, which documents the savings or savings algorithms and costs for measures proposed to be offered through its programs in 2020~~.~~ . The TRM identifies the sources for the savings estimates. Sources can be ~~:~~ evaluation studies, engineering analyses, and/or other research. This TRM is a public document and was provided to the EERMC and its consultants to support and facilitate the determination of the Plan's cost-effectiveness. The TRM is reviewed and updated annually to reflect changes in technology, baselines, and evaluation results.

The cost-effectiveness analyses of the proposed programs use avoided energy supply costs that were developed by Synapse Energy Economics as part of the "Avoided Energy Supply Components in New England: 2018 Report" (2018 AESC Study) that was sponsored by all the electric and gas efficiency program administrators in New England and was designed to be used for cost effectiveness screening in 2019 through 2021.[41] The avoided costs reflect current and expected market conditions and are highly influenced by the cost of fossil fuels and expectations about ISO-NE's forward capacity market. Company-specific transmission and distribution capacity values are also included. The avoided costs from the report used for 2020 are shown in Attachment 5, Table E-8 and Attachment 6, Table G-8. There were several noted changes to the avoided costs in the 2018 AESC Study (Study).

The Study found lower avoided costs of energy due to sustained low natural gas prices at national hubs and lower estimated costs of complying with the Regional Greenhouse Gas Initiative (RGGI). Avoided capacity costs were also lower due to changes in market rules and a lower estimate for the cost of new entry. Avoided costs of natural gas were lower based on shale gas breakeven prices. Avoided costs for fuel oil and other fuels increased. There was also an increase in the values for electric capacity demand reduction induced price effects (DRIPE) and oil DRIPE, where these were estimated to be non-existent or were not calculated in AESC 2015 Study. The Study also quantified new benefits for non-embedded NO_x reduction benefits, value of improved reliability, and avoided pool transmission facilities (PTF) costs. Due to all these factors, the avoided costs benefits have increased in 2020 compared to 2018.

[41] The report is available online at: http://ma-eeac.org/studies/special-cross-sector-studies/. This study forecasts avoided costs for three years, compared to prior studies which developed avoided costs applicable to a two-year period.

Attachment 5, Table E-5 and Attachment 6, Table G-5 provide the calculations of 2020 program year cost-effectiveness~~.~~. Attachment 5, Table E-6 and Attachment 6, Table G-6 show the energy savings goals based on the proposed budgets~~.~~. Attachment 5, Table E-7 and Attachment 6, Table G-7 show a comparison of the goals with the approved program goals from 2019~~.~~. Attachment 5, Table E-5 shows that the proposed portfolio of electric programs, including demand response, is expected to have a benefit/cost ratio of $4.63, which means that approximately $4.63 in benefits is expected to be created for each $1 spent on the programs~~.~~. Attachment 6, Table G-5 shows that the proposed portfolio of gas programs is expected to have a benefit/cost ratio of $3.27, which means that $3.27 in benefits is expected to be created for each $1 spent on the programs~~.~~. This increase in efficiency investment continues the progress of acquiring all energy efficiency resources that are cost-effective and lower cost than supply.

~~27.~~11. Bill Impacts

Commented [RJ16]: This section will be updated once the Bill Impact Analysis is completed for the 3rd draft.

In addition to energy efficiency being a cost effective investment for Rhode Island, an analysis of bill impacts from the proposed investment in energy efficiency indicates that the average Rhode Islander who participates in the electric programs will realize an annual bill reduction of ~~XX~~TK% to TK~~XX~~% over the lifetime of the measure mix, depending on rate class. The average Rhode Islander who participates in the gas programs will realize a bill reduction of TK~~XX~~% to TK~~XX~~% over the lifetime of the measure mix depending on rate class.[42] The average Rhode Island consumer (blending participants and non-participants) will see an average annual bill reduction of TK~~xx~~% to TK~~xxx~~% for electricity over the lifetime of the installed energy efficiency measures, compared to no investment. For gas bills, the average Rhode Island consumer will realize a TK~~xxx~~% to TK~~xxx~~% bill reduction over the lifetime of the measure mix, depending on rate class. The bill impacts analysis uses models that were first used in the 2015 Plan and considers bill savings to participants compared to the incremental cost to all consumers of investing in energy efficiency in 2020~~.~~. It also factors in that non-participants will benefit through avoided infrastructure investments as well as market effects. The full bill impacts analyses for electric and gas programs may be found in Attachment 7~~.~~.

~~28.~~12. Evaluation Measurement and Verification Plan

To verify the impacts that programs are having on energy savings, the Company hires independent third-party consulting firms to regularly conduct evaluation studies as part

[42] Due to differences in the electric and gas Bill Impacts models, electric bill reductions indicate average annual bill savings over the lifetime of the measure mix, while gas bill reductions are the overall lifetime bill savings converted to 2019 present value and shown as a percentage reduction of the 2019 bill.

of its evaluation measurement and verification (EM&V) process. These evaluations incorporate industry standard methods such as engineering analysis, metering analysis, billing analysis, site visits, surveys, and market studies to realize the actual energy savings that particular measures are having~~.~~. The EERMC's Consultant Team and OER provide direct oversight of each evaluation study conducted. Every year, the results of the ~~surveys~~ studies are used to update the benefit-cost calculations during planning. Attachment 3 lists the evaluations that have occurred since 2007, that are still being used, and their influence on program planning.[43] ~~The executive summaries of recently~~All completed evaluations are submitted electronically to the PUC; executive summaries of evaluations completed in prior years are available in the dockets for previous years, or upon request.[44]

Additionally, the EM&V Plan for 2020 is presented in Attachment 3 and includes brief descriptions of each of the proposed studies. The areas proposed for study in 2020 have been chosen based on a number of factors: the relative amount of savings in that program or end use, the vintage of the most recent evaluation study, the relative precision of the recent evaluation study, and the available evaluation budget. In addition, some new program areas are designated for both impact and process evaluations. This list may be added to as the year progresses and different evaluation priorities are identified. In particular, the parties will consider the value of using evaluations from other jurisdictions as well as adding Rhode Island-specific impact or process evaluations, as appropriate, that will help inform the Company's efforts towards achieving the goals of least cost procurement~~.~~.

The Office of Energy Resources is conducting a study to review and confirm reported energy savings~~.~~. In 2019, $275,000 was transferred to OER for the study and OER has not requested additional 2020 funding for the study~~.~~. This study was legislated in Senate Bill 2500, enacted in June 2018.[45] The purpose of this study is to independently verify the energy savings of National Grid's energy efficiency programs and to review the evaluation, measurement, and verification (EM&V) process to ensure quality data, rigorous methods, and appropriate assumptions are being used~~.~~. The legislation states that "The office of energy resources [*sic*], in consultation with the electric and gas distribution company and representatives referenced in §39-1-27.7(f)(2) shall be authorized to hire an energy consulting company or firm to carry out the energy efficiency verification study. The costs associated with this study, including, but not limited to, those

[43] The information in the Attachment is also intended to meet the specific requirement from the 2016 EE Program Plan to provide "a summary of evaluation results obtained since October 1, 2015, together with an attachment summarizing the impact of those results in planning the Company's 2019 programs."
[44] All evaluation studies can be found at the EERMC's website: https://rieermc.ri.gov/plans-reports/evaluation-studies/
[45] http://webserver.rilin.state.ri.us/PublicLaws/law18/law18079.htm

associated with the consultant or firm contract and reasonable administrative costs incurred by the office in the execution of subsection (f) of this section, shall be recoverable through the system benefit charge subject to commission approval. Funding shall be transferred from the electric and gas distribution utility to the office of energy resources upon request by the office."[46]

13. Reporting Obligations

a. In 2020, the Company will provide quarterly reports to the EERMC, the Division, OER, the ~~Collaborative~~TWG, and the PUC on the most currently available program performance for both natural gas and electric efficiency programs~~.~~. These reports will include a comparison of budgets and goals by program to actual expenses and savings on a year-to-date basis, and a status report on revolving loan funds~~.~~. The Company will also coordinate reporting of loan funds with the Rhode Island Infrastructure Bank. The reports will also include a brief summary of program progress and will highlight issues by sector for EERMC, Division, OER, and Technical Working Group attention. Within the C&I sector, there will be separate highlighting of large and small customer program progress and issues~~.~~. Beginning in the second quarter, the quarterly reports also include a forecast of expected results.

b. In 2020, for months during which quarterly reports are not produced, the Company will provide to the EERMC, the Division, and the ~~Collaborative~~ TWG monthly summaries of year-to-date spending and savings and results by sector.

c. The Company will provide to the Parties and file with the PUC its 2020 Year-End Report no later than May 1, 2021~~.~~. This report will include achieved natural gas and electric energy savings in 2020 and earned incentives for 2020~~.~~.

d. The Company will provide the Parties with a summary of evaluation results obtained since October 1, 2016, including a description of the impact of those results in planning the Company's 2020 programs, in the Plan to be filed by October 15, 2019.

14. ~~Incentive~~Performance Incentive

i. ~~a.~~ **Proposed Modification**

[46] http://webserver.rilin.state.ri.us/PublicLaws/law18/law18079.htm

The anticipated transformation of energy efficiency delivery during the next three years and the continued saturation of low-hanging, least cost measures will necessitate a shift in the management, sale, and development of energy efficiency services. It is important to begin sending the correct signal to the Company to begin this shift in 2020 in order to prepare for the future. In this environment, it is essential that the performance ~~shareholder~~ incentive mechanism not create a financial disincentive for the Company to drive these changes.

The Company proposes incremental modifications to the 2019 performance ~~shareholder~~ incentive mechanism that better align company incentives with changing savings goals and evolving state policy goals. ~~-~~For the electric portfolio, the ~~change in the~~ performance ~~shareholder~~ incentive will continue to be calculated in the same manner as 2019 for the majority of programs and measures while adding a separate earning mechanism for heat pumps and weatherization measures that save customers delivered fuels~~is two-fold:. change from an annual to a lifetime savings goal and a change from electric MWh and kW goal to a net all-fuel savings (MMBtu) goal.~~ The performance incentive mechanism will continue to include a demand reduction savings target as it did in 2019. For the natural gas portfolio~~, the change is from a goal of annual MMBtu to lifetime MMBtu.~~ the performance incentive calculation will be unchanged from the 2019 calculation. More is described in Section 2, above~~.~~ .

Including a component of the performance incentive tied to ~~The change to lifetime savings for both the electric and natural gas portfolio will better align the Company's shareholder incentive with the maximization of customer, environmental, and system benefits. This change will encourage the Company to focus on the delivery of more comprehensive energy savings to provide the greatest value to customers. While this modification will better align the Company's portfolio with Rhode Island's policy goals, the shift to a lifetime, as opposed to annual, goal does introduce an incremental degree of difficulty as compared to the Company's achievement of annual savings goals for several reasons. First, measures with longer lifetimes typically have more intricate and custom installations at a home or business and that require multiple steps and considerations and require more time to complete. For example, the weatherization of a home delivers 20 years of savings and it takes multiple steps to get there. It begins with a home energy audit to measure and develop specifications for insulation, then a customer deciding to move forward, and scheduling a contractor at a convenient time and then a multi-day installation along with verification visits. The challenge that the lifetime goal creates is ensuring that these longer-lead projects have the participation levels, processes and customer ease to be completed within a calendar year. The Company will have to change its customer strategy, sales, and delivery practices to successfully achieve targets.~~

~~Second, the challenge that the lifetime savings goals create is that it removes the agility the Company has had in the past to meet savings goals with easier-to-install and shorter-life measures. If the Company is lagging in performance, it will no longer be able to rely on lighting flash sales or natural gas steam traps to make up performance. This reduction in the company's portfolio of options will reduce the Company's nimbleness in balancing savings portfolios in real time with strategies to quickly procure additional savings. This will increase the difficulty in achieving planned goals. Given that this change will be difficult, it is necessary to ensure that Rhode Island maintains its leadership position in energy efficiency and can evolve as markets continue to transform.~~

~~The change to~~ all-fuel MMBtu savings for delivered fuel savings from air source heat pumps and weatherization of homes with delivered fuel will remove the current disincentive to promote the strategic electrification of heating and measures that save delivered fuels. It will help to create the needed step change to move towards providing customers with an energy optimization approach that focuses on holistic opportunities to reduce overall energy use in a least-cost manner. It also more fully captures the net effect of all-fuel savings efforts (electric, oil, and propane), as well as the impact of fuel conversions that result in overall lower energy use~~,~~. ~~Delivering this holistic, total energy outcome will be a challenge for the Company because it places a new emphasis on all-fuel measures which are more complicated to deliver and require more sophisticated sales and delivery approaches than do measures such as lighting. This change also upends the past years of program delivery experience by changing the relative savings contribution of programs. Take EnergyWise Multi-Family for example – in 2018, the Company under performed on the planned goals by achieving 67% of planned savings. The program has a relatively low impact on sector goals when measuring against Annual or Lifetime MWh. However, in the change to Lifetime MMBTu proposed in this plan, the relative contribution to savings quadruples because it delivers holistic savings for all-fuels. To successfully focus on optimization and holistic opportunities, the Company will have to change management strategies from the past.~~

~~Given the increased risks noted in this section, past performance will no longer be as reliable an indicator of Company ability to achieve committed savings goals. With the increased risk to performance, the~~The ~~C~~Company proposes to maintain a target performance incentive of 5.0% of the spending budget in 2020, equal to the overall rate in 2019. The target performance incentive will be composed of the following parts:

Core Electric Performance Incentive:~~earn a target based incentive rate equal to 5.5% of the eligible spending budget in a program year for achieving lifetime MMBtu electric and gas energy savings goals.~~

- For electric savings not coming from delivered fuel-switching heat pumps and delivered fuel weatherization, the Company can earn a target-based performance incentive rate equal to 3.50~~5.00~~% of the eligible annual spending budget for achieving net annual MWh savings target. The spending budget used in this calculation does not include customer incentives that are allocated to delivered fuel-switching heat pumps and delivered fuel weatherization. The MWh savings ~~goal~~ target for this calculation also does not contain the savings from the designated delivered fuel-switching heat pumps and delivered fuel weatherization.
- For passive demand savings the Company can earn a target-based performance incentive rate equal to~~5.00~~ 1.50% of the annual spending budget for achieving net annual MW savings target. The spending budget used in this calculation does not include customer incentives that are allocated to delivered fuel-switching heat pumps and delivered fuel weatherization, however the passive demand savings for those measures are included in the calculation.

Delivered Fuel Weatherization and Heat Pump Performance Incentive:

- For all-fuel net annual MMBtu savings coming from delivered fuel-switching heat pumps and delivered fuel weatherization, the Company can earn a target-based performance incentive rate equal to 5.00% of the customer incentives (rebates) tied directly to those measures. The spending budget upon which this performance incentive may be earned is composed of only the customer incentives (rebates) paid to customers for delivered fuel-switching heat pump installations and delivered fuel weatherization in the ENERGY STAR® HVAC, EnergyWise, and Single Family Income Eligible Services programs.[47] This performance incentive calculation correspondingly only includes the all-fuel MMBtu savings from delivered fuel-switching heat pump installations and delivered fuel weatherization in those programs.

[47] Note that fuel-switching air source heat pump installations also occur in the EnergyWise Multifamily and Income Eligible Multifamily programs, but are tracked as custom measures in those programs. The programs will continue to include heat pumps as custom installations, but any savings from those measures are tracked and included in the Core Electric performance incentive.

Natural Gas Performance Incentive:

- ~~For electric savings, the Company can earn a target-based incentive rate equal to 5.5% of the eligible annual spending budget for achieving lifetime MMBtu savings goals.~~
- For natural gas, where there is no demand savings component, the Company can earn a target-based ~~incentive~~performance incentive rate equal to 5.~~5~~0% of the eligible annual spending budget for achieving ~~lifetime~~ annual MMBtu savings ~~goals~~target.

~~Although the target Company's incentive is calculated as share of the annual spending budget, and not based on customer benefits, given the movement toward outcome and benefits-based incentives in Rhode Island, discussed in the next section, it is useful to consider that the proposed revision represents a very small increase in the percent of customer benefits retained by the Company. The Company would continue to retain only a very small percentage of the net benefits generated by its efficiency investments. For example, under the TRC Test, the target incentive for the electric portfolio under the traditional 5% of the annual spending budget amounts to 1.61% of benefits. This would increase to 1.77% under the proposed revision. The target incentive for the gas portfolio under the traditional 5% rate amounts to 2.01% of benefits. This would increase to 2.21% under the proposed revision.~~

As in 2018 and 2019, the proposed ~~incentive~~performance incentive mechanism for the Core Electric Incentive and the Natural Gas Incentive establishes an earning rate ~~n incentive~~ of 1.25% of the annual spending budget for achieving 75% of the savings ~~goals~~ targets in a sector~~.~~. This would increase linearly to 5.~~5~~0% of the annual spending budget for achieving 100% and increase linearly from that point to 6.~~7~~25% of the annual spending budget for achieving 125% of the savings ~~goals~~targets.

Expressed mathematically, the Core Electric and Natural Gas performance ~~shareholder~~ incentives w~~w~~ould be calculated as follows for both energy and demand savings, where SB is the Annual Spending Budget in the sector:

- From 75% of savings to 100% of savings:
  - Performance Incentive = SB x (1.25% + (% of Savings Achieved - 75%) x 0.15)
    - x 0.7 for electric energy savings
    - x 0.3 for electric demand savings
    - x 1.0 for natural gas savings
- From 100% of savings to 125% of savings:
  - Performance Incentive = SB x (5.00% + (% of Savings Achieved - 100%) x 0.05)
- Performance Incentive is capped at 6.25% above 125% of savings

- ~~From 75% of savings to 100% of savings:~~
  - ~~Shareholder Incentive = SB x (1.25% + (% of Savings Achieved - 75%) x 0.17)~~
- ~~From 100% of savings to 125% of savings:~~

~~Shareholder Incentive =SB x (5.50% + (% of Savings Achieved - 100%) x 0.05)~~ For the Electric Delivered Fuel Incentive, the proposed mechanism would establish an earning rate of 1.25% of customer incentives associated directly with the delivered fuel switching heat pumps and weatherization projects for achieving 50% of the all-fuel savings for those measures. This would increase linearly to 5.0% of the annual customer incentives for those measures at 100% of savings. Above 100% the earning mechanism would increase linearly on the same path as in the Core Performance Incentive mechanism but would be uncapped.

~~Shareholder Incentive~~Performance Incentive =SB x (5.50% + (% of Savings Achieved - 100%) x 0.05) For the Electric Delivered Fuel Incentive, the proposed mechanism would establish an earning rate of 1.25% of customer incentives associated directly with the delivered fuel switching heat pumps and weatherization projects for achieving 50% of the savings targets for those measures. This would increase linearly to 5.0% of the annual customer incentives for those measures at 100% of savings and would continue upwards on the same linear rate above 100% and would be uncapped.

Expressed mathematically, the Electric Delivered Fuel Incentive would be calculated as follows, where CI are distributed Customer Incentives for delivered fuel-switching heat pumps and weatherization associated with delivered fuels:

- From 50% of savings to 100% of savings:
  - Performance Incentive = CI x (1.25% + (% of Savings Achieved - 50%) x 0.075)
- From 100% of savings and above:
  - Performance Incentive = CI x (5.00% + (% of Savings Achieved - 100%) x 0.05)
- Performance Incentive is uncapped above 100% of savings

The Company believes that ~~this~~ this combination of performance incentive structures will incent the Company to achieve savings that approach or exceed 100% of the annual goals while providing a way to move past potential disincentives for some delivered fuel measures.~~.~~ ~~It does so by setting the threshold for savings required to earn an incentive at 75% of the annual savings goals, by creating a steep slope to earn a greater incentive in the range of 75% of savings to 100% of savings, by establishing the target incentive at 5.5% of the annual spending budget, and by offering a higher incentive for exceeding 100% of the annual goals.~~

~~The threshold performance level for energy savings by sector will be set at 75% of the lifetime energy and demand savings goal for the sector. The Company must attain at least this threshold level of savings in the sector before it can earn an incentive. The Company will have the ability to earn an incentive for each MMBtu saved, once threshold savings for the sector are achieved. The cap for the target incentive amount of energy savings will remain at 125%.~~

The ability to earn up to 125% of the target incentive in the Core Electric and Natural Gas Incentive mechanisms is worthwhile because Rhode Island customers will realize additional energy and cost savings if the Company achieves a high level of energy savings performance~~.~~ . Given budget control requirements, this feature will provide the Company with an incentive to improve the efficiency of its program implementation efforts while providing Rhode Island customers with value in excess of the incremental incentive that may be earned by the Company~~.~~ . That is, the Company will have an incentive to increase customers' savings and customers will realize an overwhelming majority of the savings. The uncapped incentive over 100% of savings within the Electric Delivered Fuel Incentive mechanism gives the Company a strong incentive to pursue measures that align with Company and State policy goals, but which do not have as large an electric energy savings potential, therefore mitigating a possible disincentive to pursue these efficiency measures.

The savings ~~goals~~ targets are based on a set of assumptions of savings per measure and other impact factors in each program as well as the proposed budget~~.~~ . The determination

of achieved savings will be based on the same set of savings and impact assumptions as is used to develop the savings goal in this Annual Plan. The Company anticipates that upon review these assumptions These assumptions have been reviewed and will be accepted by the Parties.

Attachment 5, Tables E-3 and Attachment 6, Table G-3 provide the derivations of the eligible electric spending budget that are used to determine the incentiveperformance incentive amounts that the Company may earn if it is successful in achieving its goals for energy and passive demand savings. The Residential ConnectedSolutions and Commercial Connected Solutions program budgets are subtracted from the "Eligible Sector Spending Budgets for Shareholder IncentivePerformance Incentive" in tables E-3 and G-3. Customer Incentives for fuel-switching heat pump installations and delivered fuel weatherization are also accounted for separately and used as the basis upon which the Electric Delivered Fuel Incentive can be earned. Attachment 5, Table E-9 and Attachment 6, Table G-9 provide a summary of the incentives related to annual energy-savings goals targets by sector. These goals targets by sector reflect the expected cost of savings in each sector informed by evaluation studies, and these goals targets have been adjusted to take into account changing rebate policies and the changing market being served. As described above, these goals targets have been carefully reviewed by the Collaborative TWG and EERMC representatives to ensure that they represent reasonable and challenging goals targets for the year.

For electric energy efficiency programs, the proposed target base incentive rate in 2020 is equal to 5.5% of the eligible spending budget for 2020. The projected electric eligible spending budget for 2020 is approximately $103.6 100.7 million (see Attachment 5, Table E-3).[48] The total electric target incentive for 2020 is 5.50% of the proposed spending budget, or approximately $5.695.0 million (see Attachment 5, Table E-9).[49] The eligible spending budget includes the $5.0M for Finance Costs which is transferred to the Rhode Island Infrastructure Bank for the Efficient Building Fund. The Company takes actions to help the deployment of EBF funds which have proven to deliver incremental benefits, see Table XX in Attachment 2. Additionally, In accordance with the Amended Settlement Agreement in Docket Nos. 4770 and 4780 filed with the PUC on August 10, 2018, the Company is not eligible to earn an energy efficiency incentive on its Energy Efficiency Demand Response Programs. To comply with this requirement, the Company excluded

[48] Of this total electric spending budget, approximately $92.7 million of the spending budget would be eligible for performance incentive earnings under the Core Electric Shareholder Incentive mechanism and $8.0 million of the spending budget would be eligible for performance incentive earnings under the Delivered Fuel Measure Shareholder Incentive mechanism.

[49] Of this total electric target incentive, approximately $4.6 million of the target incentive would be earned under the Core Electric Shareholder Incentive mechanism and $0.4 million would be earned under the Delivered Fuel Measure Shareholder Incentive mechanism.

spending on Demand Response Programs from the eligible spending budget as shown in Table E-3.

For natural gas efficiency programs, the proposed target base incentive is equal to 5.~~5~~0% of the eligible budget~~.~~. The projected natural gas eligible spending budget for 2020 is approximately $~~3~~31.2 ~~.1~~ million (see Attachment 6, Table G-3)~~.~~. The total natural gas target incentive for 2020 is 5.~~5~~0% of the proposed spending budget, or approximately $~~1.71~~1.6 million (see Attachment 6, Table G-9).

In addition, to promote cost efficiency in spending in the achievement of the energy the savings targets~~savings goals~~, an adjustment will be made under certain circumstances to ~~lifetime MMBtu~~ the savings targets ~~savings goals~~ in the ~~shareholder incentive~~performance incentive calculation. If the actual implementation expenses in a sector at year-end are less than the planned implementation expenses for that sector by more than five percent, and if achieved savings in the sector exceed 100% of ~~the~~the savings target ~~target savings goal~~, the savings target ~~savings goal~~ for that sector will be adjusted by the ratio of actual implementation expenses to the planned implementation expenses. Conversely, if the actual implementation expenses[50] in a sector at year-end are greater than the planned implementation expenses by more than five percent, and if achieved savings in the sector are less than 100% of the ~~target~~ savings ~~goal~~target, ~~the~~ the savings target ~~savings goal~~ for that sector will be adjusted by the ratio of actual implementation expenses to the planned implementation expenses.

The Company will report final program results and earned incentive in its Year-End Report regarding 2020 Energy Efficiency Program efforts.

ii. ~~b.~~ Relationship of Proposed Modification to Future ~~Performance Incentive~~Performance Incentive Mechanisms in Rhode Island

The Company recognizes that there are ongoing conversations about how ~~performance incentive~~performance incentives will evolve in Rhode Island, most notably under Docket 4943, which aims to provide guidance and principles for ~~performance incentive~~performance incentive mechanisms in Rhode Island~~.~~. The Company has provided comments on Commissioner Anthony's proposed principles. The memo raises some broader priorities and considerations for ~~performance incentive~~performance incentive mechanisms in Rhode Island with which the Company is largely in agreement, including:

[50] Expenses related to overspending for deliverable fuels will be excluded from implementation expenses in this calculation.

- rationalization of incentives across dockets, to avoid the potential for duplicative earning for a single outcome or action;
- avoiding differently sized incentives for the same action or outcome in different dockets;[51]
- movement toward incentives focused on key outcomes and benefits, rather than actions or programs; and
- ensuring benefits of incentives exceed costs to customers~~.~~ .

The Company believes that the proposed change to the ~~shareholder incentive~~performance incentive discussed above is consistent with these priorities~~.~~ . First, in ~~shifting~~ incorporating the Electric Delivered Fuel Incentive, the ~~the outcome of focus to lifetime MMBtus, revised structure will remove a~~ disincentive for the Company to pursue electrification of heat and thermal improvements is mitigated, and in ~~doing so~~ better aligns the Company's financial interest with Rhode Island's GHG goals. ~~Second, the Company's proposed increase in the incentive size reflects a minimal increase in the share of benefits retained by the Company, while maximizing benefits to customers by sending a signal to prioritize the deployment of measures that create longer-term energy savings, and is reflective of the greater challenge associated with achieving lifetime savings targets relative to an annual target.~~

The Company believes that this proposal represents an important incremental step in moving toward broader outcome-based ~~performance incentive~~performance incentive mechanisms tied to customer benefits and savings from all fuels~~.~~ . The Company expects that the next Three-Year Plan will provide an opportunity to consider further changes to the ~~shareholder incentive~~performance incentive structure that align with the outcomes of Docket 4943, as well as the impacts of other relevant filings (e.g., AMF and GMP)~~.~~ . The proposed change is not intended to set precedent for future iterations of ~~performance incentive~~performance incentive mechanisms~~.~~ .

15. Testing Performance Metrics

In 2020, the Company proposes to continue the ~~In the 2019 Annual Plan, the Company proposed~~ tracking and reporting performance related to certain metrics in order to test progress towards several key objectives~~.~~ . In 2019, t~~T~~he Company began testing and reporting out annual and lifetime carbon reductions resulting from investments in the

[51] The Company did note in its comments on Commissioner Anthony's memo, however, that in certain circumstances, ancillary benefits might warrant differently sized incentives~~.~~ .

electrification of heating and delivered fuels measures, lifetime MWh and MMBtu savings, program costs per energy savings, and a customer satisfaction metric. The Company continues to work towards tracking greenhouse gas equivalent savings (in carbon dioxide equivalents) resulting from all electric and natural gas measures. These efforts were to assist in collecting information in order to consider new performance metrics for future Annual Plans that would better align the plans with Rhode Island's goals for Power Sector Transformation and greenhouse gas emissions reduction.

~~The Company proposes to continue reporting out on these metrics with two changes from 2019 to 2020. Since the Company has proposed to move from Annual MWh and Annual kW to Lifetime all fuel savings (MMBtu) for the electric portfolio and from Annual MMBtu for Lifetime MMBtu for the natural gas portfolio, the Company proposes to no longer track and report on lifetime MWh and MMBtu. In addition, since the move to all fuel savings (MMBtu) will capture the energy savings from electrification of heating it is no longer necessary to track a carbon metric specific to these measures but will commit to reporting out on carbon savings at the program level.~~

The Company will provide updates on progress, challenges, and lessons learned with the Energy Efficiency Technical Working Group and the EERMC during 2020. While Company performance against a test metric may help inform future goals, it will not predetermine these goals. At the end of 2020, the Company, in consultation with the Division, OER, EERMC Consultants, the ~~Collaborative~~TWG, and the PST Advisory Group may determine that a metric is not appropriate for use in the future. The Company will work with the Division, OER, EERMC Consultants, and the ~~Collaborative~~ TWG in the development of future baselines and financial rewards for any new annual goals resulting from these test metrics.

i. Carbon Reductions

The Company proposes to continue tracking annual and lifetime carbon reductions resulting from investments in the electrification of heating and delivered fuels measures. This approach mirrors what was proposed in the Company's Power Sector Transformation Vision and Implementation Plan (PST Plan), as detailed in the Docket Nos. 4770/4780 Settlement Agreement. The carbon reductions will be calculated using emission rates from the 2018 AESC Study shown in Table 18 ~~the table~~ below, multiplied by the resulting annual and lifetime avoided oil or propane from this suite of measures.

Table 18. 2018 AESC Study Emission Rates

Fuel	Emissions Rate	Unit
#2 Fuel Oil	0.081	CO2 (tons/MMBtu)
Propane	0.070	CO2 (tons/MMBtu)

2018 AESC Study Emmission Rates		
~~#2 Fuel Oil~~	~~0.081~~	~~CO2 (tons/MMBtu)~~
Propane	0.070	CO2 (tons/MMBtu)

The carbon metric will provide additional visibility on this suite of measures that do not significantly contribute to existing electric and demand savings goals but contribute to Rhode Island's greenhouse gas reduction goals.[52]

The Company appreciates the direction given by the PUC at the Open Meeting on Docket Nos. 4770/4780 held on August 3, 2018 indicating that the Company could propose a ~~shareholder incentive~~performance incentive for achieving carbon reductions from the electrification of heating in future energy efficiency Annual Plans. For 2020, the Company proposes to only continue testing a performance metric for carbon. The Company believes it is prudent to track this metric to help inform the development of an annual goal and appropriate ~~shareholder incentive~~performance incentive level in the future~~.~~.

In addition to tracking carbon reductions for the purpose of this metric, the Company will strive to track greenhouse gas equivalent savings (in carbon dioxide equivalents) resulting from all electric and natural gas measures in the Plan. The Company will report out on any issues it encounters in striving to report in terms of carbon dioxide equivalents.

ii. **Lifetime MWh and MMBtu Savings**

National Grid currently includes lifetime electric and gas savings in its Annual Plans. These values are based on the lifetime savings associated with the measures in the Plan. In the 2019 Plan, the Company committed to show planned and achieved lifetime savings and will continue to do so in 2020~~.~~.

~~i.~~**iii. Program costs per energy savings**

The Company currently includes the projected costs of lifetime electric and gas savings in its Annual Plans. The Company recently began including the actual costs of lifetime savings compared to planned values in its quarterly reports. In 2020, the Company will continue this reporting in its quarterly reports and will add this metric to its Year-End Report~~.~~.

The Company will also report out on the cost of saved peak demand for the residential and C&I demand response programs. This metric will be important to track as these new program offerings scale up~~.~~.

[52] Rhode Island Greenhouse Gas Emissions Reduction Plan, December 2016.

~~ii.~~iv. Customer Satisfaction

Commented [TJ17]: Customer sat questions under further review for Draft Three

The Company proposes to continue to track a Customer Satisfaction metric in 2020. Initially the metric will be applied to whole house programs with the potential to expand to other residential programs over time.

The Company proposes to utilize a third party vendor to conduct the customer survey. The metric would be based off customer responses to the following questions:

1. Would you recommend this program to a friend or family member?
2. How satisfied are you with the energy efficiency services received?

The Company will track customer responses and report out on the average satisfaction across tracked programs.~~.~~

The Company will detail progress on the above proposed metrics in its quarterly reports as well as a detailed summary of the results, lessons learned, and any needed improvements in its 2020 Year-End Report to the PUC.

~~17.~~16. Miscellaneous Provisions

a. Other than as expressly stated herein, this Settlement establishes no principles and shall not be deemed to foreclose any party from making any contention in any future proceeding or investigation before the PUC.

b. This Settlement is the product of settlement negotiations~~.~~. The content of those negotiations is privileged and all offers of settlement shall be without prejudice to the position of any party.

c. Other than as expressly stated herein, the approval of this Settlement by the PUC shall not in any way constitute a determination as to the merits of any issue in any other PUC proceeding.

d. The Parties agree that the Energy Efficiency Technical Working Group shall meet no less than six times in 2020 to review the status and performance of the Company's 2020 energy efficiency programs and advise the Company on potential energy efficiency programs for 2021.

~~d.~~

The Parties respectfully request that the PUC approve this Stipulation and Settlement as a final resolution of all issues in this proceeding.

Respectfully submitted,
THE NARRAGANSETT ELECTRIC COMPANY D/B/A NATIONAL GRID

_____

By its Attorney, Date
Raquel J. Webster