

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
PUBLIC UTILITIES COMMISSION

In Re: The Narragansett Electric Company
d/b/a National Grid

Docket No. _____

Annual Energy Efficiency Plan for 2019

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ANNUAL ENERGY EFFICIENCY PLAN FOR 2019

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October 15, 2018

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Executive Summary

| For Final Draft

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ATTACHMENTS

1. 2019~~9~~ Residential Energy Efficiency Solutions and Programs

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2. 2019~~9~~ Commercial and Industrial (C&I) Energy Efficiency Solutions and Programs

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3. 2019~~9~~ Measurement and Verification Plan

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4. Rhode Island Benefit Cost Test Description

5. 2019~~9~~ Electric Energy Efficiency Program Tables

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6. 2019~~9~~ Gas Energy Efficiency Program Tables

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7. 2019~~9~~ Energy Efficiency Program Plan Bill Impacts

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8. 2019 Energy Efficiency Pilots Summary

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9. National Grid Customer Listening Forum Summary Report

Comment [JR2]: For Final Draft

1. Introduction and Summary

The Narragansett Electric Company d/b/a National Grid (National Grid or Company) is pleased to submit this 2019 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) and has been endorsed by the Energy Efficiency and Resource Management Council (EERMC).¹

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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 revised by the EERMC and approved by the PUC at an Open Meeting on April 27, 2017 in Docket 4684. This Plan is being jointly submitted as a Stipulation and Settlement, entered into by the Rhode Island Division of Public Utilities and Carriers (Division), the Office of Energy Resources (OER), the EERMC, Acadia Center, People's Power & Light (PP&L), and National Grid (collectively, the Parties), and addresses issues raised by members of the Collaborative concerning the Company's electric and natural gas energy efficiency (EE) programs for calendar year 2019.

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The 2019 Plan satisfies the statutory requirements for Least Cost Procurement. The gas annual savings are higher than the Three-Year Energy Efficiency Procurement Plan (Three-Year Plan) for 2018-2020 and the electric savings are slightly lower due to factors described in Section 2 below.² The Annual Plan is cost-effective and has a cost that is lower than the cost of acquisition of additional supply for both electricity and natural gas, satisfying the requirements prescribed in R.I. Gen. Laws § 39-1-27.7 (a)(2).

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The primary goal of the Annual 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 Plan will create annual savings of 192,036 MWh and 432,369 MMBtu and lifetime savings of 1,678,632 MWh and 4,418,408 MMBtu. The Plan will generate benefits of more than \$634.0 million over the life of the measures (with

¹ Since 1991, a collaborative group (Collaborative) has been meeting regularly to analyze and inform the Company's electric and gas energy efficiency programs. Presently, members of the Collaborative include: the Company, the Division and the Division's consultant, Synapse Energy Economics (Synapse), PP&L, TEC-RI, RI Housing, and Acadia Center. In addition, the OER and several EERMC members and representatives from the EERMC's Consulting Team participate in the Collaborative. Since 1991, membership in the Collaborative has varied because some organizations have withdrawn and others have joined.

² The Company submitted the Three-Year Plan to the PUC on August 30, 2017 in Docket 4684.

\$519.1 million in benefits coming from electric efficiency and \$114.9 million in benefits from natural gas efficiency), which represents a large and urgently needed benefit for Rhode Island's residential, commercial, industrial, and income eligible energy customers.

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These savings 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 2050.³ 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.⁴ The electric, gas, and oil energy efficiency measures proposed in this Plan will avoid over 1.09 million tons of carbon over the lifetime of the installed measures.⁵ This represents 9.6% of the state's total carbon emissions and is the equivalent of removing 233,883 passenger vehicles from the road for one year.⁶

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In addition to providing customers with cost-savings and contributing to the state's carbon reduction goals, the 2019 Annual Plan will also create significant economic benefits in Rhode Island. The Company expects that investments made in energy efficiency under this Plan will add \$86.5 million to Rhode Island's state gross domestic product (GDP) and create more than 1,271 job-years of employment.⁷ The vast majority of jobs created as a result of energy efficiency investments are local because they are tied to the installation of equipment and other materials. An analysis of National Grid's 2017 energy efficiency programs found that 79% of companies involved in the Company's energy efficiency programs were located in Rhode Island.⁸ These findings confirm that job creation is an additional significant benefit that National Grid's investments in energy efficiency contribute to Rhode Island's economy overall and

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³ R.I. Gen. Laws § 42-6.2.

⁴ Rhode Island Greenhouse Gas Emissions Reduction Plan, December 2016.

⁵ 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.

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⁶ RI carbon emissions equal 11.33 million metric tons (<https://www.eia.gov/environment/emissions/state/>). Carbon equivalency value calculated from <https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator>

Deleted: Figure 4-15 on page 4-39. The report is available online at: <http://ma-eeac.org/wordpress/wp-content/uploads/2015-Regional-Avoided-Cost-Study-Report1.pdf>.

⁷ Macroeconomic multipliers for the economic growth and job creation benefits of investing in cost-effective energy efficiency from National Grid's 2014 Regional Economic Model (REMI) Analysis as presented by the Company to the Collaborative on May 29, 2014. To maintain consistency with RI Test economic benefits multiplier, the Company is only including construction phase impacts to GDP and job-years to account for only direct and indirect impacts.

⁸ Peregrine Energy, "Analysis of Job Creation from 2017 Expenditures for Energy Efficiency in Rhode Island by National Grid", April 25, 2017 (filed as part of National Grid's 2017 Year-End Report).

directly to the business owners and their employees who deliver these programs and services.

Table 1: 2019 Energy Efficiency Program Plan Summary

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Table 1: 2019 Energy Efficiency Program Plan Summary

Electric Programs by Sector	Implementation Spending (\$000)	Customer Contribution (\$000)	Annual MWh Savings	Annual kW Savings	Lifetime MWh Savings	Demand Response (kW)	Total Benefits (\$000)	RI Test B/C Ratio	¢/lifetime kWh	Participants
Non-Income Eligible Residential	\$42,863.9	\$4,597.7	92,658	12,919	436,729	1,763	\$152,669.8	3.08	10.9	533,877
Income Eligible Residential	\$15,538.3	\$0.0	6,990	1,112	73,304		\$44,055.6	2.70	21.2	7,550
Commercial and Industrial	\$44,766.1	\$16,729.3	92,389	14,935	1,168,600	34,000	\$322,382.5	5.07	5.3	2,897
Regulatory	\$1,861.7									
Subtotal	\$105,029.9	\$21,327.0	192,036	28,967	1,678,632	35,763	\$519,107.8	3.95	7.5	544,324
Gas Programs by Sector	Implementation Spending (\$000)	Customer Contribution (\$000)	Annual MMBtu Savings		Lifetime MMBtu Savings	Total Benefits (\$000)	RI Test B/C Ratio	\$/lifetime MMBtu		Participants
Non-Income Eligible Residential	\$13,854.4	\$6,481.5	191,729		1,604,291	\$43,249.6	2.06	12.68		110,837
Income Eligible Residential	\$8,185.9	\$0.0	29,665		543,171	\$26,151.9	3.19	15.07		4,175
Commercial and Industrial	\$8,112.4	\$4,875.4	210,974		2,270,945	\$45,586.0	3.41	5.72		1,992
Regulatory	\$611.8									
Subtotal	\$30,152.7	\$11,356.9	432,369		4,418,408	\$114,987.5	2.64	9.53		117,004
Total for Plan	\$135,182.6	\$32,683.9				\$634,095.3	3.66			661,328

(1) Implementation spending does not include customer contributions, shareholder incentive, or commitments.

(2) Regulatory Includes contributions to OER and EERMC

As noted above, these savings 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/Total Costs - must be greater than 1.0.¹⁰ The overall electric EE Program RI Test ratio is 3.95, and the overall natural gas EE Program RI Test ratio is 2.64. This means that for each \$1 invested, electric programs will create \$3.95 of benefits over the lifetime of the investment, and natural gas efficiency investments will create \$2.64 in benefits over the lifetime of the investments.

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

Deleted: The revised Standards set forth new requirements for a cost-effectiveness test called the Rhode Island Benefit Cost Test (RI Test), which "more fully reflects the policy objectives of the State with regard to energy, its costs, benefits, and environmental and societal impacts."⁹ In accordance with the Standards, the Company worked in collaboration with the Division consultants, EERMC consultants, OER, and the Collaborative to incorporate new benefits into the RI Test that were approved as part of the 2018-2020 Three-Year Plan in Docket 4684. The RI Test includes greenhouse gas reduction values and economic benefits as described in Attachment 4.

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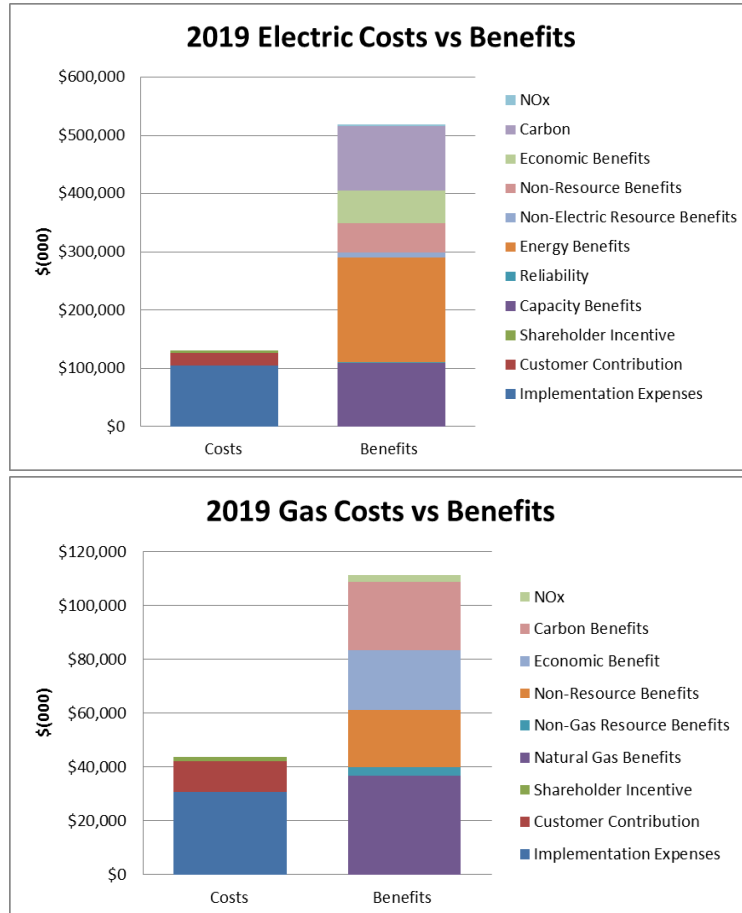
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¹⁰ Standards, Section 1.4(C).

1.71, and the overall natural gas EE Program TRC Test ratio is 1.70. The TRC Test comparison is included in Table E-5A and G-5A.

Graph 1. Annual Plan Total Benefits and Total Costs (RI Test)

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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.

Over time, the benefits of procuring energy efficiency at a cost less than supply accrue to customers. Graph 3 shows the cumulative energy savings for just those energy efficiency measures installed since 2009 (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 2018. This is also true for those

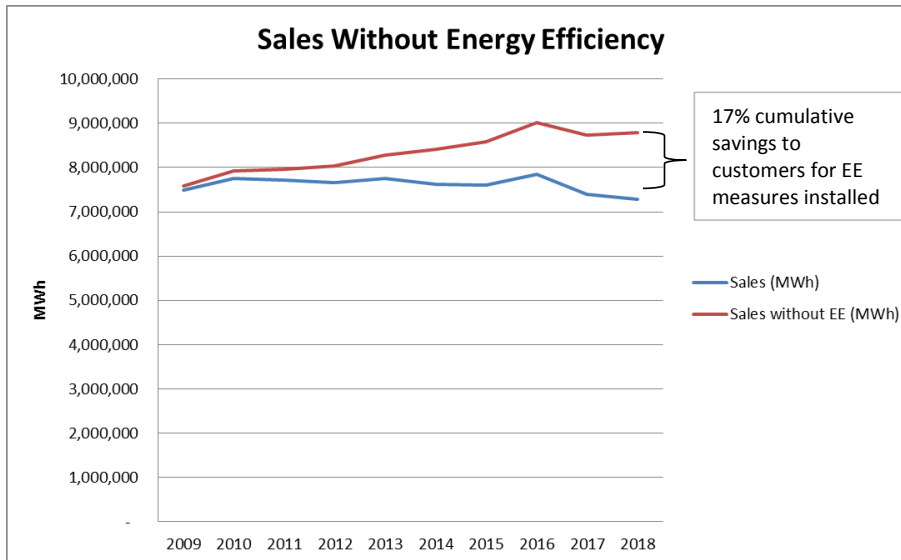
Comment [CL6]: Awaiting direction from RI PUC; more to be included in second draft

Deleted: Least Cost Procurement requires the Company to procure "energy efficiency and energy conservation measures that are prudent and reliable and when such measures are lower cost than acquisition of additional supply."¹¹ As prescribed by statute, the Company procures energy efficiency resources instead of supply to meet customer energy demand. If what the Company spends on acquiring energy savings is less than acquiring additional supply, the Plan meets this requirement. The Company's cost to achieve the lifetime savings for the electric energy efficiency portfolio is 5.19¢ per lifetime kWh saved. This is 5.15¢ less than the weighted average cost of electric supply across all customer sectors.¹² The Company's cost to achieve the lifetime savings for the natural gas energy efficiency portfolio is \$5.63 per lifetime MMBtu saved. This is \$1.39 less than the weighted average cost of gas supply across all customer sectors.¹³ ¶

Deleted: Graph 2. 2018 Annual Plan Total Benefits and Total Costs¶

measures installed in and after 2009.¹⁴ The only exception is the savings from Home Energy Reports. This program only has a one-year measure life, and is counted as such in the graph below because it connects with customers annually to prompt them to continue taking energy saving actions. In Graph 3 below, the area between the blue and red lines represents the cumulative annual MWh savings for measures installed since 2009. All these MWh savings were obtained at a cost lower than the cost of supply. From 2009 to projected year-end 2018, electric energy efficiency programs will have saved an estimated 7.25 million MWh. Without these energy savings, Rhode Island customers would have had to purchase 17% more energy at a higher cost.

Graph 3: Cumulative Impacts of Energy Efficiency



This cost-effective Annual Plan includes an investment of \$111.4 million for electric energy efficiency implementation in 2019. If approved, this will be funded by the existing energy efficiency program charge of \$0.00972 per kWh, and additional funding sources including ISO-NE Forward Capacity Market (FCM) proceeds. Pursuant to R.I. Gen. Laws § 39-1-27.7(c)(5), a fully reconciling mechanism of \$0.00196 per kWh is needed to fully fund the cost-effective electric energy efficiency programs for 2019.

This Plan also includes a \$32.2 million investment in cost-effective natural gas energy efficiency implementation. If approved, this investment will be funded by the existing energy efficiency program charge of \$0.869 per dekatherm for residential customers

¹⁴ Actual lifetime varies by measure but is not included in Graph 3 for ease of illustration. When the Company reports out on savings to ISO-NE it takes into account impact of each measure's life.

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and \$0.671 per dekatherm for non-residential customers. Pursuant to R.I. Gen. Laws § 39-1-27.7(c)(5), a fully reconciling mechanism of negative \$0.012 per dekatherm for residential customers and negative \$0.135 per dekatherm for non-residential customers will be needed to fully fund the cost-effective natural gas energy efficiency programs for 2019.

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All Rhode Island electric and gas customers will benefit from lower 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 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 reductions in their combined electric and gas bills over the life of the installed measures when compared to not having the 2019 energy efficiency program charge: Residential (1.24%, \$30.34); Low Income (6.19%, \$133.51); Small C&I (12.60%, \$962.77); Medium C&I; (10.84%, \$2,410.18); Large C&I (3.99%, \$19,043.56). Non-participants benefit from power market effects and avoided investment in infrastructure due to energy efficiency that is also reflected in rates. When the impacts on both participants and non-participants are averaged, the analysis shows that the average 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 the participant and overall bill savings in Rhode Island.

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2. Annual Plan Compared to Three-Year Plan for Year 2019

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The ambitious energy and cost savings for the 2019 program year are consistent with the objectives and requirements of Least Cost Procurement and exceed the savings targets proposed in the Three-Year Plan in Docket 4684. The electric savings goal proposed for 2019 is 192,036 MWh, or 2.56% of the referenced 2015 load. The natural gas savings goal for 2018 is 432,369 MMBtu, or 1.05% of 2015 natural gas load. Proposing a comparable electric goal and a higher gas goal in the Annual Plan, compared to the Three-Year Plan, demonstrates National Grid's continued commitment to a data-driven process whereby goals will be set at the most aggressive and nation-leading levels that are achievable in practice, a principle described in the Three-Year Plan.

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The following table compares the Annual Plan components to the 2018-2020 Three-Year Plan.

Table 2: Annual Plan compared to Three-Year Plan for Year 2019

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Electric Programs	2019 3 Year Plan	2019 Annual Plan	% Change
Annual MWh Savings	194,677	192,036	-1%
Lifetime MWh Savings	1,904,592	1,678,632	-13%
Annual Peak kW Savings	35,188	28,967	-21%
Total Benefits	\$ 438,942,301	\$ 519,107,844	15%
Total Spending	\$ 124,932,991	\$ 111,445,235	-12%
Benefit Cost Ratio (RI Test)	2.88	3.95	27%
Cost/Lifetime kWh	\$ 0.077	\$ 0.075	-2%
EE Program Charge per kWh	\$ 0.01390	\$ 0.01168	-19%
Gas Programs	2019 3 Year Plan	2019 Annual Plan	% Change
Annual MMBtu Savings	408,100	432,369	6%
Lifetime MMBtu Savings	4,709,195	4,418,408	-7%
Cost/Lifetime MMBtu	\$ 8.33	\$ 9.53	13%
Total Benefits	\$ 101,369,221	\$ 114,987,483	12%
Total Spending	\$ 30,776,029	\$ 32,271,266	5%
Benefit Cost Ratio (RI Test)	2.49	2.64	5%
C&I EE Program Charge per Dth	\$ 0.739	\$ 0.536	-38%
Residential EE Program Charge per Dth	\$ 0.903	\$ 0.857	-5%

Each year, the Company creates an Annual Plan that attempts to meet the savings targets set out in the Three-Year Plan while meeting the requirements of the law that the Plan must be cost-effective and less than the cost of supply. However, as noted in previous PUC dockets, Annual Plans may contain budgets and EE Program Charges that vary from those contained in the Three-Year Plan.¹⁵ 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 include: updates to the avoided cost study, electric and gas sales, available fund balance, Regional Greenhouse Gas Inc. (RGGI) auction revenue, ISO-New England's (ISO-NE) Forward Capacity Market (FCM) auction proceeds, evaluation results, market conditions, customer preferences, and changes in legislation.

¹⁵ 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 EE Program Charges differ compared to the illustration presented in the Three-Year Plan. There are several factors contributing to this difference.

A. Evaluation Results

Annual and lifetime gas savings are higher in the Annual Plan than in the Three-Year Plan. This is due to the completion of several evaluations after the Three-Year Plan was filed that increased the claimable savings. The evaluations include C&I Custom Realization Rate studies, C&I Free Ridership and Spillover Study.

Annual and lifetime electric savings are lower in the Annual Plan than the Three-Year Plan. This is due in part to several evaluations that reduced claimable savings. These studies include the C&I Upstream HVAC and the C&I Upstream Lighting impact and net-to-gross studies, the Residential Lighting and Products net-to-gross studies, and the Income Eligible Services Single Family program Impact Evaluation.

Lifetime benefits from gas savings increased as compared to the Three-Year Plan. This is due to the increased energy savings described above.

B. Future Innovation

The Company included an adder of 25,539 Annual MWh for future innovation in the Three-Year Plan to demonstrate its commitment to strive and achieve the approved 2019 electric Targets in Docket 4684. The MWh associated with future innovation was equal to the difference between what the Company thought was achievable in 2019 at the time of the Three-Year Plan filing and the approved 2019 electric Targets.

Since the Company filed the Three-Year Plan with the PUC, the Company has worked to identify new savings opportunities to help meet the 25,539 MWh of savings needed to meet the approved 2019 electric targets.

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The state's 2018 fiscal year budget established in 2017 House Bill 5175 Sub A set forth the requirement that "The 2018 program year plans total budget shall not exceed the commission-approved total budget for the 2017 system reliability and energy efficiency and conservation procurement program plan."¹⁶ This requirement (budget cap) lowered the total electric spending, cost per savings, and EE Program Charge compared to the Three-Year Plan.¶
This budget cap also reduced the amount of cost-effective electric savings that could have been achieved in 2018. Without the budget cap in place, the 2018 EE Plan could have saved 3,612 more annual MWh, 54,191 more lifetime MWh, and 72,902 more lifetime MMBtu of oil. This means that electric customers in Rhode Island must purchase 3,612 MWh more of electricity in 2018 at an average rate that is more than a third higher than the cost of saving that energy through efficiency. In total, the reduction in savings results in Rhode Island electric customers losing \$14.9 million in lifetime benefits. The impact of the budget cap also harms the Rhode Island environment and economy. The state loses the ability to avoid 35,966 tons of carbon emissions. The reduction of cost-effective spending on energy efficiency implementation in the RI economy also impacts the economy. Rhode Island will lose out on a state GDP increase of \$6.5 million and a loss of 95 job years. ¶

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Three-Year Plan (2019)		2019 Annual Plan	
Initiative	Annual MWh	Initiative	Annual MWh
Future Innovation	25,539	EnergyStar Lighting	13,411
		2018 Evaluation Results	6,887
		C&I – C-PACE	1,600
		C&I – Strategic Energy Management	1,000
Total	25,539	Total	22,898

The transformation of the lighting market is a key contributor to achieving additional savings in 2019. The EnergyStar Lighting program planned to incent over 1,600,000 lighting products in 2018 and in 2019 the program plans to incent over 2,790,000 lighting products, a nearly 75% increase. Despite a declining realization rate, the increase in the volume of lighting products has led to an increase in the MWh savings for EnergyStar Lighting in 2019. In addition, several evaluations completed after the filing of the Three-Year Plan led to an increase in claimable savings for 2018, and consequently 2019. The evaluations include C&I Custom Realization Rate studies, C&I Free Ridership and Spillover Study, and the C&I Upstream Lighting Study. Lastly, the Company identified two new initiatives within the C&I sector that will contribute to additional savings in 2019. These include Commercial Property Assessed Clean Energy (C-PACE) for commercial real estate owners and developers and Strategic Energy Management (SEM) for business energy management.

C. Updated Sales and Fund Balance Projections

The EE Program Charge for electric and gas customers varies from the Three-Year Plan to 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.

The gas EE Program Charge decreased from \$0.903 to \$0.869 per Dth for residential customers and from \$0.739 to \$0.536 for C&I customers. The reduction in the charge is primarily driven by a positive projected 2018 year-end fund balance of \$4.7 million.

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Although the electric sector sales forecast decreased since the Three-Year Plan was filed, the lower electric budget, higher revenue from the ISO-NE Forward Capacity Market, and a positive projected year-end 2018 fund balance of \$4.2 million have reduced the electric EE Program Charge from \$0.01390 to \$0.01168.

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D. Lifetime Savings and Benefits

Electric lifetime savings are lower than in the Three-Year Plan due to the application of evaluation results detailed in section A above. Gas lifetime savings are lower due to changes in measure mix.

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 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 NOx 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 2019 compared to 2018.

3. Strategies to Achieve Goals

The primary goal of the Annual Plan is to create 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:

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1. **Customers** - Deliver comprehensive 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 demand response, renewable energy, and smart grid technologies. This includes incorporating outcomes from the Rhode Island Power Sector Transformation Initiative and Docket 4600.

The application of these priorities is more fully described in the detailed program and marketing descriptions in Attachments 1 and 2.

4. Delivering 2019 Goals

National Grid will build on its almost thirty years of experience to deliver the energy and cost savings goals in this Plan.¹⁷

a. Residential Programs

In 2019, the Parties agree to continue the residential programs offered in 2018. The Parties also agree to offer new programs and demonstrate the development of new technologies for potential inclusion in programs in future years. The programs are summarized below and described in further detail in Attachment 1. The description of each program includes proposed changes from 2018 that are intended to help meet the savings targets for 2019.

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Comment [RHH8]: highlights of customer listening forum will be included here in second draft

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¹⁷ 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, the Company will continue its work sessions with the EERMC's consultants.

Table 3. Residential Energy Efficiency Programs

EnergyWise Program (Funded by Electric and Gas)	EnergyWise offers single-family customers home energy assessments and information regarding their actual energy usage. Participants in this program receive recommendations and technical assistance as well as financial incentives to replace 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. <u>Starting in 2019, EnergyWise will implement an online assessment to educate customers on where household opportunities for greater comfort and energy savings exist.</u>
Multifamily Programs Income Eligible, Residential and Commercial sectors (Funded by Electric and Gas)	Comprehensive energy services for multifamily customers 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 through the Company's existing portfolio, including EnergyWise, C&I Retrofit, Residential New Construction, Income Eligible, and the ENERGY STAR® HVAC programs. <u>Beginning in 2019, the Company's lead vendor for the multifamily retrofit program will begin serving individual condo-unit owners and utilize the time on-site as an opportunity for face-to-face recruitment of the other units at the facility.</u>
Income Eligible Single Family (Funded by Electric and Gas)	Income Eligible Services, also known as the Single Family Low Income Services, are delivered by local Community Action Program (CAP) agencies with oversight provided by a Lead Industry Partner. Three levels of home energy assessments will be offered: (1) lighting and appliance focus, (2) heating and weatherization focus, and (3) comprehensive focus. Customers who qualify for LIHEAP are eligible and receive all services and equipment upgrades at no cost. <u>In 2019, National Grid will begin to offer cold-climate mini-split heat pumps through the IES Program. This new offering will provide clarity on up-front "installed cost" as well as customer satisfaction and ease of use.</u>

Deleted: In 2018, the Company plans to establish a \$500,000 revolving loan opportunity for the Capital Loan Fund to support more EnergyWise customers.

Deleted: In 2018, the Company will use a number of avenues to meet the needs of its customers including: heat pumps and smart technologies, a customer centric recruiting process, building benchmarking data, and a continued focus on finance opportunities

Deleted: In 2018, the Company will collaborate with the Rhode Island Department of Human Services (RI DHS) to leverage job development and explore the possibility of new program offerings like smart home technologies, Wi-Fi thermostats, and mini splits.

Residential New Construction (Funded by Electric and Gas)	The <u>Residential New Construction</u> program promotes the construction of high-performing energy efficient single family, multifamily, and low income homes, as well as the education of builders, tradesmen, designers, and code officials. <u>In 2019, the residential new construction program will utilize a new energy efficiency incentive mechanism called the “Path to Zero Energy Ready”, which will include additional incentives for areas including: PV and EV ready buildings, home electrification, and compliance with the RI Residential Stretch Code.</u>
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. <u>In 2019, emails the Company will send to customers will begin to include annual or bill-level disaggregation pie charts of customers’ individual energy usage, which will help customers identify drivers of high bills.</u>
ENERGY STAR® Lighting (Funded by Electric Only)	This is an initiative 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. <u>In 2019, the EnergyStar Lighting program will continue to drive market transformation and reach new retailers that have not yet participated in the program.</u>
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. <u>In 2019, the Residential Consumer Products program will add an additional customer offering of low-e storm windows to provide an additional 50% energy savings over traditional windows.</u>

Deleted: In 2018, the Company will adopt a new User Defined Reference Home (UDRH) baseline that will reflect the current energy efficiency of new construction single-family homes in Rhode Island.

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Deleted: there will be additional emphasis on providing incentives to hard-to-reach communities where the traditional retail channels may not have as large of a presence as discount retailers. In addition, the Company will continue to use online flash sales in 2018.

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Deleted: the program will support dehumidifiers, dryers, refrigerator and freezer recycling, room air cleaners, room air conditioners, advanced power strips, and efficient shower heads. The Company will also support federal appliance and equipment standards development and renew efforts to advance efforts at the state level.

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, and furnaces equipped with high efficiency fans. The program provides training of contractors in installation, 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. <u>In 2019, the HVAC program will include several new offerings including: cold climate mini-split heat pumps, replacements of central air conditioners, and the reintroduction of indirect hot water heaters.</u>
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. <u>In 2019 the Company will focus on promoting expanded technology offerings within communities such as mini-split heat pumps, Wi-Fi Thermostats, and demand response offerings.</u>
Residential ConnectedSolutions (Demand Response) (Funded by Electric)	<u>Residential ConnectedSolutions will move from a pilot in 2017 and 2018 to a program in 2019. The focus of the program will continue to be 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.</u>
Residential Pilots (Funded by Electric and Gas)	<u>In 2019, the Company will continue the Zero Energy Home pilot to help accelerate the zero energy home market in Rhode Island. In 2019 the demonstration will focus on four main areas: Education and Awareness, Workforce Development, Project Incentives, and Marketing.</u>
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.

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b. 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, especially in these difficult economic times. 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 and commercial

and industrial customers using 14% of total implementation funding for the electric programs, and 26% for natural gas programs.

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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 economically disadvantaged customers are described in the residential programs in Attachment 1.

c. Commercial and Industrial Programs

In 2019, the Parties agree to continue the commercial and industrial programs offered in 2018 and assess new technologies for potential inclusion in programs in future years. These programs are summarized in Table 4 below.

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Table 4. Commercial and Industrial Energy Efficiency Programs

Large Commercial New Construction 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 promotes building code compliance and provides technical assistance in promoting new and improved appliance standards regulations. Support the development and adoption of the Stretch Building Code to support the States goals and objectives. Finally the program supports the States Zero Energy Building (ZEB) goals through engagement and development of ZEB programs in the future.

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Table 4. Commercial and Industrial Energy Efficiency Programs	
Large 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 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.
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 <u>who consume less than 1,000,000 kWh per year</u> , 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.
Commercial Pilots (Funded by Electric and Gas)	<u>In 2019, the Company will continue the Commercial and Industrial Demand Response gas pilot to address grid constraints and help provide reliable service to our customers. In addition, the Company will continue the Pathway to Zero Energy Buildings pilot in 2019 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 2019.</u>
C&I Connected Solutions (Demand Response) (Funded by Electric)	<u>C&I Connected Solutions will move from a pilot in 2017 and 2018 to a program in 2019. The program 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 2019 the program has a goal of enrolling 34 MW.</u>

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Deleted: g both gas and electricity. In 2018, innovative technologies which are planned to be tested include: zero energy projects, Power over Ethernet (PoE) lighting system, performance based procurement, and indoor agriculture.

Attachment 2 includes descriptions of these programs. Included in the description of each program are proposed changes from 2017 that are intended to help meet the savings targets for 2018.

d. **Participation**

Comment [JR9]: To be updated in the 2nd 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 2019, 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.

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

Table 5: 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	Unique Billing Account
		EnergyWise	Unique Billing Account
		EnergyWise Multifamily	Housing Units
		Home Energy Reports	Adjusted* Unique Billing Account
		Residential New Construction	Housing Units
Electric	Commercial & Industrial	Large Commercial New Construction	Unique Billing Account
		Large Commercial Retrofit	Unique Billing Account + Unique Customer

Fuel	Sector	Program	Participation Unit
			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	Unique Billing Account
		EnergyWise	Unique Billing Account
		EnergyWise Multifamily	Housing Units
		Home Energy Reports	Adjusted* Unique Billing Account
		Residential New Construction	Housing Units
		ENERGY STAR® Lighting	Estimated Housing Units
		ENERGY STAR® Products	Number of Rebates

The Company also aims to 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 2019. This method allows for a better estimation of unique participants but can make it more difficult to compare planned numbers across years.

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In 2019, 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 direct install 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 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 energy efficiency programs.

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A recent analysis of unique participation since 2012 is detailed in Graphs 4 and 5 below. These graphs highlight that the Company has made steady progress with reaching new

participants each year. From 2012-~~2017~~ the Company served approximately 30% of its electric customers and 21% of its gas customers from its targeted programs at least once (these graphs have removed duplicate participation across programs and across years from 2012-~~2017~~). When Home Energy Reports and C&I upstream lighting participation are added to these counts, a total of 82% of electric customers and 69% of gas customers participated over this period.¹⁸ 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.¹⁹ Planned ~~2018~~ and ~~2019~~ participants are also included in these graphs for illustrative purposes.

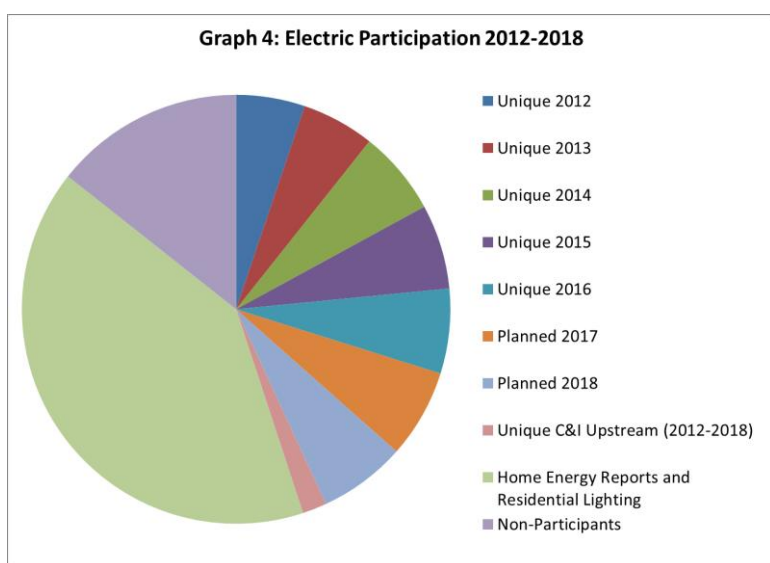
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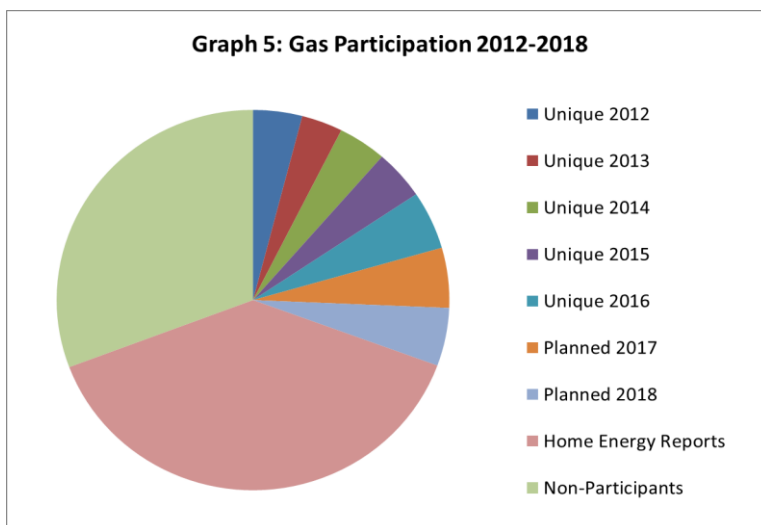
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Comment [CL10]: Update when participation is final



¹⁸ It is not possible to track residential lighting participation by customer 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 82%.

¹⁹ The full participation analysis can be found in Docket 4580 - National Grid Electric and Gas Energy Efficiency Programs 2016 Year-End Report, filed May 1, 2017.



Comment [CL11]: Update

In 2019, the Company will work to reach even more unique customers, or those that have never participated in its energy efficiency programs, and customers that have previously participated that 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.

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The Company will continue to deliver innovative strategies to increase customer participation and reach customer segments that are historically underrepresented. The 2019 Plan highlights some changes to program delivery to remove barriers that preclude customers from participating in the energy efficiency programs. The Company will continue to track participation trends and will again provide a detailed analysis in its 2018 Year-End Report showing additive and cumulative portfolio participation.

Deleted: In an effort to increase participation in its energy efficiency programs, the Company contracted with a third party to assess customer participation in its residential and small business programs.²⁰ The study characterized customers that participate in energy efficiency programs and identified non-participants that are likely to participate in each of the programs. The study also identified customer segments that are underrepresented and derived targeting strategies and recommendations that may increase participation rates. The Company will use the results of this study to try to reach customers that have not yet participated. The study will be submitted as part of the filing of this Plan.[¶]

e. **Equity**

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 financially because of lower future costs of energy – this is demonstrated through the bill impact analysis and described in detail in other sections of this Plan.

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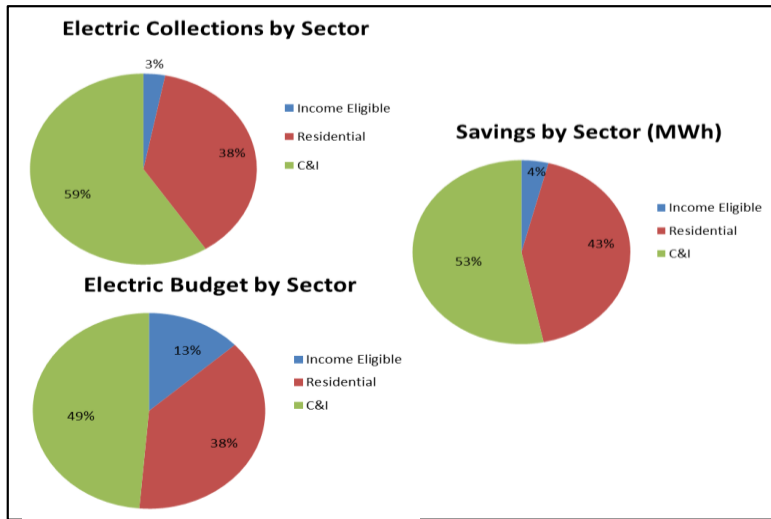
The pie charts below are a graphical representation of Attachments 5 and 6, Tables E-1 and G-1. The Company first provided these charts at the 2017 Annual Plan hearing and

has included them again in this Plan to better display the difference between customer class rates, budgets, and savings.

As shown in Graph 6, there is 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 also have fewer economies of scale (compared to C&I).

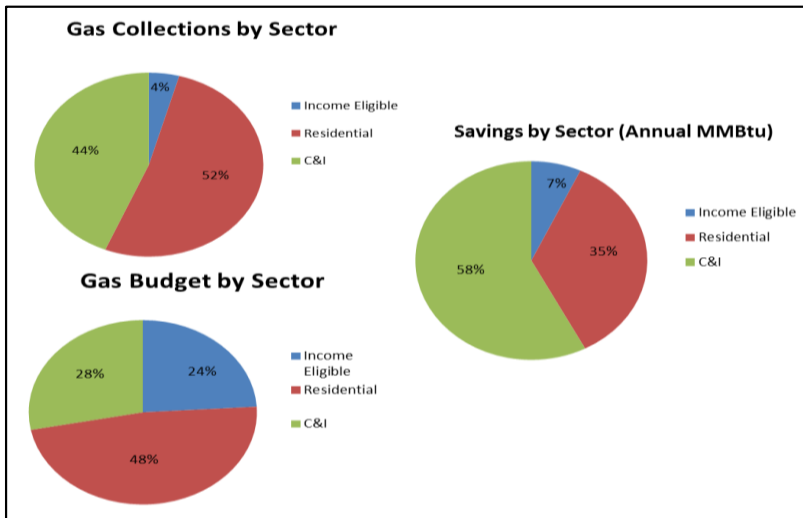
Graph 6: Graphical representation of Attachment 5 Table E-1 and total Electric Savings by Sector Cumulative

Comment [CL12]: To be updated in the 2nd draft.



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 reasonable factors. First, the EE Program Charge varies by customer segment, which changes collections. Second, C&I projects tend to create more savings per dollar. That 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.

Graph 7: Graphical representation of Attachment 6 Table G-1 and total Electric Savings by Sector Cumulative



Comment [CL13]: To be updated in the 2nd draft

f. Creating and Sustaining Energy Jobs

Delivery of energy efficiency savings is a large effort, involving a large number of people. One of the most evident economic benefits that energy efficiency creates in RI is the number of jobs created or sustained in the energy sector. Each year, National Grid reports on the number of jobs supported by its RI energy efficiency programs. 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 2017 report found that the energy efficiency programs supported 726 full-time equivalent (FTE) workers across 917 different firms, 79% of which were located in Rhode Island.

National Grid has conducted a number of workforce development activities throughout the state that it will continue in 2019. In order to help our contractors develop the skills needed to effectively deliver our programs, the Company conducts code training for residential new construction; in-field technical training for residential new construction;

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Deleted: State policies promoting energy efficiency have enabled a rapid growth in energy efficiency jobs across job functions and skill levels throughout the state, especially among small businesses. Together with partners, National Grid will explore opportunities for engaging local businesses and employers in a conversation about economic development, growth opportunities, and policies that will grow and sustain local jobs in the future. The opportunities will take shape in 2018 and may include creating a forum or working group for business to come together.¶ Additionally,

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Deleted: Examples of the Company's activities include the Codes Initiative, which offers continuing education credits related to energy codes for design and construction professionals.

Deleted: has also conducted the following trainings:

weatherization training for our Community Action Partners and their weatherization staff; and technical training for HVAC contractors. Additionally, the Company offers professional certifications for facility managers through its Building Operator Certification course, which teaches energy efficient techniques for optimizing energy management. Additional details of these offerings is included in Attachments 1 and 2.

Deleted: National Grid also sponsors the Rhode Island Home Show, and in 2018, the show will promote job and workforce development.

g. **System Reliability Procurement**

In a contemporaneous filing, the Company is submitting its System Reliability Procurement (SRP) Annual Report for 2019 for the PUC's review and consideration. The SRP Annual Report describes the strategies, goals, and funding request for SRP in 2019. The SRP Factor is included as part of the total EE Program Charge shown on line 14 of Table E-1 in Attachment 5. For 2019, the charge is negative \$0.00002 due to a positive SRP fund balance.

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h. **Pilots**

In accordance with Docket No. 4600-A PUC Guidance Document, the Plan includes a description of pilots in Attachment 9. The Company is proposing the following new definitions to provide clarity around the terms pilot, demonstration, assessment, and initiatives used in this Plan.

Pilot: 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."²¹

For actions in the Plan that do not fall under the Docket 4600-A definition of pilots, the Company proposes the follow definitions for demonstrations, assessments and initiatives.

- Demonstration: A demonstration tests a new technology or solution, that is delivered as part of an existing program, where technical assessment can estimate the savings and they are likely cost effective.
- Assessment: 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 and will be explored as part of the assessment.

²¹ Docket No. 4600-A PUC Guidance Document, October 27, 2017. Section V. Pilots.

- Initiative: An initiative tests new go-to market strategy for a known measure that is cost effective (known savings) and consistent with initiatives done in the past.

Names for pilots, demonstrations, and initiatives may differ from prior Annual Plans in order to adhere to the new definitions to provide more clarity around different actions and their anticipated outcomes.

5. 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.

a. Annual Plan Funding Sources

The sources of funding and the amounts of the funding proposed for the cost-effective 2019 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 2019 electric programs are shown in Attachment 5, Table E-1. To collect these funding sources for the 2019 cost-effective programs, the Company proposes: (1) one line on the customers' bill labeled "Energy Efficiency Charge" at \$0.01192 per kWh, as calculated in Attachment 5, Table E-1 (composed of the existing energy efficiency program charge of \$0.00972 per kWh plus a fully reconciling funding mechanism charge of \$0.00220 per kWh in accordance with the requirements of R.I. Gen. Laws § 39-1-27.7); (2) projected Large C&I commitments from 2018, 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) anticipated revenues generated through RGGI permit auctions. Funding sources do not include revolving loan funds.

The sources of funding for the 2019 natural gas programs are shown in Attachment 6, Table G-1. The Company proposes that the 2019 budget should be funded from the following sources: (1) one line on the customers' bill labeled "Energy Efficiency Charge" at \$0.857 per dekatherm for residential customers and \$0.536 per dekatherm for non-residential customers as calculated in Attachment 6, Table G-1 (composed of the existing energy efficiency program charge of \$0.869 per dekatherm minus a fully reconciling funding mechanism of \$0.012 per dekatherm for residential customers and the existing energy efficiency program charge of \$0.671 per dekatherm minus a fully reconciling funding mechanism of \$0.135 for non-residential customers in accordance with the requirements of R.I. Gen. Laws § 39-1-27.7); (2) projected carryovers or under-

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recoveries of the year-end 2018 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.

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The 2019 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 kWh or therm sales of electricity and natural gas, year-end 2018 large C&I program commitments, capacity payments received from ISO-NE (electric only), and year-end 2018 spending. The Company estimates that the electric projected fund balance at year-end 2018 will be \$4.1 million, as shown in Attachment 5, Table E-1; the gas fund balance at year-end 2018 is estimated to be \$4.7 million, as shown in Attachment 6, Table G-1. As detailed in Section 5.b, it is likely that the actual year-end 2018 fund balance will be more or less than the amounts projected in this Plan. To ensure that the 2019 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 1, 2018 that will include several additional months of actual expenses and revenues to provide an updated Energy Efficiency Charge. The Company proposes to submit revised tables on December 1, 2018 and not at the end of the year to provide the PUC with enough time to review the Company's proposed charges since the proposed charges, if approved, would have an effective date of January 1, 2019. 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 of the 2019 energy efficiency programs and delivery. Other considerations regarding funding sources include:

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i. ISO-NE Capacity Market Revenue

Consistent with the PUC's Standards, the 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.

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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 Measurement and Verification (M&V) compliance costs of participation in the 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,²² the Company is unable to provide all or a portion of the megawatts of capacity proposed in its qualification packages and capacity auction bids, some or all of the financial assurance monies would be forfeited.

ii. 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 gas energy efficiency surcharge.²³

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 energy efficiency program services.

²² 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 or a PUC decision limiting the Company's role in bidding the demand savings acquired through program efforts into the FCM.

²³ 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.

b. Budgets

The Parties agree that the portfolio of energy efficiency programs and services for 2019 will have an overall budget of approximately \$113.0 million for electric programs and \$32.2 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 2018 budget is provided in Attachment 5, Table E-4 and Attachment 6, Table G-4.

The Parties agree that the Company should make every attempt to spend or commit all the funds available for energy efficiency during the program year, including any increases in the fund balance due to increased sales or other factors. Although this Plan includes a projection of the fund balance expected at year-end 2018 as a funding source (or deficit) to carry into 2019, it is likely that the actual year-end 2018 fund balance will be more or less than that amount. Within 30 days after the filing of the 2018 Year-End Report, the Company will calculate the difference between the actual year-end fund balance and the projected year-end fund balance included in this Plan. If excess funds are available, the Company is permitted to move the excess funds into financing mechanisms for the sectors in which the excess occurs, support possible overspending during the year, reduce the energy efficiency program charge, or carry the excess funds over into the next program year. The Company will include a description and reflect the application of excess funds in quarterly reports, annual reports, and Annual Plans as applicable. If the use of the funds supports overspending of current year program budgets, then, in addition to the above requirements, the Company will follow the provisions for overspending in Section D, below. Use of excess funds for financing mechanisms will not be considered as overspending.

The Parties also agree to review the status of budgets regularly to assess whether they are likely to come to a successful completion. If not, the Parties agree to review the advisability 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 to continue the practice of funding commitments that were established in the 2014 Plan, Docket 4451. Namely, the Company will continue to make

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On August 3, 2017, the Governor of Rhode Island signed RI H5175, "Relating To Making Appropriations For The Support Of The State For The Fiscal Year Ending June 30, 2018." This legislation includes the following language pertaining to the state budget for fiscal year 2018 on page 36:²⁴ ¶

"SECTION 17. Notwithstanding any provisions of Chapter 2 in Title 39 of the Rhode Island General Laws, the Electric and Gas Distribution Company shall transfer to the State Controller the sum of twelve million and five hundred thousand dollars (\$12,500,000) by June 30, 2018 from the Public Utilities Commission approved 2018 System Reliability and Energy Efficiency and Conservation Procurement Programmatic Budget Plan."¶

To comply with this law, the Company proposes to transfer \$12.5 million to the RI General Fund after the PUC approves this Plan. The transfer has been accounted for on line 7 of Table E-1. The impact of this transfer is an increase in the EE Program Charge of \$0.00174 per kWh for all electric customers. ¶ The payment is not included in cost-effectiveness screening, the RI Test, because it does not meet the definition of costs as described in Attachment 4 of this Plan which is derived from the requirements of Least Cost Procurement in R.I. Gen. Laws § 39-1-27.7(a)(2) and (c)(5). Specifically, the payment to the state budget does not contribute to the implementation of energy efficiency measures and programs nor does it represent the customer's contribution to the installation cost of energy efficiency measures. For these reasons, it is not included as a cost in determining cost-effectiveness, nor is it included in the calculation of the shareholder incentive. ¶

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commitments for projects with a projected incentive in excess of \$3 million.²⁵ 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. Specifically, in 2019, the Company proposes to make a commitment to BQ Energy for a large-scale CHP at Naval Station Newport that is planned to be operable in 2020 and commissioned in 2021. The Company notified the Commission of the project in May 2018 in Docket 4755. The Company proposes to commitment \$3 million from the 2019 budget for the incentive, which is anticipated to be paid in 2020. The Company has precedence for commitments for large projects such as the large CHP project at Toray Industries in 2012. This commitments serves several purposes: it ensures adequate funding for the project will be available in 2020, diminishes fluctuations in the customer charge by collecting the funding over multiple years instead of in one year, and ensures adequate funding for all other C&I customers should unanticipated challenges to funding occur in 2020, such as state legislated caps on least cost procurement.

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c. 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 in the same sector. For transfers of 20% or more of the originating program'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

²⁵ As noted below in Section D, the Company will be required to notify the PUC of all incentive offers in excess of \$3 million. Such notifications will also include a description of how the Company intends to fund the incentive.

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 calculation.

d. Budget Management

It is possible that there could be deviations from the planned budget for 2019 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 2019 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 2019 plan.

2. The Company agrees that, during 2019, 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.

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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 ~~2019~~ Year-End Report, if not sooner.

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

In addition, the Company will file a written notification with the PUC of any energy efficiency incentive annual offer in excess of \$3 million. The notification will occur after the cost benefit screening and may occur before the offer letter is finalized. The project, the incentive, and any other related proposals will be authorized to proceed after thirty days from the notice filing 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.

If the dollar value of a proposed incentive for a single project is such that it would cause a program to exceed the overall energy efficiency plan budget for the current program year, the Company will follow the provisions related to overspending, per the rules established above.

6. Goals and Cost-Effectiveness

The Company has projected cost-effectiveness for the proposed ~~2019~~ programs using the RI Test. The use of the RI Test was required by the Standards, as revised by the EERMC, and approved by the PUC at the Open Meeting on April 27, 2017 in Docket 4684. 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).

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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. 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 and the Avoided Cost Study. For the Annual Plan, the Company developed the 2019 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 2019. The TRM identifies the sources for the savings estimates: 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.

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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 2021.²⁶ 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 2019 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).

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Deleted: In the fall of 2016, TCR prepared a limited update of Appendices B (Avoided Electricity Cost Results), C (Avoided Natural Gas Cost Results), and D (Avoided Electricity Cost Results) in the report for Maine, New Hampshire, Rhode Island, and Vermont based on new estimates for six categories of inputs starting in 2017 that the Company applied to the 2018-2020 Three-Year Plan and this 2018 Annual Plan.

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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 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 2019 compared to 2018.

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Attachment 5, Table E-5 and Attachment 6, Table G-5 provide the calculations of 2019 program year cost-effectiveness. Attachment 5, Table E-6 and Attachment 6, Table G-6

²⁶ The report is available online at: <http://ma-eeac.org/wordpress/wp-content/uploads/2015-Regional-Avoided-Cost-Study-Report1.pdf>. This study forecasts avoided costs for three years, compared to prior studies which developed avoided costs applicable to a two-year period.

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 2018. Attachment 5, Table E-5 shows that the proposed portfolio of electric programs is expected to have a benefit/cost ratio of 3.97, which means that approximately \$3.97 in benefits is expected to be created for each \$1 invested in the programs. Attachment 6, Table G-5 shows that the proposed portfolio of gas programs is expected to have a benefit/cost ratio of 2.55, which means that \$2.55 in benefits is expected to be created for each \$1 invested in 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.

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7. Bill Impacts

Comment [CL14]: To be updated in Final 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 a bill reduction of 1.56% to 15.80%, depending on rate class. The participant in the gas programs will see a bill reduction of 0.93% to 8.28%, depending on rate class. The average Rhode Island consumer (blending participants and non-participants) will see reduced bills of 0.81% to 3.47% for electricity over the lifetime of the installed energy efficiency measures, compared to no investment. For gas bills, the average Rhode Island consumer will see 0.01% to 1.75% reduction, 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 2019. 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.

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8. Measurement and Verification Plan

To verify the impacts that programs are having on energy savings, the Company hires independent consulting firms to regularly conduct program evaluations as part of its measurement and verification process. These evaluations include engineering analysis, metering analysis, billing analysis, site visits, surveys, and market studies to realize the actual energy savings that particular measures are having. Every year, the results of the surveys 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.²⁷ The executive summaries of recently 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.

Additionally, the M&V Plan for 2019 is presented in Attachment 3, and includes brief descriptions of each of the proposed studies. The areas proposed for study in 2019 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 M&V Plan includes funding for a study of energy efficiency measures that will review and confirm energy savings to be conducted by the Office of Energy Resources. This study was legislated in Senate Bill 2500, enacted in June 2018.²⁸ 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, 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 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."

²⁷ 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."

²⁸ <http://webserver.rilin.state.ri.us/PublicLaws/law18/law18079.htm>

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9. Coordination with Power Sector Transformation

Comment [RW15]: This language is subject to further internal legal review.

There will be coordination between the 2019 Plan and the Company's Power Sector Transformation (PST) Vision and Implementation Plan (PST Plan) as detailed in the Docket Nos. 4770/4780 Amended Settlement Agreement, filed August 10, 2018. The Company is committed to coordination across dockets to ensure transparency and to create streamlined programs to its customers. Areas that will involve such coordination include the following:

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i. Demand Response

The 2019 Plan includes residential and C&I Demand Response programs. The Amended Settlement Agreement includes Demand Response as an eligible resource in meeting the System Efficiency: Annual MW Capacity Savings metric.

The Company will pay for and implement Demand Response programs in its 2019 Plan. All associated budgets, benefits, and savings are detailed in Attachment 5, 2019 Electric Energy Efficiency Program Tables.

The Company will report progress on this metric in its energy efficiency quarterly and Annual Report, as well as in the mid-year and annual performance incentive reports required under the Amended Settlement Agreement. In accordance with the Amended Settlement Agreement, MW capacity savings from Demand Response Programs will be tracked and reported as follows:

a. Residential Demand Response:

The number of participating customers (thermostats) in Demand Response events multiplied by the approved deemed kW savings value per thermostat.

b. Commercial Demand Response:

The average observed MW savings over called Demand Response events.

As described in Section 11, the Company will not earn a shareholder incentive on Demand Response through the 2019 Plan. The shareholder incentive will be earned through the Annual MW Capacity Savings Performance-Based Incentive Mechanism.

The Company will continue coordination between its energy efficiency programs and PST through internal processes and as part of the PST Advisory Group.

10. Reporting Obligations

- a. In 2019, the Company will provide quarterly reports to the EERMC, the Division, OER, the Collaborative, 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 Collaborative 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 2019, for months during, which quarterly reports are not produced, the Company will provide to the EERMC, the Division, and the Collaborative 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 2019 Year-End Report no later than May 1, 2020. This report will include achieved natural gas and electric energy savings in 2019 and earned incentives for 2019.
- 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 2019 programs, in the 2019 Plan to be filed by October 15, 2018.

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11. Incentive

Consistent with the Three-Year Plan, the proposed shareholder incentive mechanism for 2018 will be based on the same metric applicable to the 2018 Plan. Under the current incentive structure, the Company can earn a target based-incentive rate equal to 5.0% of the eligible spending budget in a program year for achieving electric and gas energy savings goals.

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- For electric savings, the Company can earn a target-based incentive rate equal to 3.5% of the eligible annual spending budget for achieving MWh savings goals and 1.5% of the annual spending budget for achieving MW savings goals.

- For gas, where there is no demand savings component, the Company can earn a target-based incentive rate equal to 5.0% of the eligible annual spending budget for achieving MMBtu savings goals.

As in 2018, the proposed incentive mechanism establishes an incentive of 1.25% of the annual spending budget for achieving 75% of the savings goals in a sector. This would increase linearly to 5% of the annual spending budget for achieving 100% and increase linearly from that point to 6.25% of the annual spending budget for achieving 125% of the savings goals.

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Expressed mathematically, the shareholder incentive would 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:
 - Incentive = $SB \times (0.15 \times \% \text{ of savings achieved} - 0.10)$
 - 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:
 - Incentive = $SB \times (0.05 \times \% \text{ of savings achieved})$

The Company believes that this structure will incent the Company to achieve savings that approach or exceed 100% of the annual goals. 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 5.0% 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 annual 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 MWh, MW or 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 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 savings goals 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. These assumptions have been reviewed and 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 incentive amounts that the Company may earn if it is successful in achieving its goals for energy savings. Attachment 5, Table E-9 and Attachment 6, Table G-9 provide a summary of the incentives related to annual energy-savings goals by sector. These goals by sector reflect the expected cost of savings in each sector informed by evaluation studies, and these goals have been adjusted to take into account changing rebate policies and the changing market being served. As described above, these goals have been carefully reviewed by the Collaborative and EERMC representatives to ensure that they represent reasonable and challenging goals for the year.

For electric energy efficiency programs, the proposed target base-incentive rate in 2019 is equal to 5.0% of the eligible spending budget for 2019. The projected electric eligible spending budget for 2019 is approximately \$99.2 million (see Attachment 5, Table E-3). The total electric target incentive for 2019 is 5.0% of the proposed spending budget, or approximately \$4.96 million (see Attachment 5, Table E-9). 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 Demand Response Program spend from the eligible spending budget as shown in Table E-3.

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For natural gas efficiency programs, the proposed target base incentive is equal to 5.0% of the eligible budget. The projected natural gas eligible spending budget for 2019 is approximately \$29.8 million (see Attachment 6, Table G-3). The total natural gas target incentive for 2019 is 5.0% of the proposed spending budget, or approximately \$1.49 million (see Attachment 6, Table G-9).

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In addition, to promote cost efficiency in spending in the achievement of the energy savings goals, an adjustment will be made under certain circumstances to MWh and MMBtu savings goals in the shareholder 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 target savings goal, the 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 expenses²⁹ 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, the 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 2019 Energy Efficiency Program efforts.

12. Testing Performance Metrics

As indicated in the 2018-2020 Three-Year Plan and in the 2018 Annual Plan, the Company agreed to work with the OER, the DPUC, the EERMC, and the Collaborative during program year 2018 to consider new performance metrics for future Annual Plans to align energy efficiency plans with the Rhode Island's goals for power sector transformation and greenhouse gas emissions reduction.

Energy efficiency measures and initiatives have evolved over time due to state policy objectives, customer preferences, and technological advancements. In recent years it has become clear that the annual KWh, KW, and MMBtu savings goals may not capture the full benefits of all energy efficiency measures. Although all energy efficiency measures comply with Least Cost Procurement, contribute to State policy goals, reduce overall energy usage, and provide net benefits to customers, many do not provide significant contributions to annual savings goals. An example is the suite of measures that reduce consumption of delivered fuels. High-efficiency oil heating measures, oil weatherization, and beneficial electrification of heating only provide a small contribution to electric savings goals, but create a significant contribution to the State's greenhouse gas reduction goal.

It is important that the goals in Annual Plans send an appropriate signal for investment in all forms of cost-saving measures, not just those that save annual electric, demand, and natural gas. In 2019, the Company is proposing to test new performance metrics to gain experience tracking and reporting out on progress towards defined goals that are not tied to a financial reward.

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²⁹ Expenses related to overspending for deliverable fuels will be excluded from implementation expenses in this calculation.

Throughout program year 2019, the Company will work towards achieving the test metrics defined below to determine if ~~any~~ are viable to become an annual goal in future Annual Plans. The Company will report out on any challenges that occur and seek to find solutions if needed. While Company performance against a test metric may help inform future goals, it will not predetermine future goals. At the end of 2019, it may be determined that a metric is not appropriate for use in the future. Likewise, it may be determined that a metric has the potential to become an annual goal tied to a financial award in future Annual Plans. The Company will work with the Division, OER, EERMC Consultants, and the Collaborative to determine the appropriate benchmark for any new annual goals resulting from test metrics and any new financial reward.

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i. Carbon Reductions

The Company proposes to track annual and lifetime CO₂ reductions resulting from investments in the electrification of heating and delivered fuels measures. The CO₂ reductions will be calculated using emission rates from the 2018 AESC Study shown in the table below, multiplied by the resulting annual and lifetime avoided oil or propane from this suite of measures.

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

Field Code Changed

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.

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 for achieving carbon reductions from the electrification of heating in future energy efficiency Annual Plans. For 2019, the Company proposes to only test a performance metric for carbon. The Company believes it is prudent to track this metric for a year to help inform the development of an annual goal and appropriate shareholder incentive level.

The carbon test metric for 2019 is included as Table E....

Comment [CL16]: Will be included in 2nd draft

ii. Lifetime MWh and MMBtu Savings

National Grid currently includes lifetime MWh and MMBtu values in its Annual Plans. These values are based off of the lifetime savings associated

with the measures in the Plan. Year-End Reports currently show achieved lifetime savings but do not show it against the planned goal. The Company will edit quarterly and Year-End Reports to include planned lifetime savings to better understand performance in the realization of lifetime savings and to consider adjustments in the future.

iii. Program costs per energy savings

The Company currently includes the projected costs of lifetime MWh and MMBtu 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 2019, the Company will continue this reporting in its quarterly reports and will add this metric to its Year-End Report.

iv. Customer Satisfaction

The Company proposes to track a Customer Satisfaction metric in 2019. 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.

The Company will provide 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 2019 Year-End Report to the PUC.

13. Miscellaneous Provisions

- i. 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.

- ii. 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.
- iii. 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.
- iv. The Parties agree that the Collaborative shall meet no less than six times in 2019 to review the status and performance of the Company's 2018 energy efficiency programs and advise the Company on potential energy efficiency programs for 2019.

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Deleted: 2018

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,
Raquel J. Webster

Date