

Explanation of Market Barriers

The attached worksheet includes a reproduction of the market barriers tables by sector (C&I and Residential, inclusive of income eligible customers) from the 2022-2023 Plan, as well as the planned interventions and program objectives. To this list, Liberty (Electric) and Liberty (Gas) have included a column detailing the cost of the intervention for program year 2021, where such delineation is possible. A description of the source (e.g., the benefit cost ("BC") model for 2021 reporting, or the Q4 2021 report) is included in a separate column.

The budgeting of expenditures related to the energy efficiency programs has not been explicitly tied to overcoming specific market barriers, nor are the general ledger accounts used by the utilities designed to track these costs. Therefore, granular estimates of either planned or actual costs to overcome the specific market barriers identified in planning are, in most cases, not quantifiable. The energy efficiency programs budgets and expenditures have been organized across six budget categories, described in Table 1-13 on Bates 23 of the 2022-2023 Plan. The six cost categories have served as the basis of planning and reporting of expenses related to the regulated New Hampshire energy efficiency programs since 2002. They are as follows:

- a) Internal Administration
- b) External Administration
- c) Customer Rebates and Services
- d) Internal Implementation Services
- e) Marketing
- f) Evaluation

The method of accounting for expenditures for the NH Energy Efficiency programs has been audited annually by the previous Public Utility Commission Audit Staff and now the Department of Energy Audit Staff. Also, the organization of expenditures, by cost category and program, is displayed most clearly in the Cost Table worksheet of each Company's B/C model, as well as in Attachment C the plan filed with and approved by the Commission. Because program year 2021 budgets were based on program year 2020 (see PUC Order 26,440 in Docket 17-136), the breakdown of planned costs by program and budget activity for 2021 is most closely associated with the 2020 Update Plan, Attachment C.

Not all energy efficiency program expenditures relate to identified market barriers or program interventions. Costs related to other activities include the following:

EM&V Costs

While the Market Barriers listed in the 2022-2023 Plan do not explicitly include activities related to Evaluation, Measurement and Verification, ("EM&V"), expenditures related to the Evaluation cost category are essential to the effective operation and continual improvement of program design and delivery. By reviewing how savings are calculated, how customers are using efficient equipment, and otherwise verifying that savings claims based on the best available information, independent third party evaluation ensures that reporting to the Commission is accurate and that offerings continue to be cost-effective. Evaluation activities also lead to continual evolution and improvements to the design and delivery of programs and help to ensure that customers are well served. Evaluation also supports the participation of utility staff in the EM&V Working Group as well as the cost of retaining a team of expert EM&V advisors whose services are competitively procured by the DOE. Finally, the evaluation cost category reflects expenditures associated with setting up and maintaining each utility's tracking systems as well as internal and external personnel engaged in data tracking activities.

Internal and External Admin Costs

While the Market Barriers listed in the 2022-2023 Plan do not explicitly include activities related to internal and external administration of programs, expenditures related to that cost category provide essential management oversight and administration of programs required to effectively comply with evolving regulatory requirements of the NHSaves programs. Docket administration, report preparation, meetings with stakeholder groups such as the Energy Efficiency and Sustainable Energy ("EESSE") Board, development of new plans, budgets, bill impacts, lost base revenue calculations, benefit cost modeling, presentations, and more are covered under this budget category. These expenditures are essential to the administration of programs and ensure that program activity is fully transparent to the Commission, DOE and other stakeholders, and that the programs are responsive to the evolving policy and regulatory environment in New Hampshire.

Line	C&I Market Barrier	Program Interventions	Program Objectives	Cost of Intervention \$2021	Description of the Cost / Source
1	Incremental price difference between standard and high-efficiency goods and services.	1. Provide rebates to give effective price signals to help cover incremental first cost.	Customers consider operating costs and not just price tag when making purchase/investment decisions.	\$2,008,083	C&I Rebates/Services total minus that provided for Education and midstream measures (included elsewhere).
2		2. Offer low-interest or interest-free loans to allow customers to finance their portion of energy efficiency investment.	Market penetration of high-efficiency equipment and services increases.	\$78,563	On-bill financing. Please note, this is not from the annual budget, but is from the RLF.
3		3. Provide information about alternative sources of funding for their high-efficiency investments (state and federal rebates or tax credits).			
4		4. Provide information/training/proformas about the importance of looking at life-cycle costs on website and in communication.			
5	Lack of customer awareness related to: <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. 	1. Promote energy-efficient options in store/online/at point of purchase.	Customers learn to look for and demand high-efficiency options.	\$0	Cost of circuit riders, included in line 1.
6		2. Keep information on NHSaves website up to date.	Market sales of high-efficiency equipment and services increases.	\$122,470	All C&I program marketing and customer engagement initiative expenses
7		3. Engage and train contractor network to improve understanding of/familiarity with new, high-efficiency technologies.	System peak usage is reduced.		
8		4. Provide information to target customer audience through case studies, one-on-one contact, technical assistance, and building assessments.	Customer iCAP charges are reduced.	\$222,632	All C&I program implementation services expenses, less education
9		5. Co-market with contractors and retailers.			
10		6. Refer customers to Program Administrator vetted turnkey service providers.			
11	Midstream (retailers/ distributors) fail to stock high-efficiency products. <ul style="list-style-type: none"> • Lower turnover * stocking cost * lack of awareness / experience 	1. Include retailer training and recruitment in midstream program offering.	Greater availability/visibility of high-efficiency equipment at point of sale.	\$179,781	Midstream C&I rebate/services
12		2. Communicate attributes of emerging or improving high efficiency equipment stock.	Engaged and motivated retailers committed and rewarded for selling high-efficiency products.		
13		3. Provide proper price signals to retailers who stock/sell targeted equipment.	Market share of high-efficiency equipment and services increases.		
14		4. Co-market available incentives to customers.			
15	Building trades lack sufficient cadre of trained personnel, awareness, experience, or commitment to high-efficiency practices, both for existing building renovations and new construction.	1. No-cost training in best practices provided to builders and trade allies.	Build confidence and competence in high-efficiency building practices. 2. Improve the industry standard practice in building design.	\$15,479	Education rebate/services and implementation expenses.
16		2. Incentives provided for exceeding commercial building energy efficiency code and appliance standards.	Improve the industry standard practice in building design.	\$693,550	Large and Small C&I new equipment and construction rebate/services expenses
17		3. Case studies developed and promoted to highlight exceptional builders and homes.	Reward and celebrate builders and other professionals who demonstrate commitment to high-efficiency building design.		
18		4. Collaboration with professional associations to promote the program and the benefits of high-efficiency homes.	Capture opportunity at time of building/renovation for energy savings over the life of building.		
19			Increase the industry standard practice for high-efficiency design/build/renovation.		
Total Cost				\$3,241,995	
Total NPV Costs C&I Sector 2021				\$3,374,386	
Unaccounted for Other Expenses				\$132,391	All internal admin, EM&V, and external admin expenses
				\$86,632	EM&V
				\$43,879	Internal Admin
				\$1,881	External Admin

Line	C&I Market Barrier	Program Interventions	Program Objectives	Cost of Intervention \$2021	Description of the Cost / Source
				\$132,391	Total

Line	Residential Market Barrier	Program Interventions	Program Objectives	Cost of Intervention \$2021	Description of the Cost / Source
1	Incremental price difference between standard and high-efficiency goods and services.	1. Provide rebates to give effective price signals to help cover incremental first cost.	Customers consider operating costs and not just price tag when making purchase/investment decisions.	\$3,388,382	Total Rebates / Services from Cost Table for Low Income and Res programs, minus behavior, and lighting offers (which are listed below)
2		2. Offer low-interest or interest-free loans to allow customers to finance their portion of larger investments in weatherization and heating systems.	Market penetration of high-efficiency equipment and services increases, allowing the transition to market-based measure offering.	\$18,982	<i>On-bill financing. Please note, this is not from the annual budget, but is from the RLF.</i>
3		3. Provide customers information about alternative sources of funding for their high efficiency investments (state and federal rebates or tax credits).		\$30,876	Interest rate buy-downs paid.
4		4. Provide information/training about the importance of looking at life-cycle costs on website and in communication.			
5	Lack of customer awareness related to: • benefits of energy efficiency. • existence of high-efficiency alternatives. • where to purchase high-efficiency equipment. • how and when to reduce demand during system peaks.	1. Promote energy-efficient options in store/online/at point of purchase.	Customers learn to look for and demand high-efficiency options.	\$31,265.24	<i>Cost of circuit riders, included in line 1.</i>
6		2. Use NH Saves/EnergyStar product labeling at point of purchase.	Market sales of high-efficiency equipment and services increases.	\$68,095.42	All residential program marketing and customer engagement initiative expenses
7		3. Keep information on NHSaves website up to date.	System peak usage is reduced.	\$243,581.14	All residential program implementation services expenses
8		4. Provide customers access to pre-vetted online marketplace for energy efficiency goods and services.			
9		5. Send Home Energy Reports directly to customers though mail and email.		\$196,874.25	Rebates and services for behavior program (subtracted from row 1 rebate total)
10		6. Provide information to target audience at trade and home shows.			
11		7. Co-market with contractors and retailers.			
12		8. Directly control thermostat settings to reduce air conditioning use during system peaks.			
13	Midstream (retailers/ distributors) fail to stock high-efficiency products. • Lower turnover • Stocking cost • Lack of awareness/ experience	1. Provide retailer training and recruitment in midstream program offering.	Greater availability/ visibility of high-efficiency equipment at point of sale • Engaged and motivated retailers committed and rewarded for selling high- efficient products.	\$0.00	Midstream rebate/services
14		2. Communicate attributes of emerging or improving high-efficiency equipment stock.	Market share of high- efficiency equipment and services increases.		
15		3. Provide proper price signals to retailers who stock/ sell targeted equipment.			
16		4. Co-market available incentives to customers.			
17		1. No-cost training in best practices provided to builders and trade allies.	Build competence and confidence in high-efficiency building practices	\$0	Residential education and training expenses are embedded in the C&I Education expenses for 2021, but are charged to residential beginning in 2022.

Line	Residential Market Barrier	Program Interventions	Program Objectives	Cost of Intervention \$2021	Description of the Cost / Source
18	Building trades lack sufficient cadre of trained personnel, awareness, experience, or commitment to high-efficiency practices.	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.	Improve the industry standard practice in building design	\$474,678	ES Homes rebate/services expenses
19		4. Collaboration with professional associations to promote the program and the benefits of high-efficiency homes.	Reward and celebrate builders and other professionals who demonstrate commitment to high-efficiency building design		
20			Capture opportunity at time of building/renovation for energy savings over the life of a building or home		
Total Cost				\$4,433,752	
Total NPV Costs Res Sector 2021				\$4,543,866	
Unaccounted for Other Expenses				\$110,114	All internal admin, EM&V, and external admin expenses
				\$93,302	EM&V
				\$45,390	Internal Admin
				\$2,298	External Admin
				\$140,990	Total

Line	C&I Market Barrier	Program Interventions	Program Objectives	Cost of Intervention \$2021	Description of the Cost / Source
1	Incremental price difference between standard and high-efficiency goods and services.	1. Provide rebates to give effective price signals to help cover incremental first cost.	Customers consider operating costs and not just price tag when making purchase/investment decisions.	\$2,010,277	C&I Rebates/Services total minus that provided for Education and midstream measures (included elsewhere).
2		2. Offer low-interest or interest-free loans to allow customers to finance their portion of energy efficiency investment.	Market penetration of high-efficiency equipment and services increases.	\$370,033	<i>On-bill financing. Please note, this is not from the annual budget, but is from the RLF.</i>
3		3. Provide information about alternative sources of funding for their high-efficiency investments (state and federal rebates or tax credits).			
4		4. Provide information/training/proformas about the importance of looking at life-cycle costs on website and in communication.			
5	Lack of customer awareness related to: <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.	1. Promote energy-efficient options in store/online/at point of purchase.	Customers learn to look for and demand high-efficiency options.	\$0	<i>Cost of circuit riders, included in line 1.</i>
6		2. Keep information on NHSaves website up to date.	Market sales of high-efficiency equipment and services increases.	\$53,877	All C&I program marketing and customer engagement initiative expenses
7		3. Engage and train contractor network to improve understanding of/familiarity with new, high-efficiency technologies.	System peak usage is reduced.		
8		4. Provide information to target customer audience through case studies, one-on-one contact, technical assistance, and building assessments.	Customer iCAP charges are reduced.	\$250,533	All C&I program implementation services expenses, less education
9		5. Co-market with contractors and retailers.			
10		6. Refer customers to Program Administrator vetted turnkey service providers.			
11	Midstream (retailers/ distributors) fail to stock high-efficiency products. <ul style="list-style-type: none"> • Lower turnover * stocking cost * lack of awareness / experience	1. Include retailer training and recruitment in midstream program offering.	Greater availability/visibility of high-efficiency equipment at point of sale.	\$173,418	Midstream C&I rebate/services
12		2. Communicate attributes of emerging or improving high efficiency equipment stock.	Engaged and motivated retailers committed and rewarded for selling high-efficiency products.		
13		3. Provide proper price signals to retailers who stock/sell targeted equipment.	Market share of high-efficiency equipment and services increases.		
14		4. Co-market available incentives to customers.			
15	Building trades lack sufficient cadre of trained personnel, awareness, experience, or commitment to high-	1. No-cost training in best practices provided to builders and trade allies.	Build confidence and competence in high-efficiency building practices. 2. Improve the industry standard practice in building design.	\$17,415	Education rebate/services and implementation expenses.

Line	C&I Market Barrier	Program Interventions	Program Objectives	Cost of Intervention \$2021	Description of the Cost / Source
16	efficiency practices, both for existing building renovations and new construction.	2. Incentives provided for exceeding commercial building energy efficiency code and appliance standards.	Improve the industry standard practice in building design.	\$513,759	Large and Small C&I new equipment and construction rebate/services expenses
17		3. Case studies developed and promoted to highlight exceptional builders and homes.	Reward and celebrate builders and other professionals who demonstrate commitment to high-efficiency building design.		
18		4. Collaboration with professional associations to promote the program and the benefits of high-efficiency homes.	Capture opportunity at time of building/renovation for energy savings over the life of building.		
19			Increase the industry standard practice for high-efficiency design/build/renovation.		
Total Cost				\$3,019,281	
Total NPV Costs C&I Sector 2021				\$3,154,225	
Unaccounted for Other Expenses				\$134,944	All internal admin, EM&V, and external admin expenses
				\$86,290	EM&V
				\$46,817	Internal Admin
				<u>\$1,838</u>	External Admin
				<u>\$134,944</u>	Total

Line	Residential Market Barrier	Program Interventions	Program Objectives	Cost of Intervention \$2021	Description of the Cost / Source
1	Incremental price difference between standard and high-efficiency goods and services.	1. Provide rebates to give effective price signals to help cover incremental first cost.	Customers consider operating costs and not just price tag when making purchase/investment decisions.	\$1,956,942	Total Rebates / Services from Cost Table for Low Income and Res programs, minus behavior, and lighting offers (which are listed below)
2		2. Offer low-interest or interest-free loans to allow customers to finance their portion of larger investments in weatherization and heating systems.	Market penetration of high-efficiency equipment and services increases, allowing the transition to market-based measure offering.	\$1,220	<i>On-bill financing. Please note, this is not from the annual budget, but is from the RLF.</i>
3		3. Provide customers information about alternative sources of funding for their high efficiency investments (state and federal rebates or tax credits).		\$8,494	Interest rate buy-downs paid.
4		4. Provide information/training about the importance of looking at life-cycle costs on website and in communication.			
5	Lack of customer awareness related to: <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. 	1. Promote energy-efficient options in store/online/at point of purchase.	Customers learn to look for and demand high-efficiency options.	\$32,917	<i>Cost of circuit riders, included in line 1.</i>
6		2. Use NH Saves/EnergyStar product labeling at point of purchase.	Market sales of high-efficiency equipment and services increases.	\$38,254	All residential program marketing and customer engagement initiative expenses
7		3. Keep information on NHSaves website up to date.	System peak usage is reduced.	\$195,665	All residential program implementation services expenses
8		4. Provide customers access to pre-vetted online marketplace for energy efficiency goods and services.			
9		5. Send Home Energy Reports directly to customers though mail and email.		\$67,875	Rebates and services for behavior program (subtracted from row 1 rebate total)
10		6. Provide information to target audience at trade and home shows.			
11		7. Co-market with contractors and retailers.			
12		8. Directly control thermostat settings to reduce air conditioning use during system peaks.			
13	Midstream (retailers/ distributors) fail to stock high-efficiency products.	1. Provide retailer training and recruitment in midstream program offering.	Greater availability/ visibility of high-efficiency equipment at point of sale • Engaged and motivated retailers committed and rewarded for selling high-efficient products.	\$101,331	Midstream retail lighting rebate/services
14	• Lower turnover	2. Communicate attributes of emerging or improving high-efficiency equipment stock.	Market share of high- efficiency equipment and services increases.		
15	• Stocking cost	3. Provide proper price signals to retailers who stock/ sell targeted equipment.			
16	• Lack of awareness/ experience	4. Co-market available incentives to customers.			
17		1. No-cost training in best practices provided to builders and trade allies.	Build competence and confidence in high-efficiency building practices	\$0	Residential education and training expenses are embedded in the C&I Education expenses for 2021, but are charged to residential beginning in 2022.

Line	Residential Market Barrier	Program Interventions	Program Objectives	Cost of Intervention \$2021	Description of the Cost / Source
18	Building trades lack sufficient cadre of trained personnel, awareness, experience, or commitment to high-efficiency practices.	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.	Improve the industry standard practice in building design	\$113,379	ES Homes rebate/services expenses
19		4. Collaboration with professional associations to promote the program and the benefits of high efficiency homes.	Reward and celebrate builders and other professionals who demonstrate commitment to high-efficiency building design		
20			Capture opportunity at time of building/renovation for energy savings over the life of a building or home		
			Total Cost	\$2,514,857	
			Total NPV Costs Res Sector 2021	\$2,491,181	
			Unaccounted for Other Expenses	-\$23,676	All internal admin, EM&V, and external admin expenses
				\$67,639	EM&V
				\$28,402	Internal Admin
				\$2,156	External Admin
				\$98,197	Total

Energy Efficiency Cost Categories

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.