



DRAFT 2021-2023 NEW HAMPSHIRE STATEWIDE ENERGY EFFICIENCY PLAN

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

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

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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") customers¹ 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 second draft of the 2021-2023 Statewide Energy Efficiency Plan ("Draft 2021-2023 Plan") for review by the Energy Efficiency and Sustainable Energy Board ("EESE 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 Utilil Energy Systems, Inc. d/b/a Utilil-NH Electric Operations ("Utilil 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. d/b/a Utilil-NH Gas Operations ("Utilil Gas") (hereinafter referred to as the "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 Units ("MMBtu") saved through New Hampshire's energy efficiency programs helps the NH Utilities to



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.

¹ Hereinafter, the word "customer" will be understood to mean both customers and New Hampshire Electric Cooperative members.

achieve deeper energy savings, reduce harmful greenhouse gas (“GHG”) emissions, save customers 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 kWhs and 45.7 MMBtus. This results in a cumulative customer savings in excess of \$3.4 billion.

The NH Utilities are proud to deliver innovative energy-efficient solutions to their customers, residential and commercial/industrial, 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. The NH Utilities are prepared to help customers achieve increased energy efficiency savings in 2021-2023 in furtherance of the Energy Efficiency Resource Standard (“EERS”), established by the New Hampshire Public Utilities Commission (“Commission”), and other state energy policies (see Chapter One).

The NH Utilities have designed a dynamic energy efficiency framework 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 pay attention to how they use energy and to provide them accessible paths to saving energy and money over the next three years. The 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 \$1.1 billion over the lifetime of the measures.

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



- **Increased Energy Savings.** During the 2021-2023 term, NHSaves Programs will result in savings of 5.5 billion electric kWhs and 9.7 million natural gas MMBtus over the lifetime of installed energy-saving measures. In addition, New Hampshire's 2021-2023 energy efficiency programs will save 7.3 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 50.4 megawatts ("MW") and winter peak demand by 48.6 MWs.
- **Stronger State Economy.** New Hampshire's energy efficiency investments help support the state's economy in multiple ways. Energy efficiency contractors are necessarily local, so most of the NHSaves funds invested in residential weatherization and other efficiency measures stay in the New Hampshire economy. In turn, lower energy bills free up participating customers' household budgets, including those of our most vulnerable low-income populations, to be directed to other goods and services.

2021-2023 Plan
programs will reduce
GHG emissions by
3.8 million 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 health and safety, and libraries.

- **Highly-Trained Workforce.** The NH Utilities plan to continue providing workforce development opportunities to the growing local labor workforce that supports the implementation of energy

efficiency solutions throughout the state. The 2021-2023 NHSaves Programs will support 3,924 full-time equivalents (“FTEs”) or 8.2 million² work hours.

- **Cleaner Environment.** The energy savings from the NHSaves Programs protect the public health and environment through significant reductions in carbon dioxide, air-polluting sulfur and nitrous oxides, and other emissions. The 2021-2023 NHSaves Programs will provide a lifetime reduction of more than 3.8 million tons of GHG emissions, the equivalent of taking 817,364 passenger vehicles³ off the road for one year.

² 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., Chakraborti, 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>.

³ 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 NHSaves Residential and C&I Programs and will work together to seamlessly deliver customer-centric solutions 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, vendors, and the energy efficiency marketplace.

1.1 Energy Efficiency and Sustainable Energy Board

In 2008, New Hampshire's legislature created the EESE Board⁴ 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. 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 incentives 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 to develop a framework, the EERS, within which the NHSaves Programs would be implemented. The process resulted in 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 agreement⁵ 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, to pursue annual savings goals, as well as achieve the long-term objective of achieving all cost-effective energy efficiency.

⁴ NH RSA 125-O:5-a; Oct.1, 2008.

⁵ 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>.

Coincident with the EERS, the Commission also established a recovery mechanism to compensate the NH Utilities for lost revenue resulting from the 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 for an additional year 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 plan⁶ (“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 Commission-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 Christopher T. Sununu and the New Hampshire Office of Strategic Initiatives (“OSI”) released the New Hampshire 10-Year State Energy Strategy⁷ (“Strategy”) in compliance with state legislation and statute. The Strategy 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 enables economic growth. The Strategy 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 term, the NH Utilities will vigorously pursue cost-effective strategies to reduce customers’ energy bills, to reduce demand for new generation capacity on the electric and natural gas systems, and to reduce air pollutant emissions.

⁶ 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>.

⁷ New Hampshire Office of Strategic Initiatives. *New Hampshire 10-Year State Energy Strategy*. April 2018. Available at: <https://www.nh.gov/osi/energy/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 term, the NH Utilities are pursuing increased energy efficiency savings goals under the EERS.

To meet the 2021-2023 EERS goals laid out in this plan, the NH Utilities will 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 4.2 percent of the NH Electric Utilities' 2019 kWh delivery sales and 2.8 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

Electric Programs	2018-2020 Plan	2021-2023 Plan
Cumulative Lifetime MWh Savings	4,038,590	5,546,071
Cumulative Annual MWh Savings	334,273	436,606
Cumulative Annual Savings as a % of 2019 Delivery Sales	3.2%	4.2%
Cumulative Program Funding	\$154,142,047	\$288,218,669
Program Cost per Lifetime kWh Savings	\$0.038	\$0.052
Natural Gas Programs	2018-2020 Plan	2021-2023 Plan
Cumulative Lifetime MMBtu Savings	7,509,343	9,696,991
Cumulative Annual MMBtu Savings	525,575	701,884
Cumulative Annual Savings as a % of 2019 Delivery Sales	2.1%	2.8%
Cumulative Program Funding	\$31,396,650	\$41,536,135
Program Cost per Lifetime MMBtu Savings	\$4.18	\$4.28

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* ("Scorecard⁸"), 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 thirteenth. In preparation for the Draft 2021-2023 Plan filing, the NH Utilities have reviewed other states' energy efficiency portfolios to determine additional opportunities to modify, improve, and lead the NHSaves Programs toward cost-effective, comprehensive energy savings over the next three years, and improve our ACEEE ranking.

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 incorporated into the NH Utilities' planning process. In addition, the NH Utilities used evaluation results during the 2018-2020 term to help modify the NHSaves 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 order of this list does not necessarily correlate to level of importance.*

Priority One: Commitment to Deliver Cost-Effective Energy Efficiency

Energy efficiency is the lowest-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 important benefits that energy efficiency provides to their customers and to motivate them to actively pursue all cost-effective energy efficiency measures and behaviors. The 2021-2023 Term

⁸ 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>.

represents a continued increase in electric, natural gas, and fuel-neutral energy savings in New Hampshire.

Figure 1-1: Electric Programs Over Time

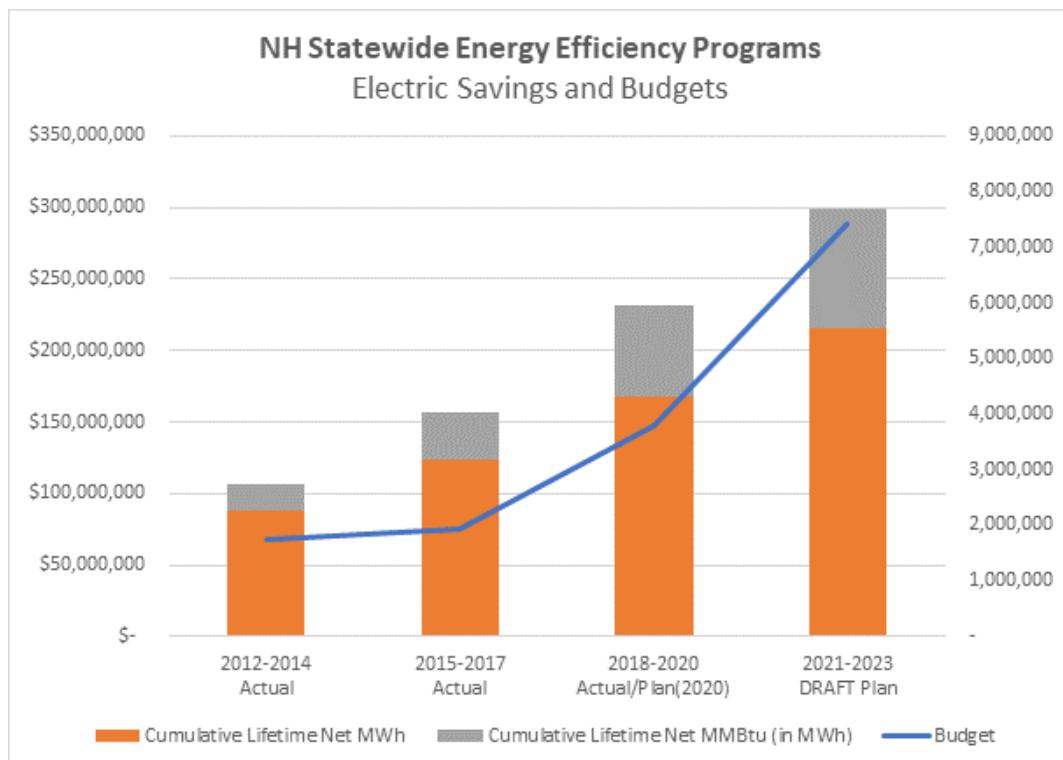
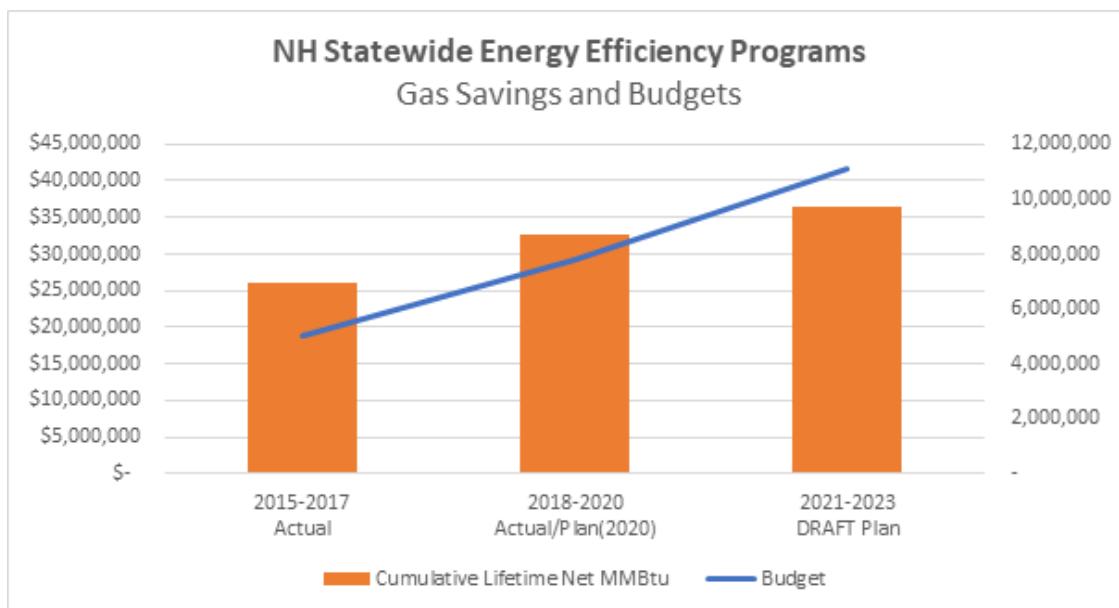


Figure 1-2: Natural Gas Programs Over Time



Throughout the 2021-2023 term, the NH Utilities plan to deliver tailored, comprehensive solutions to customers and drive electric and natural gas savings. The electric programs are deliberately expanding beyond lighting measures, which have provided an inexpensive and relatively easy means of reducing electricity use for the past decade.

For the C&I Programs, “tailored, comprehensive solutions” will involve testing various channels, incentive models, and strategies to identify more precisely what motivates customers and contractors to implement comprehensive energy-saving projects. The NH Utilities will explore offering a tiered incentive design focused on the 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 continue to offer cost-sharing comprehensive audits and will investigate the willingness of C&I customers to pay for these types of audits.

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, with their dollars staying in 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 providing them a variety of innovative energy efficiency services and 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 achieve energy savings. Through targeted marketing efforts, the NH Utilities can then re-engage these customers to purchase additional energy-efficient equipment, use that equipment more effectively, 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 will encourage additional participation through the expansion of their “Main Street” efforts and community outreach initiatives, as well as the creation of standard 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: Develop and Implement a Workforce Development Strategy

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 develop a New Hampshire-focused Workforce Development Strategy, 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 train and recruit a qualified workforce. This strategy 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 pandemic on the New Hampshire Workforce. The NH Utilities anticipate working more closely with key state agencies, such as the NH Employment Security Office, and the Community College System, in order to develop this comprehensive Workforce Development Strategy for (re)building the energy efficiency workforce. For more information regarding the NH Utilities' workforce development plan, please see Chapter Nine.

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 residential customers. Part of the NH Utilities' 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 Streets efforts and community blitzes to further engage local businesses and community groups.

Priority Seven: Upgrading Weatherization Systems and Data Sharing

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 certain statewide programs. For the NHSaves Residential weatherization programs, their home audit and tracking system will be upgraded and deployed in 2021, which 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 Button⁹ Connect My Data, which allows third parties to receive and seamlessly combine energy data from different utilities. Each of the regulated NH Utilities has been investigating the IT requirements and deployment costs associated with the sharing of customer energy use data.

Priority Eight: Implement Effective Active Demand Reduction Strategies



Effective demand reduction strategies can help reduce energy prices and price spikes during summer. For the 2021-2023 term, the NH Electric Utilities will develop and deploy several Active Demand Reduction (“ADR”) strategies to flatten peak loads, improve system load factors, and reduce costs for all electric customers.

The NH Electric Utilities plan to implement two C&I ADR offerings: Interruptible Load and Storage Performance. The Interruptible Load offering will be technology agnostic and allow customers to earn an incentive based on their curtailment performances. The Storage Performance offering consists of a bring-your-own device (“BYOD”) offering for C&I customers with behind-the-meter storage.

⁹ 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>.

Participants 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 two residential ADR offerings: Battery Storage and Wi-Fi Thermostat Direct Load Control. In addition, the NH Electric Utilities will explore implementing an Electric Vehicle ("EV") pilot. The Battery Storage offering will incentivize participants to discharge stored energy from their batteries in response to a signal from their NH Electric Utility. Wi-Fi Thermostat offering participants will be incented to allow brief, limited adjustments to their Wi-Fi thermostats during periods of peak demand. If implemented, the EV offering would utilize incentive strategies to reduce charging demand during peak hours. The NH Utilities will explore this program offering and implement it 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 seeks to minimize customers' total energy usage across all energy source and to maximize customers' benefits. The NH Utilities are currently developing an Energy Optimization pilot, based on learnings from pilots in other states and from work performed by NHEC. The pilot will focus on conversions from delivered fossil-fuel systems to higher efficiency electric systems. For more information on the NH Utilities' Energy Optimization pilot, see Chapter Seven.

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' strategy is to actively seek out cost-effective, non-lighting measures wherever possible to provide a robust portfolio during the 2021-2023 term. Several factors were considered to make this determination, including significant discussion with stakeholders at EERS Subcommittee working sessions, as well as among members of the EM&V Working Group. Most influential in this decision were: 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 10.4 for a full discussion), and the need to pursue comprehensive energy efficiency projects to capture all 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 transition program support to discount retailers focused on reaching the last-to-adopt or hard-to-reach customers.

For the NHSaves C&I Programs, an emphasis on contractor trainings and the introduction of tiered incentives should 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, direct and indirect 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 improvements, due to better air quality (indoor and outdoor). 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 are spending a significant portion of their day, whether working or relaxing at home.

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 19.1 billion electric kWhs and 45.7 million natural gas MMBtus, resulting in cumulative customer savings in excess of \$3.4 billion. Furthermore, the 2019 Independent System Operator-New England (“ISO-NE”) Energy Efficiency Forecast¹⁰ found that energy efficiency programs in New England will save over 2,460 MWs of peak demand from efficiency projects installed between 2020 and 2028. The 2021-2023 NHSaves Programs will save more than 5.5 billion electric kWhs and 9.7 million natural gas MMBtus. In addition, the 2021-2023 NHSaves Residential and C&I Programs will save 7.3 million MMBtus from other fuels, such as oil and propane. Over the lifetime of these measures, this will result in customer cost energy savings of more than \$1.1 billion.

1.6.2 Cost Savings

Energy efficiency program participants receive significant direct benefits from energy efficiency programs; however, all customers benefit from the reduction in energy consumption through efficiency and conservation resulting from NHSaves programs. 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 increasing energy demand resulting from the country’s higher growth rates in population, number of households, and commercial floorspace.¹¹

1.6.3 Environmental Benefits

Energy efficiency programs help reduce energy consumption, which in turn reduces the amount of fossil fuels burned by power plants. This reduces GHG emissions that contribute to climate change and

¹⁰ 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.

¹¹ EIA. *Annual Energy Outlook 2020*. Available at: <https://www.eia.gov/outlooks/aoe/>.

air pollution across the region, thereby helping to minimize the cost of mitigation at the state and federal level. Since their inception, the NHSaves Programs have helped reduce GHG emissions by more than 11.8 million tons, the equivalent of taking 2.6 million passenger vehicles off the road for one year. The 2021-2023 NHSaves Programs will lead to a reduction of more than 3.8 million tons of GHG emissions, the equivalent of taking 817,364 passenger vehicles off the road for one year.

1.6.4 Economic Benefits

Spending on energy efficiency services and technologies supports the local workforce in New Hampshire. For every million dollars spent on energy-efficient measures, such as building retrofits or new equipment, an estimated 6.2 direct jobs and 2.7 indirect jobs¹² are supported. Using this calculation, the 2021-2023 NHSaves Programs will support 3,924 FTEs or 8.2 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, 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 directly 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.

¹² 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>.

1.7 2021-2023 Program Goals

Table 1-1: Electric Program Annual Savings, by Utility

	2021	2022	2023	2021-2023	Percentage of 3-year Savings
Electric Annual Savings (MWh)					
Eversource	93,761	108,018	131,346	333,126	76%
Liberty Electric	9,442	12,222	15,040	36,704	8%
NHEC	7,047	7,844	7,549	22,439	5%
Unitil Electric	13,764	14,174	16,399	44,338	10%
Total	<u>124,014</u>	<u>142,258</u>	<u>170,334</u>	<u>436,606</u>	<u>100%</u>

Table 1-2: Electric Program Annual Savings, by Sector

	2021	2022	2023	2021-2023	Percentage of 3-year Savings
Electric Annual Savings (MWh)					
C&I and Municipal	96,555	120,499	150,056	367,110	84%
Residential	25,339	19,078	17,214	61,631	14%
Income-Eligible	2,120	2,681	3,064	7,865	2%
Total	<u>124,014</u>	<u>142,258</u>	<u>170,334</u>	<u>436,606</u>	<u>100%</u>

Table 1-3: Natural Gas Program Annual Savings, by Utility

	2021	2022	2023	2021-2023	Percentage of 3-year Savings
Natural Annual Savings (MMBtu)					
Liberty Gas	154,834	182,492	200,581	537,907	77%
Unitil Gas	43,434	56,229	64,315	163,977	23%
Total	<u>198,268</u>	<u>238,721</u>	<u>264,895</u>	<u>701,884</u>	<u>100%</u>

Table 1-4: Natural Gas Program Annual Savings, by Sector

	2021	2022	2023	2021-2023	Percentage of 3-year Savings
Natural Annual Savings (MMBtu)					
C&I and Municipal	130,252	153,713	175,459	459,424	65%
Residential	56,782	72,428	75,586	204,796	29%
Income-Eligible	11,235	12,579	13,850	37,665	5%
Total	<u>198,268</u>	<u>238,721</u>	<u>264,895</u>	<u>701,884</u>	<u>100%</u>

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 bills for customers of 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

Table 1-5: Annual Electric Budget, by Utility

	2021	2022	2023	2021-2023	Percentage of 3-year Budget
Electric Budget (\$000)					
Eversource	\$57,763	\$72,453	\$89,982	\$220,197	76%
Liberty Electric	\$6,025	\$7,368	\$9,003	\$22,396	8%
NHEC	\$4,965	\$5,489	\$5,512	\$15,967	6%
Unitil Electric	\$7,909	\$9,876	\$11,873	\$29,658	10%
Total	<u>\$76,662</u>	<u>\$95,187</u>	<u>\$116,370</u>	<u>\$288,219</u>	<u>100%</u>

Table 1-6: Annual Natural Gas Budget, by Utility

	2021	2022	2023	2021-2023	Percentage of 3-year Budget
Natural Gas Budget (\$000)					
Liberty Gas	\$9,294	\$10,260	\$11,417	\$30,970	75%
Utili Gas	\$2,827	\$3,575	\$4,164	\$10,566	25%
Total	\$12,121	\$13,835	\$15,580	\$41,536	100%

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 and meets New Hampshire legislative requirements¹³ that 20 percent of the SBC funds be directed toward limited-income programs.

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 and reinvested into programs. 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.

¹³ RSA 374-F.3 VI: Electric Utility Restructuring Act, 1996. VI. Benefits for All Consumers. "Restructuring of the electric utility industry should be implemented in a manner that benefits all consumers equitably and does not benefit one customer class to the detriment of another. Costs should not be shifted unfairly among customers. A non-by-passable and competitively neutral system benefits charge applied to the use of the distribution system may be used to fund public benefits related to the provision of electricity. Such benefits, as approved by regulators, may include, but not necessarily be limited to, programs for low-income customers, energy efficiency programs, funding for the electric utility industry's share of commission expenses pursuant to RSA 363-A, support for research and development, and investments in commercialization strategies for new and beneficial technologies...".

Chapter Two: Three-Year Planning Structure

The purpose of this chapter is to outline the NH Utilities' proposal to effectuate a true triennial program operating period with a single planning and settlement effort and three-year goals, rather than three distinct annual operating periods with separate planning efforts and goals.

This chapter describes the rationale behind the NH Utilities' proposal to transition from a three-year plan punctuated by significant annual updates to a true three-year plan that emphasizes long-term goals and three-year budgets. This change will give the NH Utilities the flexibility to successfully implement the term plan while maintaining transparency and accountability. Adoption of a true three-year plan structure will improve program delivery to customers, foster innovation, provide greater flexibility to adapt to fluid and evolving market conditions, and result in a more cost effective and efficient process for the NH Utilities and stakeholders. Many of the leading states for energy efficiency¹⁴ (i.e., Massachusetts, California, and Vermont) implement true three-year or multi-year plan operating cycles, allowing them to focus on new technologies, innovative program designs, and targeting underserved customers.

2.1 A Three-Year Plan

Commencing with the 2021-2023 Plan term, the NH Utilities propose to fully transition to 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 NH Utilities will implement the three-year plan consistent with such approval and will only seek to modify budgets or goals if certain triggers discussed in Section 2.1.6 are met. During the three-year term, the NH Utilities will apply new evaluation results and updated avoided costs to the actual results on a prospective basis beginning on January 1 of the year after the

¹⁴ ACEEE. 2019 State Scorecard. Available at: <https://database.aceee.org/state-scorecard-rank>. In the 2019 State Scorecard, Massachusetts, California, and Vermont, were ranked first, second, third, respectively.

results are finalized.

The final calculation of achievement toward the Commission ordered three-year term energy savings, benefits goals, and the resulting Performance Incentive (“PI”) earned will take place following the conclusion of the third year of the term, in a comprehensive term report (“Term Report”) to be filed by each NH Utility, along with a statewide summary. Planned and approved targets will not change during the term. However, the actual savings and benefits resulting from the portfolio of programs will be reported using the prospective application of results from evaluations and the Avoided Energy Supply Components study (“AESC Study”) as finalized during the term. While the plan will be triennial, stakeholders will remain fully apprised of the NH Utilities’ progress toward achieving the term goals through quarterly and annual reports.

A true triennial plan will improve program delivery and eliminate barriers facing customers (such as avoiding the stop/start of programs), contractors, installers, utility staff, and other local and regional stakeholders by providing a longer view and greater ability to adapt over time. Setting three-year budgets and goals will allow the NH Utilities the necessary flexibility to adapt to changing economic conditions, seasonal anomalies, and the evolving energy efficiency marketplace. This new structure will also allow for the introduction of new measures and innovations, with the ability to learn and adjust during the three-year period without undue focus on annual goals.

The NH Utilities and their partners will be able to develop and execute strategies over a longer period to capture energy savings when and where they are available and to test promising new ideas that a one-year performance horizon makes impractical. With a three-year planning 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 ratepayer funds.

Budget flexibility across program years will also allow the NH Utilities to effectively execute multi-year commitments with large commercial, industrial, and municipal customers, which the NH Utilities are

confident will result in sustained, long-term, and comprehensive energy savings and potential reductions in administrative costs. Furthermore, a three-year plan, budget, and goals support a sustainable energy efficiency economy by providing more stability and certainty for contractors and partners that invest in training and workforce development over a longer time horizon than 12 months. Moving to a 36-month budget will reduce administrative resources needed to design and approve annual planning efforts and program changes, and will put a greater focus on program implementation, innovation, and achievement of goals.

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 term, the NH Utilities filed two plan update filings with the Commission (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, must participate 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 period will reduce the time and resources spent in adjudicative proceedings for all parties, thereby allowing resources to be dedicated to serving customers rather than administrative matters. The NH Utilities propose to provide regular and transparent reporting, including robust quarterly and annual reports to the Commission regarding progress toward the three-year goals, changes to NHSaves Program delivery or design, and the results from evaluations, including updates to the Technical Reference Manual (“TRM”) and the AESC. Triggers for mandatory review of one or more of the NH Utilities’ plans ensure that proposals for significant mid-term modifications are reviewed and approved by the Commission, with opportunity for stakeholder input.

This proposal strikes the appropriate balance between improved program flexibility with reduced administrative burden, while maintaining robust accountability and Commission oversight.

2.1.1 Savings Goals

In a triennial plan structure, energy savings and benefits goals will be set for the entire three-year period. The NH Utilities will provide a savings target for each program year of the term. This annual target, however, shall be considered a directional indicator, while the binding goal for each utility will be based on the cumulative activity over the three-year term.

The NH Utilities will report actual savings and benefits, applying relevant evaluation findings to the years in which the studies apply. The NH Utilities will also update assumptions resulting from the 2022-2024 AESC studies in their reporting.

Approved term goals *will not change without Commission approval* regardless of the results of these studies. However, in order to maximize savings and benefits for customers, the NH Utilities are likely to implement changes to program delivery and measure mix as a result of changing market conditions, evaluation findings, and other market intelligence gained during the term. For example, if an evaluation finds that a specific measure saves less energy than was estimated in the approved triennial plan, the NH Utilities will apply the updated values to the following year's TRM, as well as the benefit-cost model used for the calculation of actual savings and benefits. The NH Utilities may also choose to modify the measure offering by adjusting incentive levels or even discontinuing incentive support for the affected measures.

Stakeholders will be made aware of these changes through several channels:

- The Evaluation, Measurement, and Verification (“EM&V”) Working Group will be made aware of the evaluation impacts to measures and programs as evaluations are drafted and finalized, and final reports are posted to the Commission’s website;
- A searchable, electronic TRM, developed by the NH Utilities in coordination with the EM&V Working Group, will be updated and published annually to a public website, which will highlight all changes to measure assumptions to be applied to the following year;
- The NH Utilities will highlight any changes to measure incentives in each quarterly report, which

is distributed to the service list and subject to discussion at quarterly meetings; and

- The NHSaves website will reflect up-to-date information regarding what equipment and other energy efficiency measures are eligible for incentives, which measures are offered through mail-in rebate, retail/distributor or online channels, and the dollar amount of all incentives.¹⁵

These changes, however, will only impact the reporting of savings, and not the planned and approved term goals or budgets. The exception is if a mid-term modification trigger is met, which will require Commission review and approval of the impacts before changes can be considered official. Under the three-year term construct, the NH Utilities will gain the flexibility to adapt to evaluation impacts and pursue cost-effective energy efficiency opportunities in order to achieve the term goals within the approved budget.

2.1.2 Budgets

Each NH Utility will develop individual program budgets for the term, as well as an estimate of the annual budgets. 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), remaining in the relevant energy-saving program. Overspending in the initial program years would reduce the remaining funds available for the remainder of the term. In order to ensure that the NH Utilities are not unduly constrained, while also ensuring significant increases in spending are subject to Commission review, the NH Utilities propose to allow each NH Utility to spend up to 110 percent of each sector's approved term budget without further Commission approval.

2.1.3 Funding

The three-year plan includes estimated customer bill and rate impacts by utility for each year of the triennium (see Section 10.3). Commission approval of the triennial plan will constitute approval of each of the NH Utility's three-year term budget, as well as the term budgets for each program; non-binding *annual* program budgets are also provided. Annually, 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

¹⁵ Note: some rebates are determined on a case-by-case basis and depend on the size, savings, total cost, efficiency rating, etc.

year's program budgets. The model for this proposal is the LDAC charges currently utilized by the NH Natural Gas Utilities. In this approach, energy efficiency budgets are developed and approved in the energy efficiency docket, while the LDAC rate itself is considered and approved in Liberty Gas's and Unitil Gas'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 and allow each utility to collect only those funds needed to execute their proposed programs, rather than being tied to a specific rate set for a statewide savings goal.

An important element of this proposal is that, as with the revenue raising mechanism utilized by 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 disproportionately reduces more fossil fuel use than electricity). This dynamic 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 would lead to a disproportionate amount of funding for NHSaves Residential Programs, as well as 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 is greatly reduced over the coming term as a result of market transformation to LED technology.

A review of other jurisdictions¹⁶ 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 to where it is most cost effective, 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 budgeted for low-income energy efficiency programs. Additionally, the NH Utilities have committed to budgeting and spending at least 17 percent of the total portfolio investment on low-income energy efficiency programs. Other than the revenues needed for the income-eligible programs (which are funded by both the residential and C&I sectors, relative to revenues), SBC and LDAC funds will continue to be dedicated to the sector from which they are collected.

The electric energy efficiency programs will continue to receive and rely on revenues from two other sources: the proceeds from each NH Electric Utility's participation in ISO-NE's FCM, and New Hampshire's participation in RGGI. FCM revenues are unique to each utility and are based on the amount of capacity each NH Electric Utility has bid into and delivered to 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 (C&I) and Home Energy Assistance (Residential) programs.

Actual and expected revenues from these two streams, as well as interest earned on balances, will

¹⁶ Eversource, MA (2020). Summary of Eastern Massachusetts Electric Rates for Greater Boston Service Area, Effective Jan. 1, 2020. Retrieved from: https://www.eversource.com/content/docs/default-source/rates-tariffs/ema-greater-boston-rates.pdf?sfvrsn=c27ef362_40.

Baltimore Gas & Electric (2020). Electric Efficiency Charge. Filed Nov. 18, 2019 and Effective Jan 1. 2020. Retrieved from https://www.bge.com/MyAccount/MyBillUsage/Documents/Electric/Rdr_2.pdf.

Efficiency Vermont (2019). Summary of Energy Efficiency Charges for 2019. Retrieved from https://www.efficiencyvermont.com/Media/Default/docs/EEC-rates/VECBill_Insert2018_Final.pdf.

Georgia Power (2020). Demand Side Management Residential & Commercial Schedules: "DSM-R-8". Retrieved from, 1) <https://www.georgiapower.com/content/dam/georgia-power/pdfs/residential-pdfs/residential-rate-plans/DSM-R-8.pdf>, and 2) <https://www.georgiapower.com/content/dam/georgia-power/pdfs/business-pdfs/rates-schedules/small-business/DSM-C-7.pdf>.

CenterPoint Energy Houston Electric, LLC (2020). Tariff for Retail Delivery Service. Retrieved from <https://www.centerpointenergy.com/PublishingImages/CNP/Common/SiteAssets/doc/CNPRetailDeliveryTariffBook12107.pdf>.

offset revenues needed by each of the NH Electric Utilities 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 determined based on achievement over the full three-year term. 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.

Given that the ADR pilot offerings were introduced after the work of the PI Working Group was concluded, there is currently no ADR element in the PI framework. In 2021-2023, the ADR offerings will transition from demonstration projects to full-fledged programs; those NH Utilities that offer an ADR program will include a distinct PI component for achievement of ADR goals, 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. 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 savings goals will be presented in the September 1, 2020 filing.

For the NH Utility annual reports, 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 NH Utility will perform a final calculation of earned PI, based on their actual achievement over the term 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 recovery of PI.

Additional discussion of the PI calculation, drawing from the 2019 PI Working Group Report¹⁷, can be found in Chapter Ten.

¹⁷ 2019 PI Working Group Report. Available at: https://www.puc.nh.gov/EESE%20Board/EERS_WG/20190913-EERS-WG-PI-FINAL-REPORT.pdf.

2.1.5 Reporting

As discussed above, each NH Utility will calculate actual achievement of term goals, budgets, and PIs as part of a comprehensive Term Report. The NH Utilities will report actual achievement relative to planned levels, as adjusted by any mid-term modifications (see Section 2.1.6, “Commission Notification and Mid-Term Modifications”). The Term Reports, along with a statewide summary, will be filed with the Commission no later than August 1st after the conclusion of the final year of the three-year term. The Commission will perform its final audit of the 2021-2023 term based on the Term Report and grant final cost recovery and PI following such investigation.

In addition to the Term Report, quarterly reporting over the course of the 2021-2023 term will ensure continued transparency into the progress of the NH Utilities in achieving the proposed goals, as well as provide an opportunity for New Hampshire’s regulators and stakeholders to provide feedback on the evolving market for energy efficiency. The NH Utilities will continue to submit a joint Quarterly Report 60 days after the end of each quarter.

For the first and second years of the term, a statewide Annual Report will be filed with the Commission. Assumptions underlying the reported savings and benefits will be based on that year’s Report and TRM, as discussed in more detail below. Updated avoided costs from the 2021 AESC Study will also be applied to the 2022 and 2023 Annual Reports for the purpose of calculating benefits. In addition, each Annual Report will detail the progress made by the NH Utilities individually and as a group toward achieving the three-year goals, as well as estimated PI earned that year for each of the NH Utilities.

The Annual Report will also include a projection from each NH Utility on whether it anticipates achieving its savings and benefits goals and with the available budgets over the term. While the Term Report will be subject to a comprehensive review by the Commission, the Annual Report filing will not include a formal adjudicative process unless the Commission deems further investigation necessary. This structure will provide the Commission and stakeholders the continued ability to assess cost effectiveness and progress toward goals annually. In addition, the structure will reduce administrative

time and cost burdens, and will continue to provide the opportunity for comprehensive review after the term has concluded but before the final PI is booked.

By December 1 of each year, the NH Utilities will file an updated TRM, reflecting prospective changes to measure assumptions that will take effect on January 1 of the following program year. This TRM will incorporate all evaluation findings, marketplace changes, emerging technologies, changing federal and state regulations, building code standards, and other pertinent information impacting measure savings assumptions. For the 2021-2023 term, the NH Utilities anticipate producing three TRMs:

Table 2-1: Planned TRMs during the 2021-2023 Plan Term

TRM version	Used for:
2021-2023 Plan TRM, filed with Plan	Planned 2021-2023 activity Reporting 2021 actual activity
2022 TRM for Reporting, to be filed 12/1/2021	Reporting 2022 actual activity
2023 TRM for Reporting, to be filed 12/1/2022	Reporting 2023 actual activity

This TRM update process will be managed by the EM&V Working Group, which consists of NH Utilities members, as well as the Commission's evaluation consultants, Commission Staff representatives, and a liaison to the EESE Board who is nominated and approved by vote of the EESE Board representatives. The NH Utilities will strive to include consensus-based assumptions for all measures and offerings included in the NHSaves Programs. Should consensus not be reached, members of the EM&V Working Group may petition the Commission for resolution on the matter. For more information regarding the EM&V process, see Chapter 11.

In order to provide the Commission and EESE Board with information on the results of the 2021 regional AESC Study, the NH Utilities will also submit an informational report to the Commission and EESE Board in the fall of 2021, documenting the impact on planned benefits over the three-year term. As part of this informational report, each NH Utility will calculate the impact of the updated avoided costs on the approved plan for 2022 and 2023. The report will allow for a comparison by year of 2022

and 2023 Commission-approved benefits and cost-effectiveness calculations with the projected benefits and cost effectiveness applying the results of the AESC Study.

As noted above, while the new AESC Study will impact actual reported benefits, the NH Utilities will not change their *planned* savings or benefits goals unless a mid-term modification trigger is met, and the Commission approves a requested change. If the impact of the AESC Study (alone or in conjunction with other evaluation results) is substantial enough to require a modification, each of the impacted NH Utilities will develop and file a proposed revision of their plan goals and budgets in accordance with the process set forth in Section 2.1.6.

2.1.6 Commission 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 be significant enough to necessitate a mid-course correction that requires 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 an individual utility 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 suspension or closure of a program.
- Shifting of program budgets of more than 20 percent of the term budget within a sector.
- 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.
- The annual filing of 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.).

A Commission notification under this section will not result in a change to approved three-year plan goals or budgets.

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

- Inclusion of a new program (by one or more of the NH Utilities).
- Increase in the proposed term budget for a sector of more than 110 percent of the approved term budget for that sector:
 - If necessary, the applicable NH Utility will also file an associated increase in the budget and savings goals for income-eligible programs in order to satisfy NH Rev Stat 374-F:3 (2015).
- A projected decrease to the planned and approved benefits or primary energy savings (kWh or kW) for NH Electric Utilities; MMBtu for NH Natural Gas Utilities) in a sector of greater than 25 percent over the term.
- A change to the planned and approved NH Utility's Granite State Test portfolio benefits or primary energy savings (kWh or summer kW for NH Electric Utilities, MMBtu for NH Natural Gas Utilities) greater than 10 percent in either direction over the term resulting from a combination of one or more of the following:
 - an update to the AESC Study;
 - evaluation findings; or
 - significant and demonstrable changes to the marketplace, or other circumstances outside of an NH Utility's control which may jeopardize the feasibility of some material element or elements of the triennial plan (i.e., COVID-19 pandemic).
- An approved mid-term modification under this section will result in a corresponding change to a NH Utility's plan goals and/or budgets. The NH Utility will compare actual performance with the modified and Commission-approved plan goals and budgets in its respective Term Report.

2.1.7 Exceptions

In exigent circumstances, an NH Utility may petition the Commission for an exception to the specific mid-term modification triggers and procedures set forth above. The NH Utility shall have the burden to demonstrate the compelling nature of such request.

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Chapter Three: NHSaves C&I Energy Efficiency Programs

Since 2002, the NH Utilities have implemented 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, purchase high-efficiency equipment and technologies, and increase productivity. Also, the program defers the need for additional generation on the electrical grid and protects the environment through reduced electricity, natural gas, and fossil fuel consumption.

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, and retailers. 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 develop 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 third-party's findings and recommendations to determine how they can improve the delivery of the NHSaves 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 Programs' 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 efforts 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 market segments (e.g., convenience stores, manufacturing, multifamily buildings, restaurants, retail stores, etc.) and end-use equipment (e.g., compressed air, industrial boilers, LED fixtures and controls, motors, retro-commissioning, VFDs and controls, HVAC including heat pumps, low-energy snowmaking guns, etc.). Standard offer marketing collateral packages will serve as market and facility-specific energy efficiency guides to help small and large C&I customers and contractors understand potential incentives, energy-efficient measures, and other energy-saving opportunities.

The NH Utilities have extensive expertise in effectively implementing the NHSaves C&I Programs and understand the target markets, end-use systems and equipment, participation barriers, and market actors (i.e., trade ally networks). The creation of a targeted, 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 and Small Business Energy Solutions programs, 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.
- 7. Expand Product and Service Provider Infrastructure.** During the 2021-2023 term, the NH Utilities will continue to expand their point-of-sale (midstream) incentive 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 emerging technologies.
- 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 (Statewide)



- **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 the business market they're operating in, customer service, and innovation.

- **Municipal Program.** This NHSaves energy efficiency solution provides technical assistance and incentives to municipalities and school districts to help them identify energy-saving opportunities and implement projects. The Municipal program was established by legislation and is administered by the NH Electric Utilities and provides fuel-neutral opportunities for energy savings. The NH Natural Gas Utilities also service municipalities; however, they seamlessly provide the same key services and incentives to towns and cities 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 ("O&M") budgets. This allows these entities to reduce O&M 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 referenced above, Eversource implements a Large Business Energy Rewards Request for Proposal ("RFP") program.

Figure 3-2: C&I Programs (Eversource Only)



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

Multifamily Offering

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 market segment. This will provide multifamily building owners an overview of the NHSaves 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.

3.1.3 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 NHSaves Programs, the NH Utilities and a consultant will develop a cohesive statewide Workforce Development Strategy for understanding workforce development priorities and what training is needed for vendors, community action agencies, distribution contractors, building operators, and other energy efficiency stakeholders. For more information regarding the NH Utilities' Workforce Development Strategy, see Chapter Nine of the 2021-2023 Plan.

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 market segment realize energy savings, improve productivity, and reduce O&M 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, outbound calling, 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.

3.1.6 Financing

The NH Utilities recognize that financing mechanisms are effective in encouraging C&I customers to invest in comprehensive energy efficiency projects, especially when combined with the NHSaves Programs' energy-efficient incentives. The NH Utilities currently offer several financing options, including on-bill financing and low-interest/interest-free loans, to their commercial, municipal, and industrial customers. During the 2021-2023 term, the NH Utilities will continue to offer several financing options to encourage C&I customers to pursue comprehensive and cost-effective energy efficiency projects.

On-Bill Financing

All of the NH Utilities offer on-bill financing mechanisms for commercial and municipal customers. On-bill financing mechanisms help reduce upfront costs and allow C&I customers to repay loans through their monthly energy bills. Customers gravitate toward on-bill financing due to its simplicity in applying for loans as well as loan repayment being accounted for as an expense versus capital. These financing tools allow for more comprehensive energy-saving projects by reducing cost and transaction barriers. The availability of these offerings and maximum loan amounts depend upon available capital for the on-bill loans.

The NH Utilities will continue to focus their on-bill financing activities toward small and medium businesses without access to low-cost capital. Small business customers are more likely to commit to

comprehensive energy-saving projects if they can overcome the upfront cost barriers of installing high-efficiency equipment and controls through zero-percent interest loans.

Traditional On-Bill Financing

All NH Utilities offer a zero-percent on-bill financing revolving loan program to small business customers. Customers can install energy efficiency measures with no upfront costs and pay for them over time on their electric bills. Liberty Electric, Liberty Gas, Utilil Electric, and Utilil Gas also make on-bill loans available to their municipal and large business customers.

Smart Start

Eversource and NHEC offer Smart Start tariffs, tied to the meter, on-bill repayment to municipal customers. This financial offering provides municipal customers with the opportunity to install energy-saving measures with no upfront costs and the ability to pay for the measures over time on their electric bill with the savings realized from lower energy costs. Municipalities reimburse their utility (Eversource¹⁸ or NHEC¹⁹) through charges added to their regular monthly electric bill. The Smart Start charges are calculated to be less than or equal to the customer's estimated monthly energy savings. NHEC also offers Smart Start to commercial customers.

Additional Financing Offerings

In addition to on-bill financing offerings, the NH Utilities provide other options that can help New Hampshire business customers invest in energy efficiency. These include an online competitive loan platform, equipment leasing, and loan options offered by the Community Development Finance Authority ("CDFA"), the New Hampshire Finance Authority ("NHFA"), and Property Assessed Clean Energy ("PACE") financing where available, and from other banks and lending institutions across the state.

¹⁸ Eversource Delivery Service Tariff Rate SSP106 outlines the requirement for service under the SmartSTART financing option.

¹⁹ NHEC pays all costs associated with the purchase and installation of approved energy efficiency measures. A SmartSTART Delivery Charge, calculated to be less than or equal to the monthly savings, is added to the member's monthly electric bill until all costs are repaid. NHEC's Delivery Service Tariff Rate SmartSTART SDC 107 outlines the requirements for service under the SmartSTART financing option.

Online Competitive Loan Platform

In 2019, the National Energy Improvement Fund (“NEIF”) presented its online competitive loan platform to the NH Utilities and Financing and Funding Working Group. The platform allows energy efficiency installation contractors to present a variety of financing options at the point of sale with the customer. By entering the project information into the platform, the contractor can match the project with lenders who could satisfy the lending needs of the customer. A portion of the project incentive is utilized to buy down the interest to zero percent. The customer can then explore an initial analysis of cashflow and paybacks that they can then use to choose a loan option. Eversource began offering the loan platform to its C&I customers in 2019.

3.2 Small Business Energy Solutions Program

3.2.1 Program Objective

The NH Utilities energy efficiency offering 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 a variety of needs and market barriers that limit or prevent them from pursuing energy efficiency opportunities. These needs and 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 energy users are the target market for the program, and specifically those customers who use less than 200 kW annual demand (electric) or 40,000 Therms (natural gas), which represent 97 percent of the NH Utilities' C&I customer accounts.

The small and midsize business market segment has a diverse set of customer types, including convenience stores, dry cleaners, office buildings, private schools, repair and professional services, restaurants, general and specialty retail stores, and commercially or master-metered multi-tenant facilities just to name a few.



photo by Amanda Garabrant

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.

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, on-bill financing mechanisms, and strategies to identify what motivates customers and contractors toward implementing cost-effective, comprehensive projects. The NH Utilities will continue to offer 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.

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 controls, Wi-Fi thermostats, and building controls.

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 incentives now offered for commercial kitchen equipment (i.e., dishwashers, fryers, griddles, and ice machines) and HVAC equipment (i.e., heat pump water heaters) and water heating equipment. 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 continual 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 efforts 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 activities engage small business customers in NHSaves C&I Programs and efforts, thereby helping Main Street reinvest in employees, business operations, and the local economy.

Please see Section 3.3.3 for more information about Main Street efforts and community blitzes.

3.2.4 Program Design

The NH Utilities are exploring segment- and facility-specific energy efficiency guides and standard offer marketing packages that small business customers and contractors can utilize to plan for more comprehensive energy-saving projects. In the 2021-2023 term, the NH Utilities will work with program contractors to develop these types of resources.

Small business customers are offered a number of channels to participate in the NHSaves C&I Programs and throughout the 2021-2023 term the NH Utilities will continue to simplify this process. For instance, small business customers can install high-efficiency lighting through multiple pathways, including: direct installation by program contractors, applying for downstream rebates for prescriptive and custom projects, and receiving midstream rebates. The NH Utilities will continue to look for new pathways to better align with contractor distribution models and customer engagement within the small business market segment.

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, including sell sheets and presentations, to provide targeted small business market segments with specific information and incentives tailored to their market's end-use systems and equipment. For example, a food and grocery store sell sheet would identify the incentives for commonly-incentivized measures, such as high-efficiency lighting and controls, HVAC systems and controls, and commercial 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, like the other NHSaves Programs, is dependent upon a well-trained and customer-oriented contractor network to promote its benefits, energy-efficient measures, incentives, financing mechanisms, and to help identify tailored solutions for New Hampshire's 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.** These 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.** These incentives are flexible and allow customers to determine if a non-standard (not on the prescriptive list or overly complex) 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 will 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), HVAC controls, 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 and controls, insulation and air sealing, integrated air compressors, specialized equipment (e.g., polymer bead washing machines), and industrial process equipment.

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 incentives.

Turnkey Direct Installations

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 at no cost to the customers. Then, the contractors recommend energy-efficient improvements, and directly install customer-approved measures, including, but not limited to: hot water-saving measures, LED lighting and controls, programmable Wi-Fi thermostats, commercial 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 energy efficiency contractors work with business owners to guide them through the program's processes, 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 efforts and community blitzes.

Customer-Directed Installations

Turnkey To streamline and increase participation, the NH Utilities also encourage customer-directed installations (measures installed by the customers' vendors of choice) of energy-efficient equipment through prescriptive incentives for common, pre-qualified measures.

Midstream Incentives

Midstream (point-of-sale) incentives encourage distributors to stock and promote energy-efficient equipment and systems, including, but not limited to lighting, 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

Table 3-1: Small Business Energy Solutions Program—Energy Savings and Budgets

	2021	2022	2023	2021-2023
Electric Programs				
Program Budget	\$14,930,533	\$19,734,888	\$22,256,582	\$56,922,002
Annual kWh Savings	37,864,829	46,193,386	53,161,187	137,219,401
Lifetime kWh Savings	487,751,207	598,936,071	695,881,982	1,782,569,260
kW Reduction	4,256	4,734	5,117	14,107
No. of Participants	5,844	5,628	4,769	16,240
Natural Gas Programs				
Program Budget	\$2,083,254	\$2,489,792	\$2,906,431	\$7,479,476
Annual MMBtu Savings	36,098	43,199	49,693	128,991
Lifetime MMBtu Savings	566,459	683,359	784,213	2,034,031
No. of Participants	1,339	1,407	1,492	4,238
Note: kWh = kilowatt hours, kW = kilowatts, and MMBtu = million British thermal units.				

3.3 Municipal Program

3.3.1 Program Objective

The Municipal program was established by legislation²⁰ to focus RGGI energy efficiency revenues on New Hampshire's towns and cities and is administered by the NH Electric Utilities. 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 to help reduce energy costs and promote comprehensive energy-saving projects.

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 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. These barriers include 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),

²⁰ 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.

the long-term budgeting and approval process of towns and cities for capital improvements, and the cyclic electoral turnover of municipal representatives.

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.

While the Municipal program is administered by the NH Electric Utilities, the NH Natural Gas Utilities do provide the same C&I rebates, technical assistance, and financing to municipalities; however, these are offered through other NHSaves C&I Programs. The NH Utilities work closely together to ensure that the process for municipalities to participate in energy efficiency projects, regardless of electric, natural gas, or other fuel measures, is seamless.

3.3.3 2021-2023 Plans

For the 2021-2023 term, the NH Electric 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 and solutions. Municipal capital projects involve long-term planning and goals which do not always align with the current annual savings goals for the NHSaves 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 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 controls, commercial refrigeration measures, programmable Wi-Fi thermostats, 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

Continuing for the 2021-2023 term, the NH Utilities remain 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 from across the state. Municipalities with energy-efficient town and school buildings serve as sustainable role models, educating and empowering citizens and businesses to participate in NHSaves Residential and C&I Programs.

The NH Utilities will continue to work with their Community Relations and Account Executive departments to engage municipal leaders to help identify appropriate energy champions within that community. Outreach will also be conducted by leveraging existing relationships already developed through the local energy committees.

Main Street Efforts

In 2020, the NH Utilities initiated their Main Street efforts. This unique initiative allows the NH Utilities to focus outreach efforts on specific neighborhoods and to provide personal attention to the small businesses and smaller town and city accounts in that community. Initially, the NH Utility that serves the community will partner with a municipality to lead an “energy blitz” campaign to educate local businesses about the NHSaves C&I Programs, energy-saving measures, incentives, and financing tools that can help them reduce their energy consumption and save money. The applicable NH Utility will send out communications to the targeted community letting them know about the Main Street campaign in their community, including specifics regarding its duration, objectives, program partners, and how a small business can engage in energy efficiency.

Then, an NH Utility-authorized contractor will perform a no-cost energy assessment of businesses to identify energy-saving opportunities, such as high-efficiency lighting and controls, Wi-Fi thermostats, occupancy sensors, and commercial refrigeration measures and controls. During the assessment some of these measures are immediately installed, while larger energy-saving projects, such as new HVAC systems and controls, are scheduled for direct installation at a later date.

During the 2021-2023 term, the NH Utilities plan to continue their Main Street efforts 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 Utilities’ employees who work closely with municipalities and energy committees to leverage partnerships with chambers of commerce, Main Street groups, and affinity groups (e.g., NH Lodging & Restaurant Association, NH Grocers Association, NH Manufacturing Extension Partnership, etc.) to conduct more aggregated campaigns rather than single-customer marketing activities. Main Street efforts will also utilize the new standard offer materials to provide targeted marketing collateral to market segments and microbusinesses typically not targeted by the C&I Programs’ turnkey vendors.

To ensure that the NH Utilities are focusing their Main Street efforts strategically, the NH Utilities will look to establish a steering committee comprised of municipalities, energy committees, stakeholders,

and community partners during the 2021-2023 term. This steering committee will help the NH Utilities establish a clear set of guidelines for selecting (i.e., qualifying) a community for Main Street efforts to ensure its efficacy and cost-effectiveness.

Additional Municipal Engagement

In addition, 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 small and rural towns and cities through the energy efficiency process and educate them regarding the programs and incentives. The NH Utilities will provide additional technical assistance to help municipal customers review proposals, implement long-term planning, develop sustainable procurement policies, and how to discuss projects with the community at town and school board meetings. This increased technical assistance, combined with additional workforce development and the new Granite State benefit-cost test will allow less cost-effective projects (small municipal buildings with lower operating hours) to be implemented in rural and small towns across the state.

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 and control measures. If RGGI funding is exhausted, the NH Utilities will work with the municipality to offer 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. Similar to the other NHSaves C&I Programs, the Municipal program focuses on providing seamless pathways for customers to participate in energy efficiency projects. Though programs, measures, and incentives are detailed in the 2021-2023 Plan, the NH Utilities work with municipalities to present an efficiency solution tailored to them.

The NH Utilities are consistently looking for new ways to simplify the process for municipal customers and contractors to engage in energy efficiency. Municipal customers have several pathways to install high-efficiency lighting, including direct install, downstream rebates for prescriptive and custom projects, and upstream rebates. In addition to the direct-install option, the NH Utilities envision a new mid-size comprehensive model for municipal customers. The NH Utilities have also moved certain existing downstream offerings upstream, such as commercial kitchen equipment to make a municipality's participation seamless. Throughout the 2021-2023 term, the NH Utilities will continue to develop new pathways to better align with contractor distribution models and customer engagement within the municipal market segment.

Incentives

Similar to Small Business Energy Solutions, the Municipal program offers prescriptive and custom incentives to encourage towns and cities to implement energy efficiency projects.

Prescriptive Incentives

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 incentives through turnkey contractors (see Program Pathways section) if they are installing standard energy-efficient measures.

Custom Incentives

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.

Targeted Incentives

In addition to prescriptive and custom measures, the Municipal program provides targeted incentives to encourage New Hampshire's towns and cities to commit to energy efficiency projects. For public school buildings, NHSaves Programs offer energy-efficient school incentives of up to 100 percent of the incremental cost of new equipment and new construction projects to assist buildings to improve indoor air quality²¹. As referenced earlier in this section, the Municipal program offers fuel-neutral incentives for the installation of energy-efficient measures, such as boilers²², 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 natural gas-saving measures.

Financing Products and Incentive Structure

In addition to incentives, the NH Utilities provide on-bill financing and other financing products which allows municipalities to pay for a project out of their O&M 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

²¹ RSA 374-F.4 VIII(a): Electric Utility Restructuring Act, 1996. VIII-a. Any electric utility that collects funds for energy efficiency programs that are subject to the Commission's approval, shall include in its plans to be submitted to the Commission program design, and/or enhancements, and estimated participation that maximize energy efficiency benefits to public schools, including measures that help enhance the energy efficiency of public school construction or renovation projects that are designed to improve indoor air quality. The report required under RSA 374-F:4, VIII(f) shall include the results and effectiveness of the energy efficiency programs for schools and, in addition to other requirements, be submitted to the commissioner of the department of education.

²² Note: Very few fuel-neutral incentives for boilers and furnaces are issued on an annual basis. As natural gas is not available in many areas of the state, the NH Utilities see oil and propane as the only option for older municipal buildings without incurring extensive weatherization upgrades to cost-effectively support electric heating technologies, such as heat pumps.

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, such as HVAC equipment and controls, programmable Wi-Fi thermostats, and air compressors.

Measures

During the 2021-2023 term, the Municipal program will provide incentives for both high-efficiency prescriptive and custom measures. 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.

Prescriptive 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), HVAC controls, heat pump water heaters ("HPWHs"), LED lighting and controls, motors, spray rinse valves, VSDs, water heater pipe wrap, water-heating equipment, and Wi-Fi thermostats.

Custom Measures

Custom measures will include, but are not limited to: energy management systems, heat pump water heaters, insulation and air sealing, commercial 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 NH Utilities rely on the technical and project management expertise of contractors to work effectively with municipalities to aggregate energy-saving projects, determine the best energy efficiency solution for the town or city, and analyze how incentives and financing mechanisms can help make the project feasible and affordable.

Turnkey Vendor Installations

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 term, the NH Utilities will continue to increase the availability of turnkey vendors' schedules and expand their Main Street efforts and community blitzes.

Customer-Directed Installations

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 C&I 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 term, 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 to implement audit findings and recommendations identified as part of a prior three-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. BOC training helps municipal facility managers learn to efficiently manage town and school building operations and helps connect NH Utility employees with municipal points of contact. The NH Utilities will also participate in affinity group conferences.

3.3.5 Program Budget and Goals

Table 3-2: Municipal Program—Energy Savings and Budgets

	2021	2022	2023	2021-2023
Electric Programs				
Program Budget	\$1,984,980	\$1,991,043	\$1,995,022	\$5,971,045
Annual kWh Savings	3,739,385	3,517,212	3,416,622	10,673,218
Lifetime kWh Savings	51,884,216	49,985,750	48,668,216	150,538,183
kW Reduction	497	453	454	1,404
No. of Participants	177	176	174	528
Note: kWh = kilowatt hours, kW = kilowatts.				

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3.4 Large Business Energy Solutions Program (Retrofit and New 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 annual 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 Assessment²³ ("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 create standard offer marketing packages to these large C&I customer segments:

- **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 businesses during their respective off-seasons, as energy efficiency investments cannot interfere with business operations.

²³ 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>.

The NH Utilities are exploring segment- and facility-specific energy efficiency guides and standard offer marketing packages that large C&I customers and contractors can utilize to plan for more comprehensive energy-saving projects. In the 2021-2023 term, the NH Utilities will work with contractors to develop these types of resources.

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 financial assistance to help defray the cost of technical assistance to assist with targeted systems tuning and process 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 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 promoting and incentivizing air compressors and chiller optimization as an entry point to work with new manufacturing customers. Air compressors and chillers provide highly cost-effective savings and the NH Utilities have found that the existing marketplace for these technologies is focused on selling high-efficiency components to large C&I customers. Once air compressors and chillers are installed, large C&I customers are encouraged by the cost-effective energy savings to participate in deeper energy efficiency projects, such as boiler optimization, process optimization, refrigeration measures, and VFDs. For the 2021-2023 term, another critical focus of the Large Business Energy Solutions program is retro-commissioning; encouraging contractors to look holistically at entire building systems rather than individual system components.

For the Healthcare sector, the program will focus on promoting the adoption of high-efficiency HVAC technologies and controls, 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 and controls.

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 commercial refrigeration equipment to this customer segment.

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, improved comfort of the building space, 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 methods 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:

1. Deep Energy Savings and Lower Energy Use Intensity;
2. Whole Building with Modeled Savings;
3. Simplified Whole Buildings Worksheet Model; and
4. Systems and Measures.

Deep Energy Savings and Lower Energy Use Intensity Pathway

The NH Utilities will introduce a Deep Energy Savings and Lower Energy Use Intensity (“EUI”) path over the next three-year period. The EUI path is designed to encourage new construction projects with a target of zero net energy or zero net emissions. For the 2021-2023 term, the NH Utilities are exploring offering a building commissioning incentive.

Whole Building with Modeled Savings Pathway

The second path is the Whole Building with Modeled Savings path which is 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.

Simplified Whole Buildings Worksheet Model Pathway

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.

Systems and Measures Pathway

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 Program Offerings

The NH Utilities are consistently looking for new ways to simplify the process for C&I customers to engage in energy efficiency including offering different incentive models and pathways. For example, large C&I customers who install high-efficiency lighting can participate through downstream incentives

for prescriptive and custom projects, and the NH Utilities can shift downstream offerings upstream, such as commercial kitchen equipment. Throughout the 2021-2023 term, the NH Utilities will continue to develop new pathways and incentives to better align with contractor distribution models and customer engagement to better serve the large C&I customer market segment.

Similar to other C&I solutions, 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 incentives 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 10 and 11) 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.

In 2020, the NH Utilities added commercial kitchen equipment and HVAC to its midstream offerings. During the 2021-2023 term, the NH Utilities will continue to actively evolve their midstream initiatives to capitalize on multiple measures.

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. These type of projects have 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 preferred choice due to the reliability of the equipment, less GHG emissions emitted, and the low cost of fuel. Other fuels could include liquid natural gas, propane, diesel, or biomass. 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.

For the 2021-2023 term, both the NH Electric Utilities and NH Gas Utilities will include and support CHP projects across the state. In addition, the NH Utilities will also develop a network of vendors to assist with screening CHP projects to determine qualifications and system performance, as well as establish partnerships with universities and other groups to assess CHP opportunities. 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.

One-on-One Technical Assistance

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

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

Engineering firms are 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, retro-commissioning opportunities, 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. In addition, the NH Utilities will provide third-party review of savings for customers participating in performance contracting.

The NH Utilities note that flexibility is key for serving large C&I customers. Different market segments and energy-efficient measures have unique payback requirements and there are varying barriers to implementation. Flexibility in the incentive model encourages large C&I customers to invest in comprehensive energy efficiency projects and not focus on individual measure savings or payback thresholds. A dynamic incentive model allows the NH Utilities to increase incentives for some measures while not overpaying for others; thus, allowing for the implementation of cost-effective projects.

Prescriptive Incentives

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.

Custom Incentives

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.

Performance-Based Incentives

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, lighting controls, and whole building projects implemented through the New Equipment & Construction pathway.

Performance Contracting

As noted in the Municipal program section, the NH Utilities have observed an increased interest in performance contracting over the last few years. During the 2021-2023 term, the Large Business Energy Solutions program will continue to support their large C&I customers who choose to follow the performance contracting path. The NH Utilities will collaborate with key performance contractor partners in the state on the development of energy efficiency projects. The NH Utilities provide a third-party review of calculated energy savings and help determine the right level of incentives to encourage the installation of highly cost-effective measures with lower savings to create a balanced, comprehensive suite of energy-efficient measures.

Measures

The NH Utilities will incentivize prescriptive, custom, and performance-based measures for the Large Business Energy Solutions program during the 2021-2023 term. The NH Utilities will search for

opportunities to achieve more energy savings through controls for building systems, such as energy management systems (“EMS”), lighting, HVAC equipment, and Wi-Fi thermostats.

Prescriptive Measures

Incentivized prescriptive measures will include, but are not limited to: air compressors, chillers, commercial kitchen equipment, heat pump water heaters, high-efficiency condensing equipment, hot water saving equipment, HVAC equipment (e.g., heat pumps and unitary air conditioners) and controls, insulation and air sealing, LED lighting and lighting controls, motors, commercial refrigeration equipment, process equipment, and VFDs.

Custom Measures

Many large C&I customers have complex technologies and specialty equipment and systems that require tailored solutions and custom measures. These custom measures will include, but are not limited to: chiller pump upgrades, CHP systems, EMS, 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.

Commissioning Assistance

The NH Utilities provide commissioning assistance for existing equipment and facilities. Energy savings are either prescriptive or custom calculations based upon metering and monitoring. Currently, the NH Utilities do not envision offering incentives for the commissioning of new building systems as builders and owners are expected to ensure optimal equipment performance as part of the cost to deliver a new construction and/or new equipment project.

3.4.6 Program Budget and Goals

Table 3-3: Large Business Energy Solutions Program—Savings and Budgets

	2021	2022	2023	2021-2023
Electric Programs				
Program Budget	\$17,529,406	\$23,964.916	\$34,032,616	\$75,526,937
Annual kWh Savings	52,327,569	65,919,278	85,598,743	203,845,591
Lifetime kWh Savings	695,150,821	878,523,771	1,139,692,527	2,713,367,118
kW Reduction	6,257	7,692	9,948	23,897
No. of Participants	2,057	2,265	2,513	6,835
Natural Gas Programs				
Program Budget	\$2,603,653	\$2,993,097	\$3,512.441	\$9,109,191
Annual MMBtu Savings	94,153	110,514	125,766	330,433
Lifetime MMBtu Savings	1,172,819	1,393,330	1,598,452	4,164,601
No. of Participants	406	441	472	1,319
Note: kWh = kilowatt hours, kW = kilowatts, and MMBtu = million British thermal units.				

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 and is designed to promote competitive market development in the energy efficiency industry by encouraging third parties to bid for energy efficiency projects on a competitive basis. 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 2021-2023 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. C&I customers of Eversource, energy service companies, and other third-party service providers representing an Eversource C&I customer are eligible to participate in the program.

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 an open-bidding cycle held year-round with bids awarded two times a year. 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 a customer’s annual accounting year (e.g., some state and local government calendar years end on June 30th, while some businesses’ fiscal years end on October 31st). This program modification 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 the number of submitted bids from large national companies and franchises whose counterparts in other states are competing for the same funding sources to complete renovation projects.

During the 2021-2023 term, the NH Utilities will encourage Energy Rewards program participants to develop sustainable procurement policies and implement comprehensive energy efficiency 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 submissions. 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.

Eligible measures include but are not limited to: high-efficiency lighting systems and controls, motor variable speed drives, process or air conditioning system improvements, and other measures that reduce annual electrical consumption. Non-eligible measures include new construction projects, any

power-producing projects such as cogeneration, fuel switching, and any repair or maintenance projects, and any technology with a measure lifetime of less than three years.

Program Process

For each RFP issued, Eversource hosts an Energy Rewards bidders' conference to provide customers and contractors information regarding submission requirements and the criteria used to select projects. Potential bidders are invited to the bidders' conference to learn how to participate in the program. Eversource also promotes the Energy Rewards program to Eversource customers with greater than 200 kW peak demand who might qualify either individually or on an aggregated demand basis. Potential energy service companies and third-party service providers are notified, and the Energy Rewards program and bidders' conferences are promoted²⁴ on the NHSaves and Eversource websites.

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. Non-price variables include such factors as whether the project includes measures other than lighting (e.g., HVAC and process measures) and whether the environmental impacts reduce on-site emissions or waste stream impacts. All projects are evaluated on the basis of established cost-effectiveness criteria.

²⁴ Energy Rewards Program. Available at: <https://nhsaves.com/energy-rewards-rfp-program/>.

3.5.4 Program Budget and Goals

Table 3-4: Energy Rewards Program—Energy Savings and Budgets

	2021	2022	2023	2021-2023
Electric Programs				
Program Budget	\$1,451,350	\$3,482,305	\$6,056,340	\$10,989,995
Annual kWh Savings	2,623,000	4,869,404	7,879,855	15,372,259
Lifetime kWh Savings	33,770,100	64,110,239	104,061,869	201,942,207
kW Reduction	265	456	716	1,438
No. of Participants	26	49	67	141
Note: kWh = kilowatt hours and kW = kilowatts.				

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 program budgets and 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 Programs' 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 NHSaves 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 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 & learn sessions.

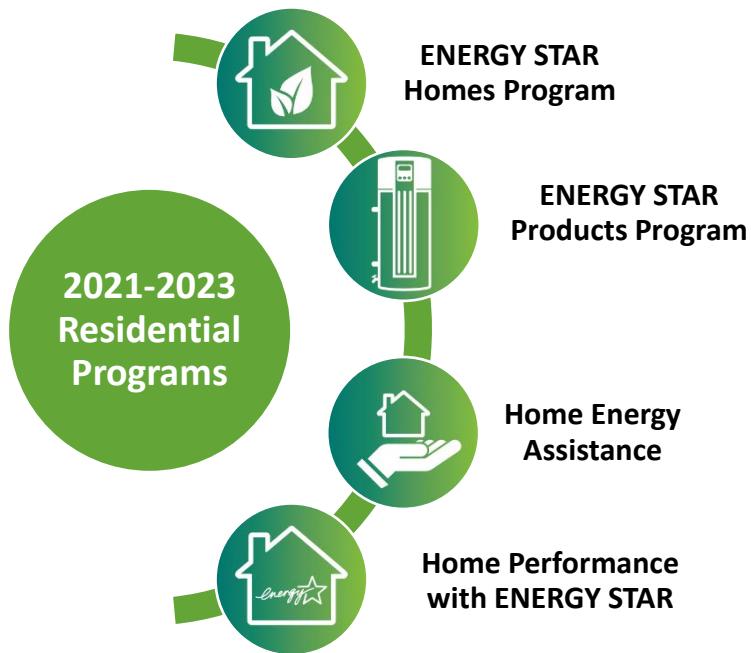
4.1.2 Residential Programs

For the 2021-2023 term, the NH Utilities will continue to deliver comprehensive NHSaves Residential Programs to help all New Hampshire residents regardless of income or home type, to reduce their energy consumption, save money, and protect the environment through reduced GHG emissions.

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 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 2007²⁵ ("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, 2019²⁶, 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.

²⁵ Public Law 110-40. Energy Independence and Security Act of 2007. Dec. 19, 2007.

²⁶ 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>.

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 billion light bulbs²⁷ 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, 2019,²⁸ 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

²⁷ 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.

²⁸ 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>.

begin to transition program support to discount retailers focused on reaching the last-to-adopt or underserved customers.

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 Code²⁹, 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 extensively 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 Workforce Development

To scale up participation and drive deeper energy savings for the 2021-2023 NHSaves Programs, the NH Utilities and a consultant will develop a cohesive statewide Workforce Development Strategy for understanding workforce development needs and what training is needed for vendors, community action agencies, distribution contractors, building operators, and other energy efficiency stakeholders. For more information regarding the NH Utilities' Workforce Development Strategy, see Chapter Nine of the 2021-2023 Plan.

4.1.6 Financing

The NH Utilities recognize that technical assistance, incentives, and innovative financing tools are all important mechanisms to effectively encourage residential customers to invest in comprehensive

²⁹ 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/>.

energy efficiency. Effective financing mechanisms have supported the success of the NHSaves Residential Programs and can be leveraged further in the next term. During the 2021-2023 term, the NH Utilities will continue to offer on-bill and third-party financing options to encourage residential customers to pursue comprehensive and cost-effective energy efficiency projects in their homes. These include zero percent on-bill offerings for electric and natural gas customers, two percent loans offered in partnership with local lenders, and zero-percent moderate-income loans, also in partnership with local lenders.

On-Bill Financing

All NH Utilities have on-bill financing available for Home Performance with ENERGY STAR program customers to help cover their portion of a weatherization project. Customers with a qualifying project apply to their NH Utility for the loan. Lending criteria includes bill payment history (all NH Utilities) and credit score (Eversource only). For customers receiving an on-bill loan, the NH Utility will pay the customer's co-pay to the contractor directly and the customer will pay off the loan at zero percent interest on their utility bill³⁰.

The NH Utilities will continue to monitor customer interest in residential on-bill financing as well as capital available for loans and may make adjustments to maximum loan amounts if needed. On-bill loan offerings are governed by each NH Utility's tariff and changes are made by updating the tariff with the Commission.

Residential Energy Efficiency Loan Program

Through the Residential Energy Efficiency Loan program, the NH Utilities partner with local lending institutions, banks, and credit unions to ensure capital and lending expertise is available to customers who want or need it to move forward with efficiency projects. The Residential Energy Efficiency Loan program allows qualified electric and natural gas customers to finance all or a portion of their share of

³⁰ Liberty Electric and Gas, Unitil Electric and Gas, and NHEC all have a maximum on-bill loan amount of \$4,000. Eversource has a maximum on-bill loan amount of \$2,000. Unitil has a maximum on-bill loan amount of \$7,500 for market-rate customers and \$15,000 for moderate-income customers. Customers needing larger loan amounts can access the Residential Energy Efficiency Loan Program with third-party lenders.

approved energy efficiency upgrades through a low-interest loan in cooperation with local banks and credit unions. Loans cover a residential customer's co-pay portion of the work performed through the Home Performance with ENERGY STAR program (e.g., insulation, appliances, and health and safety measures³¹) and some other approved energy efficiency measures

Customers can finance up to \$15,000 for qualifying energy efficiency upgrades and the customer's lending institution will determine if a customer is eligible for a loan based on their lending criteria. The NHSaves Programs subsidize a two percent APR home energy efficiency improvement loan to qualified customers. See Table 4-1 for loan amounts and repayment terms.

Table 4-1: Residential Energy Efficiency Loan

Amount	Max Loan Repayment Term
\$1,000 up to \$2,000	2 Years
\$2,001 up to \$4,000	3 Years
\$4,001 up to \$6,000	4 Years
\$6,001 up to \$9,000	5 Years
\$9,001 up to \$12,000	6 Years
\$12,001 up to \$15,000	7 Years

This third-party financing program is not designed to support a specific number of loans, but rather to ensure that customers have financing options available to cover the co-pay portion of their projects if needed. These financing dollars help drive more comprehensive projects. Throughout the 2021-2023 term, the NH Utilities will continue to offer the Residential Energy Efficiency Loan through their current lending partners for the 2018-2020 program cycle, and additional lenders will be included based on customer need and lender interest. The current lending partners include: Merrimack County Saving

³¹ Utilil Electric and Gas will give loans to Gas Networks customers.

Bank³², Meredith Village Savings Bank³³, Northeast Credit Union³⁴, Woodsville Guaranty County Bank³⁵ (Eversource and NHEC customers only), Claremont Savings Bank³⁶ (Eversource customers only), Mills 42 Federal Credit Union³⁷ (Eversource customers only), and the Savings Bank of Walpole³⁸ (Eversource customers only).

Moderate-Income Customer Financing

During the 2019 program year, the NH Utilities established a zero-percent moderate-income financial offering with local lenders. The NH Utility buys down the lender interest rate to zero percent and the lender additionally extends the maximum loan term to 10 years. These actions combine to result in a lower monthly loan payment for moderate-income customers compared to the payment for the typical Residential Energy Efficiency Loan. The lending partner determines whether the customer is within a moderate-income bracket and eligible for a loan based on their own income review and lending criteria. During the 2021-2023 term, this financing offering will continue.

Funding—NH Saves Partnership Initiative

During the 2021-2023 term, the NH Utilities will continue to work with stakeholders, local non-profits, and foundations in order to procure funds to be used to enhance offerings or overcome barriers beyond what is typically funded by the NHSaves Programs. This could include pre-weatherization barriers for HEA customers, expansion costs for CAAs, funding the co-pay of moderate-income customers, coordination with efforts that provide interactive benefits with energy efficiency, such as public health, or other identified opportunities. The NH Saves Partnership Initiative serves all of the NH Utilities' customers, however, this very much depends on the types of grants that are awarded.

Specific to income-eligible customers, in May of 2020, a grant was written and submitted on behalf of a CAA for a US Department of Agriculture Housing Preservation Grant. If awarded, this grant³⁹ will be

³² Merrimack County Saving Bank (2020). Available at: <https://www.themerrimack.com/>.

³³ Meredith Village Savings Bank (2020). Available at: <https://www.mvsb.com/>.

³⁴ Northeast Credit Union (2020). Available at: <https://necu.org/>.

³⁵ Woodsville Guaranty Savings Bank (2020). Available at: <https://www.theguarantybank.com/>.

³⁶ Claremont Savings Bank (2020). Available at: <https://www.claremontsavings.com/>.

³⁷ Mills 42 Federal Credit Union (2020). Available at: <https://www.mills42fcu.com/>.

³⁸ Savings Bank of Walpole (2020). Available at: <https://www.walpolebank.com/>.

³⁹ The grant request is for \$100k.

used for repairs and health and safety measures for single-family homes that the HEA program could not pay for and, therefore, the house would be classified as a “walk away.” Additionally, in May of 2020, a grant was written on behalf of a CAA and submitted to the Northern Borders Regional Commission, which provides economic and community development grants in Maine, New Hampshire, New York, and Vermont. This grant⁴⁰, if awarded, would pay for two trucks for a crew-based CAA that is expanding due to more HEA funds being available.

Throughout the 2021-2023 term, the NH Utilities will continue to look for additional opportunities to apply for grants and leverage funding resources to promote energy efficiency.

4.1.6 Marketing and Outreach

The NH Utilities will market the NHSaves Residential Programs through a variety of 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 NHSaves 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 effectively market new and existing program pathways and offerings to those customers who are most likely to respond and benefit from the NHSaves Residential Programs.



⁴⁰ This grant request is for \$70k.

In addition, the NH Utilities conduct significant community outreach through training such as the Button Up Workshops. This is 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.

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

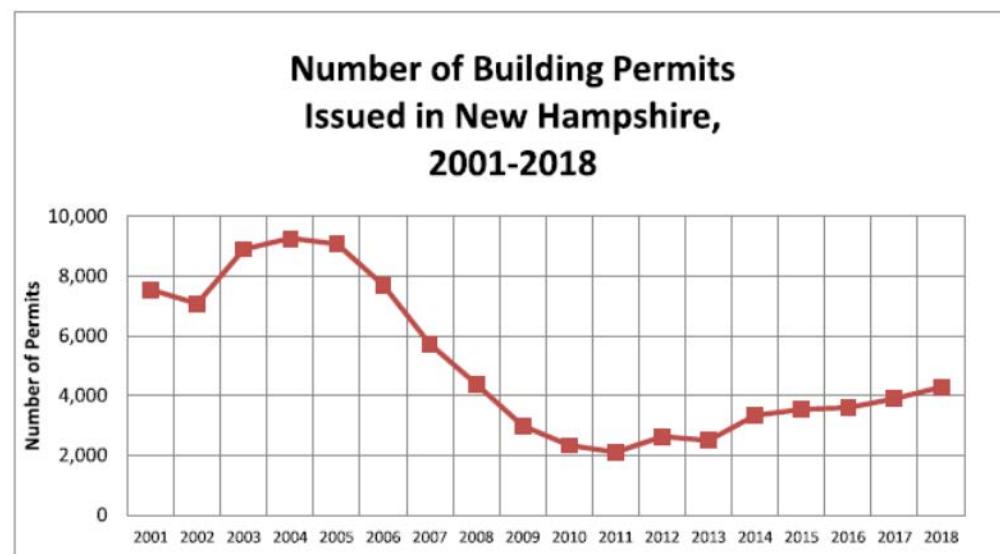
The target market for ES Homes is the entire residential new construction community across the state of New Hampshire. This includes architects, developers, home builders, homeowners, and HVAC contractors. All residential single-family and multifamily new construction projects are eligible to

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 4,285⁴¹, 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)



⁴¹ 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.

4.2.3 2021-2023 Plans

For the 2021-2023 term, the NH Utilities will implement a number of new strategies to 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 energy savings and participation in ES Homes. By 2030, an aspirational objective of the NH Utilities is to have 80 percent of new construction homes permitted in the state participating in ES Homes each program year⁴². During the 2021-2023 term, the NH Utilities will utilize a combination of training, technical support, and incentives to encourage home builders, renovation firms, and HVAC contractors to utilize the ES Homes' two performance-based pathways to integrate energy-efficient design and equipment into new construction or major rehab and renovation projects. For the 2021-2023 term, the ES Homes program will continue to have performance-based incentives and high targets for energy efficiency savings for the residential new construction marketplace.

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.

⁴² For the 2021-2023 term, the NH Utilities expect the number of residential permits pulled in New Hampshire that are enrolled in ES Homes to be between 15 and 30 percent. The 80 percent goal by 2030 is aspirational only and is not a PI metric.

Increase Workforce Development, Education and Outreach

To meet increased energy savings goals and to encourage greater participation in ES Homes, the NH Utilities will expand contractor education and outreach efforts during the 2021-2023 term. This includes providing more code and beyond code trainings for home builders, and lunch & learn sessions 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. The NH Utilities are researching current approaches for building code savings attribution in New England. This may include attribution of energy savings for increasing compliance with codes and standards, as well as conducting code trainings. 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.

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:

- 1. 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.

- 2. Passive House Certification.** The NH Utilities are closely watching the passive house (“Passive House”) movement in Massachusetts and Connecticut and will utilize any lessons learned in the development of a New Hampshire offering during the 2021-2023 term. The NH Utilities will

actively support Passive House trainings conducted by PHIUS in the region to the state's building community.

- 3. EV-Ready Homes.** The NH Utilities may also add a bonus incentive for newly-constructed homes that are built as EV ready. An EV-ready home ensures that customers have safe access to a dedicated 240 volt power supply for fast-charging Level 2 EV chargers. If a homeowner prewires their new home for EV charging during construction (even if it is not used immediately upon occupancy), they can save hundreds of dollars later. There are two paths to make a home EV-ready, including a pre-installed conduit and wiring for a Level 2 EV charger.

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.

- 4. 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 utilize heat pump technologies to mitigate the environmental impact of fossil fuels and eliminate fuel combustion within the home. The Companies may provide incentives for the following measures: building envelope measures, thermal energy-efficiency measures, air-source or heat pumps, increased use of biofuels, biomass heating systems, EV Readiness, and on-site renewable energy production and storage, including PV Readiness.
- 5. Above-and-Beyond Code Measures.** During the 2021-2023 term, the NH Utilities will explore offering incentives for energy-efficient measures that meet the next iteration of building codes for residential new construction, such as duct blaster thresholds and infiltration measures. In addition, the NH Utilities will explore implementing a pay-for-performance incentive for occupants of new homes to keep their home's energy consumption down.

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 across 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 an annual 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 Awards⁴³. These awards are presented yearly to recognize excellence in the building industry.

Throughout the 2021-2023 term, the NH Utilities will continue to meet with the EPA to collaborate on how to continue integrating advancements in net zero homes in New Hampshire. The ES Homes program is performance based and uses HERS as a scoring mechanism to determine incentives on a dollar-per-point below the target HERS Index Score. Net zero homes have a low HERS Index Score (i.e., energy efficient); therefore, homeowners and builders who build a net zero home will earn a higher performance-based incentive for building above code. During the 2021-2023 term, the NH Utilities may move toward offering a net zero homes option or pathway.

⁴³ 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.

The NH Utilities will continue to diversify their marketing strategies to reach potential new construction home buyers. This may include utilizing data collected from consumer social media searches to target customers looking for property and residential developments, as well as promoting ES Homes at home improvement stores (brick-and-mortar and online) and lumberyards. In addition, the NH Utilities may extend educational opportunities beyond the new construction marketplace to the real estate, home inspection, and appraisal communities.

4.2.6 Program Budget and Goals

Table 4-1: ES Homes Program—Energy Savings and Budgets

	2021	2022	2023	2021-2023
Electric Programs				
Program Budget	\$3,025,084	\$3,390,947	\$3,835,984	\$10,252,015
Annual kWh Savings	1,548,181	1,706,975	1,937,384	5,192,541
Lifetime kWh Savings	34,066,688	37,343,732	41,251,683	112,662,103
kW Reduction	37	42	54	133
No. of Participants	663	733	829	2,225
Natural Gas Programs				
Program Budget	\$1,296,870	\$1,509,325	\$1,655,192	\$4,461,387
Annual MMBtu Savings	7,397	7,851	8,603	23,850
Lifetime MMBtu Savings	182,075	193,174	211,212	586,460
No. of Participants	187	198	212	596
Note: kWh = kilowatt hours, kW = kilowatts, and MMBtu = million British thermal units.				

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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 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). In addition, the NH Utilities will expand their appliance recycling rebates to include room air conditioners and will investigate adding dehumidifiers during the 2021-2023 term. 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 the 2021-2023 ES Products. The NH Utilities work with organizations and vendors such as the Massachusetts and Connecticut Technical Assessment Centers, EPA, Northeast Energy Efficiency Partnerships (“NEEP”), E-Source, and contracted vendors who are experts in the appliance field (i.e., retailer circuit riders and product fulfillment vendors) to identify new and emerging technologies for ES Products.

Residential Lighting

During the 2021-2023 term, the NH Utilities will continue to incentivize general service LED bulbs and fixtures 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 conduct strategic marketing promotions and incentives to ensure that hard-to-reach and income-eligible customers, who are the most up-front value conscious consumers, have high-efficiency choices in the lighting marketplace.



ENERGY STAR Retail Products Platform

During the 2021-2023 term, the NH Utilities will look into introducing 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 to the New Hampshire marketplace. 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, Wal-Mart, Target, 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. This new product channel might 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. In preparation, the NH Utilities will research other state's ESRPP programs, ongoing evaluations, and the New Hampshire Residential Energy Efficiency Baseline Study to help determine best practices and when and if to launch a New Hampshire ESRPP.

Expand Midstream Rebate Offerings

The NH Utilities will expand the list of measures offered by the existing midstream distributor network to include heat pump water heaters and Electronically Commutated Motor ("ECM") circulating pumps. The NH Utilities will continue to investigate if and when to include heat pumps in their midstream offerings.

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 that are typically located 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 payment.

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.

To receive an incentive, midstream or upstream, the NH Utilities require that central air conditioning ("A/C") systems and heat pump systems meet nationally-recognized energy efficiency specifications, including:

- **Energy Efficiency Ratio ("EER").** An EER rating measures how efficient a central A/C or heat pump system will operate when the outdoor temperature is at a specific level (95°F). The higher the EER, the more efficient the system.
- **Heating Seasonal Performance Factor ("HSPF").** The HSPF measures the efficiency of a heat pump and shows the total heating output of the heat pump during a normal heating season, in

BTUs, as compared to the total electricity consumed (in kWh) during the same period. The higher the HSPF, the more efficient the heat pump.

- **Seasonal Energy Efficiency Ratio (“SEER”).** A SEER rating measures the efficiency of a central A/C or heat pump system over an entire cooling season. The SEER rating indicates the cooling output of a central A/C or heat pump system in BTUs during the normal cooling season as compared to the total electricity consumed (in kWh) during the same period. The higher the SEER rating, the more efficient the central A/C or heat pump system.

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 heat pump water heaters. Natural gas water heater incentives are available through mail-in and online rebate submissions.

HPWHs are considerably more efficient than traditional electric water heaters. HPWHs concentrate the warmth of ambient air around them to heat water for domestic hot water consumption. For the 2021-2023 term, HPWH technology rebates 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 heat pump water heaters and market the technologies to contractors. To support the newly-introduced midstream rebates, 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

Table 4-2: ES Products Program—Energy Savings and Budgets

	2021	2022	2023	2021-2023
Electric Programs				
Program Budget	\$10,868,234	\$9,645,146	\$8,884,940	\$29,398,320
Annual kWh Savings	21,267,406	14,362,018	11,525,816	47,155,240
Lifetime kWh Savings	123,551,377	132,367,004	140,129,629	396,048,011
kW Reduction	3,165	2,144	1,759	7,069
No. of Participants	443,057	248,350	87,767	779,174
Natural Gas Programs				
Program Budget	\$1,542,018	\$1,741,747	\$1,857,872	\$5,141,637
Annual MMBtu Savings	19,497	22,260	23,332	65,089
Lifetime MMBtu Savings	335,267	380,659	399,370	1,115,296
No. of Participants	3,796	3,950	4,122	11,868
Note: kWh = kilowatt hours, kW = kilowatts, and MMBtu = million British thermal units.				

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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 may provide services to address health and safety barriers in the home, such as inadequate ventilation, old wiring, and damaged insulation, if the energy efficiency project is deemed as cost effective.



4.4.2 Target Market

A baseline potential study⁴⁴ 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 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 guidelines include:

- **FAP Guidelines.** Participants must have an income that is at or below 60 percent of the state median income for their household size; or
- **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.

The NH Utilities also coordinate closely with the US DOE's Weatherization Assistance Program ("WAP") to identify HEA participants and to leverage funding for energy efficiency projects. WAP participants must have an income that is at or below 200 percent of the federal poverty guidelines for their household size.

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")

⁴⁴ Itron, Inc. *New Hampshire Residential Energy Efficiency Baseline Study*. Draft Rel. Mar. 16, 2020.

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, developing new "on ramps" to program participation, introducing new energy-efficient measures, and improving the program's data sharing and data tracking systems.

Improving Weatherization Tracking Systems

Currently, the NH Utilities are working to upgrade their weatherization tracking and referral systems to streamline information sharing between the NH Utilities, CAAs, NH OSI, and other contractors. The new software will allow the NH Utilities to perform energy modeling more easily; allowing them to review more projects for cost effectiveness and provide better energy savings information to customers. 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::

- 1. Increasing or Eliminating Current Incentive Cap.** The NH Utilities have increased the previous incentive cap of \$8,000 to \$20,000, including heating systems, and will allow exceptions to exceed that cap when there is not enough other funding available to complete all cost-effective measures. 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. The previous threshold did not always support the installation of all energy efficiency measures that could optimize each home's energy performance. The increased incentive cap of \$20,000 will ensure that more homes are addressed comprehensively, consequently driving energy savings in HEA. If the project cap is reached (\$20,000), the NH Utilities will review each home on a case-by-case basis to determine the cost-effectiveness of the project.

- 2. 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.
- 3. 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.
- 4. Introduce New Pathways and Measures.** To scale up energy savings and serve more customers through HEA, the NH Utilities will offer additional “on ramps” for income-eligible customers to participate in the program during the 2021-2023 term. These additional pathways will 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 may 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 the CAAs 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 building⁴⁵, such as hiring and training new CAA staff due to attrition in the workforce and purchasing weatherization equipment. The NH Utilities will focus their efforts on conducting CAA and qualified contractor education and training 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.

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. For the 2021-2023 term, the NH Utilities have established four pathways for HEA: (1) direct-install weatherization services, (2) visual audits with limited weatherization measures, (3) appliance vouchers offered to visual audit participants or as standalone rebates, and (4) the distribution of energy kits. The NH Utilities have created these pathways to scale up energy savings and make it easier for income-eligible customers to participate in NHSaves Programs.

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.

⁴⁵ RSA 374-F. <http://www.gencourt.state.nh.us/rsa/html/XXXIV/374-F/374-F-mrg.htm>. Energy efficiency programs should include the development of relationships with third-party lending institutions to provide opportunities for low-cost financing of energy efficiency measures to leverage available funds to the maximum extent and shall also include funding for workforce development to minimize waiting periods for low-income energy audits and weatherization.

Energy Efficiency Audit and Direct-Install Pathway

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 direct-install 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 direct-install program services, provided they meet a set of statewide standards for bidding, pricing, and timely program delivery. In 2020, the HEA measure incentives were increased based on updated pricing. 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 NH Utilities' standards for pricing, customer service, and work quality.

Direct-Install Measures

HEA contractors will direct-install a number of cost-effective energy efficiency measures, such as:

- 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
- Health and safety measures⁴⁶ that are required for weatherization services to be performed.

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 ductless heat pumps for customers currently using electric resistance heat and/or electric cooling when it is deemed cost-effective. In addition, the NH Utilities will continue to offer HPWHs to encourage homeowners to replace old, inefficient oil and propane water heaters with these high-efficiency technologies.

For the 2021-2023 term, the NH Utilities will continuously evaluate the cost effectiveness of adding new measures to the program.

Visual Audit Pathway

A visual audit offering has 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 pathway in HPwES is utilized for electric and natural gas customers who applied for energy efficiency services through the Home Heating Index (“HHI”) tool but did not meet the heating fuel threshold for participation in the full HPwES program. If a visual audit customer is identified by their NH Utility as income-qualified, that customer is eligible to receive a visual audit through HEA.

In the Visual Audit pathway, the contractor will perform an on-site assessment of the home to determine energy-saving opportunities and the customer will receive basic measures, such as Wi-Fi or programmable 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. The

⁴⁶ For the 2021-2023 term, the basic health and safety measures will include basic ventilation requirements, as well as smoke and carbon monoxide detectors needed to safely conduct weatherization services. Additional health and safety measures that are typically high-cost barriers to weatherization will continue to be included in HEA, including but not limited to: roof repair, knob and tube wiring replacement, and wet basement mitigation.

contractor will also determine if there are other opportunities that can be implemented through the full HEA pathway (direct-install). If sufficient opportunity exists, then the contractor will notify the customer's NH Utility to enroll the customer in the full HEA offering.

Appliance Vouchers

During the 2021-2023 term, the NH Utilities plan to offer appliance vouchers (rebates) to income-qualified customers, including those with high electric usage. 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 direct-install weatherization services. The appliance voucher offering will allow the NH Utilities to reach more income-eligible customers and drive energy savings for HEA.

Distribution of Energy Kits

For the 2021-2023 term, the NH Utilities will introduce the distribution of Energy Kits to targeted groups of income-eligible customers across the state to expand the outreach of HEA and serve more customers. The distributed Energy Kits may include several LED bulbs, power strips, and program literature. Energy Kits may be distributed to targeted customers (i.e., EAP customers) through direct marketing, after they have participated in the Visual Audit pathway, or at Button Up Workshops (see Section 4.4.5 for more details).

Energy Kits are being introduced to HEA as an effective and quick-and-easy tool to offer energy savings to low-income customers, particularly if they are on a wait list for an extended period of time for HEA direct-install weatherization services.

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.

Coordination with Other NHSaves Programs

When a customer qualifies for the HPwES program (see Section 4.5), the NH Utility checks to see if the customer is receiving EAP benefits to determine if they qualify for HEA. In addition, the NH Utilities work closely with building owners and developers building new homes or multifamily buildings for low-income communities (e.g., Habitat for Humanity, affordable housing projects, etc.) to ensure that these homes are built efficiently to decrease the energy burden of the new tenants or occupants. Residential new construction projects are budgeted for and energy savings goals are tracked through ES Homes (see Section 4.2).

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 may 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.

4.4.6 Program Budget and Goals

Table 4-3: HEA Program—Energy Savings and Budgets

	2021	2022	2023	2021-2023
Electric Programs				
Program Budget	\$15,061,477	\$18,950,375	\$23,204,587	\$57,216,439
Annual kWh Savings	2,120,327	2,681,159	3,063,552	7,865,038
Lifetime kWh Savings	30,670,979	39,308,216	45,300,481	115,279,676
kW Reduction	321	403	455	1,179
No. of Participants	1,409	1,858	2,131	5,398
Natural Gas Programs				
Program Budget	\$2,074,545	\$2,359,710	\$2,645,793	\$7,080,048
Annual MMBtu Savings	11,235	12,579	13,850	37,665
Lifetime MMBtu Savings	226,722	254,871	281,416	763,010
No. of Participants	471	496	529	1,496
Note: kWh = kilowatt hours, kW = kilowatts, and MMBtu = million British thermal units.				

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 a 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 utility⁴⁷ and a non-natural gas homes are served by its electric utility.



HPwES reviews multifamily homes and evaluates them for cost-effectiveness using the standard benefit-cost test to determine the home's eligibility.

⁴⁷ For single-family and multifamily homes that are natural gas-heated, the customer's NH Gas Utility pays for weatherization and health and safety measures and the customer's NH Electric Utility pays for the electric savings measures.

- **Natural Gas-Heated Homes.** Individually-metered residential units are serviced through HPwES. If a project reaches the customer's cap \$(8,000), the customer's electric utility will incent the customer up to \$8,000 more. 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).
- **Other Fuel-Heated Homes.** These homes are eligible for all services, which are provided by their respective electric utility.

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 HPwES while making program design modifications to serve more customers and help drive more energy savings.

Improving Weatherization Tracking Systems

As noted in the HEA section (Section 4.4), the NH Utilities are working to upgrade their weatherization tracking and referral systems to streamline information sharing between the NH Utilities, CAAs, NH OSI, and other contractors. The new software will allow the NH Utilities to perform energy modeling more easily; allowing them to review more projects for cost effectiveness and provide better energy savings information to customers. By 2021, the NH Utilities will have upgraded the program's 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 Pathway.** 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 may include appliance vouchers for prescriptive measures, such as high-efficiency appliances or self-installed insulation. For the 2021-203 term, the NH Utilities will continue the Virtual Assessment pathway to HPwES that was introduced in 2020.

Addressing Program Design Constraints

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

- **Increasing Current Incentive Cap.** For the 2021-2023 term, the NH Utilities have increased the previous HPwES incentive cap from \$4,000 to \$8,000, including heating system incentives. Due to increasing project costs, HPwES contractors can be constrained in their ability to drive deeper energy savings through the installation of holistic energy-efficient measures under the previous incentive cap. The previous threshold did not always support the installation of all energy efficiency measures that could optimize each home's energy performance. The

increased incentive cap of \$8,000 will ensure that more homes are addressed comprehensively, consequently driving energy savings in HPwES. If the project cap is reached (\$8,000), the NH Utilities will review each home on a case-by-case basis to determine the cost-effectiveness of the project.

- **Addressing More Health and Safety Barriers.** In 2021, the NH Utilities will begin to make financing options available to those homes with health and safety barriers, such as knob tube wiring and vermiculite for projects requiring this remediation to move forward.

Introduce Additional Measures to HPwES

To increase energy savings and better serve customers, the NH Utilities will introduce new energy-efficient measures during the 2021-2023 term, such as additional appliances and HPWHs (that are already part of the ES Products program). 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 contractors⁴⁸ 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

⁴⁸ Customers can choose their own contractor provided the contractor meets meet the HPwES program’s minimum qualifications. If the contractor is not already approved for work in the program, they can be brought in, provided they agree to all the program rules that participating contractors must follow.

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 history⁴⁹; 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.

Home Heating Index

The HHI is used as a customer intake system for the program and includes a behavioral component of raising customer awareness regarding their energy consumption. The HHI Tool determines if a customer is considered a low, moderate or higher energy usage per square foot customer (normalized for size of house) and if the customer is eligible for full HPwES services. Eligibility for full HPwES services is based on a high proportion of heating fuel usage per square feet of the home to help identify if there is potential for cost-effective measures or actual energy savings. In limited cases, a NH Utilities program administrator may waive the HHI qualification if it can be determined that the project potentially has significant energy saving opportunities.

The HHI qualification was put in place several years ago to identify the homes with the most opportunity for energy savings. In an effort to better serve residential customers who wish to engage in energy efficiency but who have low to moderate energy consumption in the home. The NH Utilities introduced the Visual Audit during the 2018-2020 term. For the 2021-2023 term, the NH Utilities will expand the Visual Audit offering and/or a Virtual Assessment to more customers.

⁴⁹ The NH Utilities do allow customers with less than 12 months of fuel data to participate in the program, as long as their usage still meets the HHI threshold for HPwES.

Full 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 customer's cost share of 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 within 45 days⁵⁰ 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 no cost, direct-install measures.

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 contractors 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;

⁵⁰ All pricing of recommendations is good for 45 days and can be extended by the contractor if necessary. The HPwES contract gives customers an initial 45 days to commit and the NH Utilities note that contracts are often extended to give customers as much time as they need to make a decision regarding what energy-efficient measures (if any) they will install.

- High-efficiency lighting;
- Hot water pipe insulation and hot water temperature setback;
- Refrigerator replacements;
- Water-saving devices (low-flow showerheads and faucet aerators);
- Wi-Fi thermostats; and
- Health and safety measures⁵¹ that serve as barriers to energy efficiency 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, refrigerators, 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; and
- Smart home energy management systems.

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

⁵¹ For the 2021-2023 term, the basic health and safety measures will continue to be limited to basic ventilation requirements, as well as smoke and carbon monoxide detectors needed to safely conduct weatherization services and will be limited to ensure the project is cost effective.

contractor to install a new natural gas heating system or electric heat pump system will be served via ES Products.

Visual Audit Approach

For the 2021-2023 term, 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 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 opportunities for weatherization 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 evaluate the customer for full HPwES.

Virtual Assessments

The NH Utilities are continuously exploring new offerings for customers to participate in HPwES. In 2020, the NH Utilities designed and implemented a temporary virtual HPwES audit offering ("Virtual Assessment") to provide an opportunity for contractors to engage with customers who have already expressed an interest in an audit while on-site services were suspended due to the COVID-19 pandemic.

Pre-Screening Tool

The NH Utilities believe that the Virtual Assessment is a useful pre-screening tool for a home, allowing contractors to better prepare for a more efficient on-site visit. Virtual Assessments could potentially identify weatherization barriers (e.g., improper ventilation, etc.) in advance of an on-site Visual Audit, thus reducing the need for a second visit which should reduce costs. In addition, a Virtual Assessment can help contractors better ascertain the opportunity and scope of work so the optimum contractor crew compliment and/or the length of scheduled on-site visit time (through the direct-install or visual audit pathways) is more precise. This could result in more efficient scheduling and perhaps more

effective utilization of existing contractor resources. During the 2021-2023 term, the NH Utilities will integrate Virtual Assessments into the HPwES program as appropriate.

Customers who elect to receive a Virtual Assessment will have a convenient way to understand the likely energy-saving opportunities in their home. Together, the customer and an experienced contractor will identify energy efficiency opportunities in the home, get the customer access to immediate energy-saving measures, and define additional savings opportunities and appropriate follow-up actions.

Through a combination of reviewing information about the customer's home from publicly-available online resources, pictures submitted by the customer, and through virtual interactions with the customer, a contractor will identify the energy efficiency savings opportunities and recommend solutions. The contractor will educate the customer about the opportunities and the value proposition for moving forward to implement certain measures.

Customers participating in the Virtual Assessment may be eligible to receive the following:

- **Energy Kits.** Customers may receive Energy Kits (similar to those offered through HEA) containing energy-saving measures, such as LED lighting, power strips, and NHSaves Residential Programs information. The customer will be asked if they are comfortable with installing any of these measures on their own. For measures where the customer affirms their ability to self-install, the customers will be required to attest that they will install the identified applicable products upon receipt. Once an attestation is signed, the products will be shipped directly to the customer for self-installation within an agreed-upon timeframe.
- **Appliance Rebates.** During the Virtual Assessment, the contractor will identify potential opportunities, within reason, for upgrades to mechanical equipment (e.g., heating, air conditioning, hot water, etc.) and appliances. For the 2021-2023 term, the NH Utilities will consider allowing the contractor to offer appliance rebates through the Virtual Assessment pathway. This would encourage customers to replace their old, inefficient appliances with high-

efficiency models. Prior to implementation of appliance rebates, the NH Utilities will finalize the pre-qualifications, which may include requiring the customer to still receive a Visual Audit (on-site service). The appliance rebate offering would allow the NH Utilities to reach more customers and drive energy savings for HPwES.

Participating customers will be emailed a report that discusses the energy-saving opportunities identified by the HPwES contractor during the Visual Assessment. This report will direct customers to the appropriate informational resources for all applicable rebates, incentives, and financing options.

Appliance Rebates

For the 2021-2023 term, HPwES may offer standalone rebates for the following appliances: clothes dryers, clothes washers, dehumidifiers, room air purifiers, and other measures. This offering would encourage customers to replace their old, inefficient appliances with high-efficiency models. Prior to implementation of these rebates, the NH Utilities will finalize the pre-qualifications for appliance vouchers, which may include requiring the customer to receive a Visual Audit (on-site service). The Appliance Rebate offering would allow the NH Utilities to reach more customers and drive energy savings for 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 continue to work to increase the number of natural gas customers enrolled in HPwES over the next three years especially since low natural gas prices have historically limited participation.

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. This includes partnering with local energy committees, community organizations, and environmental groups to promote the

benefits of HPwES through workshops and outreach events. The NH Utilities will work with community partners to deliver online trainings to create grassroots “boots-on-the-ground” outreach.

4.5.6 Program Budget and Goals

Table 4-4: HPwES Program—Energy Savings and Budgets

	2021	2022	2023	2021-2023
Electric Programs				
Program Budget	\$8,317,572	\$9,670,054	\$10,764,617	\$28,752,243
Annual kWh Savings	1,492,280	1,628,705	1,746,020	4,867,004
Lifetime kWh Savings	17,922,057	20,117,826	22,127,912	60,167,794
kW Reduction	192	222	234	649
No. of Participants	3,058	3,202	3,315	9,574
Natural Gas Programs				
Program Budget	\$1,539,575	\$1,748,823	\$1,978,498	\$5,266,896
Annual MMBtu Savings	15,531	16,203	17,281	49,015
Lifetime MMBtu Savings	260,349	275,308	297,636	833,293
No. of Participants	848	865	885	2,598
Note: kWh = kilowatt hours, kW = kilowatts, and MMBtu = million British thermal units.				

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Chapter Five: Active Demand Reduction Programs

5.1 Program Objective

For the 2021-2023 term, the NH Utilities have designed several ADR offerings designed to reduce customer costs and increase ISO-NE system benefits. Through these new programs, the NH Electric Utilities seek to reduce peak demand as quantified in the regional Annual Energy Supply Components (“AESC”) study. The goals of the Residential and C&I ADR programs 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 ISO-NE peak hours will also impact New Hampshire’s share of the installed capacity cost allocation and help to reduce demand charges.

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 summer average annual peak demands of 250 kW or higher and with the ability to curtail at least 50 kW. Residential ADR program participants typically include customers with controllable Behind-The-Meter (“BTM”) equipment such as batteries, Wi-Fi thermostats controlling air conditioning, or EV chargers.

5.3 2021-2023 Plans

For the 2021-2023 term, Eversource, Utilil Electric, and Liberty Electric will build upon the ADR demonstrations offered by Eversource and Utilil in 2019 and 2020 and explore new ADR offerings during the term. Based upon their success to date, Eversource and Utilil Electric propose to shift the C&I ADR pilots to full programs for the 2021-2023 term. Liberty Electric will also offer a C&I ADR program for the first time.

5.3.1 Program Design - Commercial ADR Offerings

The Commercial ADR program has two main offerings: Load Curtailment (i.e., Interruptible Load) and Storage Performance.

Load Curtailment

The Load Curtailment offering provides an incentive for verifiable shedding of load by participants in response to communication from the NH Utilities or their vendors. This offering will be based upon the design of the Eversource and Utilil Electric pilots implemented during the 2018-2020 term. The Load Curtailment offering is technology agnostic, which means that customers are able to use any technology or strategy at their disposal and earn an incentive based on their curtailment performance.

The Load Curtailment offering involves incenting C&I customers to temporarily reduce facility load upon a signal from their electric utility. The NH Utilities assess curtailment opportunities at customers' facilities in coordination with curtailment service providers ("CSPs"), vendors who work the NH Electric Utilities. The NH Utilities and CSPs identify curtailable load, process and approve customer enrollment applications, manage participants, call and manage curtailment events, oversee customer performance, and calculate payments. Utilil Electric, Eversource, and Liberty Electric plan to offer this to their customers in the 2021-2023 term.

Storage Performance

Storage Performance is a BYOD pay-for-performance offering, which incents customers with BTM storage already 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. Utilil Electric and Eversource plan to offer this to their customers in the 2021-2023 term.

5.3.2 Program Design - Residential ADR Offerings

The residential ADR program will consist of two main BYOD offerings: Battery Storage and Wi-Fi thermostats. For the 2021-2023 term, the NH Utilities will also explore EV load management as a third offering.

Battery Storage

The residential Battery Storage offering encourages the performance of energy storage systems through a pay-for-performance approach. Under this offering, participating customers are incentivized to decrease their demand by discharging stored energy from their residential batteries 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. Eversource intends to provide this offering to its customers for the 2021-2023 term, while Unitil Electric is evaluating the marketplace and cost effectiveness of this offering in its territory.

Wi-Fi Thermostats

The Wi-Fi Thermostat offering will target customers who own a qualified, wirelessly communicating thermostat that controls a central air conditioning system (including heat pump technology). As is the case with the current pilot being offered by Eversource and Unitil Electric, participants agree to allow their NH Utility to make brief, limited adjustments to their Wi-Fi thermostats during periods of peak electric demand (referred to as "events").

There will be a minimum of one event, and a maximum of 15 events. Customers that join the program opt in by default; however, they may opt out of any or all events depending on their needs. Eversource and Unitil intend to leverage their existing ADR resources and experience from other states as well as incorporate lessons learned from the current New Hampshire pilot to ensure a successful program for the 2021-2023 term.

EV Load Management

Throughout the 2021-2023 term, the NH Electric Utilities will explore possible EV Load Management offerings throughout their service territories and could implement this offering if deemed feasible. If implemented, the EV Load Management pathway would focus on events that limit or stop EVs from charging during ISO-NE peak hours. The NH Electric Utilities expect that best practices involving EV load management will evolve concurrently with the EV marketplace as other jurisdictions and energy regulatory proceedings begin to offer an EV Load Management solutions. The NH Electric Utilities will

collaborate with and learn from other states that are considering or offering EV Load Management solutions in conjunction with DR programs.

5.3.3 Cybersecurity

The NH Utilities, except for Liberty Electric, have undertaken a thorough cybersecurity risk review for ADR offerings as described in depth in the 2020 Demand Reduction Initiatives Supplemental Information compliance filing submitted as part of the 2020 Plan Update in DE 17-136⁵².

5.3.4 Evaluation

In 2019, Eversource's and Utilil Electric's NHSaves C&I ADR pilots were evaluated as part of a cross-state evaluation with Massachusetts. As the ADR initiatives grow in 2020 and beyond, the NH Utilities plan to apply the impact results from the study. This study also included a process evaluation, which is informing the NH Utilities in improving program processes as the initiative grows.

Recent ADR program evaluations are available from Massachusetts on that state's residential Wi-Fi thermostats and residential battery storage programs. These evaluations will provide a strong basis for the development and implementation of New Hampshire's Residential ADR programs. The NH Utilities will continue to develop and finalize benefit-cost models and program details for the September 1, 2020 filing to the Commission.

5.3.5 Program Budget and Goals

Table 5-1: ADR Program—Energy Savings and Budgets

	2021	2022	2023	2021-2023
Residential Program Budget	\$254,701	\$337,548	\$490,913	\$1,083,163
C&I Program Budget	\$852,729	\$1,200,315	\$1,711,040	\$3,764,083

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

⁵² DE 17-136. 2020 Demand Reduction Initiatives Supplemental Information. Feb. 28, 2020. Utilil and Eversource's cybersecurity review process is described in Section 4, pp. 10-14. https://www.puc.nh.gov/Regulatory/Docketbk/2017/17-136/LETTERS-MEMOS-TARIFFS/17-136_2020-02-28_EVERSOURCE_UES_SUPP_INFORMATION.PDF

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 NH Utilities' Behavioral-Based Strategies solutions are designed to make customers aware of how much energy they consume and empower them to adopt energy-efficient technologies and behaviors. 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)

For the past several years, the primary behavioral-based solution for the NH Utilities has been HERs. HERs are communications (e-mails and printed reports) that provide energy consumption information and energy-saving tips to residential 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 HER 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 program will continue to be implemented by Liberty (Electric and Natural Gas) and Utili (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 benchmark a customer more accurately 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 HERs when asked how they found out about the programs. Liberty extensively 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 Electric and Gas HER programs are run concurrently with Unitil's Massachusetts territory to take advantage of economies of scale. The Unitil Electric and Gas 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.

For the 2021-2023 Term, the Unitil Electric and Gas HER programs are projected to save 25 percent and 9 percent of the residential sector annual savings, respectively. Unitil Electric and Gas will continue to offer the HER program through at least the end of its current contract with its vendor for both its natural gas and electric customers and will assess appropriate next steps for 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.

In May 2020, Eversource released a Request for Information to determine what types of customer engagement services and solutions are offered in the marketplace for consideration across its three-state service territory (Connecticut, Massachusetts, and New Hampshire). The tools selected will enable Eversource to integrate customized usage insights and recommendations for applicable NHSaves Programs more seamlessly into their overall customer experience.

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.

Through most of the 2021-2023 term, Eversource does not expect for its customer engagement initiative to generate behavioral-based energy savings at a large scale for the NHSaves Programs. The focus of the customer engagement initiative in the near term is develop customized communication journeys that utilize behavior-based principles and an experimental design that allows for any generated savings to be evaluated and potentially claimed. The customer engagement initiative will be administered as a behavioral-based strategy within the NHSaves Programs; however, the program's budgets will be located in the marketing portfolio as it is not expected to generate a large quantity of behavior-based energy savings for the first years of implementation.

6.3 Aerial Infrared Mapping Program (Liberty Gas)

6.3.1 Objective

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

- Drive customer behavior change savings through promoting literacy on the specific opportunities for improved building efficiency;
- Engage and motivate customers to participate in the HEA and HPwES programs by providing a more detailed, visual profile of their heat loss; and

- Better identify, rank and prioritize, and qualify weatherization projects without having the need to go on-site.

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 home⁵³.

6.3.3 How It Works

Liberty will deliver the AIM program in partnership with MyHEAT Inc.⁵⁴, a technology company that generates aerial thermal images to produce unique and proprietary building HEAT Maps. The MyHEAT Maps provide customers a resource to help identify and target building weatherization improvement areas. MyHEAT also provides customers personalized and proprietary HEAT Ratings that enable customers to compare a home's heat loss to others in their town or city.

MyHEAT 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. MyHEAT's 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.

⁵³ 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>.

⁵⁴ MyHEAT Inc. website: <http://myheat.ca>.

MyHEAT's 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).

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. MyHEAT's 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.

6.3.4 Thermal and Ancillary Data Collection

At a high-level, several data elements are required and will be captured in order to deploy the AIM program:

- **MyHEAT Data.** Aerial thermal capture data, building polygons generated from thermal data, proprietary HEAT Ratings and HEAT Maps; and
- **Third-Party Data.** Open data, such as land parcel details, and purchased data such as market demographics.

MyHEAT will 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 the aerial thermal data in order to generate HEAT Maps and HEAT Ratings.

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



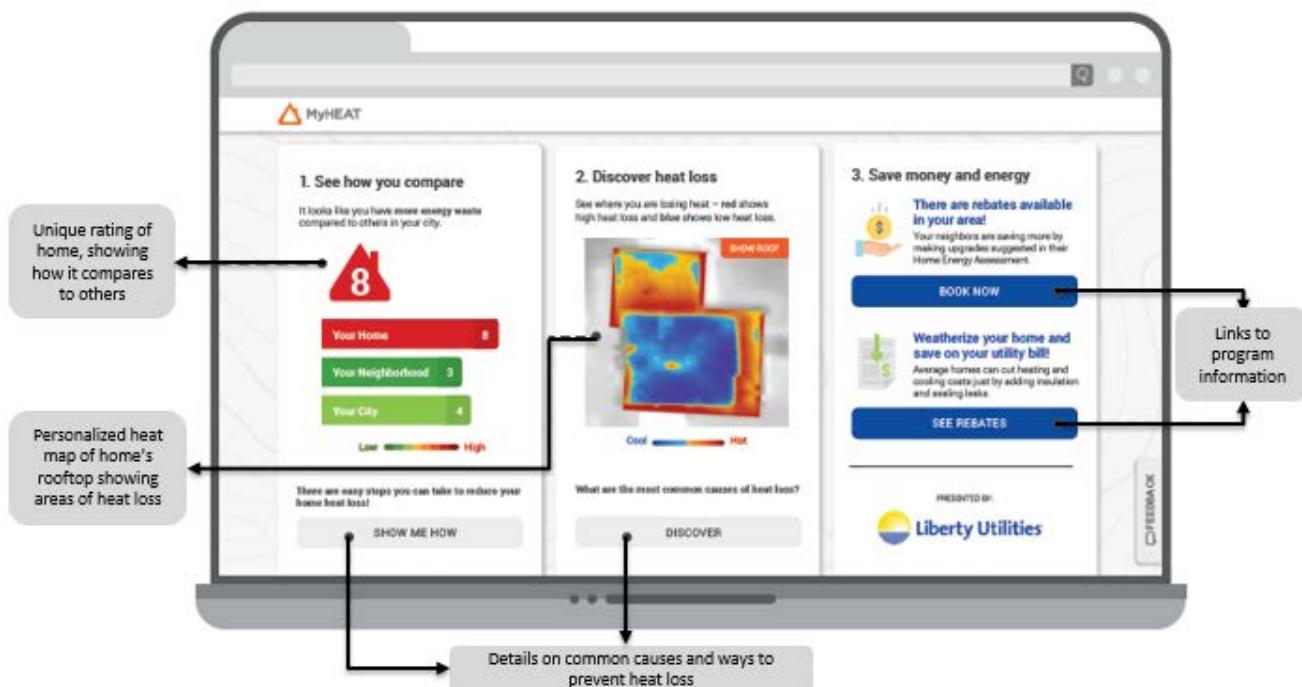
Additional geospatial datasets, such as building shapes and customer address details, will also be generated and/or compiled at this time. MyHEAT estimates that it will take approximately three nights to capture the majority of Liberty's natural gas service territory for each flyover cycle. After capturing the relevant data from Liberty, third-party data sources, and with the collected aerial thermal data, MyHEAT will process the combined data to generate personalized customer HEAT Maps and HEAT Ratings. Simultaneously, a unique customer-facing platform will be designed.

6.3.5 Customer Experience

As part of the AIM program, Liberty will provide residential customers a visual HEAT Map depiction and HEAT Rating of their home via a private access code protected web-based platform, where customers can view the heat loss details for only their own home. The HEAT Map and HEAT rating information will be provided alongside calls-to-action that direct customers toward ways they can save energy, including participating in NHSaves Programs.

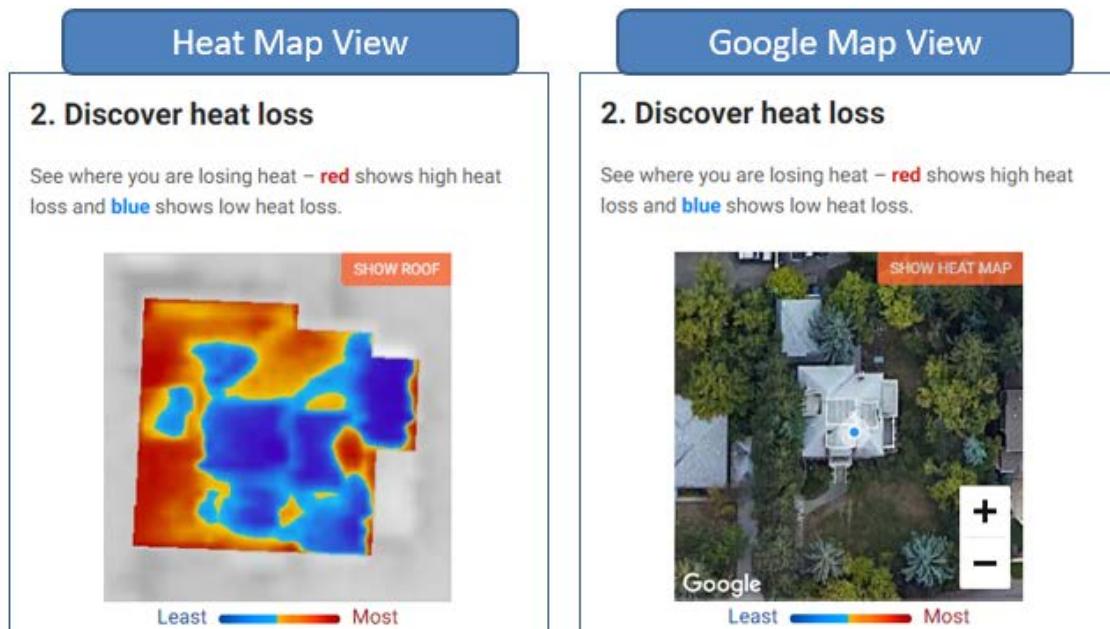
Image 6-2 provides a visual example of the information that a customer would see when viewing the online platform:

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 Eligibility and Enrollment

Liberty will offer the AIM program 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.

6.3.7 Marketing and Promotion

The AIM program 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, primarily during the heating season months. The first customer communications of the AIM program will be in September of 2021, following the initial data capture, analysis and final configuration of implementation details.

6.3.8 Target Market & Evaluation

The AIM program will be implemented under a randomized control trial (“RCT”) to measure the impact on energy consumption and program participation from customers. The AIM program will also be deployed alongside Liberty Gas’ HER program, where both programs will be in the market at the same time, but each will be distributed to separate treatment groups. For reference, the current Liberty Gas HER program includes:

Table 6-1: Liberty Gas HER Program

Treatment Group	33,000 homes ¹
Control Group	14,000 homes ¹
Remaining Customers	37,000 homes ¹

¹Approximate quantities. Exact counts can vary slightly from month-to-month based on report deliverability and periodic opt-outs.

The AIM program will use the existing Liberty Gas HER program control group and will have a separate treatment group of approximately 25,000 to 30,000 customers. The AIM program treatment group will be sourced from both the remaining customers and potentially the existing treatment group of the

HER program. As the creation of balanced treatment groups depends on the inclusion of MyHEAT's HEAT Loss dataset, the exact details around the overlap between the AIM Initiative and the HER program won't be confirmed until the thermal data is collected by MyHEAT and the HEAT Ratings are created. Also, this approach factors in that an adequate group of customers that are statistically similar to those in the existing control group can be identified. Liberty Gas will work with its HER vendor to ensure that no conflicts exist between the two programs for the purposes of evaluation and implementation integrity.

MyHEAT will assess annual and lifetime natural gas energy consumption reduction based on a statistical analysis of the targeted homes change in billing consumption data. The evaluation will consider pre-and-post treatment consumption details, measuring the impact versus the control group. Additionally, Liberty Gas' other program participation details will be incorporated to measure uplift attributed from the treatment group efforts.

6.3.9 Expected Results

The expected results for the AIM program are extrapolated from another recent MyHEAT pilot project, which found that customers achieved greater energy savings as their HEAT Ratings and potential dollar savings increased. For every \$100 in potential annual savings, customers in the MyHEAT treatment reduced their natural gas consumption by 2.9 percent. At the mean savings of \$150 per year, participants reduced natural gas consumption by 4.4 percent. Based on previous implementations by MyHEAT, the AIM program is also expected to lead to nearly a 30 percent increase in applications submitted to relevant incentive programs. For the 2021-2023 program term, Liberty is projecting the potential impact range of the AIM program to be an average 2 percent reduction in consumption for targeted homes.

6.3.10 Initial Customer Feedback

Liberty Gas performed an online survey of its residential customers to gauge their initial reaction and feedback on the AIM program concept to inform its consideration and planning of the program. The survey was fielded between March 30 and April 13, 2020 and 1,133 unique customer responses were

captured with a margin of error of plus or minus three percentage points. In summary, the survey results found:

- The AIM program would be popular with customers:
 - Three out of four customers think the AIM program would be useful to them and 79 percent say they would access the information if they received a link to the site where they could see their HEAT Map and HEAT Rating.
 - Curiosity and desire to save money are the top reasons for customer interest. Many of those who don't think the program would be useful to them are renters and/or customer living in multifamily dwellings.
 - Very few (only 1 percent of the entire sample) say they would not be likely to access the information via a private platform due to privacy concerns.
- Customers have a clear preference for a private platform:
 - By a 2-to-1 margin, customers prefer that the AIM program is offered via a private platform.
 - Concerns about privacy are the dominant reason customers prefer the private platform. Among those who gave specifics, there are worries that they could be vulnerable to sales and marketing based on their rating, as well as potential shaming from neighbors; some are even worried that their HEAT Rating could negatively affect their home's value if the information were widely available.
 - Most who prefer the public platform think it would help facilitate comparisons, or better legitimize, their home's rating with other homes.

Image 6-4: Residential Customer Survey: Likelihood to Access AIM Data

Q. If you received a link to the site where you could see the HEAT Map and HEAT Rating for your home, how likely would you be to access the information? Base: Total (n=1,133), <45 years old (n=192), 45-64 years old (n=449), 65+ years old (n=492), <\$50,000 household income (n=260), \$50,000-<\$100,000 household income (n=352), \$100,000+ household income (n=227), Own single-family dwelling (n=639), Do not own single-family dwelling (n=494).

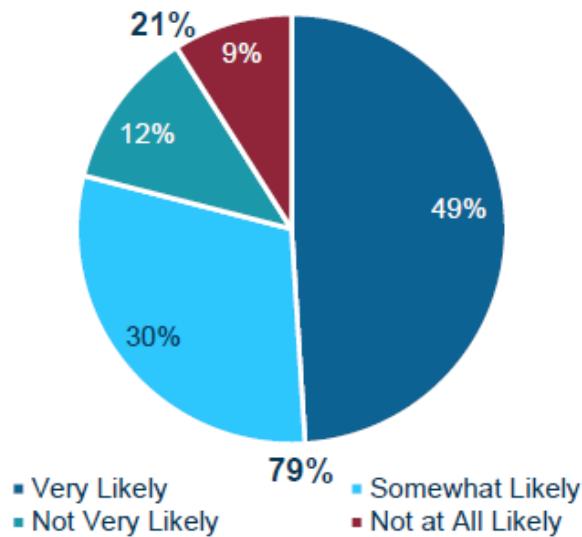


Image 6-5: Residential Customer Survey: Likelihood to Access AIM by Demographics

Q. If you received a link to the site where you could see the HEAT Map and HEAT Rating for your home, how likely would you be to access the information? Base: Total (n=1,133), <45 years old (n=192), 45-64 years old (n=449), 65+ years old (n=492), <\$50,000 household income (n=260), \$50,000-<\$100,000 household income (n=352), \$100,000+ household income (n=227), Own single-family dwelling (n=639), Do not own single-family dwelling (n=494).

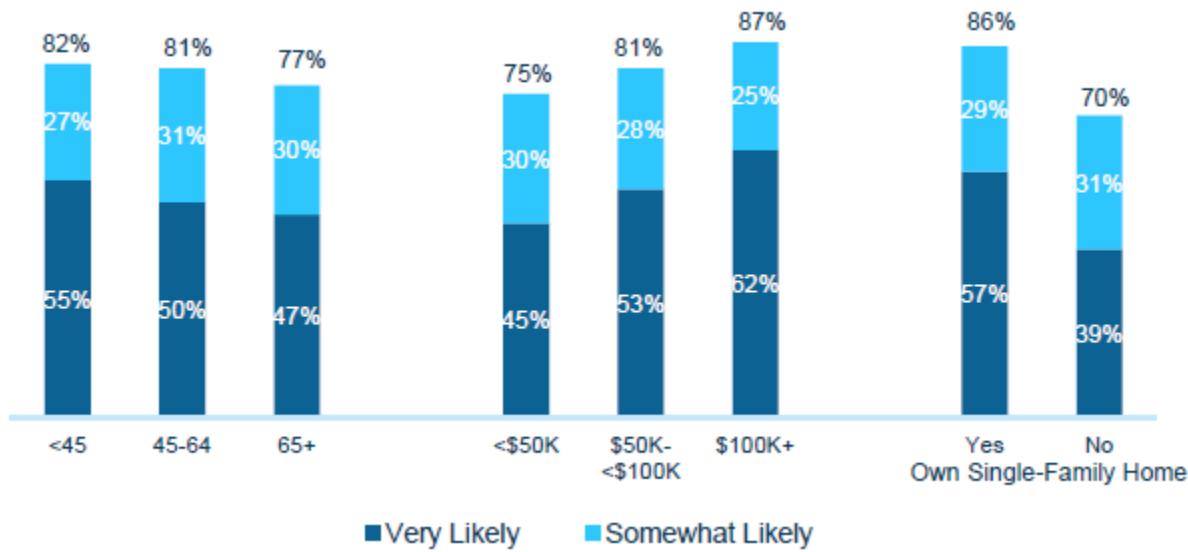


Image 6-6: Residential Customer Survey: Why Likely to Access AIM?

Q. Why would you be likely to access the HEAT Map and HEAT Rating for your home? Base: Likely to access HEAT Map and HEAT Rating for home (n=893).

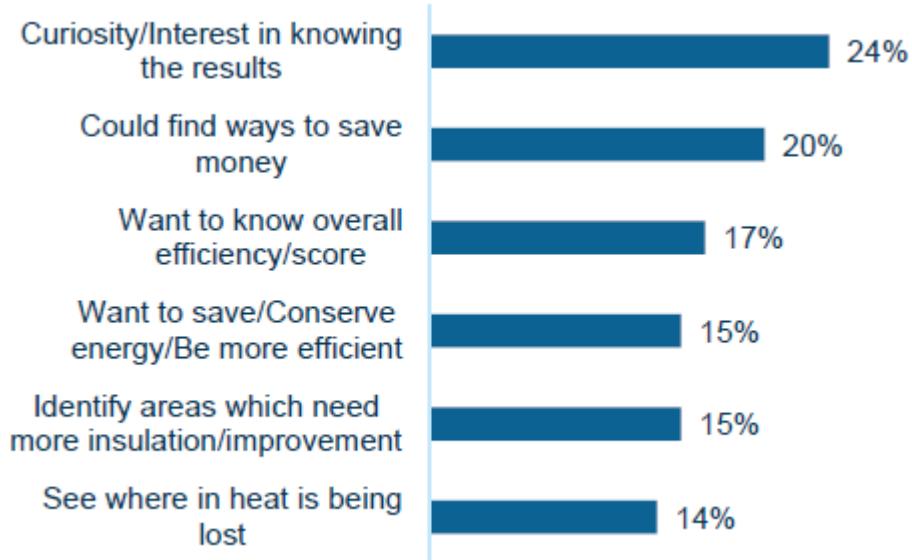
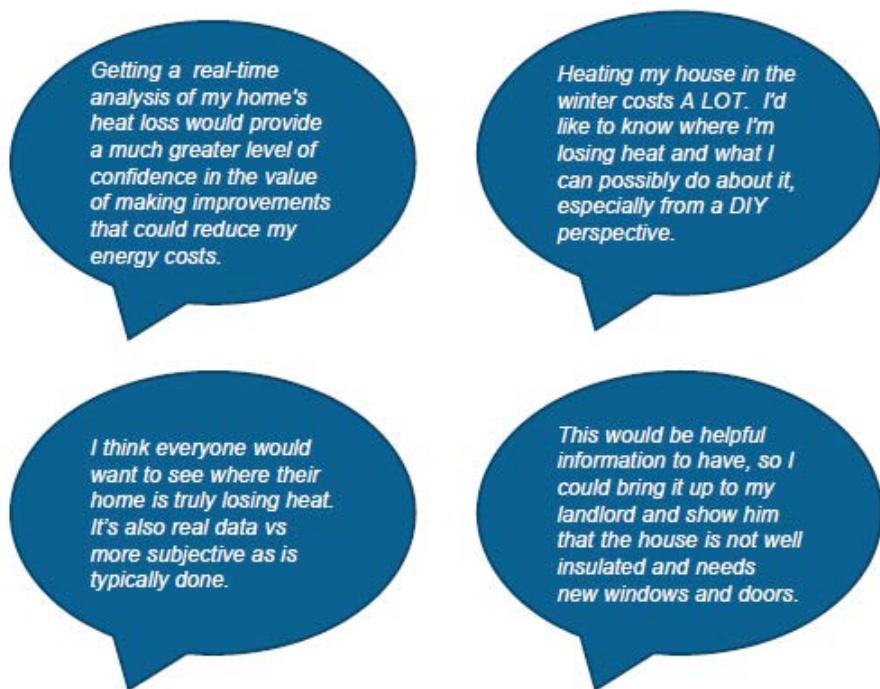


Image 6-7: Residential Customer Survey: Why Likely to Access AIM? Customer Quotes

Q. Why would you be likely to access the HEAT Map and HEAT Rating for your home? Base: Likely to access HEAT Map and HEAT Rating for home (n=893).



Chapter Seven: Energy Optimization

Energy Optimization (“EO”) is an energy resource framework that seeks to minimize customers’ total energy usage across all energy sources and maximize customers’ benefits. In particular, EO often focuses on conversions from delivered fossil-fuel systems to higher efficiency electric systems. EO strategies account for both equipment efficiency, as well as the mix of fuels used, which distinguishes it from fuel switching and beneficial electrification, which focus primarily on fuel type but do not necessarily prioritize efficiency.

For the 2021-2023 term, the NH Utilities have developed an EO pilot based on experiences from the NHEC Heat Pump program as well as offerings in other states. The NHSaves EO pilot will focus on the transition from residential delivered fossil fuel heating systems to cold climate air source heat pumps (“ASHPs”), including central and mini-split systems. To be eligible for the EO pilot, customers must convert the heat source for at least one heating zone of their house, as well as install integrated controls that will determine which heating system will operate during the heating season based on outdoor temperatures. For the EO pilot, the NH Utilities will recommend that customers maintain their existing heating system.

7.1 Existing Heat Pump Program

For more than a decade, the NH Utilities have provided incentives for the installation of high-efficiency ASHPs and have adopted best practices when cold climate heat pumps became commercially available. Historically, heat pump units were considered as an initial purchase for which the kWh and kW savings were based on a comparison between the high efficiency of the heat pump being installed to a standard efficiency baseline unit. Customers used the heat pumps either: (1) throughout the heating season, (2) only in the spring and fall (the shoulder heating months), (3) or not at all for the New Hampshire heating season, and/or (4) all summer for the New Hampshire cooling season.

7.2 Purpose

The EO pilot is designed to gather information and test both program design elements and key regulatory questions regarding how the NH Utilities should account for fossil fuel and electricity savings (positive and negative) for EO projects. As noted by the Commission in Order No. 26,322, an evaluation of the EO pilot will include:

- Recommendations for how to claim savings and calculate the cost-effectiveness of conversions from unregulated fuels (i.e., oil, propane, and wood pellets), as well as ‘negative’ electric savings due to load increase) to ASHPs.
- Assessment of the impact on summer or winter peak demand (kW) and the potential for downward pressure on electric rates due to an improved load factor.
- Bill impact analysis of what, if any, shift in costs to non-participants results from incentives aimed at reducing participants’ use of unregulated fuels.

7.3 Target Population

The pilot will consist of 100 home installations per year over the 2021-2023 term. The target population will include:

- Customers who are not actively considering heat pumps but who have central A/C systems, including mini-splits, that are failing or old;
- Customers who are not actively considering heat pumps but who use window A/C units;
- Customers who are actively considering installation of a central A/C system and who currently have window A/C units or no cooling system; and
- Customers who are interested in heat pumps as a cooling solution.



7.4 Customer and Contractor Outreach

The EO pilot will leverage existing pathways for incentivizing high-efficiency heat pump technologies, as well as 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 incentives, marketing, and financing solutions (e.g., on-bill financing and third-party loan programs). Customer education will focus on how to optimize their system's efficiency and proper maintenance and upkeep.

A critical component of the NH Utilities' EO pilot will include a broad and promotional outreach effort and training for HVAC and energy efficiency contractors on the benefits of ASHP technologies, and the need for integrated HVAC controls to optimally operate the ASHP with the building's existing heating system. The existing heating system will operate during the heating season's coldest temperatures (i.e., coldest days) and the ASHP will operate during warmer temperatures.

The NH Utilities will market the program to customers via the following channels:

- HPwES program customers (past, present, and future);
- Existing customers of HVAC contractors;
- Solar PV utility net metering customers;
- Direct market (as needed); and
- Other methods that are determined to be needed.

7.5 Customer Eligibility

Customers may participate in the EO pilot if they meet the following eligibility guidelines:

- Are willing to install integrated controls;
- Are willing to collect and provide to their NH Electric utility data on their delivered fuel consumption, including data from the two years prior to the installation of the heat pump. This

will allow an evaluation firm to analyze the data for both electricity and fossil fuel energy use pre- and post-installation of the heat pump technology. Alternatively, the customer can sign a release form that allows the evaluation firm to obtain energy data from the customer's oil and/or propane company for two years prior and up to two years after the installation;

- Agree to meet maximum outdoor temperature set points for the switch from the existing heating system to ASHPs; and
- Agree to implement a full heating zone conversion.

7.5 Post Inspections and Survey

Post inspections will be conducted for all EO pilot participants. An EM&V survey will be left behind after each inspection. The inspectors will collect the following information:

- If the number of tons meets the customer's application;
- If the existing fuel and heat pump set points are within the pilot parameters;
- If there are working integrated controls; and
- If the heat pump technologies installed were designed to provide heat to a whole heating zone.

7.6 Evaluation Plan

The NH Utilities' pilot will be accompanied by an evaluation to measure its impacts on total energy consumption (for both heating and cooling, and across all fuels) and to assess program processes, customer behavior, and workforce capacity. Results of the evaluation will guide future decisions on expanding the pilot to a full-scale program. The evaluation will include both impact and process components:

- **Pilot Impacts.** The evaluation will measure impacts and refine methods for accounting for unregulated fuel savings and electric load increase for fuel-to-electric measures, to support modelling net MMBtu savings that could be claimed under a holistic accounting framework. The

evaluation may include analysis of heat pump usage data from integrated control systems, delivered fuels billing data, where available, and whole home electric usage data from the NH Utilities.

Requirements for integrated controls and customer releases to obtain delivered fuel records will support these efforts. This analysis will also help determine the extent to which energy optimization could, at scale, lead to load factor improvements by increasing load during times when the transmission and distribution systems are not operating at peak capacity. As noted by the Commission in Order No. 26,322, such load factor improvements may present an opportunity for ratepayers, as non-participants may stand to benefit from increased electricity sales that do not significantly increase transmission and distribution system costs.

- **Pilot Processes.** The evaluation will assess the pilot design and offerings for tailored ASHP measure bundles, including weatherization and integrated controls, to understand customer behavior and satisfaction, contractor technical capacity and training needs, and equipment configurations and baselines. Post-inspections will be utilized to confirm installation configurations and setpoints, and to survey customers on their plans for using the heat pumps and modifying set points or other configurations, alternative equipment baselines they considered, and their satisfaction with contractors and installation processes. The evaluation is also expected to include surveys or interviews with contractors to obtain feedback on issues such as training or capacity needs.

For the current proposal, in lieu of primary impact evaluation results, savings assumptions will be based on the results of the EO Study done under the oversight of the NH Benefit Cost Working Group. This study and its associated planning model were based on a Massachusetts EO model and adapted to include New Hampshire specific inputs such as fuel cost data, weather data, saturation of various air conditioning technologies, and the regional electric generation mix.⁵⁵

⁵⁵ Navigant, Energy Optimization. Sept 12, 2019. See https://puc.nh.gov/Regulatory/Docketbk/2017/17-136/LETTERS-MEMOS-TARIFFS/17-136_2019-10-31_STAFF_NH_ENERGY_OPTIMIZATION_STUDY.PDF and <https://puc.nh.gov/Electric/Reports/20190805-PUC-Electric-NH-Energy-Optimization-Model.xlsx>.

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Chapter Eight: 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.

8.1 Background

8.1.1 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 on 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.

The NH Utilities worked with the EM&V Working Group during 2018 to undertake a New Hampshire Energy Efficiency Market Assessment⁵⁶ (“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 data⁵⁷ 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

⁵⁶ 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>.

⁵⁷ *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.

8.1.2 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 specific brand guidelines for contractor trade allies; 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 the above-referenced marketing efforts 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.

8.2 Customer Attributes and Market Research

8.2.1 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 Assessment⁵⁸ 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 engage in energy-efficiency behaviors. Peripherally Awares are generally aware of NHSaves Programs; however, they do not understand their program options and have never participated in an energy efficiency program.

⁵⁸ 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 many large businesses to meet and uphold environmental sustainability commitments in order to satisfy customer and shareholder priorities. 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.

8.3 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. Marketing strategies harness the strong association between the NH Utilities and the NHSaves brand. The NH Utilities bring credibility and serve as trusted energy advisors for customers across the state.

8.3.1 Marketing Communication Efforts

The NH Utilities 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 (e.g., bill inserts, direct mail and e-mail, etc.) 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.

Brand Awareness

Presentation of both the NHSaves logo and the NH Utility logos in marketing and promotional materials is a key approach in the effort to increase both awareness and uptake of energy efficiency offerings. Co-branding allows customers to recognize the statewide nature of energy efficiency offerings, provides assurance that the offerings are connected to trusted, regulated entities that they already know, and makes the connection between interest in energy efficiency and contacting their NH Utility to take action.

The NH Utilities began utilizing “NHSaves” in 2002, starting with program brochures and the website, and expanded over time as joint utility coordination on NHSaves Program offerings solidified and became the primary approach to energy efficiency in New Hampshire. As an umbrella brand, NHSaves became a way to connect the energy efficiency programs offered by each individual NH Utility to the joint planning and approval process. With NHSaves, customers can recognize that energy efficiency is available to all NH Utility customers across the state.

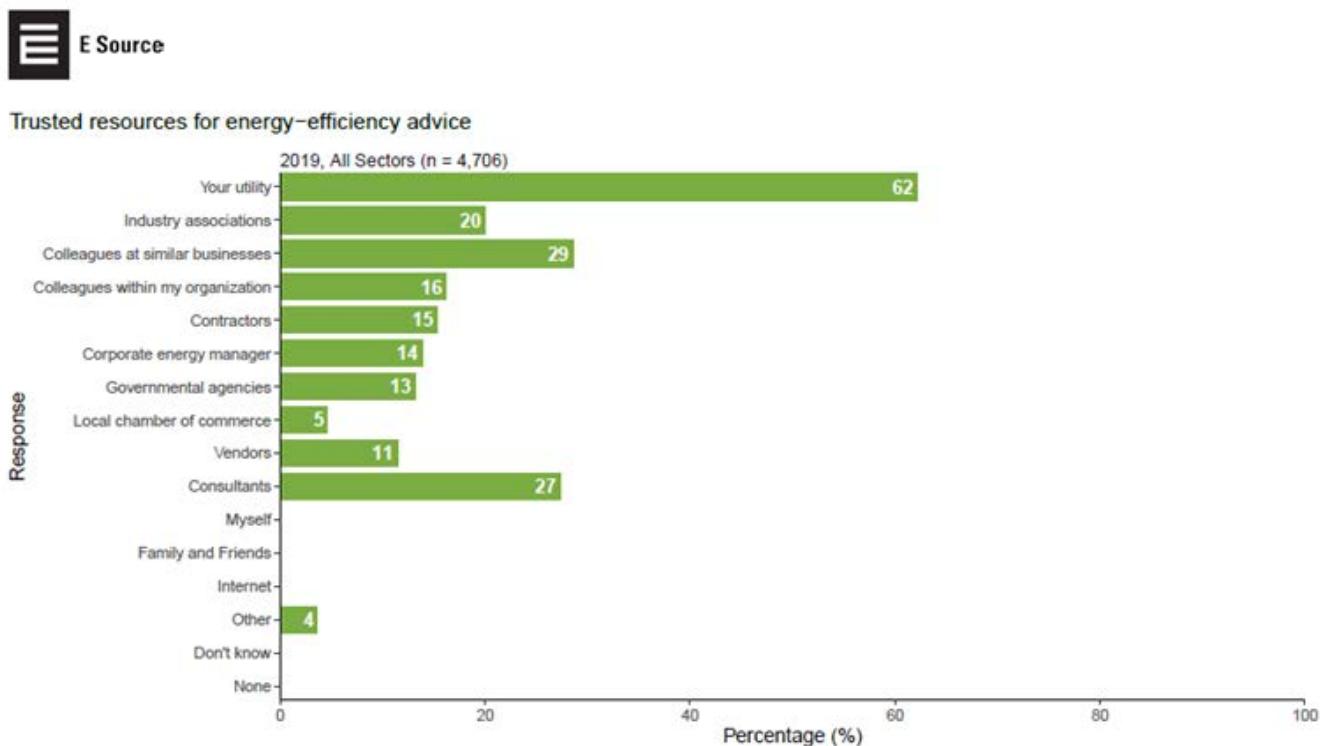
While the NHSaves logo and brand helps to reinforce the statewide nature of efficiency program offerings, NH Utility brands are featured in conjunction with the NHSaves logo in order to leverage the awareness and trust that customers have in the NH Utilities. Consumers today take in a constant flow of marketing and messaging across every aspect of their lives and activities. Consumers consistently have to analyze those messages to determine whether they are valid and from a trusted source. The initial impression of an advertisement or offer as something valid can have an impact on whether the customer is willing to engage further in the information that the message contains.

Studies have shown that customers overwhelmingly view their utility as the trusted resource for energy efficiency advice. In fact, a recent study⁵⁹ by E-Source surveyed respondents on trusted resources for energy efficiency advice and found that out of 4,706 respondents in all sectors in 2019,

⁵⁹ E Source (2020). E Source Small and Midsize Gap and Priority Study & Large Business Gap & Priority Study (Business Customer Insights Center).

62 percent of respondents selected “Your Utility” as the most trusted resource. See Figure 8-1 for the results from the E-Source study.

Image 8-1: Trusted Resources for Energy Efficiency Advice (E-Source)⁶⁰



Additionally, a survey of New Hampshire customers by Eversource found that 62 percent of residential customer respondents preferred a residential advertisement with both the utility and NHSaves logos, 21 percent preferred the advertisement with just the utility logo, and 17 percent preferred just the NHSaves logo. Similarly, 68 percent of commercial customer respondents preferred a commercial advertisement with both the utility and NHSaves logos, 24 percent preferred the advertisement with just the utility logo, and 8 percent preferred just the NHSaves logo. Based on research, and the overall desire to leverage customers’ existing awareness of the NH Utilities as legitimate regulated entities and

⁶⁰ E Source (2020). E Source Small and Midsize Gap and Priority Study & Large Business Gap & Priority Study (Business Customer Insights Center).

trusted energy advisors, co-branding strategies are a critical element of supporting and enhancing the NHSaves brand.

In addition to trust and awareness of energy efficiency programs, co-branded marketing serves to encourage the customer to take action toward implementing energy efficiency by providing a direct link to the service provider. In order to move from awareness to action the customer must have a clear understanding of what steps they can take and who they can contact. The utility is integrally connected to implementing energy efficiency projects, so it is vital that customers understand the linkage in order to move forward with energy efficiency. Call centers, energy efficiency employees, and business account executives all provide critical pathways for customers to gather information, begin a project, or resolve questions. Understanding the connection between statewide energy efficiency offerings and a customer's utility provides the full circle of information that the customer needs in order to take action and implement energy efficiency improvements. Additionally, linking the utility logo with NHSaves enables customers to see that programs are administered by the NH Utilities, thereby ensuring transparency of funding by ratepayers.

The NH Utilities recognize the benefits of the statewide NHSaves brand in promoting energy efficiency programs to customers. In order to protect the brand and ensure that it represents high standards of delivery and customer service, the NH Utilities will monitor and control the word and logo service marks in order to maintain their value and to prevent inferior services from diminishing them. The NH Utilities have stepped up these efforts, including initiating the federal service mark registration and monitoring efforts, in order to identify unauthorized uses of the service mark and protect the integrity of NHSaves.

In addition to utility-led marketing efforts, the NH utilities are also working to provide enhanced opportunities for contractors to market and support the programs through a trade ally logo. During the third quarter of 2020, this logo will be created specifically to incorporate the NHSaves logo, while differentiating it in order to signify the trade ally relationship. Contractors will be able to receive the benefit of NHSaves brand awareness and visually demonstrate that they have met the requirements to participate in the NHSaves Programs. The use of a trade ally logo will increase the visibility of NHSaves

across the state and leverage marketing campaigns funded by contractors to reach more customers. The trade ally logo will be licensed to qualified contractors through an agreement that provides for review of materials by the NH Utilities and detailed brand guidelines in order to ensure proper use of the mark and protect its integrity.

Throughout the 2021-2023 Plan, the NH Utilities will continue to use branding strategies designed to leverage customer trust and awareness and promote energy efficiency in New Hampshire.

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 non-residential customers, the NH Utilities will focus their marketing efforts on a variety of industry 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 Programs section of this document (see Chapter 3).

8.3.2 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").

8.3.3 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.

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Chapter Nine: Workforce Development

The NH Utilities recognize that increasing the adoption of energy efficiency improvements in homes, businesses, and municipal facilities across New Hampshire requires a skilled and qualified workforce. The state has a pool of dedicated trade allies who already provide quality services for the NHSaves Programs. However, as savings and participation goals increase over the 2021-2023 term, the NH Utilities must ensure this labor pool can expand to meet the demand for highly-skilled energy efficiency and demand reduction workers across the state.

Beginning in 2020 and continuing during the implementation of the 2021-2023 Plan, the NH Utilities will focus on recruiting and retaining a demographically and geographically diverse workforce to support the local energy efficiency industry with personnel who are highly-skilled and equipped to meet the NHSaves Programs' current and future needs. Energy efficiency is a growing field in New Hampshire, and many firms and organizations working within it have noted difficulties in finding new recruits to help fulfill the demand for services.

In addition to workforce needs related to increasing NHSaves Program activity and demand for services, energy efficiency contractors and vendors are significantly impacted by the recent onset of the COVID-19 pandemic. Many energy service firms had to furlough, or lay-off workers, as on-premises activities were suspended and demand for energy efficiency services slowed. Workforce recovery from this unexpected turn of events remains uncertain and may require new avenues for recruiting and replacing workforce capacity due to the pandemic.

Potential entrants into the industry would benefit from a comprehensive source of information and resources including career paths within the energy efficiency field, what education and certifications are required to acquire a job and advance within the industry, and where to find career opportunities. The NH Utilities believe that improving access to and awareness of available workforce development

resources will help develop the pool of well-trained contractors who will offer high quality services to customers. In addition, these contractors will be trained regarding building science and emerging energy-efficient technologies, which will inform them of solutions, incentives, and services available to customers through the suite of NHSaves Programs; thus, resulting in comprehensive energy-saving projects and higher levels of participation within the programs.

The NH Utilities currently support various Workforce Development efforts throughout New Hampshire and will continue to do so. These efforts are implemented through the NHSaves Programs, with resources and training offered to contractors, distributors, builders, building owners and customers who support or are interested in energy efficiency programs or initiatives. At the same time, the NH Utilities will pursue a cohesive statewide strategy for understanding workforce development needs, and training vendors, community action agencies, building operators, distribution and contractor partners, and others to meet the goals for the 2021-2023 Plan.

9.1 New Hampshire Workforce Development Strategy

In 2020, the NH Utilities will issue a competitive RFP for a Workforce Development lead vendor responsible for designing and implementing a workforce development strategy that supports the NH Utilities to achieve the following workforce development goals:

- 1. Identification of Workforce Development Needs.** The NH Utilities and lead vendor will work to develop a three-year Workforce Development Strategy to address current and future workforce development needs, as informed by existing studies and supplemented by additional benchmarking and research. The lead vendor will propose pathways and opportunities to allow contractors and trade allies to further develop their staff in three ways: technical capacity, sales acumen, and other extraneous benefits like managerial proficiency. In addition, the NH Utilities will ask the lead vendor to identify pathways for job seekers in communities with high unemployment to join the energy efficiency workforce.

- 2. Coordinate Implementation of New and Existing Training and Workforce Development Activities.** The Workforce Development lead vendor will be responsible for identifying and

coordinating the implementation of new and existing training and workforce development activities needed to fulfill the Workforce Development Strategy. Trainings will focus on the skills required to sell and install high-efficiency technologies across all fuel types (i.e., electricity, natural gas, oil, and propane), as well as the building sciences and other skills identified during the development of the strategy by the NH Utilities and lead vendor.

- 3. Coordinate Activities to Recruit Entrants to the Energy Efficiency Workforce.** The Workforce Development lead vendor will help identify, develop, and implement activities to engage potential workers who are new to the workforce, or considering career changes, to seek careers within the energy efficiency field in New Hampshire. The NH Utilities and lead vendor will collaborate with existing career and educational organizations, as well as engage with other key stakeholders to define recruitment paths for job seekers. This will also include engagement with high schools and technical schools regarding energy efficiency as a career path.

9.2 2021-2023 Workforce Development Efforts

During the development of the Workforce Development Strategy, the NH Utilities will continue to develop and implement trainings and workforce development activities for the current energy efficiency workforce. As the strategy is developed, the NH Utilities will introduce and/or modify contractor trainings to align with research and best practices design.

The NH Utilities will 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, ADR strategies, and emerging technologies.

Residential Programs

For the 2021-2023 term, the NH Utilities will look to 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.

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.

C&I Programs

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. The NH Utilities will 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 systems and controls, and refrigeration tuning and controls.



Chapter Ten: Planning Elements

10.1 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 based on values from the periodically updated, 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 over many months undertook a comprehensive review of state energy policy and Commission precedent. The resulting Cost Effectiveness Review Final Report was completed in October 2019.⁶¹ On October 31, 2019, the Benefit-Cost Working Group filed a report and a set of recommendations to the Commission regarding

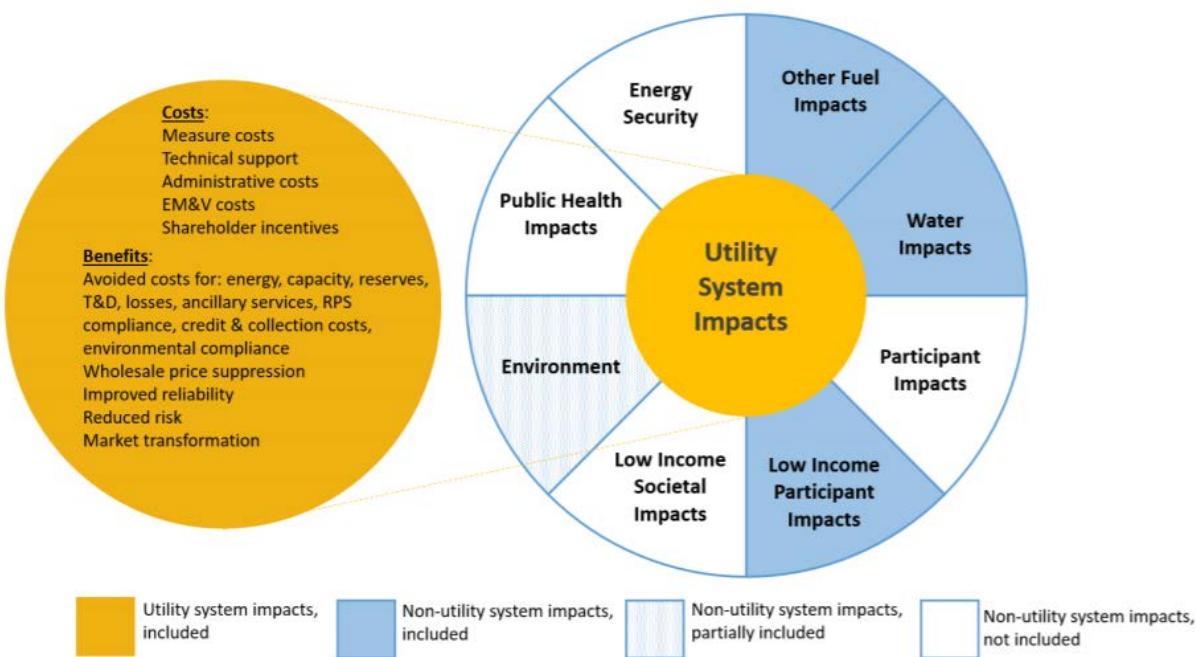
⁶¹ Synapse Energy Economics, Inc. *New Hampshire Cost-Effectiveness Review*. Oct. 4, 2019. Available at: https://puc.nh.gov/Regulatory/Docketbk/2017/17-136/LETTERS-MEMOS-TARIFFS/17-136_2019-10-31_STAFF_NH_COST_EFFECTIVENESS REVIEW.PDF.

the adoption of the proposed primary cost-effectiveness test (the Granite State Test), and two secondary tests to be applied to the 2021-2023 Plan.⁶² 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.

10.1.1 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 10-1: Granite State Test



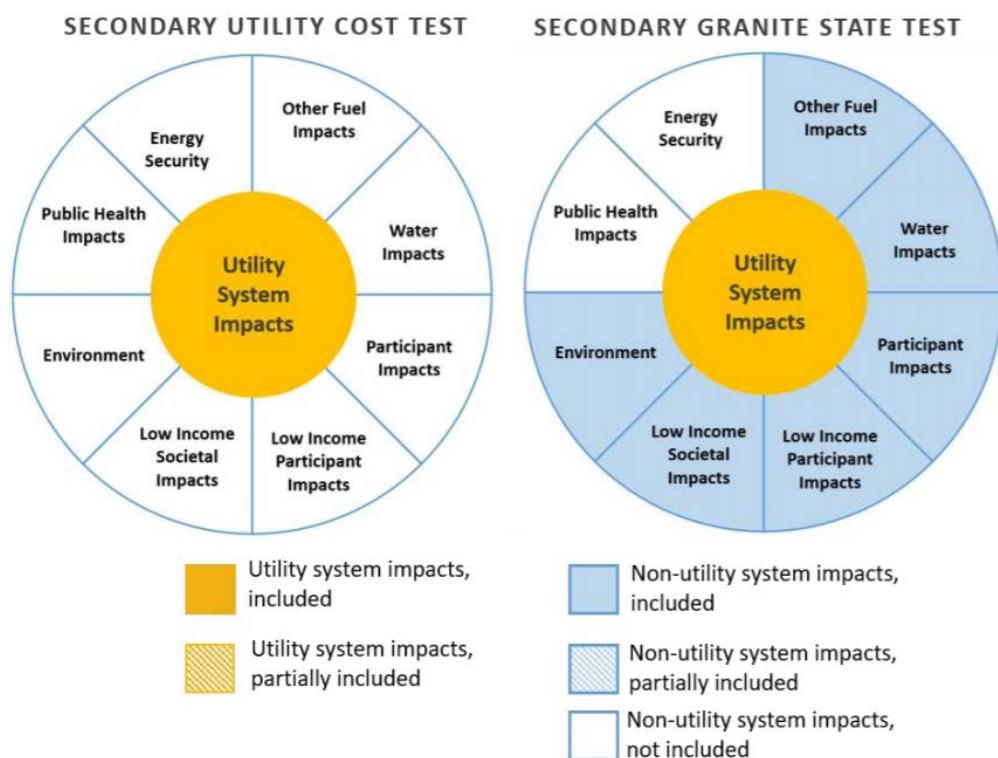
⁶² DE 17-136, *Electric and Gas Utilities 2018-20 New Hampshire Statewide Energy Efficiency Plan Benefit-Cost Working Group Recommendations Regarding New Hampshire Cost-Effectiveness Review and Energy Optimization through Fuel Switching Study*. Oct. 31, 2019. Available at: https://puc.nh.gov/Regulatory/Docketbk/2017/17-136/LETTERS-MEMOS-TARIFFS/17-136_2019-10-31_STAFF_FILING_WORKING_GROUP_REC.PDF.

10.1.2 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 measure the two extremes of the cost-effectiveness spectrum: one test includes impacts to the utility system only, the other test includes a much larger list 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 10-2: UCT and GST-2



The Granite State Test is applied to each proposed energy-saving program in the portfolio at the time of filing. If the Net Present Value (“NPV”) of benefits realized by the energy efficiency programs (benefits) is greater than the NPV of costs 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. In accordance with recommendations from the benefit-cost working group, the NH Utilities will not apply values for reliability benefits as quantified in the 2018 AESC Study but will work toward developing more rigorous values under the 2021 AESC Study that will be applied during the 2022-2023 term.

The secondary tests (UCT and GST-2) will also be applied by each NH Utility to each of their NHSaves 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.

10.1.3 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 Study have been used to calculate the benefits deriving from the Draft 2021-2023 Plan. Updated values from the 2021 AESC Study will be provided as outlined in Chapter Two.

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 electric system peak, and the fuel(s) whose use is avoided. 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 July 1 draft of the 2021-2023 Plan, the NH Utilities have applied a nominal discount rate of 3.25 percent (June 2020 value) and an inflation rate of 1.81 percent (rate of inflation between January 2019 and January 2020), resulting in a real discount rate of 1.41 percent used for NPV benefit calculations.

For the September 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.

10.1.4 Non-Energy Impacts

With the exception of HEA (low-income) programs, Non-Energy Impacts (“NEIs”) are not included in the Granite State Test but are included in the GST-2. For the Draft 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, which 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.

10.2 Performance Incentive

As part of the DE 17-136 Performance Incentive Working Group, which commenced in January 2018 and concluded with a final report in July 2019, changes to the PI structure were proposed and implemented for Plan Year 2020. For the 2021-2023 Plan, the NH Utilities will continue to utilize the revised PI framework. The PI framework categorizes and weights five separate performance indicators (components) at the portfolio level for each electric utility, each involving minimum savings thresholds (as well as other minimum thresholds summarized below) that must be met in order for any PI to be earned for that component.

Table 10-1: Performance Incentive Components (Electric)

PI No.	Component Title	Description	Incentive Weight	Minimum Threshold	Maximum PI Level	Verification
1	Lifetime kWh Savings	Actual/Planned Lifetime kWh Savings	35%	75%	125%	Annual PI Filing w/Commission
2	Annual kWh Savings	Actual/Planned Annual kWh Savings	10%	75%	125%	Annual PI Filing w/Commission
3	Summer Peak Demand Savings	Actual/Planned ISO-NE System-wide Summer Peak Passive kW Savings	12%	65%	125%	Annual PI Filing w/Commission
4	Winter Peak Demand Savings	Actual/Planned ISO-NE System-wide Summer Peak Passive kW Savings	8%	65%	125%	Annual PI Filing w/Commission
5	Value	Actual/Planned Net Benefits	35%	75%	125%	Annual PI Filing w/Commission
Total			100%			

For the NH Natural Gas Utilities, the kW components are omitted from the framework.

Table 10-2: Performance Incentive Components (Natural Gas)

PI No.	Component Title	Description	Incentive Weight	Minimum Threshold	Maximum PI Level	Verification
1	Lifetime MMBtu Savings	Actual/Planned Lifetime MMBtu Savings	45%	75%	125%	Annual PI Filing w/Commission
2	Annual MMBtu Savings	Actual/Planned Annual MMBtu Savings	20%	75%	125%	Annual PI Filing w/Commission
3	Value	Actual/Planned Net Benefits ²	35%	75%	125%	Annual PI Filing w/Commission
Total			100%			

The following PI requirements and parameters were revised or discontinued:

- **PI Calculation.** $\text{PI} = [(1.925\% \times \text{ACTUAL}) \times (\text{kWhL-ACT}/\text{kWhL-PLN})] + [(0.55\% \times \text{ACTUAL}) \times (\text{kWhA-ACT}/\text{kWhA-PLN})] + [(0.66\% \times \text{ACTUAL}) \times (\text{kWSUM-ACT}/\text{kWSUM-PLN})] + [(0.44\% \times \text{ACTUAL}) \times (\text{kWWIN-ACT}/\text{kWWIN-PLN})] + [(1.925\% \times \text{ACTUAL}) \times (\text{NET-BENACT}/\text{NET-BENPLN})]$

- **Where:**

- **PI** = Performance Incentive in dollars;
- **ACTUAL** = Total dollars spent (less PI);
- **kWhL-ACT** = Actual Lifetime kWh;
- **kWhL-PLN** = Planned Lifetime kWh;
- **kWhA-ACT** = Actual Annual kWh;
- **kWhA-PLN** = Planned Annual kWh;
- **kWSUM-ACT** = Actual passive summer peak kW;
- **kWSUM-PLN** = Planned passive summer peak kW;
- **kWWIN-ACT** = Actual passive winter peak kW;
- **kWWIN-PLN** = Planned passive winter peak kW;
- **NET-BENACT** = Actual net benefits (in NPV dollars) (i.e., total benefits less utility costs and NEI's)⁶³; and
- **NET-BENPLN** = Planned net benefits (in NPV dollars).

Additional requirements are as follows:

- The NH Utility's portfolio of programs must be cost effective before any PI can be earned, meaning the BCR must be at least 1.0 under the Granite State Test;
- If the Electric Program portfolio does not meet a minimum threshold of 55 percent of total energy savings from electricity, the PI coefficient will be reduced to 80 percent of the design value, that is, the total incentive level decreases to a maximum of 4.4 percent (e.g., for lifetime electric savings the PI would change from a target of 1.925 percent to a maximum of 1.54

⁶³ Refer to Appendix D in the Final Performance Incentive Working Group Report in Docket No. DE 17-136.

percent, etc.);

- Lifetime savings must be at least 75 percent of planned lifetime savings in order for any PI to be earned on the lifetime savings component;
- Annual savings must be at least 75 percent of planned annual savings in order for any PI to be earned on the annual savings component;
- Passive summer peak kW savings must be at least 65 percent of planned passive summer peak kW in order for any PI to be earned on the summer demand component;
- Passive winter peak kW savings must be at least 65 percent of planned passive winter peak kW in order for any PI to be earned on the winter demand component;
- The portfolio Net Benefits must be at least 75 percent of the planned Net Benefits in order for any PI to be earned on the Net Benefits component;
- Earned PI on each component is capped at 125 percent of that component's coefficient, that is, the maximum total PI is 6.875 percent; and
- PI will be calculated on actual portfolio spending up to 110 percent of approved portfolio term budget, excluding performance incentive, without prior Commission authorization. That is, the actual spending may exceed the planned term budgets, including all sources of funding and excluding the performance incentive, by up to 110 percent. A NH Utility may request approval from the Commission to spend in excess of 110 percent of proposed budget over the term if it can demonstrate good reasons why it should be exceeded. PI is then calculated against actual program spending at the portfolio level, up to 110 percent of the revised Commission-approved budget, or as otherwise ordered.

As discussed in Chapter 2, in annual reports 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 NH Utility will perform a final calculation of earned PI, based

on their actual achievement over the term compared to the three-year term goals.

10.3 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 will contain the set of standard methodologies and inputs for calculating the savings impacts and cost effectiveness of the NHSaves Program measures.

The final draft of the TRM will be submitted with the September 1, 2020 filing, and will take effect as of January 1, 2021. An annual update to the TRM will be submitted to the Commission by December 1 of 2021 and 2022 and will reflect changes in assumptions that will take effect during the subsequent program year. The NH Utilities will update the TRM in coordination with the EM&V Working Group, and annual updates will incorporate all relevant evaluation results that are finalized by November 1. The EM&V Working Group will strive to include consensus-based assumptions for all measures and offerings included in the NHSaves Programs. Should consensus not be reached, members of the EM&V Working Group may petition the Commission for resolution on the matter.

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 nearby 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 calculation tools, which estimate average savings for a variety of consumer lighting products and appliances.

As committed to in the EERS settlement and ordered by the Commission, the NH Utilities are working with the EM&V Working Group 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. Significant efforts have been made thus far and will continue for the remainder of 2020, including:

- **Independent evaluation support**, with EM&V Working Group oversight, the NH Utilities have contracted with a highly-skilled evaluation contractor to assist with drafting remaining measure chapters, review and refine descriptions of high-priority and high-impact measures, and recommend 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 recently completed 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; 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 updating of the TRM.

Savings from energy efficiency measures and projects will be calculated using the TRM that is in effect for the program year in which a customer submits an application. For example, for projects that are initiated in one year but close in the next, baselines will reflect what was in effect at the time of customer application, not payment of rebate. This ensures that customers are not misled when they are quoted an incentive based on the application year’s rebate and savings structure. It also prevents program staff and their vendors from having to rework savings calculations after the fact, which could provide a significant barrier to participation.

10.4 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").⁶⁴ As agreed to in the settlement, the NH Utilities performed a Rate & Bill Impact Analysis utilizing the model developed by Synapse Energy Economics ("Synapse"), under the guidance of the EM&V Working Group.

For this draft of the 2021-2023 Plan⁶⁵, 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 that consume 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 2021-2023 Plan, the energy efficiency programs will change the Regulated Electric Utilities' revenue requirements by -1.3 percent on average, or -\$419.9 million in total, over the life of the measures installed during the term and across all programs. The Regulated

⁶⁴ 2018 Settlement Agreement, Docket No. DE 17-136, pp. 18-19, Available at: <https://www.puc.nh.gov/Regulatory/Docketbk/2017/17-136.html>.

⁶⁵ Draft 2021-2023 Plan, Filed Jul. 1, 2020.

Utilities natural gas revenue requirements change by -3.2 percent on average, or -\$9 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 utility and each rate class differently, depending on the rate class' structure. Additional details, including graphs showing bill and rate 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.

10.5 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 factors impacting the claimable lighting savings reflected in the Draft 2021-2023 Plan:

1. The quantity of the various lighting measures that the NH Utilities anticipate being able to deliver; and
2. The net savings per lighting measure, given market changes and 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 sockets in New Hampshire homes are already filled with LEDs. Given this finding, the NH Utilities planned for residential retail lighting quantities to aggressively promote continued transition to LEDs in 2021, followed by a substantial decline over the remainder of the term.

Because LED bulbs last up to 15 years, customers are expected to purchase fewer 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 continued aggressive increased levels of C&I lighting in 2021, focusing primarily on capturing the remaining market potential for retrofit lighting. Final results from the Energy Efficiency Baseline and Potential

Study are expected in late July of 2020, and the NH Utilities anticipate revising projected savings to reflect study findings in the September 1 Plan filing.

Additionally, for midstream and upstream lighting offerings, the NH Utilities took into account the fact that some consumers participating in the programs would have purchased LED lighting with or without the NHSaves Program incentives. To adjust for this “free ridership,” the NH Utilities have included a Net to Gross (“NTG”) rate for these measures. Utilizing guidance from vendors and efficiency program administrators operating similar programs 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.

Chapter Eleven: 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 EESE Board.

The EM&V Working Group has successfully managed a dozen studies during the 2018-2020 term to date and will be launching several additional evaluations in the remainder of 2020. Going forward, particularly during times of quickly-evolving markets and program offerings, as well as broader economic disruptions associated with the COVID-19 pandemic, there will be many research questions to be studied, and competition for limited evaluation resources and staff time. To date, the NH Utility members of the EM&V Working Group have facilitated meetings and served as the primary point(s) of contact with each of the third-party evaluators under contract. This follows from the necessity of the NH Utilities, rather than the Commission or other public entity, contracting directly with the third-party evaluators given constraints on state agencies. However, the NH Utilities are committed to an efficient and collaborative process within the EM&V Working Group and welcome a larger facilitation role for the Commission's EM&V consultants in the next term.

Although members of the EM&V Working Group have successfully resolved evaluation-related disagreements to date, the NH Utilities propose a process be established for resolving potential disputes going forward. Specifically, this new process would allow for questions on which the EM&V Working Group cannot reach consensus to be adjudicated by an appeal to the Commission. In a dispute that is appealed to the Commission, each party would provide a written summary of their position for Commission review and resolution.

For purposes of this dispute resolution process, ‘parties’ to the EM&V Working Group would include:

1. The NH Utilities;
2. The Commission staff and their designees; and
3. The EESE Board Representative.

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

- All completed New Hampshire 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’ program administrators to conduct joint evaluations, and by adopting results from other states’ evaluations where appropriate. For example, Eversource and Utilil joined with counterparts in Massachusetts and Connecticut on a regional evaluation of C&I ADR programs and pilots, which are implemented on a similar basis across multiple states. This approach allowed for more robust results at a lower cost than would be possible through a study limited to NHSaves Program offerings. Similarly, the Energy Efficiency Baseline and Potential Study is leveraging analysis of the regional residential and C&I lighting markets being led by Massachusetts program administrators, by augmenting survey and interview efforts with New Hampshire-specific research questions.

11.1 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 11-1 lists the evaluations completed or planned for completion in 2020.

Table 11-1: 2020 Evaluations

Evaluation	Vendor	Completion Date	Results
Energy Efficiency Baseline and Potential Study	Dunsky Energy Consulting	Draft results, April 2020; Final report, July 2020 (est.)	The study provides a key source of planning assumptions and inputs for 2021-2023 Plan (see below).
NH Lighting Supplier Insights	NMR Group	Draft results, May 2020; Final report, June 2020	The NH Utilities have used findings from in-depth interviews with manufacturers and retailers regarding the residential lighting market in New Hampshire and the region to guide 2021-23 planning assumptions.
HPwES Impact and Process Evaluation	Opinion Dynamics Corporation	Draft report, December 2019; Final report, June 2020	Impact results will be 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, June 2020	Impact results will be 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. ⁶⁶

⁶⁶ Commission Order No. 26,232, 2018-2020 New Hampshire Statewide Energy Efficiency Plan, 2020 Update Plan, Order Approving Plan, Dec. 31, 2019.

Table 11-1: 2020 Evaluations (continued)

Evaluation	Vendor	Completion Date	Results
Crosscutting Non-Energy Impacts Study	DNV-GL	Final database, January 2020 Gap and sensitivity analysis, June 2020	NEI values will be incorporated in the TRM and included in the Secondary Granite State Test based on review by the NH Benefit-Cost Working Group, per Commission order. ⁶⁷
Bill and Rate Impact Analysis	Synapse Energy Economics, Inc.	Draft model, March 2020; Final model and report, May 2020	The model developed estimates of the bill, rate, and participant impacts of the 2021-2023 Plan programs based on utility-specific inputs (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	The study evaluated load reduction values for the 2019 ADR offerings and recommended an approach to estimate planned load reductions for the 2020 program, as described in the Supplemental Information filing to the Commission. ⁶⁷

In addition to the ongoing evaluations listed above, the NH Utilities, in coordination with the EM&V Working Group, are working with ERS, an evaluation firm, to compile New Hampshire's first comprehensive TRM, which will extensively document savings calculations and assumptions for measures offered by the NHSaves Programs. This work will result in a public-facing, electronic TRM for program year 2021, to be updated annually, as described above in the Planning Elements chapter.

11.2 Strategic Evaluation Plan

In early 2020, the Commission's EM&V consultants led 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 Solutions impact and process

⁶⁷ DE 17-136, 2020 Demand Reduction Initiatives, Supplemental Information, Feb. 28, 2020.

evaluation, as well as a Baseline Practice Study, both of which are being put out for bid as of the date of this submission. In late 2020, the NH Utilities expect to initiate another NHSaves Market Awareness Assessment.

In addition to addressing these near-term evaluation priorities, the EM&V Working Group has identified other evaluation activities that will be needed to ensure the NHSaves Programs continue to produce verified, accurate savings, and achieve the highest levels of performance during the 2021-2023 term. In particular, a subsequent round of evaluation projects will be planned based on insights gained from the results of the Energy Efficiency Baseline and Potential study as well as gaps identified during the development of the TRM.

11.3 Energy Efficiency Baseline and Potential Study

One of the critical inputs resulting from EM&V Working Group efforts informing the 2021-2023 Plan is the New Hampshire Energy Efficiency Baseline and Potential Study, being conducted by Dunsky Energy Consulting. This study is providing insights into the available energy and demand reduction opportunities in the state and will help to inform the development of savings forecasts for a wide set of energy efficiency and ADR measures across all fuels and segments.

The study utilizes primary and secondary research to provide detailed data and analysis on residential market baselines, and to estimate saturation and efficiency of energy-using equipment in New Hampshire homes. In addition, the study leverages Dunsky's expertise to infer C&I baselines in New Hampshire based on targeted primary research. Although COVID-19 interrupted primary data collection efforts for New Hampshire businesses this spring (the residential research was completed in March 2020), surveys have resumed and will provide insights on how NHSaves Programs can more effectively penetrate the C&I marketplace. Dunsky will also perform a sensitivity analysis based on the new barriers posed by the COVID-19 pandemic. The final study will examine the impact of customer barriers on achievable energy efficiency savings and model the impact of different incentive levels.

Draft results of the achievable energy efficiency and demand response potential were made available in late April 2020, and the final study results are expected in July 2020. For this July 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.