

STATE OF RHODE ISLAND PUBLIC UTILITIES COMMISSION

In Re: The Narragansett Electric Company

d/b/a National Grid

Annual Energy Efficiency Plan for 2022

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Docket No. XXXX

ANNUAL ENERGY EFFICIENCY PLAN FOR 2022

October 1, 2021

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EXECUTIVE SUMMARY AND INTRODUCTION

1 Introduction

The Narragansett Electric Company d/b/a National Grid (National Grid or the Company) submits this 2022 Annual Energy Efficiency and Conservation Procurement Plan (Plan or Annual Plan) as the second annual plan submitted within the fifth triennial plan (2021-2023 Three Year Energy Efficiency and Conservation Procurement Plan) in fulfillment of The Comprehensive Energy Conservation, Efficiency and Affordability Act of 2006.¹

Energy efficiency is the most cost-effective way to supply new energy and meet customers' energy needs. Customers who directly participate in energy efficiency programs save energy and see direct cost savings in the form of lower energy bills. Energy efficiency also lowers long-term base load and peak demand and can reduce the need for additional generation, distribution, and transmission infrastructure, benefiting all customers, regardless of direct participation in the Company's efficiency programs. The purpose of the Annual Plan is to propose the programs the Company will deliver to help Rhode Island energy consumers meet their energy needs through cost effective, reliable, prudent, and environmentally responsible energy efficiency, and to identify their costs, benefits, and energy savings.

The Annual Plan identifies the energy savings goals for 2022 and describes the detailed strategies, programming, and investments the Company is undertaking to achieve these goals, in pursuit of the overarching goals, savings, and benefits outlined in the 2021 -2023 Three-Year Energy Efficiency Plan. In proposing this Plan, the Company is mindful of the prevailing economic conditions, including the recovery of the Rhode Island economic due to the impacts of the COVID-19 pandemic. The Company is also aware of the significant economic benefits that energy efficiency programming can offer towards recovery. The planned programs and budgets attempt to maintain flexibility to ensure continued delivery of energy efficiency services and maintain and build clean energy jobs for the 2022 program year.

This Plan will create significant benefits for Rhode Island. In total, the Plan is expected to create \$338,186,996 in total benefits over the life of the installed electric, demand response, and natural gas energy efficiency measures. Investments made in energy efficiency to achieve these savings will add \$312,801,977 to Rhode Island's Gross State Product (GSP). The projected lifetime energy savings from this Plan will avoid 794,869 tons of carbon, the equivalent of removing 156,823 passenger vehicles from the road for one year. Energy savings and benefits are measured and verified by third-party evaluation firms.

¹ The RI Legislature recently passed an update to Least Cost Procurement Legislation, specifically impacting the company's transfer of funds to support the Efficient Buildings Fund administered by the Rhode Island Infrastructure Bank. As the Governor has not yet signed the bill into law, this draft may not reflect the most recent updates and impacts of this legislation.

The electric portion of the Plan will save 1,068,749 lifetime MWh over the lifetime of the installed energy efficiency measures, 124,257 net annual MWhs, and 18,848 net annual kW from passive energy efficiency. The natural gas portion of the plan will save 4,002,876 lifetime MMBtu over the lifetime of installed natural gas measures and 385,163 annual MMBtu. For all fuels (electric, gas, oil, propane), combined the plan will save 6,953,871 net lifetime MMBtu and 745,301 net annual MMBtu.

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, as approved and adopted pursuant to Order No. 23890 in Docket No. 5015² (referred to herein as the “LCP Standards”). This Plan has been developed by National Grid with feedback provided by the Energy Efficiency Technical Working Group (EE TWG) and the Energy Efficiency and Resource Management Council (EERMC).³

The 2022 Plan satisfies the statutory requirements for Least Cost Procurement and the Least Cost Procurement Standards and is consistent with the approved Three-Year Energy Efficiency Procurement Plan (Three-Year Plan) for 2021-2023. The overarching goal of both Plans is to enable Rhode Island energy consumers to meet their energy needs through cost-effective, reliable, prudent, and environmentally responsible energy efficiency.

1.1 Cost-Effective Savings

The primary goal of the Plan is to create energy and economic cost savings for Rhode Island consumers through energy efficiency. To that end, the electric-funded portion of the Plan will create electric and delivered fuels savings of 1,068,749 net lifetime MWhs, 124,257 net annual MWhs, and 18,848 net annual kW from passive energy efficiency. In addition, the Plan will generate savings of 39,526 net annual kW from active demand reduction measures. The natural gas-funded portion of the Plan will create savings of 4,002,876 net lifetime MMBtus and 385,163 net annual MMBtus. The Plan will generate total benefits of \$338,187,996 over the life of the measures. Of these total benefits, \$230,684,252 come from electric efficiency, passive demand reductions, and active demand response.

² RI PUC Docket 5015, Least Cost Procurement Standards

http://www.ripuc.ri.gov/eventsactions/docket/5015_LCP_Standards_05_28_2020_8.21.2020%20Clean%20Copy%20FINAL.pdf

³ Since 1991, a collaborative group has been meeting regularly to analyze and inform the Company’s electric and gas energy efficiency programs. The name of this group was modified in 2019 to the Energy Efficiency Technical Working Group (EE TWG) to better reflect the roles of the parties. Presently, members of the EE TWG include: The Company, the Division of Public Utilities and Carriers (Division or DPUC) and the Division’s consultant, Synapse Energy Economics (Synapse), the City of Providence, Green Energy Consumers Alliance, the Office of Energy Resources, and Acadia Center. In addition, the George Wiley Center, the Center for Justice, the Rhode Island Infrastructure Bank (RIIB), and several EERMC members and representatives from the EERMC’s Consulting Team participate in the EE TWG. Since 1991, membership in the EE TWG has varied because some organizations have withdrawn, and others have joined.

\$107,502,744 in benefits derive from natural gas efficiency. This adds up to significant benefits for Rhode Island's residential, commercial, industrial, and income eligible energy customers. The Annual Plan is cost-effective, with a cost that is lower than the cost of energy supply for both electricity and natural gas, satisfying the requirements prescribed in R.I. Gen. Laws § 39-1-27.7 (a)(2) and the Standards. The Plan also satisfies PUC Order No. 22851 by demonstrating how it advances the Docket 4600 principles and goals for the electric system detailed in Section 13.⁴

Table 1 includes a high-level summary of the Electric-funded and Natural Gas-funded portions of the Plan. Table 2 represents a more detailed table of the programs included under the "Active Demand Response (kW)" column shown in Table 1.

⁴ PUC Report and Order No. 22851 accepting the Stakeholder Report. Written Order issued July 31, 2017.

Table 1. 2022 Electric Energy Efficiency and Demand Response Program Plan Summary

Sector ⁽³⁾	Implementation Spending (\$000) ¹⁾	Customer Contribution (\$000)	Annual Savings (MWh)	Lifetime Savings (MWh)	¢/lifetime kWh	Summer Annual Demand Savings (kW) ⁽⁵⁾	Active Demand Response (kW)	Total Benefits (\$000)	RI Test B/C Ratio	Participants ⁽⁶⁾
Non-Income Eligible Residential	\$33,208	\$4,706	42,228	184,260	20.6	5,605	7,126	\$55,219	1.46	384,162
Income Eligible Residential ⁽³⁾	\$16,780	-\$2	4,851	62,816	26.7	529	N/A -	\$28,270	1.69	7,183
Commercial and Industrial	\$64,964	\$14,138	77,178	821,673	9.6	12,714	32,400	\$147,195	1.74	3,140
Regulatory ⁽²⁾	\$2,121									
Subtotal	\$117,072	\$18,842	124,257	1,068,749	12.7	18,848	39,526	\$230,684	1.63	394,485

Gas Programs by Sector	Implementation Spending (\$000)	Customer Contribution (\$000)	Annual Savings (MMBtu)	Lifetime Savings (MMBtu)	\$/lifetime MMBtu	Total Benefits (\$000)	RI Test B/C Ratio	Participants
Non-Income Eligible Residential	\$17,058	\$4,991	155,459	1,266,337	17.41	\$27,816	1.26	161,593
Income Eligible Residential	\$9,480	\$0	24,596	525,630	18.04	\$20,897	2.20	4,248
Commercial and Industrial	\$10,364	\$3,347	205,108	2,210,909	6.20	\$58,790	3.81	990
Regulatory ⁽²⁾	\$719							
Subtotal	\$37,621	\$8,338	385,163	4,002,876	11.48	\$107,503	2.26	166,831
TOTAL Plan	\$154,693	\$27,179				\$338,186	1.78	561,316

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

(2) Regulatory Includes contributions to the Office of Energy Resources and EERMC.

(3) In addition to Income Eligible Residential programs, Income Eligible customers can participate in all Non-Income Eligible Residential programs.

(4) Electric Programs are funded by the Electric Energy Efficiency Charge but also include Delivered Fuels energy savings.

(5) The Summer Annual Demand Response (kW) measures passive demand savings.

(6) The unit measure for participation varies by program. See Attachment 5, Table E-7 and Attachment 6, G-7 for participation goals by program.

Table 2. 2022 Active Demand Response Program Plan Summary

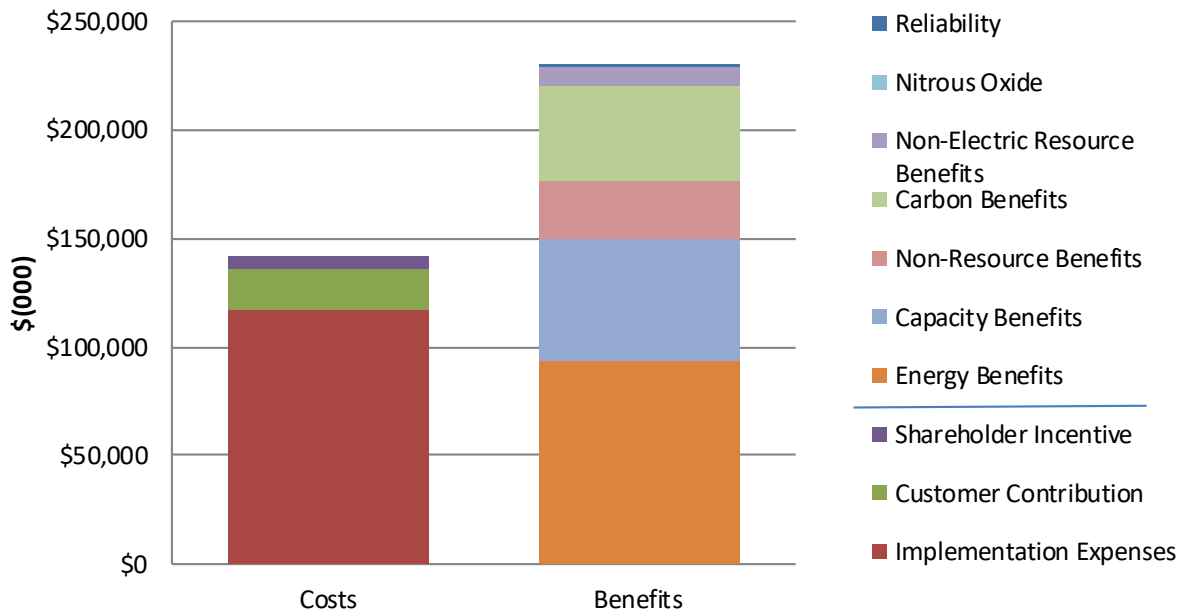
Programs	Implementation Spending (\$000)	Customer Contribution (\$000)	Active Demand Response (kW)	\$/kw	Total Benefits (\$000)	RI Test B/C Ratio	Participation
Residential	\$1,802	\$-	7,126	\$253	\$4,195	2.33	4,178
Commercial	\$4,438	\$-	32,400	\$137	\$19,972	4.50	180
Total	\$6,241	\$-	39,526	\$158	\$24,167	3.87	4,358

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

1.2 Benefits of Investment in Energy Efficiency

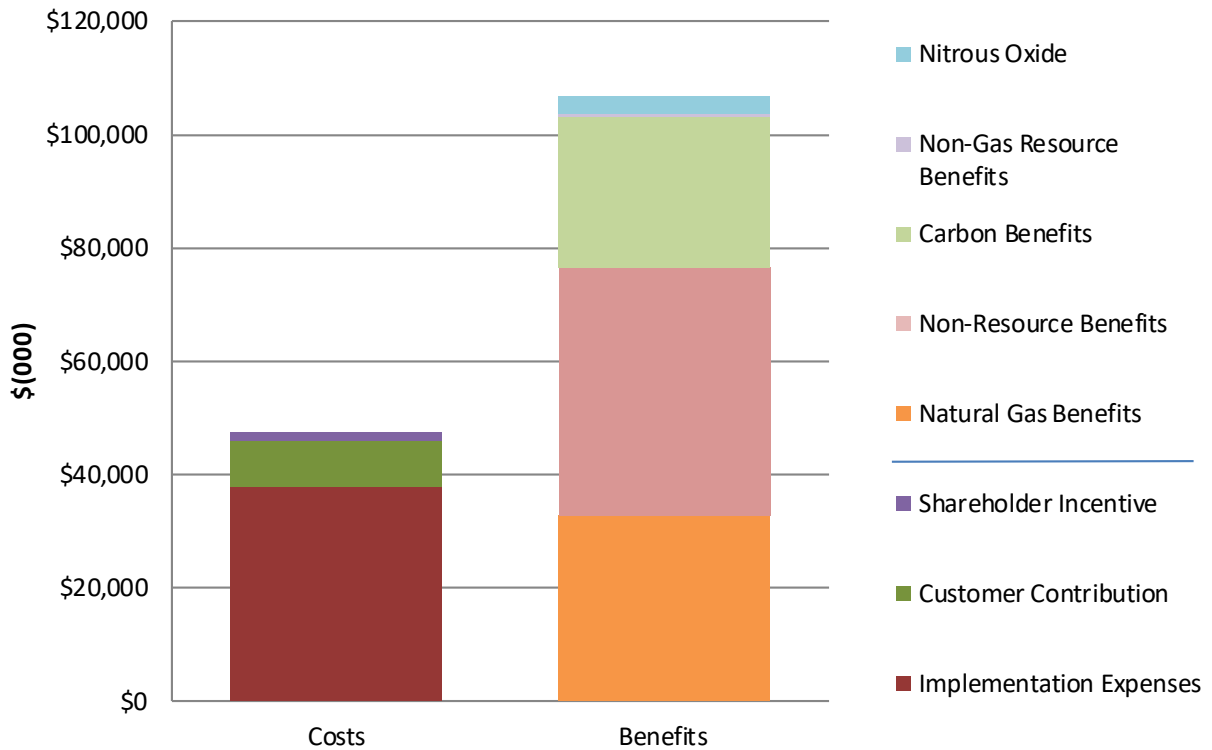
Each \$1 spent on the electric energy efficiency portfolio will create \$1.63 in benefits over the lifetime of the investment, and every \$1 spent on the natural gas portfolio will create \$2.26 in benefits over the lifetime of the investments. Figure 1 and Figure 2 below detail the costs and benefits for the electric and gas portfolios, respectively, calculated using the Rhode Island Test. A detailed summary of the benefits and costs included in the Rhode Island Test are included in Attachment 4 Rhode Island (RI) Benefit Cost Test.

Figure 1. 2022 Annual Plan Total Benefits and Total Costs (RI Test) for the Electric Portfolio⁵



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

Figure 2. 2022 Annual Plan Total Benefits and Total Costs (RI Test) for the Natural Gas Portfolio



The electric, gas, and delivered fuel energy efficiency measures proposed in this Plan will avoid over 794,869 tons of carbon.⁶ This is the equivalent of removing approximately 156,823 passenger vehicles from the road for one year.⁷

The Company expects that investments made in energy efficiency under this Plan will add \$312,801,977 to Rhode Island’s Gross State Product (GSP).⁸ The vast majority of jobs associated with the Annual Plan’s energy efficiency investments are local because they are tied to the installation of equipment and materials. An analysis of National Grid’s 2020 energy efficiency programs found that 73% of companies involved in the Company’s energy efficiency programs are either headquartered or have a presence in

⁶ 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: 2021 Report” Appendix K.

⁷ <https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator>

⁸ Macroeconomic multipliers for the economic growth and job creation benefits of investing in cost-effective energy efficiency from “Review of RI Test and Proposed Methodology” prepared for National Grid by the Brattle Group, January 31, 2019.

Rhode Island.⁹ Investments in energy efficiency contribute to Rhode Island’s economy overall and benefit business owners and their employees who deliver these programs and services.

The cost of procuring 1,068,749 net lifetime MWh electric energy efficiency savings through the Plan is \$63.2 million less than if that electric load was met by purchasing additional electric supply. The cost of procuring 4,002,876 MMBtu lifetime natural gas energy efficiency savings through the Plan is \$15.4 million less than if that natural gas load was met by purchasing additional natural gas supply.¹⁰

This Plan includes an investment of \$122.5 million in the cost-effective electric energy efficiency portfolio in 2022. If approved, this will be funded by \$14.5 million in proceeds from the ISO New England (ISO-NE) Forward Capacity Market (FCM), revenues from the existing energy efficiency program charge of \$0.01113 per kWh, and revenues from a fully reconciling mechanism of \$0.00505 per kWh pursuant to R.I. Gen. Laws § 39-1-27.7(c)(5) to fully fund the cost-effective electric energy efficiency programs for 2022.¹¹

This Plan also includes an investment of \$36.7 million in the cost-effective natural gas energy efficiency portfolio in 2022. If approved, this investment will be funded by revenues from the existing energy efficiency program charge of \$0.871 per dekatherm for residential customers and \$0.439 per dekatherm for non-residential customers plus revenues from a fully reconciling mechanism of \$0.596 per dekatherm for residential customers and \$0.299 per dekatherm for non-residential customers pursuant to R.I. Gen. Laws § 39-1-27.7(c)(5) to fully fund the cost-effective natural gas energy efficiency programs for 2022.¹²

1.3 The Planning Process and Major Changes

This plan benefited from the planning process undertaken in the 2020 calendar year that resulted in the 2021 – 2023 Three-Year Plan. This Annual Plan reflects a refinement of the planning that was undertaken for the second year of that Three-Year Plan, including incorporating the latest EM&V studies and Avoided Cost study. The Three-Year Plan was informed by the areas of opportunity identified in the Rhode Island Energy Efficiency Market Potential Study (Market Potential Study) commissioned by the EERMC and completed by Dunsky Energy Consulting in May 2020. The PUC codified the maximum potential identified by the study as the approved Targets in Docket 5023. In setting these Targets, the EERMC did not apply the filters of prudence and reliability that are required of the Company’s proposed investments in energy efficiency, and that are applied in this and other Annual Plans.

This Annual Plan has also been guided by the LCP Standard in RI PUC Docket 5015. The Standards include an extensive set of “principles of program design” referenced in Section 2.1.1.

⁹ Guidehouse, “Rhode Island 2020 Energy Efficiency Workforce Analysis Report,” May 1, 2020 (filed as part of National Grid’s 2020 Year-End Report).

¹⁰ For more information on how this was calculated, see Section 7.5 of the Main Text, “Cost of Annual Plan Compared to the Cost of Energy Supply”

¹¹ See Attachment 5 Electric EE Program Tables, Table E-1 for list of funding sources and calculation of the charge.

¹² See Attachment 6 Gas EE Program Tables, Table G-1 for list of funding sources and calculation of the charge.

The 2022 Plan is the first year without the Residential EnergyStar Lighting program. As the highly cost-efficient savings secured in previous plan cycles from lighting are reduced as a portion of program portfolio savings, the Company continues to seek new opportunities to drive deeper savings and transform additional markets. Consequently, this Plan continues to focus on building upon existing customer relationships to encourage comprehensive measures that accrue greater savings over their lifetime. Because these deeper and more comprehensive measures have higher upfront costs to secure the levels of claimable energy savings provided by lighting in previous plan cycles (i.e. they produce fewer savings per dollar invested), cost control and efficiency are key.

National Grid staff collaborated with the EERMC consultant team through a series of ongoing Deep Dive Meetings to identify measures from the Market Potential Study to inform the savings programs and strategies included in this Annual Plan. This has resulted in specific emphasis in program design on deeper measures of weatherization (insulation and air sealing), heating and hot water measures, particularly for residential and small business customers, and an increasing focus on combining sophisticated building and equipment controls alongside high potential measures offered to commercial and industrial customers. Building on the successes achieved through prior plans, this plan continues to expand active demand response programs.

The Company has engaged the TWG throughout the planning process to leverage their expertise and seek their feedback. In early 2021, TWG members were asked to identify their priorities for this Annual Plan. TWG members also previewed and provided input on key themes and major changes in an Annual Plan Outline Memorandum circulated in June 2021. The Company is grateful for the substantive critiques and innovative ideas that have come through this process of continued engagement. The Company has incorporated the priorities of TWG stakeholders into many components of this Annual Plan. The discussions of equity have helped shape and elevate the Company's explicit equity commitments, establishing equity as an overarching strategic objective of this Annual Plan and adding multiple specific, measurable actions across the portfolio of efficiency programs.

1.4 How to Read This Plan

For ease of review, this Plan has been organized to align with the revised LCP Standards. There are three overarching sections: Strategies and Approaches to Planning; Consistency with Standards; and Funding Plan, Budget and Goals. The **Strategies and Approaches to Planning** section provides a detailed discussion of the Company's approach to implementing the principles of program design outlined in the LCP Standards and provides high-level program descriptions, along with the major enhancements and innovations planned for 2022. This section also includes a discussion of program participation, pilots and demonstrations and assessments, evaluation, measurement and verification, and coordination with other energy programs. The **Consistency with Standards** section explains how the Plan meets Prudence (including a detailed discussion of equity and rate and bill impacts), Reliability, Environmentally Responsible, and Cost Effectiveness requirements, as set forth in the LCP Standards. **The Funding Plan, Budget and Goals** detail these elements and discusses the performance incentive plan and performance metrics.

The nine Attachments to this Annual Plan provide additional detail on specific Plan elements. **Attachment 1 Residential & IES Programs** and **Attachment 2 C&I Programs** provide detail on program eligibility criteria, offerings, implementation and delivery, customer feedback, 2021 changes with accompanying rationale, and proposed evaluations for each program. **Attachment 3 Evaluation, Measurement, and Verification Plan** reviews evaluation studies completed in 2020, details studies planned for 2021, and provides a recap of historical studies. **Attachment 4 RI Benefit Cost Test** presents the assessed cost-effectiveness of this Annual Plan. **Attachments 5 and 6** contain funding, budgets, goals, and cost-effectiveness tables for the electric and gas energy efficiency programs, respectively. **Attachment 7 Rate and Bill Impacts** provides a detailed analysis of the electric and gas bill impacts resulting from this Plan.¹³ **Attachment 8** details, for each sector, 2021 **Pilots, Demonstrations, and Assessments**. **Attachment 9 Cross-Program Summary** documents how the programs described in this Plan relate to other specific National Grid programs. **Attachment 10 Definitions** provides definitions of energy efficiency terms used throughout the annual plan.

STRATEGIES AND APPROACHES TO PLANNING

2 Programs and Priorities

2.1 Strategic Overview of Programs and Priorities

This Annual Plan is built as the second year of the 2021-2023 Three-Year Energy Efficiency Plan. The Three-Year Plan set the Company on a trajectory to ensure that Rhode Island has a robust and resilient energy efficiency infrastructure, particularly as the market for energy efficiency transforms with changes in the lighting market. This Annual Plan will help continue the trajectory of Rhode Island homes and businesses towards greater efficiency, while contributing to recovery from the COVID-19 pandemic and its impacts on customers and economic conditions. The Plan seeks to guarantee that all Rhode Island energy consumers, regardless of their geographic location, income, home ownership status, primary language, business size, or other relevant barriers are empowered to be active in their energy choices, control their energy use, and enjoy the economic, environmental, and cost savings benefits of energy efficiency.

The Plan supports continued innovation and evolution, building enabling tools to accelerate the transition of Rhode Island homes and businesses to increasing levels of efficiency in future years. It balances the pursuit of energy and financial savings from current technologies and programs with the need to also identify new technologies, finance channels, and programs to continue delivering savings to Rhode Island customers for years to come. The Plan achieves savings by implementing the following key strategic priorities set out in the Three-Year Plan:

- Expand and deepen customer relationships.

¹³ Attachment 7 is not complete at the time of this first draft. Rate and Bill Impacts will be assessed in a subsequent analysis.

- Drive adoption of comprehensive measures.
- Expand and Evolve Active Demand Response.
- Achieve cost optimization and efficiency.
- Apply a pertinent equity lens across all EE program planning and delivery, pending outcomes of the Rhode Island Equity Working Group (EWG).

Section 2.1.1 explains how the principles of program design included in the new LCP Standards have been applied to this Annual Plan, highlighting examples and providing direction on where deeper discussion may be found within the Plan. Sections **Error! Reference source not found.** and 2.5 provide high-level summaries of program designs and changes for 2022 to Residential, Income Eligible Services, and Commercial and Industrial Programs. Section 2.5 offers detail on the cross-cutting programs for 2022, including the Community-Based Initiative, codes and standards, and workforce development. Lastly, Section 2.6 provides participant definitions and planned participation numbers.

During the March and April 2021 Energy Efficiency Technical Working Group meetings the Company sought input from a broad stakeholder group regarding their priorities and focus areas for the 2022 Annual Plan. From these diverse perspectives, the Company identified several common themes shared by many stakeholders, summarized below. During the planning process the Company will continue to engage with stakeholders to identify if and how the plan can address these identified priorities.

Priorities	Office of Energy Resources (OER)	Acadia Center	Green Energy Consumers Alliance	Energy Efficiency and Resources Management Council (EERMC)	Rhode Island Center for Justice	Division of Public Utilities and Carriers (DPUC)	City of Providence
Electrification / Decarbonization	✓	✓	✓		✓		✓
Equity	✓	✓	✓	✓	✓	✓	✓
Innovate / Diversify Programs	✓	✓	✓	✓	✓	✓	✓
Cost Efficiency	✓			✓	✓	✓	
Planning / Reporting Process	✓		✓	✓			
Policy / Regulatory Alignment	✓	✓	✓	✓		✓	

In addition to the above main priorities, National Grid highlighted key priorities for each stakeholder:

- Office of Energy Resources (OER)
 - Expand program offerings to replace fossil-fuel and electric-resistance space and water heating systems with electric air and ground-source heat pumps
 - End incentives for gas connections in residential new construction and/or prohibit them altogether

- Include all the health, safety, comfort, and environmental benefits associated with energy efficiency and electrification investments in all marketing materials
- Fully incorporate the value of health and safety benefits of energy efficiency in program offerings and cost-effectiveness measurements
- Address pre-weatherization barriers, especially in underserved and environmental justice neighborhoods
- Embrace whole-home electrification and weatherization measures to increase savings from retrofits
- Acadia Center
 - Prioritize housing quality improvements
 - Ensure alignment with climate mitigation
 - Embrace clean heating and whole-house electrification
 - Sustain investments in efficiency as the leading energy resource
- Green Energy Consumers Alliance
 - Emissions reductions: in alignment with Act on Climate
 - Include broader stakeholder engagement and more consistent reporting
- Energy Efficiency and Resources Management Council (EERMC)
 - Align with Three-Year Plan
 - Comply with LCP Standards
 - Incorporate stakeholder input
 - Ensure effective & efficient development & review process
- Rhode Island Center for Justice
 - Reduce adverse climate change and health impacts associated with fossil fuel usage
 - Mitigate increased costs to low-income customers
 - Transition away from lighting towards deeper measures
- Division of Public Utilities and Carriers (DPUC)
 - Meet program goals
 - Ensure programs reduce customer costs
 - Expand equitable EE programs for customers and the delivery workforce
 - Leverage EE to provide economic stability, recovery, and growth post-COVID-19
 - Improve the EE performance incentive mechanism
- City of Providence
 - Net zero buildings and decarbonized transportation
 - Resilience: municipal microgrids

2.1.1 Principles of Program Design

This Annual Plan has been guided by the LCP Standards as updated in RI PUC Docket 5015, which provide an extensive set of principles of program design, listed below. This Plan’s approach to incorporating these principles follows, with references to other areas of the Plan that provide greater detail.

Integration With Other Energy Programs and Policies

Designed where possible, to complement the objectives of Rhode Island's energy programs and policies, and describe the interaction of EE Plans with these other programs, including, but not limited to, the System Reliability Procurement Plan; the Renewable Energy Standard; the Renewable Energy Growth Program; the Net Metering Program; and the Long-Term Contracting for Renewable Energy Standard; all energy supply procurement plans; and Infrastructure, Safety, and Reliability Plans.

Innovation

Energy Efficiency Plans shall address new and emerging issues as they relate to Least-Cost Procurement as appropriate, including how they may meet State policy objectives and provide system, customer, environmental, and societal benefits.

Comprehensiveness

The distribution company shall design EE Plans to ensure that all customers have an opportunity to benefit and realize both near-term and long-lived savings opportunities, and to deliver system-wide and location-specific savings.

Equity

The portfolio of programs proposed by the distribution company shall be designed to ensure that all customers have equitable opportunities to participate in the offerings of EE Plans and a fair allocation of costs and benefits.

Build on Prior Plans

The distribution company shall describe in an EE Plan the recent energy efficiency programs offered and highlight how the EE Plan supplements and expands upon these offerings at the appropriate level of detail, including, but not limited to, new measures, implementation strategies, measures specifically intended for demand or load management, and new programs as appropriate.

Build on Prior Programs

Distribution company program development shall proceed by building upon what has been learned to date in distribution company program experience, systematically identifying new opportunities and pursuing comprehensiveness of measure implementation, as appropriate and feasible.

Plan Based on Potential Assessments

At a minimum, the distribution company shall use any Targets and other Report recommendations approved by the PUC as a resource in developing its Three-Year Plan. The distribution company shall include in its Three-Year Plan an outline of proposed strategies to supplement and build upon these assessments of potential. The distribution company may also use other assessments or Report recommendations provided that such assessments or Report recommendations were not previously and specifically rejected by the PUC.

Unlocks Capital and Effectively Uses Funding Sources

EE Plans shall include a Section outlining and discussing new strategies to make available the capital needed to effectively overcome barriers to implement projects in addition to direct financial incentives provided in order to cost-effectively achieve the Least Cost Procurement mandate. Such proposed strategies shall move beyond traditional financing strategies and shall include new capital availability strategies and partnerships that effectively overcome market barriers in each market segment in which it is feasible to do so.

Integration of Gas and Electric Energy Efficiency Programs

EE Plans shall address how the distribution company plans to integrate gas and electric energy efficiency programs to optimize customer energy efficiency and provide benefits from synergies between the two energy systems and their respective programs.

Strategies to Achieve Targets

Plans shall be developed to propose strategies to achieve the energy efficiency savings targets that shall be proposed by the Council and approved by the PUC for that three-year period. Such strategies shall secure energy, capacity, and system benefits and also be designed to ensure the programs will be delivered successfully, cost-effectively, and cost-efficiently over the long term. In addition to satisfying other provisions of these Standards, the EE Plans shall contribute to a sustainable energy efficiency economy in Rhode Island, respond to and transform evolving market conditions, strive to increase participation and customer equity, and provide widespread consumer benefits.

Investments on Behalf of All Customers

Energy Efficiency investments shall be made on behalf of all customers. This will ensure consistency with existing program structure under which all customers pay for, and benefit from, Rhode Island's efficiency programs.

Efficacy

All efforts to establish and maintain program capability shall be done in a manner that ensures quality delivery and is economical and efficient. The distribution company shall include wherever possible and practical partnerships with existing educational and job training entities.

Parity Among Sectors

While it is anticipated that rough parity among sectors can be maintained, as the limits of what is cost-effective are identified, there may be more efficiency opportunities identified in one sector than another. The distribution company shall design EE Plans to capture all resources that are cost-effective and lower cost than supply. The distribution company shall consult with the Council to address ongoing issues of parity.

Cost-Effectiveness

The distribution company shall propose a portfolio of programs that is cost-effective. Any program with a quantified benefit-cost ratio greater than 1.0 (i.e., where quantified benefits are greater than quantified costs), should be considered cost-effective. Consistent with the PUC's guidance issued in Docket No. 4600A, qualitative benefits and costs may be considered in determining cost-effectiveness. The portfolio must be cost-effective and programs must be cost-effective.

This Annual Plan has been designed to **integrate** with Rhode Island’s energy programs and policies. Section 5 Coordination with Other Energy Policies and Programs provides details on the Plan’s connection to specific state policies. The program descriptions found in Attachment 1 Residential & IES Programs and Attachment 2 C&I Programs offer additional specific detail on implementation and delivery, how the energy efficiency programs help customers achieve additional state energy policy goals, and information on energy programs beyond those run directly by the Company, such as programs for connecting to renewable energy sources and electrification opportunities. This plan offers **innovations** in program design alongside a systematic approach to bringing innovative new technologies and approaches forward as outlined in Attachment 8 Pilots, Demonstrations and Assessments.

Comprehensiveness is a core design principle and a core strategy for both the 2021-2023 Three-Year Plan and this Annual Plan. This Plan includes multiple enhancements to reach and engage more customers, such as the simplified whole building pathway to capture more small and medium buildings in new construction,¹⁴ and the scale-up of the Equipment and System Performance Optimization Initiative¹⁵ to capture new customers and offer them more comprehensive approaches. The Commercial and Industrial market sector approach and the Residential and Income Eligible whole building delivery programs (EnergyWise, Multifamily, Income Eligible Services, and Income Eligible Multifamily) continue the evolution to deep comprehensive savings packages that emphasize whole building and whole system solutions, with **integration of gas and electric** energy efficiency to optimize and benefit from synergies between the two energy systems.

The program designs included in this Plan **build on prior plans and build on prior programs**. The detailed program descriptions provided in the Attachment 1 Residential & IES Programs and Attachment 2 C&I Programs offer snapshots and evidence of how programs are continuously evolving, building from one plan year to the next. They show how high-level strategies within the Three-Year and Annual Plans are translated into specific actions and activities that secure savings for customers and help to contextualize specific program innovations and enhancements described only briefly in Section **Error! Reference source not found.** and Section 2.4 Commercial and Industrial Programs. Attachments 1 and 2 provide detail on new measures, implementation strategies, measures specifically intended for demand or load management, and new programs.

Active demand response (or ConnectedSolutions) programming is a great example of how this Plan builds on prior plans and programs. Active demand response was first offered as a residential pilot in 2016 and a C&I pilot in 2017. In 2019, these pilots were converted to standard programs and continued in 2020. In this Plan, the Company proposes to continue growing active demand response offerings and expanding them to new technologies that will provide new program pathways to additional peak demand savings.¹⁶ The ConnectedSolutions programs in this Plan will deliver demand reductions that

¹⁴ See Attachment 2 C&I Programs, Section 2 Large C&I New Construction Program.

¹⁵ See Attachment 2 C&I Programs, Section 5.7 Equipment & System Performance Optimization.

¹⁶ See Attachment 1 Residential & IES Programs, Section 10 Residential ConnectedSolutions and Attachment 2 C&I Programs, Section 7 C&I ConnectedSolutions.

build upon prior success to grow participation and offerings for both commercial and residential customers in pursuit of the Active Demand Response Targets approved in Docket 5023.

Equity is a core strategic priority of this 2022 Annual Plan that builds on the themes presented in the 2021 - 2023 Three-Year Plan. The Company is committed to providing all customers with the ability to access and benefit from energy efficiency programs, regardless of their geographic location, income, home ownership status, primary language, business size, or other relevant barriers; that jobs and economic development benefits of the programs reach all Rhode Island communities, with renewed emphasis on environmental justice communities; and that the energy efficiency services help the most vulnerable customers that may pay a higher proportion of their income in energy costs. Using an equity lens involves considering how programs are designed and evaluated with these goals in mind, as well as considering the systemic and institutional structures that may make it easier for some customers to access energy efficiency products and programs and more challenging for others. As discussed further below the Company is taking several steps in 2021 in conjunction with the Office of Energy Resources (OER) and other stakeholders to further our empirical understanding of several facets of equity.

As a part of National Grid’s 2021 Annual Energy Efficiency Program Plan (2021 Annual EE Plan) and 2021-2023 Energy Efficiency Program Plan (2021-2023 EE Plan), National Grid committed to working with the RI Office of Energy Resources (OER) to co-host an Equity Working Group (EWG). The group began meeting in the summer of 2021 and consists of representatives from National Grid, OER, other state agencies, community-based organizations, advocacy organizations, and local subject matter experts in equity. The mission of the EWG is to give impacted communities, and the organizations that serve them, a structured opportunity to provide input and feedback on equity as it pertains to energy efficiency for the planning, design, and delivery of the energy efficiency programs.

Between June – August 2021, the EWG is convening to discuss marketing and outreach, data and metrics collection, workforce development and training, and energy efficiency program budgets. Thus far two key EWG meetings have occurred in 2021 that will inform the 2022 Plan.

Table 3. Summary of Equity Working Group (EWG) Meetings to Date

Meeting	Topic	Themes Discussed
June 2021	Marketing	Potential goals of equitable marketing and outreach and how to advance equitable marketing and outreach
July 2021	Data and Metrics	What metrics the company currently tracks; what metrics could potentially be used for assessing and tracking equity

The EWG’s recommendations will be presented to the Energy Efficiency Technical Working Group (EETWG) at either the August or September Meeting.

As equity is a core strategic priority, the EE Programs will incorporate the EWG’s recommendations into the 2022 Plan as feasible to build program enhancements, tailor marketing efforts, and enhance tracking systems to better meet the needs of identified non or low-participating customer groups.

The Company is committed to using the rigor of the **non-participant and multifamily census studies** to ensure that program designs are informed by data and limit existing prejudices and biases from being solidified into program designs. The Company is not, however, waiting for study results to begin acting where the Company has data and clear opportunities to immediately achieve more equitable outcomes and support our more vulnerable customers. The Company has committed to the following actions and enhancements to our programs in 2022 to achieve greater equity and support small business, moderate-income customers, and low-income customers:

- The Company is committed to tracking and reporting renters and rental unit participation (see Section 12.1.3)
- The Company will begin voluntary reporting of minority and women owned businesses that provided services to the EnergyWise program.
- The Company is increasing its emphasis on identifying and encouraging customers eligible for the discount rate to move to the discount rate.¹⁷
- As customers move to the discount rate, the Company proposes to create a welcome package to encourage participation in applicable efficiency programming, specifically Residential Income Eligible Services (IES).¹⁸
- The Company’s new codes and standards advancement support service primarily targets the nonparticipant portions of the markets we serve across all sectors. While the program is in its infancy, this approach overcomes traditional barriers of access by ensuring that efficiency levels are rising for all. See Section 2.5.2 Cross Cutting Programs, Codes and Standards Support for more information.
- The Company will incorporate the EWG’s recommendations into the 2022 Plan as feasible to build program enhancements, tailor marketing efforts, and enhance tracking systems to better meet the needs of identified non or low-participating customer groups. See Section 7 for more information.

This Annual Plan has benefited from the **Market Potential Study**, and the areas of opportunity it identified have been considered in the program planning process. The RI PUC approved Targets, which reflect the study’s maximum **potential assessment** assumed barrier reductions beyond current levels of program design and further improved customer economics by assuming 100% incentives, resulting in significantly higher budget levels than recent plans. The Company has combined this with **additional**

¹⁷ See Attachment 1 Residential & IES Programs, Section 4 Income Eligible Services.

¹⁸ See Attachment 1 Residential & IES Programs, Section 4 Income Eligible Services.

assessments and analysis of results from the Evaluation Measurement and Verification programs, program experience, and customer and vendor feedback loops. Comprehensive projects emphasize capturing the specific opportunities identified in the Market Potential Study. For example, the bundled incentive designs in EnergyWise connect deep weatherization (insulation and air sealing) with additional heating and hot water measures, the measures identified in the Market Potential Study with the highest potential.¹⁹ The Commercial and Industrial programs too have systematically focused all programs on measures with high potential. One easy to see result is the continued focus on bundling control technologies with high potential building, HVAC, and lighting end uses.²⁰ This Plan includes significant investments to ensure workforce capacity to support customer adoption of high efficiency technologies, including advanced control systems and air source heat pumps (see Section 2.5.3 Cross Cutting Programs, Workforce Development).

All program designs are connected to financing options to help **unlock capital and effectively use funding sources**. This Plan consistently looks beyond direct financial incentives and traditional financing strategies to design capital and program access strategies that respond to specific customer barriers. For example, exploring new financing support for small and mid-size independent grocers through OBR (on-bill repayment) or through an interest buy-down mechanism in partnership with third party providers of debt capital.²¹ We believe this access to capital will allow customers to commit to projects more quickly or increase the number of measures installed. The Company is also exploring expanded use of the Heat Loan to help multifamily property owners invest in more comprehensive upgrades, regardless of meter type.²²

The primary **strategies to achieve savings goals** are guided by our five strategic priorities: expand and deepen customer relationships; drive adoption of comprehensive measures; expand active demand response; achieve cost optimization and efficiency; and apply an equity lens across all planning and delivery. Detailed strategies that target specific segments by responding to and seeking to transform specific markets can be found in Attachment 1 Residential & IES Programs and Attachment 2 C&I Programs.

Efficacy, or ensuring quality delivery that is economical and efficient, like comprehensiveness, is a core strategy of the 2022 Annual Plan. As Rhode Island energy consumers face economic repercussions from COVID-19, the Company has incorporated opportunities to balance the portfolio of energy savings measures and program approaches to maximize cost efficiency (i.e. the amount of energy savings per dollar invested) and minimize the impact on customer bills. The “efficacy” principle of program design specifically calls for “practical partnerships with existing educational and job training entities.” The

¹⁹ See Attachment 1 Residential & IES Programs, Section 4 EnergyWise Single Family.

²⁰ See Attachment 2 C&I Programs, sections 3.1 Performance Lighting Plus, 5.9 and 5.10 Customer and Company Owned Street Light Equipment, 5.15.1 Upstream Lighting, 5.15.2 Upstream HVAC, and 6. Small Business Direct Install.

²¹ See Attachment 2 C&I Programs, Section 5.1 Grocery Initiative.

²² See Attachment 1 Residential & IES Programs, Section 3 Multifamily.

Company will coordinate with the Department of Labor and Training's Real Jobs Rhode Island program and the Rhode Island Department of Education's PrepareRI initiative to help promote existing solutions to reduce or eliminate duplication of effort and expenditures. For more information see Section 2.5.3.

Cost effectiveness: The Company updates its cost effectiveness models during planning and as evaluation data and program implementation insights arrive. Refer to Attachment 4 for details of the RI Test as applied to the portfolio of 2022 Programs. The application of cost effectiveness as a design principle, however, involves a balancing of the drive for comprehensive projects with long-term measures, which tend to be complex and challenging for customers to adopt and therefore have higher savings acquisition cost, with opportunities for highly cost efficient savings provided through programming that requires less intensive customer support, such as upstream programming and work on codes and standards, as well as highly cost efficient programs such as the Strategic Energy Management Planning with very large customers.

In addition to the key stakeholder priorities identified through the early stages of the planning process, the Company indicated five key objectives and themes in the 2021 – 2023 Three-Year Plan. These themes will be further explored and expanded through strategies and program adjustments identified for the residential, income eligible, and commercial and industrial sectors.

- Deepen customer relationships;
- Drive adoption of comprehensive measures;
- Expand active demand response;
- Achieve cost optimization and efficiency; and
- Apply a deeper equity lens across all program planning and delivery.

The intentional **transformation of the lighting market** to light-emitting diode (“LED”) technology is a signature achievement of the design and implementation of prior Three-Year and Annual Plans. LED lighting moved quickly from emerging technology to rapid scale up, as the Company pushed for rapid adoption through multiple channels across the portfolio. This rapid adoption to high efficiency lighting was a valuable opportunity for both customers and energy efficiency in Rhode Island. The Company anticipates a saturated LED lighting market by the end of 2022, at which point lighting will no longer be a significant driver of claimable savings or a cornerstone of residential programs. The programs phased out residential upstream lighting in 2021 and in-home installs will conclude in 2022.

When programs assess measure lives for energy efficiency products, they can be understood in two ways: the usable life of the product, or, the lifespan for which program administrators (PA) can claim savings. The latter case is how PAs measure lifetime savings and is often referred to as adjusted measure lives (AMLs).

When the question is asked, “What level of impact in the lighting market and change in lighting market sales are due to the program’s influence?” AMLs are important because the attribution of product purchases and their savings are how PAs measure their success.

AMLs seek to account for the decision customers make to purchase an energy efficient product and whether the PAs are still influencing that decision. This is done by measuring the alternative efficiency

technologies in the market, their saturation, prevalence, and trajectory. In simple terms, if today there is still a choice between incandescent lightbulbs and LED bulbs, then the programs have the opportunity to convince customers and therefore claim the savings. If the market is moving rapidly towards only offering LED bulbs for customer purchase, the Company must consider that a year from today or 5 years from today, customers may not have the same choice of differing technologies. If LEDs are fully saturated in the market and are the only option to purchase, PAs cannot claim they are causing those energy savings anymore because the market moved to that point. Therefore, AMLs are adjusted down to account for this future loss of lesser efficient products.

2.2 Residential Programs

In 2022, the Company will continue all residential programs offered in 2020, while examining the potential of new technologies for inclusion in future years.

Table 4. Overview of 2022 Residential Energy Efficiency Programs

Program Name	Program Description	Changes for 2022
EnergyWise Single Family (Funded by Electric and Gas)	EnergyWise is a direct-to-customer in-home program that educates residents on how their home can become more energy efficient. The program offers single-family customers (buildings with 1-4 dwelling units) home energy assessments, weatherization services, and information regarding their energy usage. The program addresses base load electric use and heating, cooling, and water heating energy loads in all residential buildings. Participants receive energy efficiency recommendations and technical assistance, as well as financial incentives to replace inefficient items such as lighting fixtures, appliances, thermostats, and insulation. Upgrades to efficient lighting, advanced power strips, and water saving devices are made if opportunities exist during the initial visit. At the	<ul style="list-style-type: none"> • Equity reporting of minority and/or women owned Independent Insulation • Concierge service for electric resistance heated homes to facilitate the design and right sizing of a heat pump electric heating system installation. • Continue workforce development upskilling to support program success. • Introduce 100% weatherization incentive for moderate income customers, defined as households at or below 80% state median income. • Potential to offer different weatherization incentives for non-electric and non-gas heated homes to control program costs. • Continue jointly sponsored research with other utilities through ESource and ICF on incentives.

Program Name	Program Description	Changes for 2022
	<p>completion of the assessment, the customer receives an Energy Action Plan that indicates additional energy savings opportunities 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.</p>	
<p>Multifamily (Funded by Electric and Gas)</p>	<p>This program offers comprehensive energy services for market-rate multifamily customers (buildings with 5+ dwelling units), including energy assessments, incentives for heating and domestic hot water systems, cooling equipment, lighting, and appliances. All types of multifamily properties are eligible. A primary point-of-contact is designated to manage, and coordinate services offered through the Company's existing portfolio. This program is offered in conjunction with the C&I Multifamily gas program where a site may have a commercial meter or office space but should be virtually indistinguishable to the customer as the Company's single point of contact will handle all program overlap and offer a seamless customer experience.</p>	<ul style="list-style-type: none"> • Re-launch a tiered incentive approach to encourage building owners and facility managers to include more residential unit owners in multifamily projects. • Provide greater customer choice to the condominium market by enabling customers to choose their own ASHP contractor and assess the impact on participation. • Implement recommendations from Multifamily Impact and Process Evaluations. • Leverage the Multifamily Census to implement targeted marketing to newly identified five to 20 unit small- and medium-sized multifamily owners not served to date. • Utilize customer research to further explore new motivators to increase customer participation including Non-Energy Impacts (NEIs). • Explore financing opportunities for property managers and landlords to

Program Name	Program Description	Changes for 2022
		<p>help reduce upfront co-payment burdens.</p> <ul style="list-style-type: none"> • Explore different tactics that provide opportunities to offer relevant content in a more personalized way to customers by updating website landing pages, partaking in community events, and utilizing content hubs. • Continue to provide professional development opportunities for multifamily energy auditors and sub-contractors to improve sales acumen and deepen savings.
Residential New Construction and Building Energy Code Support (Funded by Electric and Gas)	The Residential New Construction (RNC) program promotes the construction of high-performing energy efficient single family, multifamily, and income eligible homes, as well as the education of builders, tradespeople, designers, and code officials.	<ul style="list-style-type: none"> • Provide a new HVAC consulting support service (in coordination with the ENERGY STAR HVAC program) targeted to high performance projects. • Refresh program content related to codes and standards to reflect the State’s expected code update.
Home Energy Reports (Funded by Electric and Gas)	<p>The Home Energy Reports (HER) program encourages energy efficiency behavior through personalized print and email reports and a seamlessly integrated website. Each of the communication channels displays energy consumption patterns and contains a normative comparison to similarly sized and similarly heated homes, as well as to an energy reduction goal for each customer.</p> <p>The Company will continue to deliver Home Energy Reports that offer enhanced feedback tools to inspire customers to</p>	<ul style="list-style-type: none"> • Continue 1-click promotion opportunities which were started in 2021. Enables additional data collection about customer residence to customize future marketing.

Program Name	Program Description	Changes for 2022
	take actions that reduce their energy consumption and increase their participation in other energy efficiency programs.	
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 carrying the ENERGY STAR® label. In combination with ENERGY STAR® Lighting, this program trains retail sales staff about products. The program also offers refrigerator recycling.	<ul style="list-style-type: none"> • Assess the cost effectiveness of joining the ENERGY STAR® Retail Products Platform (ESRPP) and roll out in 2022 if cost effective.
Residential High-Efficiency Heating, Cooling, and Hot Water (ENERGY STAR® HVAC) (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, and boiler reset controls. Incentives for energy efficient air source heat pumps for space and water heating equipment are available for customers with electric resistance heating/hot water. Incentives are also available for air source heat pumps used as accessory heating and cooling devices in homes with a primary heating system that is natural gas, oil, or propane. The program provides training of contractors to increase accurate	<ul style="list-style-type: none"> • In both the electric and gas HVAC Programs, the heat loan has been added to the Program budget • In the Gas HVAC Program, the lower efficiency boiler and combo condensing measures were removed to increase participation in the higher efficiency boiler and combo condensing measures. • The Electric HVAC Program and the Residential New Construction/Major Renovations Program will work closely together to develop and implement an HVAC contractor training for the design and have installation of heating/cooling/ventilation systems in projects striving to meet Zero Net Energy and Passive House. <ul style="list-style-type: none"> ○ HVAC Contractors will be listed on the Program’s webpage as having completed the training and/or for the completing Zero

Program Name	Program Description	Changes for 2022
	installation practices, testing of the high efficiency systems, tiered rebates for new ENERGY STAR® systems, and incentives for checking new and existing systems.	Net Energy and Passive House projects.
Residential ConnectedSolutions (Active Demand Response) (Funded by Electric)	ConnectedSolutions is National Grid’s demand response program that sends control signals to customer owned electric devices to reduce peak energy use and improve power quality on the grid. Consumers with eligible controllable equipment (e.g. Smart thermostats, batteries, pool pumps, electric vehicles, electric vehicle chargers, solar inverters) can enroll to participate in Connected Solutions. All electric consumers are eligible to participate in ConnectedSolutions.	<ul style="list-style-type: none"> • Offer an electric vehicle-based demand response program to cost-effectively reduce peak loads; enroll 250 vehicles in 2022, pending outcomes of evaluation pilot results. • Offer a smart solar inverter demand response program to improve power quality on the grid, reduce energy use (kWh), and reduce peak energy use (kW); enroll 540 solar inverters in 2022. • Offer a pool pump demand response program to cost-effectively reduce peak loads: enroll 25 pool pumps in 2022.

2.3 Income Eligible Programs

The Company and the Parties want customers who meet the income eligibility requirements, have a high proportion of energy burden and/or difficulty paying their electric bills to participate in, and benefit from, the Company’s energy efficiency programs. Therefore, the income eligible sector of the customer base is designated as a unique sector, and funding for this sector is subsidized by both non-income-eligible residential customers and commercial and industrial customers using 14.3% of total implementation funding for the electric programs, and 26.6% for natural gas programs. Total implementation funding for income eligible electric programs increased 2.3% from 2021 levels from \$16.4M to \$16.8M. Total implementation funding for income eligible gas programs increased 4.0% from 2021 levels from \$9.0M to \$9.3M in 2022.

Table 5. Overview of 2021 Income Eligible Programs

Program Name	Program Description	Changes for 2022
<p>Income Eligible Single Family (Funded by Electric and Gas)</p>	<p>Income Eligible Single (IES) Family Services are delivered by local Community Action Program (CAP) agencies with oversight provided by a Lead Industry Partner. Three levels of home energy assessments are offered: (1) lighting and appliance, (2) heating and weatherization, and (3) comprehensive. Customers who qualify for the A-60 rate or for the Low-Income Home Energy Assistance Program (LIHEAP) are eligible to receive all services and equipment upgrades at no cost.</p>	<ul style="list-style-type: none"> • Full implementation of a third-party support model to expand CAP capacity for completing weatherization jobs. This support will help improve greater equity for improving equity by serving customers equitably across CAP territories and will improve the timelines for completion of weatherization jobs. • Rebuild and stabilize the number of qualified AMP/weatherization and heating assessors. The IES Program will prioritize assisting CAPs to train, hire and retain assessors. Indicators of success include training and hiring new assessors and regularly tracking the number of assessors. • Implement a workforce development program with a clear pathway to IES workforce opportunities. • Focused communication and engagement with landlords on behalf of interested tenants. The Company aims to increase renter participation, via landlord outreach, to effectively improve the equitable share of program resources • Leverage the results from research conducted in 2021 on the costs and timeline of replacing oil/propane heating

Program Name	Program Description	Changes for 2022
		<p>systems with air source heat pumps during non-emergency months. Based on the cost effectiveness, ease of implementation and approval to utilize rate-payer funds to convert oil heat to electric heat, this may require additional budgets and enhanced education for program staff, industry partners, and customers.</p> <ul style="list-style-type: none"> • Incorporate recommendations from the 2021 RI Equity Working Group as applicable, and as funds allow, to the IESSF Program. • Develop a protocol for offering smart thermostats to homes with central AC to improve efficiency and operability and align with ConnectedSolutions when possible. Develop a customer education campaign on thermostat temperature control. •
Income Eligible Multifamily (Funded by Electric and Gas)	Comprehensive energy services for multifamily customers (buildings with 5+ dwelling units) that also meet the criteria for “income eligible” as defined in Attachment 1 Residential & IES Programs, Section 3. Multifamily. These services include energy assessments, incentives for heating and domestic hot water systems, Air Source Heat Pumps, cooling equipment, lighting,	<ul style="list-style-type: none"> • Launch a specific marketing and outreach campaign for the income eligible multifamily program. • Leverage the Multifamily Census to identify new prospective income eligible properties. • Update the website landing page and program brochure to

Program Name	Program Description	Changes for 2022
	and appliances. In most cases, there are no costs to the customer for these services as most income eligible upgrades are covered at 100%.	increase ease and transparency of program offerings.

Income Eligible Multifamily

*Income Eligible Multifamily is combined with Multifamily above.

2.4 Commercial and Industrial Programs

The Commercial and Industrial (C&I) programs consistently offer highly cost-efficient savings. The Company continuously evaluates and responds to customer needs and market dynamics to develop enhancements that secure deeper, more comprehensive savings while evolving program designs to drive market transformation across multiple end-uses.

The Company has focused on non-lighting opportunities and program enhancements that help drive progress toward deeper comprehensive measure adoption in every customer class, while continuing to help late adopters to leverage remaining lighting savings opportunities. The specific priority measures vary by customer but are generally reflective of opportunities highlighted in the Market Potential Study. The innovations and enhancements in this plan reflect many ideas and insights that have evolved from the close collaboration with the EERMC and the EERMC consultant team, OER, the Division, and our vendors, as well as customer feedback. Finally, the Company engaged a third-party consultant to assess the barriers and opportunities associated with new and underutilized technologies listed in the Market Potential Study, and this plan incorporates the early results of that assessment.

Summarized in Table 7 below and described in more detail in Attachment 2 C&I Programs, the Company is expanding its focus on specific market segments to engage customers with tailored approaches to generate more comprehensive savings measure adoption (new Telecommunications initiative launched in 2021), enhancements that make participation easier or more attractive (such as the Equipment and Systems Performance Optimization), provide attractive incentives for specific customer (especially Small Business), and multiple enhancements that reduce focus on reduction of barriers to comprehensive measure adoptions (ex: e.g. Whole Building Streamlined pathway in New Construction introduced in 2021).

For each of the Commercial and Industrial Programs listed in Table 6 below, an overview of 2022 programs is provided in Table 7. For more detailed program descriptions, please refer to Attachment 2 C&I Programs. Rationales for 2022 program changes are included under “rationale” in the program description tables in Attachment 2.

Table 6. Commercial and Industrial Programs

Large Commercial and Industrial New Construction
Large Commercial and Industrial Retrofit
Small Business Direct Install
Connected Solutions (Active Demand Response)
Commercial and Industrial Multifamily Program

Table 7. Overview of 2022 Commercial and Industrial Energy Efficiency Programs

Program Name	Program Description	Changes for 2022
<p>Large Commercial and Industrial New Construction and Building Energy Code Support</p> <p>(Funded by Electric and Gas)</p>	<p>This program encourages energy efficiency in new construction, major renovations, planned replacement of aging equipment, and replacement of failed equipment through financial incentives and technical assistance to developers, manufacturers, vendors, customers, and design professionals. C&I customers with annual electric consumption greater than 1,000,000 kWh per year are eligible.</p> <p>The program supports new construction projects with proactive technical assistance during design with energy modeling and analysis. Incentives are also offered to owner’s design teams for their time and effort to meet program requirements. The program promotes and incentivizes the installation of high efficiency equipment in existing facilities during remodeling or equipment failure and replacement. A customer who does not install energy efficient equipment at the time of construction or equipment replacement will likely never make</p>	<ul style="list-style-type: none"> • Leverage available municipal electronic permitting information to identify trends and better characterize the State’s C&I new construction market. • Update energy code related elements of the program following the state’s energy code update (anticipated in early 2022) • Revise the <i>Performance Lighting Plus</i> initiative incentive offerings and requirements in concert with Massachusetts colleagues to ensure greater ease of customer participation, remove inconsistencies, and account for changes in the lighting market. The Company will collaborate with the lighting sub-group of EERMC Consultants before the offering is finalized and published to customers. • <i>Boilers</i>: Baseline efficiency requirements may increase in 2022, which could eliminate the Company’s ability to incentivize new boilers. • <i>Upstream Products</i>: Increase goals for Upstream HVAC and

Program Name	Program Description	Changes for 2022
	<p>the investment or will do so at a much greater cost later. Operations Verification or quality assurance is also offered to ensure that the equipment and systems operate as intended.</p> <p>The program also promotes compliance with the building energy code and increased use of the Stretch Code to support the State’s goals and objectives. In addition, it provides technical assistance in advancing the development and adoption of minimum efficiency standards for appliances and equipment. Finally, the program supports the State’s Zero Energy Building (ZEB) goals through engagement and development of ZEB programs in the future.</p>	<p>Food Service due to growing demand the past two years.</p>
<p>Large Commercial and Industrial Retrofit (Funded by Electric and Gas)</p>	<p>This program incentivizes the replacement of existing equipment and systems with energy-efficient alternatives when the customer might otherwise not plan on making efficiency investments. This may include 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</p>	<ul style="list-style-type: none"> • Scale up new <i>Telecommunications Initiative</i>, which serves mobile, fiber optic, and cable data companies and their associated infrastructure through technical assistance, project management, and incentives, delivering savings from non-lighting as highlighted in the Market Potential Study. • <i>Industrial</i>: Increase focus on customers in the 200-400 kW range to encourage greater participation by small- and medium-sized customers. • <i>Strategic Energy Management Planning</i>: Ramp up efforts to engage more customers (e.g.

Program Name	Program Description	Changes for 2022
	<p>opportunities and pays incentives to assist in defraying part of the material and labor costs associated with the energy efficient measures.</p> <p>The Company also offers education and training, such as the building operator certification (BOC) training, to support the implementation and adoption of energy efficiency.</p>	<p>colleges/universities, cities, industrial customers, and chain restaurants). Provide educational customers with access to an energy solutions provider specialized in campus energy infrastructure.</p> <ul style="list-style-type: none"> • <i>Equipment & Systems Performance Optimization:</i> Fund set-up costs for monitoring-based commissioning systems. Standardize guidance on savings calculations and baseline documentation. Add new gas and CHP measures to the low-cost tuning pathway, if feasible. Revisit measure persistence assumptions to reflex full lifetime value to customers. • <i>Lighting Designer Incentives:</i> Create a one-pager for new construction or major retrofit customers that articulates the benefits of hiring a lighting designer. • <i>Farm/Agriculture:</i> Explore simplifying the initiative for customers with multiple meter types in an attempt to increase participation. • <i>Combined Heat & Power:</i> Provide an additional incentive tier to CHP systems that leverage biogas as a fuel source and offer an Optimal Operation and Maintenance Incentive for biogas CHP systems to reduce economic barriers associated

Program Name	Program Description	Changes for 2022
		<p>with the installation, operation, and maintenance.</p> <ul style="list-style-type: none"> • <i>Commercial Real Estate:</i> Explore the opportunity to develop a peer group of local commercial real estate investors or property managers interested in energy efficiency. Determine the measure mix to promote. • <i>Lodging:</i> Support packaged terminal heat pumps (PTHPs), potentially as a prescriptive measure. Develop marketing collateral explaining common measures for lodging facilities (PTHP's, guest room energy management systems, lighting, HVAC, kitchen equipment, etc.). • • <i>Combined Heat and Power:</i> The Company is currently working with a customer that is pursuing an energy efficiency incentive for a 13.3 megawatt combined heat and power system that would provide electricity, hot water, and CO2 to their facility. The unique design of this system will allow the customer to capture the CO2 from the CHP and use the exhaust CO2 for their business operation. The CO2 harvesting will substantially reduce the greenhouse gas emissions from the CHP plant, while also reducing or eliminating the customers need to purchase food quality CO2. The incentive cost per a unit of

Program Name	Program Description	Changes for 2022
		<p>energy is expected to be below \$0.03 per a lifetime kWh, making the project one of the most cost-effective offerings in the energy efficiency portfolio.</p> <ul style="list-style-type: none"> • <i>Upstream Products: Maintain strong</i> incentive support for Luminaire Level Lighting Controls (LLLCs). • <i>Energy Management Systems:</i> Streamline savings calculator and standardize audit process. • <i>Lighting:</i> Lighting savings will decline significantly in 2022 due to evaluation impacts as LED’s have become much more common, while fewer retrofit opportunities remain. Prescriptive and Upstream lighting will decline roughly 42% vs 2021. Custom will also likely to decline significantly.
<p>Small Business Direct Install (Funded by Electric and Gas)</p>	<p>This is a retrofit program that provides turn-key solutions to customers that consume less than 1,000,000 kWh per year. As part of the program, customers receive a free on- site energy assessment and a customized report detailing recommended energy efficient improvements. National Grid then completes retrofit installations at the customer’s convenience. The program serves small businesses of all types from restaurants to non-profits, to small offices. National Grid pays up to 70% of installation and equipment costs and customers can finance the remaining share of the project over as many as 60 months (typically 24) on their electric bill, interest free, using the</p>	<ul style="list-style-type: none"> • Maintain focus on non-lighting opportunities (e.g. hood controls, other HVAC controls) and savings per the Market Potential Study. • Dramatically increase the weatherization volume for customer of all fuel types. This is possible due to a \$1,100,000 RGGI allocation to the Company from OER for this purpose. The Company has committed, at the request of OER, to spend 50% of these funds in areas hit hardest by COVID-19. Many of these areas contain

Program Name	Program Description	Changes for 2022
	Small Business Revolving Loan Fund, providing that funds are available.	<p>customers who may be more comfortable discussing our services in languages other than English. The Company and its vendor will deploy bilingual auditors. In addition to English, the auditor will speak either Spanish or Portuguese (the most widely spoken languages besides English in Rhode Island).</p> <ul style="list-style-type: none"> • Work to achieve 40% of installed luminaires and retrofit kits with integrated controls. • Introduce a short, formal customer satisfaction survey in 2022. In addition to typical of a customer satisfaction questions, the Company will ask an optional question about whether the survey respondent identifies as a woman, minority, or LGBT. This will increase the Company's understanding the customers it serves. • Expand marketing to Woman and Minority Owned Enterprises (WME). This effort will extend beyond the WME registered with the state and will seek to develop relationships with groups such as the RI Black Business Association and the RI Hispanic Chamber of Commerce to understand

Program Name	Program Description	Changes for 2022
		<p>how we can better serve these businesses.</p>
<p>Commercial Connected Solutions (Active Demand Response) (Funded by Electric)</p>	<p>The Commercial Connected Solutions or Active Demand Response program is focused on reducing peak electric demand and associated costs for large and small commercial customers. All customers, regardless of size can participate. The program is technology neutral and provides a customer incentive for verifiable shedding of load in response to a signal or communication from the Company.</p>	<ul style="list-style-type: none"> • At this time, no program changes are anticipated related to Targeted or Daily Dispatch for 2022. However, there has been a shift in customer participation from the Targeted Dispatch initiative to the Daily Dispatch offering. The increased enrollment in the Daily Dispatch is welcomed trend as the Daily Dispatch generates more system benefits per a curtailed MW than the Target Dispatch offering. Additionally, an ongoing review of summer 2021 performance may generate opportunities to improve the program in 2022. However results are not expected until shortly after the filing of this Plan. The Company will share any proposed program changes resulting from the evaluation with stakeholders prior to implementing changes. • Coordinate with the Company's other new Energy Storage Initiatives, which test the ability of grid-connected systems to mitigate the load impact associated with EV charging, both behind-the-meter and front-of-the-meter, in order to

Program Name	Program Description	Changes for 2022
		<p>identify applications that benefit customers and the grid as a whole and advance the storage market.</p>
<p>Commercial and Industrial Multifamily (Funded by Gas)</p>	<p>Comprehensive energy services for market-rate multifamily customers (buildings with five plus dwelling units) include energy assessments and incentives for heating and domestic hot water systems and weatherization. Coordinated services will be offered for all types of multifamily properties. An approach tailored for multifamily properties designates a primary point-of-contact to manage and coordinate services offered through the Company’s existing portfolio, including EnergyWise, C&I Retrofit, Residential New Construction, Income Eligible, and the ENERGY STAR® HVAC programs.</p>	<ul style="list-style-type: none"> • Implement recommendations from Multifamily Impact and Process Evaluations (e.g. health and safety barrier remediation, redesigning the customer energy report, identifying the long-term role of virtual energy assessments in multifamily buildings). • Leverage the Multifamily Census to implement targeted marketing efforts to newly identified five to 20 unit small- and medium-sized multifamily owners, newly identified income eligible properties, and other newly identified properties that have not been served by the program to date. • Explore whether enhancements to the Heat Loan to finance larger improvements for deeper energy savings in multifamily buildings would be attractive to larger multi-family property owners and drive participation. • Reevaluate co-branding with the Multifamily vendor to consider more prominent Company placement to facilitate greater customer trust, ease, and ultimately participation. • Invest in professional development for multifamily

Program Name	Program Description	Changes for 2022
		energy auditors to improve sales acumen and deepen savings.

2.5 Cross-Cutting Programs

2.5.1 Community-Based Initiative

The Rhode Island Community-Based Initiative is designed to increase participation in the Rhode Island Energy Efficiency commercial and residential energy efficiency programs and elevate local energy priorities of a city or town. Cities and towns are selected to participate based on need, commitment from the city or town, and the desire for a community-based approach to efficiency. The Company and the municipality work to set pertinent community-based energy efficiency goals and align incentive dollars for achieving the goals. Success of the Initiative is driven by advocacy from elected officials and deep municipal engagement with residents and small businesses to achieve the established energy efficiency goals. Examples of possible energy efficiency programs through which goals are identified:

- EnergyWise Home Energy Assessments
- Income Eligible Energy Assessments – single family and multifamily
- Refrigerator Recycling
- Replacement of inefficient cooling units with high-efficiency heat pumps
- Small Business Direct Install Program
- Demand Response
- Other: measures that may be underrepresented within the community

The Company provides marketing toolkits and trainings to municipalities to empower staff to promote the energy efficiency opportunities to their residents and small businesses. Frequent check-in calls allow the communities to speak with the Company regarding progress toward goals, as well as conveyance of best practices learned from other participating municipalities. The municipality promotes the Initiative through events, engagement of key businesses, and local communications. At the end of the year, municipalities earn grant monies based on achieving the agreed upon energy efficiency goals. These grant monies are then utilized for energy saving projects on a municipal property, or on educational energy programs for community members.

In 2022, the emphasis for selecting the Cities to participate in the Program, in addition to energy efficiency, will include elements of equity and workforce development. This will be an important endeavor as COVID-19 greatly impacted the ability to engage with customers on the ground in the community in 2020 and 2021.

In the first quarter of 2022, the Company will recruit Rhode Island municipalities based on opportunities to increase residential and small business program participation and a new focus on industrial parks. In addition, the Company will maintain a dedicated engagement with the Aquidneck Island community to

provide continuity in the ongoing efficiency efforts in this region. As the Company has run this effort successfully since 2013, prior participating communities may again be invited to participate.

Wi-Fi Thermostats and active demand response opportunities will remain a focus as the Company strives to minimize energy peak demand. If such programs or efforts are part of a System Reliability Plan (SRP) initiative, then they would follow SRP considerations noted in Section 5.1 and be detailed in the System Reliability Plan. The initiative will continue to coordinate with the SRP team to determine whether the RI System Data Portal (Portal), which was developed in 2018, could be a valuable tool for the use of educating municipal leadership, as well as the Company in recruiting municipal participation.

Building upon the community-based approach stated above, the Company will also continue the Community Solutions Initiative. This initiative targets geographic communities that encompass multiple towns, industrial and technology parks, and other organized communities such as industry groupings with common end uses (e.g. indoor agriculture). Community Solutions will provide a single point of contact for a given community to access all available Company solutions, including energy efficiency, EVs, demand response and emerging technologies.

Under this initiative, in 2020, Quonset Development Corporation (QDC) signed a three-year memorandum of understanding with the Company to provide businesses at the Quonset industrial park in North Kingstown with access to enhanced incentives and technical services to identify and implement energy efficiency projects. In 2020, these businesses received more than \$2 million in incentives, resulting in savings of over 8 million kWh and 120,000 therms per year, valued at over \$1.4 million in cost savings. Participating customers range from small industrial businesses to some of the largest energy users in the state. In 2022, the Company will continue to provide energy-related trainings in collaboration with QDC to expand program participation.

2.5.2 Codes and Standards Support

The Codes & Standards Technical Support Initiative (CSTS) develops and delivers technical guidance to a wide variety of stakeholders to support energy efficiency policies applicable to the state's building sector. CSTS is a highly cost-effective initiative that unlocks sources of typically long-lived energy savings and primarily benefits historical nonparticipants and customer segments considered "hard to reach" (HTR) by raising efficiency baselines market wide. CSTS saves energy by: (1) increasing overall market compliance with current minimum energy efficiency codes and standards, and (2) increasing the level of energy efficiency required by such policies. The Company has successfully demonstrated both approaches with respect to building energy codes.

In 2022, the Company will continue to support RI energy code compliance and advancement. CSTS compliance support activities include training (classroom, webinar, and in-field), a "hotline" for project-specific inquiries, and development and delivery of tools and resources that help fill market gaps. CSTS has a broad reach, but our primary audiences are building code officials, design professionals (architects, engineers), and builders/developers/contractors. CSTS will also continue to support energy code advancement by developing and delivering proposals to strengthen the efficiency of the RI energy code.

The Company also plans to extend these strategies to better support appliance and equipment standards. The Company will pursue additional opportunities at the state and federal levels to advance appliance and equipment standards impacting RI energy consumption. Conditional to adoption of the package of appliance and equipment standards currently being considered by the legislature, the Company will also investigate the opportunity to support compliance with these standards through a similar approach to that currently employed for energy codes.

Active technical support of codes & standards, and appliance and equipment standards in particular, aligns very well with stakeholder goals for this Plan. The Company will continue to coordinate with stakeholders to develop a clear path to attribution or alternative means of compensation for these activities.

2.5.3 Workforce Development

In 2022, the Company plans to maintain its historical workforce development investments as well as investigating specific areas where there is high confidence in delivering ratepayer benefits.

The table below shows continued workforce development activities. These efforts will be supplemented by sales and marketing focused training to program vendor/subcontractor sales and technical staff focused on promoting deeper savings measures to customers.

Table 8 Continued Workforce Development Activities

Sector	WFD activity	Description	Target audience	Estimated individuals reached	2022 budget
Res	HVAC Check trainings	HVAC installation best practices training delivered as part of the HVAC program	HVAC technicians	70	\$39,400
Res + IE	Zero Net Energy training	High performance building best practices training delivered as part of the Residential New Construction program	Design professionals builders / contractors	200	\$20,000
IE	Miscellaneous IE training	Training on topics such as WiFi thermostats and ASHPs delivered as part of the Income Eligible Single Family program		20	\$50,000
C&I	Zero Net Energy training	High performance building best practices training delivered as part of the C&I New Construction and Major Renovations program	Design professionals developers / contractors	200	\$20,000

Sector	WFD activity	Description	Target audience	Estimated individuals reached	2022 budget
C&I	BOC training	Building O&M best practices training delivered as part of the C&I Retrofit program	Facility managers, building maintenance staff	25	\$20,000
All sectors	Codes & Standards – code compliance training	A suite of services which includes training sessions (classroom, webinar, and in-field), project-specific “hotline” support, and development and delivery of tools and resources to fill industry gaps.	Code officials, design professionals, builders / developers / contractors	500	\$200,000

Several additional workforce development activities focusing on upskilling the workforce supporting our C&I programs have been added for 2022 as shown in the following table. The new initiatives address workforce gaps in the following high-priority technology areas:

- Controls (EMS, BAS)
- Ventilation (DCV, ERV)
- Variable Frequency Drives (VFDs)
- HVAC
- Retro-commissioning (RCx)
- Lighting controls

By taking this approach, the Company seeks to advance its role in upskilling the local workforce to enable the transition to deeper savings measures highlighted by the Market Potential Study. The Company will also engage with other entities in recognition that these efforts fit within a larger workforce development ecosystem. As such, the Company will coordinate with the public and private entities comprising the RI energy efficiency workforce development network to help maximize impact and avoid duplication of efforts. For example, the Company will promote participation in trainings organized by the Residential Construction Workforce Partnership such as the Residential Construction Pre-Apprentice Energy Weatherization Auditor, Installer & Performance Evaluator Training Program launching in 2021.

Table 9. New Workforce Development Activities for 2022

Sector	WFD activity	Description	Target audience	Estimated individuals reached	2022 budget
C&I	Controls Best Practices training	ASHRAE Guideline 36 training (Sequence of Operations)	Contractors / engineers	40	\$20,000
	(HVAC and Lighting Controls)	Lighting Design Lab (lighting controls) training	Contractors / engineers, program technical and sales staff	20	\$30,000
C&I	Manufacturer-led trainings	<p>The Company will coordinate and promote participation in existing manufacturer trainings in the following technology areas.</p> <ul style="list-style-type: none"> • Building / HVAC Controls (e.g. Johnson Controls BAS and HVAC training courses) • DCV and ERV (e.g. Trane Engineers Newsletter Live Series) • VFDs (e.g. Danfoss Drives training) • HVAC (e.g. Mitsubishi heat pump training) • Lighting Controls (e.g. Acuity wired lighting systems course) 		100	\$75,000
C&I	Industry certifications	<p>The Company will increase number of local certified individuals by sponsoring certifications in the following technology areas; sub-bullets provide example certifications.</p> <ul style="list-style-type: none"> • Controls <ul style="list-style-type: none"> ○ ISA Building Automation Systems ○ BOMA Building Automation Systems Certificate • HVAC <ul style="list-style-type: none"> ○ NATE Level 4 ○ ASHRAE Certified HVAC Designer • RCx <ul style="list-style-type: none"> ○ ASHRAE Building Commissioning Professional 		125	\$100,000

2.6 Participation

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 2022, 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 Electric EE Program Tables, Table E-7 and Attachment 6 Gas EE Program Tables, Table G-7.

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

Table 10. 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
		Multifamily	Housing Units
		Home Energy Reports	Unique Billing Account
		Residential New Construction	Housing Units
	Electric	Commercial & Industrial	Large Commercial New Construction

		Large Commercial Retrofit	Unique Billing Account + Unique Customer names from Upstream Lighting
		Small Business Direct Install	Unique Billing Account
		Commercial ConnectedSolutions	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
		Multifamily	Housing Units
		Home Energy Reports	Unique Billing Account
		Residential New Construction	Housing Units
		Residential ConnectedSolutions (Direct Load Control)	Unique Billing Account
		ENERGY STAR® Products	Number of Rebates

The Company will estimate the number of unique participants for each program. For some programs such as ENERGY STAR® 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 2022. This method allows for a better estimation of unique participants but can make it more difficult to compare planned numbers across years.

In 2022, the Company will continue to drive participation through two main pathways – targeted programs and broad-based programs. Targeted programs include the Company’s retrofit, new construction, product rebate, and small business initiatives. These programs serve to drive deeper savings to targeted customer segments and offer a wide array of energy efficiency measures. The Company also reaches broad participation by promoting products upstream and through Home Energy Reports. These broader based programs provide value by reaching a wide and diverse set of customers,

helping to provide more customers with access to energy savings, as well as acting as a gateway to drive participation in other Company energy efficiency programs.

The Company has made steady progress with reaching new participants each year. From 2012-2020 the Company served approximately 60% of its electric customers and 31% of its gas customers from its targeted programs at least once (this analysis has removed duplicate participation across programs and across years from 2012-2020). When Home Energy Reports and C&I upstream lighting participation are added to these counts, a total of 90% of electric customers and 91% of gas customers participated over this period. 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. Planned In the 2022 Year-End report, the Company will remove any participation overlap to report unique 2022 participants. See 2020 year-end report for further details on participation through 2020.

In 2022, the Company will continue its efforts to reach customers that have never participated in its energy efficiency programs. The Company will also continue its efforts to reach customers that have previously participated in its energy efficiency programs but who can still benefit from the installation of additional energy efficiency measures. Many unique participants are still eligible for additional programs. For example, a participant in the EnergyWise Single Family program may participate in the HVAC program. The Company will continue to deliver innovative strategies to increase customer participation and reach customer segments that are historically underrepresented. Also, the Company will continue to track participation trends and will again provide a detailed analysis in its 2022 Year-End Report showing additive and cumulative portfolio participation.

3 Pilots, Demonstrations and Assessments

In accordance with Docket 4600-A PUC Guidance Document, this Plan includes a description of Commercial, Industrial, and Residential pilots, demonstrations and assessments in Attachment 8. Please refer to Attachment 8 Pilots, Demonstrations & Assessments for additional detail.

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.”²³ Pilots are designed to explore technologies and approaches to energy management not included in the core energy efficiency programs (Residential, Commercial and Industrial, and Multifamily) and that could potentially become a new, standalone program.

Pilots enable the Company to test technologies, new energy management strategies, customer adoption, workforce adoption, and cost effectiveness of emerging and new technologies. While pilots are designed to test standalone programs, pilot results may conclude that a standalone program is not recommended or that certain aspects of the pilot should be offered within existing programs. It is likely

²³ Docket 4600-A PUC Guidance Document, October 27, 2017. Section V. Pilots.

that pilots will require a long-term commitment and broader set of stakeholder input, given the scope of adding a new core program to the Company portfolio. Savings associated with Pilots will not contribute to shareholder incentives. Pilots may be evaluated with either an independent or a vendor evaluation.

For actions in this Plan that do not fall under Docket 4600-A PUC Guidance Document's definition of pilots, the Company includes demonstrations and assessments within the programs. A demonstration will test the feasibility of a new product or offering for inclusion in existing programs. It is generally expected that demonstrations will be less time and resource intensive than pilots, since generally there is greater certainty around a narrow, incremental idea added to a program rather than a totally new set of offerings. Savings associated with demonstration projects may contribute to shareholder incentives. Demonstrations may be evaluated with either an independent or a vendor evaluation. An assessment will be deployed for solutions that address a particular gap or program need but have significant uncertainty around the effectiveness or potential of the solution to realize savings. Because of the uncertainty, assessments will not include field demonstrations or customer installations. Instead, assessments will focus on information gathering to equip Company staff to make a more informed decision of whether and how to proceed with the idea. It is possible that an assessment could recommend further demonstration of the idea or determine the solution should exit the review process. Savings associated with assessments may not contribute to shareholder incentives. Assessments may be evaluated with an independent evaluation, vendor evaluation, or internal review.

The Company will continue to seek out opportunities to identify, test, analyze, and deliver new creative and innovative solutions and services that are technically feasible, desirable by customers, and viable for inclusion in the portfolio. The Company plans to explore logical program extensions like new or substitute measures, adaptations to program or delivery approaches to drive incremental improvement, and completely new offers. The Company will use evaluation studies, customer and market research, the Market Potential Study, and stakeholder feedback to identify areas for potential exploration and will prioritize efforts based on likelihood of success, speed of development, and program need. Each customer segment and savings technology has unique barriers to adoption and will be assessed on a situational basis.

The Company will coordinate efforts with internal and external stakeholders, such as Evaluation, Measurement, and Verification (EM&V), Customer Energy Management (CEM), OER, and EERMC, at various points in the development process to ensure appropriately rigorous evaluation and attention is given to each pilot, demonstration, and assessment. Updates will be provided to OER and the EERMC consultant team on a quarterly basis and will solicit input during the Company's collaborative annual planning process.

The Company will continue to systematically review opportunities to add to the portfolio through a consistent and transparent process. Please refer to Attachment 8 for details on evaluations for pilots, demonstrations and assessments. The Company anticipates that calendar year 2022 will be the last year in which the gas demand response pilot is included as a pilot offering. The Company will assess the viability of this approach to meeting capacity constraints as part of non-pipeline alternative (NPA) solution development that is underway.

4 Evaluation Measurement and Verification Plan

To verify the impacts of programs on energy savings, the Company hires independent third-party consulting firms to regularly conduct evaluation studies as part of its evaluation, measurement, and verification process. These evaluations incorporate industry standard methods such as engineering analysis, metering analysis, billing analysis, site visits, surveys, and market studies to realize the actual energy savings of a measure. The EERMC and OER provide direct oversight of each evaluation study conducted. Every year, the results of the studies are used to update the benefit-cost calculations during planning. Attachment 3 EM&V Plan lists the evaluations that have occurred since 2007 that are still being used and their influence on program planning. All completed evaluations are submitted electronically to the PUC; final reports of evaluations completed in prior years are available in the dockets for previous years, on the EERMC website²⁴, or upon request.

Additionally, the EM&V Plan for 2022 is presented in Attachment 3 and includes brief descriptions of each of the proposed studies. The areas proposed for study in 2022 were 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, recommendations from previously completed studies, and the available evaluation budget. 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.

5 Coordination with Other Energy Policies and Programs

Continuing to provide the best value to Rhode Island customers necessitates that the Company coordinate with other parts of the energy system, rather than pursuing savings programs and strategies in isolation. In 2022 the Company will continue to seek ways to implement the energy efficiency portfolio of programs in coordination with other Company filings and activities, described below. Efforts have also been taken to ensure the 2022 Annual Plan is aligned with relevant state policies and objectives, with specific coordination opportunities detailed below.

5.1 System Reliability Procurement

During the 2022 program year, the Company's energy efficiency programs will continue their longstanding coordination with SRP plans and filings, including the development of the Non-Pipelines Alternative (NPA) program within the SRP pathway. Energy efficiency, among other demand side management solutions, has potential to be a component to meet a variety of situations in which NWA and NPAs are considered. SRP filings will continue to be made separately from the energy efficiency filings while any charge associated with SRP will be accounted for in the energy efficiency charge.

²⁴ <https://rieermc.ri.gov/plans-reports/evaluation-studies/>

5.2 Advanced Metering Functionality (AMF), Grid Modernization (Grid Mod), Rate Cases, Renewables

On January 21, 2021, the Company filed its proposed Grid Modernization Plan and Updated Advanced Metering Functionality Business Case in RI PUC Docket 5114²⁵ and 5113²⁶, respectively. As of the date of this draft Plan, the RI PUC has stayed both dockets pending further consideration following the issuance of a final Order in Docket No. D-21-09.²⁷ The teams working on the energy efficiency programs, Grid Mod, and AMF will continue to work closely to ensure the Company has a comprehensive view of the benefits and impacts of the roll out of grid modernization and AMF.

These programs will provide increased visibility into customer usage (from AMF) and insights into the operation of the local distribution system (from grid modernization investments, including AMF). This will allow for improved efficiency program marketing, more personalized savings offers, more targeted measure deployment, and optimization of demand side resources. The Energy Efficiency team will continue to coordinate with the GMP and AMF teams to ensure that the benefits estimated in the GMP and AMF Benefit Cost Analyses (BCA) would constitute a new baseline of savings upon which future energy efficiency goals are based and to ensure energy savings are not double counted. In addition to the calculation of benefits, the Company will also examine any possible overlap of costs. If AMF is launched, the Company still anticipates energy efficiency programs would continue to offer customer incentives for in-home/in-business technologies, such as Wi-Fi programmable thermostats and smart appliances to drive the achievement of additional incremental energy savings to meet annual energy savings targets. The Company recognizes that the future energy efficiency plans would include the total participant costs (i.e., ratepayer-funded rebates and customer contribution costs) associated with such measures in its BCA methodology.

While the Energy Efficiency, GMP, and AMF teams have been coordinating closely through the filing process, the need to bifurcate savings and costs associated with these plans would not arise until grid modernization and AMF investments are approved, deployment begins, and data is collected and visualized for customers in later years. Therefore, the energy efficiency team anticipates that should the PUC approve AMF, the important overlap and distinction between GMP, AMF, and energy efficiency would most likely not arise until after the 2022 Annual Plan is implemented. At that point the Company anticipates undertaking a more robust discussion of evaluation methodologies and other key considerations. In the interim, the Company will continue to work with stakeholders to ensure all are aware of any future transition.

²⁵ RI PUC Docket 5114: <http://www.ripuc.ri.gov/eventsactions/docket/5114page.html>

²⁶ RI PUC Docket 5113: <http://www.ripuc.ri.gov/eventsactions/docket/5113page.html>

²⁷ RI PUC Docket 5113, Order 24089: [http://www.ripuc.ri.gov/eventsactions/docket/5113-5114-NGrid-Ord24089%20\(7-14-2021\).pdf](http://www.ripuc.ri.gov/eventsactions/docket/5113-5114-NGrid-Ord24089%20(7-14-2021).pdf):

5.3 Act on Climate

The Act on Climate Legislation was signed into law by Governor McKee in April 2021. This legislation accelerates the timeline of legislated GHG reductions in RI. Specifically, 10% below 1990 levels by 2020; 45% below 1990 levels by 2030 (previously 2035); 80% below 1990 levels by 2040 (previously 2050); and net-zero emissions by 2050 (new). Moving forward, the Company's energy efficiency programs will continue to set energy reduction goals which contribute to these statewide GHG emissions reduction targets and will be reporting out on GHG emissions reductions in quarterly and annual reports, consistent with the 2021 Annual Plan.

5.3.1 *Electrification, Heat Pumps, and Delivered Fuel Policy and Objectives*

The Company plans to continue to offer enhanced incentives for customers installing heat pumps using allocated RGGI funds from OER, to the degree that those funds extend into 2022. At this time the Company does not have visibility to a direct regulatory pathway to the promotion of electrification for delivered fuel customers by way of electric or gas system benefit charge collections.

5.4 Codes and Standards Program and Accounting for New Codes and Standards

With an update to the state energy code (to the 2018 IECC) projected in early 2022, savings opportunity in 2022 will be reduced due to rising baselines.

6 Multi-Year Strategies

In the revised LCP Standards adopted by the PUC in Docket 5015, the PUC directed the Company to identify investment strategies for which implementation and budget requests (or revenue collection) are expected to span multiple years. In addition to the budgets and targets required for the rest of the portfolio, the PUC directed that the Company may separately provide budgets and goals for multi-year strategies. The requirement applies to both the Annual and Three-Year Energy Efficiency Plans.

6.1 Combined Heat and Power

Combined Heat and Power: The Company is currently working with a customer that is pursuing an energy efficiency incentive for a 13.3 megawatt combined heat and power system that would provide electricity, hot water, and CO₂ to their facility. The unique design of this CHP will allow the customer to capture the CO₂ from the CHP system and use the gas for their business operation. The CO₂ harvesting will substantially reduce the environmental emissions from the CHP plant, while also reducing or eliminating the customers need to purchase CO₂ for the horticulture operation. The incentive cost per a unit of energy is expected to be below \$0.03 per lifetime kWh, making the project one of the most cost-effective offerings in the energy efficiency portfolio. The project is expected to be operational by late 2022, pending PUC

approval. A minimum of 20% of the energy efficiency incentive payment will be held until commissioning is complete, anticipated in 2023.²⁸

CONSISTENCY WITH STANDARDS

7 Least Cost Procurement Law and Standards

This Annual 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 as approved and adopted pursuant to Order No. 23890 in Docket No. 5015. The Standards guide how energy efficiency services are delivered – in a manner that is optimally cost-effective, reliable, prudent, and environmentally responsible. Least-Cost Procurement that is Energy Efficiency and Conservation Procurement shall also be lower than the cost of additional energy supply.

The Company has assessed each of these requirements in developing this Plan. Details on the Company's approach to considering each of these elements are included in this section. In addition, further detail on the cost-effectiveness screening of the proposed investments is in Attachment 4 RI Benefit Cost Test, with detail on rate and bill impacts in Attachment 7.

7.1 Prudency

Over the course of its history implementing energy efficiency programs in Rhode Island, the Company has considered and continues to consider several key components in the analysis of prudency. These components can be summarized as considerations of:

- How the investment supports the goals of the electric or natural gas system and the purposes of Least Cost Procurement and what the potential for synergy savings may be based on alternatives that address multiple needs.
- What groups of customers can the Company reach with program offerings? How can we ensure that all customers are served equitably and share in the cost of energy efficiency?
- What impacts to customer rates and bills will be required to deliver the efficiency goals, and how can those impacts be mitigated through alternative funding? What risks, if any, will customers and the Company see from the investments in energy efficiency and conservation procurements?

²⁸ R.I. Gen. Laws § 39-1-27.7(c) (6) (iii) directs the Company to support the development of combined heat and power. The law requires that the following criteria be factored into the Company's Plan: economic development benefits in Rhode Island, energy and cost savings for customers, energy supply cost, greenhouse gas emissions standards and air quality benefits, and system reliability benefits. For CHP projects above 3 MW in size, the Company will determine the economic development benefits by running a Regional Economic Models Inc (REMI) analysis using project-specific values in accordance with the recommended methodology from the Battelle Group study.

- What constraints, such as available workforce and prevailing economic conditions, exist in the marketplace that may impact the achievement of the goals as developed and proposed in the Plan?

For the proposed investments detailed in this Plan, the Company has assessed each of these elements and how they can be balanced to provide a comprehensive set of programs that will be achievable within known and anticipated constraints.

7.1.1 General Considerations of Prudency

One of the very first considerations of Prudency within the Standards is that the Company assess how an investment supports the goals of the electric or natural gas system and the purposes of Least Cost Procurement. This plan secures cost effective energy efficiency resources that drive the realization of benefits as enumerated in the Rhode Island Test including Electric Energy Benefits, Electric Generation Capacity Benefits, Electric Transmission Capacity and Distribution Capacity Benefits, Natural Gas Benefits, Fuel Benefits, Water and Sewer Benefits, Non-Energy impacts, Price Effects, Non-embedded Greenhouse Gas Reduction Benefits, Economic Development Benefits, Non-embedded NOx Reduction Benefits, and Value of Improved Reliability.

As an example of the way that the proposed investments in this plan address multiple needs, the electric demand response program continues to grow in magnitude of savings and in offerings while utilizing channels and technologies that drive not only energy savings but also reduced cost and deferred infrastructure benefits that flow from reducing peak demand.

In aggregate the portfolios included in this plan submission are robustly cost effective, as the benefits exceed the costs to acquire the efficiency resources and implement the programs. The electric portfolio achieves a BC Ratio of 1.63 and the gas portfolio achieves a BC Ratio of 2.26.

Furthermore, the cost of procuring 1,068,749 MWh lifetime electric energy efficiency savings through the Plan is \$63.2 million less than if that electric load was met by purchasing additional electric supply. The cost of procuring 4,002,876 MMBtu lifetime natural gas energy efficiency savings through the Plan is \$15.4 million less than if that natural gas load was met by purchasing additional natural gas supply.

7.1.2 Equity

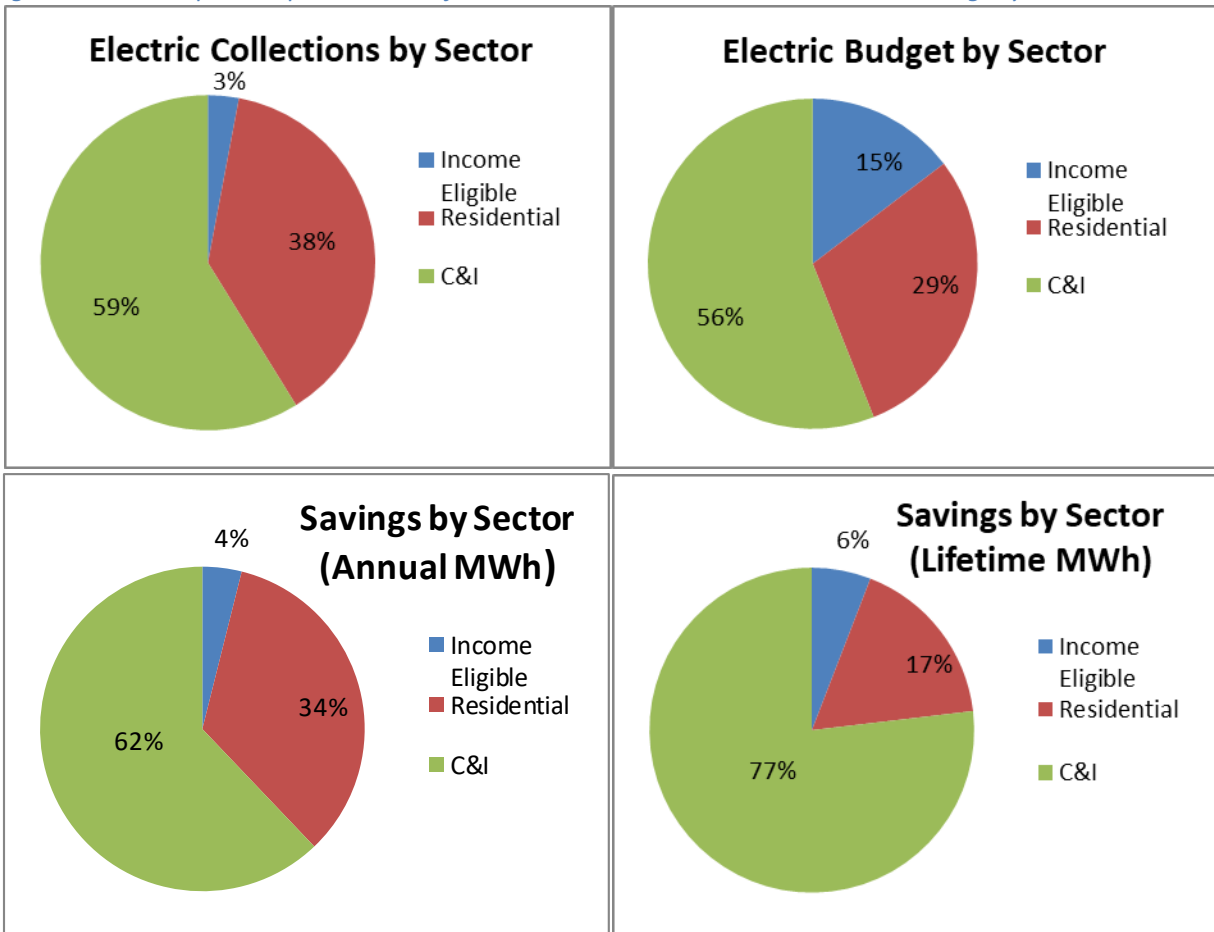
Although there are no major revisions anticipated to the equity-related processes and timelines outlined in the 2021 Plan, the Company expects preliminary information and feedback from the equity working group and relevant evaluation studies to inform the 2022 design and delivery across all sectors, especially the Residential and Income Eligible programs. Outcomes will be integrated as appropriate into the relevant section(s) of the 2022 Plan.

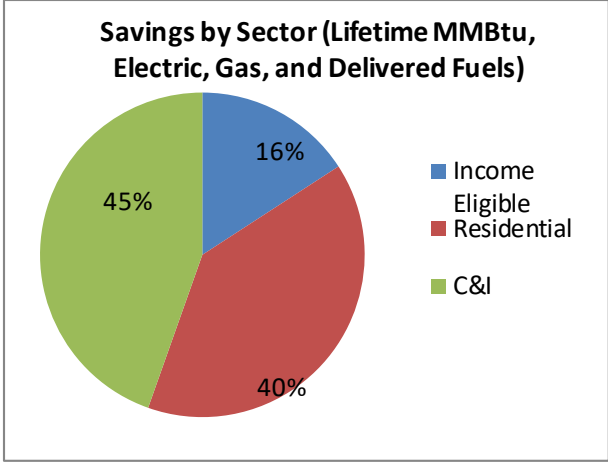
7.1.3 Parity Among Sectors

In considering the prudency of the set of proposed investments contained in this Plan, the Company has also assessed the parity among sectors along dimensions of collections, budgets, and savings. As shown

in Figure 3, there is approximate parity between the collections by a customer class and its resulting budget and savings in the electric portfolio. The only exception is the income-eligible sector where there is an established agreement amongst the Parties that the residential and C&I customer classes use part of their collections to help cover the income-eligible sector funding needs. The income-eligible budget is higher compared to its savings due to several factors: incentives are 100% of the cost, the programs are more expensive because they are delivered in-home (compared to at retail sites or via rebates) which requires more labor and management, and the programs have fewer economies of scale (compared to C&I). \$26.1 million is budgeted for the delivery of the gas and electric income eligible sector programs, 25% and 14% of the total funding for each fuel portfolio respectively in 2021. Taken together, these investments represent 16.4% of the overall electric and gas portfolio budgets. More information on the services offered through the income eligible sector programs can be found in Attachment 1 Residential & IES Programs.

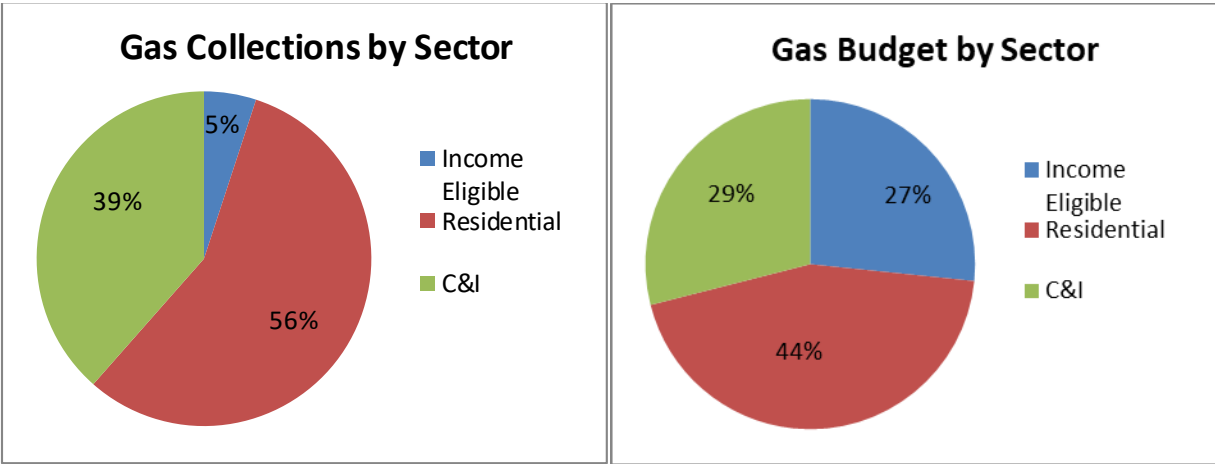
Figure 3. 2021 Graphical representation of Attachment 5 Table E-1 and total Electric Savings by Sector, Cumulative

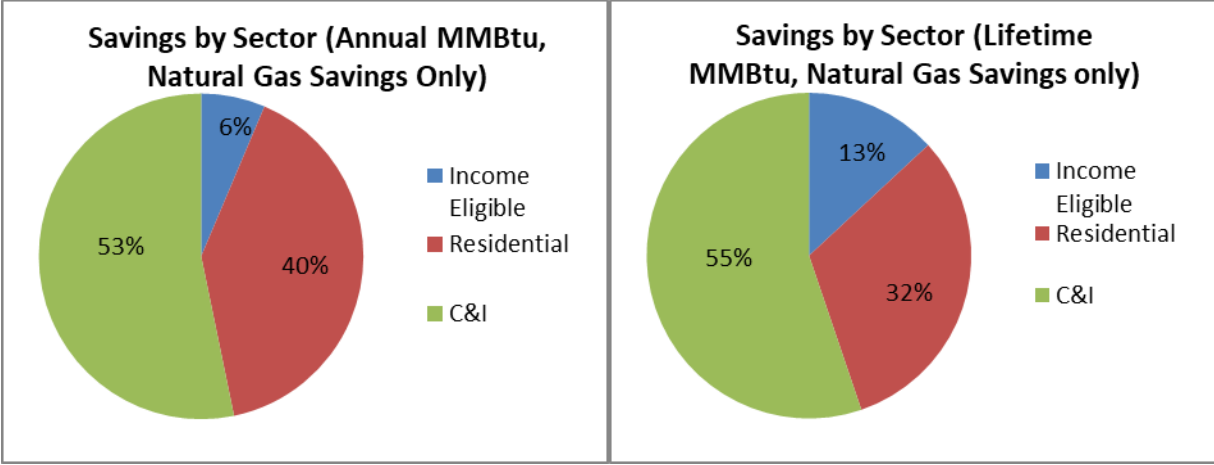




For the gas portfolio, there is also parity between the collections by a customer class and the resulting savings. There is less parity between budgets and savings. This is due to several factors. First, the energy efficiency program charge varies by customer segment, which changes collections. Second,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

Figure 4. 2021 Graphical representation of Attachment 6 Table G-1 and total Gas Savings by Sector, Cumulative





7.1.4 Rate and Bill Impacts

Rate and bill impacts will be analyzed following the issuance of this first draft. In calendar year 2020 the Company updated the methodology by which long term gas rate and bill impacts were assessed in the 2021 Annual Plan and the 2021 – 2023 Three-Year Plan. That methodology, along with the existing electric methodology will be applied in the 2022 Annual Plan.

In the interim, the Company has assessed the Year-over-Year change in rates from 2021 to 2022 driven by the funding plan and budgets discussed later in this Plan. While the Company has targeted a 5% year-over-year budget increase consistent with the RI PUC rulings at the December 22, 2020 open meeting, other factors have contributed to increases in the system benefits charge of greater than 5% year-over-year. Table 11 summarizes the changes in rates based on the funding plan included in this draft Plan.

Table 11. Summary of Changes in Rates between 2021 and 2022

Rate Category	2021	2022	2021 - 2022 Growth
Gas Residential SBC (\$/therm)	0.0871	0.131	50%
Gas C&I SBC (\$/therm)	0.0596	0.0895	50%
Electric SBC (\$/kWh)	0.01113	0.01618	45%

7.2 Reliability

The programs developed under this Annual Plan will continue the Company’s extensive history of offering best-in-class energy efficiency programs to customers, while introducing new implementation approaches and expanding the Company’s existing programs to serve more customers. Existing programs that have significant experience and traction in the market will be extended and refined to deploy low-risk cost-effective energy efficiency to the marketplace. The Company continues to collaborate with a diverse set of stakeholders including the EERMC, OER, Division, and community and advocacy organizations to continually analyze the programs and identify opportunities for improvement.

In building this Annual Plan, the Company’s Customer Energy Management team worked closely with industry experts, vendors, and program implementation professionals to assess the current state of

existing programs, the potential for program scalability, the economic environment, and the ability to deliver reliable energy savings as a result.

Supporting the Company's efforts to deploy energy efficiency to Rhode Island customers is a robust and long-standing evaluation, measurement, and verification (EM&V) apparatus. As noted in Section 4, the Company hires independent third-party consulting firms to regularly conduct evaluation studies as part of its EM&V process. A distinct group of personnel within National Grid that includes analysts with specialized skills in engineering, statistics, and economics are tasked with the EM&V function and coordinate all elements of the EM&V process internally and externally. Evaluations incorporate industry standard methods to assess the actual energy and demand savings of measures incented by the programs. All elements of the EM&V process are closely monitored by the EERMC, their Consultants, and OER. The EM&V process is continual, and every year results from EM&V studies are used to update the savings in the benefit cost calculation of the measure, programs, and portfolios. In addition, process evaluations and market studies conducted in the EM&V process provide an independent perspective on the performance of the programs and provide insight into the state of the market and ways that the Company can address new opportunities with its programs.

In total, these EM&V processes provide a transparent, externally vetted approach to ensuring that claimed savings provide an accurate picture as possible of the impact of the Company's energy efficiency programs, accounting for spillover, free ridership, and other industry standard adjustment factors

The EM&V process also supports the Company's participation in the ISO-NE Forward Capacity Market (FCM). Passive demand savings achieved via electric energy efficiency and Combined Heat and Power projects, and verified by the EM&V process, continue to participate in the FCM as Passive On-Peak Demand Resources. As detailed further in Section 10, the Company bids the passive demand savings attributed to energy efficiency measures and Combined Heat and Power facilities in the FCM and manages the associated capacity resources to maximize the resulting FCM revenue. The EM&V process provides the necessary verification of claimed savings in order to participate in the FCM.

7.3 Environmentally Responsible

The energy efficiency programs and portfolios described in the Annual Plan are environmentally responsible. They provide significant emissions reductions benefits, reduce the potential environmental costs and footprint of avoided infrastructure investments, support the ongoing growth and development of a sustainable, green job ecosystem in Rhode Island, and contribute to the realization of state environmental policy goals and initiatives.

7.3.1 Emissions Reductions

Both electric and natural gas efficiency portfolios will make a meaningful contribution to reduction in emissions by driving reductions in customer energy usage in both the short and long term. The electric and natural gas portfolios, considered together, will reduce lifetime emissions of 794,869 tons of Carbon Dioxide. The non-embedded values of CO₂ and NO_x benefits generated by the 2022 annual plan over the lifetime of the measures are \$71,473,251 and \$3,301,668, respectively.

7.3.2 *Support for an Environmentally Responsible Local Jobs Infrastructure*

In 2020, the Company's Energy Efficiency programs directly supported 827.5 FTEs. In providing for these jobs and demonstrating the availability and attractiveness of local, green jobs to Rhode Island's existing and emerging workforce, the Company's energy efficiency programs help to ensure that the local workforce will exist to support the state's environmental policy goals.

7.3.3 *Raised Customer Awareness of Environmental Issues and the Impacts of their Choices*

Educating and engaging residential and business customers on the potential environmental impacts and benefits of the implementation of energy efficiency measures is a foundational element of the Company's energy efficiency go-to-market strategy. Whether in the form of conveying potential environmental benefits of customer recommendations through Home Energy Reports, EnergyWise home energy assessments, or retail marketing initiatives, or by connecting SMB audits or large C&I customer sales efforts to business customer sustainability initiatives, the Company's energy efficiency program presence will continue to help to support the prominence of environmental issues in customers' minds. Additionally, through the Community-Based Initiative, the Company partners with municipalities and works through local energy and environmental sustainability committees to connect individual customers' energy efficiency decisions and actions to broader municipal sustainability goals and messages. In doing so, the Company's programs continue to link energy savings and efficiency to real and visible benefits for the communities in which their residents and small business reside.

7.4 Cost Effectiveness

The Company has analyzed the cost-effectiveness for the proposed 2022 portfolio and programs using the RI Test as required by Docket 4600²⁹ and the LCP Standards.³⁰ The RI Test compares the present value of the total lifetime benefits derived from efficiency savings to the total costs of the acquiring those savings (i.e., program and customers' costs).

As provided for in the Docket 4600 RI Test Framework, 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, the 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 performance incentive. To illustrate the detailed components of the RI Test as well as the sources of the values, the Company has provided Attachment 4 RI Benefit Cost Test. The RI Test as applied to the 2022 Annual Plan utilizes the recently completed regional avoided cost study, referred to as AESC 2021, completed by Synapse Energy Economics as an update and replacement of the AESC 2018 Study that provided the monetization of most benefit categories in the 2019 – 2021 Annual Plans and

²⁹ RI PUC Docket 4600, <http://www.ripuc.ri.gov/eventsactions/docket/4600page.html>

³⁰ RI PUC Docket 5015, LCP Standards

http://www.ripuc.ri.gov/eventsactions/docket/5015_LCP_Standards_05_28_2020_8.21.2020%20Clean%20Copy%20FINAL.pdf

the 2021 – 2023 Three-Year Plan. The monetization of benefits also incorporates the latest EM&V results that affect claimable savings in the programs. Attachment 4 provides additional detail on changes in the avoided costs.

Attachment 5 Electric EE Program Tables, Table E-5 and Attachment 6 Gas EE Program Tables, Table G-5 provide the calculations of 2022 program year cost-effectiveness. Attachment 5, Table E-6 and Attachment 6, Table G-6 show the energy savings goals based on the proposed budgets. Attachment 5, Table E-7 and Attachment 6, Table G-7 show a comparison of the goals with the approved program goals from 2021. Attachment 5, Table E-5 shows that the proposed portfolio of electric programs, including active demand response, is expected to have a benefit/cost ratio of 1.63, which means that approximately \$1.63 in lifetime benefits is expected to be created for each \$1 spent on the portfolio. Attachment 6, Table G-5 shows that the proposed portfolio of gas programs is expected to have a benefit/cost ratio of 2.26, which means that \$2.26 in benefits is expected to be created for each \$1 spent on the portfolio.

Table 12 and Table 13 below show the results of the RI Test at program, sector, and portfolio level. Notably, these tables compare the RI Test results without economic benefits and with economic benefits included using the multipliers as applied in the past two annual plans. The rationale for omitting quantified economic benefits is described in additional detail in Attachment 4. This change results in some programs no longer having RI Test ratios greater than 1.0. However, the RI Test and the Docket 4600 Framework also indicate that categories of the Framework can be considered qualitatively in the assessment of cost effectiveness. When considering the significant economic activity generated directly by the programs, including supporting 827 FTEs associated with the programs and more than 1,000 companies involved, a reasonable assumption is that the indirect and induced economic benefits of the programs are greater than \$0.³¹ With consideration of the potentially significant economic benefits generated by the programs, all programs could therefore be considered to be cost effective.

Table 12. Electric Benefit Cost Ratios at Program and Portfolio Level

Electric Sector and Program	RI Test without Quantified Economic Benefits	RI Test with Quantified Economic Benefits
Large Commercial & Industrial Programs		
Commercial New Construction	3.22	6.09
Commercial Retrofit	1.97	5.27
Small Business Direct Install	1.19	2.95
Commercial ConnectedSolutions	2.31	4.50
Commercial and Industrial Subtotal	1.74	4.41
Income Eligible Programs		

³¹ Refer to the 2020 Year End Report for additional details on the assessment of FTEs and companies associated with the programs. [http://www.ripuc.ri.gov/eventsactions/docket/4979-NGrid-Year-End%20Report%202020%20\(PUC%205-3-21\).pdf](http://www.ripuc.ri.gov/eventsactions/docket/4979-NGrid-Year-End%20Report%202020%20(PUC%205-3-21).pdf)

Electric Sector and Program	RI Test without Quantified Economic Benefits	RI Test with Quantified Economic Benefits
Income Eligible Single Family	1.94	2.80
Income Eligible Multifamily	0.73	1.92
Income Eligible Subtotal	1.69	2.45
Residential Programs		
Residential New Construction	2.04	2.95
EnergyStar® HVAC	2.21	3.27
EnergyWise	1.02	1.92
Multifamily	1.05	2.20
Home Energy Reports	2.03	3.03
EnergyStar® Lighting	2.02	3.06
Residential Consumer Products	1.50	2.33
Residential ConnectedSolutions	2.04	2.95
Non-Income Eligible Residential Subtotal	1.46	2.29
Electric Portfolio	1.63	3.50

Table 13. Natural Gas Benefit Cost Ratios at Program and Portfolio Level

Gas Sector and Program	RI Test without Quantified Economic Benefits	RI Test with Quantified Economic Benefits
Large Commercial & Industrial Programs		
Large Commercial New Construction	4.83	6.15
Large Commercial Retrofit	4.07	5.67
Small Business Direct Install	2.02	3.48
Commercial & Industrial Multifamily	5.83	7.57
Commercial & Industrial Subtotal	3.81	5.15
Income Eligible Programs		
Single Family - Income Eligible Services	1.99	2.98
Income Eligible Multifamily	2.69	4.24
Income Eligible Residential Subtotal	2.20	3.37
Residential Programs		
EnergyStar® HVAC	0.97	1.38
EnergyWise	1.05	2.09
Multifamily	3.42	4.75
Home Energy Reports	3.87	4.93
Residential New Construction	0.95	1.06
Non-Income Eligible Residential Subtotal	1.26	2.02
Portfolio	2.26	3.27

7.5 Cost of Annual Plan Compared to the Cost of Energy Supply

In accordance with the LCP Standards, the Company assessed the cost of energy supply and the cost of energy efficiency using all applicable costs enumerated in the Rhode Island Benefit Cost Framework (Framework) approved by the PUC in Docket 4600-A and the Rhode Island Test as described in Attachment 4 RI Benefit Cost Test. This method is substantially the same as that used in the 2020 Plan.

Based on the Company's calculation, the total cost of energy efficiency for the electric portfolio is \$141.4 million and the total cost of electric supply is \$204.6 million. This is a total savings of \$63.2 million over the life of the installed energy efficiency measures from investing in energy efficiency instead of electric supply. The total cost of energy efficiency for the natural gas portfolio is \$47.7 million and the total cost of natural gas supply is \$63.1 million. This is a total savings of \$15.4 million over the life of the installed energy efficiency measures from investing in energy efficiency instead of natural gas supply. The methodology for calculating Cost of Supply is detailed below.

The RI Test is an appropriate mechanism to determine which costs to include in this assessment. The RI Test, as detailed in Attachment 4, captures the aspects of the Framework that pertain to energy efficiency programs. The source for many of these values is the "Avoided Energy Supply Components in New England: 2021 Report" prepared by Synapse Energy Economics for the AESC 2021 Study Group, May 14, 2021. The benefits in the RI Test are associated with the cost savings to Rhode Island from investing in energy efficiency instead of investing in additional energy supply. For the purpose of the RI Test, these values are described as a benefit of energy efficiency in the form of avoided costs. The avoided cost values can also be applied as the costs of procuring additional energy supply for the purpose of this assessment. The RI Test also details what is considered a cost of energy efficiency. These are costs incurred by the utility to implement the Plan and the expense borne by the customer for its share of the energy efficiency measure cost.

The Company proposes to use the costs described in Table 14 to compare the cost of energy efficiency to the cost of energy supply. The categories listed in this table are all used in the RI Test, as proposed in Attachment 4 of the Plan. As directed by the LCP Standards, the Company provides an explanation for why cost categories are either appropriate or not appropriate for inclusion in the assessment of the cost of energy supply compared to the cost of energy efficiency.

Table 14. List of the Costs of Energy Efficiency and Costs of Energy Supply

Costs of Energy Efficiency		
Cost	Included (Y/N)	Explanation
Utility Costs	Yes	These costs are incurred to achieve implementation of energy efficiency measures and programs. Includes all costs in Tables E-2 and G-2.
Participant Costs	Yes	Customer contribution to the installation cost of the efficient measure. Customer costs included in Tables E-5 and G-5.

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

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

For the assessment, the Company applies the above costs of supply to the lifetime energy, lifetime MMBtu of delivered fuels, demand, and natural gas savings for each measure included in the Plan in present value terms. The costs of the 2022 Plan occur only in 2022 and are therefore not discounted.

FUNDING PLAN, BUDGET AND GOALS

8 Savings Goals

In 2022, the Company will primarily measure performance based on lifetime energy savings. The electric portfolio will measure energy savings in units of lifetime MWh and the gas portfolio will measure energy savings in units of lifetime MMBtu. For comparability with past plans, the Company will continue to track and report on annual energy savings as has been done for the duration of the programs. Electric demand savings, from passive energy efficiency savings and active demand response, will continue to be measured and reported in annual units of kW. The Company recognizes the long-term value of developing and achieving lifetime energy savings goals because of the focus on longer term customer savings and benefits. Lifetime energy savings units align with the energy savings Targets as set by the EERMC, and approved by the PUC, in Docket 5023.³²

8.1 Electric Portfolio Savings Goals

Continuing from 2020, the Company will also track net annual and lifetime all-fuel MMBtu (electric, gas, oil, and propane) savings as a test metric for the electric portfolio. The electric energy efficiency

³² RI PUC Docket 5023, <http://www.ripuc.ri.gov/eventsactions/docket/5023page.html>

program tables included in Attachment 5 reflect this additional metric, and further detail on Test Metrics is included in Section 12.

Tracking net annual and lifetime all-fuel savings (MMBtu) more fully captures the net effect of all-fuel savings efforts (electric, oil, and propane). The tracking effort will provide useful information and benchmarking for state efforts to support decarbonization of the thermal energy sector and better support State and Company greenhouse gas reduction goals now and in the future.

To first convert electric energy savings from MWh to MMBtu, the Company proposes to multiply MWh by an industry standard conversion factor of 3.412 MMBtu per MWh.³³ This conversion applies only to electric energy savings. Savings from natural gas and delivered fuel are tracked in MMBtu. In this Plan, the electric savings converted to MMBtu are shown in Table E-6A in Attachment 5 Electric EE Program Tables. Equation 1 shows the calculation of electric MWh savings to MMBtu.

Equation 1. Conversion of MWh to MMBtu Calculation

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

To calculate net all-fuel MMBtu as reported in Table E-6A in Attachment 5, the Company will sum electric savings (converted to MMBtu), natural gas savings, and delivered fuel (oil and propane) savings. This summation captures savings impacts for all fuels attributable to an electric measure.

Equation 2. Calculation of Net All-Fuel MMBtu Calculation for Electric Savings Measures

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

8.2 Natural Gas Portfolio Savings Goals

For the natural gas portfolio, the Company proposes to primarily measure energy savings in units of net lifetime MMBtu, while continuing to track net annual MMBtu for comparability with past plans.

9 Annual Plan Compared to the Three-Year Plan

The energy and cost savings for the 2022 program year are consistent with the objectives and requirements of Least Cost Procurement.

³³ The conversion factor of 3.412 MMBtu/MWh is a constant value. Energy Information Agency, EIA: https://www.eia.gov/totalenergy/data/monthly/pdf/sec13_7.pdf

Table 15. Comparison of 2022 Electric Portfolio in Three-Year Plan Compliance Filing and 2022 Annual Plan

Electric Portfolio	2022 in 3YP Compliance Filing	2022 Annual Plan	% Change
Net Annual Savings (MWh)	129,302	124,257	-3.9%
Net Lifetime Savings (MWh)	1,379,789	1,068,749	-22.5%
Total Benefits (RI Test) ³⁴	\$564,810,142	\$230,684,252	-59.2%
Total Budget	\$122,625,209	\$122,572,452	0.0%
Benefit Cost Ratio (RI Test)	3.93	1.63	-58.5%
Cost/Lifetime kWh	\$ 0.100	\$0.127	27.0%
EE Program Charge per kWh	\$ 0.01616	\$0.01618	0.1%

Table 16. Comparison of 2022 Gas Portfolio in Three-Year Plan Compliance Filing and 2022 Annual Plan

Gas Portfolio	2022 in 3YP Compliance Filing	2022 Annual Plan	% Change
Net Annual Savings (MMBtu)	427,504	385,163	-9.9%
Net Lifetime Savings (MMBtu)	4,278,262	4,002,876	-6.4%
Total Benefits (RI Test)	\$144,538,274	\$107,502,743	-25.6%
Total Budget	\$36,723,443	\$36,721,134	0.0%
Benefit Cost Ratio (RI Test)	3.09	2.26	-26.9%
Cost/Lifetime MMBtu	\$10.53	\$11.48	9.0%
C&I EE Program Charge per Dth	\$0.773	\$0.895	15.8%
Residential EE Program Charge per Dth	\$1.109	\$1.310	18.1%

The Company has proposed goals consistent with Least Cost Procurement, however there are some notable differences between the goals proposed in the 2022 Annual Plan and the Three-Year Plan Compliance Filing. First, the electric net lifetime energy savings goal is decreasing by 22%. This is mainly driven by evaluation results which significantly reduced the measure lives, and claimable lifetime energy savings, of Commercial and Industrial (C&I) lighting measures.³⁵ C&I lighting energy savings contributed to approximately 619,528 net lifetime MWh (45%) of the electric portfolio's net lifetime target for 2022 in the 2021-2023 Compliance Filing. In the 2022 Annual Plan, C&I lighting energy savings contributed to approximately 325,674 net lifetime MWh (30%) of the electric portfolio's net lifetime goal for the 2022 Annual Plan. This decline in C&I lighting energy savings is the primary contributor to the 22% decline in the lifetime MWh goal and the 27% increase in the Cost/Lifetime kWh from the 2022 3YP compliance filing to the 2022 annual plan. Next, the 59% decline in the total electric benefits (RI Test) and the

³⁴ 2022 Total Benefits in the Three-Year Plan included monetized economic benefits. In the 2022 Annual Plan draft those benefits are treated qualitatively.

³⁵ These results are adopted from a Massachusetts Market Characterization study, completed in March 2021. Rhode Island traditionally adopts the results of this study but is planning to do a RI specific study for application in 2023

corresponding 58% decline in the B/C Ratio (RI Test) is a combination of both the decline in lifetime MWh energy savings and associated benefits, along with the removal of economic benefits from the Company's RI Test calculation for the 2022 Annual Plan. For more information on the removal of economic benefits from the RI Test Calculation see Attachment 4.

Evaluation results impacting the EnergyStar HVAC program was the main contributor to the 6% decline in net lifetime MMBtu and the 9% increase in the Cost/Lifetime MMBtu from the 2022 3YP compliance filing to the 2022 annual plan. Next, the 26% decline in the total electric benefits (RI Test) and the corresponding 27% decline in the B/C Ratio (RI Test) is a combination of both the decline in lifetime MMBtu energy savings and associated benefits, along with the removal of economic benefits from the Company's RI Test calculation for the 2022 Annual Plan. Finally, the increase in the C&I and Residential Program Charge per Dth is driven by the negative 2021 Year End Gas Fund Balance forecast of -\$6.2M. This overspend is due to an uptick in customer interest in efficiency services combined with increased incentive amounts designed to mitigate the impacts of Covid 19 on customer participation.

10 Funding Plan and Budgets

The 2022 Annual Plan will be submitted to the RI PUC on October 1, 2021, consistent with the revised LCP Standards in RI PUC Docket 5015. Given this updated timeline compared to prior years, the Company may not be able to include its updated annual electric load forecast for the October 1st filing. When the electric forecast is available, the Company will provide an updated filing to the RI PUC, consistent with past practice when incremental information on in-year spend is available following the filing.

Funding, budgets, goals, and cost-effectiveness information is provided in Attachment 5 Electric EE Program Tables for the proposed electric energy efficiency programs and in Attachment 6 Gas EE Program Tables for the proposed natural gas energy efficiency programs.

In developing the savings goals, associated budgets, and funding plans for this 2022 Annual Plan, the Company took into account the traditional factors (anticipated 2021 year-end fund balances and anticipated 2022 sales volumes) that always impact the relationship between requested implementation budgets and the required customer surcharges necessary to fund the proposed plan.

2021 Year-End Fund Balances

- Given the fixed nature of the 2021 electric and gas energy efficiency surcharges, year-end fund balances will be a function of both remaining Company collections results as well as volumetric sales through year-end. Consistent with recent practice, a final update to the projected year-end fund balance to be provided to the Commission by December 1st, 2021.
- The 2021 year-end fund balance will also be a function of actual implementation expenses and Company earned performance incentive through year-end 2021. For the October 1st submission to the PUC, the Company has included 2021 year end fund balance forecasts (electric and gas) on line 2 of the E-1 and G-1 tables in Attachment 5 and Attachment 6, respectively. The fund balance forecasts include estimated implementation expenses and estimated earned

performance incentives. Consistent with recent practice, on December 1, 2021 the Company will provide updated year-end fund balance forecasts, reflecting updated sales, collection, and program expenditure forecasts through year-end to provide the PUC with time to review the Company's proposed charges in advance of the Annual Plan hearing. This would allow the charges, if approved, to have an effective date of January 1, 2022. This will allow the Company to begin collecting the most accurate charge possible at the start of the program year and avoid any market confusion surrounding the status and implementation of the 2022 energy efficiency programs. If the actual year-end 2021 fund balance as filed in the Year-End Report is higher or lower than that amount projected in the December 1, 2021 revised Tables E-1 and G-1, any deviation will be fully reconciled in the next program year in accordance with the requirements of R.I. Gen. Laws § 39-1-27.7.

Anticipated 2021 Sales

- The proposed 2022 surcharges are a function of both energy efficiency plan funding requirements as well as forecasted volumetric sales in 2022. As in past years, this filing incorporates the most current electric and gas forecasts as of the creation and distribution of this Plan.

Annual Plan Funding Sources

The sources of funding and the amounts of the funding proposed for the cost-effective 2022 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 2022 electric programs are shown in Attachment 5 Electric EE Program Tables, Table E-1. To collect these funding sources for the 2022 cost-effective programs, the Company proposes: (1) one line on the customers' bill labeled "Energy Efficiency Charge" at \$0.01618 per kWh, as calculated in Attachment 5, Table E-1 (composed of the existing energy efficiency program charge of \$0.01113 per kWh plus a fully reconciling funding mechanism charge of \$0.00505 per kWh in accordance with the requirements of R.I. Gen. Laws § 39-1-27.7); (2) projected Large C&I commitments from 2022, if any; (3) projected carryover of the year-end 2021 fund balance, as applicable, including interest at the rate in effect for customer deposits; (4) forecast revenue generated by ISO-NE's Forward Capacity Market (FCM); and (5) other potential outside revenue sources, including but not limited to those generated through RGGI permit auctions. Funding sources do not include revolving loan funds.

The sources of funding for the 2022 natural gas programs are shown in Attachment 6 Gas EE Program Tables, Table G-1. The Company proposes that the 2022 budget should be funded from the following sources: (1) one line on the customers' bill labeled "Energy Efficiency Charge" at \$1.310 per dekatherm for residential customers and \$0.895 per dekatherm for non-residential customers as calculated in Attachment 6, Table G-1 (composed of the existing energy efficiency program charge of \$0.871 per dekatherm plus a fully reconciling funding mechanism of \$0.439 per dekatherm for residential customers and the existing energy efficiency program charge of \$0.596 per dekatherm plus a fully reconciling funding mechanism of \$0.299 for non-residential customers in accordance with the requirements of R.I. Gen. Laws § 39-1-27.7); (2) projected carryovers or under-recoveries of the year-

end 2021 fund balance, including interest at the rate in effect for customer deposits. Funding sources do not include revolving loan funds.

The 2022 budgets for cost-effective electric and natural gas efficiency investments are dependent on a number of projections that inform the amount of funding, including projections of electricity and natural gas sales, year-end 2021 large C&I program commitments, capacity payments received from ISO-NE (electric only), and year-end 2020 spending. The Company estimates that the electric projected fund balance at year-end 2021 will be negative \$0.23 million, as shown in Line 3, Attachment 5, Table E-1; the gas fund balance at year-end 2020 is estimated to be negative \$6.26 million, as shown in Line 2 Attachment 6, Table G-1. Other considerations regarding funding sources are described in the subsequent sections.

10.1 ISO-NE Capacity Market Revenue

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

The Parties fully agree that the Company should recover all prudently incurred FCM expenses from ISO-NE capacity-payment revenue generated by the demand savings from efficiency programs represented by the Company. The Company expects that capacity payments received from the ISO-NE will exceed its administrative and Evaluation, Measurement and Verification (EM&V) compliance costs of participation in the FCM and 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,³⁶ the Company is unable to provide all or a

³⁶ 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.

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

10.2 Exceptions to the Natural Gas Energy Efficiency Program Charge

All natural gas used for distributed generation projects approved since 2014 will be subject to the natural gas energy efficiency surcharge.³⁷

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 Company has developed recommendations for a process under which a manufacturer may submit its self-directed program and the required annual reports for approval. The Company recognizes that this process may need to be reviewed and modified after the PUC has accumulated sufficient experience with these programs. Any customer that receives this exemption from the natural gas energy efficiency program charge will not be eligible to receive natural gas energy efficiency program services.

10.3 Budgets

After consideration the Company proposes initial budgets for this first draft in line with PUC guidance of a 5% target. The Company has considered areas for potential growth but must balance this with the prudence requirements of the Standards. More specifically, the company must account for the anticipated significant increase in the Systems Benefit Charge and its impact on ratepayers.

The portfolio of energy efficiency programs and services for 2022 will have an overall budget of approximately \$122.6 million for electric programs and \$36.7 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. Proposed sector and program budgets are provided in Attachment 5 Electric EE Program Tables, Table E-2 and Attachment 6 Gas EE Program Tables, 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 2021 budget is provided in Attachment 5, Table E-4 and Attachment 6, Table G-4.

The Parties agree to review the status of budgets regularly to assess whether they are likely to be fully utilized. If not being utilized, the Parties agree to review the advisability of transferring funds to other programs where the money could be more effectively used. Fund transfer guidelines are presented in Section 10.4 below.

³⁷ 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.

The Company will continue the practice of funding commitments established in the 2014 Plan, Docket 4451. Specifically, the Company will continue to make funding commitments for projects with a projected incentive in excess of \$3 million. For all other projects, except those with incentives greater than \$3 million, there would be no commitment budget.

10.4 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 discussed above) and will transfer monies as needed. Transfers during the program year may occur as follows:

- Transfers within a Sector. For transfers of less than 20% of the originating program's budget, the Company can transfer funds from one program to another program or pilot in the same sector. For transfers of 20% or more of the originating program or pilot's budget, the Company can transfer funds from one program to another program in the same sector with the Division's prior approval. Upon seeking the Division's approval, the Company shall simultaneously notify the EERMC and OER. For all transfers in a sector, the Company will reflect changes in the quarterly report(s) following the transfer and the year-end report.
- Transfers between Sectors. The Company can transfer funds from one sector to another sector with the Division's prior approval. Upon seeking the Division's approval, the Company shall simultaneously notify the EERMC and OER. If a transfer reduces the originating sector's budget by more than 20% in aggregate over the course of the program year, the transfer will also require PUC approval. For all transfers between sectors, the Company will reflect changes in the quarterly report(s) following the transfer and the year-end report.
- Transfers among residential retrofit programs. The Company can transfer among *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.
- 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.
- 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 performance incentive calculation. Any changes will be communicated and reported consistent with transfers between sectors, described above.

10.5 Budget Management

Deviations from the planned budget for 2022 are possible during the program year. The Parties contemplate three scenarios, and have agreed to address them as follows:

- The Company's expenditures for 2022 may exceed the total budget by up to 10% so long as written notification is provided to the EERMC, OER, PUC, and DPUC for any deviation. The Company will track expected expenditures relative to planned budgets and will report to stakeholders through inclusion in the quarterly reports, or earlier, if the Company believes such overage is likely to occur. Any such notification will occur as soon as possible, and no later than the distribution of the Company's Third Quarter Report in mid-November 2022 and must explain the need for a higher budget and must justify how the expenditures are reasonably consistent with the original annual plan and in accordance with Least Cost Procurement.
- The Company agrees that, during 2022, if the Company anticipates that continued operation of its programs is likely to result in actual expenditures exceeding the total budget by more than 10%, the Company will seek a vote of approval from the EERMC. OER commits to making all reasonable efforts to schedule such vote as soon as feasible following notification, but no later than thirty days from receipt of notification. The PUC will not provide advance approval of expenditures exceeding the total budget by more than 10%. The Company will be required to demonstrate to the PUC that the transfer or overspend was prudent. Support from the Division, OER, and EERMC will be considered in the PUC's review of prudence.
- During a program year, if the Company did not anticipate and notify parties identified above that its actual expenditures would exceed the total budget by more than 10%, but actual expenditures do exceed such threshold, such expenditures above 110% of approved budget will be at the Company's risk, and in order to secure cost recovery, the Company will bear the burden of demonstrating the reasonableness of its actions to the PUC, including an explanation of why the over-spending occurred and how the expenditures are reasonably consistent with the original plan and in accordance with Least Cost Procurement. Such demonstration would be required to be part of the 2022 Year-End Report, if not sooner.

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

10.6 Notification of large customer incentives

The Company shall inform the PUC, DPUC, OER, and EERMC in writing of any energy efficiency incentive annual offer in excess of \$3 million per a measure. The Company shall inform the DPUC, OER, and EERMC in writing of any CHP project with a net output of 1 MW or greater (where net is the nameplate MW output minus CHP auxiliary kW). The process for notification of CHP projects is described in Attachment 2 C&I Programs.

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

11 Performance Incentive Plan

The RI PUC approved a performance incentive mechanism (PIM) for 2021 – 2023 in Docket 5076 that changed the way that the Company measures and earns a performance incentive. The PUC-approved PIM modified the structure and earning pathways proposed in the Parties’ Settlement Filing in Docket 5076.³⁸ In years prior to 2021 the Company’s earning opportunity was set equal to a percentage of the eligible spending budget upon achieving goal savings, subject to performing within budget bounds. The PIM, as approved in Docket 5076, changes the measurement of performance to a net benefits framework based on a set of prioritized benefit categories. Fundamentally, this change more completely accounts for the broader set of benefits that the energy efficiency programs generate while prioritizing utility system impacts above resource benefits generated by the programs and omitting the societal benefits. The “netting” calculation incents budget controls so that the benefits are achieved in line with the portfolio budgets as proposed in the Plan.

Equation 3. Illustrative Calculation of Net Benefits for Performance Incentive Mechanism

$$\text{Net Benefits} = (100\% \text{ of Utility System Benefits} + 50\% \text{ of Resource Benefits}) \\ - (\text{Programmatic Costs} + \text{Regulatory Costs})$$

The PIM continues to measure performance at the sector and fuel level:

- Non-Income Eligible Residential Electric
- Income Eligible Residential Electric
- Commercial and Industrial Electric
- Non-Income Eligible Residential Gas
- Income Eligible Residential Gas
- Commercial and Industrial Gas

In the non-income eligible residential and income eligible residential sectors, the calculation of net benefits using the above prioritized calculation of benefits results in negative net benefits, so the

³⁸ At the time of this 2022 Annual Plan draft a written Order detailing the parameters of the newly approved PIM has not been released in Docket 5076. Refer to the RI PUC Docket 5076 webpage for materials related to the PIM components of the Docket proceedings, including staff guidance documents that provide illustrative examples with detailed step-by-step PIM calculations: <http://www.ripuc.ri.gov/eventsactions/docket/5076page.html>

earning opportunities for each fuel's portfolio are allocated to the C&I sector. The PIM also includes Service Quality Adjustments (SQAs) in the non-income eligible residential and income eligible residential sectors which require the Company to achieve defined levels of performance equal to the sum of prioritized total benefits. If the defined levels of service (total prioritized benefits) are not achieved in the residential and income eligible sectors, the SQAs apply reductions to any realized earnings in the commercial and industrial sectors. The SQAs also include a cost component that adjusts the realized performance, and consequently any reduction of C&I earnings, based on how the realized expenditures in the residential and income eligible sectors compare to planned budgets. The SQAs therefore provide a similar incentive signal as the "netting" calculation in the core of the PIM and to provide the Company with signals that savings and benefits should be pursued and prioritized in each sector, rather than exclusively the Commercial and Industrial sector where the earning opportunity resides. The combined influence of the core PIM and the SQAs resulted in a similar overall portfolio composition as in years past.

In addition, the PIM calculations include a set of rules introduced by the PUC that are intended to further incent the company to maintain budget controls in the pursuit of all cost effective savings, and therefore prioritized benefits, by adjusting earnings under this mechanism based on cost relative to budget.³⁹

Attachment 5, Table E-8A and Attachment 6, G-8A show the categories of benefits that are included in the PIM calculations, categories omitted from the PIM, and the weighting assigned to those benefits in the calculation. The categories of benefits are also summarized in the table below. The monetized benefits included in the PIM are calculated from a subset of benefit categories included in the RI Test, calculated using the same methods and inputs as the RI Test.

³⁹ Refer to the draft PUC PIM Guidance Document in Docket 5076 for detailed descriptions of the PIM and SQA calculations and rules: <http://www.ripuc.ri.gov/eventsactions/docket/5076-PUC%20PIM%20Proposal%202-18-21.pdf>. As noted previously, the Company anticipates that an updated version of this Guidance will be released with a written Order in Docket 5076. That final guidance would supersede the draft version linked here and would incorporate final changes voted on by the PUC at an Open Meeting on April 29, 2021.

Table 17. Electric Energy Efficiency Portfolio Benefits Alignment for PIM Calculations

Benefit	PIM Categorization	Percent Allocation in PIM Calculation
Summer Generation	Electric Utility System Benefits	100%
Capacity DRIPE		
Transmission		
Distribution		
Reliability		
Winter Peak Electric Energy		
Winter Off Peak Electric Energy		
Summer Peak Electric Energy		
Summer Off Peak Electric Energy		
Electric Energy DRIPE		
Utility Non-Energy Impacts (NEIs)		
Natural Gas and Natural Gas DRIPE	Resource Benefits	50%
Oil and Oil DRIPE		
Propane		
Water		
Non Resource (NEIs)	Other Not Included Benefits	0%
Non-Embedded Carbon		
Non-Embedded NOx		
Economic		

Table 18. Gas Energy Efficiency Portfolio Benefits Alignment for PIM Calculations

Benefit	PIM Categorization	Percent Allocation in PIM Calculation
Natural Gas	Gas Utility System Benefits	100%
Natural Gas DRIPE		
Utility Non Energy Impacts (NEIs)		
Summer Generation	Resource Benefits	50%
Capacity DRIPE		
Transmission		
Distribution		
Reliability		
Winter Peak Electric Energy		
Winter Off Peak Electric Energy		
Summer Peak Electric Energy		
Summer Off Peak Electric Energy		
Electric Energy DRIPE		
Oil and Oil DRIPE		
Propane		
Water		
Non Resource (NEIs)		
Non-Embedded Carbon		
Non-Embedded NOx		
Economic		

Tables E-8B and G-8B show the costs that are used in the “netting” calculations in the PIM, and that are incorporated in the SQAs in the sectors to which they apply. The core of the costs included in the PIM remain the “Eligible Spending Budget” derived from Attachment 5, Table E-3 and Attachment 6, Table G-3. The Eligible Spending budget is calculated based on the total budget from Tables E-2 and G-2 with commitments, regulatory costs, pilot costs, assessment costs, and performance incentive value removed.⁴⁰ Notably, in the new PIM the regulatory costs for collections allocated to OER and the EERMC are added back into the calculations of total costs for the net benefits calculations and the SQAs. This is a change from the PIM that was in place prior to 2021.

Tables E-8C and G-8C show the final summarizations of the calculations for the PIM and SQAs, including target earning opportunities and maximum earning opportunities. The Company is seeking electric performance incentives of \$5.5 Million and natural gas performance incentives of \$1.7 Million.

12 Future Performance Metrics

The Company proposes to continue tracking several performance metrics initiated in past plans.

12.1 Testing Performance Metrics

In 2022, the Company proposes to continue tracking and reporting performance related to certain metrics in order to test progress towards several key objectives.

12.1.1 Carbon and Carbon Dioxide Equivalent (CO₂e) Reductions

The Company proposes to continue tracking carbon reductions resulting from investments in energy efficiency measures, as was initiated in the 2021 Plan. While the net benefits-based PIM approved for the Three-Year Plan makes a performance incentive based on emissions reductions less likely, the contribution of energy efficiency to the emissions reductions goals in the Act on Climate is a valuable data point.

12.1.2 Peak Hour Gas Demand Savings

In 2020, the Company began tracking an estimate of peak-hour gas demand savings based on existing heuristics that assume fixed, but distinct, relationships between annual and peak day and peak hour gas consumption for heating and non-heating-based customer usage of natural gas. The Company will be clear in all reporting that National Grid considers this to be a rough approximation of peak-hour gas demand impacts. In 2020 and 2021 the Company engaged in several efforts to quantify peak gas demand savings resulting from gas energy efficiency measures for application in future. The Company

⁴⁰ The Eligible Spending Budget also omits the costs of the Company’s active demand response (Connected Solutions) programs. The peak demand reductions achieved through those programs are subject to the Amended Settlement Agreement in Docket Nos. 4770 and 4780 filed with the PUC on August 10, 2018, and the System Efficiency PIM contained therein. Spending and benefits derived from active demand reductions are therefore excluded from the EE PIM calculations. At the time of this plan Draft the Company and stakeholders are assessing the possibility of incremental PIM earning opportunities derived from active demand response.

joined an existing residential study in Massachusetts in 2020 and expanded the study scope to Rhode Island homes in order to measure peak gas demand savings resulting from residential sector energy efficiency measures. The Company also conducted a study of commercial and industrial peak gas demand in 2020/2021. Results of those efforts are expected to be incorporated in tracking in 2022.

15.2 Forward Looking Performance Metrics

12.1.3 Renter and Rental Unit Tracking

In 2020 the Company began an analysis of the data it possesses on participants that are renters, along with rental units, and expanded the collection of this information across more programs, where appropriate. The Company will continue to track and refine this data in 2022 and begin reporting on the performance to this metric. The renter metric will serve as one input to the assessment of the programs’ equity performance. If the Company and stakeholders determine that the data is of sufficient breadth and quality to serve as the basis for linking a portion of the Company’s performance incentive metric to program participation by rental units, that may be considered for a future component of the performance incentive mechanism.

13 Advancing Docket 4600 Principles and Goals

Along with the quantitative benefits detailed in the Plan, as measured by the RI Test, the energy efficiency investments and innovation planned for 2022 also advance the Docket 4600 principles and goals.⁴¹

The Docket 4600-A Guidance Document directed that “the proposing party must provide accompanying evidence that addresses how the proposal advances, detracts from, or is neutral to each of the stated goals of the electric system.”⁴²

To meet this directive, the Company describes how the Plan either advances, detracts, or remains neutral on achieving the Docket 4600 goals for the electric system in Table 19.

Table 19. Docket 4600 Goals for the Electric System

4600 Goals for Electric System	Advances/Detracts/Neutral
Provide reliable, safe, clean, and affordable energy to Rhode Island customers over the long term.	Advances: The Plan gives customers tools to reduce their energy consumption. The safest, most reliable, most affordable energy is energy that is never used. Lowering energy consumption avoids investments in the installation, upgrade, or

⁴¹ PUC Report and Order No. 22851 accepting the Stakeholder Report. Written Order issued July 31, 2017.

⁴² Approved final clean version of Guidance Document 10/27/17.

4600 Goals for Electric System	Advances/Detracts/Neutral
	replacement of transmission and distribution infrastructure, and reduces strain on the system.
Strengthen the Rhode Island economy, support economic competitiveness, retain and create jobs by optimizing the benefits of a modern grid and attaining appropriate rate design structures.	Advances: The Plan will create significant economic benefits in Rhode Island. The Company expects that investments made in energy efficiency under this Plan will add \$308.4 million to Rhode Island’s Gross State Product (GSP).
Address the challenge of climate change and other forms of pollution.	Advances: The Plan will avoid 794,869 tons of carbon over the lifetime of the installed measures as well as reduce other pollutants associated with the generation and combustion of electricity, natural gas, and delivered fuels.
Prioritize and facilitate increasing customer investment in their facilities (efficiency, distributed generation, storage, responsive demand, and the electrification of vehicles and heating) where that investment provides recognizable net benefits.	Advances: The Plan provides incentives for customers to invest in cost-effective energy efficiency measures in their facilities and participate in demand response programs.
Appropriately compensate distributed energy resources for the value they provide to the electricity system, customers, and society.	Neutral
Appropriately charge customers for the cost they impose on the grid.	Neutral
Appropriately compensate the distribution utility for the services it provides.	Advances: The performance incentive contained in this Plan compensates the Company for achieving the energy savings goals through delivering cost-effective energy efficiency programs to customers while aligning with the PUC’s PIM principles.
Align distribution utility, customer, and policy objectives and interests through the regulatory framework, including rate design, cost recovery, and incentive.	Advances: The Plan aligns Company, customer, and policy objectives and interests by incentivizing energy savings measures that enable customers to manage and reduce their energy consumption, which in turn contributes to the greenhouse gas reduction goals of the Resilient

4600 Goals for Electric System	Advances/Detracts/Neutral
	Rhode Island Act of 2014, Power Sector Transformation goals, Heating Sector Transformation goals, and the 100% Renewable Electricity goal while allowing the Company to earn a performance incentive.

CONCLUSION

14 Miscellaneous Provisions

- Other than as expressly stated herein, this Plan 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.
- Other than as expressly stated herein, the approval of this Plan by the PUC shall not in any way constitute a determination as to the merits of any issue in any other PUC proceeding.
- The Parties agree that National Grid shall convene the Energy Efficiency Technical Working Group no less than six times in 2022 to review the status and performance of the Company’s 2022 energy efficiency programs and advise the Company on potential energy efficiency programs for 2023.

15 Reporting Requirements

- In 2022, the Company will provide quarterly reports to the EERMC, the Division, OER, the EE TWG, and the PUC on the most currently available program performance for both natural gas and electric efficiency programs. These reports will include a comparison of budgets and goals by program to actual expenses and savings on a year-to-date basis, and a status report on revolving loan funds. The Company will also coordinate reporting of loan funds with the Rhode Island Infrastructure Bank. The reports will also include a brief summary of program progress and will highlight issues by sector for EERMC, Division, OER, and Technical Working Group attention. Within the C&I sector, there will be separate highlighting of large and small customer program progress and issues. Beginning in the second quarter, the quarterly reports also include a forecast of expected results.
- In the 2019 Year End Report, the Company provided detailed costs schedules that were developed in collaboration with the Rhode Island Division of Public Utilities and Carriers. The Company proposes to submit detailed cost schedules in the 2022 Year End Report. In addition, the Company also proposes to submit confidential vendor schedules to the PUC, with a motion for protective treatment. These confidential vendor schedules detail costs to individual vendors and other external entities.
- In 2022 for months during which quarterly reports are not produced, the Company will provide to the EERMC, the Division, and the EE TWG monthly summaries of year-to-date spending and savings and results by sector.

- The Company will provide to the Parties, the EE TWG, and file with the PUC its 2022 Year-End Report no later than June 1, 2022. This report will include achieved natural gas and electric energy savings in 2022 and earned incentives for 2022.
- The Company will provide the Parties and the EE TWG with a summary of evaluation results that have been incorporated into the Annual Plan within the annual plan. Including a description of the impact of those results in planning the Company's 2022 programs, in the Plan to be filed by October 1, 2021.

16 Requested Rulings

The Company respectfully requests that the PUC approve the 2022 Annual Energy Efficiency Plan as presented in this document and the supporting attachments in its entirety. The plan has been developed with careful consideration of the linkages between all parts. The specific components of this plan for which the Company requests approval include:

- The savings goals, programs, measures, budgets, and associated customer collections required to fund the energy efficiency programs in 2022.
- The pilots, demonstrations, and assessments the Company proposes for program year 2022 and the associated budgets and customer collections required to fund those efforts.
- The performance incentive mechanism and associated earning opportunity as approved in the three-year plan and applied in this Annual Plan.

ATTACHMENTS

Annual Plan Attachment 1. Residential and Income Eligible Energy Efficiency Solutions and Programs

Annual Plan Attachment 2. Commercial and Industrial Energy Efficiency Solutions and Programs

Annual Plan Attachment 3. Evaluation, Measurement & Verification Plan

Annual Plan Attachment 4. Rhode Island Benefit Cost Test Description

Annual Plan Attachment 5. Electric Energy Efficiency Program Tables

Annual Plan Attachment 6. Gas Energy Efficiency Program Tables

Annual Plan Attachment 7. Rate and Bill Impacts

Annual Plan Attachment 8. Pilots, Demonstrations & Assessments

Annual Plan Attachment 9. Cross-Program Summary

Annual Plan Attachment 10. Definitions