



2022-2023 NEW HAMPSHIRE STATEWIDE ENERGY EFFICIENCY PLAN

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

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

Submitted March 1, 2022



Table of Contents

Executive Summary.....	1
Chapter One : New Hampshire’s Energy Efficiency Programs.....	5
1.1 State Energy Policy	5
1.2 2022-2023 Plan Goals and Strategy	7
1.3 Energy Efficiency Program Funding.....	12
1.4 Annual Program Budgets.....	17
Chapter Two : NHSaves C&I Energy Efficiency Programs	20
2.1 NHSaves C&I Programs.....	20
2.2 Small Business Energy Solutions Program.....	27
2.3 Municipal Program	32
2.4 Large Business Energy Solutions Program	37
Chapter Three : NHSaves Residential Energy Efficiency Programs	42
3.1 NHSaves Residential Programs.....	42
3.2 ENERGY STAR Homes Program.....	51
3.3 ENERGY STAR Products Program.....	56
3.4 Home Energy Assistance Program	59
3.5 Home Performance with ENERGY STAR Program	66
3.6 Home Energy Reports.....	71
Chapter Four : Active Demand Reduction (ADR) Pilots	73
4.1 C&I Load Curtailment	73
4.2 Wi-Fi Thermostat Direct Load Control	73
4.3 Pilot Budget and Goals	73
Chapter Five : Planning Elements	75
5.1 Marketing and the NHSaves Brand	75
5.2 Education of Contractors and Customers	77

5.3 Benefit-Cost Testing	78
5.4 Savings Assumptions	80
5.5 Performance Incentive	83
5.6 Technical Reference Manual	86
5.7 Bill and Rate Impact Analysis.....	88
5.8 Lost Base Revenue.....	89
Chapter Six : Evaluation, Measurement & Verification	91
6.1 Strategic Evaluation Plan.....	94
6.2 EM&V Budgets.....	102
Conclusion.....	104

Attachments

Attachment A: Technical Reference Manual – 2022 Update

Attachment B: Statewide Goals

Attachment C: Utility Budgets by Activity

Attachment D: Utility Goals by Program

Attachment E: Eversource – Electric Program Cost-Effectiveness

Attachment F: Liberty Electric– Electric Program Cost-Effectiveness

Attachment G: NHEC – Electric Program Cost-Effectiveness

Attachment H: Unitil Electric – Electric Program Cost-Effectiveness

Attachment I: Liberty Gas – Natural Gas Program Cost-Effectiveness

Attachment J: Unitil Gas – Natural Gas Program Cost-Effectiveness

Attachment K: Rates Testimony

Attachment L: Avoided Energy Supply Costs in New England: 2021 Report

Attachment M: Bill and Rate Impact Analysis

Attachment N: Bill and Rate Impact Assumptions

Attachment O: Funding and Finance Working Group Report

Attachment P: Proposed 2022-2023 EM&V Expenses

Attachment Q: 2018-2020 EERS Working Group Details

Executive Summary

For more than two decades, New Hampshire’s electric and natural gas utilities (“NH Utilities”) have offered award-winning energy efficiency and demand response programs to residential and Commercial and Industrial (“C&I”) customers across the state.¹ Energy efficiency is the lowest-cost energy resource available to utilities, customers, and states. These programs provide energy and cost savings to both participating customers and users of the electricity and natural gas systems, promote economic development within New Hampshire, reduce the need for additional investments in generating capacity, help customers overcome market barriers, and counteract climate change and other environmental impacts related to energy generation and consumption.

New Hampshire’s electric and natural gas utilities are pleased to submit the 2022-2023 Statewide Energy Efficiency Plan (“2022-2023 Plan” or “Plan”). This 2022-2023 Plan is being submitted jointly by Liberty Utilities Corp. (Granite State Electric) d/b/a Liberty Utilities (“Liberty Electric”), New Hampshire Electric Cooperative, Inc. (“NHEC”), Public Service Company of New Hampshire d/b/a Eversource Energy (“Eversource”), and Unitil Energy Systems, Inc. d/b/a Unitil-NH Electric Operations (“Unitil Electric”) (hereinafter referred to as the “NH Electric Utilities”), and Liberty Utilities (EnergyNorth Natural Gas) Corp. d/b/a Liberty Utilities (“Liberty Gas”), and Northern Utilities, Inc. d/b/a Unitil-NH Gas Operations (“Unitil Gas”) (hereinafter referred to as the “NH Natural Gas Utilities”). The NH Utilities designed the 2022-2023 Plan to continue energy savings and program participation, utilizing the funding levels and program framework that are required by law pursuant to the passage of House Bill (“HB”) 549.

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

The NH Utilities are proud to deliver market-driven energy-efficient solutions to customers—residential, municipal, and C&I—throughout the state. The NH Utilities are well-trusted and recognized for their ability to work together, and with

stakeholders, legislators, state agency staff, and regulators, to provide continuity in delivering cost-effective energy efficiency solutions across the state facilitated under the NHSaves™ Programs (“NHSaves Programs”) brand. In furtherance of the energy efficiency framework, established by the New Hampshire Public Utilities Commission (“Commission”) and reinforced by HB 549, as well as other state energy priorities, this Plan will help New Hampshire achieve energy efficiency savings and produce the following results:

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

- **Customer Energy Cost Savings.** The 2022-2023 NHSaves Programs will result in customer energy cost savings of more than \$441 million over the lifetime of the measures. These savings will accrue to both participating and non-participating customers from all sectors and parts of the State. As detailed below, NHSaves Programs are designed to appeal to a broad range of customers in different rate classes, and measures incented run the gamut from commonplace appliances to complex new construction and retrofit projects.
- **Continued Energy Savings.** During 2022-2023, the NHSaves Programs will result in savings of 2.0 billion electric kilowatt-hours (“kWh”) and 5.4 million natural gas MMBtu over the lifetime of installed energy-saving measures. In addition, New Hampshire’s 2022-2023 energy efficiency programs will save 3.6 million MMBtu from other fuels, such as oil and propane.
- **Peak Demand Reduction Savings.** The 2022-2023 NHSaves Programs result in passive demand reduction savings that will reduce summer peak demand by 22.4 megawatts (“MW”) and winter peak demand by 23.5 MW. The continuation of the NHSaves Active Demand Reduction (“ADR”) pilots will also provide an incremental reduction to summer peak demand.
- **Strong 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 Programs funds invested in residential weatherization, commercial building

upgrades, and other efficiency measures stay in the New Hampshire economy. In turn, lower energy bills free up participating residential customers' household budgets to be directed to other needs, goods, and services. 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, health and safety, and public 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 2022-2023 NHSaves Programs will support 1,698 full-time equivalents ("FTEs") or 3.5 million work hours².
- **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 air pollutant emissions. The 2022-2023 NHSaves Programs will provide a lifetime reduction of more than 1.5 million tons of greenhouse gas ("GHG") emissions, the equivalent of taking 327,184 passenger vehicles off the road for one year³.

The 2022-2023 NHSaves Programs will reduce GHG emissions by 1.5 million tons.



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., Chakrabortu, S., Hansen, T. *A Green Growth Program for Colorado*. Study available at: <https://www.peri.umass.edu/publication/item/1168-a-green-growth-program-for-colorado>.

³ Utilizing the Environmental Protection Agency's Greenhouse Gas Equivalencies Calculator. Retrieved from: www.epa.gov/energy/greenhouse-gas-equivalencies-calculator.

- **Overcoming Market Barriers.** The NHSaves Programs enable customers to pursue investments in efficiency of their homes and businesses that would otherwise not be pursued due to market barriers such as information and upfront cost. Through a combination of education, technical support, comprehensive installation services, attractive financing options, and reduced payback periods, the NHSaves suite of programs put efficient measures on a more level playing field with other investments available to customers. Please see Sections 1.2.2, 2.1.1, and 3.1.1 for more information on Market Barriers.

The 2022-2023 Plan has been developed with the funding available from both ratepayer funds (System Benefits Charge [“SBC”] and Local Distribution Adjustment Charges [“LDAC”]), the portion of the Regional Greenhouse Gas Initiative (“RGGI”) auction revenues directed to the NHSaves Programs, as well as Forward Capacity Market revenues, and revolving loan programs, to offer a plan that continues the program framework in place in 2020, updated for current market conditions, and focused on maximizing energy savings that are both cost-effective and market transformative.

The NH Utilities will continue to manage a dynamic workforce of vendors and contractors, who are the backbone of weatherization programs, new construction innovations, education about building science best practices, and coordination of retail programs that reach every corner of the state and are accessible to all customers. The NH Utilities will also continue to rely on the highly developed and robust collaboration with stakeholders that is integral to the success of these programs.

Chapter One: New Hampshire's Energy Efficiency Programs

For 2022-2023, the NH Utilities remain focused on encouraging participation and achieving energy savings within the NHSaves Residential and C&I Programs and continue to collaborate to deliver customer-focused solutions under the NHSaves umbrella. These objectives will be met through hands-on management of energy efficiency programs that address changing federal and state economic conditions, supply chain challenges, evolving energy code and appliance standards, customer demand, emerging technologies, and an evolving landscape of vendors, distributors, retailers, and service providers.

New Hampshire's energy efficiency programs are jointly marketed by the NH Utilities under a statewide marketing brand—NHSaves.



Through this collaboration, the NH Utilities have developed award-winning programs under a statewide marketing platform that ensures consistency and continuity in branding and messaging. The NHSaves.com website serves as the statewide information portal where customers are directed to learn about and take advantage of incentives and services offered through the NHSaves Programs.

1.1 State Energy Policy

In August 2014, the Commission initiated an informal, non-adjudicative stakeholder process to develop a framework—the Energy Efficiency Resource Standard (“EERS”)—within which the NHSaves Programs would be implemented. The process resulted in an eighteen-month dialogue among the Commission Staff, the NH Utilities, and numerous stakeholders. In 2016, the state's first EERS was established through a settlement agreement filed with the Commission.⁴ The EERS framework within which the NHSaves Programs have been implemented since 2018, and reinforced with the passage of HB 549, requires the NH Utilities to file triennial plans, to pursue annual savings goals, and to achieve the long-

⁴ 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>.

term objective of achieving all cost-effective energy efficiency. In 2022, the New Hampshire Legislature amended RSA 374-F:3, VI with HB 549, providing policy direction on SBC and LDAC funding levels, programming elements and the process for future filings.

1.1.1 Stakeholder Process

On January 2, 2018, in Order No. 26,095, the Commission approved the settlement agreement for the 2018-2020 term including the establishment of five stakeholder working groups to further analyze key issues. These working groups focused on the following areas: a) evaluation, measurement and verification (“EM&V”); b) alternate sources of funding and financing of programs; c) the benefit/cost (“BC”) test used to screen energy efficiency programs; d) potential changes to the calculation of performance incentives (“PI”); and e) the development of a lost base revenue (“LBR”) mechanism. More details on the working groups are provided in Attachment Q and on the Commission’s Working Group website.⁵ A study on additional funding sources, produced in January 2020 for the funding and financing working group, is marked as Attachment O to this filing.

In 2008, New Hampshire’s legislature created the Energy Efficiency and Sustainable Energy Board (“EESE”) Board to promote and coordinate energy efficiency, demand response, and other sustainable energy programs in the state.⁶ The EERS Committee of the EESE Board, now the Energy Efficiency Committee, serves as the primary stakeholder body in the development of the NH Utilities’ triennial plans.

The EERS Committee met twice each month from November 2019 to August 2020 for a total of 20 stakeholder meetings to discuss EERS savings targets, budgets, program design, marketing approaches, and other related topics.

This 2022-2023 Plan is designed based on the funding levels and program framework in place in 2020 and in effect with the passage of HB 549. This framework was originally developed in collaboration

⁵ https://www.puc.nh.gov/EESE%20Board/EERS_Working_Groups.html

⁶ RSA 125-O:5-a; Oct.1, 2008.

with and supported by the EESE Board and its members and aims to continue to deliver cost-effective program offerings to all customer segments.

1.2 2022-2023 Plan Goals and Strategy

The NH Utilities will continue to offer award-winning programs in 2022-2023 to drive customer adoption of energy efficiency measures and practices. Over the two-year planning period, the NH Utilities will achieve cumulative energy savings of 1.6 percent of the NH Electric Utilities’ 2019 kWh delivery sales and 1.5 percent of the NH Natural Gas Utilities’ 2019 MMBtu delivery sales. The data in Table 1-1 and Table 1-2 provide an overview of 2022-2023 Plan Goals⁷.

Table 1-1: 2022-2023 Plan Goals (Electric)

Electric Programs	2022	2023	2022-2023 Plan
Cumulative Lifetime MWh Savings	1,028,080	957,048	1,985,128
Cumulative Annual MWh Savings	88,246	82,170	170,416
Cumulative Annual Savings as a % of 2019 Delivery Sales	0.84%	0.78%	1.62%
Cumulative Program Funding	\$59,179,376	\$60,825,179	\$120,004,555
Program Cost per Lifetime kWh Savings	\$0.058	\$0.064	\$0.060

Note: Numbers may not add up due to rounding

⁷ In compliance with HB 549, the NH Electric Utilities planned for at least 65% of all energy savings to come from electric savings.

Table 1-2: 2022-2023 Plan Goals (Natural Gas)

Natural Gas Programs	2022	2023	2022-2023 Plan
Cumulative Lifetime MMBtu Savings	2,766,322	2,639,195	5,405,517
Cumulative Annual MMBtu Savings	187,974	187,425	375,399
Cumulative Annual Savings as a % of 2019 Delivery Sales	0.75%	0.75%	1.49%
Cumulative Program Funding	\$11,278,443	\$11,367,360	\$22,645,045
Program Cost per Lifetime MMBtu Savings	\$4.08	\$4.31	\$4.19

Note: Numbers may not add up due to rounding.

1.2.1 2022-2023 Plan Strategy

Utilizing the funding and program structure provided by HB 549, and in response to the current clean energy and economic landscape in New Hampshire, the 2022-2023 Plan strategy is geared towards delivering cost-effective programs that are able to reach all customer segments and are adaptable to changing marketplace dynamics and trends. One meaningful shift incorporated into the Plan is the planned reduction in investment in high-efficiency lighting measures in the electric programs. Focus will shift to lighting retrofits and customer segments that still have market barriers, as well as to non-lighting energy efficiency measures that face barriers to customer adoption.

1.2.2 Market Barriers

The NH Utilities have a long-standing commitment to delivering market transformation-based energy efficiency programs to customers statewide. The market barriers addressed by NHSaves Programs include but are not limited to: reducing first-cost obstacles by providing customer incentives; increasing stocking of energy efficient equipment at retailers, distributors, and suppliers; training and recruiting installers and other market actors in highly efficient design and installation; and educating customers about the benefits of energy efficiency.

As equipment efficiency standards and standard practice increase, so too do the minimum standards qualifying for a rebate within the energy efficiency programs. There is continual innovation, adoption, transformation in the energy efficiency industry, and continual adjustment on the part of program administrators and vendors to raise the bar. New Hampshire customers in every sector face a variety of impediments to the acquisition of energy efficiency equipment, as well as adoption of behaviors and practices that conserve or reduce energy use to achieve the same result. Barriers differ depending on the customer's particular circumstances, and generally change over time both due to the personal circumstance and as a result of the evolving marketplace of energy-using equipment.

As new, more energy-efficient technologies and equipment are developed and brought to market, barriers to adoption are always present in the form of higher cost, lack of information, lack of ready availability, and lack of trained contractors with the requisite experience to recommend and install the equipment knowledgeably and safely.

1.2.3 Benefits of Energy Efficiency Programs

The NHSaves Programs provide significant value to all customers, both participants and non-participants, including but not limited to direct energy and cost savings, direct and indirect jobs creation, reduced spending by state and local governments, reinvestment in local New Hampshire communities, reduced GHG emissions, improved air quality, and a variety of other non-energy benefits.

NHSaves Programs deliver additional non-energy impacts ("NEIs"), such as improved health related to asthma and other respiratory illness, fewer missed days of work and school, improved air quality (indoor and outdoor), and increases in productivity. Additional quantifiable NEIs include reduced operation and maintenance costs due to longer-lived and cleaner equipment, improved building value, lower water and wastewater emissions, and reduced utility bill arrearage costs.

The primary purpose of the NHSaves Programs, however, is to reduce the demand for and consumption of energy on the electric and natural gas systems. The 2022-2023 NHSaves Programs will save 2.0 billion electric kWh and 5.4 million natural gas MMBtu. In addition, the 2022-2023 NHSaves Residential and C&I Programs will save 3.6 million MMBtu from fossil fuels such as oil, propane, and

kerosene. Over the lifetime of these measures, this will result in customer cost savings of more than \$441 million.

Energy efficiency programs help reduce energy consumption, which in turn reduces the amount of carbon-intensive fossil fuels burned by power plants. This reduces GHG emissions that contribute to climate change, thereby helping to minimize the cost of mitigation at the state and federal level. The 2022-2023 NHSaves Programs will lead to a reduction of more than 1.5 million tons of GHG emissions, the equivalent of taking 327,184 passenger vehicles off the road for one year.

Spending on energy efficiency 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 jobs are supported. Using this calculation, the 2022-2023 NHSaves Programs will support 1,698 FTEs or 3.5 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 ensuring investments stay in the New Hampshire economy rather than being diverted out of state. 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.

1.2.4 Annual Program Goals

Detailed estimates of the energy savings and benefits resulting from NHSaves Programs described here for 2022 and 2023 can be found in the attachments accompanying this Plan. The following tables summarize those savings. Specifically, Table 1-3 shows annual electric savings in megawatt-hours ("MWh") and the proportion of statewide savings contributed by each of the NH Electric Utilities.

Table 1-4 shows the statewide annual electric savings and the proportion contributed by each customer sector. It is notable that the vast majority of electric savings come from the C&I sector. The focus of weatherization programs in the residential sector (including services to income-eligible

customers) results in a significant amount of energy savings in the winter months, predominantly related to heating oil, propane, kerosene, and wood.

Table 1-5 and Table 1-6 show the statewide annual natural gas savings and the proportion contributed by the state’s two natural gas distribution companies, and the proportion contributed by each customer sector, respectively.

Table 1-3: Electric Program Annual Savings, by Utility

Utility	2022	2023	2022-2023	Percentage of 2-Year Savings
Electric Annual Savings (MWh)				
Eversource	61,060	57,476	118,536	70%
Liberty Electric	10,091	9,769	19,860	12%
NHEC	8,036	5,502	13,538	8%
Unitil Electric	9,059	9,422	18,481	11%
Total	88,246	82,170	170,416	100%

Note: Numbers may not add up due to rounding

Table 1-4: Electric Program Annual Savings, by Sector

Sector	2022	2023	2022-2023	Percentage of 2-Year Savings
Electric Annual Savings (MWh)				
C&I and Municipal	66,815	61,351	128,166	75%
Residential	19,568	19,026	38,594	23%
Income-Eligible	1,863	1,792	3,655	2%
Total	88,246	82,170	170,416	100%

Note: Numbers may not add up due to rounding

Table 1-5: Natural Gas Program Annual Savings, by Utility

Utility	2022	2023	2022-2023	Percentage of 2-Year Savings
Natural Gas Annual Savings (MMBtu)				
Liberty Gas	137,824	147,961	285,785	76%
Northern Utilities	50,149	39,465	89,614	24%
Total	187,974	187,425	375,399	100%

Note: Numbers may not add up due to rounding

Table 1-6: Natural Gas Program Annual Savings, by Sector

Sector	2022	2023	2022-2023	Percentage of 2-Year Savings
Natural Gas Annual Savings (MMBtu)				
C&I and Municipal	107,485	98,218	205,703	55%
Residential	71,108	80,065	151,173	40%
Income-Eligible	9,381	9,143	18,524	5%
Total	187,974	187,425	375,399	100%

Note: Numbers may not add up due to rounding

1.3 Energy Efficiency Program Funding

1.3.1 Energy Efficiency Funding for NHSaves Electric Programs

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 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 NH Utilities have estimated prior year carryforwards for calculation of 2022-2023 funding. True-up of actual carryforward from 2021, 2022, and 2023 will take place with the Annual Reports and, if needed, the following SBC or LDAC rate adjustment.

The New Hampshire Department of Energy’s (“NH Department of Energy”) 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 2022-2023. These figures differ by each NE Electric Utility and can be subject to adjustment based on actual performance.

Table 1-7 and Table 1-8 show the sources and estimated amount of funding for each of the NH Electric Utilities for the efficiency programs in program years 2022 and 2023. HB 549 directed that up to \$400,000 in funding from the SBC revenues be directed to the NH Department of Energy “to promulgate the benefits of energy efficiency according to guidelines developed as specified in RSA 125-O:5-a, 1(c) as determined by the department of energy.” That funding is not reflected in these tables, given that it will not be available for NHSaves Programs offered by the NH Electric Utilities.

Table 1-7: 2022 Electric Program Funding

Utility	Sector	2022				
		Carryover	RGGI	FCM	SBC Funds	Total
Eversource	Residential	\$0	\$359,499	\$1,433,201	\$16,117,105	\$17,909,805
	C&I	\$0	\$1,450,940	\$3,344,136	\$21,760,450	\$26,555,526
NHEC	Residential	\$1,031,666	\$41,106	\$30,000	\$2,461,254	\$3,564,026
	C&I	\$500,493	\$165,905	\$70,000	\$1,412,113	\$2,148,511
Liberty	Residential	\$305,677	\$41,127	\$242,122	\$2,140,259	\$2,729,185
	C&I	\$256,522	\$165,987	\$308,156	\$2,434,331	\$3,164,995
Unitil	Residential	(\$164,882)	\$66,785	\$346,072	\$2,389,493	\$2,637,468
	C&I	(\$88,534)	\$229,111	\$131,199	\$3,443,566	\$3,715,342

Note: Numbers may not add up due to rounding.

Table 1-8: 2023 Electric Program Funding

Utility	Sector	2023				
		Carryover	RGGI	FCM	SBC Funds	Total
Eversource	Residential	\$0	\$347,726	\$1,198,252	\$17,768,161	\$19,314,138
	C&I	\$0	\$1,531,542	\$2,795,920	\$23,512,891	\$27,840,354
NHEC	Residential	\$0	\$34,612	\$30,000	\$2,640,105	\$2,704,717
	C&I	\$0	\$172,873	\$70,000	\$1,559,331	\$1,802,204
Liberty	Residential	\$0	\$40,687	\$154,477	\$2,357,811	\$2,552,975
	C&I	\$0	\$177,584	\$196,607	\$2,664,744	\$3,038,935
Unitil	Residential	\$44	\$52,238	\$97,867	\$2,589,199	\$2,739,348
	C&I	(\$5)	\$228,000	\$228,356	\$3,705,385	\$4,161,736

Note: Numbers may not add up due to rounding

1.3.2 Efficiency Funding for NHSaves Natural Gas Programs

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. As with the NHSaves electric programs, the natural gas programs reconcile the balance of funds from prior program years on an annual basis, including interest earned on monthly balances applied at the prime rate.

Under HB 549, the LDAC rate applicable to energy efficiency programs will go into effect on January 1 of each year, thereby avoiding the previous inconsistency between the effective date of new rates, and the energy efficiency program year. Table 1-9 and Table 1-10 show the sources and estimated amount of funding for each of the NH Natural Gas Utilities for the efficiency programs in program years 2022 and 2023.

Table 1-9: 2022 Natural Gas Program Funding

Utility	Sector	2022		
		Carryover	LDAC Funds	Total
Liberty	Residential	\$ 556,625	\$4,742,637	\$5,299,262
	C&I	\$ 58,366	\$3,603,695	\$3,662,061
Unitil	Residential	\$7,889	\$1,011,432	\$1,019,321
	C&I	\$325,069	\$1,570,882	\$1,895,952

Note: Numbers may not add up due to rounding

Table 1-10: 2023 Natural Gas Program Funding

Utility	Sector	2023		
		Carryover	LDAC Funds	Total
Liberty	Residential	\$ -	\$5,359,188	\$5,359,188
	C&I	\$ -	\$4,022,789	\$4,022,789
Unitil	Residential	\$1,246	\$1,079,369	\$1,080,614
	C&I	(\$1,207)	\$1,515,897	\$1,514,690

Note: Numbers may not add up due to rounding

1.3.3 Supplemental Funding for Energy Efficiency

The NH Utilities have spent considerable time and effort investigating the possibility of supplementing existing ratepayer and FCM revenues with outside sources of funding. As documented in the Funding and Finance working group and its report, “NH Saves: External Funding and Partnership Assessment” (see Attachment O), attracting charitable funding for utility energy efficiency programs that are otherwise funded by a system benefits charge is a high bar, and funding amounts available from charitable sources are small compared to existing program funds. That said, the NH Utilities and its vendor, Resilient Buildings Group, have succeeded in identifying funding for certain customers who are interested in pursuing energy efficiency projects. We remain engaged with community partners and the NH Department of Energy to identify potential grant opportunities from the recently passed Infrastructure Law. As was the case with the American Recovery and Reinvestment Act, the NH Utilities are willing partners in leveraging external sources of funding for Weatherization Assistance Program, the Better Buildings Program, and other energy-related initiatives at the state and federal level.

In addition, the NH Utilities’ long-standing relationships with both for-profit and non-profit lenders have allowed for our mutual customers to access private financing to cover their portion of energy efficiency projects that are not covered by program incentives. These offerings are described in more detail in the sections related to on bill and third-party financing in the residential and commercial and industrial program sections of this plan.

1.4 Annual Program Budgets

Once each utility estimates the available energy efficiency program funding for each year, as presented in Section 1.3, it is able to develop budgets at the sector level (C&I, Residential, and Income Eligible). Within each sector budget, each utility then develops a budget for each of the common NHsaves Programs. Each utility uses its discretion to set budgets at the program level based on expected opportunity or demand, past experience, and cost effectiveness. Variation among the utilities is expected based on territory specific characteristics, cost-effectiveness, customer composition and vendor capacity. Each utility plans to utilize all of the available funding in each program year, inclusive of performance incentive.

Table 1-11 and Table 1-12 display annual program budgets by utility and fuel source.

Table 1-11: Annual Electric Budget, by Utility

Utility	2022	2023	2022-2023	Percentage of 2-Year Budget
Eversource	\$42,149	\$44,698	\$86,847	72%
Liberty Electric	\$5,587	5,300	\$10,887	9%
NHEC	\$5,415	\$4,272	\$9,687	8%
Unitil Electric	\$6,029	\$6,555	\$12,584	10%
Total	\$59,179	\$60,825	\$120,005	100%

Note: Numbers may not add up due to rounding

Table 1-12: Annual Natural Gas Budget, by Utility

Utility	2022	2023	2022-2023	Percentage of 2-Year Budget
Liberty Gas	\$8,494	\$8,893	\$17,387	77%
Unitil Gas	\$2,784	\$2,474	\$5,259	23%
Total	\$11,278	\$11,367	\$22,646	100%

Note: Numbers may not add up due to rounding

Budget allocations by sector are informed by the source of the funds, and each NH Utility’s forecasted delivery sales to each customer sector. The Home Energy Assistance (income-eligible) sector budget meets New Hampshire legislative requirement that 20 percent of the SBC funds be directed toward limited-income programs.⁸

Any difference between the actual spending in each program year and the total actual energy efficiency funds received, exclusive of the actual earned performance incentive, is carried forward into future year program budgets. This value may be positive or negative. Unspent fund balances earn interest monthly at the Prime Rate on the average net balance of the total revenue and proceeds received less funds expended for programs and services. Funding estimates from the SBC and LDAC are based on each of the NH Utility’s sales projections. Actual sales will differ from forecasts, resulting in variances between estimated and actual revenues. In addition, RGGI and FCM estimates used for planning purposes typically differ from actual revenues and can be impacted by the timing of payment transfer to the energy efficiency programs.

When planning program budgets and reporting actual expenditures, the NH Utilities categorize expenses by specific tracking activities, defined as follows in Table 1-13:

⁸ RSA 374-F.3 VI:(c) As amended by HB549 signed on February 24, 2022. “No less than 20 percent of the portion of the funds collected for energy efficiency shall be expended on low-income energy efficiency programs.”

Table 1-13: Tracking Activities for Expenses

Tracking Activity	Description
Administration— Internal	Internal utility costs associated with program design, development, regulatory support, and quality assurance. Costs include employee labor, benefits, expenses, materials, and supplies.
Administration— External	External costs associated with program administration. This includes contractors and consultants used in support of program design, development, regulatory support, and quality assurance.
Customer Rebates and Services	Costs associated with incentives that reduce the cost of equipment as well as costs for services to speed adoption. This includes direct rebate dollars paid to distinct participants, as well as indirect incentives for equipment discounts. It also includes services such as technical audits, employee and contractor labor to install measures, expenses, materials, and supplies.
Internal Implementation Services	Tracking of internal utility costs associated with delivering programs to customers, including labor, benefits, expenses, materials, and supplies.
Marketing	Costs for marketing, advertising, trade shows, toll-free numbers, and NHsaves website. Types of expenses include labor, benefits, consultants, contractors, expenses, materials, and supplies.
Evaluation	Costs for EM&V activities including labor, benefits, expenses, materials, supplies, consultants, contractors, and tracking systems.

1.4.1 Interim Changes in Program Budgets

Individual programs are defined as the programs listed in each utility’s Program Cost Effectiveness Reports, included in this Plan as Attachments E1, F1, G1, H1, I1 and J1. Specifically, once the budgets are approved, there will be no movement of funds between the Residential and C&I sectors unless specifically approved by the Commission. In addition, no funds shall be transferred from the Home Energy Assistance (“HEA”) Program without prior approval by the Commission.

The NH Utilities shall provide notification to the Commission if an individual program’s actual expenditures are forecasted to exceed 120 percent of the program’s budget.

Chapter Two: NHSaves C&I Energy Efficiency Programs

Since 2002, the NH Utilities have implemented programs to help improve the efficiency of small and mid-size 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 C&I Programs defer the need for additional generation on the electric grid and reduce the use and associated costs of electricity, natural gas, and fossil fuel consumption.

2.1 NHSaves C&I Programs

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. Figure 2-1 displays the C&I statewide programs, which are described in detail below.

Figure 2-1: 2022-2023 C&I Programs (Statewide)



For 2022-2023, the NH Utilities are focused on resuming the recruitment of customers to realize energy savings through participation for the NHSaves C&I Programs.

The NHSaves C&I Programs will be 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 will 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 policy.

The NH Utilities have designed the NHSaves energy efficiency programs to be open and available for the entire year to maximize customer satisfaction and minimize market disruption with key channel partners such as contractors, equipment suppliers, and distributors. However, in order to be responsive to the market, ensure consistent program availability, and minimize program oversubscription challenges, the NH Utilities may make specific program changes as needed during the year, including:

- Adjusting program marketing activity levels to ramp up or slow down demand;

- Modifying incentive levels for certain programs or measure categories;
- Introducing time-based incentives, which could involve promoting more limited period offerings, as well as potentially promoting higher incentive offers during periods of lower or seasonal demand where there may be greater contractor availability;
- Introducing a rebate reservation system process where customers submit an initial application to reserve funds, and those who do not make the initial reservation list are moved onto a waiting list. Customers on the waiting list can move forward once initial reservation list customers have been served, or they can be moved into the following year;
- Transferring available program funds from underperforming programs into programs with higher demand within the same sector;
- Amending per customer maximum project cap levels to help extend program availability;
- Making commitments for a future program year in lieu of a current year incentive.

2.1.1 C&I Market Barriers

The NHSaves C&I Programs are deliberately designed to overcome the barriers our customers face to adopting energy efficiency solutions, both for existing equipment and building performance, as well as during new construction or major renovations. Program design is subject to continuous improvement on the part of both individual utilities as well as the NHSaves C&I team consisting of representatives from all the Utilities. NHSaves is not just a static suite of programs offered by the NH Utilities, it is a robust ecosystem of utility staff, vendors, contractors, architects, consultants, customers, and other stakeholders that is constantly evolving, improving, and responding to the market.

Going well beyond monetary incentives to customers, the NHSaves Program interventions offer technical assistance, education and training, turnkey solutions, and key account services to help reduce customers' energy use and ultimately improve our state's economic efficiency.

Table 2-1 details typical market barriers faced by our C&I customers and the NHSaves interventions designed to overcome them in 2022-2023.

Table 2-1: C&I Market Barriers

Market Barrier	Program Interventions	Program Objectives
<p>Incremental price difference between standard and high efficiency goods and services.</p>	<ol style="list-style-type: none"> 1. Provide rebates to give effective price signals to help cover incremental first cost. 2. Offer low-interest or interest-free loans to allow customers to finance their portion of energy efficiency investment. 3. Provide information about alternative sources of funding for their high-efficiency investments (state and federal rebates or tax credits). 4. Provide information/training/pro-formas about the importance of looking at life-cycle costs on website and in communication. 	<ol style="list-style-type: none"> 1. Customers consider operating costs and not just price tag when making purchase/investment decisions. 2. Market penetration of high efficiency equipment and services increases.
<p>Lack of customer awareness related to:</p> <ul style="list-style-type: none"> • benefits of energy efficiency. • existence of high-efficiency alternatives. • where to purchase high-efficiency equipment/quality installation. • how and when to reduce demand during system peaks. 	<ol style="list-style-type: none"> 1. Promote energy-efficient options in store/online/at point of purchase. 2. Keep information on NHSaves website up to date. 3. Engage and train contractor network to improve understanding of/familiarity with new, high-efficiency technologies. 4. Provide information to target customer audience through case studies, one-on-one contact, technical assistance, and building assessments. 5. Co-market with contractors and retailers. 6. Refer customers to Program Administrator vetted turnkey service providers. 	<ol style="list-style-type: none"> 1. Customers learn to look for and demand high-efficiency options. 2. Market sales of high efficiency equipment and services increases. 3. System peak usage is reduced. 4. Customer iCAP charges are reduced.

Market Barrier	Program Interventions	Program Objectives
<p>Midstream (retailers/distributors) fail to stock high-efficiency products.</p> <ul style="list-style-type: none"> • Lower turnover • Stocking cost • Lack of awareness/experience 	<ol style="list-style-type: none"> 1. Include retailer training and recruitment in midstream program offering. 2. Communicate attributes of emerging or improving high efficiency equipment stock. 3. Provide proper price signals to retailers who stock/sell targeted equipment. 4. Co-market available incentives to customers. 	<ol style="list-style-type: none"> 1. Greater availability/visibility of high-efficiency equipment at point of sale. 2. Engaged and motivated retailers committed and rewarded for selling high-efficiency products. 3. Market share of high-efficiency equipment and services increases.
<p>Building trades lack sufficient cadre of trained personnel, awareness, experience, or commitment to high-efficiency practices, both for existing building renovations and new construction.</p>	<ol style="list-style-type: none"> 1. No-cost training in best practices provided to builders and trade allies. 2. Incentives provided for exceeding commercial building energy efficiency code and appliance standards. 3. Case studies developed and promoted to highlight exceptional builders and homes. 4. Collaboration with professional associations to promote the program and the benefits of high-efficiency homes. 	<ol style="list-style-type: none"> 1. Build confidence and competence in high-efficiency building practices. 2. Improve the industry standard practice in building design. 3. Reward and celebrate builders and other professionals who demonstrate commitment to high-efficiency building design. 4. Capture opportunity at time of building/renovation for energy savings over the life of building. 5. Increase the industry standard practice for high-efficiency design/build/renovation.

2.1.2 C&I Program Overview

NH Saves offers the following three C&I programs, which are described in more detail in each program’s section below.

- **Small Business Energy Solutions Program.** Small businesses are the backbone of the state’s economy. This program provides technical expertise and incentives to small business customers who often lack the dedicated staff, time, and other resources necessary to effectively address energy use and cost. This program provides critical assistance to small business owners so that they can manage their energy use and realize other benefits, freeing them up to invest their time and resources in their business, customer service, and innovation.

- **Municipal Program.** Municipalities and school districts can be large users of energy. Unlike for-profit businesses, the buildings owned and managed by our public servants are often old, historic, and inefficient. Many public assets have unique uses, such as wastewater treatment plants, streetlights, gymnasiums, and 24-hour services. The Municipal Program is designed to help public employees to identify and undertake energy-saving opportunities.

The Municipal Program was established by legislation, is funded by the revenues from the RGGI, and is administered by the NH Electric Utilities. Given the funding source's focus on reducing greenhouse gas emissions, this program has a focus on both electric and fossil fuel reducing projects. The NH Natural Gas Utilities also service municipalities by seamlessly providing the same key services and incentives to towns and cities through the Small Business Energy Solutions and Large Business Energy Solutions programs.

The NHSaves Municipal Program provides invaluable technical assistance and vendor management assistance to help town and school officials move forward on projects that reduce their buildings' high energy costs, often a large component of their operations and maintenance ("O&M") budgets, allowing them to redirect the savings toward other public services.

- **Large Business Energy Solutions Program.** Large businesses and manufacturers represent the largest energy users in the state and provide some of the most important opportunities for energy savings that benefit not only their own bottom lines, but the state's economy as a whole. This program offers technical services and incentives to help large C&I customers put energy efficiency projects at the top of the list of conflicting capital improvement priorities. Through incentives and technical assistance, large C&I customers are able to retrofit existing facilities or equipment, expand or replace equipment that is at the end of its useful life, and expand or construct new facilities to minimize future operating costs related to energy use.

2.1.3 Marketing and Financing

During 2022-2023, the NH Utilities will market the C&I Programs through a variety of proven channels including but not limited to: the NHSaves website; 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); presentations for and hosting energy efficiency trainings, forums, and events; and design of content for partners' blogs, newsletters, and websites.

Accessible financing mechanisms are effective in encouraging C&I customers to invest their own funds 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 commercial, municipal, and industrial customers.

All NH Utilities offer on-bill financing mechanisms for commercial, industrial, and municipal customers. On-bill financing mechanisms help reduce upfront costs and allow C&I customers to repay loans through their monthly natural gas or electric bills. On-bill financing simplifies the practice of applying for loans and allows the customer to treat loan repayment as an operating expense rather than a capital liability. These financing tools allow for more comprehensive energy-saving projects by reducing cost and transaction barriers. These offerings, including flexible caps and repayment periods, depend upon the NH Utilities having sufficient capital available in on-bill loan pools.

Eversource and NHEC offer SmartSTART tariffs, tied to the meter, with on-bill repayments to municipal customers. This 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 (Eversource or

NHEC) through charges added to their regular monthly electric bill.^{9, 10} The SmartSTART charges are calculated to be less than or equal to the customer’s estimated monthly energy savings. NHEC also offers SmartSTART to commercial customers.

In addition to on-bill financing offerings, the NH Utilities provide customers with or can connect customers to other financing options that can help them invest in energy efficiency. These include an online competitive loan platform (described below), as well as loan options offered by the Community Development Finance Authority (“CDFA”), the New Hampshire Business Finance Authority (“NHBFA”), and Property Assessed Clean Energy (“PACE”) financing where available, and from other banks and lending institutions across the state.

2.2 Small Business Energy Solutions Program

2.2.1 Target Customers

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 opportunities, or skilled vendors who can undertake the work and split incentives in which the building owner controls the equipment, and the tenants pay the energy bills. The Small Business Energy Solutions Program helps identify electric and natural gas-saving opportunities and guides business owners through the energy efficiency process,



⁹ Eversource Delivery Service Tariff Rate SSP106 outlines the requirement for service under the SmartSTART financing option.

¹⁰ 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.

including assigning experienced “turnkey” vendors vetted and managed by the customer’s utility. This removes the small business customer’s barrier of finding the time and bearing the risk of procuring a qualified and reputable contractor to do the work. This allows small business owners to focus on customer service, entrepreneurship, and creating a competitive niche within their market segments.

Small and midsize energy users are the target market for the program, and specifically those customers who use less than 200 kilowatts (“kW”) annual demand (electric) or 40,000 therms (natural gas), which represent the vast majority of the NH Utilities’ C&I customer accounts.

The small and midsize business market segment has a diverse set of customer types, including, but not limited to, 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.

Throughout 2022-2023, the NH Utilities will continue to apply data analytics to identify underserved small business market segments and determine if new measures or tailored solutions can be cost-effectively employed to engage these businesses, including those in rural or hard-to-serve markets where energy efficiency contractors and program outreach have traditionally been limited.

2.2.2 Incentives Offered

The Small Business Energy Solutions Program provides incentives to customers to encourage the implementation of cost-effective, energy efficiency projects. There are two types of incentives for energy-efficient measures—prescriptive and custom.

- **Prescriptive Incentives.** These incentives are fixed-price rebates (either based on the size or the type of measure being acquired by the customers) applied to pre-qualified energy efficiency measures. Prescriptive incentives provide a predictable and streamlined process for customers installing common high efficiency equipment.
- **Custom Incentives.** These incentives vary depending on the application, allowing customers flexibility based on their building and the overall project they are undertaking. Custom projects

rely on engineering calculations to determine energy savings and evaluate cost-effectiveness.

Custom projects are reviewed by vendors or utility staff on a site-specific basis and may require a technical study to present the planned energy savings and project costs.

2.2.3 Program Design and Delivery Pathways

There are multiple program delivery channels for customers to participate in the Small Business Energy Solutions Program, as follows.

- **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 customized energy-efficiency 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.** Some small business customers have the capacity and desire to manage the installation of new equipment with their own vendors, which promotes a

competitive marketplace. The NH Utilities accommodate all such vendors, as long as they are able to provide the requisite data about the measures installed and the cost of installation.

- **Midstream Incentives.** For 2022-2023, the NH Utilities will continue the Small Business Energy Solutions point-of-service, or midstream distributor incentives offered for commercial kitchen equipment (i.e., dishwashers, fryers, griddles, and ice machines), HVAC, and water heating equipment for both gas and electric end uses. The NH Utilities will work with energy efficiency program administrators across the region to provide consistent qualified product offerings to maximize market consistency and effectiveness. We will also continue work with distributors, equipment manufacturers, and the Massachusetts & Connecticut Technical Assessment Center to monitor and evaluate emerging energy-efficient technologies for inclusion in our offerings. 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.

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, streamline the transaction process for the customer (i.e., no rebate forms), and play a critical role in raising awareness and acceptance of as well as demand for high efficiency alternatives to standard equipment types.

- **Workforce Development.** The Small Business Energy Solutions Program, like the other NHSaves programs, is dependent upon a well-trained and customer-oriented contractor network. The NH Utilities will continue to work with its partners to ensure that New Hampshire retains and builds upon the existing workforce of energy professionals so that customers can trust that their energy improvement projects will be professionally scoped and completed, and competitively priced, whether or not they are participating in the NHSaves programs.

2.2.4 Program Budget and Goals

Table 2-2 summarizes the proposed budget, savings targets, and number of participants statewide (i.e., for all Utilities combined) for program years 2022 and 2023. For more detailed estimates by utility, delivery pathway or measure, please refer to each of the NH Utilities’ BC models.

Table 2-2: Small Business Energy Solutions Program—Energy Savings and Budgets

Savings and Budgets	2022	2023	2022-2023
Electric Programs			
Program Budget	\$13,059,348	\$13,514,116	\$26,573,464
Annual kWh Savings	33,508,350	30,789,888	64,298,238
Lifetime kWh Savings	391,469,245	360,894,744	752,363,988
kW Reduction	4,478	4,061	8,539
No. of Participants	4,181	4,055	8,236
Natural Gas Programs			
Program Budget	\$2,220,236	\$2,249,379	\$4,469,615
Annual MMBtu Savings	36,443	33,911	70,354
Lifetime MMBtu Savings	599,664	568,131	1,167,795
No. of Participants	2,462	2,635	5,098

Note: Numbers may not add up due to rounding

2.3 Municipal Program

2.3.1 Target Customers

The Municipal Program was established by legislation to focus RGGI energy efficiency revenues on New Hampshire's towns and cities and is administered by the NH Electric Utilities.¹¹ 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 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. In addition, municipalities face other barriers that limit participation in energy efficiency programs, including potentially shorter operating hours (resulting in reduced cost-benefit savings), the long-term budgeting and approval process of towns and cities for capital improvements, and the cyclic electoral turnover of municipal representatives.

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

¹¹ 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 legislative directive for funding the Municipal program goes specifically to the NHSaves Electric programs and not the NHSaves Natural Gas programs.

and fuel-neutral energy savings from electric, oil, and propane. All municipal and local government energy efficiency projects are eligible to participate in the program, including local governments with municipal 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 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 uniformly accessible.

2.3.2 Incentives Offered

Similar to Small Business Energy Solutions, the Municipal Program provides 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 Design and Delivery Pathways section) if they are installing standard energy-efficient measures.
- **Custom Incentives.** The Municipal Program also offers custom incentives that 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 quality.¹² Unlike the Large and Small Energy Solutions Programs offered by the Electric Utilities, the Municipal Program offers fuel-neutral incentives for the installation of energy-efficient measures such as boilers, HVAC systems and equipment, and weatherization measures.¹³ 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.** 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 O&M budgets (i.e., monthly utility bill): not requiring the towns and cities to secure additional approvals, bonding, or ballot measures.

2.3.3 Program Design and Delivery Pathways

There are two program delivery channels for customers to participate in the Municipal Program, as follows.

¹² 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.

¹³ 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.

- **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. 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.
- **Customer-Directed Installations.** As with the Large and Small Business Solutions Programs, 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. 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, how to determine which energy-efficient solutions are right for the town’s needs, and how to leverage incentive and loan options to finance projects. For 2022-2023, 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 contracting¹⁴ by school districts and municipalities. For 2022-2023, 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).

2.3.4 Program Budget and Goals

Table 2-3 summarizes the proposed budget, savings targets, and number of participants statewide (i.e., for all NH Utilities combined) for program years 2022 and 2023. For more detailed estimates by utility, delivery pathway or measure, please refer to each of the NH Utilities’ BC models.

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

Savings and Budgets	2022	2023	2022-2023
Electric Programs			
Program Budget	\$1,943,528	\$2,000,000	\$3,943,528
Annual kWh Savings	3,776,956	3,578,147	7,355,103
Lifetime kWh Savings	47,041,405	44,760,795	91,802,200
kW Reduction	361	318	679
No. of Participants	246	241	487

Note: Numbers may not add up due to rounding

¹⁴ Performance contracting provides customers with the ability to have comprehensive energy efficiency projects completed without requiring a copayment. Customers pay for the projects with dollar savings achieved over a period of time that is shorter than the life of the measures. The value proposition for the customers is that the energy savings are free for the remainder of the measure lives.

2.4 Large Business Energy Solutions Program

2.4.1 Target Customers

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 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 to ensure energy efficiency opportunities are captured for the entire lifecycle of the building.

A 2019 New Hampshire Energy Efficiency Market Assessment (“Market Assessment”) determined the decision-making constraints of four large C&I market segments and identified recommendations for the NHSaves Programs.¹⁵ The NH Utilities will employ this research to effectively engage these large C&I customer segments, including:

- **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 efforts with other regional utility partners to promote energy efficiency.

¹⁵ 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>.

- **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 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, so that energy efficiency investments will not interfere with business operations.



2.4.2 Incentives Offered

The Large Business Energy Solutions Program provides prescriptive, custom, and performance-based incentives to customers to encourage the implementation of cost-effective, energy efficiency 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.** Performance-based incentives are 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 to consider



long-term, holistic building design and measures that optimize the energy performance of systems or buildings. For 2022-2023, 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 2022-2023, the Large Business Energy Solutions Program will continue to support 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.

2.4.3 Program Design and Delivery Pathways

There are four program delivery channels for customers to participate in the Large Business Energy Solutions Program, as follows.

- **One-on-One Technical Assistance.** First, the NH Utilities offer one-on-one technical assistance, through 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 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 institutions, hospitals, hotels, manufacturers, and ski resorts.
- **Engineering Firms.** Engineering firms provide whole-building audits and individual building system performance checks and work directly with a customer's facility team or energy committee to identify whole-building management approaches, behavioral changes, new equipment, renovations, retro-commissioning opportunities, and process improvements that drive down energy use and cost.
- **Midstream.** Midstream offerings are available to both Large and Small Businesses and increase the availability of, and stocking of, high-efficiency technologies. For 2022-2023, the NH Utilities will expand beyond the lighting market to support new midstream incentives for commercial kitchen equipment and HVAC equipment, including heat pump water heaters and high-

efficiency condensing units. The NH Utilities will use the results of the Energy Efficiency Baseline and Potential study as a guide to determine which technologies provide opportunity for cost-effective savings and will continue to collaborate with our counterparts across New England to influence distributors to stock high-efficiency equipment.

2.4.4 Program Budget and Goals

Table 2-4 summarizes the proposed budget, savings targets, and number of participants statewide (i.e., for all NH Utilities combined) for program years 2022 and 2023. For more detailed estimates by utility, delivery pathway or measure, please refer to each of the NH Utilities’ BC models.

Table 2-4: Large Business Energy Solutions Program—Savings and Budgets

Savings and Budgets	2022	2023	2022-2023
Electric Programs			
Program Budget	\$11,989,092	\$12,303,161	\$24,292,253
Annual kWh Savings	29,529,624	26,983,246	56,512,870
Lifetime kWh Savings	366,696,943	335,577,902	702,274,846
kW Reduction	3,672	3,132	6,804
No. of Participants	780	707	1,487
Natural Gas Programs			
Program Budget	\$2,569,559	\$2,569,559	\$5,123,692
Annual MMBtu Savings	71,042	64,307	135,349
Lifetime MMBtu Savings	1,038,472	972,004	2,010,476
No. of Participants	556	552	1,107

Note: Numbers may not add up due to rounding

Chapter Three: 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 become more familiar with how they use energy so that they can manage their energy costs, adopt more efficient behaviors, and purchase high-efficiency equipment and technologies.

3.1 NHSaves Residential Programs

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 (“CAAs”), distributors, manufacturers, retailers, and other stakeholders. This energy efficiency ecosystem does far more than complete energy audits and install equipment. The NH Utilities and our partners collectively provide education, incentives, design and technical assistance, and contractor education to promote investment in energy efficiency advancement, increase program participation and transform markets.

For 2022-2023, the NH Utilities are focused on meeting the strong demand for weatherization assistance and

high efficiency appliances within the NHSaves Residential Programs. The NH Utilities designed flexible and innovative programs, incentivizing emerging energy-efficient technologies, ensuring convenient customer access to capital, supporting workforce development efforts, and providing “on-ramps” that allow customers varied pathways to participate in NHSaves Residential Programs. Flexibility in managing the NHSaves Residential Programs is imperative in order for the NH Utilities to adapt quickly to new federal and state laws and funding opportunities, changing codes and standards, continuous market transformation, emerging technologies, and customer expectations.



Figure 3-1 displays the residential statewide programs, which are described in detail below.

Figure 3-1: 2022-2023 Residential Programs



The NH Utilities prioritize keeping the NHsaves energy efficiency programs open and available for the entire year to maximize customer satisfaction and minimize market disruption with key channel partners such as contractors, equipment suppliers, and distributors. In order to be responsive to the market, ensure consistent program availability, and minimize program oversubscription challenges, the NH Utilities may make specific program changes as needed during the year, including:

- Adjusting program marketing activity levels to ramp up or slow down demand;
- Modifying incentive levels for certain programs or measure categories;
- Introducing time-based incentives, which could involve promoting more limited period offerings, as well as potentially promoting higher incentive offers during periods of lower or seasonal demand where there may be greater contractor availability;
- Introducing a rebate reservation system process where customers submit an initial application to reserve funds, and those who do not make the initial reservation list are moved onto a

waiting list. Customers on the waiting list can move forward once initial reservation list customers have been served, or they can be moved into the following year;

- Transferring available program funds from underperforming programs into programs with higher demand within the same sector;
- Amending per customer maximum project cap levels to help extend program availability;
- Making commitments for a future program year in lieu of a current year incentive.

3.1.1 Residential Market Barriers

The NHsaves Residential Programs address various barriers customers face to adopting energy efficiency solutions, both in their existing homes, as well as during new construction or major renovations. As with our C&I Program offerings, the NH Utilities and our partners are continuously improving our delivery mechanisms, offering new measures and adjusting strategies to ensure we are delivering solutions that are both cost effective and impactful for our customers and the utility system as a whole.

Rebates to customers for high efficiency equipment or to weatherize their home are just one strategy employed by the programs. Other NHsaves program interventions include technical assistance to builders and renovation contractors, education and training, an online marketplace, and point of sale discounts.

Table 3-1 details typical market barriers faced by our residential customers and the NHsaves interventions designed to overcome them in 2022-2023.

Table 3-1: Residential Market Barriers

Market Barrier	Program Interventions	Program Objectives
<p>Incremental price difference between standard and high efficiency goods and services.</p>	<ol style="list-style-type: none"> 1. Provide rebates to give effective price signals to help cover incremental first cost. 2. Offer low-interest or interest-free loans to allow customers to finance their portion of larger investments in weatherization and heating systems. 3. Provide customers information about alternative sources of funding for their high efficiency investments (state and federal rebates or tax credits). 4. Provide information/training about the importance of looking at life-cycle costs on website and in communication. 	<ul style="list-style-type: none"> • Customers consider operating costs and not just price tag when making purchase/investment decisions. • Market penetration of high efficiency equipment and services increases, allowing the transition to market-based measure offering.
<p>Lack of customer awareness related to:</p> <ul style="list-style-type: none"> • benefits of energy efficiency. • existence of high-efficiency alternatives. • where to purchase high-efficiency equipment. • how and when to reduce demand during system peaks. 	<ol style="list-style-type: none"> 1. Promote energy-efficient options in store/online/at point of purchase. 2. Use NH Saves/EnergyStar product labeling at point of purchase. 3. Keep information on NHSaves website up to date. 4. Provide customers access to pre-vetted online marketplace for energy efficiency goods and services. 5. Send Home Energy Reports directly to customers though mail and email. 6. Provide information to target audience at trade and home shows. 7. Co-market with contractors and retailers. 8. Directly control thermostat settings to reduce air conditioning use during system peaks. 	<ul style="list-style-type: none"> • Customers learn to look for and demand high efficiency options. • Market sales of high efficiency equipment and services increases. • System peak usage is reduced.
<p>Midstream (retailers/distributors) fail to stock high efficiency products.</p> <ul style="list-style-type: none"> • Lower turnover • Stocking cost • Lack of awareness/experience 	<ol style="list-style-type: none"> 1. Provide retailer training and recruitment in midstream program offering. 2. Communicate attributes of emerging or improving high-efficiency equipment stock. 3. Provide proper price signals to retailers who stock/sell targeted equipment. 4. Co-market available incentives to customers. 	<ul style="list-style-type: none"> • Greater availability/visibility of high-efficiency equipment at point of sale • Engaged and motivated retailers committed and rewarded for selling high-efficient products • Market share of high-efficiency equipment and services increases

Market Barrier	Program Interventions	Program Objectives
<p>Building trades lack sufficient cadre of trained personnel, awareness, experience, or commitment to high efficiency practices.</p>	<ol style="list-style-type: none"> 1. No-cost training in best practices provided to builders and trade allies. 2. Incentives provided for meeting Energy Star Homes standards and for other above-energy code practices. 3. Case studies developed and promoted to highlight exceptional builders and homes. 4. Collaboration with professional associations to promote the program and the benefits of high efficiency homes. 	<ul style="list-style-type: none"> • Build competence and confidence in high efficiency building practices • Improve the industry standard practice in building design • Reward and celebrate builders and other professionals who demonstrate commitment to high efficiency building design • Capture opportunity at time of building/renovation for energy savings over the life of a building or home

3.1.2 Residential Program Overview

NH Saves offers the following residential programs, which are described in more detail in each program’s section below.

- **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 (“Drive to ES”) and (2) ENERGY STAR Homes Version 3.1 (“ES 3.1”).
- **ENERGY STAR Products Program.** This high-volume program with 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 (“HEA”) 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.
- **Home Energy Reports.** This program, offered to Liberty and Unitil customers, provides mailed and emailed messaging to customers in a highly successful intervention aimed at motivating sustained behavior change around energy use in the home.

3.1.3 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 energy efficiency. During 2022-2023, 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 bill.

The NH Utilities will continue to monitor customer interest in residential on-bill financing as well as capital available for loans and may adjust 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 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 measures) and some other approved energy efficiency measures.¹⁶

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 lending criteria. The NHSaves Programs subsidize a two percent APR home energy efficiency improvement loan to qualified customers. Changes to the APR offered to customers may be made by updating agreements with the participating lenders. See Table 3-2 for loan amounts and repayment terms.

¹⁶ Unil Electric and Gas will give loans to Gas Networks customers.

Table 3-2: 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 customers overcome the upfront cost barrier and drive more comprehensive projects. Throughout 2022-2023, the NH Utilities will continue to offer the Residential Energy Efficiency Loan through the current lending partners and additional lenders will be introduced based on customer need and lender interest.¹⁷

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

¹⁷ The current lending partners include: Merrimack County Saving Bank, Meredith Village Savings Bank, Northeast Credit Union, Woodsville Guaranty County Bank (Eversource and NHEC customers only), Claremont Savings Bank (Eversource customers only), Mills 42 Federal Credit Union (Eversource customers only), and the Savings Bank of Walpole (Eversource customers only).

moderate-income bracket and eligible for a loan based on income review and lending criteria. During 2022-2023, this financing offering will continue.

Funding—NH Saves Partnership Initiative

During 2022-2023, 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.

One example, specific to low-income customers, is a grant award on behalf of a CAA from the US Department of Agriculture Housing Preservation Grant. This grant will be 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.”¹⁸ Throughout 2022-2023, the NH Utilities will continue to look for additional opportunities to apply for grants and leverage funding resources to promote energy efficiency.

3.1.4 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

¹⁸ The grant is for \$100,000.

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 take advantage of 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 encourage NHSaves Residential Program participation. During 2022-2023, the NH Utilities plan to continue data analysis of customers’ billing and demographic information to effectively market delivery pathways and offerings to those customers who are most likely to respond to and benefit from the NHSaves Residential Programs.

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 a 90-minute presentation on how to optimize the energy performance of their homes and the workshop includes information about basic building science principles and how whole-house energy measures can help customers “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.

3.2 ENERGY STAR Homes Program

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

homeowners 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.

3.2.1 Target Market

The primary 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 eligibility applies to manufactured, prefabricated, and site-built homes.

3.2.2 Program Design and Delivery Pathways

ES Homes is designed to serve all residential single-family and multifamily new construction homes, including site-built, manufactured, and prefabricated 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—ES 3.1 and Drive to ES.

ENERGY STAR Version 3.1 (ES 3.1) Pathway

The ES 3.1 pathway 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 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 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 2022-2023, 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 (Drive to ES) Pathway

During the 2018-2020 Plan, the NH Utilities introduced the 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 2022-2023, the NH Utilities will continue to offer the Drive to ES pathway.

HVAC Contractor Training

Through ES Homes, the NH Utilities will continue the workforce training opportunities and certification assistance for HVAC contractors during 2022-2023. Currently, a third-party vendor trains HVAC contractors to understand the ES 3.1 requirements and checklists, how to conduct duct-blast 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.

Drive to Net Zero Home Competition

The Drive to Net Zero Home Competition has been designed to challenge homebuilders, architects, and homeowners to build high-efficiency, net zero energy homes that generate more on-site energy than is used. 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 Awards.¹⁹ These awards are presented yearly to recognize excellence in the building industry.

Throughout 2022-2023, 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.

3.2.3 Program Budget and Goals

Table 3-3 summarizes the proposed budget, savings targets and number of participants statewide (i.e., for all Utilities combined) for program years 2022 and 2023. For more detailed estimates by utility, delivery pathway or measure, please refer to each of the Utilities’ benefit cost models.

Table 3-3: ES Homes Program—Energy Savings and Budgets

Savings and Budgets	2022	2023	2022-2023
Electric Programs			
Program Budget	\$3,043,343	\$3,144,206	\$6,620,204
Annual kWh Savings	1,588,200	1,559,522	3,147,722
Lifetime kWh Savings	36,143,248	35,350,664	71,493,913
kW Reduction	43	42	84
No. of Participants	769	806	1,575

¹⁹ NHHBA. Website: <https://nhhba.com/nhhbaevents/cornerstone-awards/>.

Savings and Budgets	2022	2023	2022-2023
Natural Gas Programs			
Program Budget	\$936,307	\$976,919	\$1,913,226
Annual MMBtu Savings	7,804	7,919	15,723
Lifetime MMBtu Savings	192,603	195,479	388,082
No. of Participants	355	345	700

Note: Numbers may not add up due to rounding

3.3 ENERGY STAR Products Program

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 give customers an incentive to recycle certain old, inefficient appliances, such as refrigerators and freezers, and dispose of them in an environmentally friendly manner.

All residential customers in New Hampshire’s 520,000 households are potential participants in the ES Products Program, which provides incentives on a wide and evolving array of high efficiency energy-consuming appliances. The program’s incentives are designed to help customers overcome the tendency to make purchase decisions based on the lowest purchase price. By providing messaging at the point of sale about the long-term benefits of energy efficiency and providing a cash incentive that helps to overcome the higher priced ENERGY STAR-certified model, this program helps customers to lock in savings for the life of their appliance or other purchase. ES Products also provides an easy opportunity for customers to recycle old appliances, thereby ensuring their proper disposal and ensuring that old, inefficient appliances are no longer in operation.

The NH Utilities have established several priorities for ES Products to deliver energy savings and encourage customer participation during 2022-2023. These priorities include:

3.3.1 Introducing New Products to the Energy Efficiency Marketplace

The NH Utilities will continue ES Products during 2022-2023 by offering incentives for high-efficiency products, such as advanced power strips, air purifiers, and dehumidifiers. The NH Utilities will evaluate the cost-effectiveness of smart home energy management systems and connected products for inclusion in the 2022-2023 ES Products program.

Remaining Residential Lighting

During 2022-2023, the NH Utilities will conduct strategic marketing promotions and incentives to ensure that hard-to-reach and income-eligible customers, who are the most upfront value-conscious consumers, are enabled to take advantage of high-efficiency lighting.

ENERGY STAR Retail Products Platform

During 2022-2023, 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., NH 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 will be designed to generate increased energy savings 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, and evaluations of those offerings to help determine best practices regarding a possible deployment of a New Hampshire ESRPP.

Midstream Rebate Offerings

The NH Utilities will consider changes to the list of measures offered by the existing midstream distributor network to include HPWHs and Electronically Commutated Motor (“ECM”) circulating pumps. The NH Utilities will continue to investigate if and when to include heat pumps for heating and cooling in midstream offerings.

3.3.2 Program Budget and Goals

Table 3-4 summarizes the proposed budget, savings targets and number of participants statewide (i.e., for all Utilities combined) for program years 2022 and 2023. For more detailed estimates by utility, delivery pathway or measure, please refer to each of the NH Utilities’ BC models.



Table 3-4: ES Products Program—Energy Savings and Budgets

Savings and Budgets	2022	2023	2022-2023
Electric Programs			
Program Budget	\$6,189,197	\$6,326,235	\$12,515,432
Annual kWh Savings	11,243,943	10,062,045	21,305,988
Lifetime kWh Savings	109,095,731	104,780,286	213,876,017
kW Reduction	1,669	1,489	3,158
No. of Participants	105,689	88,922	194,611
Natural Gas Programs			
Program Budget	\$1,410,961	\$1,385,396	\$2,796,357
Annual MMBtu Savings	21,302	19,684	40,986
Lifetime MMBtu Savings	353,879	325,765	679,645
No. of Participants	2,892	2,809	5,701

Note: Numbers may not add up due to rounding

3.4 Home Energy Assistance Program

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.

3.4.1 Target Market

A baseline potential study estimates that approximately 22 percent of 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 state's CAAs.²⁰ 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 by the CAA 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

²⁰ Itron, Inc. New Hampshire Residential Energy Efficiency Baseline Study. June 11, 2020.

Program's ("LIHEAP") funds and assists the state's low-income customers in paying for heating costs. The NH Department of Energy and New Hampshire's CAAs distribute FAP benefits.

3.4.2 2022-2023 Plans

For the 2022-2023 Plan, the NH Utilities will implement a number of initiatives to facilitate participation in HEA, including supporting workforce development and addressing program design constraints, including:

- **Incentives.** After careful review of actual costs of HEA projects implemented over the past two years, the NH Utilities plan to utilize a maximum rebate per project of \$15,000, which would cover the costs associated with remediating barriers to weatherization, as well as air sealing and insulation, and appliance and heating system replacements where recommended. This rebate level will help to offset increased labor and material costs that the industry has experienced in the last two years. In rare circumstances, homes may require in excess of \$15,000 in weatherization and associated work, and in these cases enhanced rebates may be reviewed and approved by an implementation supervisor. The risk of setting a lower maximum rebate is that a participating income-eligible customer's home would be insufficiently weatherized, leaving energy and cost saving opportunities unaddressed or postponed until a future program year. Because much of the cost of a weatherization job involves the mobilization of a contractor to travel to the home, there is an opportunity-cost to undertaking less than comprehensive weatherization. Utilizing a maximum rebate per project of \$15,000, inclusive of appliance and heating system replacements, will ensure that income-eligible homes are addressed comprehensively and cost-effectively.
- **Screening Methodologies.** The structure of the Granite State Test for cost-benefit analysis of the portfolio of programs and the existing PI structure that places the BC threshold at the portfolio level allow the NH Utilities flexibility in applying the BC test requirements for HEA, which in turn allow more projects to qualify, including those that need health and safety repairs. For 2022-2023, the NH Utilities will 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 while maintaining a cost-effective portfolio.

- **HEA Implementation Manual.** During 2022-2023, 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.
- **Pathways and Measures.** To better serve customers through HEA, the NH Utilities will offer multiple “on ramps” for income-eligible customers to participate in the program during the 2022-2023 term. These pathways may include, but are not limited to: visual audits, standalone appliance vouchers, and the distribution of energy efficiency kits.

3.4.3 Program Design and Delivery Pathways

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, improve their homes’ energy performance, and ensure their homes are comfortable. For 2022-2023, 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.

Support Education, Training, and Trade Ally Relationships

The NH Utilities recognize the need to support workforce capacity in parallel 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. The NH Utilities will focus 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.

Customer Intake

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

Energy Efficiency 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 2022-2023, 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. 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.

Visual Audit Pathway

A visual audit offering has been deployed through the Home Performance with ENERGY STAR (“HPwES”) program (see Section 3.5) 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 performs 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 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 2022-2023, the NH Utilities plan may offer appliance vouchers (rebates) to income-qualified customers, including those with high electric usage. These vouchers may be offered through the Visual Audit pathway or as standalone appliance rebates to encourage customers to replace their old, inefficient appliances with high-efficiency models.

Distribution of Energy Kits

For 2022-2023, the NH Utilities may distribute energy kits to targeted groups of income-eligible customers across the state to broaden access to low-cost measures for eligible customers. The distributed energy kits would include items such as 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.

Energy kits are an effective tool to offer quick and easy energy savings to 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 Department of Energy 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. The NH Utilities will closely monitor federal increases to WAP funding under the bi-partisan infrastructure plan and work with our colleagues at the NH Department of Energy to ensure that the impact of energy funding for the state's most vulnerable customers is maximized.

Coordination with Other NHSaves Programs

When a customer qualifies for the HPwES program (see Section 3.5), 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 on the new tenants or occupants. Residential new construction projects are budgeted for, and energy savings goals are tracked through, ES Homes (see Section 3.2).

3.4.4 Program Budget and Goals

Table 3-5 summarizes the proposed budget, savings targets, and number of participants statewide (i.e., for all NH Utilities combined) for program years 2022 and 2023. For more detailed estimates by utility, delivery pathway or measure, please refer to each of the NH Utilities’ BC models.

Table 3-5: HEA Program—Energy Savings and Budgets

Savings and Budgets	2022	2023	2022-2023
Electric Programs			
Program Budget	\$11,811,025	\$12,123,036	\$23,934,061
Annual kWh Savings	1,863,439	1,791,912	3,655,351
Lifetime kWh Savings	25,053,438	24,303,389	49,356,827
kW Reduction	350	341	691
No. of Participants	805	798	1,603
Natural Gas Programs			
Program Budget	255,688	273,471	4,529,159
Annual MMBtu Savings	9,381	9,143	18,524
Lifetime MMBtu Savings	183,237	177,607	360,844
No. of Participants	355	364	719

Note: Numbers may not add up due to rounding

3.5 Home Performance with ENERGY STAR Program

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.

3.5.1 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.

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 utility and if it is a non-natural gas home, it participates through its electric utility.²¹



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

- **Natural Gas-Heated Homes.** Individually metered residential units are serviced through HPwES. Centrally heated residential units that are on a commercial or master-meter account are primarily served by the NH Natural Gas Utilities through the NHSaves C&I programs (see Chapter Two).

²¹ 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.

- **Other Fuel-Heated Homes.** These homes are eligible for all services, which are provided by the respective NH Electric Utility.
- **Lead Utility.** In order to ensure efficiency in program delivery, the NH Natural Gas Utilities take the lead on homes heated with natural gas, while the Electric Utilities take the lead on homes heated with other fuels. Should the needs of a home heated with natural gas exceed the program cap, the relevant electric utility may elect to supplement the weatherization rebate for an additional amount up to the cap. This structure provides natural gas customers with an opportunity to achieve deeper energy savings and recognizes that they contribute to the system benefits charge on their electric bill as well as the energy efficiency portion of the local distribution adjustment charge on their natural gas bill.

Regardless of heating fuel, utility territory, or which program the project falls into, customers undertaking a multifamily project will have a streamlined single point of contact through their Home Performance Contractor, Community Action Agency, or other vendor working with the NH Utilities.

3.5.2 Program Design and Delivery Pathways

The eligibility requirements and multiple program delivery channels for the HPwES Program are as follows.

Contractor Eligibility

HPwES supports a robust network of local energy efficiency professionals who provide a number of implementation services including: raising customer awareness of the program, recruiting participants, conducting the home energy audits, recommending energy-saving improvements, installing energy-efficient measures, and tracking the energy savings and project progress. The NH Utilities provide a contractor vetting process to ensure all HPwES contractors meet the following qualifications: (1) be a registered business in New Hampshire, (2) have weatherization experience, (3) have BPI Building Analyst certification and lead training, (4) pass an enhanced quality assurance (“QA”) review of their initial three jobs performed within HPwES, and (5) agree to the HPwES program’s pricing and the NH

Utilities' terms and conditions.²² A third-party QA contractor reviews a percentage of homes serviced and provides feedback to the NH Utilities and HPwES contractor.

Program Qualifications

Customers play a key role in determining if their home qualifies to participate in HPwES by filling out a form on the NHSaves.com website. Here, customers can self-qualify via the Home Heating Index (HHI) Tool. Customers are asked for the following information: (1) zip code, (2) conditioned square footage of the home, and (3) annual heating fuel use (one year of fuel history; system accepts up to two different types of heating fuel).²³ Interested residential customers can also work directly with their respective NH Utility to enroll in the HPwES program.

Not only is the HHI used as a customer intake system, it also raises customer awareness regarding their energy consumption. Based on the energy used per square foot of the home, the HHI Tool indicates whether a customer is considered a low, moderate or higher energy usage. Depending on their energy use intensity, the customer may be eligible for HPwES services. If they use a lot of heating fuel per square foot, there is good opportunity for cost-effective intervention to reduce energy use and lock in 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.

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

²² 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.

²³ 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.

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. 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 a specified number of days 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.

Visual Audit Pathway

For 2022-2023, 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). The contractor performs a visual audit of the home without the more time-consuming and labor-intensive blower door test, and the customer is provided 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 offered to the customer to help cover the incrementally higher cost of an ENERGY STAR-certified refrigerator, washing machine, dryer or other appliance. 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 audit and weatherization services.

3.5.3 Program Budget and Goals

Table 3-6 summarizes the proposed budget, savings targets and number of participants statewide (i.e., for all Utilities combined) for program years 2022 and 2023. For more detailed estimates by utility, delivery pathway or measure, please refer to each of the Utilities’ benefit cost models.

Table 3-6: HPwES Program—Energy Savings and Budgets

	2022	2023	2022-2023
Electric Programs			
Program Budget	9,254,558	9,466,186	18,720,744
Annual kWh Savings	2,482,825	2,374,495	4,857,321
Lifetime kWh Savings	48,326,897	46,350,340	94,677,237
kW Reduction	484	486	969
No. of Participants	2,402	2,352	4,755
Natural Gas Programs			
Program Budget	\$1,539,811	\$1,550,274	\$3,090,085
Annual MMBtu Savings	18,829	18,204	37,033
Lifetime MMBtu Savings	375,293	365,951	741,245
No. of Participants	566	422	988

Note: Numbers may not add up due to rounding

3.6 Home Energy Reports

The NH Utilities’ behavioral-based program is currently offered by Liberty and Unitil for both their electric and natural gas customers. Consisting of mailed and emailed home energy reports (“HERs”), this program educates customers about how much energy they consume and empowers them to adopt energy-efficient technologies and behaviors. Most residential customers are uninformed and unaware of their energy consumption and habits. However, when a customer is made aware of how much energy they consume via 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 HERs as a component of the NHSaves Programs.

HERs provide customer-specific information in easy-to-understand language and with easy-to-read graphics. 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. For 2022-2023, Eversource will undertake behavioral-based marketing strategies to engage its electric customers in understanding how they consume energy in their homes and move them toward adoption of energy efficiency measures through the Residential program offerings.

3.6.1 Program Budget and Goals

Table 3-7 summarizes the proposed budget, savings targets and number of participants statewide (i.e., for all NH Utilities combined) for program years 2022 and 2023. For more detailed estimates by utility, delivery pathway or measure, please refer to each of the NH Utilities’ benefit cost models.

Table 3-7: HER Program—Energy Savings and Budgets

	2022	2023	2022-2023
Electric Programs			
Program Budget	\$280,319	\$293,983	\$574,301
Annual kWh Savings	4,252,690	5,030,316	9,283,006
Lifetime kWh Savings	4,252,690	5,030,316	9,283,006
kW Reduction	592	700	1,293
No. of Participants	10,256	10,256	20,512
Natural Gas Programs			
Program Budget	\$203,194	\$219,827	\$423,020
Annual MMBtu Savings	23,173	34,257	57,430
Lifetime MMBtu Savings	23,173	34,257	57,430
No. of Participants	41,200	41,200	82,400

Note: Numbers may not add up due to rounding

Chapter Four: Active Demand Reduction (ADR) Pilots

For 2022-2023, Eversource and Unitil Electric will continue their existing ADR pilot offerings launched in 2019 to reduce peak demand and capture benefits as quantified in the regional Annual Energy Supply Components (“AESC”) study. Active Demand savings (kW) are realized by dispatching resources during hot days in the summer likely to be associated with the ISO-NE system peak. Reducing load during ISO-NE peak hours also has the effect of reducing New Hampshire’s share of the installed capacity (“ICAP”) cost allocation.

4.1 C&I Load Curtailment

The C&I Load Curtailment pilot provides Eversource and Unitil Electric customers an incentive for verifiable shedding of load in response to communication from the utility or curtailment service providers (“CSPs”). The strategy taken by the customer to shed load is technology agnostic, which means that customers are able to use any technology or strategy and earn an incentive based on their summer seasonal average curtailment performance.

4.2 Wi-Fi Thermostat Direct Load Control

The Wi-Fi Thermostat Direct Load Control pilot will target Eversource and Unitil Electric residential customers who own a qualified, wirelessly communicating thermostat that controls a central A/C system (including but not limited to heat pump technology). As is the case with the 2019-2021 pilot, participants receive an incentive in exchange for allowing their NH Utility to make brief, limited adjustments to their Wi-Fi thermostats during periods of peak electric demand (referred to as “events”). These adjustments can be overridden by the customer at their discretion.

4.3 Pilot Budget and Goals

Table 4-1 summarizes the proposed budget, savings targets, and number of participants statewide (i.e., for all utilities combined) for program years 2022 and 2023. Please note that Eversource and Unitil Electric are proposing to offer these programs as pilots. As such, the costs of delivery will be included in the respective BC analysis for each sector but resulting savings and benefits will not be counted.

Table 4-1: ADR Pilots—Energy Savings and Budgets

Savings and Budgets	2022	2023	2022-2023
Electric Residential Pilots			
Program Budget	\$186,400	\$190,704	\$377,103
Active kW Reduction	2,080	2,168	4,248
No. of Participants	2,871	2,993	5,864
Electric C&I Pilots			
Program Budget	\$516,983	\$546,901	\$1,063,885
Active kW Reduction	10,114	10,714	20,828
No. of Participants	43	43	86

Note: Numbers may not add up due to rounding

Chapter Five Error! Bookmark not defined. Error! Bookmark not defined. : Planning Elements

The 2022-2023 NHSaves Plan contains many different planning elements, as detailed below:

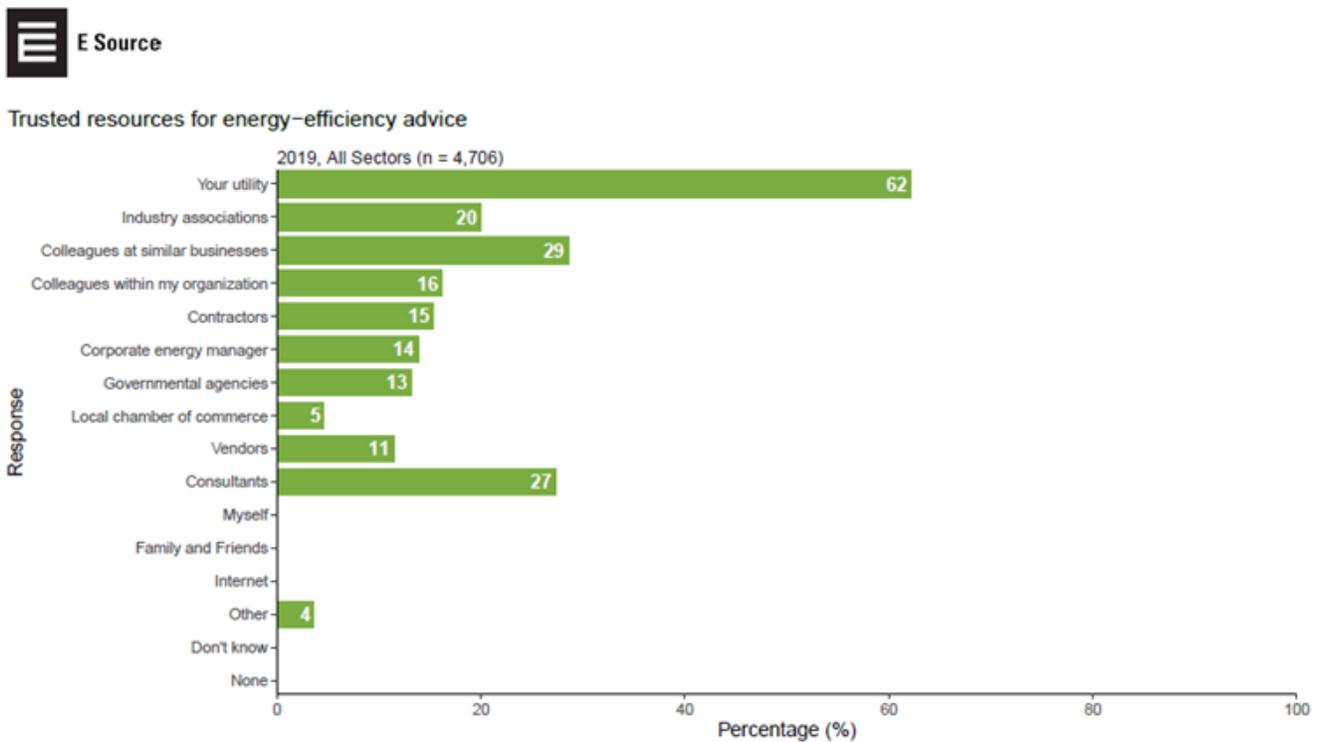
5.1 Marketing and the NHSaves Brand

The NH Utilities began utilizing “NHSaves” as a brand in 2002, starting with program brochures and a statewide website. Over time, the utilization of this umbrella for the suite of statewide energy efficiency programs has expanded as joint utility coordination on NHSaves Program offerings has solidified. It is now a highly recognizable and respected brand for energy efficiency programming in New Hampshire. As an umbrella brand, NHSaves connects the energy efficiency programs offered by each individual NH Utility to the joint planning and approval process. With NHSaves, customers recognize that energy efficiency is available to all NH Utility customers across the state.

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 with which they already have a relationship; and draws a clear line between interest in energy efficiency, the NHSaves website, and connecting with their NH Utility to take action. 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. Studies have shown that customers overwhelmingly view their utility as the trusted resource for energy efficiency advice. In fact, a recent study 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, 62 percent of respondents selected “Your Utility” as the most trusted resource. See Figure 5-1 for the results from the E-Source study.²⁴

Figure 5-1: Trusted Resources for Energy Efficiency Advice (E-Source)²⁵



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 and have recently been granted federal service mark

²⁴ E Source (2020). E Source Small and Midsize Gap and Priority Study & Large Business Gap & Priority Study (Business Customer Insights Center).

²⁵ E Source (2020). E Source Small and Midsize Gap and Priority Study & Large Business Gap & Priority Study (Business Customer Insights Center).

registration, which will allow the NH Utilities to pursue unauthorized uses of the service mark and protect the integrity of NHSaves and the programs for which it stands.

In addition to utility-led marketing efforts, the NH Utilities may also provide enhanced opportunities for contractors to market and support the programs through a trade ally logo. This logo would be created specifically to incorporate the NHSaves logo, while differentiating it in order to signify the trade ally relationship. Contractors would be able to receive the benefit of NHSaves brand awareness and visually demonstrate that they meet the requirements to participate in the NHSaves Programs. The use of a trade ally logo would increase the visibility of NHSaves across the state and leverage marketing campaigns funded by contractors to reach more customers. The trade ally logo would be licensed to qualified contractors through an agreement that would provide 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.

5.2 Education of Contractors and Customers

For 2022-2023, the NH Utilities will offer contractor and customer education trainings and events across the state. These activities are described in more detail in the NHSaves C&I Programs section (Chapter Two) and the NHSaves Residential Programs section (0). 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 improve efficiency and performance where they live. During 2022-2023, the NH Utilities will continue to partner with schools 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 NH Utilities have worked with NHEEP to support additional flexible options for teachers and students who may be participating in virtual education. Recognizing the challenges

schools are facing related to COVID-19 and health risks, offerings include virtual workshops with hands-on components, home learning lessons and additional custom curriculum support, as well as virtual professional development workshops. The student education and professional development workshop curriculum is aligned with Next Generation Science Standards (“NGSS”).

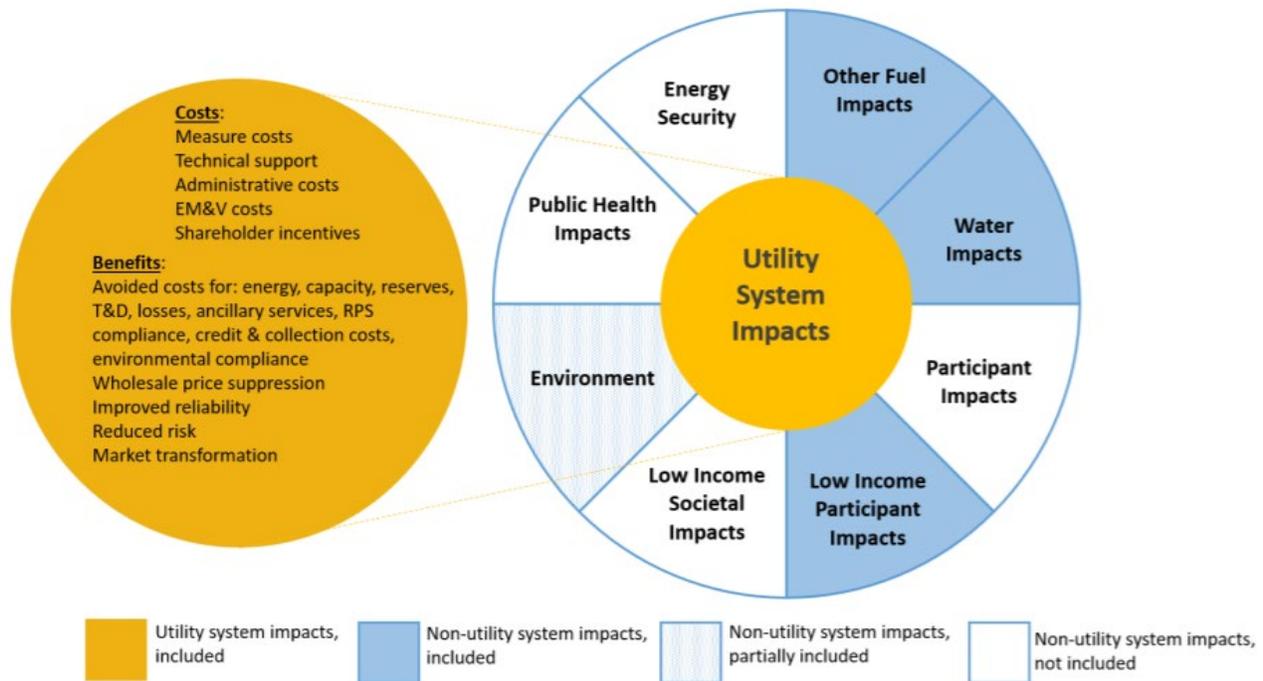
5.3 Benefit-Cost Testing

Since the inception of energy efficiency programs in New Hampshire in 1999, and, as reaffirmed Commission Order No. 23,850, in DE 01-057, dated November 29, 2001, the NH Utilities used the Total Resource Cost (“TRC”) test to measure the cost-effectiveness of programs and measures. As part of the settlement to the 2018-2020 Plan, stakeholders agreed to revisit the energy efficiency program’s long-standing BC test and assess whether adjustments should be made based on the evolution of policy priorities in New Hampshire. On October 31, 2019, the BC Working Group filed a report and a set of recommendations to the Commission regarding the adoption of the proposed primary cost-effectiveness test (the Granite State Test), and two secondary tests to be applied to the 2022-2023 Plan. On December 30, 2019, the Commission issued Order 26,322, approving the BC Working Group’s recommendations to take effect for 2022-2023. As part of HB 549, the Granite State Test has been reaffirmed as the primary cost-effectiveness test for the NHSaves programs, with the TRC test to be used as a secondary test.

5.3.1 Granite State and Secondary Tests

The Granite State Test (see Figure 5-2) measures the cost to the utility of delivering energy efficiency programs against the benefits of avoided energy (i.e., electricity, natural gas, and other fossil fuels, as well as wood, water, and wastewater), and non-energy benefits associated with improving outcomes for limited-income participants.

Figure 5-2: Granite State Test



The Granite State Test is applied to each proposed energy-saving program in the portfolio at the time of filing and will be applied again for reporting on actual benefits and calculating earned performance incentive. 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 cost-effective. Certain exceptions to cost-effectiveness requirements can be made for offerings including evaluation or other research, education, pilots, programs in early stages, and investments in income-eligible programs and customers.

The Granite State Test is also applied by each NH Utility to each approved program 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 BC ratio greater than 1.0), the NH Utility is eligible to earn a performance incentive.

The NH Utilities plan for each program to be cost-effective, which in turn requires that on average the measures and projects that make up the programs must also be cost-effective. The costs included go beyond the rebates and services provided to customers to include all program-related marketing, evaluation, administration, and other costs not invested directly in energy-saving measures. In accordance with recommendations from the BC 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 2024 AESC Study that will be applied during the 2024-2026 term.

In addition to the Granite State Test, the Commission approved two secondary cost-effectiveness tests recommended by the BC Working Group—the Utility Cost Test (“UCT”) and the Secondary Granite State Test (“GST-2”)—and HB 549 authorizes the TRC test as a secondary test. Secondary test calculations will also be performed by each NH Utility to each of the NHSaves Programs and may be used to help inform resource allocation decisions.

5.4 Savings Assumptions

5.4.1 Free-ridership and Spillover (Net-to-Gross)

Net-to-gross factors are applied to measures in order to ensure the savings claimed are attributable to the NHSaves program intervention. “Net-to-gross” is shorthand for the combined effect of free-ridership, in which a customer would have adopted the high-efficiency measure even absent the intervention by the utility, and spillover, in which savings are attributable to the utility program but not captured in the program data. Net-to-gross impacts are particularly important for those markets in which there is already high adoption of the high-efficiency option, such as for LED lighting.

The EM&V Working Group continues to follow the impact of net-to-gross on lighting and other markets closely in order to identify other measures or categories of measures to which net-to-gross factors should be applied, as directed by recent legislation related to the programs. Updates to all savings factors, including those related to free-ridership and spillover, will appear in the annual update to the Technical Reference Manual (“TRM”), which is reviewed and approved by the EM&V Working Group.

5.4.2 Realization Rates

To account for the difference between predicted and actual energy savings, the NH Utilities apply realization rates to certain measures or markets. As with net-to-gross values, updated evaluation results will be incorporated into the next update to the TRM and applied on a prospective basis.

If data quality checks identify typographical or mathematical errors or misapplication of a TRM value in reported savings, the NH Utilities shall correct the errors as soon as they are identified, including after a program year is complete, and the NH Utilities shall seek to ensure that any similar errors are corrected everywhere they are relevant. If errors are discovered as part of an evaluation based on a sample of projects, they shall be accounted for in realization rates that shall be applied prospectively.

5.4.3 Benefits

The calculation of benefits is based on the AESC Study, which is undertaken every three years for energy efficiency programs in 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 Costs in New England: 2021 Report* ("2021 AESC") (Attachment L) was completed in March 2021 and amended in May 2021, the results of which were used to estimate the benefits associated with programs to be delivered in 2022-2023.

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' BC 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.

Discount Rate

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 BC 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 2022-2023 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 cost and benefit calculations.

SBC and LDAC Rate Calculated Increases

In accordance with HB 549, the NH Utilities have incorporated the (three-year averaged) CPI-W + 0.25% adjustment to the SBC and LDAC rates for 2023. As directed in the law, the NH Department of Energy provided the calculation, including its inputs, the methodology utilized, and the resulting increase, to the NH Utilities for incorporation into the 2023 budgets in the Plan. For future plans, the NH Utilities will continue to coordinate with the NH Department of Energy and utilize the same methodology to ensure that subsequent increases are reflected consistently and accurately.

5.4.4 Non-Energy Impacts

As discussed with the BC Working Group, and per Commission Order,²⁶ the NH Utilities are applying NEIs in cost-effectiveness screenings as follows:

- The **Primary Granite State Test** reflects low-income participant NEIs, based on New Hampshire-specific primary research on the HEA program. Specifically, based on the HEA evaluation, a per-project value reflecting participant NEIs—including increased comfort, decreased noise, and

²⁶ Docket No. DE 17-136, Order Approving Benefit Cost Working Group Recommendations, No. 26,322, Dec. 30, 2019; Order Approving 2020 Update Plan, No. 26,323, Dec. 31, 2019.

health-related NEIs—will be applied annually to each weatherization project over its 15-year measure life, as reflected in the TRM.²⁷

- The **Secondary Granite State Test** reflects sector-level percentage adders for participant NEIs for the Residential (non-low-income) and C&I sectors, based on a comprehensive, secondary research survey and analysis of NEIs by an independent third party.²⁸ The NH Utilities shall apply a consistent percentage adder by sector based on research into NEI factors undertaken over the past two years. For 2022-2023 the NH Natural Gas Utilities shall use a 15 percent adder for both Residential (excluding the income-eligible program) and C&I sectors. The NH Electric Utilities, for 2022-2023, shall use a 25 percent adder for the Residential sector (excluding the income-eligible program) and a 10 percent adder for the C&I sector. Per the BC Working Group’s final report, the test also reflects environmental externalities, including the \$100/ton global reduction marginal abatement scenario from the AESC Study.

Both the Primary and Secondary Granite State Tests reflect other resource impacts for water and delivered fuels.

5.5 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, approved, and implemented for Plan Year 2020. For the 2022-2023 Plan, the NH Utilities will continue to utilize the revised PI framework, as illustrated below in Table 5-1 and Table 5-2.

²⁷ Opinion Dynamics. Home Energy Assistance Program Evaluation Report 2016-2017, Final, July 29, 2020. <https://puc.nh.gov/Electric/Monitoring%20and%20Evaluation%20Reports/20200729-NHSaves-HEA-Evaluation-Report-FINAL.pdf>.

²⁸ DNV-GL. New Hampshire Non-Energy Impacts Database Methodology Memo, April 9, 2020. <https://puc.nh.gov/Electric/Monitoring%20and%20Evaluation%20Reports/Final-NH-NEI-Methodology-Memo-20200409.pdf>.

Table 5-1: 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 Winter 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 5-2: 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%	65%	125%	Annual PI Filing w/Commission
2	Annual MMBtu Savings	Actual/Planned Annual MMBtu Savings	20%	65%	125%	Annual PI Filing w/Commission
3	Value	Actual/Planned Net Benefits ²	35%	65%	125%	Annual PI Filing w/Commission
Total			100%			

Additional requirements are as follows:

- The utility’s portfolio of programs must be cost-effective before any PI can be earned, meaning the BC ratio must be at least 1.0.
- If the electric program portfolio does not meet a minimum threshold of 55 percent of total energy savings from electricity, the 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 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.
- PI will be calculated on actual portfolio spending, up to 105 percent of approved portfolio budget, excluding performance incentive. That is, the actual portfolio spending may exceed the planned portfolio budget, regardless of actual revenues and excluding the performance incentive, by up to 5 percent. A utility may request approval from the Commission to spend in excess of 105 percent of proposed budget in a given year if it can demonstrate good reasons why the cap should be exceeded. In that case, it is anticipated that PI would be calculated against actual program spending at the portfolio level, up to 105 percent of the revised, Commission-approved budget, or as otherwise ordered.

For the NH Electric Utilities that are offering ADR pilots, utility costs are included in the PI calculation, but kW savings and benefits associated with the pilots will not be reported or used in PI calculations. This approach ensures that the portfolio is cost-effective with all costs to the NH Utilities, including those for the pilots, while avoiding projections of savings and benefits that the pilot has been designed to test.

5.6 Technical Reference Manual

The NH Utilities work together with the EM&V Working Group 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. Historically, these changes have been made by the NH Utilities and reflected in the BC models filed with each plan. Beginning in program year 2021, these savings assumptions were also thoroughly documented in the

New Hampshire TRM, which contains the set of standard methodologies and inputs for calculating the savings impacts of the NHSaves Program measures.

The Plan TRM will be filed at the beginning of each plan term and updated on an annual basis. For program year 2022, the NH Utilities include an update to the 2022 TRM with this filing (Attachment A). The 2023 program year TRM will be filed with the Commission on December 1, 2022, and go into effect on January 1, 2023. The update will be created by the NH Utilities in coordination with the EM&V Working Group. The TRM and the annual updates to the TRM will be available in two forms: an eTRM hosted on the ANB web platform, and a PDF on the Commission website. Additionally, the TRM will be updated to reflect newly added or adjusted measures and changes noted in the quarterly report.

The EM&V Working Group will strive to include consensus-based assumptions for all measures and offerings included in the NHSaves Programs. It shall be the responsibility of the consultant to the EM&V Working Group to seek consensus among members of the working group. In the event consensus is not reached after reasonable efforts, any member of the working group may seek a Commission determination on the issue. In such a circumstance, the status quo shall continue to apply until the Commission makes a decision. Should no request for a Commission determination be filed within ten calendar days of notification by the working group member who raised the concern, the recommendation of the consultant to the EM&V Working Group shall be adopted.

The primary source of methodologies and inputs for the TRM is New Hampshire-specific evaluations, where available. New Hampshire jurisdiction-specific results will be favored over results from other jurisdictions in order to account for differences in climate, hours of use, program design and delivery, market conditions, and evaluation frameworks. When considering whether to apply results from a study originating in another jurisdiction to New Hampshire programs, the EM&V Working Group will make the determination based on (1) the similarity of evaluated program/measures to those offered in New Hampshire; (2) the similarity of relevant markets and customer bases; (3) the recency of the study relative to the recency of any applicable New Hampshire results; and (4) the quality of the study's methodology and sample size. In addition to third-party evaluations, inputs may also be based on sources including manufacturer and industry data, data from government agencies such as the US DOE

or EPA, or credible and realistic factors developed using engineering judgment. Savings from energy efficiency measures and projects will be calculated using the TRM that is in effect during the program year in which the application or project savings are approved by the respective NH Utility.

5.7 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 Electric and Gas, and Unitil Electric and Gas (the “Regulated Utilities”) agreed to undertake a bill impact analysis, including rate impacts, bill impacts, and participant impacts (“Rate & Bill Impact Analysis”).²⁹ As agreed to in the settlement, the Regulated 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 the 2022-2023 Plan, 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 2022-2023 NHsaves Programs and benefits derived from the most recent AESC Study, completed in May 2021. Based on these inputs and the assumptions built into the model by Synapse (see Attachment N), 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 and no cost assumptions to address the increased load that would be realized without the 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.

²⁹ 2018 Settlement Agreement, Docket No. DE 17-136, pp. 18-19, Available at: <https://www.puc.nh.gov/Regulatory/Docketbk/2017/17-136.html>.

The rate and bill impact analysis includes or omits a number of key impacts. First, the analysis focuses on electric and natural gas system cost savings, while the NH Utilities implement the energy efficiency programs in a fuel-neutral manner, providing additional benefits to customers who utilize 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 greenhouse gas or other environmental requirements, which would increase the cost to ratepayers of energy resources other than energy efficiency. Third, all costs and benefits included in the model are assumed to reconcile annually, which is not reflective of actual practice. Fourth, there are a number of other benefits, including NEIs resulting from the programs, that are not accounted for in the model. These include but are not limited to (depending on the measures installed): improved air quality; improved health and safety; and improved comfort. Fifth, there are no assumptions built into the model to attempt to accommodate any difference in load that would be realized in the “no EE” scenario. The model simply compares the cost of the programs and the projected savings on just the electric or gas system against zero costs.

Based on the NH Utilities’ 2022-2023 Plan, the energy efficiency programs will change the Regulated Utilities’ revenue requirements by -0.4 percent on average, or -\$158.8 million in total, over the life of the measures installed during the term and across all programs. The Regulated Utilities’ natural gas revenue requirements change by -1.0 percent on average, or -\$58.5 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's 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, are included in Attachment M.

5.8 Lost Base Revenue

Eversource and Unitil, as the only NH Utilities collecting Lost Base Revenue (“LBR”) in 2022-2023 to account for the revenue impacts of the EERS, shall apply a consistent method for calculating planned

and actual LBR. If Eversource or Unitil³⁰ adopt a decoupling mechanism during the Plan, they shall eliminate their LBR mechanism in the manner detailed below. Further, Eversource and Unitil shall (1) employ the terminology set forth in the LBR working group report of August 29, 2018, whose methodology was subsequently approved in Docket No. DE 17-136, to ensure that the methods used for actual LBR collections are consistent; (2) continue to file quarterly reports with the Commission, using a consistent format; (3) apply 100 percent of the calculated monthly savings using the paid date, which is on average two months after the install date, to account for the fact that not all installations are made on the first day of each month; (4) cease accruing lost base revenues in the first month following effective date of any decoupling mechanism approved by the Commission; (5) use the average distribution rate in effect at the time of the triennial plan filing, or as updated by Commission order during the term, for planning purposes, while using the actual rate in effect at the time of the reconciliation filing for reconciliation purposes; and (6) determine carrying costs on LBR over and under recoveries using the Prime Rate, compounded monthly.

³⁰ Unitil Energy Services has reached a settlement in its rate case currently before the Commission in which decoupling has been proposed. Northern Utilities has also proposed decoupling in its rate case, which is expected to be completed in 2022.

Chapter Six: Evaluation, Measurement & Verification

EM&V has been an integral and essential component of the efficiency programs in New Hampshire since inception. Ensuring robust EM&V of energy efficiency programs is critical to demonstrating the accuracy of reported energy and demand savings and determining cost effectiveness of ratepayer-funded programs.

The key purposes of EM&V are to ensure accurate and credible impacts, determine cost effectiveness, support continuous program improvement, and support timely regulatory reporting.

- **Ensure accurate and credible impacts.** EM&V ensures that program impacts reported to regulators and stakeholders are credible and sufficiently accurate for decision-making. EM&V measures “impact factors” including what percentage of energy saving was actually realized (i.e., realization rates) based on independent third-party analysis of completed projects. These realization rates are applied to gross savings, resulting in “adjusted gross” values. In addition, EM&V measures what savings are attributable to the programs’ interventions rather than to naturally occurring market adoption, and applies free-ridership and spillover factors (also called “net-to-gross”) to ensure that the NH Utilities are credited only for savings the programs induced. Evaluation also ensures that measure lives, standard efficiency baselines against which savings are measured, and NEIs are accurate and up to date. These impacts are documented in the NH TRM, which includes entries for each measure or measure type offered by the programs, and describes in detail how the NH Utilities calculate and adjust savings for energy efficiency measures.
- **Determine cost-effectiveness.** EM&V produces impact factors described above and assesses costs of energy efficiency by researching total and incremental costs at the measure level (e.g., the difference between what the customer would pay for a standard-efficiency measure and the high-efficiency measure). These EM&V results are used as inputs to cost-effectiveness tests

to gauge both the measure and the overall programs' cost effectiveness, ensuring that ratepayer dollars are well-spent.

- **Support continuous program improvement.** EM&V goes beyond verifying program impacts by assessing the effectiveness of program delivery and the evolution of the market. It undertakes primary research such as process evaluation and market characterizations studies, which investigate what is happening at the retail, distributor, and manufacturing level, what approaches other jurisdictions are taking to transform the market for energy efficiency products, and how customers think and behave in relation to energy use at their homes and businesses. These studies identify program strengths, limitations, and opportunities and make recommendations for continuous program improvement.
- **Support timely regulatory reporting.** EM&V is used to meet regulatory commitments to the PUC and the ISO, as well as instilling ratepayers' and stakeholders' confidence that programs are effective and that estimates of claimed savings are credible. The NH EM&V Working Group proposes to continue the evaluation framework in 2022 and 2023 that has successfully resulted in high-quality, independent EM&V efforts.

The NH EM&V Working Group consists of representatives from the NH Utilities, staff of the NH Department of Energy, a representative appointed by the EESE Board to represent stakeholders, and independent evaluation consultants under contract to the NH Department of Energy (and previously under contract with the Commission). The EM&V Working Group has successfully managed a dozen studies during the 2018-2020 term, working collaboratively to ensure confidence in evaluation results and build stakeholder and regulatory trust in the NHSaves Programs. The EM&V process ensures credible and accurate reporting of energy savings by conducting independent evaluation of NH programs while also leveraging evaluation results from other jurisdictions, where appropriate, to make best use of available resources.

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 position summary 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 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 over 2022-2023.

- All completed New Hampshire evaluations are posted at:
https://puc.nh.gov/Electric/Monitoring_Evaluation_Report_List.htm
- EM&V Working Group agendas and other materials from 2018 and 2019 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 Unitil 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 leveraged 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.

6.1 Strategic Evaluation Plan

The EM&V Working Group developed a Strategic Evaluation Plan ("SEP") for 2022-2023. The SEP provides a priority set of evaluation activities that are essential to effective programs, transparency, and continuous improvement of the NHSaves programs and the New Hampshire energy efficiency market. The EM&V Working Group will continue to update this plan as new information and research results become available.

The EM&V work planned for the remainder of this term can be grouped into three distinct tasks: 1) activities to support regulatory and other mandated reporting requirements; 2) third-party EM&V studies; and 3) NH Department of Energy consultants' support. Each of these tasks is described below.

1) Activities to support regulatory and other mandated reporting requirements.

These activities include ISO NE certification of utility demand resources, utility modeling and tracking system software, Avoided Energy Supply Component (AESC) study, Technical Reference Manual (TRM) hosting, internal staff time for EM&V and other supporting efforts.

These efforts are necessary to meet NH Utilities' reporting requirements, and therefore the NH Utilities request explicit approval to spend energy efficiency EM&V program funding on them.

- *ISO NE certification of utility demand resources.* EM&V activities are crucial to demonstrate compliance for participation in the ISO-NE Forward Capacity Market (FCM). The ISO-NE requires each electric utility to annually certify the passive demand resources (i.e., summer and winter kW occurring during system peaks) to receive compensation for their previously committed to obligation related to their participation in the FCM. Each electric utility must undertake their own distinct certification, which typically begins early each calendar year to be completed by the ISO certification deadline in May.
- *Utility modeling and tracking system software.* This includes upgrades and maintenance of the NH Utilities' jointly funded program modeling and tracking systems (previously OTTER for Home Performance with ENERGY STAR®, now transitioning to Compass; and Targeted Retrofit Energy Analysis Tool (TREAT) for Home Energy Assistance). These systems track efficiency measures installed in income eligible and other residential customers homes and calculate savings estimates used in scoping and reporting.
- *AESC Study.* This study updates the value of reductions in energy and capacity use resulting from energy efficiency programs. The study models the present value of reducing electricity, natural gas, other fuels as well as water and wastewater as a result of program-based energy efficiency or other demand-side measures. The AESC study is a comprehensive and sophisticated econometric study undertaken on a regional basis on behalf of all six New England states. It is guided by a Working Group that consists of representatives from various state governments, regulatory bodies, and energy efficiency program administrators, including the NH Utilities. The next AESC study is expected to be launched in 2023 and be completed in 2024.
- *TRM Hosting.* Per the EERS settlement agreement filed under DE 15-137 on April 27, 2016, a New Hampshire-specific TRM was finalized at the end of 2020. The TRM is currently hosted on a third-party vendor's web-based platform and is accessible to the public. The platform captures, organizes, and tracks measure definitions, descriptions, savings values, and

reference materials in a web-based interface with public access for reports. The platform allows for annual updates of the TRM with tracked changes. The technical work of identifying what updates are needed to the TRM is accounted for in the next bullet (Third Party EM&V Studies) under the “Updates to impact factors” study.

- *Internal staff time for EM&V and other supporting efforts.* These activities include internal staff labor associated with capturing energy efficiency project data from customers and vendors in the field and storing it in internal tracking systems, quarterly and annual reporting, maintaining benefit-cost models, updating the TRM, and other supporting efforts for program accountability.

2) Third-Party EM&V Studies

Independent, third-party EM&V studies are used to meet the core purposes of EM&V described above (e.g., to ensure that program impacts reported to regulators and stakeholders are credible and sufficiently accurate for decision-making). Many EM&V studies are important to the electric utilities’ continued compliance with ISO-NE’s Market Rule 1, tied to FCM funding, which requires that energy efficiency capacity resources entered into commercial operation meet certain minimum statistical significance requirements.

The NH Utilities request Commission approval to continue to expend funds on third-party evaluation for 2022 and 2023. The NH Utilities’ first priority is to resume two studies that had been initiated in 2021 but were put on hold due to the Commission’s Orders related to EM&V activities. These studies are:

- a. NH Baseline Practices Study. The objective of this study is to investigate industry standard practice (“ISP”) regarding new equipment purchases and end-use efficiencies for residential and commercial/ industrial new construction, add-on, replace on failure, and retrofit markets, and thereby determine the baseline against which claimable energy efficiency savings can be calculated. It is important to keep baseline information current, and to have baseline

information specific to New Hampshire, so that savings calculations are up-to-date and accurate for local markets. For example, markets tend to gradually become more efficient over time, though to different degrees in different locations and with different equipment. Baseline studies can help assess the degree to which program-eligible efficiency requirements need to increase to ensure that they are continuing to accelerate adoption of efficient equipment and practices.

- b. Large C&I Impact Evaluation. The objective of this study is to undertake a thorough review of recent custom commercial and industrial energy efficiency projects to determine how accurately the NH Utilities are estimating savings. The realization rates derived from this impact study will be included in the TRM and incorporated into the NH Utilities' BC models to more accurately reflect future savings. In addition, the study will make recommendations for improving the accuracy of calculations from what tend to be complex custom projects involving unique site conditions. This study is important to ensure that savings estimates for a significant share of the state's efficiency savings are accurate and reflective of current practices. Prior to this study, the most recent Large C&I Impact Evaluation was conducted in 2015.³¹

In addition, the NH Utilities in consultation with the EM&V Working Group identified a set of new priority evaluation efforts to be considered in 2022 and 2023, with the understanding that they will be completed in the next term and the scope of the studies may change based on evolving program needs and research priorities. A brief description of these priority studies is provided below:

- a. Commercial Energy Efficiency Baseline Study. The objective of this study is to develop savings forecasts for a wide set of energy efficiency and active demand response measures across all fuels and segments. This study includes a baseline study of existing buildings in

³¹ New Hampshire Utilities Large Commercial & Industrial Retrofit and New Equipment & Construction Program Impact Evaluation, September 25, 2015, <https://www.puc.nh.gov/Electric/Monitoring%20and%20Evaluation%20Reports/New%20Hampshire%20Large%20C&I%20Program%20Impact%20Study%20Final%20Report.pdf>

the commercial sector, and may be informed by survey responses, with photo support. The sample for this study would be stratified by size of business, and additional business type sub-samples may also be studied. This study will develop a comprehensive database and/or tables containing an inventory of end-uses, including HVAC (including fuel and system types), water heating, process equipment, appliances and electronics, building shell/envelope characteristics and other relevant equipment within existing commercial buildings in New Hampshire. The resulting report will include a well-documented, user-friendly spreadsheet tool. The results of the study will inform the understanding of existing equipment efficiencies and building energy use baselines, identify gaps in efficient equipment, and estimate savings potential.

b. Residential New Construction, Renovation/Additions, and Manufactured Housing Study.

This study would examine current practices and barriers, feasible programs and initiatives, and potential savings from new or enhanced program offerings in these sub-sectors of the residential new construction market. The study would rely on a combination of surveys, stakeholder interviews, literature or secondary data review, and in-depth interviews with subject matter experts. Given New Hampshire's unique experience with resident-owned communities and the opportunity for mortgage financing in the manufactured housing sector, conducting interviews with local stakeholders will be an important part of understanding the opportunities and barriers associated with this market sector. Evaluation research in other states indicates that these sub-sectors may have significant untapped potential for energy efficiency savings. The EM&V Working Group will approach NH Housing and other subject matter experts before this project is contracted to identify opportunities to leverage funding for this project and to identify data and other resources that may support the work.

c. Best Practices/Next Steps for Saving Electricity. Rather than a broad potential study, the EM&V Working Group proposes to target one or more specific sub-markets to provide actionable information on targets for energy efficiency in New Hampshire. The study's focus

areas should include drill-down on best practices and measures on the horizon that can help augment diminishing savings opportunities from lighting measures. A key focus will be identifying remaining potential and “next measures” related to commercial lighting. This study will use interviews with commercial lighting distributors to provide a New Hampshire benchmark for use in adapting a commercial lighting market model that was developed in Massachusetts and adapted to Connecticut. The model will allow an assessment of how New Hampshire compares to other states in the region in remaining commercial lighting potential, with results analyzed for the southern vs northern half of the state. The research should also address the current adoption of advanced lighting/integrated controls, market uptake, and the potential role of programs in increasing adoption of a variety of next energy efficiency measures.

- d. TRM Update/Updates to Measure Impact Factors. Activity related to this research will include a periodic scan of impact factors and other savings assumptions documented in the TRM to identify necessary updates. An independent third-party contractor would identify new information that should be incorporated into measure descriptions or more up-to-date values and sources for savings, for consideration by the EM&V Working Group. The research would include review of TRMs from other relevant states, recently released studies, and other secondary sources. If time and budget allow, primary research or more in-depth review could be conducted for priority measures or particularly out of date values. Updates must be completed in time for New Hampshire filing deadlines.
- e. Process Evaluation for Priority Program. Regular process evaluations are a key element to keeping programs running efficiently and effectively. This study will identify a priority program, using criteria including size of the program, time elapsed since the last process evaluation, pattern of performance (growing, declining), and other factors and discuss program options with the EM&V Working Group. After program selection, the contractor will conduct a process evaluation; provide information on current efficacy, barriers, and opportunities; and provide comparisons and suggestions from best practices for similar

programs in other states. The study should examine and compare the measure mix, incentives, targeting and other elements to improve the effectiveness of the program for New Hampshire.

- f. Evaluation of the ADR Offerings. This research will validate the load reductions of the ADR pilots and be utilized to support their becoming full programs. This research will be undertaken in collaboration with other jurisdictions; in particular, New Hampshire may build on EM&V research planned in Massachusetts and/or Connecticut to use resources efficiently.
- g. Other Regional Studies. The EM&V Working Group is interested in joining regional studies where it makes sense to leverage scarce dollars, and be able to afford state-of-the-art work in EM&V. Other states in the region (e.g., Massachusetts and Connecticut) invest in numerous evaluation studies and members of the EM&V Working Group follow work being conducted elsewhere. Where these studies meet a priority New Hampshire need, the EM&V Working Group will seek to participate.
- h. C&I New Construction Study. This study will focus on the incremental savings achieved by participants in the C&I new construction program relative to the new building code/baseline. The study will focus on the percentage of new construction projects that are being captured by the program, the incremental savings achieved, and the share of the market that is not being captured. The study will identify program gaps and barriers and will compare the program with similar programs in other states to recommend program refinements and estimate the additional share of new construction projects that could be influenced with program revisions.
- i. Emerging Issues Study. The energy efficiency market is a fast-changing environment, and changes in purchasing behavior, new technologies and market dynamics influence estimated savings, program design, and program targets. It is not possible to identify all the

projects that will be needed in this term, and the EM&V Working Group is reserving this study to address priority emerging issues.

The EM&V Working Group recognizes that additional research topics are also on the horizon, and the following studies are likely to be addressed next term, or possibly if sooner if additional funding becomes available:

- a. NEI Research. NEIs include benefits and costs related to the energy efficiency programs that are not directly related to avoiding energy. In the Granite State Test, NEIs are an important component of the income eligible programs given the positive impacts of energy efficiency measures to vulnerable customers beyond the reduction in their energy bill. Improved health outcomes are the most obvious of these, but studies have shown a wide variety of monetizable impacts that can have positive impact on both participating and non-participating customers, including improved air quality to fewer missed days at work and school. In addition, the secondary Granite State Test includes non-energy impacts of energy efficiency programs for non-income eligible residential and commercial customers in the calculation of the benefits. Updating the values of improved productivity, health outcomes, operational costs and maintenance can allow for a more accurate assessment of cost and benefits in the secondary cost test. The scale and scope of such a study, as well as its timing and budget, will depend on the weight that the Commission and stakeholders place on the secondary cost test.
- b. Benefits and Impacts of Peak Load Reduction. Peak load reduction on an annual basis and monthly basis could reduce the transmission costs to New Hampshire ratepayers and also benefit the distribution system. By targeting ISO-NE system-wide monthly peaks with active demand response programs, the monthly cost allocations of Regional Network Service (RNS) and Local Network Service (LNS) could potentially be reduced for New Hampshire ratepayers. In addition, peak load reductions throughout the year could avoid potential costs on the distribution

system by decreasing load that might otherwise cause increased costs on the distribution system. An evaluation of a pilot of peak load reductions throughout the year would assess the impacts and benefits. In addition, a possible study of peak load reduction on the distribution systems from active demand response programs and passive energy efficiency measures would assess the benefits to the system.

- c. Equity Study. This study would review the equity of residential energy efficiency program access across New Hampshire. The study could begin with a consideration of different definitions of equity and what definition is most appropriate in New Hampshire. The study could combine utility program participation data with Census data (mapping geographic areas with high percentages of sensitive populations) to identify if there are systematic patterns or gaps in how well these populations are served. The study could review New Hampshire energy efficiency program participation in these sensitive areas compared to the rest of the territory. This could inform whether the programs need to revise their design or targeting to provide more equitable access. If funds allow an analysis of participation for small businesses could also be of interest.

3) NH Department of Energy Consultants' Support

The NH EM&V Working Group includes third-party evaluation consultants under contract to the NH Department of Energy (formerly PUC). The evaluation consultants support and represent the Department of Energy and provide input on substantive issues before the EM&V Working Group, including evaluation planning, study development, contractor selection, and review of project deliverables.

6.2 EM&V Budgets

The EM&V budget for the 2022-2023 Plan is proposed to be consistent with past budgeting and not to exceed five percent of each utility's annual program budget, per recent legislation pertaining to the programs. The budget includes EM&V tasks identified in the Strategic Evaluation Plan Section 6.1: 1)

activities to support regulatory and other mandated reporting requirements; 2) third-party EM&V studies; and 3) NH Department of Energy consultants’ support. Attachment P to this filing contains more details on the EM&V activities and their budgeted costs. Any funds budgeted in the EM&V budget activity category that an NH Utility anticipates will not be spent in a given year can be utilized for other program-related purposes. The EM&V budget will be updated each year as part of the NH Utilities’ energy efficiency plan and is subject to Commission review and approval. As illustrated in Table 6-1, the EM&V Working Group estimates approximately \$2.1 million and \$3.1 million in EM&V funding in program years 2022 and 2023, respectively. The EM&V budget comprise 3.0% of the total portfolio budget in 2022 and 4.4% of the total portfolio budget in 2023.

Table 6-1: EM&V Budget 2022-2023

EM&V Tasks	2022	2023
Activities to support regulatory and other mandated reporting requirements	\$1,415,132	\$1,478,026
Third-party EM&V Studies	\$628,750	\$1,566,250
Department of Energy Consultants Support	\$99,750	\$104,738
Total EM&V Budget	\$2,143,632	\$3,149,013
<i>EM&V Budget as % of Total Budget Estimate</i>	<i>3.0%</i>	<i>4.4%</i>
<i>Third Party Evaluation Budget as % of Total EM&V Budget</i>	<i>29%</i>	<i>50%</i>

Note: Numbers may not add up due to rounding

Numbers depicted are statewide estimates

Conclusion

As presented here, the 2022-2023 Plan reflects a coordinated and integrated planning effort among the six NH Electric and Natural Gas Utilities, based upon two decades of successful program delivery and reflective of the guidance of State policy and the support and input from a diverse array of energy efficiency stakeholders, contractors, and customers. The NH Utilities look forward to working together to executing on this plan for 2022-2023 as we simultaneously look ahead to preparing for the next triennium.