



DRAFT 2021-2023 NEW HAMPSHIRE STATEWIDE ENERGY EFFICIENCY PLAN

Jointly submitted by New Hampshire’s Electric and Natural Gas Utilities:

- Liberty Utilities Corp. (Granite State Electric Corp.) d/b/a Liberty Utilities
- Liberty Utilities Corp. (EnergyNorth Natural Gas) d/b/a Liberty Utilities
- New Hampshire Electric Cooperative, Inc.
- Northern Utilities, Inc. d/b/a Unitil Energy Systems, Inc.
- Public Service Company of New Hampshire d/b/a Eversource Energy
- Unitil Energy Systems, Inc.

Draft: April 1, 2020



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April 1, 2020

Don Kreis, Esq.
Chair, EERS Committee
Office of the Consumer Advocate
21 South Fruit Street, Suite 18
Concord, NH 03301-2429

Dear Mr. Kreis and EERS Committee Members,

In a Settlement Agreement filed on December 13, 2018, the NH Electric and Natural Gas Utilities (collectively, the “NH Utilities”) and other Parties agreed that a Draft of the 2021-2023 Statewide Energy Efficiency Plan (“Draft 2021-2023 Plan”) would be submitted for stakeholder review on April 1, 2020. The Draft 2021-2023 Plan has been developed over the course of six months with extensive input from the Energy Efficiency Resource Standard (“EERS”) Committee and other stakeholders, including 10 EERS Committee meetings, 11 program-specific meetings with the Stakeholders’ Consultant, and a public comment session.

During the month of March, Governor Sununu issued Executive Order 2020-04¹ declaring a State of Emergency to account for a new virus, resulting in the infectious disease COVID-19. That order, along with its follow-on Emergency Order No. 17² which closed all non-essential businesses in the State for at least a month, will have an unprecedented impact on the State of New Hampshire, including on the delivery of energy efficiency programs and services. Similar emergency actions in other states, at the Federal level, and around the world, mean that these impacts will extend well beyond New Hampshire. The duration and extent of the impacts will not be known for some time³. This Draft 2021-2023 Plan does not include any integration or analysis of the impacts of the current global pandemic. The planning process was too far along and the incoming information too rapid and dynamic for a reasonable effort at adjustments. Thus, the Draft 2021-2023 Plan is based entirely on market conditions and a projected economic landscape prior to the pandemic’s spread.

It is clear, however, that this pandemic will have significant impacts to our customers, our contractor partners, and the broader health and economic environment of our state and nation. As always, the health and safety of our customers is our overarching top priority.

¹ <https://www.governor.nh.gov/news-media/orders-2020/documents/2020-04.pdf>

² <https://www.governor.nh.gov/news-media/emergency-orders/documents/emergency-order-17-1.pdf>

³ The NH Utilities also note that the COVID-19 virus has resulted in a general economic downturn so substantial that it inspired Congress to pass, and the president to sign, the Coronavirus Aid, Relief, and Economic Security Act (the “CARES Act”), the largest economic relief bill in United States history. See, e.g., <https://www.natlawreview.com/article/summary-cares-act>.

On March 18, 2020, the NH Utilities sent a letter to the NH Public Utilities Commission (“Commission”) notifying regulators of the temporary suspension of on-premise energy efficiency services, including energy efficiency assessments, incentives for direct-install services, and in-building evaluation activities, as well as any other in-person activity deemed to create an unnecessary risk of exposure. This suspension took effect on March 19, 2020 with an initial period lasting through at least April 6th.⁴ Given updated state and federal communications and guidance provided over the last few days, the NH Utilities continue to believe that the currently in-place suspensions of on-premise contracted vendor activities will remain in place for the foreseeable future, and at least until May 4, 2020.

Given the unprecedented uncertainty facing our customers and the impact of the pandemic on energy efficiency services in both the short and long term, the NH Utilities are providing tables and budgets as Plan Attachments for informational purposes only. The NH Utilities note that the values shown are based on program planning and modeling conducted prior to the domestic spread of COVID-19 and the associated economic impacts. As such, they do not reflect the potentially significant adjustments that will be required to account for these impacts. In order to develop meaningful and realistic goals for the next triennium under an Energy Efficiency Resource Standard, the NH Utilities need to better understand the impacts of the pandemic on the energy efficiency marketplace.

A number of factors, detailed below, will have specific impacts on the energy efficiency programs and the Final 2021-2023 Plan. While the NH Utilities are developing an understanding of the elements that must be considered, the level of severity and timing of these impacts are not yet clear.

Economic

- With the statewide and nationwide shutdown of public and private infrastructure and activities aimed at minimizing the spread of COVID-19, the economic stability of many residents and businesses may change, impacting their ability and willingness to pay for efficiency services.
- There is some discussion of additional federal stimulus that will seek to support contractors and energy efficiency work. If passed there could be some positive impact in New Hampshire, but the timing and details are currently unknown.⁵
- The NH Utilities will make every effort to take into account the broader and evolving economic landscape in determining the scale of the Final 2021-2023 Plan, and the offerings and incentive levels contained within the final document.

⁴ Similar suspensions of energy efficiency work have occurred Massachusetts and other states in New England.

⁵ <https://www.building-performance.org/news-and-resources/news/hope-homes-bpa-working-you>.

Workforce

- There have been immediate financial impacts to energy efficiency contractors and their workforce as fieldwork has been suspended for an indeterminate period of time. Many New Hampshire energy efficiency contractors had to lay off their workforce in March when the temporary suspension began. As of today, the NH Utilities do not yet know when, or how many, of these people will be re-hired. The contractor infrastructure in New Hampshire was already under pressure as the NHSaves Programs have ramped up significantly over the past three years, and there may be longer-term impacts to the marketplace if the energy efficiency industry loses contractor capacity.

Energy Efficiency Potential

- The potential to implement energy efficiency measures in New Hampshire will be impacted by the pandemic. In some cases, it may result in more potential than the NH Utilities originally anticipated for 2021-2023 projects, if, for instance, the rapid market transformation to LED bulbs is slowed. However, a multitude of factors, including potential supply-chain issues, lower customer demand, and increased incentive costs, may affect the potential for energy efficiency savings in a downward direction. In particular, it is anticipated that all customers may have less operating capital available to invest in energy efficiency upgrades.
- The New Hampshire Potential Study (“Study”), which has been ongoing for several months, is also impacted. Collection of commercial and industrial (“C&I”) customer baseline data has been delayed and may remain limited for an extended period of time. There is also a greater level of uncertainty around the projections of future potential, particularly for impacted business segments.

Timing

- The implications of the pandemic are rapidly evolving. The NH Utilities will have some additional information regarding workforce and economic impacts before the planned July 1 filing of the Final 2021-2023 Plan with the Commission; however, the Study results, as well as a more thorough understanding of impacts to customer motivations and workforce constraints, will all continue to develop after that date.

All of these elements must be carefully considered over the next several months so that the NH Utilities can collectively present a Final 2021-2023 Plan that provides a clear and realistic path forward. That path should take into account, to the fullest extent possible, customer needs and motivations, market place potential, and workforce capacity.

Together, the NH Utilities are committed to providing our customers with outstanding energy efficiency services and to working with our customers, contractors, vendors, and other partners in order to mitigate impacts of the COVID-19 pandemic. Energy efficiency can play an important role in helping the residents and businesses of New Hampshire recover from the financial impacts of the pandemic. The NH Utilities look forward to working with the EERS Committee as we collectively meet the challenge of these unprecedented times.

Sincerely,

The NH Electric and Natural Gas Utilities

_____/s/_____
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Eversource Energy

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Table of Contents

Executive Summary	1
Chapter One: New Hampshire’s Energy Efficiency Programs.....	5
1.1 Energy Efficiency and Sustainable Energy Board	6
1.2 NHSaves Programs.....	6
1.3 State Energy Policy	6
1.4 2021-2023 Plan Goals	8
1.5 2021-2023 Plan Priorities	8
1.6 Benefits of Energy Efficiency Programs	17
1.7 2021-2023 Program Goals	19
1.8 Energy Efficiency Program Funding	19
1.9 Natural Gas Energy Efficiency Funding	20
1.10 Annual Program Budgets	20
Chapter Two: Three-Year Planning Structure	23
2.1 A Three-Year Plan.....	23
Chapter Three: NHSaves C&I Energy Efficiency Programs	31
3.1 Overview.....	31
3.2 Small Business Energy Solutions Program	39
3.3 Municipal Program	47
3.4 Large Business Energy Solutions Program.....	55
3.5 Energy Rewards Program (Eversource Only).....	65
Chapter Four: NHSaves Residential Energy Efficiency Programs	69
4.1 Residential Programs Overview	69
4.2 ENERGY STAR Homes Program.....	77
4.3 ENERGY STAR Products Program	87
4.4 Home Energy Assistance Program.....	93
4.5 Home Performance with ENERGY STAR Program	101
Chapter Five: Active Demand Reduction Program.....	109
5.1 Program Objective	109
5.2 Target Market	109
5.3 2021-2023 Plans.....	109
Chapter Six: Behavioral-Based Strategies	113
6.1 Home Energy Reports (Unitil and Liberty)	113

6.2 Customer Engagement Initiative (Eversource) 115
6.3 Aerial Infrared Mapping Initiative (Liberty Gas) 117
Chapter Seven: Marketing and Education 123
7.1 Background 123
7.2 Customer Attributes and Market Research 126
7.3 2021-2023 Marketing Strategies 129
Chapter Eight: Planning Elements 135
8.1 Benefit-Cost Testing 135
8.2 Technical Reference Manual 140
8.3 Bill and Rate Impact Analysis 141
8.4 Lighting Market Trends 143
Chapter Nine: Evaluation, Measurement, and Verification 145
9.1 Evaluations Completed in 2020 146
9.2 Strategic Evaluation Plan 147
9.3 Energy Efficiency Baseline and Potential Study 148

Attachments

- Attachment A: Technical Reference Manual - Working Draft
- Attachment B: Statewide Goals
- Attachment C: Utility Budgets by Activity
- Attachment D: Utility Goals by Program
- Attachment E: Eversource - Electric Program Cost-Effectiveness
- Attachment F: Liberty Utilities - Electric Program Cost-Effectiveness
- Attachment G: NHEC - Electric Program Cost Effectiveness
- Attachment H: Unitil Energy Systems, Inc. - Electric Program Cost-Effectiveness
- Attachment I: Liberty Utilities - Natural Gas Program Cost-Effectiveness
- Attachment J: Northern Utilities - Natural Gas Program Cost-Effectiveness
- Attachment K: Bill and Rate Impact Analysis


Executive Summary

For more than two decades, New Hampshire’s electric and natural gas utilities have offered energy efficiency and demand response programs to residential and commercial and industrial (“C&I”) customers⁶ across the state. These programs provide energy savings, promote economic development, reduce the need for additional capacity investments and protect the natural environment by reducing the amount of carbon dioxide (“CO₂”) and sulfur and nitrogen oxides released into the atmosphere due to reduced energy generation and consumption.

New Hampshire’s electric and natural gas utilities (“NH Utilities”) are pleased to submit this draft 2021-2023 Statewide Energy Efficiency Plan (“Draft 2021-2023 Plan”) for review by the Energy Efficiency and Sustainable Energy Board (“ESEE Board”). This Draft 2021-2023 Plan is being submitted jointly by Liberty Utilities Corp. (Granite State Electric) d/b/a Liberty Utilities (“Liberty Electric”), New Hampshire Electric Cooperative, Inc. (“NHEC”), Public Service Company of New Hampshire d/b/a Eversource Energy (“Eversource”), and Unitil Energy Systems, Inc. (“Unitil Electric”) (hereinafter referred to as the “NH Electric Utilities”), and Liberty Utilities (EnergyNorth Natural Gas) Corp. d/b/a Liberty Utilities (“Liberty Gas”), and Northern Utilities, Inc. (“Unitil Gas”) (hereinafter referred to as “NH Natural Gas Utilities”).

Energy efficiency is the most low-cost and emission-free resource available to utilities, stakeholders, and states. Every kilowatt-hour (“kWh”) or million natural gas British Thermal

Over the last few decades, New Hampshire’s energy efficiency programs have achieved significant energy savings for the state’s electric and natural gas customers.




Units (“MMBtu”) saved through New Hampshire’s energy efficiency programs helps the NH Utilities to achieve deeper energy savings, reduce harmful greenhouse gas (“GHG”) emissions, save customers

⁶ Hereinafter, the word “customer” will be understood to mean both customers and New Hampshire Electric Cooperative members.

money, and mitigate the need to generate additional power. The NH Utilities designed the Draft 2021-2023 Plan to scale up energy savings and program participation, create and heavily promote existing “on ramps” to energy efficiency to attract customers, diversify program offerings, tailor marketing solutions and incentives through standard offer packages, and broaden outreach to customers and local communities.

Since 2002, New Hampshire’s electric and natural gas customers have installed energy efficiency measures that have resulted in lifetime savings of more than **19.1** billion electric kWh and **45.7** MMBtus. This results in a cumulative customer savings in excess of **\$3.4** billion.

The New Hampshire energy efficiency industry supports a robust local and state labor workforce.



The NH Utilities are proud to deliver innovative energy-efficient solutions to their customers, residential or commercial, throughout the state. The NH Utilities are well-trusted and recognized for their ability to work together, and with stakeholders, legislators, and regulators, to provide continuity in their delivery of cost-effective energy efficiency solutions across the state facilitated under the NHSaves™ Programs (“NHSaves Programs”) brand. With direction from the New Hampshire Public Utilities Commission (“Commission”)-directed Energy Efficiency Resource Standard (“EERS”) and other state energy policies (see Chapter One), the NH Utilities are ready to help customers engage in 2021-2023 NHSaves Programs.


The NH Utilities have designed a dynamic energy efficiency platform to help reduce energy demand and achieve significant energy savings over the next three-year period. The NH Utilities remain focused on engaging customers to look at how they use energy and to provide them alternative paths to saving energy and money over the next three years. The Draft 2021-2023 Plan will provide the following results:

- **More Customer Energy Savings.** The 2021-2023 NHSaves Programs will result in customer energy cost savings of more than \$YY million over the lifetime of the measures.

- **Increased Energy Savings.** During the 2021-2023 term, New Hampshire’s energy efficiency programs will result in savings of **YY** billion electric kWhs and **YY** million natural gas MMBtus over the lifetime of installed energy-saving measures. In addition, New Hampshire’s 2021-2023 energy efficiency programs will save **YY** million MMBtus from other fuels, such as oil and propane.
- **Increased Peak Demand Reduction Savings.** The NHSaves Programs result in passive demand reduction savings that will reduce summer peak demand by **YY** megawatts (“MW”) and winter peak demand by **YY** MWs.

- **Stronger State Economy.** New Hampshire’s energy efficiency investments help support the state’s economy in multiple ways. By participating in energy-efficient solutions, income-eligible customers can reduce their energy burdens, allowing them to put money toward other household needs.

2021-2023 Plan programs will reduce GHG emissions by 2,781 thousand tons.



Participating C&I customers will lower their energy bills, allowing owners to invest in other company operations, such as labor, materials, and other business-related resources. Energy savings that result from municipal building projects lead to a more efficient use of taxpayer dollars in the community. Funds once allocated to energy costs can now be utilized for increased public services, such as education, public safety, and libraries.

- **Highly-Trained Workforce.** The NH Utilities plan to continue providing workforce development opportunities to the growing local and state labor workforce that supports the implementation of energy efficiency solutions throughout the state. The 2021-2023 NHSaves Programs will support **YY** full-time equivalents (“FTEs”) or **YY** million⁷ work hours.
- **Cleaner Environment.** The energy savings from the NHSaves Programs protect the public health and environment through significant reductions in CO₂ and other GHG emissions. The 2021-

⁷ According to a study from the Political Economy Research Institute (“PERI”) of the University of Massachusetts at Amherst (2019), every million dollars spent on energy-efficient measures, such as building retrofits, supports 6.2 direct jobs, 2.7 indirect jobs, and 3.3 induced jobs. See Pollin, R., Wicks-Lim, J., Chakrabortu, S., Hansen, T. *A Green Growth Program for Colorado*. Available at: <https://www.peri.umass.edu/publication/item/1168-a-green-growth-program-for-colorado>.

2023 NHSaves Programs will provide a lifetime reduction of more than **YY** thousand tons of GHG emissions, the equivalent of taking **YY** passenger vehicles⁸ off the road for one year.

⁸ Utilizing EPA Greenhouse Gas Equivalencies Calculator. Retrieved from: www.epa.gov/energy/greenhouse-gas-equivalencies-calculator.

Chapter One: New Hampshire's Energy Efficiency Programs

The Draft 2021-2023 Plan reflects a coordinated and integrated planning effort among the six NH Electric and Natural Gas Utilities, with significant input from a diverse array of energy efficiency stakeholders, contractors, and customers.

The NH Utilities worked extensively and collaboratively with Commission Staff and members of the EESE Board's EERS Committee and its consultant to develop an energy efficiency and demand management plan that is consistent with the state's energy policies and legislation, including the EERS. During 2021-2023, the NH Utilities will remain focused on implementing high-quality energy efficiency programs that drive energy savings, save customers money, reduce the need for additional capacity investments, and help protect the environment through reduced electricity, natural gas, and delivered fossil fuel consumption.

The Draft 2021-2023 Plan is a strategic guide for the NH Utilities to deliver multiple energy efficiency and demand management programs and initiatives designed for residential, commercial, municipal, and industrial customers. These programs, taken together as an integrated whole, will achieve significant energy savings, protect the environment, help businesses operate more efficiently, and help lead the state into the next decade as a leader in energy efficiency. For the 2021-2023 term, the NH Utilities remain focused on scaling up participation and energy savings for the residential and C&I programs and will work together to seamlessly deliver customer-centric solutions and packaged marketing under the NHSaves brand. As noted in the C&I and residential sector chapters of this Draft 2021-2023 Plan, the NH Utilities will support these objectives by designing programs that can be modified quickly to



address changing energy code standards, customer demand, emerging technologies, and economic conditions affecting customers and the energy efficiency marketplace.

1.1 Energy Efficiency and Sustainable Energy Board

In 2008, New Hampshire's legislature created the EESE Board⁹ to promote and coordinate energy efficiency, demand response, and other sustainable energy programs in the state. The EERS Committee of the EESE Board serves as the primary stakeholder body in the development of the NH Utilities' triennial plans.

1.2 NHSaves Programs

New Hampshire's energy efficiency programs are jointly marketed by the NH Utilities under a statewide umbrella marketing brand—NHSaves Programs. Through this collaboration, the NH Utilities deliver innovative, award-winning programs on a statewide marketing platform ensuring continuity in branding and messaging. The NHSaves.com website serves as the statewide information portal where customers can learn about rebates and services offered through the NHSaves Programs.



1.3 State Energy Policy

1.3.1 Energy Efficiency Resource Standard

In August 2014, the Commission initiated an informal, non-adjudicative stakeholder process regarding creating a framework, the EERS, within which the NHSaves Programs would be implemented. The process was a year-and-a-half dialogue among the Commission, the NH Utilities, and numerous stakeholders. In 2016, the state's first EERS was established through a settlement agreement¹⁰ filed with the Commission. The EERS is the framework in which the NHSaves Programs have been implemented since 2018 and requires the NH Utilities to file triennial plans and to meet annual savings goals, as well as achieve the long-term objective of achieving ***all cost-effective energy efficiency***.

⁹ NH RSA 125-O:5-a; Oct.1, 2008.

¹⁰ State of New Hampshire Public Utilities Commission. DE 15-137. *Order No. 25,392: Energy Efficiency Resource Standard*, Aug. 2, 2016. Available at: <https://www.puc.nh.gov/Regulatory/Orders/2016orders/25932e.pdf>.

Commensurate with the EERS, the Commission also established a recovery mechanism to compensate the NH Utilities for any lost revenue related to implementation of NHSaves Programs under the EERS. The NH Utilities file annual updates with the Commission regarding any necessary changes that need to be made to the Systems Benefit Charge (“SBC”) or Local Delivery Adjustment Clause (“LDAC”), the primary funding mechanisms for the NHSaves Programs. The SBC and LDAC are nominal charges on customers’ electric and natural gas utility bills, respectively.

During the state’s transition to the EERS, the Commission extended the approved 2015-2016 NHSaves Programs (i.e., the program implementation and established annual savings targets for the 2017 program year). On January 2, 2018, the Commission approved the implementation of the NH Utilities’ first three-year plan¹¹ (“2018-2020 Plan”). The NH Utilities filed plan updates in September 2018 (“2019 Plan Update”) and September 2019 (“2020 Plan Update”) to realign energy saving goals and program budgets with the PUC-approved 2018-2020 Plan. The Draft 2021-2023 Plan is the second triennial plan filed by the NH Utilities under the EERS.

1.3.2 New Hampshire’s 10-Year State Energy Strategy

In April 2018, New Hampshire Governor Chris Sununu and the New Hampshire Office of Strategic Initiatives (“OSI”) released the **New Hampshire 10-Year State Energy Strategy**¹² (“Report”) in compliance with state legislation and statute. The Report established 11 statewide goals that should be pursued to better meet residential and C&I customers’ needs, including prioritizing all cost-effective energy policies and achieving environmental protection that is cost-effective and enables economic growth. The Report noted that, “[i]nvesting in efficiency boosts the state’s economy by creating jobs and reducing energy costs for consumers and businesses.” During the 2021-2023 Plan, the NH Utilities will work to ensure that cost-effective strategies are prioritized to reduce customers’ energy bills and to reduce air pollutant emissions.

¹¹ State of New Hampshire Public Utilities Commission. DE 17-136. *Order No. 26,905: 2018-2020 New Hampshire Statewide Energy Efficiency Plan*, Jan. 2, 2018. Available at: <https://www.puc.nh.gov/Regulatory/Orders/2018orders/26095e.pdf>.

¹² New Hampshire Office of Strategic Initiatives. *New Hampshire 10-Year State Energy Strategy*. April 2018. Available at: <https://www.nh.gov/osi/energy/programs/documents/2018-10-year-state-energy-strategy.pdf>.

1.4 2021-2023 Plan Goals

With more than two decades of experience in jointly operating successful energy efficiency programs across the state, the NH Utilities have the expertise, infrastructure, and relationships in place to meet the EERS program goals for the 2021-2023 term. During the 2018-2020 Plan, the NH Utilities realized increased energy efficiency savings goals under the EERS.

To meet the EERS goals, the NH Utilities must develop new market-friendly offerings and heavily promote existing programs to increase customer participation and drive energy savings. Between 2021 and 2023, the NH Utilities will achieve cumulative energy savings of **YY** percent of the NH Electric Utilities’ 2019 kWh delivery sales and **YY** percent of the NH Natural Gas Utilities’ 2019 MMBtu delivery sales. The data in Table 1-1 provides a comparison to the 2018-2020 Plan.

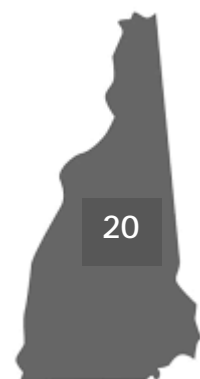
Table 1-1: Comparison to 2018-2020 Plan

Note: Comparison Chart will be included in the next iteration of the 2021-2023 Plan.

1.5 2021-2023 Plan Priorities

For the 2021-2023 term, the NH Utilities are focused on scaling up energy savings and increasing customer participation in the NHSaves Programs.

New Hampshire was ranked 20th in the American Council for an Energy-Efficient Economy’s (“ACEEE”) *2019 State Energy Efficiency Scorecard* (“Scorecard¹³”), a one place improvement from the 2018 and 2017 Scorecards. In the portion of the Scorecard for Utility and Public Benefits Program and Policies, New Hampshire was ranked 13th. In preparation for the Draft 2021-2023 Plan filing, the NH Utilities have reviewed other states’ energy efficiency portfolios to determine additional opportunities for them to modify, improve, and lead the



¹³ ACEEE. *2019 State Energy Efficiency Scorecard*. Rel. Sep. 2019. Available at: <https://www.aceee.org/sites/default/files/pdf/state-sheet/2019/new-hampshire.pdf>.

NHSaves Programs toward cost-effective, comprehensive energy savings over the next three years.

The Draft 2021-2023 Plan's program offerings and incentives are designed to increase New Hampshire's leadership in energy efficiency and demand management programs. Market trends, new federal regulations and policies, changing state building codes, emerging technologies, and baseline studies were all calculated into the NH Utilities' planning process. In addition, the NH Utilities reviewed evaluation results of the 2018-2020 NHSaves Programs to help them modify the programs toward greater efficacy while driving energy savings, GHG emissions reductions, and increased economic benefits. The NH Utilities developed the following Draft 2021-2023 Plan priorities building on discussions with the EERS Committee and its consultant. The numbering of this list does not necessarily correlate to level of importance.

Priority One: Commitment to Deliver Cost-Effective Energy Efficiency

Energy efficiency is the most low-cost and emission-free energy resource available to New Hampshire's homes, businesses, and municipalities. The NH Utilities recognize that it is imperative to communicate the message regarding how important and beneficial energy efficiency is to their customers and to motivate them to actively pursue all cost-effective energy efficiency measures. Throughout the 2021-2023 term, the NH Utilities plan to deliver tailored, comprehensive solutions to customers and drive electric and natural gas savings beyond lighting measures.

Figure 1-1: Place Holder

For the C&I programs, this will involve testing various channels, incentive models, and strategies to identify what motivates customers and contractors to implement comprehensive energy-saving projects. The NH Utilities will explore offering a tiered incentive design which would package rebates based on delivered energy savings of an entire project, rather than the current approach of incentivizing single measures. For the 2021-2023 term, the NH Utilities will also investigate cost-sharing comprehensive audit expenses with small businesses.

The NH Utilities will promote comprehensiveness in the 2021-2023 residential programs through the introduction and heavy promotion of multiple “on ramps” to energy efficiency (referenced in Priority Three) that will be utilized to encourage investment in multiple-measure projects over the next three-year period.

Priority Two: Provide Significant Benefits to New Hampshire's Economy

New Hampshire's energy efficiency investments help support the state's economy in multiple ways. Delivering cost-effective energy efficiency programs to customers helps lower energy bills, generates local jobs, reduces the energy dollars that go toward out-of-state energy generation, and increases the quality of the state's building stock. Businesses can invest energy savings toward making their business more profitable and into operations and personnel. Towns and cities can use taxpayers' dollars to fund critical infrastructure and public services. Home owners, particularly limited-income customers, can use their energy savings toward their most critical needs and support the local economy.

Priority Three: Increasing Participation through New and Expanded Program Pathways

The NH Utilities remain focused on transforming the way customers think about and use energy by giving them a variety of innovative energy efficiency services and energy information that will help them to better manage their energy use and costs and move them toward adoption of efficiency measures as a standard practice. The NH Utilities will effectively scale up the NHSaves Programs to increase energy savings and program participation by introducing or reinforcing multiple “on ramps” with varied levels of participation requirements for different customer types. These new or more heavily promoted program pathways create easily accessible avenues for customers to earn energy savings. Through targeted marketing efforts, the NH Utilities can then re-engage these customers to purchase additional energy-efficient equipment or dive deeper into energy savings.

The NHSaves residential programs will introduce or more heavily promote several pathways, including: code-plus initiatives, online platforms, single-measure rebates, energy kits, and visual audits. For the C&I sector, the NH Utilities plan to encourage additional participation through significant main street and community outreach initiatives, as well as the creation of tailored marketing collateral targeting C&I customers and market segments (see Priority Four).

Priority Four: Offer Effectively-Packaged Solutions to Engage Customers

To increase program participation and energy savings, the NH Utilities must effectively market and package energy efficiency solutions to residential, municipal, and C&I customers. During the 2021-2023 term, the NH Utilities will expand midstream and point-of-purchase rebate offerings for the NHSaves Residential programs, as well as include additional tiers and bonus incentives for the residential new construction marketplace.

For the C&I programs, the NH Utilities will create standard offer marketing pieces, such as sell sheets and presentations, specifically developed for target C&I market segments and end-use equipment. These tailored marketing collateral packages will make it easier for customers to understand the potential incentives and estimated energy savings associated with common high-efficiency measures, such as compressed air, industrial boilers, light-emitting diode (“LED”) fixtures and controls, retro-commissioning process, motors, variable frequency drives (“VFDs”) and controls, and low-energy snowmaking guns.

Priority Five: Continue to Develop New Hampshire's Energy Efficiency Workforce

A skilled workforce is a critical component of successfully moving the state toward the EERS' increased energy savings goals. Currently, the NH Utilities in collaboration with other Northeast region utilities are working to develop a regional approach to facilitate workforce development strategies for the building and energy efficiency industries. A regional approach will focus on best practices and lessons learned in developing contractor education and workforce development strategies. Throughout the 2021-2023 term, the NH Utilities will leverage the regional activities to expand the state's training offerings and to cost-share training-related expenses.

In addition to regional collaboration, the NH Utilities will work with knowledgeable and interested New Hampshire stakeholders to develop a comprehensive plan to train and recruit a qualified workforce. This plan will be informed by additional stakeholder input and a needs assessment to better understand workforce barriers specific to New Hampshire. In particular, the NH Utilities will be closely examining the outcome of the COVID-19 crisis on the New Hampshire Workforce. The NH Utilities

anticipate needing to work more closely with key state agencies, such as the NH Employment Security Office and the Community College System, in order to develop a comprehensive plan for (re)building the energy efficiency workforce. A Workforce Chapter will be added to the next iteration of the 2021-2023 Plan, as the NH Utilities continue to work with stakeholders and others on this important topic.

The NH Utilities will also continue to monitor and support existing trainings and training pathways in order to contribute to building and maintaining a qualified workforce that will meet the demand for energy efficiency. During the 2021-2023 term, the NH Utilities will continue to train the state's current workforce, including contractors, distributors, manufacturers, community action agencies, home builders, municipal facility managers, and retailers on high-efficiency equipment and design. To support many of the Draft 2021-2023 Plan's priorities and programs, key workforce trainings will include but are not limited to these topics: high-efficiency heating, ventilation, and air conditioning ("HVAC") technologies and controls, refrigeration equipment and controls, advanced LED lighting and



controls, whole-building design (C&I sector), code-plus initiatives, active demand reduction strategies (see Priority 8), and emerging technologies.

For the 2021-2023 NHSaves residential programs, the NH Utilities will expand existing trainings and include additional content on: building code compliance, emerging technologies, and energy-efficient building

techniques. Residential workforce development will include in-field home builder trainings, lunch and learns, hands-on equipment training, and interactive online training videos. In order to scale up energy savings and program participation, the NH Utilities will increase workforce capacity through more contractor training, particularly regarding HVAC equipment and systems.

During the 2021-2023 term, the NH Utilities plan to increase the C&I contractor network statewide: enabling the program to serve more customers in remote, hard-to-reach areas where access to energy efficiency contractors and solutions is sometimes limited. The NH Utilities will continue to offer C&I trainings on advanced technologies and controls to municipal representatives, including building

operators and facility managers. In addition, for the NHSaves C&I programs, the NH Utilities will conduct workforce trainings on high-efficiency equipment and design, including but not limited to: building codes and standards, building above the minimum code, advanced lighting design and controls, refrigeration tuning and controls, and HVAC equipment and systems.

Priority Six: Increase Outreach to Main Streets, Municipalities and Rural Areas

For both the residential and C&I sectors, the NH Utilities will expand efforts to reach customers in hard-to-serve and rural communities, including municipalities, businesses and residents. Part of that strategy will consist of building a community network of energy champions that includes municipal representatives, sustainability groups, energy committees, and economic development commissions. In addition, the NH Utilities plan to expand their main street initiatives and community blitzes to further engage local businesses and community groups.

Priority Seven: Upgrading Data Sharing and Data Tracking Systems

The NH Utilities are currently working to expand and refine the capabilities of their Information Technology ("IT") data sharing, energy modeling and tracking systems. For the residential programs, a new software platform will be deployed in 2020 that will allow the NH Utilities to streamline contractor interactions and provide better energy savings information to customers.

In the December 13, 2018 settlement, Eversource agreed to review further integration of Green Button¹⁴ Connect My Data. Eversource has been investigating the IT needs and costs and the other NH Utilities are also reviewing this avenue for sharing of customer data. Green Button Connect My Data allows third parties to receive and seamlessly combine data from different utilities.

Priority Eight: Implement Effective Active Demand Reduction Strategies

Effective demand reduction strategies can help reduce energy prices and price spikes during summer and winter peak demand. For the 2021-2023 term, the NH Electric Utilities will develop and deploy

¹⁴ The Green Button initiative is an industry-led effort that responded to a 2012 White House call-to-action to provide utility customers with easy and secure access to their energy usage information in a consumer-friendly and computer-friendly format for electricity, natural gas, and water usage. Customers are able to securely download their own detailed energy usage with a simple click of a literal "Green Button" on utility websites. US DOE, "Green Button". Available at: <https://www.energy.gov/data/green-button>.

several Active Demand Reduction (“ADR”) strategies to flatten peak loads, improve system load factors, and reduce costs for electric customers.

The NH Electric Utilities plan to implement two C&I ADR pathways: Interruptible Load and Storage Performance. The Interruptible Load pathway will be technology agnostic and allow customers to earn an incentive based on their curtailment performances. The Storage Performance pathway is a bring-your-own device (“BYOD”) offering for C&I customers with behind-the-meter storage. C&I customers will earn a performance-based incentive for responding to peak demand events initiated, or called, by their NH Electric Utility.



For the 2021-2023 term, the NH Electric Utilities will include three residential ADR pathways: Smart Thermostat, Battery Storage, and Electric Vehicle (“EV”). Smart Thermostat participants will allow their NH Electric Utility (through a third-party) to make brief, limited adjustments to their Wi-Fi thermostats during periods of peak electric demand (i.e., June 1 to September 30). The Battery Storage pathway is similar to C&I Storage Performance: incentivizing customers to discharge stored energy from their batteries in response to a signal from their NH Electric Utility. If implemented, the EV program would be designed to shift the time period when customers charge their EVs to non-peak hours. The NH Utilities will explore this program offering and implement if feasible during the 2021-2023 term.

For more information regarding the NH Utilities’ residential and C&I ADR offerings, see Chapter Five.

Priority Nine: Implementing an Energy Optimization Pilot

Energy optimization is an energy resource framework that combines energy efficiency, demand response, and fuel switching (switching from fossil-fuel combustion systems to electric equipment). As of this draft plan, the NH Utilities are developing an Energy Optimization pilot, based on learnings from pilots in other states and from work done at NHEC.

The pilot will be designed to gather information and test both program design elements and key regulatory questions about how utilities should claim savings for such a program, as noted by the Commission in Order No. 26,322, including:

- Whether or how to claim savings from unregulated fuel (as well as 'negative' electric savings due to load increase) for fuel-to-electric measures;
- Which customers are appropriate to target for such an effort (e.g., based on home characteristics, existing heating fuel source, and heating system types) and whether heat pumps should be offered as a stand-alone measure or as part of broader measure 'bundles' (e.g., including weatherization);
- How best to provide energy optimization-specific workforce trainings; and
- Whether and how an energy optimization approach can contribute to electric system load factor and improve overall energy system resiliency.



The Energy Optimization pilot may leverage existing pathways for incentivizing high efficiency heat pump technologies, or design new outreach efforts depending on the particular population and technologies that are to be targeted. The NH Utilities plan to provide support via multiple engagement channels, including customer education, targeted upstream or midstream incentives, marketing, and financing solutions.

Qualifying heat pump technologies may include but are not limited to: central air-source, ground-source, and water-source heat pumps, ductless mini-split heat pumps, and heat pump water heaters ("HWPHs"). A critical component of the NH Utilities' Energy Optimization pilot will include a broad and promotional outreach effort and training for HVAC and energy efficiency contractors on the benefits of heat pump technologies, how to properly identify buildings for heat pump technology installations,

and the integration of HVAC controls to optimally operate the heat pumps with the building's existing heating source.

A section on the Energy Optimization pilot will be added to the next iteration of the 2021-2023 Plan, as the NH Utilities continue to work with stakeholders and others on this important topic.

Priority Ten: Increase Energy Efficiency Portfolio Savings from Non-Lighting Measures

The NH Utilities have carefully considered and accounted for the significant ongoing changes in the residential and C&I lighting marketplaces in their development of the Draft 2021-2023 Plan. The NH Utilities' decision is to transition energy efficiency portfolio savings away from lighting to non-lighting measures during the 2021-2023 term. Several factors were considered to make this determination, including the federal roll-back of minimum efficiency standards for lighting (see Section 4.1.3 for a full discussion), preliminary results from the Energy Efficiency Baseline and Potential study and other studies conducted in the region (see Section 8.4 for a full discussion), and the need to drive comprehensiveness into energy efficiency projects and capture achievable energy savings.

Despite the federal roll-back of minimum efficiency standards, the lighting market has continued to drive the transition to LEDs in the marketplace. In order to help maintain and accelerate the strong demand for high-efficiency ENERGY STAR LED technologies, the NH Utilities will continue to aggressively support and incentivize energy-efficient bulbs and fixtures for the NHSaves residential programs through the end of 2021. Beginning in 2022 and depending on how the marketplace responds to the relaxed federal standards, the NH Utilities will begin to transition program support to discount retailers focused on reaching the last-to-adopt or hard-to-reach customers.

For the NHSaves C&I programs, the increased emphasis on contractor training and the introduction of tiered incentives is designed to encourage comprehensiveness in energy efficiency projects and increase the share of energy savings from non-lighting measures during the 2021-2023 term.

1.6 Benefits of Energy Efficiency Programs

The NHSaves Programs provide significant value to all customers, both participants and non-participants. As noted in the Executive Summary section, the benefits associated with improving the energy performance of residential and C&I buildings and facilities are numerous and include reduced GHG emissions, direct energy and cost savings, jobs creation, lower municipal spending, reinvestment in local New Hampshire communities, and a variety of other non-energy benefits.

Participation in the NHSaves Programs delivers additional benefits, such as lower asthma rates and other health-related concerns due to improved air quality. In addition, businesses can realize improved performance and productivity due to the installation of high-efficiency equipment, such as LED lighting controls and commercial kitchen equipment. Other non-energy benefits include: increased comfort, reduced maintenance costs, improved building value, and healthier buildings in which homeowners or renters can live.

1.6.1 Direct Energy Savings and Demand Reduction

Since 2002, New Hampshire electric and natural gas customers have installed energy efficiency measures that have saved more than **13** billion electric kWh and **27.7** million natural gas MMBtus, resulting in cumulative customer savings in excess of **\$2.2** billion. Furthermore, the 2019 Independent System Operator-New England ("ISO-NE") Energy Efficiency Forecast¹⁵ found that energy efficiency programs in New England will save over 2,460 MW of peak demand from energy efficiency projects installed between 2020 and 2028. The 2021-2023 NHSaves Programs will save more than **YY** billion electric kWh and **YY** million natural gas MMBtus. In addition, the 2021-2023 NHSaves residential and C&I programs will save **YY** million MMBtus from other fuels, like oil and propane. These energy savings will result in customer cost energy savings of more than **\$YY** million over the lifetime of the measures.

¹⁵ ISO New England, Inc. *Final 2019 Energy Efficiency Forecast*. May 12, 2019. Available at: https://www.iso-ne.com/static-assets/documents/2019/04/eef2019_final_fcst.pdf

1.6.2 Cost Savings

Energy efficiency program participants receive significant direct benefits from energy efficiency programs; however, all customers benefit by offsetting energy consumption through efficiency and conservation. Energy efficiency improvements can defer the costs of building new power plants and are less expensive than new energy generation. According to the US Energy Information Administration (“EIA”), nationwide residential and commercial sector energy efficiency improvements were responsible for partially offsetting the country’s higher growth rates in population, number of households, and commercial floorspace.¹⁶

1.6.3 Environmental Benefits

Energy efficiency programs help reduce energy consumption which reduces the amount of fossil fuels burned by power plants due to lower demand. This reduces GHG emissions that contribute to climate change and air pollution across the region. Since their inception, the NHSaves Programs have helped reduce GHG emissions by more than **YY** million tons, the equivalent of taking **YY** million passenger vehicles off the road for one year. The 2021-2023 NHSaves Programs will lead to a reduction of more than **YY** million tons of GHG emissions, the equivalent of taking **YY** passenger vehicles off the road for one year.

1.6.4 Economic Benefits

Spending on energy efficiency services and technologies support the local workforce in New Hampshire. For every million dollars spent on energy-efficient measures, such as building retrofits or new equipment, 6.2 direct jobs and 2.7 indirect jobs¹⁷ are supported. Using this calculation, the 2021-2023 NHSaves Programs will support **YY** FTEs or **YY** million work hours.

Direct jobs are defined as those that perform energy services or install equipment in a home or a building, such as a home energy auditor, installation contractor, or energy service company. Typically,

¹⁶ EIA. *Annual Energy Outlook 2020*. Available at: <https://www.eia.gov/outlooks/aeo/>.

¹⁷ Pollin, R., Wicks-Lim, J., Chakraborty, S., Hansen, T. *A Green Growth Program for Colorado*. Available at: <https://www.peri.umass.edu/publication/item/1168-a-green-growth-program-for-colorado>.

direct jobs in the energy efficiency industry are located close to where building retrofits and new construction take place, thereby stimulating the local economy. Indirect jobs are defined as those that supply direct-install companies with the equipment needed for building retrofits and construction, such as high-efficiency commercial kitchen equipment, insulation, LED lighting and controls, and refrigeration equipment.

Across the state, the NH Utilities work with approximately 1,200 architects, builders, distributors, electricians, energy auditors, engineers, energy service companies, retailers, and other energy efficiency professionals. As noted in Priority Five, the NH Utilities are developing a regional comprehensive plan to facilitate workforce development strategies for the energy efficiency industry.

1.7 2021-2023 Program Goals

Note: Program goals will be included in the next iteration of the 2021-2023 Plan.

1.8 Energy Efficiency Program Funding

1.8.1 Electric Energy Efficiency Funding

There are three main funding sources for the NHSaves electric programs: (1) a portion of the SBC that is applied to the electric bills of all customers receiving delivery service from one of the NH Electric Utilities; (2) a portion of the Regional Greenhouse Gas Initiative ("RGGI") auction proceeds; and (3) proceeds earned by each of the NH Electric Utilities from ISO-NE for participation in ISO-NE's Forward Capacity Market ("FCM").

All electric utility FCM revenues are derived from the NH Utilities' energy efficiency programs and support NHSaves electric programs. Any balance of funds, positive or negative, from prior program years is carried forward to future years. This includes interest applied on the monthly balance at the prime rate.

The Commission's staff provides an estimate of RGGI revenue figures to be dedicated to the energy efficiency programs. ISO-NE's FCM revenues are estimated based on the market price for passive

demand savings and the obligation of each NH Electric Utility during the two commitment periods covered by calendar years 2021-2023. These figures differ by each NE Electric Utility and can be subject to adjustment based on actual performance.

Note: Funding tables will be included in the next iteration of the 2021-2023 Plan.

1.9 Natural Gas Energy Efficiency Funding

The NHSaves natural gas programs are funded by a portion of the LDAC, which is applied to natural gas customers' bills for the NH Natural Gas Utilities. Similar to the NHSaves electric programs, the balance of funds from prior program years is carried forward to future years, including interest earned on monthly balances applied at the prime rate.

The NH Natural Gas Utilities determine the overall budget requirements to meet the required energy savings targets. LDAC rates are then set by program sector by each of the NH Natural Gas Utilities based on revenue needs and sales forecasts.

Note: Funding tables will be included in the next iteration of the 2021-2023 Plan.

1.10 Annual Program Budgets

Note: Budget tables will be included in the next iteration of the 2021-2023 Plan.

Budget allocations by sector are informed by the source of the funds, and each utility's forecasted delivery sales to each customer sector. The Home Energy Assistance (income-eligible) program budget is not less than 17 percent of each NH Utility's total portfolio budget exclusive of any unspent income-eligible program funds from the prior year.

There are several factors that may impact budget levels. Any difference between the actual spending in each program year and the actual energy efficiency funds received (which are based on customer usage) is carried forward into future year program budgets. This value may be positive or negative. Monthly interest at the prime rate is applied to fund balances. Funding estimates from the SBC and

LDAC are based on each of the NH Utility's sales projections. Actual sales may differ, resulting in more or less SBC or LDAC revenue available for energy efficiency programs. In addition, RGGI and FCM proceeds are estimated and are likely to differ from actual revenues.

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Chapter Two: Three-Year Planning Structure

The NH Utilities are proud to submit their draft second triennial plan to the EESE Board in furtherance of New Hampshire’s EERS. The purpose of this chapter is to outline the NH Utilities’ proposal to effectuate a true triennial program period rather than three annual periods, each distinguished by a distinct planning and settlement effort.

This chapter describes the rationale behind the NH Utilities’ proposal and offers a mechanism for plan modifications due to market or program design changes, evaluation findings, or significant changes to revenues or expenditures. The NH Utilities assert that a true three-year plan will result in a more cost-effective and efficient process for the NH Utilities and stakeholders by emphasizing long-term goals and three-year budgets, rather than a short-term focus on annual objectives.

2.1 A Three-Year Plan

For the Draft 2021-2023 Plan period, the NH Utilities propose to utilize a three-year plan, with a 36-month operating structure, in which the program budgets, energy savings goals, and planned program designs are approved by the Commission for the entire triennium, rather than for each year of the term. Once approved by the Commission, the Draft 2021-2023 Plan will only be amended under certain limited circumstances, as proposed below in Section 2.1.6.

A true triennial plan will eliminate several barriers facing customers, contractors, installers, utility staff, and other local and regional stakeholders. By extending the period of time over which the NH Utilities are able to execute their plan and meet the goals agreed to under the EERS, programs will be able to expand and contract with economic conditions, seasonal anomalies, and the energy efficiency marketplace. The NH Utilities and their partners will be able to develop and execute strategies over a longer period, allowing them to capture energy savings when and where they are available and test promising new ideas that a one-year performance horizon makes impractical. With a three-year

structure, programs and offerings can be ramped up or down based on market needs, and resources can be deployed when opportunities arise rather than being dictated by annual budgets. Three-year budgets will minimize disruption in the marketplace caused by programs opening and closing on a calendar-year basis and maximize efficient use of customer funds.

Permitting budget flexibility across program years will also allow the NH Utilities to more effectively execute multi-year commitments with large commercial, industrial, and municipal customers, which the utilities believe will result in sustained long-term comprehensive energy savings.

Prior to implementation of the EERS, the NH Utilities filed biannual energy efficiency plans, which were updated annually. During the course of the 2018-2020 Plan, the NH Utilities filed two plan update filings (2019 Plan Update and 2020 Plan Update). These annual filings and plan updates require an enormous amount of time and resources for the NH Utilities to prepare beginning in the early summer of the preceding year. Following the filing of a plan or plan update, the NH Utilities and numerous other parties including Commission Staff, have participated in public input and stakeholder sessions, as well as a four-month adjudicative proceeding including tech sessions, discovery and settlement, and culminating in hearings before the Commission. An EERS plan that truly spans a three-year time period will reduce the time and resources spent in adjudicative proceedings for all parties. The NH Utilities will still be required to notify the Commission or file a mid-term modification for necessary or unanticipated updates, but such updates will be focused on a particular topic or challenge, rather than opening up the entire statewide Energy Efficiency Portfolio.

2.1.1 Savings Goals

In a triennial plan structure, energy savings targets will be set for the entire three-year period. Each program year of the term will have a target energy savings goal, and the NH Utilities will continue to provide a detailed report on their progress toward that target each quarter. This annual goal, however, shall be considered a directional indicator. The primary goal is achievement of the overarching three-year targets. The final calculation of achievement toward the term's energy savings, benefits goals, and the resulting Performance Incentive ("PI") earned will take place following the conclusion of the third

year of the triennium, in a comprehensive term report to be filed by each NH Utility with a statewide summary.

2.1.2 Budgets

Each NH Utility will develop individual program budgets for each program year, as well as for the term as a whole. Any budgeted but underspent funds from one year will be carried over into the next program year (until the conclusion of the three-year term) but would remain in the relevant sector (non-income eligible residential, and C&I), or, in the case of income-eligible, the relevant program. Overspending in the first two program years would reduce the remaining funds available in the final program year. The maximum that can be expended by each of the NH Utilities within the three-year period without separate Commission approval shall remain at 105 percent of the approved triennial budget.

2.1.3 Funding

The three-year plan includes estimated customer bill and rate impacts by utility for each year of the triennium. Commission approval of the triennial plan will constitute approval of each of the NH Utility's three-year term budget, as well as the non-binding target budget for each program year within the triennium. Each year, each of the NH Electric Utilities will propose, in separate rate filings with the Commission, an SBC rate to raise the revenues required for the following year's program budget. The model for this proposal is the LDAC charges currently utilized by the NH Natural Gas Utilities, wherein energy efficiency budgets are developed and approved in the energy efficiency docket, while the LDAC rate itself is considered and approved in Liberty's and Unital's utility-specific Cost-of-Gas filings.

The NH Electric Utilities propose to file separate SBC filings with the Commission based on the funding needed to execute their individual portfolio and sector energy efficiency programs. This methodology will streamline the manner in which actual collections and expenditures are reconciled for each NH Electric Utility.

An important element of this proposal is that, as with the natural gas energy efficiency programs, each NH Electric Utility will set a distinct SBC rate for each sector (Residential and C&I), based on the

approved annual energy efficiency budget for that sector in each program year. As the opportunities for energy efficiency evolve in the marketplace, the need for distinct SBC rates for the residential and non-residential sectors becomes paramount. In order to achieve increasingly ambitious EERS goals for kWh savings and demand reduction, it is imperative that the NH Utilities have the flexibility to collect revenues at different rates between the sectors.

A relatively high percentage of the investment in the residential sector results in fuel-neutral energy efficiency savings (i.e., heating and water heating savings from weatherization programs, which is typically reducing fossil fuel use, not electricity). This leads to a high cost to achieve kWh savings in the residential sector relative to the C&I sector. Maintaining an identical SBC rate for residential and C&I customers could lead to residential rates that are unnecessarily high, and which contribute relatively little to the EERS' electricity savings goals. This disconnect will be exacerbated as the opportunity for claimable energy efficiency savings from residential lighting largely disappears over the coming term as a result of market transformation to LED technology.

A review of nearby jurisdictions shows that setting distinct energy efficiency rates for each customer sector is the norm. By following suit, the NH Electric Utilities will be able to better target electric ratepayer funding, capturing electric savings opportunities where they exist in order to achieve increasingly ambitious EERS goals.

Pursuant to state legislation¹⁸, at least 20 percent of all SBC funds for energy efficiency shall be expended on income-eligible energy efficiency programs. Additionally, the NH Utilities have committed to budgeting and spending at least 17 percent of the total portfolio investment on income-eligible energy efficiency programs. Other than the revenues needed for the income-eligible programs (which are funded by both sectors, relative to revenues), SBC and LDAC funds will continue to be dedicated to the sector from which they are collected.

¹⁸ NH Rev Stat § 374-F:3 (2015). Available at: <http://www.gencourt.state.nh.us/rsa/html/XXXIV/374-F/374-F-3.htm>.

The electric energy efficiency programs will continue to receive and rely on revenues from two other sources: the proceeds from each utility's participation in ISO-NE's FCM and the state's participation in RGGI. FCM revenues are unique to each of NH Electric Utility and are based on the amount of capacity each company has bid into the market over the past decade. Revenues from RGGI have been relatively fixed for the past several years based on legislation that limits to \$1 per allowance the amount of funding made available to the energy efficiency programs. Further restrictions on how the RGGI revenues can be spent limit most funding to the Municipal and Home Energy Assistance programs. Actual and expected revenues from these two streams, as well as interest earned on balances, will be taken into account by each NH Electric Utility when proposing each year's SBC rate.

2.1.4 Performance Incentive

Under the proposed three-year planning structure, each NH Utility's PI will be accrued during the year based on planned achievement in that program year. Subsequent to completion of each of the first two years of the three-year plan, each NH Utility will complete a preliminary PI calculation based on actual costs, savings, and benefits for the program year. At the end of the third year of the three-year term, each utility will perform a final calculation of earned PI, based on their actual achievement compared to the three-year term goals. After the Commission's final audit is complete, the resulting PI for the entire term will be considered approved, and subsequent SBC filings will adjust rates to account for any over or under performance.

The NH Utilities propose to retain the new PI framework approved by the Commission in Order 26,323 for the 2021-2023 term. However, the calculation of the Benefit-Cost Ratio ("BCR") will be amended to reflect the new Granite State Cost Test, which removes customer costs and non-energy benefits from the calculation of the BCR.

During the timeframe of the PI Working Group activity and during 2020, the ADR offerings are in a demonstration phase; thus, there is not an ADR element to the PI framework. In 2021-2023, the ADR offerings will shift from demonstration projects to full-fledged programs; those NH Utilities that offer an ADR program will include an ADR kW element as part of their PI as was anticipated by the PI Working Group. This element will be based on the actual spending for the ADR programs, as well as

actual kW reduced and benefits realized, compared to the Draft 2021-2023 Plan. The target PI for the ADR portion will match the rest of the PI at 5.5 percent of actual expenditures, with a threshold of 65 percent and a cap of 125 percent. Details on how to estimate the amount of kW reduction that will be achieved are still being developed and therefore estimates of the savings and resulting benefits will be presented in the July 2020 filing.

2.1.5 Reporting

Periodic reporting over the course of 2021-2023 term will ensure continued transparency into the progress of the NH Utilities in achieving the proposed goals and provide an opportunity for New Hampshire's regulators and stakeholders to provide feedback on the quickly evolving market for energy efficiency. The NH Utilities will continue to produce a joint Quarterly Report 60 days after the end of each quarter. Each year, no later than June 1, a fully vetted statewide Annual Report will be filed with the Commission, detailing the progress made by the NH Utilities individually and as a group toward achieving the three-year goals. This joint Annual Report will include calculations of the estimated PI earned that year for each of the NH Utilities.

Each year, the NH Utilities will also file or publish on-line an updated annual version of the following year's Technical Reference Manual ("TRM"), reflecting prospective changes to savings assumptions that will take effect on January 1 of the following program year based on evaluation findings, marketplace changes, emerging technologies, changing federal and state regulations and building code standards, and other pertinent information. This document will be overseen by the Evaluation, Measurement, and Verification ("EM&V") Working Group and will strive to include consensus-based assumptions for all measures and offerings included in the NH Utilities' programs.

2.1.6 PUC Notification and Mid-Term Modifications

While a true three-year plan will lead to improved continuity of programs, flexibility, and minimization of time spent in adjudicative proceedings, some changes may necessitate mid-course corrections that require adjustments to the NH Utilities' approved plans. The NH Utilities propose two mechanisms for amending the term plan based on the significance of the change(s) requested. The first mirrors the

current practice of alerting the Commission and stakeholders regarding relatively modest changes in program budgets, program design or delivery, or measure offerings. The second type of amendment will require the NH Utilities to file a Mid-Term Modification, which the Commission must approve in order for the proposed change to take effect.

1. Circumstances Requiring Notification to the Commission:

- The sunsetting of a program or offering.
- The transition from a pilot offering to a full offering that does not trigger one or more of the conditions requiring a Mid-Term Modification.
- An annual update to the TRM, which includes modifications to measure level assumptions (e.g., measure life, gross savings, in-service rates, net-to-gross factors, load shape, coincidence factors, algorithms, etc.).

2. Circumstances Requiring a Mid-Term Modification and Approval by the Commission:

- Inclusion of a new program or significant offering (by one or more of the NH Utilities).
- Increase in the proposed budget for a sector of more than ten percent of the approved term budget for that sector (requiring a concomitant increase in the budget for income-eligible programs).
- A change to the originally planned and approved NH Utility portfolio benefits or primary energy savings (kWh or summer kW for NH Electric Utilities, MMBtu for NH Natural Gas Utilities) greater than ten percent in either direction resulting from:
 - an update to the Avoided Energy Supply Components study;
 - a change in the annual inflation rate or prime rate;
 - evaluation findings; or
 - significant and demonstrable changes to the marketplace, or other circumstances outside of the NH Utility's control.

- In the event that there are substantial changes due to circumstances outside of the NH Utility's control, the Mid-Term Modification may include a request and justification for approval of an adjustment to one or more of the term goal(s).

Chapter Three: NHSaves C&I Energy Efficiency Programs

Since 2002, the NH Utilities have implemented C&I programs to help improve the efficiency of small and midsize businesses, municipalities, and large C&I customers across New Hampshire. The NHSaves C&I programs are designed to help businesses and municipalities reduce operating costs, defer the need for additional generation on the electrical grid, protect the environment through reduced electricity, natural gas, and fossil fuel consumption, purchase high-efficiency equipment and technologies, and increase productivity.

3.1 Overview

In addition to serving customers, the NHSaves C&I programs collaborate with a mature and robust network of stakeholders, including but not limited to: energy efficiency contractors, architects, developers, distributors, manufacturers, retailers, and others. The NH Utilities provide education, incentives, design and technical assistance, and workforce development opportunities to promote investment in energy-efficient technologies and designs in C&I buildings and facilities.

For the 2021-2023 term, the NH Utilities are focused on scaling up energy savings and program participation for the NHSaves C&I programs. The NH Utilities will support these goals by expanding their outreach to towns and business customers, incentivizing emerging energy-efficient technologies, ensuring convenient customer access to capital, developing an enhanced workforce development strategy, and encouraging customer participation through standard offer marketing pieces for target C&I market segments and end-use equipment.



Through market research and data analytics, the NH Utilities can identify what financing mechanisms, incentives, and market actions are needed to convince a C&I customer or market segment to invest in energy-efficient equipment and process improvements. Over the next three-year period, the NH Utilities will continue to utilize market research and customer insights gleaned from data analysis to identify key C&I segments and customers and deliver packaged marketing and incentive solutions tailored to their needs. During the 2021-2023 term, the NH Utilities will also offer standard offer marketing pieces for targeted market segments and end-use equipment.

The NHSaves' C&I programs are continuously evaluated by independent third-parties to determine how processes, procedures, energy savings calculations, and incentives can be improved. Once these evaluations are completed, the NH Utilities review the findings and recommendations to determine how they can improve the delivery of the C&I programs. The flexibility in design allows the NH Utilities to respond quickly to changing codes and standards, customer demand, economic conditions, emerging technologies, market transformation, and new federal and state laws.

3.1.1 2021-2023 C&I Program Priorities

For more than 20 years, the NH Utilities have designed and delivered valuable energy efficiency services to municipalities, small businesses, commercial entities, and industries across the state. The primary focus of the NH Utilities during the 2021-2023 term is to tailor energy efficiency solutions to the customer. Each C&I customer's business needs, energy consumption, on-site technical expertise in energy-efficient technologies and design, and access to capital are varied and unique. Different market segments, such as municipal buildings, convenience stores, manufacturers, and ski resorts, demand different solutions that do not fit into a one-size-fits-all approach.

To realize investment in energy-efficient technologies and building design the 2021-2023 term emphasizes the following C&I program priorities.

- 1. Achieve Cost-Effective and Comprehensive Energy Savings.** The NH Utilities will continue their long-term push to motivate C&I customers and contractors toward implementing cost-effective, comprehensive projects at their facilities and buildings. To promote

comprehensiveness, the NH Utilities may implement a tiered incentive approach for all C&I programs to encourage multi-measure projects that move beyond common lighting upgrades.

- 2. Scale Up to Deliver Increased Savings While Stimulating Market Transformation.** During the 2021-2023 term, the NH Utilities will look to develop strategic initiatives and support emerging technologies in the marketplace to create market demand for energy-efficient products and building design.
- 3. Expand Reach of Programs by Serving More Customers.** The NH Utilities will expand their efforts to reach hard-to-serve and rural small businesses, municipalities, and large C&I enterprises throughout the 2021-2023 term. The Small Business Energy Solutions and Municipal programs' turnkey direct-install pathways will support Main Street initiatives and community blitzes targeting microbusinesses, small municipal accounts (libraries and town halls), and downtown areas to engage C&I customers in energy efficiency efforts.
- 4. Deliver Excellent Customer Experience.** The NHSaves Programs provide great opportunities for the NH Utilities, as trusted entities within the state and local communities, to engage customers in energy efficiency and deliver excellent customer experience. The NH Utilities have refined and streamlined the C&I programs' design for the 2021-2023 term; allowing them to deliver packaged marketing and tailored solutions to New Hampshire's businesses and municipalities.
- 5. Encourage Customer Participation with "Standard Offer" Information.** For the 2021-2023 term, the NH Utilities will create standard offer marketing pieces, such as sell sheets and presentations, specifically developed for target C&I market segments and end-use equipment. Standard offer incentives will include but not be limited to the following end-use equipment: compressed air, industrial boilers, LED fixtures and controls, motors, retro-commissioning, VFDs and controls, and low-energy snowmaking guns. These tailored marketing collateral packages will make it easier for customers to understand potential incentives, energy-efficient measures, and other energy-saving opportunities.

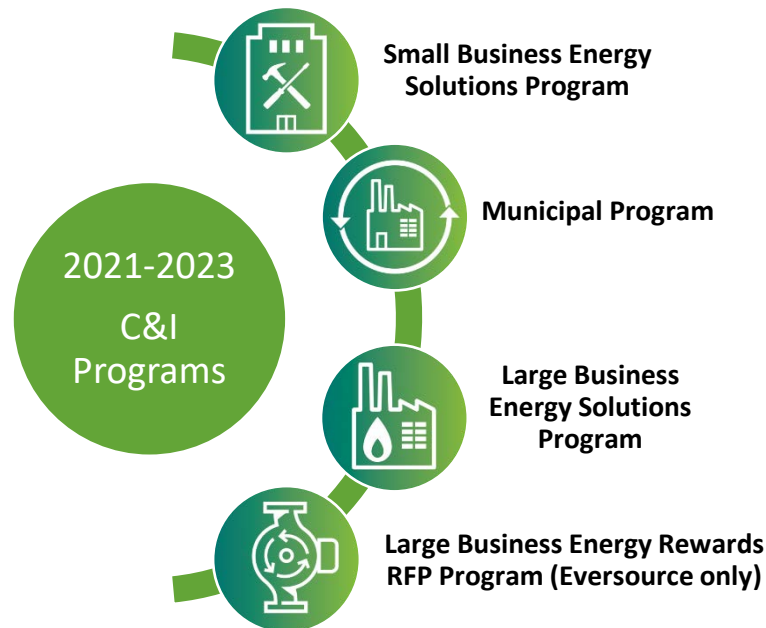
The NH Utilities have extensive expertise in effectively implementing C&I programs and understand the target markets, their end-use systems and equipment, participation barriers, and market actions (i.e., trade ally networks). The creation of a targeted and streamlined presentation of incentive options will encourage additional participation in the C&I programs.

- 6. Engage with Stakeholders to Increase Customer Participation.** For the Municipal program, the NH Utilities will increase their collaboration with New Hampshire’s towns and cities by building a community network of energy champions that includes municipal representatives, sustainability groups, energy committees, and economic development commissions. The NH Utilities plan to expand their main street initiatives and community blitzes to further engage local businesses and community groups.
- 7. Expand Product and Service Provider Infrastructure.** During the 2021-2023 term, the NH Utilities will continue to expand their point-of-sale (midstream) rebate offerings by working with distributors and equipment manufacturers to monitor and evaluate new and emerging technologies. In collaboration with regional distributors, the NH Utilities will conduct periodic refreshes and introduce technologies to align their efforts with customer demand and new consumer products.
- 8. Stimulate Customer and Other Private Investment.** To encourage C&I customer investment in energy efficiency projects, the NH Utilities will continue to explore and evaluate financing mechanisms throughout the 2021-2023 term. For the Small Business Energy Solutions program, the NH Utilities will look to establish a permanent source of capital for financing energy efficiency projects.

3.1.2 C&I Programs

The NH Utilities have three statewide C&I programs that deliver vital energy efficiency services, technical assistance, and incentives to New Hampshire’s industrial, large commercial, municipal, and small business customers. Figure 3-1 details the 2021-2023 NHSaves C&I programs.

Figure 3-1: 2021-2023 C&I Programs



- Small Business Energy Solutions Program.** Small businesses are the backbone of the state’s charm and economic development. This retrofit and new equipment & construction initiative offers technical expertise and incentives to small business customers who lack the dedicated staff, time, or resources to address energy costs. This program allows small business owners to achieve energy savings while continuing to invest their time and resources in customer service, creativity, and the business market they’re operating in.
- Municipal Program.** This NHSaves energy efficiency solution was established by legislation and directs the NH Electric Utilities to provide technical assistance and incentives to municipalities and school districts to help them identify energy-saving opportunities and implement projects. The NH Natural Gas Utilities also service municipalities; however, they do so through their Small Business Energy Solutions and Large Business Energy Solutions programs. Energy efficiency programs help town and school officials reduce their buildings’ high energy costs, often a large component of their operations and maintenance budgets: allowing these entities to reduce operating budgets or redirect the savings toward other priorities.

- **Large Business Energy Solutions (Retrofit and New Equipment & Construction) Program.** The program offers technical services and incentives to assist large C&I customers who are retrofitting existing facilities or equipment, adding or replacing equipment that is at the end of its useful life, or constructing new facilities or additions.

In addition to the three statewide programs, Eversource implements a Large Business Energy Rewards Request for Proposal (“RFP”) program.

- **Large Business Energy Rewards RFP (“Energy Rewards”) Program.** The Energy Rewards program encourages customers to propose energy efficiency projects through a competitive solicitation process.

3.1.3 Incentives

The NH Utilities are responsible for managing their overall energy efficiency budgets and for achieving an equitable distribution of program funds across customer types and market segments. To move customers to action once opportunities have been identified, the NH Utilities offer various financial incentives and resources that are calibrated to match customer investment criteria and reduce barriers to adoption, while maintaining cost-effectiveness and minimizing costs of acquisition. Each of the NH Utilities may establish caps on the level of incentives offered by that utility to serve as guideposts for disbursing incentives.

3.1.4 Workforce Development

To scale up participation and drive deeper energy savings for the 2021-2023 C&I programs, the NH Utilities must provide and support a strategic workforce development plan to educate C&I program contractors, customers, and efficiency partners regarding the benefits and availability of high-efficiency technologies and NHSaves program offerings. The NH Utilities recognize that contractor education and workforce development are imperative to meet their objectives during the 2021-2023 term. In addition, the NH Utilities plan to increase the C&I programs contractor network statewide enabling the program to serve more customers in remote, hard-to-reach areas where access to energy efficiency contractors and solutions are sometimes limited.

Here are some targeted workforce development efforts for the C&I programs:

- **Small Business Energy Solutions Program.** Maintaining close connections with Small Business trade allies, through partner meetings and other outreach, ensures the NH Utilities hear and act upon feedback from the contractor community that serves small and mid-size businesses.

Combined with enhanced workforce development and contractor education outreach, the NH Utilities hope to engage small and midsize business customers during the 2021-2023 term. These efforts should increase the program’s efficacy and comprehensive energy savings over the next three-year period.



- **Municipal Program.** Through their extensive outreach and work with municipalities, the NH Utilities recognize the benefit of providing additional training and resources to municipal facility managers regarding energy-efficient construction, design, emerging technologies, and operations. During the 2021-2023 term, the NH Utilities will continue to offer trainings regarding advanced energy-efficient technologies and controls and will explore offering tuition reimbursement opportunities to municipal representatives for attending trainings. In addition, the NH Utilities will develop and distribute project development timelines, such as municipal energy action plans or playbooks, to assist municipal representatives and staff in developing and implementing holistic, strategic energy management projects.
- **Large Business Energy Solutions.** During the 2021-2023 term, the NH Utilities will continue to conduct workforce trainings regarding energy-efficient technologies, building codes and standards, and building above code (code plus). The number of specialized contractor trainings will be increased to promote the C&I programs’ push for more comprehensive energy projects and to increase the adoption of new and emerging energy-efficient technologies. Workforce trainings will include but are not limited to: advanced lighting design and controls, HVAC equipment and systems, and refrigeration tuning and controls.

The NH Utilities also plan to continue to collaborate with HVAC contractors and to increase training opportunities regarding HVAC system design, operations, and performance. In addition, the NH Utilities will expand their refrigeration contractor trade ally network during the 2021-2023 term. This effort will help increase the number of refrigeration contractors who understand high-efficiency technologies and controls and the comprehensiveness of large C&I projects.

3.1.5 Marketing and Outreach

During the 2021-2023 term, the NH Utilities will create standard offer marketing collateral packages, including sell sheets and presentations designed to deliver C&I customers targeted information regarding energy-efficient incentive offerings that can help their business market segment realize energy savings, improve productivity, and reduce operational and maintenance costs.

In addition to the creation of the standard offer marketing collateral, the NH Utilities will market the C&I programs through a variety of proven marketing channels, both as individual companies as well as through a statewide marketing approach. These channels include but are not limited to: the website (NHsaves.com), program promotional materials, direct mail, distributor engagement, e-mail, active social media campaigns, paid digital advertising, billboards, radio/TV/music streaming advertisements, trade shows, public relations efforts (statewide and utility-driven), hosting or providing speakers for trainings, forums, and events, and providing content for partners' blogs, newsletters, and websites.

3.2 Small Business Energy Solutions Program

3.2.1 Program Objective

New Hampshire’s energy efficiency solution for small and midsize businesses is the Small Business Energy Solutions program. This is both a turnkey retrofit, and new equipment & construction initiative that provides small commercial customers with technical expertise and incentives to improve the energy performance of their business and facilities.

Many small business owners face market barriers that limit or prevent them from pursuing energy efficiency opportunities. These barriers include a shortage of capital resources, lack of staff dedicated to operations and facility issues, time, expertise or awareness of energy efficiency programs and opportunities, and splitting incentives between a building owner and their tenants. The Small Business Energy Solutions program helps identify electric and natural gas-saving opportunities and guides business owners through the energy efficiency process. This allows small business owners to focus on customer service, entrepreneurship, and creating a competitive niche within their market segments.

3.2.2 Target Market

Small and midsize businesses are the target market for the program and represent **97** percent of the NH Utilities’ C&I customer accounts. However, each business has diverse energy needs and priorities. The small and midsize business market segment includes, but is not limited to: convenience stores, dry cleaners, mom and pop shops, office buildings, private schools, repair and professional services, restaurants, retail stores, and commercially or master-metered multi-tenant facilities.

Throughout the 2021-2023 term, the NH Utilities will continue to utilize data analytics to identify underserved small business market segments and determine if new measures or tailored solutions should be employed to engage them in energy efficiency programs. These include small businesses



that are in rural or hard-to-serve markets where energy efficiency contractors and program outreach have traditionally been limited.

The Small Business Energy Solutions program serves small energy users; customers who use less than 200 kW demand (electric) or 40,000 Therms (natural gas). The program helps provide efficiency-related incentives and technical expertise to small C&I customers who are replacing failed equipment, addressing aging, inefficient equipment and systems, or who are planning new construction or major renovation projects.

3.2.3 2021-2023 Priorities

During the 2021-2023 term, the NH Utilities will expand the design of the Small Business Energy Solutions program to drive electric and natural gas energy savings and develop multiple pathways to engage the hard-to-reach small business customer in energy efficiency. This includes the following priorities:

Developing a Comprehensive Energy Efficiency Approach

The NH Utilities plan to deliver tailored, comprehensive solutions to small business customers and drive electric and natural gas savings beyond lighting measures. This will be a long-term effort testing various channels, incentive models, and strategies to identify what motivates customers and contractors toward implementing cost-effective, comprehensive electric and natural gas saving projects. First, the NH Utilities will investigate cost-sharing comprehensive audit expenses with small business customers. Currently, the audit's cost is seen as a barrier by some small business customers when they explore holistic energy efficiency solutions.

Energy efficiency programs use incentives to encourage customers to install high-efficiency equipment and systems, rather than inefficient, low-cost units. To encourage comprehensiveness in the Small Business Energy Solutions program, the NH Utilities are exploring a tiered-incentive approach for the 2021-2023 term. The NH Utilities' tiered incentive design would package rebates based on delivered energy savings of an entire project, rather than the current prescriptive approach of incentivizing individual energy-efficient measures. To complement this approach, the NH Utilities will increase the

number of contractor trainings regarding non-lighting measures, including HVAC equipment and systems.

Financing

Financing is vital to increasing program participation and encouraging comprehensive energy efficiency projects in the small business community. During the course of the 2018-2020 Plan, the NH Utilities developed multiple new financing offerings for small business customers, including on-bill and third-party options. Throughout the 2021-2023 term, the NH Utilities will continue to utilize these offerings and explore way to leverage additional capital for financing energy efficiency projects completed through the Small Business Energy Solutions program.

Incentivizing New Energy Efficiency Measures

With the diverse priorities of the state's small businesses, the NH Utilities recognize that varied business operations and needs require different equipment, systems, and "on ramps" to participate in energy efficiency. Throughout the 2021-2023 term, the NH Utilities will introduce new and emerging technologies to diversify the energy efficiency measure portfolio, including products such as high-efficiency VFDs for distribution systems, heat recovery ventilators ("HRVs"), and energy recovery ventilators ("ERVs"). The NH Utilities will look to align the state's energy-efficient product qualifications with other New England and neighboring states to create regional continuity.

For the 2021-2023 term, the NH Utilities will expand the program's point-of-service (midstream) distributor rebates offered to include commercial kitchen equipment (i.e., dishwashers, fryers, griddles, and ice machines) and HVAC equipment (i.e., HPWHs). The NH Utilities will work to provide consistent qualified product offerings across all New England states and will also partner with distributors, equipment manufacturers, and the Massachusetts & Connecticut Technical Assessment Center to monitor and evaluate emerging energy-efficient technologies. This continuous review will ensure that the NH Utilities are incentivizing up-to-date, energy-efficient solutions tailored to optimizing building performance and ensuring that distributors are stocking high-efficiency equipment.

Outreach Initiatives

Small businesses are the backbone of New Hampshire’s economy and vital to the local communities they serve. In an effort to extend the reach of the Small Business Energy Solutions program, the NH Utilities will continue to employ outreach initiatives, such as main street initiatives and community blitzes, to meet small and midsize C&I customers where they conduct business.

These outreach initiatives are collaborations between the NH Utilities and the cities and towns they serve to create small business communities engaged in saving energy. These efforts provide targeted communications and direct outreach to customers explaining the Small Business Energy Solutions program, its benefits, and what customers can do to begin their energy efficiency journey. Participating small business customers receive energy assessments and recommended energy efficiency solutions tailored to their business’ needs, priorities, and energy-consuming equipment and practices. These marketing and outreach efforts engage small business customers in NHSaves Programs and efforts, thereby helping Main Street reinvest in employees, business operations, and the local economy.

3.2.4 Program Design

As noted in the C&I program priorities (Section 3.1.3), during the 2021-2023 term, the NH Utilities will create standard offer marketing collateral to provide targeted small business market segments with information regarding incentives for their market’s end-use systems and equipment. These sell sheets and presentations will identify tailored solutions to the multiple target markets within the small business community. For example, a food and grocery store sell sheet would identify the incentives for commonly-incentivized measures, such as high-efficiency lighting, HVAC systems, and refrigeration equipment.

In addition, the NH Utilities will focus their efforts on developing the state’s workforce to increase program participation and encourage comprehensive, cost-effective efficiency projects. The Small Business Energy Solutions program is dependent upon a well-trained and customer-oriented contractor network to promote its benefits, energy-efficient measures, and identify tailored solutions to the small business community.

Incentives

The program provides incentives to customers to encourage the implementation of cost-effective, energy efficiency projects. For the 2021-2023 term, the Small Business Energy Solutions program will continue to develop and refine measure initiatives over time. There are two types of incentives for energy-efficient measures—prescriptive and custom. **Prescriptive incentives** are fixed-price rebates for pre-qualified energy efficiency measures and are designed to streamline the process for customers who are installing common technologies.

Custom incentives are flexible and allow customers to determine if a non-standard (not on the prescriptive list) energy efficiency measure is cost-effective. These types of incentives rely on engineering calculations to evaluate cost-effectiveness and determine energy savings. As these incentives are more customer-centric, custom rebates allow for more comprehensive energy efficiency projects that are tailored and unique for a small business. Custom projects are reviewed on a case-by-case basis and may require a technical study to present the planned energy savings and project costs.

For the 2021-2023 term, the NH Utilities may implement a tiered incentive level design for comprehensive energy efficiency projects with multiple measures. In addition, the Small Business Energy Solutions program may offer higher incentive levels for small microbusinesses, nonprofits, or customers in rural areas to broaden the NH Utilities' reach into hard-to-serve and underserved markets.

Measures

Throughout the 2021-2023 term, the NH Utilities will continuously look for new energy efficiency measures to incentivize through the Small Business Energy Solutions program. This will include reviewing new and emerging technologies, such as controls, evaluated by the Massachusetts and Connecticut Technical Assessment Center.

The program will provide incentives for prescriptive high-efficiency equipment, including, but not limited to: air compressors, commercial kitchen equipment (e.g., dishwashers and ice machines), electric HVAC equipment (e.g., heat pumps and unitary air conditioners), LED lighting, lighting controls,

motors, spray rinse valves, variable speed drives (“VSDs”), water heating equipment, and Wi-Fi thermostats.

Throughout the three-year plan, the NH Utilities will pursue more comprehensive projects that look at energy efficiency as a long-term journey for the small business customer. This new approach will include a tiered incentive structure encouraging the installation of non-lighting measures in small business customers’ buildings and facilities. Custom measures will include, but are not limited to: energy management systems, insulation and air sealing, integrated air compressors, specialized equipment (e.g., polymer bead washing machines), and weatherization measures.

Multiple Program Pathways

The Small Business Energy Solutions program is designed to provide hard-working small business owners with multiple pathways to engage in energy efficiency. These options allow the NH Utilities to broaden their reach to the different market segments, business sizes, and customer types that fall under the “small business” umbrella. Whether a small business is replacing failed or end-of-life equipment, has aging, inefficient equipment and systems, or is planning for a major renovation or new construction project, there is a program option allowing customers to choose an energy-efficient solution designed for them. The program’s pathways include turnkey direct-installations, customer-directed installations, and midstream rebates.

Turnkey direct installation is the program’s simple, easy-to-use pathway that removes the initial barriers to energy efficiency (e.g., time, shortage of capital resources, and expertise or awareness of energy efficiency opportunities) and delivers solutions to small business customers. Professional trade ally contractors perform an initial assessment of the small business and its existing equipment. Then, the contractors recommend energy-efficient improvements, and directly install customer-approved measures, including, but not limited to: commercial kitchen equipment, hot water-saving measures, LED lighting and controls, programmable thermostats, refrigeration measures, spray rinse valves, and weatherization measures.

As program administrators, the NH Utilities establish the pricing of energy-efficient measures, approve comprehensive custom projects, review energy savings proposals, and issue incentives. Contractors are paid directly for the incentive portion of approved energy efficiency projects: ensuring upfront costs are not a barrier to small business customer participation. The NH Utilities and contractors work with business owners to guide them through the program's process, determine which prescriptive and custom measures can be installed, and assess how each business can optimize its facility's energy performance. In addition to routine marketing efforts, the NH Utilities promote the Small Business Energy Solutions program through main street initiatives and community blitzes. To streamline and increase participation, the NH Utilities also encourage **customer-directed installations** of energy-efficient equipment through prescriptive incentives for common, pre-qualified measures.

Midstream (point-of-sale) rebates are incentives that encourage distributors to stock and promote energy-efficient equipment and systems, including, but not limited to HVAC, commercial kitchen, and water heating equipment. The midstream rebate approach is an effective way to impact the broader marketplace and influence what distributors purchase and make available throughout their product inventory. Midstream rebates increase the availability of energy-efficient products in the marketplace, streamline the transaction process for the customer (i.e., no rebate forms), and play a critical role in encouraging program participation and increasing energy savings.

3.2.5 Program Budget and Goals

Note: Program budgets and goals will be included in the next iteration of the 2021-2023 Plan.

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3.3 Municipal Program

3.3.1 Program Objective

The Municipal program was established by legislation¹⁹ to focus RGGI energy efficiency revenues on New Hampshire's towns and cities. The objective is to help local communities to better identify, plan, and implement energy efficiency projects to help reduce the energy intensity and operating costs of municipal and school buildings. This turnkey retrofit and new construction program provides incentives and technical assistance to municipalities and school districts replacing existing equipment with high-efficiency alternatives, installing new equipment or systems, or planning major renovation or new construction projects. In addition, the program provides fuel-neutral weatherization services for existing municipal buildings.

The municipal sector (municipal and school buildings) is a large and important customer segment of the NH Utilities. Energy-efficient projects allow New Hampshire's towns and cities to reduce their operational costs and shift energy bill-related funds toward other priorities. The Municipal program is a close collaboration between among the NH Electric Utilities, municipal representatives, and citizen stakeholders, including energy committees.

The program's effective design allows the NH Electric Utilities to help municipal representatives and staff eliminate unique market segment barriers to planning and implementing energy efficiency projects, including a shortage of time, expertise or awareness of energy efficiency programs and opportunities, and the number of dedicated staff for facilities and operations. In addition, municipalities face other barriers that limit their participation in energy efficiency programs, including the short operating hours of municipal buildings (resulting in reduced cost-benefit savings), the long-term budgeting and approval process of towns and cities for capital improvements, and the cyclic electoral turnover of municipal representatives.

¹⁹ RSA 125-O:23. Available at: <http://www.gencourt.state.nh.us/rsa/html/X/125-O/125-O-23.htm>. NH Senate Bill 123 ("SB 123") requires that the NH Electric Utilities ensure municipal customers have priority access to these funds. If after four months however, program funding is not fully allocated, the dollars will be offered to other business customers who contribute to the Systems Benefit Charge. This legislatively-directed funding for the Municipal program goes specifically to the NHSaves Electric programs and not the NHSaves Natural Gas programs.

3.3.2 Target Market

Municipalities and school buildings are the target market for the Municipal program, including both large and small energy users. The Municipal program covers a diverse array of energy-efficient projects, ranging from large comprehensive school district upgrades to small wastewater facility renovations. The program provides technical assistance and incentives to encourage comprehensive and fuel-neutral energy savings from electric, oil, and propane municipal customers. All municipal and local government energy efficiency projects are eligible to participate in the program, including local governments with their own utilities, such as Ashland, Littleton, New Hampton, Wolfeboro, and Woodsville.

3.3.3 2021-2023 Plans

For the 2021-2023 term, the NH Utilities are considering a number of innovative approaches to expand the Municipal program's reach and energy savings. These include:

Increasing the Comprehensiveness of Municipal Projects

For the 2021-2023 term, the Municipal program will continue to pursue more comprehensive projects in municipal and school buildings, including potentially offering a new tiered incentive design to encourage the installation of multiple, non-lighting energy-efficient measures. If implemented, this proposed incentive design change would increase energy savings for municipal customers and drive comprehensiveness in school and town building renovation and new construction projects.

The NH Utilities will explore splitting comprehensive energy audit costs with municipal customers. Currently, these costs are seen as an upfront barrier to municipalities and school districts that prefer funds to be directed toward short-term energy fixes rather than long-term energy planning. Municipal capital projects involve long-term planning and goals which do not always align with the current annual savings goals for C&I programs. For the 2021-2023 term, the NH Utilities will encourage long-term projects that consider comprehensive, multi-measure and multi-year energy solutions rather than short-term, energy-efficient fixes. This effort will involve the NH Utilities encouraging Municipal

program contractors to shift toward multi-year strategies and energy savings goals, rather than annual goals, and encouraging process improvements.

In addition, the NH Utilities will increase the number of contractor trainings on non-lighting energy-efficient measures, such as commercial kitchen equipment, HVAC systems, and VFDs. This will increase contractor awareness and education regarding new and emerging technologies that can help them customize energy solutions for a municipality's needs.

Engaging Municipalities and New Hampshire Communities in Energy Efficiency

The NH Utilities are committed to increasing their collaboration with municipalities and building a community network of energy champions that includes sustainability groups, energy committees, and economic development commissions. Municipalities with energy-efficient town and school buildings serve as sustainable role models, educating and empowering citizens and businesses to participate in other NHSaves residential and C&I programs.

During the 2021-2023 term, the NH Utilities plan to continue conducting energy blitzes and offer increased incentives for micro-businesses and small town and city accounts, such as libraries and town halls. These efforts will be supported by direct outreach through NH Utility employees who work closely with municipalities to leverage partnerships with chambers of commerce and Main Street groups to conduct more aggregated campaigns rather than single-customer marketing activities.

The NH Utilities will explore ways to enhance their municipal engagement by providing technical assistance and project management support for towns and cities with limited or no facility operations staff. Efforts will be made to help guide smaller towns and cities through the energy efficiency process, educate them regarding the programs and incentives, and to encourage comprehensive measures and long-term planning.

Increasing Number of Comprehensive Fuel Neutral Projects

The Municipal program is funded by RGGI to deliver fuel-neutral measures to New Hampshire's town and city buildings, facilities, and schools. During the 2021-2023 term, the NH Utilities stand ready to

adjust programs if RGGI funding changes to help the state’s municipalities save energy and money. Therefore, the NH Utilities will plan accordingly to increase the number of fuel neutral projects in school districts through enhanced incentives for comprehensive energy efficiency solutions, including air sealing, insulation, and HVAC equipment measures. If RGGI funding is exhausted, the NH Utilities will work with the municipality to offer energy efficiency solutions through the other C&I programs.

3.3.4 Program Design

The Municipal program covers a diverse array of building types, such as school buildings, town offices, public works facilities, police and fire stations, and libraries. For the 2021-2023 term, the NH Utilities will offer an array of C&I solutions, incentives, technical assistance, and financing options to support the state’s municipalities in implementing energy-efficient projects.

Incentives

The Municipal program provides incentives to customers to encourage the implementation of cost-effective electric and natural gas efficiency projects. Similar to the Small Business Energy Solutions program, the Municipal program offers prescriptive and custom incentives to towns and cities pursuing energy efficiency projects. **Prescriptive incentives** allow customers to select measures from a pre-qualified energy-efficient measure list and receive a set rebate amount to cover the incremental cost of installing a high-efficiency measure rather than a standard product. Municipal customers can receive prescriptive rebates through turnkey contractors (see Program Pathways section) if they are installing standard energy-efficient measures.

The Municipal program also offers **custom incentives** which are determined based on engineering calculations and analyses. By offering custom incentives, the NH Utilities encourage customers to consider tailored solutions to reduce the energy intensity of their town’s or school district’s buildings and facilities. Custom incentives encourage long-term comprehensive projects that drive energy savings, reduce capital and operational budgets, and increase the rate-of-return on a municipality’s energy-efficient investment. The NH Utilities review and evaluate each project’s technical studies and analyses on a case-by-case basis to determine the custom incentive amount.

In addition to prescriptive and custom measures, the Municipal program provides unique incentives to encourage New Hampshire's towns and cities to commit to energy efficiency projects. For public school buildings, NHSaves offers **energy-efficient school incentives** of up to 100 percent of the incremental cost of new equipment and new construction projects. As referenced earlier in this section, the Municipal program offers **fuel-neutral incentives** for the installation of energy-efficient measures, such as boilers, HVAC systems and equipment, and weatherization measures. This is in addition to the custom, prescriptive, or energy-efficient school incentives given for the installation of electric and gas-saving measures. In addition to incentives, the NH Utilities provide on-bill financing which allows municipalities to pay for a project out of their operational and maintenance budgets (i.e., monthly utility bill): not requiring the towns and cities to secure additional approvals, bonding, or ballot measures.

For the 2021-2023 term, the NH Utilities are exploring a more flexible incentive structure where they can calibrate incentive levels to meet the customer's benefit-cost decision making based on the customer's business needs. This portfolio-level view of cost-effectiveness will allow for program review of municipal projects that historically may not have qualified due to cost-effective barriers, such as low operating hours or other extenuating circumstances.

To encourage comprehensiveness in the program, the NH Utilities may implement a pay-for-performance approach. This would include the creation of a tiered incentive system that packages rebates based on delivered energy savings of an entire project, rather than the current prescriptive approach of incentivizing specific energy-efficient measures. In addition, the NH Utilities may increase incentive levels for remote towns and allow non-turnkey vendors to implement Municipal program services in hard-to-serve areas. To complement these incentive approaches, the NH Utilities will increase the number of municipal contractor trainings on non-lighting measures.

Measures

During the 2021-2023 term, the Municipal program will provide incentives for high-efficiency prescriptive and custom measures. The program will provide incentives for the following **prescriptive measures**: high-efficiency equipment, including, but not limited to: aerators, air compressors, electric

commercial kitchen equipment (e.g., dishwashers and ice machines), electric HVAC equipment (e.g., heat pumps and unitary air conditioners), HPWHs, LED lighting and controls, motors, spray rinse valves, VSDs, water heater pipe wrap, water-heating equipment, and Wi-Fi thermostats.

Over the next three-year period, the NH Utilities will pursue more comprehensive projects that consider energy efficiency from a long-term perspective. The program's new comprehensive incentive design will incentivize turnkey, performance contracting, and direct-install contractors (see Multiple Program Pathways section below) to install non-lighting measures in municipal buildings and facilities. **Custom measures** will include, but are not limited to: energy management systems, HPWHs, insulation and air sealing, refrigeration equipment, water heating equipment, and weatherization measures.

Multiple Program Pathways

The NH Utilities have designed the Municipal program to provide New Hampshire's towns and cities with multiple pathways to participate in energy efficiency projects. They have developed a robust trade ally network of equipment distributors and installers, energy assessors, engineering and commissioning firms, and energy service companies to drive energy efficiency projects across New Hampshire's towns and cities.

The program's **turnkey vendor installation** pathway connects municipalities with experienced trade allies who can help design, develop, and install prescriptive measures for town buildings or facilities. This pathway is an effective streamlined mechanism that provides municipalities with professional trade allies who perform initial assessments of municipal or school district buildings and make energy-efficient recommendations. The NH Utilities work with the contractors to determine pricing, approve energy savings proposals, and help municipalities prioritize the projects with the best payback. Contractors are paid directly for the incentive portion of approved energy efficiency projects: ensuring that upfront costs are not a barrier to municipalities participating in the program. During the 2021-2023 Plan, the NH Utilities will continue to increase the availability of turnkey vendors' schedules and expand their Main Street initiatives and community blitzes.

To streamline and increase participation in the Municipal program, the NH Utilities encourage **customer-directed installations** of energy-efficient equipment through prescriptive incentives for common, pre-qualified measures. This includes midstream rebates, incentives that encourage distributors to stock and promote energy-efficient equipment and systems, including, but not limited to HVAC, commercial kitchen, and water heating equipment. Midstream rebates allow distributors to offer incentives directly to customers and offers flexibility to non-turnkey vendors to participate in NHsaves Programs. This also streamlines the program for the NH Utilities, as many distributors operate in multiple states, allowing for coordination and common points-of-contact.

The NH Utilities provide technical assistance to municipal customers with limited energy efficiency expertise or resources to guide them through the project process. This assistance includes showing municipalities how to understand an energy audit's findings, determining which energy-efficient solutions are right for the town's needs, and how to leverage incentive and loan options to finance projects. For the 2021-2023 term, the NH Utilities will continue to provide technical assistance for specialized assessments of historical buildings, such as building shell or HVAC system audits.

Over the past few years, the NH Utilities have observed an increased interest in **performance contracting** by school districts and municipalities. For the 2021-2023 Plan, the Municipal program will continue to support performance contracting as it spurs comprehensiveness in projects and is a streamlined guided energy efficiency pathway for municipalities and school districts. The NH Utilities will also continue to service **wastewater treatment facilities** through a partnership with the New Hampshire Department of Environmental Services ("NH DES") to implement audit findings and recommendations identified as part of a prior 3-year US Department of Energy ("US DOE") grant. This grant funded comprehensive energy audits and benchmarking (analysis of energy performance of a building).

Contractor and Customer Education

To encourage participation in the program and comprehensiveness, the NH Utilities will continue to offer contractor and customer education opportunities, including Builder Operator Certification ("BOC") training, energy code training, and workshops. The NH Utilities will also participate in affinity

group conferences. BOC training helps municipal facility managers learn to more efficiently manage town and school building operations and helps connect NH Utility employees with municipal points of contact.

3.3.5 Program Budget and Goals

Note: Program budgets and goals will be included in the next iteration of the 2021-2023 Plan.

3.4 Large Business Energy Solutions Program (Retrofit and Equipment & Construction)

3.4.1 Program Objective

New Hampshire's energy efficiency solution for large C&I customers is the Large Business Energy Solutions program. The program provides custom and prescriptive incentives to large C&I customers who are retrofitting existing facilities or equipment (Retrofit Pathway) or constructing new facilities, installing new equipment, or replacing equipment that is at the end of its useful life (New Equipment & Construction Pathway). The NH Utilities energy efficiency staff, key account representatives, and energy service contractors work collaboratively with customers to design, build, and retrofit large C&I facilities to optimize their energy performance. Energy-efficient projects can provide numerous benefits for large C&I customers, including reduced operating costs, increased productivity, improved comfort of employees and customers, and enhanced building air quality.

3.4.2 Target Market

Large C&I energy users are defined as customers who have an average demand of 200 kW or greater for electric customers and 40,000 Therms or greater for natural gas customers. The program serves large C&I customers who are replacing failed equipment, addressing aging, inefficient equipment and systems, or who are planning new construction or major renovation projects. The target market segments for the Large Business Energy Solutions program include commercial real estate, healthcare facilities, higher education, hotels, manufacturers, national retail chains, private schools, ski resort areas (snowmaking), and large retail facilities. These large C&I customers typically have in-house sustainability and energy efficiency expertise and are primarily interested in reducing operating costs and eliminating waste.

In addition to focusing on large C&I energy users, the NH Utilities also target building developers, architects, and design teams through the New Equipment & Construction pathway. Working with

design and building firms early in the process allows the NH Utilities to work with architects to promote and incorporate energy efficiency at the drawing board.

To optimize large C&I customer participation during the 2021-2023 term, the NH Utilities will continue to consider these customers' unique seasonal, organizational decision-making constraints. A recent New Hampshire Energy Efficiency Market Assessment²⁰ ("Market Assessment") determined the decision-making constraints of four large C&I market segments and identified recommendations for the NHSaves Programs. The NH Utilities will utilize this research to tailor marketing packages to these large C&I customers.

- **Large National Retail Chains.** Decisions regarding energy efficiency are made at the national and regional level for large national retail chain stores. The Market Assessment noted that it was essential for the NH Utilities to maintain strong key account representative relationships and to coordinate their efforts with other regional utility partners to promote energy efficiency.
- **Large Manufacturers.** The large manufacturing segment is a highly-competitive space focused on cost-cutting measures that increase productivity and output and give businesses an advantage over competitors. The decision-making process for large manufacturers is often decentralized and all levels of the business offer energy efficiency opportunities. The NH Utilities will maintain their strong account representative relationships and highlight cost-saving measures to this market segment.
- **Municipal and Higher Education.** The decision-making process for these organizations is highly structured, long-term, and time consuming. Large-scale projects are often considered with this market segment, increasing the potential for comprehensive energy-saving measures.
- **Seasonal Operations.** This market segment includes resorts, hotels, and manufacturing firms with cyclic down periods and limited operations. It is important to market these types of

²⁰ Navigant Consulting. *New Hampshire Energy Efficiency Market Assessment*. Apr. 19, 2019 Presentation. Available at: <https://www.puc.nh.gov/EESE%20Board/Meetings/2019/0419Mtg/20190419-EESE-Board-NHSaves-Market-Assessment-Presentation.pdf>.

businesses during the off-seasons, as energy efficiency investments will not stifle business operations.

3.4.3 2021-2023 Retrofit Pathway

The Retrofit pathway incentivizes large C&I customers to replace existing, functioning equipment or systems with high-efficiency measures. The incentives cover a portion of the installed cost to purchase the energy-efficient measure, thus deeming it an acceptable return on investment for large companies and facilities. The NH Utilities are considering introducing several initiatives and design approaches to the 2021-2023 Large Business Energy Solutions program’s Retrofit pathway. These changes include increasing contractor education and training, strengthening trade ally relationships, focusing on retro-commissioning equipment and systems performance, and delivering tailored solutions to targeted C&I market segments.



Promoting Retro-commissioning and Systems Performance Optimization

For the Retrofit pathway, the NH Utilities will introduce multiple channels to retro-commissioning during the 2021-2023 term. This includes offering low-cost prescriptive tuning measures, such as resetting water and air temperature for cooling systems and adjusting pump and fan schedules. The Retrofit pathway will also introduce targeted systems tuning to help meter and monitor energy savings for targeted system optimization. In addition, the NH Utilities will introduce a Whole Buildings and Process Tuning channel to the Retrofit pathway that will target larger C&I facilities with existing functioning control systems.

Develop Tailored Services and Delivery Models for Market Segments

For the 2021-2023 term, the NH Utilities will continue to develop segment-specific services and delivery models to target large C&I market sectors. For the Manufacturing sector, the NH Utilities will focus on air compressors and chiller optimization. For the Healthcare sector, the program will focus on promoting the adoption of high-efficiency HVAC technologies, water heating equipment, and

commercial kitchen equipment. For the Retail sector, the NH Utilities will direct customers to advanced lighting and controls, commercial refrigeration equipment, and HVAC equipment.

The NH Utilities have identified that tenant fit-outs and HVAC equipment are customized solutions for the Real Estate Management sector. For franchise businesses, the NH Utilities will continue to market high-efficiency commercial kitchen equipment, hot water equipment, HVAC equipment and controls, interior and exterior lighting and controls, and refrigeration equipment to this customer segment.

Develop a Multifamily Offering

Starting in 2021, the NH Utilities will begin to develop a multifamily building offering across the state to increase this market segment's participation in the C&I programs. During the 2021-2023 term, the NH Utilities will continue to work with multifamily building owners to encourage investment in energy-efficient measures through both the NHSaves residential and C&I programs. The NH Utilities will create a standard offer for multifamily buildings which will include marketing sell sheets, presentations, and targeted incentives to reach this target market. This will provide multifamily building owners an overview of the C&I programs.

The Large Business Energy Solutions program will target multifamily buildings where there are common-area lighting and master-metered natural gas heat energy-saving opportunities. Tenant area energy-efficient measures (e.g., appliances, lighting, water-saving devices, plug load, etc.) will be served through the NHSaves residential programs. In addition, the NH Utilities will investigate creating a pathway for multifamily buildings over the next three-year period to incentivize comprehensive energy approaches that optimize the energy performance of common areas and tenant units.

3.4.4 New Equipment & Construction Pathway

The New Equipment & Construction pathway incentivizes major renovation and new construction projects, as well as the replacement of failed existing equipment or equipment at the end of its life with high-efficiency units. The NH Utilities created this pathway to encourage design teams, facility managers, and building owners to move beyond minimum building code compliance and integrate high-efficiency technologies and optimized building systems early in the design stage.

The program’s New Equipment & Construction pathway allows the NH Utilities and contractors to reinforce the value that energy-efficient measures and design bring to large C&I customers, including reduced energy costs and increased worker productivity. It is vital that the NH Utilities and efficiency stakeholders play a role with new construction and renovation projects to ensure that incentives and



the benefits of energy-efficient design are considered at each of the design stages. Including the NH Utilities and efficiency contractors in cost-and-design deliberations with building owners and design firms will ensure that the Large Business Energy Solutions program’s incentives and technical assistance are fully considered and not removed in an effort to reduce project costs.

For the 2021-2023 term, the NH Utilities are considering introducing several initiatives and

design approaches to the New Equipment & Construction pathway, including revamping pathway offerings, expanding midstream rebate offerings, increasing trade ally education and trainings, and exploring opportunities to integrate Combined Heat and Power (“CHP”) systems with energy-efficient projects.

Introduce New Equipment & Construction Pathway Offerings

The NH Utilities will revamp the New Equipment & Construction pathway during the 2021-2023 term through the creation of four new paths. The NH Utilities will introduce a **Deep Energy Savings and Lower Energy Use Intensity** (“EUI”) path over the next three-year period. This path is designed to encourage new construction projects with a target of zero net energy or zero net emissions.

The second path the NH Utilities will introduce is the **Whole Building with Modeled Savings** path designed to provide intensive technical assistance and support for large C&I new construction and equipment projects. Customers will be guided through the decision-making process in determining the correct energy-efficient measures or designs that are right for their business’ needs and priorities.

Large C&I projects require a collaborative planning process that utilizes the expertise of architects, design teams, and contractors—often via a design charette. The Whole Building with Modeled Savings path will provide charette support, mid-design feedback, and guidance regarding setting EUI targets.

The **Simplified Whole Buildings Worksheet Model** is the third path introduced for the 2021-2023 term. This path is being introduced for fast-paced design and build projects and will require simplified spreadsheets versus detailed energy models. The fourth and final new path being introduced in 2021-2023 is the **Systems and Measures** path which will focus on capture projects in the late design stages. This path will integrate existing prescriptive and custom incentives, and the NH Utilities will provide technical assistance services typically not available for these fast-paced projects.

Expand Midstream Offerings

Similar to other C&I programs, the Large Business Energy Solutions program is focused on expanding the availability of midstream offerings to increase the availability of, and stocking of, high-efficiency technologies. For the 2021-2023 term, the NH Utilities will expand beyond the lighting market to support new midstream rebates for commercial kitchen equipment and HVAC equipment, including HPWHs and high-efficiency condensing units. The NH Utilities will use the results of the energy efficiency baseline and potential study (see Chapters 8 and 9) to help guide them in determining which technologies still have significant opportunities. The NH Utilities will continue to collaborate across the New England region to influence distributors to stock high-efficiency equipment.

Support CHP System Installations

In 2021-2023, the NH Utilities will continue to explore opportunities to incentivize CHP projects to target market segments with high-energy requirements for heat and power. CHP equipment uses waste heat from a building's generator for thermal needs, such as space heating or hot water. When combined with a boiler or furnace heating system, CHP is 60 to 80 percent more efficient²¹ than

²¹ EPA. Combined Heat and Power. Available at: <https://www.epa.gov/chp/chp-benefits>. A CHP system's efficiency depends on the technology used and the system design. The five most commonly installed CHP power sources (known as "prime movers") offer these efficiencies as compared to conventional generation: steam turbine (80 percent), reciprocating engine (75-80 percent), combustion turbine (65-70 percent), microturbine (60-70) percent, and fuel cell (55-80 percent).

conventional generation (grid power). These type of projects require long lead times, typically one to three years, requiring a long-term commitment from participating customers.

Though any input fuel can be used with CHP projects, generally natural gas is the first choice due to the reliability of the equipment and the low cost of fuel. CHP can also be used as a demand reduction resource and as a back-up generator. Typically, the market segments that are viable candidates for CHP include: hospitals, hotels, manufacturers with a significant thermal process load, and nursing homes.

During the 2018-2020 term, Liberty Utilities and Unutil integrated CHP projects into their C&I program offerings and identified multifamily buildings and nursing homes as their target market segments. For the 2021-2023 term, Liberty Utilities and Unutil will continue to deploy and support CHP projects. In addition, the NH Utilities will also develop a network of vendors to assist with screening CHP projects to determine qualifications and system performance. Starting in 2021, the NH Utilities will begin to incorporate custom incentives for CHP installations.

3.4.5 Program Design

Design

There are three program delivery channels for customers to participate in the Large Business Energy Solutions program's Retrofit or New Equipment & Construction pathways. First, the NH Utilities offer one-on-one technical assistance, through their account representatives and energy efficiency staff, to help large C&I customers identify energy-saving opportunities, complete applications, and generally guide them through the process.

Energy service companies are firms that offer compressed air, electrical, HVAC, lighting certification, and other comprehensive energy efficiency services to large C&I customers such as state and local government, higher education, hospitals, hotels, manufacturers, and ski resorts. This second program delivery channel allows energy service companies to provide holistic building services and comprehensive technical assistance. Engineering firms provide the third alternative channel for customers to participate in the Large Business Energy Solutions program. These firms provide whole

building audits and individual building system performance checks and work directly with customer's facility teams and energy committees to identify energy behavioral changes, new equipment, renovations, and process improvements that could result in energy efficiency savings.

Incentives

Similar to other C&I programs, the Large Business Energy Solutions program may pursue the creation of a tiered incentive design in 2021-2023 to encourage advanced lighting and comprehensive energy efficiency projects for the Retrofit and New Equipment & Construction pathways. The program provides prescriptive, custom, and performance-based incentives to encourage the implementation of cost-effective, energy efficiency projects.

Prescriptive incentives allow customers to select equipment from a pre-qualified list of measures and receive an incentive designed to cover the incremental installed cost for New Equipment & Construction pathway projects and a percentage of the installed costs for Retrofit pathway projects. Incentives for prescriptive measures offer a standardized process for customers to integrate energy efficiency in their renovation or construction projects. Program trade allies can manage the prescriptive incentive process for large C&I customers, allowing them a streamlined pathway to energy efficiency. Prescriptive incentives create a supply chain that includes distributors, manufacturers, key trade ally contractors, and the NH Utilities.

The Large Business Energy Solutions program offers **custom incentives** for energy-efficient measures that are non-standard and not on the prescriptive list of approved products. This approach encourages comprehensive, long-term projects that the prescriptive incentive process cannot fully address. Project engineering calculations and analyses are reviewed on a case-by-case basis by the NH Utilities to determine project eligibility and incentive amounts.

In addition, **performance-based incentives** are also offered to customers to encourage comprehensive energy savings from multiple measures. These incentives are based on energy calculations, including watts saved per square foot, dollars per kWh saved, and energy savings achieved above code.

Performance-based incentives encourage customers to move beyond installing just one piece of

energy-efficient equipment and to consider long-term, holistic building design and measures that optimize the energy performance of systems or buildings. For the 2021-2023 term, the NH Utilities will offer performance-based incentives for performance lighting and whole building projects implemented through the New Equipment & Construction pathway.

Measures

The NH Utilities will incentivize prescriptive, custom, and performance-based measures for the Large Business Energy Solutions program during the 2021-2023 term. Incentivized prescriptive measures will include, but are not limited to: air compressors, chillers, commercial kitchen equipment, HPWHs, high-efficiency condensing equipment, hot water saving equipment, HVAC equipment (e.g., heat pumps and unitary air conditioners), insulation and air sealing, lighting and controls, motors, refrigeration equipment, process equipment, and VFDs.

Many large C&I customers have complex technologies and specialty equipment and systems that require tailored solutions and custom measures, including, but not limited to: chiller pump upgrades, CHP systems, energy management systems, injection molding machines, insulation and air sealing, integrated air compressors, large chillers and boilers, retro-commissioning, snowmaking equipment (e.g., low-energy snow guns and lift heater terminal controls), specialized equipment (e.g., polymer bead washing machines), and weatherization measures.

3.4.6 Program Budget and Goals

Note: Program budgets and goals will be included in the next iteration of the 2021-2023 Plan.

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3.5 Energy Rewards Program (Eversource Only)

3.5.1 Program Objectives

The Energy Rewards program encourages customers to propose energy efficiency retrofit projects as part of a competitive solicitation process. The program's objective is to generate market-driven demand for cost-effective electric savings by encouraging customers to bid in retrofit projects that meet their internal business objectives, rate-of-return requirements, and approval processes. The program was designed for industrial and other large customers who need several years to design, plan, approve, and implement large, comprehensive electric-saving projects.

3.5.2 Target Market

The target market for the Energy Rewards program is C&I customers with electric demand greater than 200 kW, individually or in aggregate. Eversource has established a minimum estimated energy savings for all projects of 100,000 kWh per year (single site or aggregate) and project costs of \$150,000 or greater.

3.5.3 Program Design

The Energy Rewards program offers customers and engineering consultants an opportunity to design and bid in cost-effective comprehensive projects with electric savings. The program allows customers to bundle less cost-effective and more cost-effective efficient measures together. This increases the chances for comprehensive energy-saving projects that are multi-year and implement multiple measures. Having a multi-year program structure gives large C&I customers the time to develop projects, obtain approval, and submit well-developed proposals for their internal planning process.

The design of the Energy Rewards program allows Eversource to engage large C&I customers, giving them the opportunity to tailor their own energy-efficient solutions. Over the years, the program has allowed Eversource to provide a better customer experience and to develop project plans, such as Memorandums of Understanding ("MOUs"), with large C&I energy users across New Hampshire.

2021-2023 Changes

During the 2021-2023 term, Eversource will issue multiple Energy Rewards RFPs. This program design change is in response to customer demand to align the issuance of an RFP with multiple accounting calendars, such as the fiscal year and the customer's annual accounting year. This change creates time for C&I customers to receive internal approvals, secure financing, and gain company support for efficiency projects. Eversource expects that this change will increase participation in the Energy Rewards program and create a continuous pipeline of electric-saving projects. In addition, this should help increase submitted bids from large national companies and franchises whose counterparts in other states are competing for the same funding sources to complete renovation projects.

Incentives and Measures

The Energy Rewards program's incentive levels are market driven through a competitive bidding process. Customers submit their request for incentives to implement energy efficiency projects through their bid submission. Customers determine their requested incentive levels based upon internal calculations regarding rate of return and if management will approve the projects, project costs, and design plans. The program reviews all energy-efficient measures that cost-effectively deliver electric savings.

Program Process

Eversource hosts Energy Rewards bidders conferences to provide customers and contractors information regarding RFP submission requirements. In response to an RFP, customers must submit a request for the incentive amount needed to implement an individual project or a series of energy efficiency projects. Funds are awarded through the competitive RFP process to customers or third-parties acting on behalf of a customer. Projects are screened through a preliminary evaluation and a final, more-detailed analysis by Eversource staff. The bids are evaluated on their electric savings, incentive levels (pricing determined by customer or third party), and other non-price variables, such as the environmental impacts, and if a project integrates advanced lighting and other comprehensive measures.

3.5.4 Program Budget and Goals

Note: Program budgets and goals will be included in the next iteration of the 2021-2023 Plan.

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Chapter Four: NHSaves Residential Energy Efficiency Programs

Since 2002, the NH Utilities have implemented residential programs to help improve the efficiency of single-family and multifamily homes across the state. The NHSaves residential programs are designed to help New Hampshire residents reduce their energy costs, engage in energy efficiency behaviors, purchase high-efficiency equipment and technologies, defer the need for additional generation on the electrical grid, and help protect the environment through reduced electricity, natural gas, and delivered fossil fuel consumption.

4.1 Residential Programs Overview

In addition to serving customers, the NHSaves residential programs support a mature and robust network of stakeholders, including but not limited to: energy efficiency contractors, community action agencies, distributors, manufacturers, retailers, and other stakeholders that are the backbone of completing audits and installations of equipment and materials. The NH Utilities provide education, incentives, design and technical assistance, and contractor education to promote investment in energy-efficiency advancement and increase program participation.

For the 2021-2023 term, the NH Utilities are focused on scaling up participation and energy savings for the NHSaves residential programs. The NH Utilities will support these objectives by designing flexible and innovative programs, incentivizing emerging energy-efficient technologies, ensuring convenient customer access to capital, increasing workforce development efforts, and providing new “on-ramps” that allow customers varied pathways to participate in NHSaves residential programs. The flexibility built into



NHsaves residential programs is imperative to allowing the NH Utilities to adapt quickly to new federal and state laws, changing codes and standards, market transformation, emerging technologies, and customer demand.

4.1.1 2021-2023 Residential Program Priorities

For almost 20 years, the NH Utilities have designed and delivered valuable energy efficiency services to New Hampshire’s residential customers. Historical efforts have prioritized energy efficiency projects that maximize cost-effectiveness over serving the greatest number of customers. Due to increased 2021-2023 Plan budgets and program goals, the NH Utilities will shift their focus to providing market-friendly offerings that encourage greater customer participation and increased engagement. To realize these evolving goals in residential energy-efficient technologies and building design the 2021-2023 Plan emphasizes the following NHsaves residential program priorities.

- 1. Increasing Participation through New and Expanded Program Pathways.** The NH Utilities will continue to effectively scale up the NHsaves residential programs to drive deeper and broader energy savings by creating or reinforcing multiple market pathways or “on ramps” with varied levels of participation offered for different customer types. These may include but are not limited to: access to single-measure rebates, online platforms, visual audits, and code-plus initiatives for residential new construction projects. These on-ramps will provide residential home owners, home buyers, and tenants with easily accessible avenues to realize initial energy savings. The NH Utilities will use various marketing methods to attract and retain these customers, as they may be more inclined to further engage in energy efficiency with future home improvement projects. The NH Utilities will employ data analysis to determine how these new or reinforced pathways are utilized and will also track repeat program participation by contractors, home builders, homeowners, or landlords throughout the 2021-2023 term.
- 2. Offering Effectively-Packaged Solutions to Engage Customers.** The NH Utilities will effectively market and package energy efficiency solutions to New Hampshire residents. These solutions will include expanded midstream and point-of-purchase rebates (ENERGY STAR Products program) and additional tiers and bonus incentives to encourage the design-and-build

community to move beyond the current building code in residential new construction projects (ENERGY STAR Homes program).

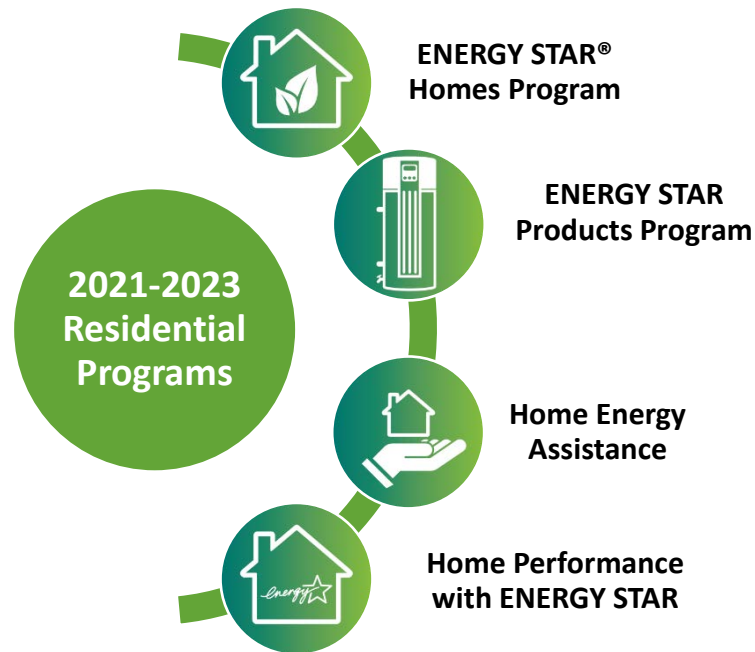
- 3. Increase Customer Education and Workforce Development Trainings.** To scale up participation and drive deeper energy savings for the 2021-2023 residential programs, the NH Utilities must facilitate a thorough and targeted workforce development plan to educate contractors, distributors, manufacturers, community action agencies, home builders, and retailers regarding the benefits and availability of energy-efficient technologies and NHSaves program offerings. Throughout the 2021-2023 term, the NH Utilities will expand the trainings offered pertaining to going beyond minimum code compliance, emerging technologies, and energy-efficient building techniques. These trainings will be delivered through several short-term and long-term workforce development channels, including but not limited to: interactive online training videos, in-field home builder trainings, hands-on equipment training, and lunch & learns.

4.1.2 Residential Programs

For the 2021-2023 term, the NH Utilities will continue to deliver comprehensive residential programs to help all New Hampshire residents regardless of income or home type, to reduce their energy consumption and save money while also protecting the environment.

The 2021-2023 NHSaves residential programs will offer multiple pathways to engage residential customers with entrées to energy efficiency. In order to reach the ambitious EERS goals, the NH Utilities must offer multiple and varied pathways in order to scale up program participation and drive energy savings. By offering multiple new and reinforced pathways, the NH Utilities will engage a broad range of customers in energy efficiency programs at various levels of savings, while raising interest across the market overall regardless the degree of participation. Figure 4-1 illustrates the multi-entry point approach of the 2021-2023 NHSaves residential programs.

Figure 4-1: 2021-2023 Plan Residential Programs



- **ENERGY STAR® Homes Program.** This is the NHSaves energy efficiency solution for residential single-family and multifamily new construction homes. The program provides incentives and contractor support through two pathways: (1) Drive to ENERGY STAR and (2) ENERGY STAR 3.1. During the 2021-2023 term, the NH Utilities will for the first time explore providing incentives for new construction homes that are certified passive solar, solar photovoltaic (“PV”) ready, EV ready, demand management ready, and for all-electric homes.
- **ENERGY STAR Products Program.** This high-volume program with a broad reach is designed to help residential customers overcome the extra expense of purchasing and installing ENERGY STAR-certified appliances, electronics, HVAC equipment and systems, hot water-saving equipment, and lighting. This is accomplished through consumer education, point-of-sale marketing, active training, engagement of retailers and distributors, and a variety of incentives both at point-of-sale and through automatic markdowns.
- **Home Energy Assistance Program.** This fuel-neutral weatherization program is designed to reduce energy use from both electric and fossil fuel-consuming appliances, lighting, and HVAC

systems. The program serves New Hampshire’s income-eligible homeowners and renters to help reduce their energy costs, optimize their home’s energy performance, and make their homes safer, healthier, and more comfortable.

- **Home Performance with ENERGY STAR.** This energy efficiency solution provides comprehensive energy-saving services at significantly reduced cost to customers’ existing homes, and covers lighting improvements, space heating and hot water equipment upgrades, weatherization measures, and appliance replacements.

4.1.3 Changes in the National Lighting Marketplace

Over the past two years, there has been great uncertainty regarding the implementation and enforcement of the Energy Independence & Security Act of 2007²² (“EISA”). Phase 2 and Phase 3 of EISA’s light bulb standards were slated to begin on January 1, 2020 (“EISA 2020 standard”) and January 1, 2025 (“EISA 2025 standard”), respectively, to go into effect on those dates. Finally, on February 11, 2019, the US DOE published a Notice of Proposed Rulemaking (“NOPR”) that proposed withdrawing the revised definitions of general service lamp (“GSL”), general service incandescent lamp (“GSIL”), and other supplemental definitions, that were originally set to go into effect on January 1, 2020. In a final ruling issued on September 5, 2019²³, the US DOE reversed its 2017 decision to expand the types of GSLs to be subject to the stricter standards, rescinded the expanded definition, and allowed exemptions for specialty lamps such as globes, candelabras, and reflectors, as well as other bulbs such as three-way and rough service lamps.

With this ruling, the US DOE withdrew the prior final rules regarding the EISA 2020 standard published on January 19, 2017 (82 FR 7276 and 82 FR 7322) that were to become effective on October 7, 2019. The September 2019 final rule eliminated energy efficiency standards for about 50 percent of the six

²² Public Law 110-40. Energy Independence and Security Act of 2007. Dec. 19, 2007.

²³ 84 FR 46661. Office of Energy Efficiency and Renewable Energy. Energy Conservation Program: Definition for General Service Lamps, Published Sep. 5, 2019, pp. 46661-46676. Available at: <https://www.federalregister.gov/documents/2019/09/05/2019-18940/energyconservation-program-definition-for-general-service-lamps>.

billion light bulbs²⁴ used in the United States. The standards would have covered a variety of light bulb shapes and sizes used in homes, including candelabra-based bulbs, candle- and globe-shaped bulbs, and reflector bulbs. These original standards were intended to phase out the incandescent bulb in favor of high-efficiency LEDs and fluorescent bulbs and fixtures. In a further rollback of earlier proposed lighting efficiency standards, the US DOE also issued a proposed determination on September 5, 2019,²⁵ which if finalized, would eliminate the EISA 2020 standards for “A-lamps,” the pear-shaped bulbs that make up the other 50 percent of light bulbs used in the United States.



At the same time, lighting manufacturers, expecting the original rules to go into effect in 2020 and 2025, have largely already transitioned to designing and manufacturing long-lasting, energy-efficient LEDs, both ENERGY STAR-certified and otherwise. As a result, the lighting market continued to drive the transition to LEDs in the marketplace, a process that is expected to continue in spite of the federal roll-back of minimum-efficiency standards. In order to help maintain and accelerate the strong demand for high-efficiency ENERGY STAR LED technologies, the NH Utilities will continue to aggressively support and incentivize energy-efficient bulbs and fixtures for the NHSaves residential programs through the end of 2021. Beginning in 2022 and depending on how the marketplace responds to the relaxed federal standards, the NH Utilities will begin to transition program support to discount retailers focused on reaching the last-to-adopt or hard-to-reach customers.

²⁴ ACEEE. DOE’s Light Bulb Standards Rollback Will Cost Americans \$14 Billion Each Year. Sep. 4, 2019. Available at: <https://aceee.org/press/2019/09/doe-s-light-bulb-standards-rollback>. 25 84 FR 46830. Office of Energy Efficiency and Renewable Energy. Energy

²⁵ 84 FR 46830. Office of Energy Efficiency and Renewable Energy. Energy Conservation Program: Energy Conservation Standards for General Service Incandescent Lamps, Published Sep. 5, 2019, pp. 46830-46862. Available at: <https://www.federalregister.gov/documents/2019/09/05/2019-18941/energy-conservation-program-energy-conservation-standards-for-general-service-incandescent-lamps>.

4.1.4 Residential Building Codes

New Hampshire’s current building energy code went into effect on September 15, 2019 when the State Building Code Review Board approved the adoption of the 2015 editions of the International Building Code²⁶, including the 2015 International Energy Conservation Code (“IECC 2015”). There were several legislative amendments to the code that will sunset in March 2022. As of January 1, 2019, the NH Utilities updated the ENERGY STAR Homes program’s User Defined Reference Home (“UDRH”) to reflect the current minimum standard from the IECC 2015. The UDRH will be updated again in March 2022 to reflect the end of the sunsetted amendments to the IECC 2015.

The NH Utilities are closely researching current approaches for building code savings attribution in New England, specifically in Connecticut and Massachusetts. Based on the NH Utilities’ analysis, the creation of a code savings attribution model for New Hampshire may be proposed during the 2021-2023 term.

4.1.5 Marketing and Outreach

The NH Utilities market the residential programs through a variety of different channels, both as individual companies as well as through a statewide marketing approach. These channels will include but are not limited to: the website (NHSaves.com), program promotional materials (“collateral”), direct mail and e-mail, bill inserts, point-of-sale marketing, retailer engagement, social media campaigns, paid digital advertising, billboards, radio/TV/music streaming advertisements, trade shows, public relations efforts (statewide and utility-driven), hosting or providing speakers for trainings, forums, and events, and providing content for partners’ blogs, newsletters, and websites.

The NH Utilities utilize market segmentation to effectively target customers and engage them in energy efficiency programs. Understanding what motivates a customer to participate in energy efficiency programs, gives the NH Utilities insight into what marketing strategies will work when trying to increase residential program participation. During the 2021-2023 term, the NH Utilities plan to scale up their data analysis of customers’ billing and demographic information to more effectively market the

²⁶ New Hampshire Department of Safety—State Building Code Review Board. *New Hampshire Building Code*. Sep. 15, 2019. Available at: <https://www.nh.gov/safety/boardsandcommissions/bldgcode/>.

new and existing program pathways and offerings to those customers who are most likely to respond and benefit from the NHSaves residential programs.

4.2 ENERGY STAR Homes Program

4.2.1 Program Objective

The ENERGY STAR Homes (“ES Homes”) program is New Hampshire’s energy efficiency solution for residential single-family and multifamily new construction homes. Residential new construction homes must meet strict building guidelines to earn the US Environmental Protection Agency’s (“EPA”) ENERGY STAR certification and are typically 15 to 30 percent more efficient than standard, built-to-code homes. The EPA’s ENERGY STAR Home certification uses the Home Energy Rating System (“HERS”) as a scoring mechanism, analogous to a miles-per-gallon sticker for new homes, giving current or future home owners insight into the home’s energy performance. The lower the HERS Index Score the more energy efficient the home is compared to one built to standard building code.

The goal of ES Homes is to encourage homeowners, home builders, and contractors to build high-performance single-family and multifamily homes. This encouragement is provided through incentives and connecting home builders with third-party HERS Raters who provide support and verification services



throughout the construction process. Over the past decade, ES Homes has seen 15 to 35 percent of New Hampshire’s newly built homes achieve ENERGY STAR certification. ES Homes, the NH Utilities, participating home builders, HERS Raters, and contractors have also received numerous national ENERGY STAR awards and recognition for driving the New Hampshire residential construction market toward high-efficiency building designs, techniques, and technologies.

4.2.2 Target Market

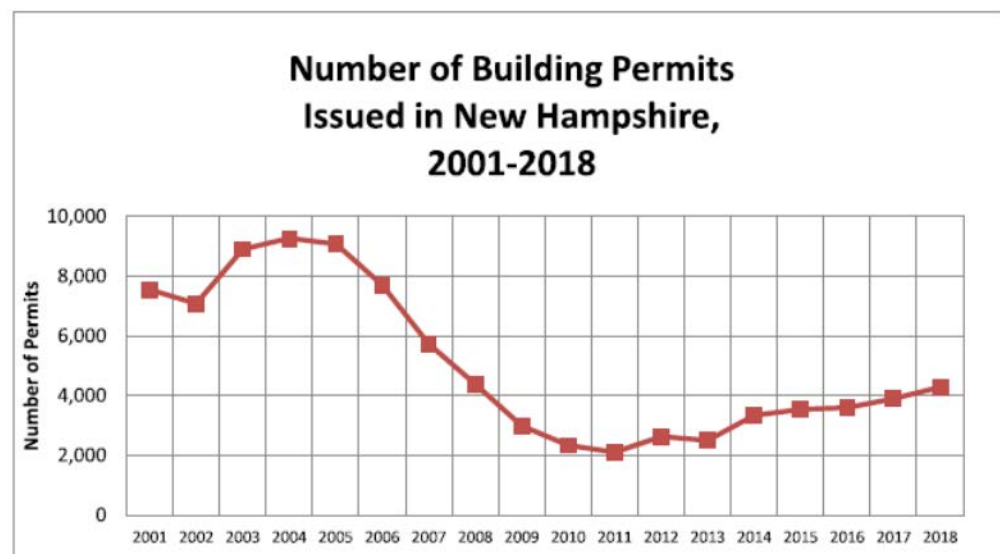
The target market for ES Homes is the entire residential new construction community across the state of New Hampshire. This includes architects, developers, home builders, homeowners, and HVAC contractors. All residential single-family and multifamily new construction projects are eligible to

participate in ES Homes, regardless of the fuel or system used in the home for space heating. ES Homes applies to manufactured, pre-fabricated, and site-built homes.

A secondary target market is homes with major additions or large portions of a home’s structure undergoing a renovation. The goal of this offering is to encourage high-efficiency building practices and equipment for remodeled homes that are not eligible for the ENERGY STAR Homes Version 3.1 or Drive to ENERGY STAR pathways. For the 2021-2023 term, the NH Utilities will look to expand this strategy through greater marketing and by offering more robust incentives (based on the scale of the opportunity and cost-effectiveness) and increasing home contractor and homeowner awareness.

In 2018, the number of new construction permits filed statewide reached 4,285²⁷, an increase of approximately 18.5 percent from 2017 (3,625 permits pulled). This is the fifth year in a row in which there was an increase in the total number of permits issued. The NH Utilities estimate that 4,500 permits will be filed in 2020, with 33 percent participating in the ES Homes program.

Figure 4-2: Building Permits Issued in New Hampshire (2001-2018)



²⁷ New Hampshire Office of Strategic Initiatives. *Current Estimates and Trends in New Hampshire’s Housing Supply: Update 2010-2018*. Dec. 2019. Available at: <https://www.nh.gov/osi/data-center/documents/housing-estimates-trends.pdf>.

Over the next decade, the NH Utilities plan to foster an increase in the percentage of ENERGY STAR-certified homes built in New Hampshire through enhanced contractor outreach, in-person and online home builder trainings, and the creation of a flexible program design that encourages multiple points-of-entry and incentive levels for the home builder community. Currently, approximately 20 percent of residential new construction projects per year participate in ES Homes. The NH Utilities' goal is to reach 80 percent participation (of all new construction permits pulled) in ES Homes by 2030.

4.2.3 2021-2023 Plans

For the 2021-2023 term, the NH Utilities will implement a number of new strategies to increase participation in ES Homes and increase electricity, natural gas, and fossil fuel savings for residential customers. These include:

Increase Reach of Existing Program and Serve More Customers

Beginning with the 2021-2023 term, the NH Utilities plan to significantly ramp-up participation in ES Homes. By 2030, the NH Utilities' goal is to have 80 percent of new construction homes permitted in the state participating in ES Homes each program year. To meet this objective, the NH Utilities will utilize a combination of training, technical support, and incentives to engage home builders, renovation firms, and HVAC contractors to utilize the ES Homes' two pathways to integrate energy-efficient design and equipment into new construction or major rehab and renovation projects.

The Drive to ENERGY STAR Homes pathway provides an introduction to ES Homes by offering smaller incentives for home builders who construct homes above code but fall short of being eligible for ENERGY STAR certification. By easing non-participating builders into ES Homes, the NH Utilities can encourage home builders to begin to practice more comprehensive design with the idea of moving them toward the ENERGY STAR Homes Version 3.1 pathway. In 2021-2023, the NH Utilities will make the online enrollment form more accessible to builders and allow builders to submit the enrollment form and associated ES Homes paperwork online.

Increase Workforce Development, Education and Outreach

To reach 80 percent participation in ES Homes by 2030, the NH Utilities must significantly expand contractor education and outreach efforts beginning with the 2021-2023 term. This includes providing more code and beyond code trainings for home builders and lunch & learns for architects, home builders, and HVAC contractors.

The NH Utilities will continue to deploy more in-the-field home builder trainings in which high performance building specialists will provide on-site technical support during the installation of air sealing, high-efficiency insulation, and HVAC equipment and systems. These hands-on, interactive trainings will be supplemented with an enhanced NHSaves.com video library to serve as an online classroom for home builders, HVAC contractors, and home owners, as well as web links to the EPA's ENERGY STAR-certified home project checklists. In addition, the NH Utilities will create and post their own ES Homes checklists and guidelines for home builders, home owners, and contractors detailing the different aspects of designing and building an ENERGY STAR-certified home. These utility-generated checklists will feature "Top 10" tips and tricks of the trade (e.g., "Top 10 ways to ensure HVAC equipment is properly installed, etc.).

Throughout the 2021-2023 term, the NH Utilities will continue to engage with local building departments regarding current residential building codes, IECC 2015, and ES Homes. This includes ongoing meetings with building departments and delivering program literature to town halls and building code enforcement offices.

Design Program Tiers and Bonus Incentives to Encourage Sustainability

During the 2021-2023 term, the NH Utilities will include multifamily new construction projects in the Drive to ENERGY STAR pathway. The NH Utilities will also offer additional program tiers and bonus incentives to encourage the design-and-build community to build to standards well beyond the current IECC 2015. In addition, the NH Utilities may offer bonus incentives for residential new construction projects that meet additional efficiency criteria or other sustainable guidelines, such as:

- **US DOE Zero Energy Ready Home (“ZERH”) Program.** This US DOE program is based on the building science requirements of ENERGY STAR for Homes Version 3.1 and promotes a comprehensive home performance-principled approach to residential new construction projects. ZERHs are high-performance homes that are so energy efficient that a renewable energy system can offset all or most of the home’s annual energy consumption.

The ZERH program has two pathways: Prescriptive and Performance. This allows the NH Utilities to offer more opportunities for home builders and homeowners looking for varied options to construct efficiently. The Performance pathway requires energy modeling (HERS). Qualifying measures include: thermal enclosures, domestic hot water equipment and distribution systems, high-quality HVAC installations, water management, certification by the EPA’s Indoor airPLUS program, ENERGY STAR-certified appliances, lighting, and windows, and compliance with the US DOE’s PV-ready checklist.

A ZERH offering may also include incentives for “renewable energy-ready” homes. The NH Utilities will explore whether there is a need for separate or additional incentives to ensure that future homeowners can easily install renewable energy systems, such as PVs, without needing to alter their home’s building envelope or electrical service.

- **Passive House Certification.** ES Homes may offer a bonus incentive for homes built with Passive House design principles. A certified Passive House relies on energy efficiency measures combined with passive solar features to dramatically reduce space heating demands. The NH Utilities are closely watching the Passive House movement in Massachusetts and Connecticut and will utilize any lessons learned in the development of a New Hampshire offering.
- **EV-Ready Homes.** The NH Utilities may also add a bonus incentive for newly-constructed homes that are built as EV ready. To design the EV-ready bonus incentive, the NH Utilities will benchmark other states’ program designs, including Rhode Island’s stretch code which includes requirements for upgraded service panels and a conduit for electricity to a garage or driveway from the home’s service breaker.

- **All-Electric Home Package.** For the 2021-2023 term, the NH Utilities will offer an all-electric home offering to encourage home builders and contractors to build all-electric residential homes that mitigate the environmental impact of fossil fuels and eliminates fossil fuel combustion within the home.

4.2.4 Program Design

ES Homes is designed to serve all residential single-family and multifamily new construction homes, including site-built, manufactured, and pre-fabricated homes. The NH Utilities’ residential program implementation staff will work closely with home builders, contractors, and certified HERS Raters across New Hampshire to encourage participation in the program’s two primary pathways—ENERGY STAR Version 3.1 and Drive to ENERGY STAR.

ENERGY STAR Version 3.1 Pathway

The ENERGY STAR Homes Version 3.1 pathway (“ES 3.1”) establishes a high-efficiency target for new construction homes to be built above code in the state. On average, ES 3.1 homes are designed to save on average 15 percent or more energy relative to homes built to the IECC 2015 standards. The NH Utilities use a robust HERS Rater contractor network to provide independent third-party inspection, verification, and diagnostic testing to help maximize the energy efficiency of single-family and multifamily homes. Once enrolled in ES Homes, a home builder submits their design plans to a HERS Rater for review. The HERS Rater analyzes the submitted designs using HERS to determine and share with builders the energy-efficient features needed to ensure the home earns the ENERGY STAR certification. During the construction process, the HERS Rater is responsible for performing site visits and inspections.

To be eligible for incentives, a home must be enrolled in ES Homes and inspected prior to the installation of any sheet rock or other type of wall covering, to ensure that an insulation inspection can occur. Once a home is fully built, the HERS Rater will perform a final inspection and calculate the home’s energy performance. For the 2021-2023 term, the NH Utilities will encourage the continued adoption of ES 3.1 through additional incentives and increased HERS Rater support and training.

Drive to ENERGY STAR Pathway

During the 2018-2020 Plan, the NH Utilities introduced the Drive to ENERGY STAR (“Drive to ES”) pathway to recruit new builders, HVAC contractors, and single-family homeowners to ES Homes. The pathway was originally designed as an entry point into energy-efficient building design and practices to encourage home builders to go beyond code (code plus) in their new construction projects. Once a home builder participates in the Drive to ES pathway, the NH Utilities have found that it eliminates an identified program barrier: the perception that committing to building an ENERGY STAR-certified home is a complex undertaking that requires multiple steps and interactions with other firms or contractors.

For the 2021-2023 term, the NH Utilities will continue to offer the Drive to ES pathway to builders of single-family homes and expand to builders of multifamily homes. The pathway will continue to provide smaller incentives (less than the ES 3.1’s pathway incentives) to builders who have constructed new single-family and multifamily homes that are above code but do not meet ENERGY STAR certification requirements.

HVAC Contractor Training

Through ES Homes, the NH Utilities will expand the workforce training opportunities and certification assistance for HVAC contractors during the 2021-2023 term. Currently, a third-party vendor trains HVAC contractors to understand the ES 3.1 requirements and checklists, how to conduct duct blaster tests, and how to properly seal duct work. The EPA requires builders to utilize a credentialed HVAC contractor trained in best practice HVAC design and installation services to qualify a home for ENERGY STAR certification. These trainings and technical assistance will allow the NH Utilities to build a robust network of HVAC contractors to support increased energy savings goals.

Measures

An ENERGY STAR-certified home is designed and built so that all energy efficiency systems and features work together to create a high-performance home. This level of building performance is achieved through the installation of energy-saving measures and energy-efficient design, including high-efficiency HVAC systems, complete thermal enclosure (i.e., high-performance windows, properly

installed insulation, and air sealing), ENERGY STAR-certified lighting and appliances, Water Protection Systems (i.e., water management system checklist) to improve indoor air quality and durability, and well-insulated and sealed heating and cooling ducts.

Drive to Net Zero Home Competition

The Drive to Net Zero Home Competition was designed to challenge homebuilders, architects, and home owners to build high-efficiency, net zero energy homes that generate more on-site energy than they use. Typically, net zero homes are 40 to 50 percent more energy efficient than standard homes and score a 10 or below on the HERS Index Score. The NH Utilities started the competition in 2017 and



have seen considerable success in promoting beyond ENERGY STAR construction techniques to the New Hampshire residential home builder community.

The annual competition recognizes the top three homes for five categories, including: lowest overall HERS Index, lowest overall HERS Index prior to renewables, home’s estimated annual operating

costs, construction cost per square foot, and technological innovation. The competition is marketed to the state’s home builder community and publicized through press releases, videos on the NHSaves website, and at the awards presentation.

For program years 2020, 2021, and 2022, the NH Utilities have partnered with the New Hampshire Home Builders Association (“NHHBA”) to recognize the Drive to Net Zero Home Competition winners at the NHHBA’s annual Cornerstone Awards²⁸. These awards are presented yearly to recognize excellence in the building industry.

²⁸ NHHBA. Website: <https://nhhba.com/nhhbaevents/cornerstone-awards/>.

4.2.5 Marketing

ES Homes will be promoted through a variety of marketing channels, including social media updates (Facebook and Twitter), home shows, paid Internet searches, and circuit riders at Lowe's, Home Depot, and local hardware and lumber stores. The NHSaves.com website will continue to drive participation in the program through interactive online trainings regarding ENERGY STAR-certified homes, fillable enrollment forms, customer testimonials, and Drive to Net Zero Home Competition case studies.

Throughout the 2012-2023 term, the NH Utilities will focus their marketing efforts on direct outreach to the program's existing network of builders, HERS Raters, and HVAC contractors, as well as reaching out to recruit new participants from the home builder community through the Drive to ES pathway. In addition, the NH Utilities have ongoing meetings with building departments and deliver ES Homes literature to town halls and building code enforcement offices.

4.2.6 Program Budget and Goals

Note: Program budgets and goals will be included in the next iteration of the 2021-2023 Plan.

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4.3 ENERGY STAR Products Program

4.3.1 Program Objective

The ENERGY STAR Products (“ES Products”) program’s objective is to increase the purchase and installation of high-efficiency appliances, lighting, heating and cooling systems, and water heating equipment. ES Products is focused on targeted consumer education and a robust network of distributors, manufacturers, installation contractors, and retailers to promote the purchase of energy-efficient products over standard-efficiency equipment. The NH Utilities also provide appliance recycling rebates that gives customers an incentive to recycle certain old, inefficient appliances, such as refrigerators and freezers, and to dispose of them in an environmentally-friendly manner.

4.3.2 Target Market

The target market for ES Products is New Hampshire’s 520,000 households which utilize a multitude of energy-consuming devices. The program’s incentives are designed to encourage customers to replace old, inefficient products with high-efficiency ENERGY STAR-certified technologies.



4.3.3 2021-2023 Plan Priorities

The NH Utilities have established several priorities for ES Products to increase energy savings and customer participation during the 2021-2023 term. These priorities include:

Introducing New Products to the Energy Efficiency Marketplace

The NH Utilities will look to expand ES Products during the 2021-2023 term by offering incentives for additional high-efficiency products, such as advanced power strips, freezers, electric-heated water-saving devices, and Wi-Fi thermostats (for oil and propane-heated homes). The NH Utilities will expand their appliance recycling rebates to include room air conditioners and will investigate adding

dehumidifiers. This expansion may be integrated into the current appliance recycling pick-up offering (see 4.3.4: Program Design) for freezers and refrigerators. Alternatively, some of the NH Utilities may host local and regional recycling events in collaboration with municipalities or waste managers.

In addition to the above-referenced new measures, the NH Utilities will evaluate the cost-effectiveness of smart home energy management systems and connected products for inclusion in ES Products.

Maintain Residential Lighting Incentives Through 2021

During the 2021-2023 term, the NH Utilities will continue to incentivize general service LED bulbs and fixtures until the 2022 program year in order to prevent backsliding that may otherwise result from recent reversals in federal standards for general service bulbs (see Section 4.1.3). The NH Utilities have been utilizing retailer point-of-purchase markdowns for energy-efficient lighting since 2016. Since that time, the number of participating retailers has increased each year, while some smaller retailers have continued to offer mail-in rebates.

During the 2021-2023 term, the NH Utilities will continue to target marketing and incentives to ensure that the remaining market for incandescent and halogen bulbs transitions to LEDs. Depending on market conditions, the NH Utilities will continue to target hard-to-reach and income-eligible customers throughout the 2021-2023 term to ensure that even the most up-front value conscious consumers have high-efficiency choices in the lighting marketplace.

Evaluating Participation in the ENERGY STAR Retail Products Platform

In late 2020 and throughout 2021, the NH Utilities will begin to evaluate participation in the ENERGY STAR Retail Products Platform (“ESRPP”), a collaborative marketing and upstream initiative facilitated by the EPA, ENERGY STAR, energy efficiency program sponsors (i.e., utilities), retailer partners, and other stakeholders. The ESRPP gives program sponsors a national-level structure to offer minimal direct retailer incentives to big-box retail stores, such as Best Buy, Home Depot, Lowe’s, and small independent stores (as part of the Nationwide Marketing Group) to increase the sale, promotion, and stocking of high-efficiency appliances.

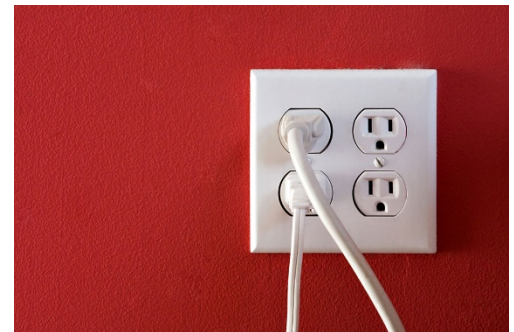
Incentivized measures may include, but are not limited to: clothes dryers, clothes washers, freezers, refrigerators, and room air conditioners. If implemented, this new product channel would help generate increased energy savings to ES Products as more energy-efficient products are stocked and sold at big-box and small independent retail stores. The NH Utilities will research other state’s ESRPP programs, ongoing evaluations, and the New Hampshire Residential Energy Efficiency Baseline Study to help determine if and when to launch a New Hampshire ESRPP.

Expand Midstream Rebate Offerings

The NH Utilities plan to expand the measures offered by the existing midstream distributor network to include HPWHs and Electronically Commutated Motor (“ECM”) circulating pumps. The NH Utilities will continue to investigate whether to include heat pumps in the midstream offering.

4.3.4 Program Design

The NH Utilities have designed ES Products for 2021-2023 to promote the purchase of ENERGY STAR-certified appliances, lighting, heating and cooling systems, and water-heating equipment. The NH Utilities will continue to utilize varied incentives and delivery mechanisms to reach New Hampshire’s households at multiple points in their retail experiences.



Lighting Products

The primary mechanisms to promote ENERGY STAR-certified LED products are point-of-purchase product markdowns and online rebates. The NH Utilities partner with numerous retailers, distributors, and manufacturers (“Retail Partnerships”) to promote LED light bulbs and fixtures. Recently, five new Retail Partnerships with discount stores have been established to better serve the limited-income and hard-to-serve markets. Over the next three-year period, the NH Utilities will continue to negotiate the special placement of products and promotions at various retail partners’ locations throughout the state to help fully transform the market toward high-efficiency LED lighting.

Appliances

Rebates

ES Products provides rebates for the purchase of ENERGY STAR-certified electric appliances, including: clothes dryers, clothes washers, dehumidifiers, pool pumps, refrigerators, room air conditioners, and room air purifiers. These rebate forms are available online and at retail partner locations. For online rebates, customers must first purchase the energy-efficient item, then complete an online rebate form, providing supporting documentation (i.e., receipts) through the ES Product online system. The NH Utilities' rebate fulfillment vendor then processes and verifies online rebate submissions. Once an online rebate submission has been approved, the vendor sends the NHsaves incentive check to the customer. The rebate fulfillment vendor sends detailed rebate fulfillment data to each utility along with an invoice for the cost of all customer rebates fulfilled during the period.

Point-of-sale rebates result from collaborations between the NH Utilities, a retailer, and a manufacturer. These partners agree to offer special promotions combined with program incentives on targeted high-efficiency products. The on-sale products are displayed at end-caps and retail shelves with prominent NHsaves and ENERGY STAR signage promoting the discounted prices. Upon checkout, the product is automatically marked down without the need for the customer to fill out a mail-in rebate; thus, removing a participation barrier for customers and retailers. Point-of-sale rebates and instant discount e-rebates are available for measures such as: dehumidifiers, room air conditioners, and room air purifiers. The NH Utilities will monitor new and emerging technologies that could be introduced during the 2021-2023 term.

Appliance Recycling Program

The NH Utilities offer appliance recycling rebates to encourage customers to dispose of their under-utilized freezers and refrigerators wasting energy in the basement or garage. These old, inefficient appliances are then disposed of in an environmentally-friendly manner. The appliance recycling process begins when a customer schedules a pick-up time for the appliances through an online request form or via telephone. The third-party vendor will pick up the old refrigerator or freezer at the customer's home and will then issue an incentive check.

During the 2021-2023 term, the NH Utilities will expand ES Products recycling to include room air conditioners and will evaluate the cost-effectiveness of offering dehumidifier recycling rebates. This expansion may include integration into the current program design (third-party pickup) and/or recycling events at central locations.

HVAC Systems

The NH Utilities offer mail-in and online submission rebates for high-efficiency heating and cooling equipment, including central air conditioning systems, air-source heat pumps, ductless heat pump mini-splits (“DHPMS”), natural gas boilers and furnaces, and Wi-Fi thermostats. The HVAC offerings are heavily promoted through periodic e-mail blasts to over 500 contractors across the state and New England area, in addition to bill inserts, newsletters, and social media.

Contractor response has been extremely positive to these rebates, especially for air-source heat pumps, as the incentives significantly help them to sell high-efficiency heating and cooling equipment to customers. To complement these rebates, the NH Utilities will continue to support contractor education and training on high-efficiency HVAC equipment.

Domestic Water Heating Equipment

ES Products provides rebates for the purchase of ENERGY STAR-certified water heating equipment, including natural gas water heaters, combination units (providing both heat and hot water), and HPWHs. Natural gas water heater incentives are available through mail-in and online rebate submissions.

For the 2021-2023 term, HPWH technology incentives will be offered through three channels: (1) mail-in rebates, (2) instant discount e-rebates offered through participating Retail Partners, and (3) a midstream offering. In 2020, the NH Utilities introduced a midstream rebate to encourage retailers and distributors to stock their shelves with ECM circulating pumps and high-efficiency HPWHs and market the technologies to contractors. To support the newly-introduced midstream incentives, the NH Utilities will continue to partner with big-box retail stores and distributors to conduct contractor trainings regarding the benefits of high-efficiency water heating equipment.

4.3.5 Marketing

For the 2021-2023 Plan, the NH Utilities plan to market ES Products through a variety of marketing channels, including retail and equipment distributor partner promotions, bill inserts, e-mail communications, social media updates (Facebook and Twitter), and paid internet searches. The NH Utilities will also continue to work closely with retail partners to market high-efficiency appliances, HVAC systems, water heating equipment, and lighting products to the residential marketplace. This may include special promotions, end-cap displays, distribution of marketing collateral, and in-store educational presentations.

4.3.6 Program Budget and Goals

Note: Program budgets and goals will be included in the next iteration of the 2021-2023 Plan.

4.4 Home Energy Assistance Program

4.4.1 Program Objective

HEA is a fuel-neutral weatherization program designed to reduce energy use from both electric and fossil fuel-consuming appliances and HVAC systems. The program serves New Hampshire’s income-eligible homeowners and renters to help reduce their energy costs, optimize their home’s energy performance, and make their homes more comfortable. The primary objective of HEA is to reduce the energy burden of limited-income households, which often incur a significantly higher share of household income from energy costs.

High energy burdens, often called *energy poverty*, are when a household spends 10 percent or more of its income on energy-related expenses. Often, these households are older homes where maintenance improvements have been deferred and there is insufficient insulation to keep the home comfortable, safe, and efficient. HEA measures, such as air sealing, insulation, heating system upgrades, and LED lighting provide long-term solutions that help these households reduce energy consumption, lower their bills, and provide significant non-energy-related benefits.

HEA covers the cost to improve the efficiency of customers’ homes and provides practical solutions about how to modify how they use their homes and equipment without sacrificing their comfort or quality of life. In addition to energy-efficient measures, the HEA program provides services to address health and safety barriers in the home, such as inadequate ventilation, old wiring, and damaged insulation.



4.4.2 Target Market

A baseline potential study²⁹ currently being undertaken estimates that approximately 22 percent of the New Hampshire’s households meet the income-eligible criteria for HEA, some of which have been

²⁹ Itron, Inc. *New Hampshire Residential Energy Efficiency Baseline Study*. Draft Rel. Mar. 16, 2020.

served over the past two decades through the NH Utilities' collaboration with the Community Action Agencies ("CAAs"). The HEA program targets income-eligible residential customers who live in single-family buildings (1 to 4 units) and multifamily buildings (greater than 4 units). To receive HEA services, a household's income must meet the eligibility criteria for participation in the New Hampshire Fuel Assistance Program ("FAP"), the New Hampshire Electric Assistance Program ("EAP"), or anyone residing in subsidized housing or municipal or nonprofit organizations serving those in need. The current HEA income-eligibility guidelines are:

- **Weatherization Assistance Program ("WAP") Guidelines.** This is a US DOE weatherization program. Participants must have an income that is at or below 200 percent of the federal poverty guidelines for their household size; or
- **FAP Guidelines.** Participants must have an income that is at or below 60 percent of the state median income for their household size.
- **Electric Assistance Guidelines.** This statewide utility assistance program has general guidelines for discounts on bills based on household income, household size, and electricity or natural gas usage. Applications are processed by the CAAs.

HEA applications are reviewed, and income eligibility is verified before customers can receive services. HEA effectively leverages multiple funding sources, like WAP and FAP, to fund additional energy efficiency measures, such as heating system replacements. WAP provides federal funding to income-qualified homeowners who want to optimize the energy performance of their home. The New Hampshire FAP is funded by the federal Low Income Home Energy Assistance Program's ("LIHEAP") funds and assists the state's low-income customers in paying for heating costs. The New Hampshire Office of Strategic Initiatives ("NH OSI") and New Hampshire's CAAs distribute FAP benefits.

4.4.3 2021-2023 Plans

For the 2021-2023 Plan, the NH Utilities will implement a number of new initiatives to increase participation in HEA, including supporting workforce development, addressing program design

constraints, introducing new energy-efficient measures, and improving the program's data sharing and data tracking systems.

Improving Data Sharing and Data Tracking Systems

Currently, the NH Utilities are working to expand and refine their internal IT data sharing and referral systems to streamline the transfer of data between the NH Utilities, CAAs, NH OSI, and other contractors. The new software being implemented in 2020 will allow the NH Utilities to more easily perform energy modeling; allowing them to review more projects for cost-effectiveness and potentially increasing the number of customers who qualify. By 2021, the NH Utilities' data tracking system should be upgraded and operational.

Modifications to HEA

During the 2021-2023 term, the NH Utilities will make several modifications to HEA, including:

- **Increasing or Eliminating Current Incentive Cap.** The NH Utilities are working to increase or eliminate the current incentive cap of \$8,000. Due to the limited amount of WAP funds available, once the incentive threshold is reached HEA contractors cannot install additional energy-efficient measures or address further health and safety barriers. This threshold discourages the installation of all energy efficiency measures that could optimize each home's energy performance. Therefore, prior to the implementation of the 2021-2023 Plan, the NH Utilities will have eliminated or increased the incentive cap to ensure that more homes are addressed comprehensively, consequently driving energy savings in HEA.
- **Implement New Screening Methodologies.** By 2021, the structure of the new Granite State Test for cost-benefit analysis of the portfolio of programs, as well as a PI structure that places the benefit-cost threshold at the portfolio level, will allow the NH Utilities more flexibility in applying the benefit-cost test requirements for HEA to allow more projects to qualify, including those that need health and safety repairs. For the 2021-2023 term, the NH Utilities will also continue to allocate HEA incentive dollars toward fixing health and safety barriers, such as roof

repair, removal of knob and tube wiring, and vermiculite remediation, as part of the energy improvements.

- **HEA Implementation Manual.** During the 2021-2023 term, the NH Utilities will revise and update the HEA implementation manual to record the standard processes and guidelines the NH Utilities follow to administer the program. This will eliminate some inconsistencies in HEA design, procedures (e.g., invoice processing, which measures are funded, etc.), and operations across the NH Utilities.

Introduce New Pathways and Measures

To scale up energy savings and serve more customers through HEA, the NH Utilities will explore offering additional “on ramps” for income-eligible customers to participate in the program during the 2021-2023 term. These additional pathways may include, but are not limited to, visual audits, standalone appliance vouchers, and the distribution of energy efficiency kits.

In addition to the new HEA pathways, the NH Utilities will introduce new energy-efficient measures during the 2021-2023 term, including, but not limited to: clothes dryers, clothes washers, dehumidifiers, HPWHs, and air conditioning equipment. Some of these measures will be included with the standalone appliance vouchers referenced above.

Increase Education, Training, and Trade Ally Relationships

In order to ramp-up HEA activity, the NH Utilities recognize that in parallel, they need to increase workforce capacity through CAA and qualified contractor training. This will ensure they can train and retain contractors who have the expertise to specify, install, and optimize energy-efficient technologies. In addition, the NH Utilities plan to allocate a portion of NHSaves funds to allow CAAs to support capacity building, such as hiring staff and purchasing weatherization equipment.

4.4.4 Program Design

The HEA program provides fuel-neutral weatherization services to income-eligible homeowners and renters across the state. These energy-efficient measures reduce customers' energy costs, improves their homes' energy performance, and ensures their homes are comfortable and safe.

Customer Intake

The NH Utilities partner with the CAAs, NH OSI, housing authorities, and other nonprofits across the state to identify and verify eligible customers and projects for the HEA program. This collaboration is important to ensure that the HEA program fully qualifies, prioritizes, and serves income-eligible customers who have a variety of complex needs. The HEA program's partners are consistent and reliable presences within the low-income community and have established relationships with multiple service providers that help promote trust and social acceptance, and have access to a variety of local, state and federal funding sources that improve services and outcomes for the same income-eligible customers.

Energy Efficiency Audits and Direct-Install Measures

Verification screenings determine if customers are eligible for HEA based on their income. HEA contractors will perform an energy assessment of the eligible home to identify the most cost-effective improvements needed to optimize the energy performance of each customer's home. Then, a team of energy technicians installs the recommended improvements. Once a home has received HEA services, an Energy Auditor will perform a post-work inspection and explain the energy savings to the customer. Services are fully paid for by the NHSaves HEA budget or collaborating partner funding (e.g., WAP), and there are no costs incurred directly by the customer.

For the 2021-2023 term, the NH Utilities will continue to offer the CAAs the right of first refusal to deliver HEA program services, provided they meet a set of statewide standards for bidding, pricing, and timely program delivery. Should a CAA not be able to provide HEA program services in accordance with the approved weatherization plan or declines to deliver the services, the work will be assigned to other qualified contractors who meet the utility standards for pricing, customer service, and work quality.

Measures

HEA provides a number of energy efficiency measures, including: air sealing, building shell insulation, duct sealing, freezer replacements, high-efficiency lighting, hot water-saving devices (hot water temperature setback, faucet aerators, low-flow showerheads, and water pipe insulation), HVAC system cleaning, refrigerator replacements, window and door replacements, and a number of health and safety measures. HEA also replaces HVAC equipment with high-efficiency technologies if the current model is at the end of its useful life, deemed potentially unsafe, or is otherwise in need of replacement. The NH Utilities may install a limited number of ductless heat pumps for customers currently using electric resistance heat and/or electric cooling when it is deemed cost-effective.

For the 2021-2023 term, the NH Utilities will continuously evaluate the cost-effectiveness of adding new measures to the program. New offerings may include high-efficiency clothes dryers, clothes washers, dehumidifiers, air conditioning equipment, and HPWHs.

Visual Audit Approach

For the 2021-2023 term, the NH Utilities will permanently establish a visual audit pathway for HEA. Currently, the visual audit has only been deployed through the Home Performance with ENERGY STAR (“HPwES”) program (see Section 4.5) and is being reviewed for its efficacy and cost-effectiveness within the 2020 HEA framework. The visual audit in HPwES is utilized for electric and natural gas customers who applied for energy efficiency services through the Home Heating Index (“HHI”) tool. If a visual audit customer is identified by the utility as income-qualified, that customer is eligible to receive a visual audit through HEA.

The visual audit offering provides customers the ability to receive basic measures, such as Wi-Fi thermostats, flow-control showerheads and faucet aerators, up to six feet of domestic hot water pipe insulation, and LED bulbs without the need for a full on-site energy audit.

Energy Kits

An additional new 2021-2023 pathway currently being tested in the field is the distribution of energy kits to targeted groups of income-eligible customers. These energy kits will include LED bulbs, power

strips, and program literature. Energy kits may be distributed to targeted customers (i.e., EAP customers) through direct marketing, after a visual audit has been completed, or at Button Up Workshops (see Section 4.4.5 for more details).

Appliance Vouchers

During the 2021-2023 term, the NH Utilities plan to offer appliance vouchers (rebates) to qualifying limited-income customers, including those with high electric usage or high energy burdens. These vouchers will be offered through the Visual Audit or may be standalone appliance rebates to encourage customers to replace their old, inefficient appliances with high-efficiency models.

Prior to implementation, the NH Utilities will finalize the pre-qualifications for appliance vouchers, which may include requiring the customer to receive a visual audit or that the qualified customer has been on a wait list for an extended period of time for HEA in-home weatherization services. The appliance voucher offering will allow the NH Utilities to reach more income-eligible customers and drive energy savings for HEA.

Coordination with Other Fuel Assistance Programs

HEA is closely coordinated with the EAP and FAP (which as noted previously is funded by LIHEAP). The NH Utilities work with EAP and FAP participants to help make their homes more energy efficient and help them save on their energy bills. This stretches EAP and FAP funding to include other New Hampshire residents in need of assistance, while improving the comfort and efficiency of their homes.

Coordination with WAP

The CAAs and the NH OSI administer WAP. The NH Utilities collaborate closely with these HEA partners to maximize the number of projects that are jointly funded by HEA and WAP. Leveraging other energy efficiency funding allows the NH Utilities to serve more income-qualified customers and help decrease these customers' energy burdens.

4.4.5 Marketing

Program participants are primarily recruited through referrals from the CAAs, social service agencies, housing authorities, nonprofit groups, the EAP and FAP programs, and the NH Utilities' customer care

and energy efficiency departments. These groups are well-trusted and serve the target market year round. By partnering with these entities, the NH Utilities have direct access to communicate HEA benefits to the right market segment. For the 2021-2023 term, the NH Utilities plan to market HEA through a variety of marketing channels, including bill inserts, periodic e-mail updates and newsletters, events, social media updates (Facebook and Twitter), targeted direct mail, and paid Internet searches.



In addition, the NH Utilities conduct significant community outreach through Button Up Workshops. This a popular energy-saving workshop series sponsored by NHSaves and coordinated by the Plymouth Area Renewable Energy Initiative (“PAREI”). Participants attend an hour-and-a-half presentation regarding how to optimize the energy performance of their homes and includes information about basic building science principles and how whole-house energy measures can help them “button up” their homes for the heating and cooling seasons. Each workshop is presented by a knowledgeable Building Performance Institute (“BPI”)-certified Building Analyst and a representative from the NH Utilities. The NH Utilities may potentially utilize Button Up Workshops to distribute energy kits and as an HEA marketing tool.

4.4.6 Program Budget and Goals

Note: Program budgets and goals will be included in the next iteration of the 2021-2023 Plan.

4.5 Home Performance with ENERGY STAR Program

4.5.1 Program Objective

The HPwES program is a comprehensive, fuel-neutral whole house approach to improving energy efficiency and comfort in existing residential single-family and multifamily homes. The objective of HPwES is to help customers who live in existing homes reduce their energy costs, reduce their dependence on fossil fuels, and improve their home's energy performance through the implementation of weatherization and energy-efficient measures. HPwES provides lighting upgrades, heating and hot water equipment upgrades, weatherization measures, and appliance replacements.

4.5.2 Target Market

The target market for HPwES is existing residential single-family homes where the homeowners or landlords want to reduce energy bills, improve a home's energy performance, and increase the comfort of the home.

Program Eligibility

There are a number of eligibility guidelines for participation in HPwES. Single-family homes (1 to 4 units) are eligible to participate regardless of how any home is heated. If a home is primarily served by its natural gas utility (residentially-metered home heated by natural gas), it participates in HPwES through its natural gas utility and a non-natural gas homes are served by its electric utility.



HPwES models multifamily homes and evaluates them for cost-effectiveness using the standard benefit-cost test to determine the home's eligibility. Multifamily homes are eligible to receive specific services depending on the fuel used to heat the home:

- **Natural Gas-Heated Homes.** Individually-metered residential units are serviced through HPwES. Centrally-heated residential units that are on a commercial or master-meter account are

primarily served by the NH Natural Gas Utilities through the NHSaves C&I programs (see Chapter Three).

- **Electric-Heated Homes.** These homes are eligible for all services, which are provided by their respective electric utility.
- **Other Fuel-Heated Homes.** These homes are eligible to receive electric baseload measures, such as lighting and appliances, which are provided by their respective electric utility. The NH Utilities will implement full weatherization services when cost effective.

4.5.3 2021-2023 Plans

For the 2021-2023 term, the NH Utilities will implement a number of new initiatives to continue the success of the HPwES program while making program design modifications to serve more customers and help drive more energy savings.

Improving Data Sharing and Data Tracking Systems

As noted in the HEA section (Section 4.4), the NH Utilities are working to expand and refine the capabilities of their IT data sharing and tracking systems. New software launched in 2020 will allow the NH Utilities to perform more energy modeling; thus, they will be able to review more projects for cost-effectiveness. These enhanced capabilities will allow the NH Utilities to expand HPwES offerings to more customers and achieve deeper energy savings. By 2021, the NH Utilities will have also upgraded their data tracking systems.

Increase Program Participation and Savings

The NH Utilities will increase HPwES participation levels and energy savings by expanding the entry points to the program for customers and contractors. This drive toward increased energy savings and participation will include the following initiatives:

- **Prioritize Workforce Trainings.** The NH Utilities will focus their efforts on conducting contractor education and training workshops to increase the knowledge-level and expertise regarding

high-efficiency technologies and comprehensive energy savings. Building an educated workforce will allow the program to serve more customers and drive increased energy savings.

- **Implement New Screening Methodologies.** The structure of the new Granite State Test for cost-benefit analysis of the portfolio of programs, as well as a PI structure that places the benefit-cost threshold at the portfolio level, will allow the NH Utilities more flexibility in applying the benefit-cost test requirements for HPwES. The upgraded tracking software will allow more timely and accurate energy modeling that is expected to allow the NH Utilities to expand HPwES offerings to more customers.
- **Expand Visual Audit Options.** To ensure that HPwES energy efficiency services reach more customers, the NH Utilities will expand the program to offer more HPwES visual audits. This ensures that all customers have a pathway to participate in the program, even if they do not qualify through the HHI screening models.
- **Add New Pathways.** The NH Utilities are exploring adding more pathways for customers who do not meet the HHI screening tool to participate in HPwES. This could include appliance vouchers for prescriptive measures, such as high-efficiency appliances or self-installed insulation.

Addressing Program Design Constraints

For the 2021-2023 term, the NH Utilities have resolved to refine several HPwES design constraints, including:

- **Increasing or Eliminating Current Incentive Cap.** Currently, the NH Utilities are working to increase or eliminate the current HPwES incentive cap of \$4,000. Due to increasing project costs, HPwES contractors cannot address homes with a whole-building energy efficiency approach to drive deeper energy savings through the installation of holistic energy-efficient measures. By 2021, the NH Utilities will either have increased or eliminated the incentive threshold.

- **Addressing More Health and Safety Barriers.** In 2021, the NH Utilities will begin to ease the benefit-cost test requirements for HPwES to allow more projects to qualify, including those homes with health and safety barriers, such as knob and tube wiring and vermiculite. In 2021, the NH Utilities will allocate some incentive dollars toward addressing these health and safety barriers. This is due to a change in the Granite State Test (benefit-cost test), which will be introduced during the 2021 program year. The new test will only utilize the respective NH Utility’s cost and eliminate the customer’s costs for benefit-cost modeling.

Introduce New Energy-Efficient Measures

To increase energy savings and better serve customers, the NH Utilities will introduce new energy-efficient measures during the 2021-2023 term, including appliances and HPWHs. In addition, the NH Gas Utilities will work to identify and evaluate new natural gas space and water heating measures throughout the 2021-2023 term.

4.5.4 Program Design

Contractor Eligibility

HPwES supports a robust network of local energy efficiency professionals who provide a number of implementation services including: raising customer awareness of the program, recruiting participants, conducting the home energy audits, recommending energy-saving improvements, installing energy-efficient measures, and tracking the energy savings and project progress.

The NH Utilities provide a contractor vetting process to ensure all HPwES contractors meet the following qualifications: (1) be a registered business in New Hampshire, (2) have weatherization experience, (3) have BPI Building Analyst certification and lead training, (4) pass an enhanced quality assurance (“QA”) review of their initial three jobs performed within HPwES, and (5) agree to the HPwES program’s pricing and the NH Utilities’ terms and conditions. A third-party QA contractor reviews a percentage of homes serviced and provides feedback to the NH Utilities and HPwES contractor.

Program Qualifications

Customers can determine if their home qualifies to participate in HPwES through the NHSaves.com website. Here, customers can self-qualify via the HHI Tool. Customers are asked for the following information: (1) zip code, (2) conditioned square footage of the home, and (3) annual heating fuel use (one year of fuel history; system accepts up to two different types of heating fuel). Interested residential customers can also work directly with their respective NH Utility to enroll in the HPwES program. Two years of heating fuel usage is required with the application.

Home Heating Index

The HHI determines if a customer is considered a moderate or higher energy usage customer and if the customer is eligible for full HPwES services. In limited cases, a NH Utilities program administrator may waive the HHI qualification if it can be determined that the project potentially has significant savings.

Program Services

The NH Utilities use a streamlined whole-home approach from the energy audit through installation to inspection and allows customers to choose their HPwES contractor from a qualified list, or to ask their respective utility to assign them a contractor based on location and workload. Once a customer qualifies for HPwES, a qualified contractor will perform an energy audit of the customer's home to identify energy efficiency opportunities, calculate potential savings, and provide QA for any services performed. A nominal fee is paid upfront for the energy audit, which includes diagnostic testing (blower door test) for air leakage. If a customer decides to move forward with any of the HPwES contractor's recommendations, this fee is applied toward the project costs.

The energy audit report provides the project cost, rebate availability, and payback or Return-on-Investment ("ROI") estimations. When presented with the recommendations and energy audit report, customers must decide if they want to proceed further with the energy-efficient improvements. For customers who decide not to proceed further with energy-efficient improvements, the contractor will provide some direct-install measures at the time of the energy audit.

If a customer decides to proceed with the home improvements, energy efficient measures are installed by the qualified HPwES contractor. Incentive payments are typically paid directly to contactors by the NH Utilities once the project is complete. Customers are responsible for paying their share of the project costs (“Co-pay”) either directly to the contractor or via the loan program.

Qualifying energy-efficient measures allow for comprehensive, fuel neutral weatherization, and typically include: air sealing, building shell insulation, duct sealing, high-efficiency lighting, hot water pipe insulation, hot water temperature setback, refrigerator replacements, water-saving devices (low-flow showerheads and faucet aerators), Wi-Fi thermostats, and a variety of health and safety measures. During the energy audit, the HPwES contractor will also evaluate the efficiency of the home’s appliances to determine if they are cost effective to replace. These appliances include: clothes dryers, clothes washers, dehumidifiers, room air purifiers, and other measures.

For homes that need more energy-efficient improvements than those listed above, HPwES also offers incentives for custom measures. Custom measures are proposed and evaluated as individual projects, separate from the customer’s HPwES energy-efficient improvements. These custom measures can include but are not limited to: air source or ductless heat pumps, HVAC optimization, smart home energy management systems, and programmable or Wi-Fi thermostats. In addition, if an oil or propane heating system is at the end of its life, the HPwES contractor can recommend that the customer bring in an HVAC contractor to replace the unit with a new ENERGY STAR-certified model. HPwES provides an additional rebate to lower the incremental cost between the standard equipment and high-efficiency model. Customers that receive a recommendation from the contractor to install a new gas heating system will be served via ES Products.

Visual Audit Approach

For the 2021-2023 Plan, the NH Utilities will continue to offer the visual audit pathway to electric and natural gas customers who do not meet the current HHI threshold (typically high to moderate usage customers) and therefore are not eligible to participate in HPwES. The contractor performs a visual audit of the home and the customer will receive weatherization measures, including Wi-Fi thermostats, flow-control showerheads or faucet aerators, up to six feet of domestic hot water pipe insulation, and

LED light bulbs. Additional appliance vouchers may also be considered. The contractor will also determine if there are cost-effective measures that can be implemented through the full HPwES offering. If sufficient opportunity exists, then the contractor will notify the customer's NH Utility to enroll the customer in HPwES.

4.5.5 Marketing

For the 2021-2023 term, the NH Utilities plan to market HPwES through a variety of marketing channels, including bill inserts, direct mail, e-mail blasts, events, newspaper and magazine advertisements, NH Utilities call center referrals, paid Internet searches, and social media updates (e.g., Facebook and Twitter). The NH Utilities will work to increase the number of natural gas customers enrolled in HPwES over the next three years as low gas prices have historically limited participation.

As referenced in the HEA section, the NH Utilities conduct Button Up Workshops, a popular energy-saving NHSaves workshop series. Participants attend an hour-and-a-half presentation regarding basic building science principles and how whole-house energy measures can help them "button up" their homes for the heating and cooling seasons. Each workshop is presented by a knowledgeable home auditor and/or a representative from the NH Utilities.

The NH Utilities will continue to explore avenues to partner with and support community-based initiatives to encourage weatherization projects during the 2021-2023 term.

4.5.6 Program Budget and Goals

Note: Program budgets and goals will be included in the next iteration of the 2021-2023 Plan.

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Chapter Five: Active Demand Reduction Program

5.1 Program Objective

For the 2021-2023 term, the NH Utilities have designed several ADR programs to reduce customer costs and increase ISO-NE system benefits, which are mainly tied to avoided peak demand as quantified in the regional Annual Energy Supply Components (“AESC”) study. The goals of the ADR program are to flatten peak loads, improve system load factors, and reduce costs for all grid-tied New Hampshire customers. Demand savings (kW) are tied to dispatching resources during time of the ISO-NE peak demand period. Reducing load during peak ISO-NE hours will most profoundly impact New Hampshire’s share of the installed capacity cost allocation and help to reduce electric costs for all grid-tied New Hampshire customers.

5.2 Target Market

The target market for the 2021-2023 ADR programs is both residential and C&I customers who have the ability to reduce demand (kW) when an “event” is called for specific days and times. C&I program participants typically include customers with interval meters and demand charges, and who have peak demands of 250 kW or higher and with the ability to curtail 50 kW. Residential ADR program participants typically include customers with controllable Behind-The-Meter (“BTM”) equipment such as batteries, Wi-Fi thermostats, or EV chargers.

5.3 2021-2023 Plans

For the 2021-2023 term, the NH Utilities will build upon the ADR demonstrations offered in 2019 and 2020, as well as explore new offerings.

5.3.1 Program Design – Commercial ADR Programs

The Commercial ADR program has two main pathways: Interruptible Load and Battery Storage. The Interruptible Load pathway is technology agnostic and provides an incentive for verifiable shedding of load in response to communication from the NH Utilities or their vendors. A technology agnostic

pathway allows customers to use any technology or strategy at their disposal and earn an incentive based on their curtailment performance. The Interruptible Load pathway utilizes the NH Utilities' existing energy efficiency implementation teams to assess curtailment opportunities at customers' facilities in coordination with curtailment service providers ("CSPs"). CSPs are vendors who identify curtailable load, submit customer enrollment applications, manage curtailment events, and calculate payments. For this pathway, the NH Utilities are responsible for managing direct participants and vendors, approving program applications, calling events, overseeing customer performance, calculating payments, and managing the pathway's initiatives.

The Storage Performance pathway is a BYOD pay-for-performance offering which incentivizes customers with BTM storage already installed or to be installed at their facilities for the measured discharge when responding to an NH Utility event signal. The performance-based incentive only rewards the performance of storage systems and does not provide compensation for other project costs.

4.2.4 Program Design - Residential ADR Pathways

The residential ADR program currently has two main BYOD pathways: Battery Storage and Wi-Fi thermostats. For the 2021-2023 term, the NH Utilities will also explore EV load management as a third pathway. Eligible customers' devices will be connected to a demand response management platform through an Application Programming Interface ("API"), a mechanism that allows two different electronic systems to exchange core data and interact in a common language.

The Wi-Fi Thermostat pathway is for customers who own a qualified, wirelessly communicating thermostat that controls a central air conditioning system. Participants agree to allow the NH Utilities to make brief, limited adjustments of their Wi-Fi thermostats during periods of peak electric demand between June 1 and September 30. There will be a minimum of one adjustment, and a maximum of 15 adjustments per summer. Peak demand periods typically occur on especially hot days. Customers that join the program have opted in, but customers may opt out of any events as needed.

The residential Battery Storage pathway encourages the performance of energy storage systems through a pay-for-performance approach. Under this offering, customers will be incentivized to

decrease their demand on their NH Utility's distribution system by discharging stored energy from their battery in response to a signal or communication from their NH Utility's intermediary partner(s).

Lowering daily summer peak demand will have an impact on overall capacity requirements.

Throughout the 2021-2023 term, the NH Electric Utilities will continue to explore offering an EV Load Management throughout their service territories and will implement this pathway if deemed feasible. If implemented, the EV Load Management pathway would focus on shifting residential EV charging periods to non-peak hours. The NH Electric Utilities expect that best practices involving EV load management will evolve concurrently with the EV marketplace. If the exploration indicates that EV charging holds promise, each of the NH Electric Utilities will determine if an EV Load Response program can be offered cost effectively. An EV offering would accommodate current types of equipment deployed in the NH Electric Utilities' service territories and seek to attract customers who are considering upgrading or purchasing new EV charging equipment.

Note: The NH Utilities will develop a full narrative, as well as BCR models with estimated kW reductions and benefits in the next iteration of the 2021-2023 Plan.

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Chapter Six: Behavioral-Based Strategies

Utilities and energy efficiency program administrators are increasingly exploring new innovative ways to utilize data-driven and behavioral-based strategies to engage customers in energy efficiency. During the 2021-2023 term, the NH Utilities plan to diversify and expand their behavioral-based strategies to determine optimal engagement channels.

The concept behind behavioral-based strategies is that most customers are neither engaged, nor knowledgeable, regarding their energy consumption and habits. However, when a customer is made aware of how much energy they consume through either through digital, print, or visual communications, they are more empowered and motivated to adopt energy-efficient behaviors or technologies. Since 2014, one or more of the NH Utilities have utilized a behavioral-based strategy in the form of Home Energy Reports (“HER”) as a component of the NHSaves Programs.

For the 2021-2023 term, the NH Utilities will diversify their program offerings in order to test new behavioral-based strategies to determine if varied approaches work better for certain customer segments, utility service territories, and even fuel types. Though these approaches vary, the NH Utilities are all working toward a common goal of maintaining behavioral-based strategies as an integral part of the NHSaves Programs and to drive customer engagement in energy efficiency.

6.1 Home Energy Reports (Unitil and Liberty)

HERs are communications (e-mails and printed reports) that provide energy consumption information and energy-saving tips to individual customers in an effort to raise awareness and change behavior. These reports provide customer-specific information in easy-to-understand language and with easy-to-read graphics.

6.1.1 2021-2023 Home Energy Reports

The primary objective of the HER program is to induce customers to conserve energy by providing easy-to-understand paper and e-mail communications comparing their household energy consumption with that of their neighbors or other customers. The 2021-2023 HER program will continue to be implemented by Liberty (Electric and Natural Gas) and Unitil (Electric and Natural Gas). HER is a well-established behavioral-based strategy offered across North America by utilities and energy efficiency program administrators to help customers better understand and control their energy use.

Liberty Gas HERs

The initial launch of the Liberty Gas HER program was in the fall of 2014 and includes approximately 30,000 customers. Paper-based HERs are sent out approximately four times a year and six e-mail-based HERs are distributed during the heating months (November-March) when natural gas consumption is higher for space heating.

Customers receiving either the paper or email-based reports have the ability to view their reports and profiles online via a web-based platform. The online platform allows customers to view their reports and energy consumption data, as well as provide additional data about their residences and energy consumption patterns that then enables Liberty to more accurately benchmark a customer against an appropriate peer comparison group.

Response to the Liberty HER program has been positive, with a regular number of customers who sign up for HEA or HPwES referencing their neighbor report when asked how they found out about the programs. Liberty regularly uses the HER program to cross promote the other NHSaves Program offerings.

The HER program is responsible for 21 percent of the 2019 residential sector annual savings for Liberty Gas. As the program continues to mature, for the 2021-2023 Plan, Liberty Gas will attempt to capture more relative savings out of the program by cycling its recipient pool, adjusting the frequency of reports distributed, and continuing to tailor report and tip messaging via the printed and web-based reports.

Liberty Electric HERs

The Liberty Electric HER program was launched in January 2018 and includes approximately 12,000 electric customers. The program components and structure are identical to that of the Liberty Gas HER program, with the exception of communication frequencies. Liberty Electric customers receive year-round HER via print and e-mail alternating every other month in frequency for a total of six of each medium per year.

The HER program is responsible for 38 percent of the 2019 residential sector annual savings for Liberty Electric. For the 2021-2023 term, Liberty Electric will attempt similar strategies to that of the Liberty Natural Gas HER program, attempting to capture more relative savings by cycling the recipient pool, testing the effects of adjusting the frequency of reports distributed, as well as continuing to tailor report and tip messaging via the printed and web-based reports.

Unitil Electric and Gas HERs

Launched in October 2018, the Unitil HER program is run concurrently with Unitil Massachusetts territory to take advantage of economies of scale. The Unitil HERs are sent to approximately 25,800 electric customers and 11,000 natural gas customers. Unitil Gas HER program participants receive e-mail HERs year round (12 per year) and four paper HERs are distributed during the heating months (November-March). Unitil Electric HER participants receive year-round e-mail HERs and six print HERs a year with higher frequency during the summer months.

The HER program is credited with 25 percent and 26 percent of the 2019 residential sector annual savings for Unitil Electric and Unitil Gas, respectively. Unitil will continue to offer the HER program through at least the end of 2021 for both its gas and electric customers and will assess appropriate next steps for their behavioral-based strategies for 2022-2023 and beyond.

6.2 Customer Engagement Initiative (Eversource)

For the 2021-2023 term, Eversource will research new behavioral-based strategies to engage its electric customers in understanding how they consume energy in their homes and subsequently modify their behaviors.

6.2.1 Program Objective

Eversource's customer engagement initiative is a streamlined approach to providing customers with data-driven insights and targeted recommendations to motivate behavior change and participation in energy efficiency programs. The initiative will leverage expertise gained through previous experience with traditional behavioral programs and digital customer engagement in the areas of data analytics, informational design, behavioral science, and communication delivery.

6.2.2 Program Design and Marketing

The customer engagement initiative will drive energy efficiency awareness and customer action by meeting customers where they are with the right message at the right time. Eversource's approach involves identifying good candidates for a specific offer (behavioral recommendation or hard measure) based on what Eversource knows about them, their homes, and how they use energy, then designing a series of personalized communications and interactions over time to move customers along the desired path to energy efficiency.

The communications will include customized usage insights and recommendations delivered through traditional one-on-one outbound marketing channels (e-mail and possibly direct mail) that allow for personalization at scale. To maximize impact and reinforce the message, Eversource will integrate this information with natural touchpoints that customers have with their utility (for example, the process of viewing and paying a bill online) and trigger the presentation of information at times when its most relevant (for example, seasonal changes in temperature or after a customer receives a high bill).

In 2021, Eversource's customer engagement initiative will focus primarily on residential customers with learnings from that work applied to relevant C&I subsegments in the following years. Eversource will involve statewide evaluation contractors early in the design process to ensure that the methodologies used meet requirements for future savings evaluations.

6.3 Aerial Infrared Mapping Initiative (Liberty Gas)

6.3.1 Objective

For the 2021-2023 term, Liberty Gas will implement an innovative behavioral-based program called the Aerial Infrared Mapping (“AIM”) initiative. The objective of the AIM initiative is to efficiently capture detailed building weatherization information about Liberty’s residential natural gas customer base at scale in order to:

- Better identify, rank and prioritize, and qualify weatherization projects without having the need to go on-site;
- More accurately quantify the weatherization potential amongst residential homes;
- Engage and motivate customers to participate in the HEA and HPwES programs by providing a more detailed, visual profile of their heat loss; and
- Promote general customer literacy on the benefits of improved home energy efficiency and drive natural gas savings as a result of behavioral changes.

6.3.2 Market Challenge

Heat loss arguably suffers from an invisibility problem, in that it is inconspicuous in everyday activities. Further, few customers have easy access to view, let alone understand, the weatherization conditioning of their home or how it compares to others. From a psychology perspective, having the opportunity to see something that is typically invisible can attract attention and create more of an emotional connection, as well as make things easier to understand. In fact, consumer research shows that homeowners are five times more likely to take energy efficiency measures after seeing a thermal image of their home³⁰.

³⁰ Goodhew, J. et al. (2014). Making Heat Visible: Promoting Energy Conservation Behaviors Through Thermal Imaging. Sage Journals, 1059–1088. Retrieved from: <https://doi.org/10.1177%2F0013916514546218>

6.3.3 How It Works

Liberty will deliver the AIM initiative in partnership with MyHEAT Inc.³¹, a technology company that generates aerial thermal images to produce unique building HEAT Maps that provides customers with a tool to investigate potential areas of heat loss and HEAT Ratings that enable customers to compare a home's heat loss to others in their town or city.

The company is able to collect aerial Thermal Infrared (“TIR”) imagery of buildings via a super high-resolution TIR camera with a plane flying over a geographical area at night, under strict environmental conditions at approximately 4,000 feet. The proprietary process uses Geographic Object-Based Image Analysis and machine learning to detect, map, and create powerful visualizations of the heat waste escaping from buildings. The TIR sensors do not detect temperature, rather they detect emitted long-wave thermal radiation (i.e., relative temperature); which when ‘corrected’ to kinetic temperature is used to present heat loss data.

The process has the ability to automatically correct for local changes in temperature, microclimate, and elevation, meaning all buildings can be compared as if they were collected at a single instance in time. Data for each building is extracted and standardized so that different buildings can be compared and rated using a scale of 1 (least heat loss measured) to 10 (most heat loss measured). This information is typically presented to end-users via a private online platform and utilized in a variety of marketing communications such as direct mail and email. MyHEAT's solution has been deployed across numerous cities and utility territories in the United States and Canada and is based on six years of award-winning, peer reviewed research in Urban Thermal Remote Sensing from the University of Calgary.

6.3.4 Thermal and Ancillary Data Collection

The company intends to perform two flyovers of Liberty's territory, in the Spring of 2021 and Spring of 2023. The flyovers will cover the specified geography as shown in Image 6-1 to collect thermal data in order to generate HEAT Maps and HEAT Ratings. Additional geospatial datasets, such as building

³¹ MyHEAT Inc. website: <http://myheat.ca>.

shapes and customer address details, will also be generated and/or compiled at this time. It should take approximately three nights to capture the majority of Liberty’s natural gas service territory for each flyover cycle.

Image 6-1: Depiction of AIM Program Fly-Over Geography



After combining relevant data from Liberty and/or external sources with the collected thermal data, MyHEAT will process the combined data to generate HEAT Maps and HEAT Ratings. Simultaneously, a unique customer-facing platform will be designed.

6.3.5 Customer Experience

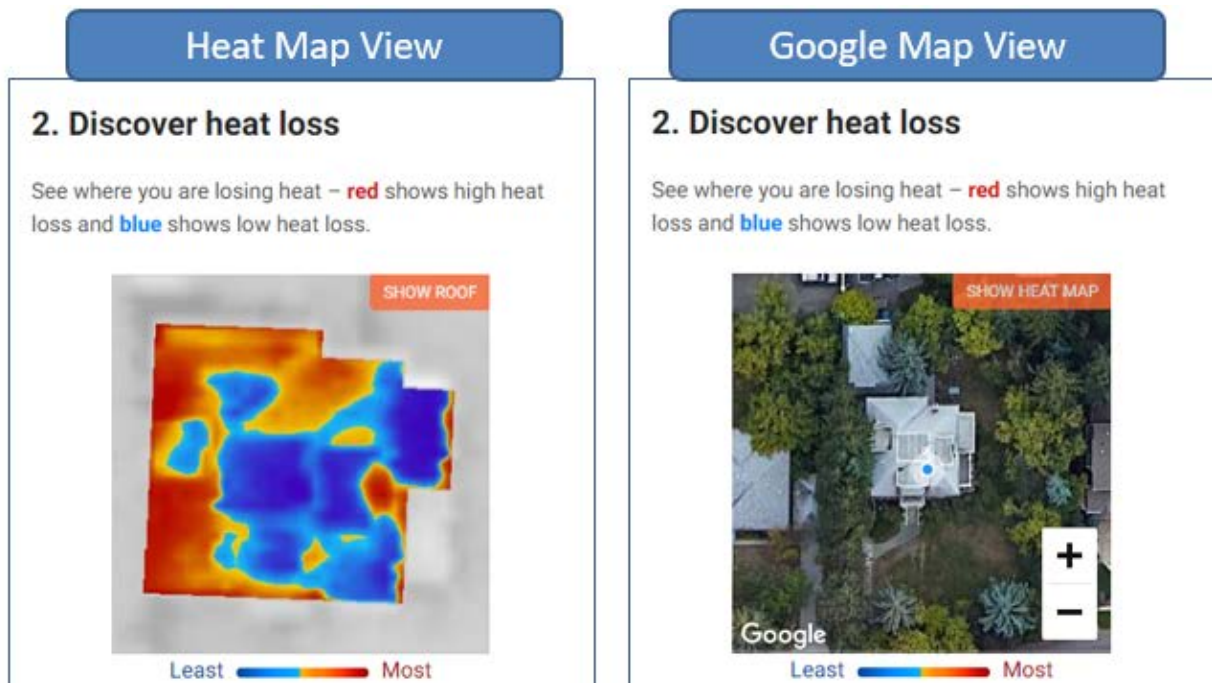
As part of the AIM initiative, Liberty will provide residential customers a visual HEAT Map depiction and HEAT Rating of their home via a private online platform, where customers can view the heat loss details for only their own home using unique access information. This information will be provided alongside calls-to-action that direct customers toward ways they can save energy, including participating in NHSaves Programs. Image 6-2 provides a visual example of the information that a customer would see when viewing the online platform:

Image 6-2: AIM Program Customer Home Profile



The online platform will also allow customers to compare their home's HEAT Map visual depiction to what is publicly available via Google Maps, as shown in Image 6-3.

Image 6-3: Comparison of Heat Map View to Google Maps View



6.3.6 Target Market

The target market for the AIM initiative is Liberty natural gas customers who reside in single-family homes, including income-qualified customers. The AIM initiative will identify target customers for engagement based on several factors including HEAT Ratings, consumption, and/or stage of program participation. MyHEAT will also establish balanced treatment groups to ensure robust program evaluation.

6.3.7 Eligibility and Enrollment

Liberty will offer the AIM initiative to customers free of charge, via an opt-out basis, meaning customers will not have the ability to opt-in if they so choose in order to maintain the proper participant control group for evaluation and measurement purposes. Rather, customers will have the ability to opt-out if they do not want their home mapped and rated.

6.3.8 Marketing and Promotion

The AIM initiative will be promoted via personalized direct mail and e-mail, which will encourage customers to visit the customized Liberty/MyHEAT private online platform, where customers can view their unique, personalized profile. Communications will be distributed periodically, with an anticipated four direct mailings per year, and eight e-mail distributions per year.

6.3.9 Evaluation and Verification

The evaluation process for the AIM initiative will analyze:

- The accuracy of ranking and qualifying weatherization projects;
- The resulting uptake in HEA and HPwES program participation, as a result of customers receiving the HEAT Map depiction;
- The resulting changes in energy consumption from customers receiving the HEAT Map depiction.

Liberty is in the process of implementing a survey of its residential customers to gauge their feedback on the AIM initiative concept and will use learnings from this research to inform the final program design to be submitted as part of the 2021-2023 EERS filing on July 1, 2020.

Chapter Seven: Marketing and Education

Marketing and education strategies are administered to increase awareness of the benefits of energy efficiency. They are also used to drive increased participation in NHSaves Programs. The NH Utilities will promote and implement marketing strategies that motivate residential, municipal, and C&I customers to participate in program offerings made available by NHSaves.

During the implementation of the 2021-2023 Plan, the NH Utilities will continue to increase customer awareness and participation in energy efficiency programs and to encourage behavior changes that save energy and reduce GHG emissions. Successful marketing and education strategies move customers through a long-term transitional process beginning with awareness that develops attitudinal changes and action. Over the past three years, the NH Utilities have focused their marketing communications efforts toward making customers aware of the benefits of energy efficiency, as well as working through a strategic brand redesign of NHSaves and realigning marketing messages specific to target audiences. The primary objective during the 2021-2023 term is to take customers' heightened awareness of energy efficiency and turn it into tangible results by engaging customers' participation in NHSaves Programs in order to save energy, save money and realize non-energy benefits.

7.1 Background

7.1.1 2018-2020 Market Assessment

During the 2018-2020 program years, the NH Utilities launched a significant redesign of their marketing strategies to support the increased program budgets and goals under the EERS. Prior to the EERS framework implementation, NHSaves Programs budgets and goals had remained relatively flat since their inception in 2002 and NHSaves brand marketing was primarily focused around the mass market ES Products program at retail store locations and for co-branding commercial forms.

In 2018, the NH Utilities established a statewide marketing team and issued an RFP to engage a marketing partner to develop and execute NHSaves campaigns, marketing, and outreach. Once selected, the marketing partner collaborated with the NH Utilities to establish three broad objectives for a strategic 2018-2020 Marketing Plan:

- **One:** Build awareness and demonstrate the value of energy efficiency;
- **Two:** Drive deeper customer participation in the programs; and
- **Three:** Increase trade and channel participation in the programs.

In 2018, the NH Utilities initiated a soft launch of an umbrella marketing campaign with a refresh of the NHSaves logo and brand, a brand descriptor, digital platform activation, and enhancements to the NHSaves.com website. Included in this scope of work was a deep dive into the brand essence and definition of NHSaves to balance key messages of practical savings with inspiring energy conservation and efficiency.

In 2018, the NH Utilities worked with the EM&V Working Group to undertake a New Hampshire Energy Efficiency Market Assessment³² (“Market Assessment”) to determine the general awareness of energy efficiency across the state, establish a benchmark awareness level of the NHSaves brand, identify effective marketing channels to communicate with customers and market segments. This allowed for understanding of the drivers and barriers related to energy efficiency participation, and identification of the general attitudes, perceptions, and behaviors concerning energy efficiency in New Hampshire.

The Market Assessment gathered primary data³³ through population surveys of residential and small and mid-size business customers, residential customer focus groups, and non-residential customer interviews. Completed in 2019, the Market Assessment found that one-third and one-half of residential

³² Navigant Consulting. *New Hampshire Energy Efficiency Market Assessment*. Apr. 19, 2019 Presentation. Available at: <https://www.puc.nh.gov/EESE%20Board/Meetings/2019/0419Mtg/20190419-EESE-Board-NHSaves-Market-Assessment-Presentation.pdf>.

³³ *New Hampshire Energy Efficiency Market Assessment*. The Study received feedback from 1,072 residential customers (response rate of 11%) and 304 C&I customers (response rate of 4%). Two residential customer focus groups and 30 large C&I customer interviews were held.

and non-residential customers, respectively, had seen or heard the term “NHSaves”. Additionally, of those aware of the brand, 60 percent and 30 percent of residential and non-residential customers, respectively, were aware that NHSaves was associated with their utility. Among those who were aware of the programs, program participation levels were relatively low at around 30 percent for both residential and non-residential customers.

7.1.2 2018-2020 Marketing Activities

In 2019, the NH Utilities launched phase one of a fully-integrated marketing campaign guided by insight from the market research with the Market Assessment’s findings and recommendations. The theme of the marketing campaign was: “Live Free, Live Smart.” The NH Utilities focused on several key objectives to increase awareness of the NHSaves brand and the benefits of participating in the programs, including:

- Expanded the use of social media to build and engage a larger audience with targeted messaging across all the NH Utilities service areas. A variety of social platforms were added, including Facebook, Instagram, Twitter, and LinkedIn;
- Enhanced with continued improvements to the User Experience Design (“UX”) on NHSaves.com with UX best practices in place including: ongoing support and maintenance, beta testing, Search Engine Optimization (“SEO”), navigational improvements, refreshed content and feature updates, and streamlined calls-to-action and consumer access points;
- Deployed consistent customer communication materials (e.g., collateral, display materials, etc.) and resources across the NH Utilities leveraging the NHSaves brand;
- Expanded the use of paid media for the purpose of building brand awareness and driving traffic to the NHSaves website for program participation. The NH Utilities developed and implemented a full media plan including: digital, social media, and traditional marketing platforms.

- Expanded, increased, and improved the library of customer case studies and testimonials that can be promoted via social media platforms and on the website to educate customers on the benefits of energy efficiency;
- Created partner brand guidelines for contractor partners; and
- Continued to leverage national and regional energy efficiency partnership campaigns, such as ENERGY STAR, to promote programs and services.

The NH Utilities plan to update the Market Assessment findings with additional surveys and focus groups to gauge the effectiveness of how the above-referenced marketing efforts were for increasing awareness and participation in the NHSaves Programs. Additionally, in 2020, the NH Utilities received monthly data reports with detailed information on website traffic and conversions.

7.2 Customer Attributes and Market Research

7.2.1 Understanding What Influences Customers in their Energy Decisions

The overarching marketing strategy for the NH Utilities is using the knowledge of how our customers use energy and what influences their energy decisions to design simple “on ramps” for them to engage with the NHSaves Programs and energy efficiency. Understanding what motivates a customer to engage or not engage in energy efficiency programs helps the NH Utilities craft the appropriate message, determine the right marketing tactic, and design effective communications that focus on solving a customer’s needs or problems. As referenced throughout the 2021-2023 Plan, the NHSaves Programs have many benefits; however, the key to successful marketing is to understand what influences or drives a customer’s energy decisions the most. Cost savings may be the most important thing for one customer to participate in an energy efficiency program, while improving the comfort of the home may be another person’s primary motivator.

Customer Segmentation

To better understand their customers, the NH Utilities worked throughout the 2018-2020 term to categorize residential and C&I customers into groups or market segments. For the 2021-2023 term, the

NH Utilities will build on this market research and leverage a number of psychographic and behavioral segmentation strategies to refine the marketing tactics used to engage customers. This segmentation combined with demographic-based data (e.g., demographics, housing type and age, business type, number of employees, etc.) provides the NH Utilities with insight into customers' lives, world views, what would motivate them to participate in an energy efficiency program, and what they perceive as barriers to participation.

The Market Assessment³⁴ categorized customers into market segments using target metrics, such as awareness of NHSaves Programs and attitudinal statements. The following four key factors were used to segment the marketplace: (1) concern for the environment, (2) environmentalism, (3) responsibility, and (4) behaviors. These factors helped to sort customers into the following four categories.

- **Engaged Greens.** This market segment (24 percent) has high levels of familiarity with energy efficiency programs and have participated in NHSaves Programs. Engaged greens have the highest level of concern with environmental issues, perceive a high-level of responsibility to take energy-saving actions, and frequently engage in energy conservation behaviors.
- **Aspiring Greens.** This market segment (27 percent) has moderate levels of awareness of NHSaves Programs, energy-efficient technologies, and has participated in energy efficiency programs. Aspiring Greens have a high level of concern for environmental issues, frequently engage in energy efficiency, and perceive a higher level of personal responsibility to take action.
- **Peripherally Aware.** Customers in this market segment (25 percent) are less likely to be concerned about environmental issues and to take responsibility to act and then in engage in energy-efficiency behaviors. Peripherally Awarers are generally aware of NHSaves Programs; however, they do not understand their program options and have never participated in an energy efficiency program.

³⁴ Navigant Consulting. *New Hampshire Energy Efficiency Market Assessment*. Apr. 19, 2019 Presentation. Available at: <https://www.puc.nh.gov/EESE%20Board/Meetings/2019/0419Mtg/20190419-EESE-Board-NHSaves-Market-Assessment-Presentation.pdf>.

- **Disconnected.** This market segment (24 percent) shows the lowest levels of awareness of energy efficiency and participation in NHSaves Programs. Disconnected customers have a lower level of concern with environmental issues, perceive a lower level of responsibility to take energy-efficient actions, and do not frequently engage in energy-saving behaviors.

Recommendations

Upon review, the Market Assessment identified two key customer segments that represented immediate opportunity for the NHSaves brand and program engagement—the Engaged Greens and Aspiring Greens. These customer segments were identified as already having moderate levels of awareness of the NHSaves brand and more likely to have already participated in NHSaves Programs.

These customers are more likely to respond positively to the NH Utilities’ communications, as they are interested in taking action to save energy and perceive it as their responsibility to do so. A key recommendation from the study was to increase utility-generated communications, including but not limited to: bill inserts, e-mails, or a separate postcard mailing to these customers.

C&I Customers

The NH Utilities utilize market segmentation to effectively target C&I customers and engage them in the NHSaves Programs. Understanding what motivates a customer to participate in energy efficiency gives the NH Utilities insight into what communications strategies are most effective to increase C&I customer participation in the NHSaves Programs.

The Market Assessment determined that the largest energy consuming C&I customers have a higher level of concern for environmental issues than small to mid-size businesses. This is due to the need for large businesses to maintain a sustainable corporate image, satisfy customers and shareholders with environmental priorities, and to uphold environmental sustainability commitments. These motivations help the NH Utilities effectively target large C&I customers, which encourages their participation in energy efficiency program offerings. The Market Assessment also determined the decision-making constraints of four large C&I market segments and identified viable solutions the NH Utilities should implement. These market segments and strategies were discussed in Section 3.4 of this document.

7.3 2021-2023 Marketing Strategies

While looking toward the 2021-2023 Plan's implementation, the NH Utilities recognize that this is a great opportunity to build on the lessons learned and Market Assessment recommendations implemented in the previous three-year plan. The primary focus of the NH Utilities' marketing efforts is to take customers' heightened awareness of energy efficiency and turn it into participation in the NHSaves Programs through increased and targeted customer engagement by implementing comprehensive, multi-measure projects that save energy and money.

7.3.1 Marketing Communication Efforts

Marketing communication efforts for New Hampshire will focus on motivating customers to engage in energy efficiency through a diverse mix of push-and-pull tactics that connect them back to relevant conversion points. A "conversion point" is the point at which the recipient of a marketing message performs a desired action. "Pull tactics" are designed to effectively draw customers into the programs and will include television and print and brand advertising, as well as utility communications, such as bill inserts and direct mail, to leverage customers' trust with their utility.

The NH Utilities will also continue to place an emphasis on engagement through public relations and social media. These channels will help to expand the "brand story" in authentic, relatable ways. This will include balancing brand, program and product offerings, lifestyle, and education-based content on social media advertising to attract customers' attention indirectly, and then work to motivate customers to find out more about the NHSaves Programs and how they can make their home or business more energy efficient. Positive stories about how local businesses, municipalities, and customers are saving energy and money will serve as a conversion point to engage a customer, turning a potential actor into one who actually engages with the programs and energy efficiency behaviors.

Residential Customers

Residential marketing communications will target residents of single-family and multifamily homes, especially limited-income customers, as well as home builders and buyers, contractors, distributors, property managers, realtors, and retailers to inform these stakeholders about various high-efficiency

products and technologies. The NH Utilities will also increase their outreach to rural and hard-to-serve customers to engage them in energy efficiency through Button Up Workshops and community forums.

During the 2021-2023 term, the NH Utilities will expand midstream and point-of-purchase rebate offerings for the NHSaves residential programs, as well as include additional tiers and bonus incentives for the residential new construction marketplace. These new offerings are designed to simplify the process for residential customers to participate in NHSaves Programs. Through program-specific marketing communications efforts, the NH Utilities will make customers aware of these simplified paths to energy efficiency.

Throughout the 2021-2023 term, the NH Utilities will market the NHSaves residential programs through a variety of channels, including the website (NHSaves.com), bill inserts, program materials, direct mail and e-mail, active social media campaigns, paid digital advertising, billboards, radio/TV/music streaming advertisements, trade shows, public relations efforts (statewide and utility-driven), hosting or providing speakers for trainings and events, and providing content for partners' blogs, newsletters, and websites.

C&I and Municipal Customers

For businesses, the NH Utilities will focus their marketing efforts on a variety of business segments and facility types and will leverage utility account representatives' and customer service personnel's relationships with these customers. The Market Assessment found that C&I customers, especially large C&I customers, attributed their engagement with energy efficiency to their strong relationships with their utility representatives. The NH Utilities will continue to foster these relationships to encourage long-term, multi-measure efficiency projects with their C&I customers. In addition, the NH Utilities will work closely with various trade ally and channel partners, including but not limited to: architects, builders, contractors, developers, electricians, engineers, equipment manufacturers and suppliers, facility managers, and trade associations. For municipalities, the NH Utilities will continue to work closely with town, school, and local community officials and leverage the NH Utilities' internal resources to market the NHSaves Programs.

For the 2021-2023 term, the NH Utilities will focus on simplifying the process for customers to participate in NHSaves C&I programs. The NH Utilities will create standard offer marketing pieces, such as sell sheets and presentations, specifically developed for target C&I market segments and end-use equipment. These tailored marketing collateral packages will make it easier for customers to understand the potential incentives and estimated energy savings associated with installing energy-efficient equipment. Through case studies and customer testimonials, the NH Utilities will enhance efforts to use the success stories of other local businesses to recruit newcomers to the NHSaves Programs.

The NH Utilities will work to spread the energy efficiency message further to local communities, municipalities, and small businesses through outreach efforts, such as the main street initiative described in the C&I section of this document (see Chapter 3).

7.3.2 Marketing Strategy Components

The primary focus of the NH Utilities marketing efforts over the coming three-year term is to convert customers' heightened awareness of energy efficiency resulting from NHSaves marketing efforts over the 2018-2020 term and motivate them to take action. For the 2021-2023 term, the NH Utilities have designed programs to allow for multiple, easy-access program pathways to serve as on ramps to engage customers in energy efficiency. The NH Utilities' marketing strategies also focus on delivering communications through multiple and diverse marketing channels to increase customer touch points and to increase conversion rates. The NH Utilities will focus on three broad marketing objectives for the 2021-2023 NHSaves Programs:

1. Continue to build awareness and demonstrate the value of energy efficiency;
2. Convince customers to take action and participate in NHSaves energy efficiency offerings;
and
3. Increase education and outreach efforts to both customers and trade allies.

These marketing strategies, along with a comprehensive set of program solutions, are designed to overcome specific barriers to energy efficiency program participation.

Continue to Build Awareness and Demonstrate the Value of Energy Efficiency

The brand awareness research and marketing efforts conducted during the 2018-2020 Plan have helped the NH Utilities to better understand New Hampshire customer behaviors and to assess the overall knowledge of energy efficiency, NHSaves Programs, and the motivators and barriers to participation. During the 2021-2023 term, the NH Utilities will continue to leverage this knowledge to inform its marketing campaign strategies and to focus on program-specific marketing campaigns.

The NH Utilities will continue to keep the NHSaves website up to date and engaging throughout the 2021-2023 term to increase awareness of programs, and to provide an online platform for customers to engage with energy efficiency. The website is currently an information source for customers wanting to learn about energy efficiency programs and technologies. The next step is for the NH Utilities to transform the website into a digital marketing platform that directly engages customers with energy efficiency offerings. This will include the creation of multiple digital conversion points where customers may redeem appliance vouchers, sign up for a program, learn about energy-efficient equipment and building design through a digital video library, or even purchase an energy-efficient product through a digital rebate redemption platform.

Convince Customers to Take Action and Participate in NHSaves Programs

The NH Utilities will continue to use their established social media platforms to build a larger audience and to target messaging to select customer groups, using a social media content calendar of planned campaigns and promotions to be implemented through the 2021-2023 term. The NH Utilities will track social media metrics to measure change over time and success toward meeting key performance indicators.

Increase Contractor and Public Education Efforts

For the 2021-2023 term, the NH Utilities will increase the number of contractor and customer education trainings and events across the state. These activities are described in more detail in the

residential programs section (Chapter Four) and the C&I programs section (Chapter Three). Contractor and customer education is an important component of the NH Utilities' marketing efforts to inform the public about the benefits of energy efficiency and the NHSaves Programs.

The NH Utilities recognize that educating K-12 students on energy efficiency has the double benefit of empowering students to help their schools set and achieve energy efficiency goals, while also arming them with information to take home and improve efficiency and performance where they live. During the 2021-2023 term, the NH Utilities will continue to partner with schools around the state to instill an energy-efficient ethic in school-aged children across the state. All K-12 schools in the NH Utilities' service areas are eligible to participate in New Hampshire Energy Education Project ("NHEEP") presentations and workshops to learn about energy efficiency. The presentations and professional development workshop curriculum is aligned with Next Generation Science Standards ("NGSS").

7.3.3 Key Performance Indicators

Throughout the 2021-2023 term, the NH Utilities will build upon the successful 2018-2020 marketing research and strategies developed to increase awareness of and participation in NHSaves Programs. To track the success of these efforts, the NH Utilities have developed several key performance indicators for the 2021-2023 term, including:

- **Awareness.** In 2021, the NH Utilities will be armed with the results of a new Market Assessment showing the change over time in NHSaves brand awareness. The new Market Assessment will also provide better understanding of which customer segments have been reached through marketing efforts over the last three years.
- **Interest.** The NH Utilities will track the engagement of visitors to the NHSaves.com website, including time on-site, pages viewed, and bounce rates. In addition, the NH Utilities will track social media account metrics, including social follows, reactions, and general engagement.
- **Intent.** This metric will track the intent of customers to engage in NHSaves Programs, including gathering the following information: visits to key NHSaves.com pages, sponsor and contractor click-throughs, and event engagement (e.g., Button Up Workshops and contractor trainings).

- **Conversion.** This key metric will measure if customers are taking action and participating in NHSaves Programs. The NH Utilities will track the following conversion metrics: rebate submissions, HHI Tool submissions, online store purchases, and e-news sign-ups. Throughout the 2021-2023 term, the NH Utilities will look to add new conversion tools to track the success of their marketing communications efforts.
- **Word-of-Mouth.** Another key metric for marketing communications efforts is advocacy for the NHSaves Programs. Word-of-mouth recommendations and customer-driven testimonials are positive marketing tools to promote the NHSaves Programs. The NH Utilities will track the customer referrals, social shares, and positive reviews of the NHSaves Programs to determine if they can attribute increased program engagement and awareness with advocacy.

Chapter Eight: Planning Elements

8.1 Benefit-Cost Testing

Since the inception of Energy Efficiency programs in New Hampshire, and in accordance with Commission Order No. 23,850, in DE 01-057, dated November 29, 2001, the NH Utilities have used the Total Resource Cost (“TRC”) test based on valuing the avoided cost of energy over the life of measures installed against the cost of those measures to both the utilities and the customer. Over the years, amendments to the TRC test have been made, which include adding the value of avoided fossil fuels as the residential weatherization programs became fully fuel-blind (saving oil, propane, and other fossil fuels), and also include a non-energy impact adder to the benefits as a proxy for the participant benefits the programs delivered beyond those deriving from reduced energy use. The NH Utilities use a common set of avoided costs to ensure that program benefits are calculated consistently across utilities, which are calculated in the regional AESC study (see additional detail below).

As part of the settlement to the 2018-2020 Plan, stakeholders agreed to revisit the energy efficiency program’s long-standing benefit cost test and assess whether adjustments should be made based on the evolution of policy priorities in New Hampshire. To undertake this assessment the EM&V Working Group, in conjunction with the Benefit-Cost Working Group, issued a competitive bid and selected Synapse Energy Economics to facilitate the stakeholder effort. Following the guidance of the National Standards Practice Manual, the NH Utilities and energy efficiency stakeholders undertook a comprehensive review of state energy policy and Commission precedent over many months. The resulting Cost Effectiveness Review Final Report was completed in October 2019.³⁵ On October 31, 2019, the Benefit-Cost Working Group filed a report and a set of recommendations to the Commission regarding the adoption of the proposed primary cost-effectiveness test (the Granite State Test), and

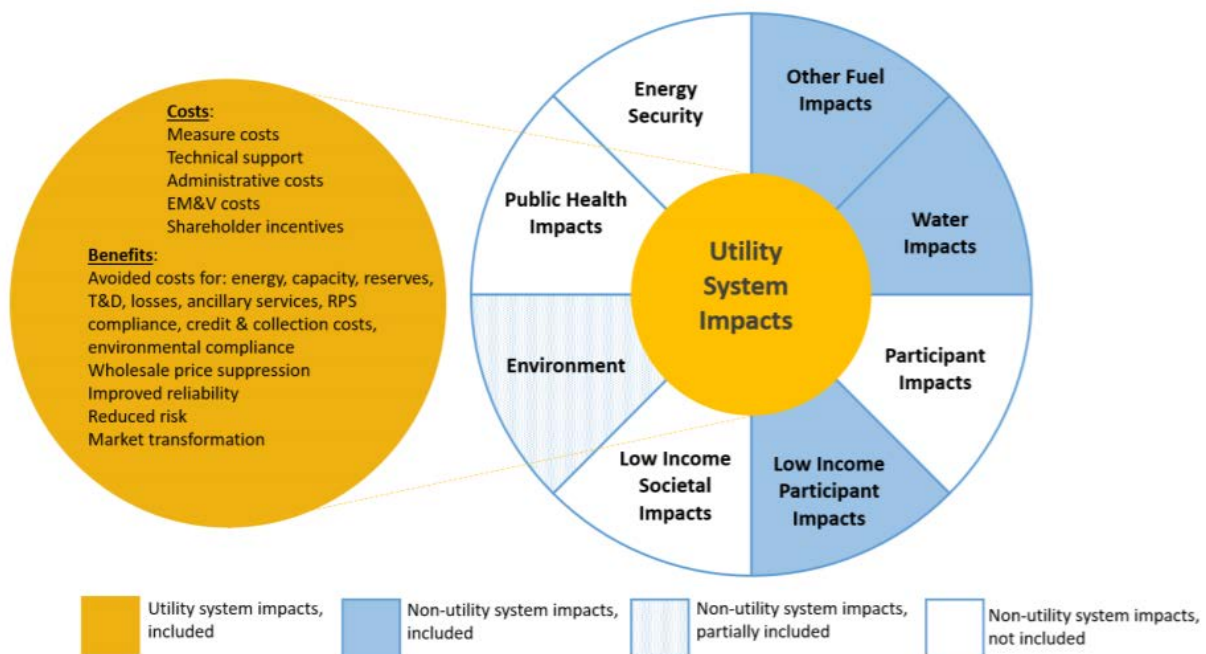
³⁵ Synapse Energy Economics, Inc. *New Hampshire Cost-Effectiveness Review*. Oct. 4, 2019. Available at: https://puc.nh.gov/Regulatory/Docketbk/2017/17-136/LETTERS-MEMOS-TARIFFS/17-136_2019-10-31_STAFF_NH_COST_EFFECTIVENESS_REVIEW.PDF.

two secondary tests to be applied to the 2021-2023 Plan.³⁶ On December 30, 2019, the Commission issued Order 26,322, approving the Benefit-Cost Working Group’s recommendations to take effect for the 2021-2023 term.

8.1.1 Granite State Test

The Granite State Test, the primary cost-effectiveness test, measures the utility costs of delivering energy efficiency programs against the benefits that accrue to the utility system, as well as those benefits associated with improving outcomes for limited-income participants, reducing participants’ use of unregulated fuels and water, and a RGGI/carbon emissions proxy.

Figure 8-1: Granite State Test



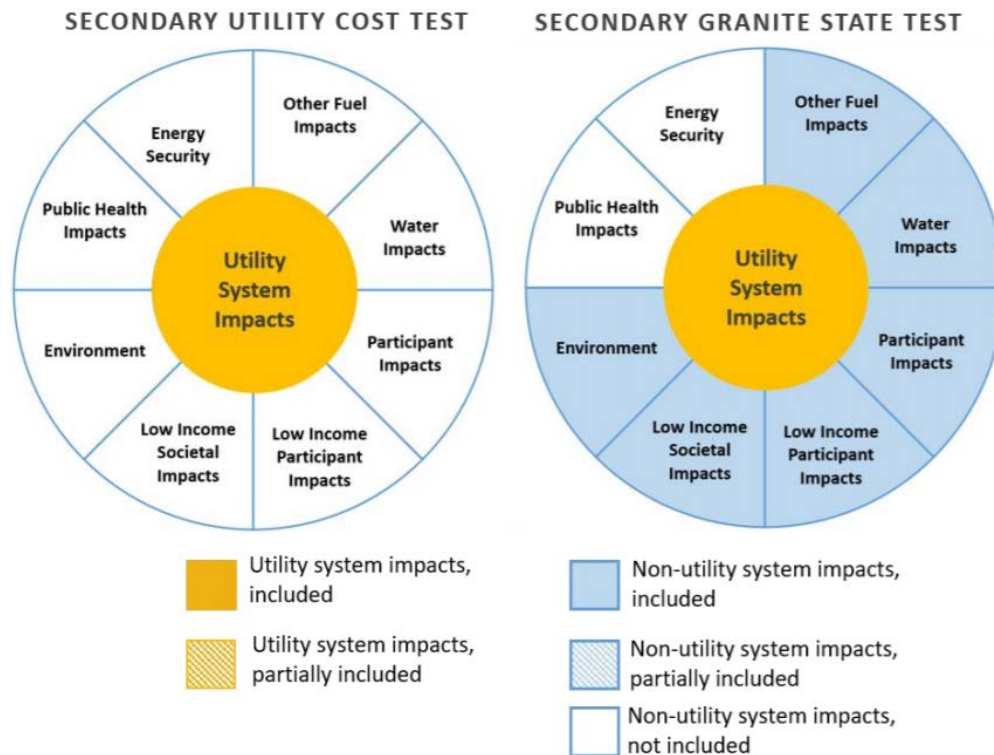
³⁶ DE 17-136, *Electric and Gas Utilities 2018-20 New Hampshire Statewide Energy Efficiency Plan Benefit-Cost Working Group Recommendations Regarding New Hampshire Cost-Effectiveness Review and Energy Optimization through Fuel Switching Study*. Oct. 31, 2019. Available at: https://puc.nh.gov/Regulatory/Docketbk/2017/17-136/LETTERS-MEMOS-TARIFFS/17-136_2019-10-31_STAFF_FILING_WORKING_GROUP_REC.PDF.

8.1.2 Secondary Tests

In addition to the Granite State Test, the Commission approved two secondary cost-effectiveness tests recommended by the Benefit-Cost Working Group: the Utility Cost Test (“UCT”) and Secondary Granite State Cost Test (“GST-2”). These two tests provide two ends of the cost-effectiveness spectrum: one test includes impacts to the utility system only, the other test includes the full universe of impacts that the Benefit-Cost Working Group considered relevant to New Hampshire.

- The UCT takes into account the utility’s costs of delivering energy efficiency programs against the direct benefits to the utility system (i.e., ignoring the significant non-system benefits realized by participants).
- The GST-2 considers the utility and participant costs of delivering energy efficiency programs against both the direct and indirect benefits to the utility system, participants, and the environment.

Figure 8-2: UCT and GST-2



The Granite State Test is applied to each proposed program in the portfolio at the time of filing. If the Net Present Value (“NPV”) of outcomes realized by the energy efficiency programs (benefits) is greater than the cost to deliver those programs (costs), it is assumed the investment is sound and can proceed. Certain exceptions to cost-effectiveness requirements can be made for offerings including education, approved pilots, programs in their first year(s), and the low-income HEA program.

The Granite State Test will also be applied by each NH Utility to each of their approved programs at the time of annual and term reporting. If, under that test, a NH Utility’s portfolio of programs delivered during the term is cost-effective (with a benefit-cost ratio greater than 1.0), the NH Utility will be eligible to earn a performance incentive.

Because the Granite State Test requires that the NH Utilities plan for each program to be cost-effective, measures and projects that make up the program must also be cost-effective. Not every individual measure or project has to be cost-effective, but on average, they must have a benefit-cost ratio greater than 1.0 to ensure their benefits exceed the costs of both rebates and services provided to customers, as well as all program-related marketing, evaluation, administration, and other costs not invested directly in energy-saving measures.

The secondary tests (UCT and GST-2) will also be applied by each NH Utility to each of their programs at the time of filing and reporting. These tests will help inform resource allocation decisions, as well as treatment of marginally cost-effective programs, but will not be used to judge the viability of a program that has been determined cost-effective under the Granite State Test and will not have an impact on the NH Utilities’ PI.

8.1.3 Benefits

Benefits are derived from the AESC Study undertaken every three years for the entire New England region. The AESC Study is overseen by and receives input from the AESC Study Group, comprised of regulators, utility staff, and energy efficiency consultants throughout New England, and serves as the source of most avoided costs for calculation of benefits for New England states.

The most recent study, *Avoided Energy Supply Components in New England: 2018 Report* (“2018 AESC”) was completed in March 2018 and amended in June 2018. The results of the 2018 AESC have been used to calculate the benefits deriving from the 2021-2023 Plan.

The AESC Study generates state-specific models of the value of avoided energy and capacity (kWh in each of four seasonal periods, kW at summer and winter peak, and natural gas, oil, propane, kerosene, cord wood, and wood pellets), as well as Demand Reduction Induced Price Effect (“DRIPE”) and avoided costs of certain transmission infrastructure. These avoided energy values are projected out over a 25-year time horizon. Individual state policy specifies the time period that should be used in determining the inflation and discount rates to be applied to the NH Utilities’ benefit-cost model to arrive at a calculation of NPV benefits. The NPV benefits of a given project depend on various project-specific factors, including measure life, load-shape, the coincidence of its use with summer and winter electric system peak, and the fuel that is reduced. As a result, the value (or benefit) of an avoided annual kWh varies by measure and by project.

In accordance with the Final Energy Efficiency Group Report, dated July 6, 1999 in DR 96-150, the nominal discount rate from June of the prior year is applied to the benefit-cost analysis, while the inflation rate is based on the seasonally adjusted rate of inflation between January of the preceding year and January of the current year, as determined by the US Bureau of Economic Analysis. For the April 1 draft of the 2021-2023 Plan, the NH Utilities have applied a nominal discount rate of 5.5 percent (June 2019 value) and an inflation rate of 1.9 percent (rate of inflation between January 2018 and January 2019– the January 2020 data is not yet available), resulting in a real discount rate of 3.5 percent used for NPV benefit calculations.

For the July 1, 2020 filing, the NH Utilities will update these values based on the available information, which will lead to variances in calculated NPV benefits compared to this draft filing.

8.1.4 Non-Energy Impacts

With the exception of HEA (low-income), Non-Energy Impacts (“NEIs”) are not included in the Granite State Test but are included in the GST-2. For the 2021-2023 Plan, the NH Utilities are continuing the

past practice of using an adder of ten percent of all resource benefits associated with a program, except for HEA that applies an adder of 20 percent of all resource benefits. Pending final reports of the *Home Energy Assistance Impact, Process, and Low-Income NEI Evaluation* and the *Crosscutting Non-Energy Impacts Study*, NEI values will be reviewed by the EM&V Working Group in conjunction with the Benefit-Cost Working Group members, and agreed upon values will be incorporated in the TRM and included in the benefit-cost models per the Commission's order.

8.2 Technical Reference Manual

In advance of every program plan or update filing, the NH Utilities work together to review savings assumptions, incorporate results from New Hampshire evaluations, identify changes in federal equipment standards, reference neighboring states' evaluations, and update relevant savings algorithms as necessary. Historically, these changes have been made by the NH Utilities and are reflected in the benefit-cost models filed with each plan. Beginning with the 2021-2023 Plan, these savings assumptions will also be documented in the New Hampshire TRM, which contains the set of standard methodologies and inputs for calculating the savings impacts and cost-effectiveness of the NHSaves Program measures.

The primary source of methodologies and inputs for the TRM is New Hampshire-specific evaluations, where available. For New Hampshire programs or measures that have not been recently evaluated, the NH Utilities may rely upon assumptions derived from studies undertaken in neighboring states as a source of information about prescriptive measure savings assumptions, measure lives, hours of use, and other impacts. Typically, Massachusetts and Connecticut are the most common source of savings assumptions where New Hampshire assumptions are not available. The NH Utilities also use savings estimates from the EPA's online energy savings tools, which provide savings calculations on a variety of consumer lighting products and appliances.

As committed to in the EERS settlement and ordered by the Commission, the NH Utilities, working with the EM&V Working Group, plan to finalize the first version of the TRM by the end of 2020. Once finalized, it will be made available on a public website for easy reference. For purposes of the NH

Utilities’ April 1, 2020 draft submission, an early working draft of the TRM has been provided as Attachment A to demonstrate progress to date in compiling a comprehensive, transparent, and rigorous compendium of savings methodologies and inputs. The current draft of the TRM should be considered a *work in progress* and not a document of record for savings assumptions. Significant efforts have been made thus far and will continue for the remainder of 2020, including:

- **Independent consultant support**, with EM&V Working Group oversight, including drafting remaining measure chapters, performing in-depth review and refinement of high-priority and high-impact measures, and recommending selected “fast fill” updates based on TRMs in similar, nearby jurisdictions;
- **Incorporation of results** from ongoing NH evaluations, including the Dunsky Consulting Energy Efficiency Baseline and Potential Study for the state of New Hampshire, results from the forthcoming final HEA and HPwES evaluation reports, and results from the cross-cutting NEI evaluation, which will be considered in coordination with the Benefit-Cost Working Group, per Commission Order No. 26,323, December 31, 2019; and
- **Vendor support for publication of the TRM on an electronic platform** to provide a user-friendly interface for public access and streamlined review and update of the TRM.

8.3 Bill and Rate Impact Analysis

As part of the settlement agreement filed on December 13, 2018 and approved via Order No. 26,207 on December 31, 2018 in Docket No. DE 17-136, Eversource, Liberty, and Unitil (the “Regulated Utilities”) agreed to undertake a bill impact analysis, including rate impacts, bill impacts, and participant impacts (“Rate & Bill Impact Analysis”).³⁷ As envisioned in the settlement, the rate & bill impact analysis was performed by a consultant, Synapse Energy Economics (“Synapse”), under the guidance of the EM&V Working Group.

³⁷ 2018 Settlement Agreement, Docket No. DE 17-136, pp. 18-19, Available at: <https://www.puc.nh.gov/Regulatory/Docketbk/2017/17-136.html>.

For this draft of the 2021-2023 Plan³⁸, the Regulated Utilities utilized the modeling tool developed by Synapse, using model inputs including rates, sales, and customer data, as well as planned savings for the 2021-2023 NHSaves Programs. Based on these inputs, the modeling tool estimates the annual and long-term electric and gas rate and bill impacts of the proposed energy efficiency programs, relative to a scenario with no programs. These impacts are estimated for both non-participating customers and for program participants, including an illustrative high savings participant and an illustrative low savings participant, across each of the four customer segments: residential, low-income, small C&I, and large C&I. In addition, the modeling tool estimates bill impacts for an average customer in each segment, which represents a hypothetical blend between non-participants and participants and is calculated based on the segment's program savings divided by the segment's total customers.

The rate and bill impact analysis does not consider two key impacts to customers' energy bills. First, the analysis focuses on electric and natural gas utility rates and bills, while the NH Utilities implement the energy efficiency programs in a fuel-neutral manner, providing additional benefits to customers consuming oil, propane, or other unregulated fuels. Second, the estimates of long-term bill and rate impacts do not reflect the potential costs of compliance with any future federal or state GHG or other environmental requirements, which would increase the cost to ratepayers of energy resources other than energy efficiency.

Based on the NH Utilities' draft plan, the energy efficiency programs will change the Regulated Utilities' revenue requirements by **-X.X** percent on average, or **-\$XX** million in total, over the life of the measures installed during the 2021-2023 term and across all programs. The Regulated Utilities natural gas revenue requirements change by **-X.X** percent on average, or **-\$XX** million in total. These changes in revenue requirements are driven by long-term avoided costs and account for SBC and LDAC revenues. The reductions in revenue requirements are distributed across each rate class differently, depending on the rate class' structure. Additional details, including graphs showing bill and rate

³⁸ Draft 2021-2023 Plan, Filed April 1, 2021

impacts for non-participants, high and low savings participants, and average customers for each customer segment and each Regulated Utility, is included in Attachment K.

8.4 Lighting Market Trends

The NH Utilities carefully considered and accounted for the significant ongoing changes in lighting markets in the development of the draft 2021-2023 Plan. There are two primary aspects impacting the claimable lighting savings reflected in the 2021-2023 Plan:

1. The quantity of bulbs that the NH Utilities anticipate being able to deliver; and
2. The net savings per bulb, given evaluation paradigms.

For the first item, the NH Utilities used historical quantities as well as recent study results to determine the remaining potential from lighting. Specifically, the results from the residential baseline survey revealed that the majority (over 50 percent) of bulbs in New Hampshire homes are already LEDs. Given this finding, the NH Utilities planned for residential retail lighting quantities to decline substantially over the term; since LED bulbs last up to 15 years, people will have less need to purchase bulbs of any kind. For C&I customers, based on preliminary results from surveys of NH lighting suppliers as well as survey and on-site results from Massachusetts and Rhode Island, the NH Utilities have planned for increased levels of C&I lighting in 2021, focusing primarily on capturing the remaining market potential for retrofit lighting. Final results from the Achievable Energy Efficiency Potential Study are pending and the NH Utilities anticipate continuing to revise projected savings to reflect those results.

Additionally, for midstream and upstream lighting, the NH Utilities took into account the likelihood that consumers participating in the programs would have purchased an LED on their own, referred to as free ridership and reflected in the Net to Gross (“NTG”) rate for the measures. Utilizing guidance from studies in other states, and accounting for possible differences in the New Hampshire market, the NH Utilities applied declining NTG rates over the term for both residential retail and C&I midstream lighting.

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Chapter Nine: Evaluation, Measurement, and Verification

EM&V has been an integral component of the efficiency programs in New Hampshire since their inception. EM&V has many objectives, including verifying portfolio energy savings, estimating future energy savings of specific measures and behaviors, and identifying ways to improve program delivery and results. The 2018-2020 Plan established a formalized NH EM&V Working Group, consisting of Commission Staff members, independent EM&V consultants hired and supervised by the Commission, representatives of the NH Utilities, and a representative of the NH EESE Board.

The EM&V Working Group has worked diligently to build upon previous evaluation work and expand the portfolio of NH evaluation activities to a level commensurate with the size and scope of the NHTSaves Programs, and it will continue doing so as the programs continue their growth over the 2021-2023 triennium.

- All completed NH evaluations are posted at: https://puc.nh.gov/Electric/Monitoring_Evaluation_Report_List.htm; and
- EM&V Working Group agendas and other materials are posted at: https://www.puc.nh.gov/EESE%20Board/EERS_Working_Groups.html#em&v.

The NH Utilities, together with the EM&V Working Group, have also sought to make the most effective use of New Hampshire evaluation resources by leveraging the efforts of neighboring jurisdictions—both by collaborating with other states to conduct joint evaluations, and by adopting results from other states' evaluations where appropriate. For example, Eversource and Unitil joined with counterparts in Massachusetts and Connecticut on a regional evaluation of C&I demand response programs and pilots, which are implemented on a similar basis across the multi-state service territories. This approach allowed for higher quality results at a lower cost than would be possible through a study limited to NH offerings and evaluation funding. Similarly, the Energy Efficiency Baseline and Potential Study is leveraging analysis of the regional residential and C&I lighting markets being led

out of Massachusetts, by augmenting survey and interview efforts with New Hampshire-specific research questions.

9.1 Evaluations Completed in 2020

The EM&V Working Group has continued progress on a number of ongoing research efforts that are concluding in 2020. Table 9-1 lists the evaluations completed or planned for completion in 2020.

Table 9-1: 2020 Evaluations

Evaluation	Vendor	Completion Date	Results
Energy Efficiency Baseline and Potential Study	Dunsky Energy Consulting	Draft results, April 2020 (est.); Final report, June 2020 (est.)	The study provides a key source of planning assumptions and inputs for 2021-2023 Plan (see below).
HPwES Impact and Process Evaluation	Opinion Dynamics Corporation	Draft report, December 2019; Final report, April 2020 (est.)	Impact results are reflected in the TRM. Process recommendations, including incentive structure changes and software upgrades are being pursued as described in the residential section of the plan.
HEA Impact, Process, and Low-Income NEI Evaluation	Opinion Dynamics Corporation	Draft report, February 2020; Final report, April 2020 (est.)	Impact results are reflected in the TRM. Process recommendations, including incentive structure changes and software upgrades are being pursued as described in the residential section of the plan. NEI values will be incorporated in the TRM based on review by the NH Benefit-Cost Working Group, per Commission order. ³⁹
Crosscutting Non-Energy Impacts Study	DNV-GL	Final database, January 2020 Gap and sensitivity analysis, May 2020 (est.)	NEI values will be incorporated in the TRM based on review by the NH Benefit-Cost Working Group, per Commission order. ²

³⁹ Commission Order No. 26,232, 2018-2020 New Hampshire Statewide Energy Efficiency Plan, 2020 Update Plan, Order Approving Plan, December 31, 2019

Table 9-1: 2020 Evaluations (continued)

Evaluation	Vendor	Completion Date	Results
Bill and Rate Impact Analysis	Synapse Energy Economics, Inc.	Draft model, March 2020; Final model and report, May 2020 (est.)	The model results provide information on the bill, rate, and participant impacts of the 2021-2023 Plan programs (see Planning Elements section).
Cross-State C&I Demand Response Evaluation (<i>joint with Massachusetts and Connecticut</i>)	Energy & Resource Solutions	Draft report, January 2020; Final report, April 2020 (est.)	The study provided evaluated load reduction values for the 2019 ADR offerings, and a recommended approach used to estimate planned load reductions for the 2020 program, as described in the Supplemental Information filing to the Commission. ⁴⁰

In addition to the ongoing evaluations listed above, the NH Utilities, in coordination with the EM&V Working Group, have begun developing the NH TRM, which provides detailed, comprehensive documentation of savings calculations and assumptions for measures offered under the NHSaves Programs. This work will result in a public-facing, electronic TRM in 2020, as described above in the Planning Elements chapter.

9.2 Strategic Evaluation Plan

In early 2020, the Commission’s EM&V consultants began engaging the EM&V Working Group in updating the NH Strategic Evaluation Plan (“SEP”). The updated SEP provides a prioritized and annotated list of evaluation activities to guide the EM&V Working Group over the next several years. These activities will include impact and process evaluations—including a Large Business evaluation—as well as an NHSaves Market Assessment and other activities needed to ensure the NHSaves Programs continue to produce verified, accurate savings, and achieve the highest levels of performance.

⁴⁰ DE 17-136, 2020 Demand Reduction Initiatives, Supplemental Information, February 28, 2020

In developing the SEP, the EM&V Working Group worked jointly to identify a set of near-term priority evaluation efforts to undertake in early 2020. The EM&V Working Group reviewed the previous Six-Year Evaluation Plan, past NH project evaluation work, work conducted in other states, emerging issues and workload constraints to develop a consensus on the following priority evaluations.

- Large C&I impact evaluation;
- New construction baseline and standard practice evaluation;
- Targeted primary research to update and fill TRM gaps;
- NHSaves Market Awareness assessment; and
- NEI gap review and supplemental research.

Additional projects will be planned as part of a more comprehensive process to be undertaken starting in late 2020. This later process will include projects discussed during the early 2020 process and will also be guided by results from the Achievable Energy Efficiency Potential study and gaps identified by the independent consultant's TRM review.

9.3 Energy Efficiency Baseline and Potential Study

One of the key EM&V Working Group efforts used to inform the 2021-2023 Plan is the assessment of New Hampshire's Achievable Energy Efficiency Potential, being conducted by Dunsky Energy Consulting. This study will provide insights into the available energy and demand reduction opportunities in the state and will provide annual savings forecasts for a wide set of energy efficiency and ADR measures across all fuels and segments.

The study leverages detailed data and analysis on residential market baselines, providing insights on the saturation and efficiency of energy-using equipment in New Hampshire homes. In addition, the study leverages an in-depth commercial and industrial baseline database, comprised of information on equipment stock in similar jurisdictions and adapted to reflect New Hampshire's businesses, along with primary data being collected on New Hampshire businesses. The study will examine customer barriers and the impact on the levels of achievable savings from energy efficiency. The study will then assess the impact of different spending levels by modeling multiple scenarios with a range of incentive levels.

Draft results of the achievable energy efficiency and demand response potential are expected to be available in late April 2020, and the final results will be available in early June 2020. For the April 1 submission, preliminary study results have informed the savings assumptions and planned quantities for lighting over the 2021-2023 term. For the final 2021-2023 Plan filing, detailed results will be available at different level of disaggregation (at the sector, segment, end-use level), allowing the NH Utilities to identify areas with additional growth opportunities for energy efficiency investments and inform savings goals for the NHSaves Programs.

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