NEW HAMPSHIRE ENERGY EFFICIENCY CALCULATION OF PERFORMANCE INCENTIVE BEGINNING IN 2020

Report Issued by the NH Performance Incentive Working Group

Docket No. DE 17-136
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I. Introduction

A. Scope and Members of the PI Working Group

The scope of the Performance Incentive Working Group's ("PI Working Group" or "Working Group") activities is defined by New Hampshire Public Utilities Commission ("Commission" or "PUC") Order Nos. 26,095 and 26,207 in Docket DE 17-136, which approved the Settlement Agreements filed on December 8, 2017 and December 13, 2018, respectively. The Settlement Agreements direct the PI Working Group to undertake a review of potential PI methodologies that could further promote the achievement of New Hampshire's EERS goals, with the objective of implementing any changes to the performance incentive calculation beginning in the 2020 program year. The PI Working Group was tasked with considering metrics designed to encourage income eligible participation in energy efficiency programs and to encourage peak load reductions. Per the Settlement Agreement, the intent of the PI Working Group is to make its recommendations in time to incorporate proposed methodologies into the 2020 New Hampshire Statewide Energy Efficiency Plan Update. This Report represents the PI Working Group's fulfilment of that assignment.

During its extensive 16-month review of the issues surrounding the current, and alternative, PI methodologies, the Working Group reviewed and produced many documents, some of which are posted to a page on the Commission website http://www.puc.state.nh.us/EESE%20Board/EERS WorkingGroups.html. These documents are posted for informational purposes only and the PI Working Group members do not necessarily adopt or endorse the information and findings contained in these documents.

This Report is largely a consensus document produced by the Working Group members. However, while this Report was guided by and results from the Settlement Agreements filed December 8, 2017 and December 13, 2018, it is not intended as, and should not be construed as a Settlement Agreement. As such, Working Group members reserve the opportunity to take consistent or contrary positions when PI is at issue in future proceedings before the Commission. The Report is a public document and may be used in future Commission proceedings. The Working Group meetings and related discussions that lead to the Report were not conducted as privileged or confidential sessions.

This Working Group Report, along with any member/stakeholder comments, has been posted to the Commission website under the PI Working Group section.

The members of the PI Working Group devoted many hours to meetings, research, information responses and preparation of slide presentations and this Report is the product of a collaborative effort enriched by the creative ideas each member brought to the table. A full list of members is included in Appendix B.

B. Executive Summary

The PI Working Group met in order to review the current, and alternative, PI calculation methodologies and to recommend an appropriate PI framework to be implemented for the 2020 period. The Working Group considered including potential metrics to encourage electric system peak load reductions and to increase participation by low income groups and households in energy efficiency programs. The discussions of the PI Working Group occurred over a sixteen-month period between January 2018 and July 2019, and the salient documents from these discussions are posted to the Commission website.

A significant portion of the Working Group's time was spent studying and revising minimum PI thresholds, calculation methodologies, and developing a more comprehensive and transparent framework for calculating PI that constitutes a good replacement for the existing methodology. The new proposed framework is based on the following:

- Categorizing and weighting five separate performance indicators (components), at the portfolio level, each involving minimum savings thresholds (as well as other minimum thresholds summarized below) that must be met in order for any PI to be earned for that component.

Performance Incentive Components (Electric)

PI #	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/PUC
2	Annual kWh Savings	Actual/Planned Annual kWh Savings	10%	75%	125%	Annual PI Filing w/PUC
3	Summer Peak Demand Savings	Actual/Planned ISO-NE System-wide Summer Peak Passive kW Savings	12%	65%	125%	Annual PI Filing w/PUC
4	Winter Peak Demand Savings	Actual/Planned ISO-NE System-wide Winter Peak Passive kW Savings	8%	65%	125%	Annual PI Filing w/PUC
5	Value	Actual/Planned Net Benefits[1]	35%	75%	125%	Annual PI Filing w/PUC
Total			100%			

[1] Total resource benefits (See Appendix D) less utility costs (not including PI).

Performance Incentive Components (Gas)

PI #	Component Title	Description	Incentive Weight	Minimum Threshold	Maximum PI Level	Verification
1	Lifetime MMBtu Savings	Actual/Planned Lifetime MMBtu Savings	45%	75%	125%	Annual PI Filing w/PUC
2	Annual MMBtu Savings	Actual/Planned Annual MMBtu Savings	20%	75%	125%	Annual PI Filing w/PUC
3	Value	Actual/Planned Net Benefits[2]	35%	75%	125%	Annual PI Filing w/PUC
Total			100%			

- The source data for the PI value of each performance indicator is taken from the Benefit-Cost model spreadsheets utilized by the utilities in the preparation of their annual PI filings showing calculations of program cost effectiveness and present value of benefits. Note: The reporting requirement and the compilation of this data on an annual basis will not change – only the calculation of PI has changed.

C. Minimum Thresholds and Requirements

- Most of the existing minimum PI requirements/parameters remain unchanged as follows:
  - ✓ Maintain existing target PI equal to 5.5 percent of each company's program spending with a maximum PI equal to 6.875 percent of actual spending.
  - ✓ Maintain actual spending as the basis of the calculation of PI, rather than the budget.
  - ✓ Maintain a minimum portfolio-wide threshold benefit-cost ratio ("BCR") of 1.0 before PI can be earned, but – remove the BCR from calculation of PI.[3]
  - ✓ Maintain the cap on incentives that can be earned equal to 125 percent of design PI, equivalent to 6.875 percent of actual spending.
  - ✓ Maintain existing use of "adjusted gross savings" for annual and lifetime savings calculations, exclusive of market effects (free ridership and spillover) and inclusive of applicable realization rates achieved by the programs as indicated by third party evaluations and adopted by the Evaluation Measurement and Verification ("EM&V") Working Group.
  - ✓ Maintain the minimum portfolio-wide threshold of 55% of lifetime energy savings from electric measures in the electric programs. As is the case currently, if this threshold is not

[2] Id.

[3] The minimum threshold for cost-effectiveness in this PI framework will be based on the current Total Resource Cost test. The Benefit-Cost and EM&V Working Group are currently evaluating the B/C test used by the New Hampshire energy efficiency programs. A final report is expected to be completed by September of 2019. The PI Working Group members did not address in depth as to whether future PI calculations will reflect any changes to the B/C screening test from that review.

met, then a lower coefficient (4.4 percent rather than 5.5 percent) is to be used in the calculation of PI, along with a corresponding cap of 5.5 percent.

- The following PI requirements/parameters were revised or discontinued:
  - ✓ The existing practice of calculating PI based on achievements at the sector level (i.e. Residential/Income Eligible and Commercial/Industrial sectors) will be replaced by a calculation based on achievement at the portfolio level as a whole (i.e. combination of both sectors) .
  - ✓ The existing minimum threshold of 65 percent of planned lifetime savings, which must be met before any PI is earned for that component, will be increased to 75 percent for each of the lifetime and annual savings components as well as the net benefits component. For the new PI components associated with passive electric summer and winter peak demand, the minimum threshold will be 65 percent (see table above).

The Working Group supports the revised PI framework for the following reasons:

- It uses metrics that are <u>transparent</u> – e.g., performance is incentivized within separate key metric areas that are clear and well-defined, and aligned with EERS goals.
- It is <u>administratively expedient</u> – e.g., provides an easy to use one-page template based on the existing data compilation methods used by the utilities.
- It increases <u>focus</u> on targets and promotes various policy objectives by applying incentives to each performance component separately - e.g., peak demand.
- It establishes minimum thresholds for <u>each performance indicator</u> to encourage performance on each of the targets.
- It preserves <u>effective elements</u> of the existing minimum PI requirements as outlined above - e.g., baseline target and cap, BCR, actual savings, etc.
- It uses a <u>portfolio approach,</u> which provides the utilities with greater flexibility in terms of program implementation and innovation, and increasing low income participation through fuel-neutral measures.

II. Review of Existing Performance Incentive Framework

The current energy efficiency program administration performance incentive framework was initially proposed by the Energy Efficiency Working Group in its final report to the Commission on July 6, 1999,[4] and approved by the Commission in November 2000.[5] Aside from Commission modifications to the framework in September 2013,[6] and again when it approved the Energy Efficiency Resource Standard in 2016,[7] the framework developed nearly two decades ago remains the foundation of New Hampshire's energy efficiency program administration performance incentive framework today.

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[4] Docket No. DE 96-150. Energy Efficiency Working Group Final Report. (July 1999) Page 21. Available at: https://www.puc.nh.gov/Electric/96-150%20%20NH%20Energy%20Efficiency%20Working%20Group%20Final%20Report%20(1999).pdf

[5] Order No. 23,574 at 19. See also, Order No. 23,982 at 13.

[6] Order No. 25,569 at 7. The Commission added the tiered incentive described *infra* at note 7 as a means of balancing the Commission's recently approved fuel neutral programs.

[7] Order No. 25,932 at 60. The modification was to the size the of the performance incentive

A. Current Threshold Requirements

To be eligible for a performance incentive for a specific sector (Residential/income-eligible programs, and Commercial/Industrial, inclusive of the Municipal program for electric programs), the gas or electric utility currently must achieve the following:

1. A BCR of greater than 1.0 in that sector for the electric utilities and gas utilities or not receive PI for the BCR portion.
2. Actual lifetime kWh savings at or above 65 percent of the planned savings in that sector for the electric utilities or no PI is earned for the kWh savings portion.
3. Actual lifetime MMBtu savings at or above 65 percent of the planned savings in that sector for the gas utilities or no PI is earned for the MMBtu savings portion.

B. Electric Programs

Once the above-mentioned threshold requirements have been satisfied, the current performance incentive for the electric energy efficiency programs is calculated on a sector specific basis, and based on the following factors:

1. If actual electric lifetime savings (for both electric and non-electric measures) are greater than or equal to 55 percent of total lifetime energy savings, the multiplier for the savings component is 2.75 percent of sector spending; if it is less than 55 percent then the multiplier is 2.2 percent of sector spending[8]
2. The actual dollars spent (by the utility and by customers) to carry out programs;
3. The actual BCR compared to the planned BCR;
4. The actual lifetime electric energy (kWh) savings compared to the planned lifetime electric energy (kWh) savings;
5. The BCR component and the kWh savings ratio component are each capped at 3.4375 percent for each sector and each sector PI is capped at 6.875 percent; and
6. Actual spending amounts for the PI calculation may exceed the total budget by up to 5 percent.

The current performance incentive formula ties these factors together is as follows for each sector:

(1) (2) (3) (4)

PI= [(2.75% or 2.2%) x Actual Spend] x [(BCR Actual/BCR Planned) + (lifetime kWh Actual/lifetime kWh Planned)]

C. Natural Gas Programs

The performance incentive framework for the natural gas programs is similar to the electric programs, except that it uses MMBtu savings from natural gas instead of lifetime kWh and the incentive percentage and total PI cap is not dependent on achieving a minimum portion of total energy savings from gas measures.

[8] If at least 55 percent of the overall energy savings are in the form of electric energy, then the utility earns PI using the higher 5.5 percent (i.e. 2.75 percent for the savings component and 2.75 percent for the benefit-cost component). If less than 55percent of the overall savings are from electric energy, then the utility earns PI using the lower 4.4 percent multiplier (i.e. 2.2 percent for the savings component and 2.2 percent for the benefit-cost component). The 55% electric savings threshold also determines the overall performance incentive cap; if the 55% threshold is reached, the maximum PI is 6.875% of actual expenditures, otherwise it is 5.5% of actual expenditures. This is meant to focus the majority of the SBC-funded budget towards electric savings rather than gas and other fossil fuel savings. .

The current performance incentive formula for the natural gas programs is as follows for each sector:

(1) (2) (3)
PI= [2.75% x Actual Spend] x [(BCR Actual/BCR Planned) + (lifetime MMBtu Actual / lifetime MMBtu Planned)]

III. Opportunities for Improving the Performance Incentive Model

The PI Working Group stakeholders identified several aspects of the current model which could be improved to reflect the State of New Hampshire's priorities, and account for changes that have taken place in our energy systems in the two decades since the framework was originally adopted.

The opportunities for improvement were focused on the following aspects of the existing framework: (1) a narrow focus on lifetime savings and BCR; (2) a limited emphasis on the value of electric peak demand reduction; (3) a threshold for incentive eligibility that begins at 65 percent of lifetime savings goals; (4) a threshold for incentive eligibility at the sector level rather than portfolio level; and (5) a focus on the ratio of benefits to costs rather than on net benefits.

A. Narrow Focus on Lifetime Savings and BCR

The existing performance incentive framework's narrow focus on BCR and lifetime kWh savings excludes other performance metrics or outcomes stakeholders believe the utilities should target based on the policies of the State of New Hampshire and priorities of the Commission. The American Council for an Energy Efficient Economy (ACEEE) suggests, "Multifactor performance incentives that incorporate multiple metrics can also work to meet other policy objectives… like reducing peak demand (and system costs), creating savings for low-income customers, and others."[9] Several jurisdictions, such as Vermont, utilize a framework based on several quantifiable performance indicators (QPIs).

While the working group acknowledged the importance of utility performance as it relates to lifetime energy savings, as well as maximizing the overall benefits and minimizing the overall costs of the programs, it also reached consensus that other performance indicators merited attention in the framework.[10]

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[9] American Council for an Energy Efficient Economy (ACEEE). Topic Brief: Snapshot of Energy Efficiency Performance Incentives for Electric Utilities. (December 2018) Page 3. Available at: https://aceee.org/sites/default/files/pims-121118.pdf

[10] In addition to reviewing the Vermont QPI framework, the Working Group also reviewed Massachusetts' PI framework, which focuses on the gross and net dollar benefits delivered by energy efficiency programs. After including seven program metrics in its PI formula for several years, the Massachusetts Department of Public Utilities subsequently excluded these metrics stating "performance metrics should induce Program Administrators to undertake activities they would not otherwise undertake" Massachusetts DPU Order 13-67 (December 11, 2014), page 10. Available at https://fileservice.eea.comacloud.net/FileService.Api/file/FileRoom/9230369

B. Limited Emphasis on Peak Demand Reduction

The existing performance incentive framework accounts for the benefits associated with electric peak demand reduction indirectly within that framework's benefit cost component. This contrasts with several states in the region that have recently placed a greater emphasis on the value of demand reduction by including a specific incentive associated with the achievement of planned demand reduction goals.[11] The group also notes that the New Hampshire PUC asked the utilities to explore and pursue peak reduction in several recent dockets as a means to control increasing transmission costs.[12]

While the Working Group members acknowledge that the value of summer peak demand reduction is already indirectly accounted for in the current performance incentive framework's BCR component, the group reached consensus on including components for both a passive summer and passive winter peak demand reductions in the electric programs' PI framework. The group also reached consensus that future opportunities for adoption of a demand reduction metric for natural gas programs should be explored as part of the 2021 -2023 planning process.

C. Incentive Eligibility Threshold

Under the existing performance incentive framework, a utility begins earning an incentive on the savings component upon achieving 65 percent of its targeted lifetime savings goal. However, in several other New England states, including Massachusetts,[13] Connecticut,[14] and Rhode Island,[15] the threshold for earning an incentive is 75 percent of the program targets. As a result, consensus emerged among the working group members that New Hampshire should raise its incentive eligibility thresholds to align better with neighboring jurisdictions. However, the Working Group members also agreed that given the uncertainty surrounding passive summer and winter peak demand reductions and their dependence upon the programs' measure mix, a 65 percent minimum threshold would be applied to those new demand-related components.

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[11] National Grid. 2018-20 Energy Efficiency and System Reliability Procurement Plan. (August 2017). Page 63-65. Available at: http://rieermc.wpengine.com/wp-content/uploads/2017/08/2018-2020-3-year-plan-puc-8-30-17.pdf; Order Re: Compensation Set-Aside and Performance Targets for Efficiency Vermont. (November 2017) Page A-1. Available at: https://drive.google.com/file/d/1oFLJ3yOdHyCv-3UmXQsXpf1MBUnTWS9m/view?usp=sharing; Memorandum dated October 19, 2018, Program Administrator Guide to Updates to the September 14, 2019- 2021 Draft Plan. Page 7. Available at: http://ma-eeac.org/wordpress/wp-content/uploads/Memo-from-PAs-to-EEAC-10-22-18.pdf

[12] . See, e.g., Order No. 26,042 at 5 (July 24, 2017) (stating that transmission costs are tied to peak loads and requiring Unitil to consider what measures could be taken to mitigate increases in transmission costs); DE 18-089, Eversource Energy, 2018 Transmission Cost Adjustment Mechanism, Hearing Transcript of July 12, 2018, at 19-20; DE 18-051, Liberty Utilities (Granite State Electric) Corp., Annual Retail Rate Filing, Hearing Transcript of May 9, 2018, at 46-52.

[13] Massachusetts 2019-21 Energy Efficiency Plan. (October 2018) Page 160. Available at: http://ma-eeac.org/wordpress/wp-content/uploads/Exh.-1-Final-Plan-10-31-18-With-Appendices-no-bulk.pdf

[14] Connecticut 2019-21 Conservation and Load Management Plan Update. (March 2019) Page 368. Available at: https://www.energizect.com/sites/default/files/FINAL%202019%202021%20Plan%20%283-1-19%29.pdf

[15] Rhode Island 2019 Energy Efficiency Program Plan. (October 2018) Page 42. Available at: http://www.ripuc.org/eventsactions/docket/4888-NGrid-EEPP2019(10-15-18).pdf

D. Sector Level Incentive Eligibility

Under the existing performance incentive framework, each utility's targets and related performance incentives are calculated on a sector-specific basis. As a result, if a utility under-performs in one sector, it cannot make up for that underperformance by over-performing in the other sector. This sends a signal that is inconsistent with the EERS: rather than pursue a statewide efficiency target as the EERS mandates, the existing framework suggests that there are two targets, one for each sector, thus encouraging the utilities to pursue them independently.

According to the National Efficiency Screening Project's Database of State Efficiency Screening Practices, many states, including Arizona, California, District of Columbia, Illinois, Michigan, New Mexico, New York, Oklahoma, Ohio, Pennsylvania, Rhode Island, Vermont, Washington, and Wisconsin, assess the cost-effectiveness of their programs at the portfolio level.[16]

While there is some inherent logic to incenting performance on a sector specific basis, Working Group members agreed that doing so limits flexibility to implement new programs and might unnecessarily limit the savings or cost-effectiveness pursued in a sector. In such a case, the utility would be reluctant to pursue all-cost effective programs, especially those with a lower BCR, if the utility is unable to offset the savings uncertainty associated with new programs in one sector by investment in highly cost-effective programs in the other sector.

Rewarding a utility's performance at the sector level also has implications for how income eligible programs are delivered. The Commission has the authority to approve income-eligible programs such as Home Energy Assistance (HEA) program where the BCR is less than 1.0.[17] However, for the purposes of the performance incentive eligibility, HEA falls within the residential sector and represents a significant portion of the sector's overall budget goals. This limits the utility's ability to utilize the flexibility provided by the Commission regarding HEA program cost-effectiveness because the PI earned will potentially be less if the sector level BCR is less. By moving the calculation of incentives to the portfolio level, this flexibility is maintained because more programs can be used to offset a lower BCR from the HEA programs.

E. Benefit Cost Ratio Component

The existing performance incentive framework focuses half of the incentive on actual versus planned BCR. This is a primary component of the current framework. In most jurisdictions however, the BCR is treated as a threshold that must be met at either the measure, program or portfolio level before implementation of that measure, program, or portfolio is approved by a Commission, rather than a metric against which a program administrator is rewarded. While there is some inherent logic in encouraging the utilities to maximize the cost effectiveness of the programs, there was consensus among Working Group members that the energy efficiency portfolio should be focused on other metrics so that the BCR should set a floor for portfolio performance at 1.0. Stated another way, using a minimum B/C threshold of 1.0 before PI can be earned ensures that the benefits exceed the costs.

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[16] National Efficiency Screening Project. Database of State Efficiency Screening Practices. Accessed June 21, 2019. Available at: https://nationalefficiencyscreening.org/state-database-dsesp/

[17] *See* Docket No. 96-150, Order No. 23,574 dated 11/01/2000 at 4.

Neighboring jurisdictions, including Massachusetts and Vermont, have embraced this approach to set the BCR as a threshold requirement and focus on other metrics for the PI components.

IV. Revised Framework

A. Current Framework Formula

Assuming a utility meets the minimum threshold of 55 percent of electric program total energy savings (electricity, natural gas, oil, propane, kerosene and wood) coming from electricity, the performance incentive earned by each electric utility under the current framework is as follows:

$PI = [2.75\% \times ACTUAL] \times [(BCR_{ACT} / BCR_{PLN}) + (kWh_{ACT} / kWh_{PLN})]$

Where:

PI = Performance Incentive in dollars
ACTUAL = Total dollars spent less the performance incentive
BCR_{ACT} = Actual Benefit-to-Cost ratio achieved
BCR_{PLN} = Planned Benefit-to-Cost ratio
kWh_{ACT} = Actual Lifetime Kilowatt-hour savings achieved
kWh_{PLN}= Planned Lifetime Kilowatt-hour savings

If the minimum threshold of 55 percent of electric program energy savings from electricity is not achieved, then the PI formula is modified so that the 2.75 percent multiplier is replaced by a 2.2 percent multiplier. Otherwise it remains the same. For each sector, the BCR must be 1.0 or greater or no incentive is earned for the cost-effectiveness performance component for that sector. Actual lifetime savings must be at least 65 percent of the planned lifetime savings or no incentive is earned for the savings performance metric for that sector. Performance incentive is calculated separately for the two sectors Residential/Income Eligible and Commercial/Industrial. Total PI is the sum of the two.

The natural gas programs have no equivalent minimum kWh to total energy threshold requirement. Otherwise the calculation is identical except that the unit used for lifetime savings is MMBtu rather than kWh.

PI is currently capped at the component level for each of the following:

- Residential sector BCR
- Residential sector lifetime savings
- C&I sector BCR
- C&I sector lifetime savings

Taken together, the maximum performance incentive a utility can earn is the sum of 6.875 percent of the spending in each sector, with each sector calculated separately.

B. Revised Framework Formula

Under the revised framework, several additional components have been added, including two components related to summer and winter peak electric system passive demand[18] and an annual savings component and a net benefits component.

PI =
$[(1.925\% \times \text{ACTUAL}) \times (kWh_{L\text{-}ACT}/kWh_{L\text{-}PLN})] +$
$[(0.55\% \times \text{ACTUAL}) \times (kWh_{A\text{-}ACT}/kWh_{A\text{-}PLN})] +$
$[(0.66\% \times \text{ACTUAL}) \times (kW_{SUM\text{-}ACT}/kW_{SUM\text{-}PLN})] +$
$[(0.44\% \times \text{ACTUAL}) \times (kW_{WIN\text{-}ACT}/kW_{WIN\text{-}PLN})] +$
$[(1.925\% \times \text{ACTUAL}) \times (\text{NET-BEN}_{ACT}/\text{NET-BEN}_{PLN})]$

Where:

PI = Performance Incentive in dollars
ACTUAL = Total dollars spent (less PI)
$kWh_{L\text{-}ACT}$ = Actual Lifetime kWh
$kWh_{L\text{-}PLN}$ = Planned Lifetime kWh
$kWh_{A\text{-}ACT}$ = Actual Annual kWh
$kWh_{A\text{-}PLN}$ = Planned Annual kWh
$kW_{SUM\text{-}ACT}$ = Actual passive summer peak kW
$kW_{SUM\text{-}PLN}$= Planned passive summer peak kW
$kW_{WIN\text{-}ACT}$ = Actual passive winter peak kW
$kW_{WIN\text{-}PLN}$= Planned passive winter peak kW
NET-BEN_{ACT}= Actual net benefits (in NPV dollars) (i.e. total benefits less utility costs and NEI's)[19]
NET-BEN_{PLN}= Planned net benefits (in NPV dollars)

Additional requirements are as follows:

- The utility's portfolio of programs must be cost-effective before any PI can be earned, meaning the BCR must be at least 1.0 ;
- If 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 saving in order for any PI to be earned on the lifetime savings component;
- Annual savings must be at least 75 percent of planned annual saving 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;

[18] These demand components are excluded from the calculation of performance incentive for the natural gas programs. See Section C. under "Issues for Future Consideration" below.
[19] See Appendix D.

- 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, without prior Commission authorization. That is, the actual spending may exceed the planned budgets, including all sources of funding 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. PI is then calculated against actual program spending at the portfolio level, up to 105 percent of the revised, Commission-approved budget, or as otherwise ordered.[20]

V. Income Eligible Customers

A. Review by the Working Group

The Commission specifically tasked the Working Group with investigating the participation of income eligible customers in energy efficiency programs. Throughout its discussions, the Working Group weighed whether proposed changes would result in any unintended consequences related to design or implementation of the Home Energy Assistance program (HEA), or negatively impact the interests of income eligible customers. The group carefully considered including a specific metric related to achievement of goals in those programs, including establishing minimum spending or participation requirements. Input and feedback from The Way Home, which represents the interests of low income customers, as well as by the Office of Consumer Advocate, which represents residential customers, was sought throughout the process.[21]

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[20] This represents a departure from the methodology set out in Order No. 25,189, Docket No. DE 10-188 at 9, whereby the performance incentive will be calculated using actual expenditures 'up to a maximum of 5% of the total approved by the Commission for each utility's residential and C&I sectors, <u>including performance incentive</u>…'[emphasis added]. Upon review, it was the conclusion of the Working Group that continuing with including the performance incentive as an expense in calculating the cap under the new proposed framework (now based on the portfolio approach) would introduce a circular component into the calculation that would allow the utilities to earn a performance incentive on the performance incentive. Accordingly, in keeping with the Working Group's assignment to review and propose new and alternative methodologies, it was the consensus of the group to modify the calculation by removing the cost of the performance incentive in setting the 105 percent cap.

[21] On July 24, 2018, the PI Working Group and the B/C Working Group convened a special meeting to review current low-income programs (primarily HEA) and obtain feedback from Community Action Agencies, the utilities, project managers, and low-income advocates on program effectiveness and potential improvements.

[21] On July 24, 2018, the PI Working Group and the B/C Working Group convened a special meeting to review current low-income programs (primarily HEA) and obtain feedback from Community Action Agencies, the utilities, project managers, and low-income advocates on program effectiveness and potential improvements.

B. Funding

Ultimately, the group reached consensus that the current 17 percent budget earmark for spending on low-income energy efficiency programs was sufficient and should be maintained. The Working Group also agreed that the recently instituted mandate to carry over any budgeted but unspent funds from HEA programs would ensure that sufficient funds were dedicated to these programs. Similarly, concerns that cost-effectiveness requirements (involving a BCR of 1.0 or greater) might limit participation of income eligible homes, have been addressed by a move from a sector level approach to a portfolio level approach. By moving to a portfolio level framework, in contrast to the sector level framework with its budgetary requirements, the Working Group was comfortable that the income eligible programs would be served adequately without adding a specific PI metric or component. In addition, the Working Group concluded that the net benefit component would help incent fossil fuel savings, which make up the primary benefit of weatherization activities in the income eligible programs. As a result, the Working Group members agreed that the income eligible programs would receive adequate investment and prioritization without the inclusion of a specific PI metric related to that customer segment in program year 2020. Should the PI framework be adjusted during the planning process for the next three-year plan, the topic of a specific income eligible metric may be revisited.

VI. Issues for Future Consideration

Over the course of the Working Group meetings, members reviewed many presentations from external experts as well as from the utilities and the OCA, and engaged in thoughtful discussion covering various aspects of performance incentive design. As these discussions progressed, several emerging developments in the energy efficiency field were considered but set aside due to the need for additional study and in the interest of reaching group consensus for the 2020 Program Year. This does not preclude future adjustment to the PI Framework to accommodate the evolution of program design, the adoption of new cost-effectiveness testing, the incorporation of a gas demand component, or other methods of calculating savings. Some of the ideas that may merit future investigation are discussed below.

A. Energy Optimization/Electrification

Energy Optimization (EO) is a concept that is known by different names in different jurisdictions. EO is a strategy undertaken by the utilities to provide customers with fuel-neutral education and encourage them to minimize energy usage through various energy efficiency measures. In practice, this has typically (but not exclusively) meant fuel switching from less efficient to more efficient, cleaner sources of energy. Heat pump technology and combined heat and power (CHP) are examples of common technologies considered under energy optimization. EO is also referred to in some circles as strategic electrification.

Both the existing PI Framework and the revised PI Framework focus on electricity savings (for electric programs) and natural gas savings (for natural gas programs), with some consideration given to other fuels saved. The current and revised PI frameworks do not consider overall energy savings, when switching from one fuel to another. Throughout the region, interest and investment in more holistic approaches to energy efficiency is increasingly involving technologies and appliances that shift energy use from dirtier fossil fuels to cleaner and more efficient natural gas and electric power. Massachusetts, Vermont, Connecticut, Maine, and Rhode Island have begun placing a greater emphasis on *energy* savings as opposed to strictly *electric* savings among energy efficiency program planners and implementers.

One of the stumbling blocks encountered by the Working Group in judging the merits of creating a viable PI metric in this area is that EO is an emergent concept in New Hampshire in terms of policy, program design, implementation, and evaluation. An additional impediment was the availability of state-specific data involving deployment and utilization of optimization technologies. Currently, the EM&V Working Group and the B/C Working Group are working with Navigant, a third party evaluation firm, to investigate how other jurisdictions are handling EO in their energy efficiency planning, cost-effectiveness testing, and reporting, and the policies that support implementation. [22]

Depending on the outcome of the Navigant-led study, and the EERS priorities for the 2021-2023 term, the utilities and the stakeholders may want to adjust the PI framework in the future to incent overall energy reductions, rather than just those energy reductions that result from a decrease in the use of electricity or natural gas alone. If that is the case, there will need to be further discussion about how to convert energy savings resulting from the efficiency programs to a common unit of energy, and whether to do so at the customer site or the generating source. A study to investigate these issues is currently being scoped in Massachusetts, the results of which may help to inform future New Hampshire energy efficiency program design.

B. Revised Cost Effectiveness Tests

The EM&V Working Group and the B/C Working Group are working with Synapse, a third-party firm, to review policies related to New Hampshire's cost-effectiveness test for energy efficiency programs, in accordance with the framework established in the National Standard Practice Manual ("NSPM"). Synapse will prepare a report that summarizes the key elements of the NSPM and how the B/C Working Group can apply those elements to the energy efficiency cost-effectiveness analyses in New Hampshire. Any resulting recommendations for the New Hampshire cost-effectiveness test are expected to be implemented beginning in 2021.

As described above, Total Resource Cost test is the current benefit/cost test for program screening and is expected to be the, the basis for the PI for 2020. If the screening cost-effectiveness test changes with a start date of program year 2021, then the PI framework, including the components and requirements, will need to be revisited since the benefit/cost test and the PI calculation overlap.

C. Gas Demand

As coal, oil and nuclear decline as fuels for the generation of electricity in the northeast, natural gas, along with renewables and energy efficiency, have filled in the gap. This additional demand for natural gas to meet the demand for electricity generation has strained already congested gas pipeline capacity in our region. This strain has been particularly acute during the winter months when demand for natural gas for heating homes and businesses reaches a peak. Short-term natural gas supply shortfalls have led

[22] The Commission is currently investigating grid modernization, including strategic electrification, in Docket IR 15-296.

to wholesale price instability that regional energy planners, the Independent System Operator of New England ("ISO-NE"), regulators and the natural gas distribution companies throughout the region are attempting to address. Similarly, at the distribution level, natural gas utilities (including in New Hampshire) are experiencing peak day demand growth that threatens to exceed the level of firm supply that can be accessed without major new infrastructure investments. Reducing end users' natural gas demand will free up more pipeline capacity.

Unlike electricity measures and end uses, for which hourly load-shapes have been developed by energy efficiency evaluators as well as ISO-NE, the Working Group was not aware of readily available studies or related data sources for peak gas demand. Nor did the group find evaluation studies that show the peak gas demand reduction related to specific energy efficiency measures. There is currently no mechanism to put a dollar value on the demand reduction value of natural gas conserving activities during peak periods. This relationship is further complicated by the way in which natural gas is procured for the purpose of generating electricity (short term, spot market) versus the way it is procured by end-using customers who purchase from a natural gas local distribution company to heat their homes and businesses (long-term contracts, regulated rates).

While the Working Group members were in broad agreement that natural gas efficiency programs help ameliorate the winter gas supply issues, the gas utilities said that they do not track peak demand savings in New Hampshire. Without such information, the Working Group could not establish a meaningful goal or determine whether or not the natural gas programs have achieved it. Consequently, the Working Group agreed that the natural gas utilities would stay abreast of various studies in the region that are investigating the issue of natural gas peak demand in order to consider development and inclusion of a peak demand reduction metric for the next three-year plan period.[23]

D. Income Eligible Participation

As noted above, the Working Group examined the feasibility of additional PI metrics to incentivize increased participation by low-income households in energy efficiency programs, including adoption of specific participation and savings targets. After considerable discussion and review, including outreach to other stakeholders outside the working group process, consensus was reached that maintaining adequate levels of investment and funding continues to be the most effective means of serving this community, at least through 2020. However, this is an evolving issue in many other jurisdictions, and

[23] One potential example of a peak day proxy strategy was recently identified by gas program administrators in Connecticut. As a condition of approval of the Connecticut 2019-2021 Statewide Energy Efficiency Plan, the Connecticut Department of Energy and Environmental Protection required the Connecticut Program administrators to "provide a quantification and discussion of the effects of conservation, load management, and energy efficiency investments, both electric and gas, on winter peak demand and as applicable, winter fuel reliability." In response to this condition, the program administrators provided a compliance filing describing the gas peak day savings by end use and measure-type groupings. *See* Connecticut Department of Energy and Environmental Protection. Attachment A: Schedule of Compliance Conditions of Approval. (December 2018) Available at: https://app.box.com/s/zv7bcoe283tjvppnt853ojmwfa89zahg/file/392424970636. *Also see* Connecticut Energy Efficiency Program Administrators. 2019-2021 Plan Compliance Item #7 – July 1 filing. Available at: https://app.box.com/s/u0kn24qi4f7baxypfionf5oeiam8lq2i/file/488657645351

the development and adoption of potential income eligible metrics merits further study and should be a consideration during the planning process for the next three-year plan.

Appendix

Appendix A: 2020 PI calculation templates

Proposed PI Calculation for Electric Utilities

Portfolio Planned Versus Actual Performance - 2020

	Portfolio	Planned	Threshold	Actual	% of Plan	Design Coefficient	Actual Coefficient	Planned PI	125% of Planned PI	Actual PI	Source
1	Lifetime kWh Savings	169,249,199	*126,936,899*			1.925%		$ 1,204,667	$ 1,505,834		Planned and Actual from Cost Eff Tab
2	Annual kWh Savings	140,178,883	*105,134,162*			0.550%		$ 344,191	$ 430,238		Planned and Actual from Cost Eff Tab
3	Summer Peak Demand kW	16,769	*10,900*			0.660%		$ 413,029	$ 516,286		Planned and Actual from Cost Eff Tab
4	Winter Peak Demand kW	19,383	*12,599*			0.440%		$ 275,352	$ 344,191		Planned and Actual from Cost Eff Tab
5	Total Resource Benefits	$ 206,636,229									Planned and Actual from Benefits Tab
6	Total Utility Costs[1]	$ 62,580,111									Planned and Actual from Cost Eff Tab
7	Net Benefits	$ 144,056,118	##########			1.925%		$ 1,204,667	$ 1,505,834		Line 5 minus line 6
8	Total					5.500%		$ 3,441,906	$ 4,302,383		

		Total Resource Cost Test Planned	Actual	Source
9	Total Benefits (incl. NEIs)	$ 227,299,852		Planned and Actual from Cost Eff Tab
10	Performance Incentive	$ 3,441,906		from row 6 above
11	Participant Costs	$ 52,022,201		Planned and Actual from Cost Eff Tab
12	Total Utility Costs	$ 62,580,111		from row 4 above
13	**Portfolio TRC BCR**	**1.93**		row 9 divided by rows 10+11+12

For illustrative purposes only. All dollar values are expressed in 2020 dollars. The numbers reflect the cumulative budget, savings, benefits, and costs of all the utilities combined based on the original 2020 Plan. Each utlity will file its own utility-specific version of the table as part of the 2020 Plan Update.

[1] Note that in order to avoid a circular reference in the calculation of performance incentive, "Total Utility Costs" does not include the value of PI.

Proposed PI Calculation for Gas Utilities

	Portfolio Planned Versus Actual Performance - 2020										
	Portfolio	Planned	Threshold	Actual	% of Plan	Design Coefficient	Actual Coefficie nt	Planned PI	125% of Planned PI	Actual PI	Source
1	Lifetime MMBtu Savings	2,306,693	*1,730,020*			2.475%		$ 226,656	$ 283,320		Planned and Actual from Cost Eff Tab
2	Annual MMBtu Savings	163,616	*122,712*			1.100%		$ 100,736	$ 125,920		Planned and Actual from Cost Eff Tab
3	Total Resource Benefits	$ 21,622,091									Planned and Actual from Benefits Tab
4	Total Utility Costs	$ 9,157,813									Planned and Actual from Cost Eff Tab
5	Net Benefits	$ 12,464,278	*$ 9,348,208*			1.925%		$ 176,288	$ 220,360		Line 5 minus line 6
6	**Total**					**5.500%**		**$ 503,680**	**$ 629,600**		

		Total Resource Cost Test		
		Planned	Actual	Source
7	Total Benefits (incl. NEIs	$23,784,300		Planned and Actual from Cost Eff Tab
8	Performance Incentive	$ 503,680		from row 8 above
9	Participant Costs	$ 5,999,410		Planned and Actual from Cost Eff Tab
10	Total Utility Costs	$ 9,157,813		from row 6 above
11	**Portfolio TRC BCR**	**1.52**		row 9 divided by rows 10+11+12

For illustrative purposes only. All dollar values are expressed in 2020 dollars. The numbers reflect the cumulative budget, savings, benefits, and costs of all the utilities combined based on the original 2020 Plan.
Each utlity will file its own utility-specific version of the table as part of the 2020 Plan Update.

[1] Note that in order to avoid a circular reference in the calculation of performance incentive, "Total Utility Costs" does not include the value of PI.

Appendix B: The members/participants of the PI Working Group:

- Jay Dudley, PUC
- Jim Cunningham, PUC
- Paul Dexter, PUC
- Elizabeth Nixon, PUC
- Leszek Stachow, PUC
- Brian Buckley, Office of Consumer Advocate
- Donald Kreis, Office of Consumer Advocate
- Rebecca Ohler, New Hampshire Department of Environmental Services (NH DES)
- Joe Fontaine, NH DES
- Christopher Skoglund, NH DES
- Kate Peters, Eversource
- Miles Ingram, Eversource
- Marc Lemenager, Eversource
- Christopher Plecs, Eversource
- Erica Menard, Eversource
- Tom Fuller, Eversource
- Christopher Goulding, Eversource[24]
- Matthew Fossum, Eversource
- Cindy Carroll, Unitil
- Mary Downes, Unitil
- Eric Stanley, Liberty
- Heather Tebbetts, Liberty
- Trish Walker, Liberty
- Mike Sheehan, Liberty
- Carol Woods, NH Electric Coop
- Melissa Birchard, Conservation Law Foundation
- Raymond Burke, NH Legal Assistance/The Way Home
- Ellen Hawes, Acadia Center
- Amy Boyd, Acadia Center
- Scott Albert, GDS Associates
- Madeleine Mineau, Clean Energy NH
- Brianna Brand, Clean Energy NH

[24] Christopher Goulding is now employed by Unitil.

Appendix C: Consultants who assisted and contributed to the work of the PI Working Group:

- Denise Rouleau, Northeast Energy Efficiency Partnerships (NEEP)
- Emily Levin, Vermont Energy Investment Corporation (VEIC)
- David Farnsworth and Jessica Shipley, Regulatory Assistance Project (RAP)
- Philip Mosenthal, Optimal Energy
- Martin Kushler, American Council for an Energy Efficient Economy (ACEEE)
- Lisa Skumatz, Skumatz Economic Research Associates (SERA)
- Ralph Prahl, SERA
- Robert Wirtshafter, SERA

Appendix D: Glossary of Terms

Actual: The amount of savings, spending, net benefits or BCR the programs achieved, as reported in each utility's annual report and associated Benefit Cost models.

Adjusted gross savings: The amount of savings resulting from energy efficiency measures, adjusted to reflect realization rates and other impact factors quantified in third party evaluations, exclusive of free-ridership and spillover.

Annual savings: The reduction in electricity use (kWh) or fossil fuel use (therms or MMBtus) over a one-year period resulting from energy efficiency programs.

Benefit-Cost Ratio ("BCR"): As calculated by the NH Utilities' Benefit/Cost test, currently the Total Resource Cost ("TRC") test, the BCR is the ratio of total benefits and total costs. Total benefits are the net present value of avoided energy and non-energy impacts resulting from program measures. Total costs are the net present value of utility costs, including performance incentive, plus out-of-pocket incremental costs that customers pay for energy efficiency measures, relative to a standard efficiency measure.

Demand savings: Demand savings is the reduction in electricity demand (kW) . Demand savings can result from active resources, which are activated when dispatched (i.e., demand response), or passive resources (e.g., installation of more efficient equipment) and not in response to a dispatch instruction. For purposes of the PI calculation, the peak demand savings are coincident with ISO-NE system peak demand periods.

Independent System Operator of New England ("ISO-NE") peak demand savings: The savings resulting from passive peak demand reduction occurring during the "on-peak" hours defined by ISO-NE. Specifically, summer peak demand reductions are the average reduction in demand during summer peak hours (non-holiday weekdays, 1:00 p.m. to 5:00 p.m., during June, July, and August) and winter peak demand reductions are the average reductions in demand during winter peak hours (non-holiday weekdays, 5:00 p.m. to 7:00 p.m., during December and January).

Lifetime savings: The reduction in electricity use (kWh) or fossil fuel use (therms or MMBtus) over the lifetime of installed energy efficiency measures, based on the life of a measure as determined through evaluation.

Net Benefits: Net Benefits are the Net Present Value of Total Resource Benefits less Total Utility Costs (not including Performance Incentive). Neither the value of customer costs nor non-energy impacts is considered in determining Net Benefits for purposes of calculating the performance incentive.

Planned: The amount of savings, spending, net benefits or BCR the programs are expected to achieve, based on the utilities' Three-Year Plan and typically updated each year in Annual Update filings and associated Benefit Cost models.

Portfolio: The total set of energy efficiency programs offered by a utility, including those activities that do not directly save energy (e.g., education, EM&V, marketing, lending programs, etc.) across all sectors.

Sector: A group of customers with similar characteristics, usage patterns and billing rates. Residential, and Commercial and Industrial (C&I) are the two primary sectors in the NH Saves programs.

Total Resource Benefits: Avoided costs due to program impacts on electric capacity, electric energy, Demand Reduction Induced Price Effects (DRIPE), gas benefits, other fuels, and water resources.

Utility costs: All expenditures by the program administrator to design, plan, administer, deliver, monitor, and evaluate efficiency programs, including performance incentive.

Public Service Company of New Hampshire d/b/a Eversource Energy
Docket No. IR 22-042

Date Request Received: September 12, 2022 **Date of Response: September 26, 2022**
Data Request No. RR 1-005 **Page 1 of 1**

Request from: New Hampshire Public Utilities Commission

Witness: N/A

Request:

Reference reporting requirement iv.2 from Order No. 26,621. The Commission instructs each utility to refile their reports, providing:
a. A net present value calculation for the aggregate expenditures for each program over the lifetime of each program, including all assumptions used; and
b. A calculation of the lifetime energy efficacy gains for the aggregate expenditures for each program over the lifetime of each program.

Response:

a. All expenses for the 2021 program year were incurred in 2021, and therefore nominal dollars are equal to net present value dollars.

b. Each utility's 2021 actual results by each program are contained on Page 1 of each annual PI Report, which were filed on June 1, 2022 in Dockets DE 17-136 and DE 20-092 and are also attached to this response for ease of reference.

Liberty™

Erica L. Menard
Director, Rates and Regulatory Affairs
15 Buttrick Rd.
Londonderry, NH 03053

603-361-3475

Erica.Menard@libertyutilities.com

May 31, 2022
Via Electronic Mail Only

Daniel Goldner
Chairman
New Hampshire Public Utilities Commission
21 South Fruit St., Suite 10
Concord, NH 03301-2429

Dear Chairman Goldner:

Re: DE 17-136, DE 20-092; Liberty Utilities (EnergyNorth Natural Gas) Corp. d/b/a Liberty Energy Efficiency Programs
Performance Incentive Calculation — 2021

Attached for filing with the Commission is Liberty's performance incentive calculation relating to the NHSaves Energy Efficiency Programs for the program year 2021.

Pursuant to the Commission's procedural order issued on January 24, 2022, in Docket Nos. DE 17-136 and DE 20-092, this 2021 report is being filed under Docket No. DE 17-136. The order states,

> "To ensure that filings are made in the correct docket, this procedural order clarifies that filings such as monthly, quarterly, or annual reports for program year 2021, as well as notifications regarding program expenditures made prior to January 1, 2022, should be filed in Docket No. DE 17-136. Program filings for January 1, 2022, or thereafter should be filed in Docket No. DE 20-092."

Thank you for your attention to this matter. Please do not hesitate to call if you have any questions.

Sincerely,

Erica L Menard

Erica L. Menard

Attachments

Cc: DE 17-136 and DE 20-092 Service Lists

3739

NEW HAMPSHIRE PUBLIC UTILITIES COMMISSION

LIBERTY UTILITIES (ENERGYNORTH NATURAL GAS) CORP. d/b/a

LIBERTY

ENERGY EFFICIENCY PROGRAMS - 2021 YEAR-END REPORT

NHPUC Docket No. DE 17-136

May 31, 2022

TABLE OF CONTENTS

Table 1a. Program Cost-Effectiveness - 2021 PLAN

	Benefit/Cost Ratios Granite State Test[1]	Benefits Granite State Test	Utility Costs ($000 - 2021$)[2]	Customer Costs ($000 - 2021$)[2]	Performance Incentive ($000)	Annual MWh Savings	Lifetime MWh Savings	Winter kW Savings	Summer kW Savings	Number of Customers Served	Annual MMBTU Savings	Lifetime MMBTU Savings
Residential Programs												
B1 - Home Energy Assistance	1.80	$ 2,665	$ 1,483	$ -		-	-	-	-	235	6,381	127,363
A1 - Energy Star Homes	3.63	$ 3,178	$ 875	$ 1,841		-	-	-	-	406	12,724	318,111
A2 - Home Performance with Energy Star	2.38	$ 2,456	$ 1,030	$ 353		159	796	34	22	670	13,010	234,604
A3 - Energy Star Products	2.56	$ 2,470	$ 964	$ 747		19	318	6	(0)	2,052	14,841	244,433
A4 - Home Energy Reports	0.49	$ 140	$ 287	$ -		-	-	-	-	30,000	13,169	13,169
Sub-Total Residential	**2.35**	**$ 10,909**	**$ 4,639**	**$ 2,941**		**178**	**1,114**	**41**	**22**	**33,363**	**60,126**	**937,679**
Commercial & Industrial Programs												
C1 - Large Business Energy Solutions	3.12	$ 6,839	$ 2,191	$ 2,241		-	-	-	-	93	61,935	774,804
C2 - Small Business Energy Solutions	2.27	$ 4,098	$ 1,805	$ 1,101		3	45	1	-	939	24,125	404,316
C6c - C&I Education	-	$ -	$ 88	$ -		-	-	-	-	-	-	-
Sub-Total Commercial & Industrial	**2.68**	**$ 10,937**	**$ 4,084**	**$ 3,341**		**3**	**45**	**1**	**-**	**1,031**	**86,060**	**1,179,120**
Total	**2.50**	**$ 21,846**	**$ 8,723**	**$ 6,282**	**$ 480**	**181**	**1,160**	**42**	**22**	**34,394**	**146,186**	**2,116,800**

Notes:
(1) The Granite State Test is used as the primary cost test, as approved in Order No. 36,322, and includes an annual NEI adder of $405.71 per weatherization project in the Home Energy Assistance program.
(2) Utility and Customer Costs and Benefits are expressed in 2021 Dollars.
(3) Per past precedent, discount and inflation rates have been updated for the year in which measures will be installed, and were updated in June 2020 for program year 2021.

Annual kWh Savings	**0.4%**	**kWh < 55%**
Annual MMBTU Savings (in kWh)	99.6%	
	100.0%	

Lifetime kWh Savings	1,159,677	**0.2%**	**kWh < 55%**
Lifetime MMBTU Savings (in kWh)	620,372,800	99.8%	
	621,532,476	100.0%	

Table 1b. Program Cost-Effectiveness - 2021 ACTUAL

	Benefit/Cost Ratios Granite State Test[1]	Benefits Granite State Test	Utility Costs ($000 - 2021$)[2]	Customer Costs ($000 - 2021$)[2]	Performance Incentive ($000)	Annual MWh Savings	Lifetime MWh Savings	Winter kW Savings	Summer kW Savings	Number of Customers Served	Annual MMBTU Savings	Lifetime MMBTU Savings
Residential Programs												
B1 - Home Energy Assistance	0.93	$ 1,530	$ 1,649	$ -		121	2,824	20	31	271	5,896	115,358
A1 - Energy Star Homes	2.36	$ 1,324	$ 561	$ 472		-	-	-	-	241	5,331	132,521
A2 - Home Performance with Energy Star	3.29	$ 4,213	$ 1,280	$ 305		83	834	14	19	338	17,784	407,503
A3 - Energy Star Products	3.06	$ 2,556	$ 836	$ 875		29	491	9	(0)	2,143	15,490	253,746
A4 - Home Energy Reports	1.01	$ 220	$ 218	$ -		-	-	-	-	23,705	20,661	20,661
Sub-Total Residential	**2.17**	**$ 9,842**	**$ 4,544**	**$ 1,652**		**233**	**4,149**	**43**	**50**	**26,698**	**65,161**	**929,790**
Commercial & Industrial Programs												
C1 - Large Business Energy Solutions	3.82	$ 6,896	$ 1,804	$ 2,527		(28)	(553)	0	-	1,104	51,816	769,235
C2 - Small Business Energy Solutions	2.83	$ 4,385	$ 1,549	$ 1,706		(10)	(201)	1	-	3,015	24,365	424,282
C6c - C&I Education	0.00	$ -	$ 22	$ -		-	-	-	-	-	-	-
Subtotal Commercial & Industrial	**3.34**	**$ 11,281**	**$ 3,374**	**$ 4,233**		**(38)**	**(753)**	**1**	**-**	**4,119**	**76,181**	**1,193,517**
Total	**2.67**	**$ 21,123**	**$ 7,918**	**$ 5,885**	**$ 455**	**196**	**3,396**	**44**	**50**	**30,817**	**141,342**	**2,123,307**

Notes:
(1) The Granite State Test is used as the primary cost test, as approved in Order No. 36,322, and includes an annual NEI adder of $405.71 per weatherization project in the Home Energy Assistance program.
(2) Utility and Customer Costs and Benefits are expressed in 2021 Dollars.
(3) Per past precedent, discount and inflation rates have been updated for the year in which measures will be installed, and were updated in June 2020 for program year 2021.

Annual kWh Savings	**0.5%**	**kWh < 55%**
Annual MMBTU Savings (in kWh)	100%	
Total Energy Savings	100%	

Lifetime kWh Savings	3,395,580	**0.5%**	**kWh < 55%**
Lifetime MMBTU Savings (in kWh)	622,305,576	99%	
Total Energy Savings	625,701,156	100%	

Table 1c. Percent of Plan Program Cost-Effectiveness Targets Achieved

	Benefit/Cost Ratios Granite State Test	Benefits Granite State Test	Utility Costs ($000 - 2021$)[2]	Customer Costs ($000 - 2021$)[2]	Performance Incentive ($000)	Annual MWh Savings	Lifetime MWh Savings	Winter kW Savings	Summer kW Savings	Number of Customers Served	Annual MMBTU Savings	Lifetime MMBTU Savings
Residential Programs	92%	90%	98%	56%	n/a	131%	372%	105%	225%	80%	108%	99%
Commercial & Industrial Programs	125%	103%	83%	127%	n/a	-1499%	-1661%	113%	0%	399%	89%	101%
Total	107%	97%	91%	94%	95%	108%	293%	105%	225%	90%	97%	100%

Table 2a. Present Value Benefits - 2021 PLAN

	Total Benefits ($000)[1] Granite State Test	Resource Benefits ($000) / Electric / CAPACITY: Summer Generation	Winter Generation	Transmission	Distribution	Reliability	ENERGY: Winter Peak	Winter Off Peak	Summer Peak	Summer Off Peak	Electric DRIPE	Total Electric Resource Benefits	Non - Electric: Other Fuels	Water Benefit	Total Resource Benefits	Non-Resource Benefits ($000): Fossil Emissions	Other Non-Resource Benefits[2]	Total Non-Resource Benefits
Residential Programs																		
B1 - Home Energy Assistance	**$2,665**	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1,120	$0	$1,120	$162	$1,383	$1,545
A1 - Energy Star Homes	**$3,178**	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$2,716	$0	$2,716	$462	$407	$869
A2 - Home Performance with Energy Star	**$2,456**	$3	$0	$11	$9	$0	$21	$17	$9	$6	$7	$84	$2,082	$0	$2,166	$290	$325	$615
A3 - Energy Star Products	**$2,470**	$0	$0	$0	$0	$0	$11	$13	-$1	$0	$1	$23	$2,164	$0	$2,188	$283	$328	$611
A4 - Home Energy Reports	**$140**	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$130	$0	$130	$10	$20	$29
Sub-Total Residential	**$10,909**	**$3**	**$0**	**$10**	**$9**	**$0**	**$32**	**$30**	**$9**	**$6**	**$8**	**$108**	**$8,213**	**$0**	**$8,320**	**$1,206**	**$2,463**	**$3,669**
Commercial & Industrial Programs																		
C1 - Large Business Energy Solutions	$6,839	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$6,030	$0	$6,030	$809	$904	$1,713
C2 - Small Business Energy Solutions	$4,098	$0	$0	$0	$0	$0	$1	$2	$0	$0	$0	$3	$3,038	$572	$3,614	$484	$456	$940
C6c - C&I Education	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Subtotal Commercial & Industrial	**$10,937**	**$0**	**$0**	**$0**	**$0**	**$0**	**$1**	**$2**	**$0**	**$0**	**$0**	**$3**	**$9,068**	**$572**	**$9,644**	**$1,293**	**$1,361**	**$2,654**
Total	**$21,846**	**$3**	**$0**	**$10**	**$9**	**$0**	**$34**	**$32**	**$9**	**$6**	**$8**	**$111**	**$17,281**	**$572**	**$17,964**	**$2,499**	**$3,824**	**$6,323**

Notes:
(1) The Granite State Test is used as the primary cost test, as approved in Order No. 26,322. Benefits are calculated based on net savings.
(2) Non-resource benefits include NEIs, which are only applied to the Home Energy Asssitance program in the GST primary cost test.
(3) Non-embedded environmental benefits are not included in the GST primary cost test.

Table 2b. Present Value Benefits - 2021 ACTUAL

	Total Benefits ($000)[1] Granite State Test	Resource Benefits / Electric / CAPACITY: Summer Generation	Winter Generation	Transmission	Distribution	Reliability	ENERGY: Winter Peak	Winter Off Peak	Summer Peak	Summer Off Peak	Electric DRIPE	Total Electric Resource Benefits	Non - Electric: Other Fuels Benefits	Water Benefit	Total Resource Benefits	Non-Resource Benefits: Fossil Emissions	Other Non-Resource Benefits[2]	Total Non-Resource Benefits
Residential Programs																		
B1 - Home Energy Assistance	$1,530	$67	$0	$61	$53	$0	$53	$56	$43	$34	$7	$374	$1,001	$2	$1,377	$153	$0	$153
A1 - Energy Star Homes	$1,324	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1,132	$0	$1,132	$192	$170	$362
A2 - Home Performance with Energy Star	$4,213	$25	$0	$25	$22	$0	$12	$11	$18	$14	$3	$130	$3,508	$3	$3,641	$572	$546	$1,118
A3 - Energy Star Products	$2,556	$0	$0	$0	$0	$0	$16	$19	$0	$0	$2	$36	$2,228	$0	$2,263	$293	$339	$632
A4 - Home Energy Reports	$220	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$204	$0	$204	$15	$31	$46
Sub-Total Residential	**$9,842**	**$92**	**$0**	**$86**	**$75**	**$0**	**$82**	**$85**	**$60**	**$47**	**$12**	**$539**	**$8,073**	**$5**	**$8,617**	**$1,225**	**$1,086**	**$2,310**
Commercial & Industrial Programs																		
C1 - Large Business Energy Solutions	$6,896	$0	$0	$0	$0	$0	-$12	-$6	-$11	-$6	-$2	-$37	$6,039	$0	$6,001	$894	$900	$1,795
C2 - Small Business Energy Solutions	$4,385	$0	$0	$0	$0	$0	$1	$1	$0	$0	$0	$3	$3,153	$700	$3,856	$529	$473	$1,003
C6c - C&I Education	$0	$0	$0	$0	$0		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Sub-Total Commercial & Industrial	**$11,281**	**$0**	**$0**	**$0**	**$0**	**$0**	**-$11**	**-$5**	**-$11**	**-$6**	**-$2**	**-$35**	**$9,192**	**$700**	**$9,857**	**$1,424**	**$1,374**	**$2,797**
Total	**$21,123**	**$92**	**$0**	**$86**	**$75**	**$0**	**$71**	**$80**	**$49**	**$41**	**$11**	**$505**	**$17,265**	**$705**	**$18,474**	**$2,648**	**$2,459**	**$5,108**

Notes:
(1) The Granite State Test is used as the primary cost test, as approved in Order No. 26,322. Benefits are calculated based on net savings.
(2) Non-resource benefits include NEIs, which are only applied to the Home Energy Asssitance program in the GST primary cost test.
(3) Non-embedded environmental benefits are not included in the GST primary cost test.

Table 2c. Percent of Plan Present Value Benefits Achieved

	Total Benefits ($000)[1] Granite State Test	Resource Benefits / Electric / CAPACITY: Summer Generation	Winter Generation	Transmission	Distribution	Reliability	ENERGY: Winter Peak	Winter Off Peak	Summer Peak	Summer Off Peak	Electric DRIPE	Total Electric Resource Benefits	Non - Electric: Other Fuels Benefits	Fossil Emissions	Total Resource Benefits	Non-Resource Benefits: Fossil Emissions	Other Non-Resource Benefits[2]	Total Non-Resource Benefits
Residential Programs	90%	3253%	0%	830%	830%	0%	253%	281%	680%	779%	154%	501%	98%	0%	104%	102%	44%	63%
Commercial & Industrial Programs	103%	0%	0%	0%	0%	0%	-719%	-302%	0%	0%	-1063%	-1048%	101%	122%	102%	110%	101%	105%
Total	97%	3253%	0%	830%	830%	0%	211%	251%	551%	681%	130%	455%	100%	123%	103%	106%	64%	81%

Table 3. Performance Incentive Calculation - 2021

Row	Category	Planned	Threshold	Actual	% of Plan	Design Coefficient	Actual Coefficient	Planned PI	125% of Planned PI	Actual PI	Source
1	Lifetime MMBtu Savings	2,116,800	*1,587,600*	2,123,307	100%	2.475%	2.483%	$ 215,885	*$ 269,856*	$ 196,579	Program Cost Effectiveness (Page 1 of 3)
2	Annual MMBtu Savings	146,186	*109,639*	141,342	97%	1.100%	1.064%	$ 95,949	*$ 119,936*	$ 84,215	Program Cost Effectiveness (Page 1 of 3)
3	Total Resource Benefits	$17,964,374		$18,474,474	103%						Present Value Benefits (Page 2 of 3)
4	Total Utility Costs[1]	$8,722,615		$7,918,253	91%						Program Cost Effectiveness (Page 1 of 3)
5	Net Benefits	$9,241,760	*$6,931,319.65*	$10,556,221	114%	1.925%	2.199%	$ 167,910	$ 209,888	$ 174,106	Line 5 minus line 6
6	Total					**5.500%**	**5.745%**	**$ 479,744**	**$ 599,680**	**$ 454,900**	Sum of Rows 1, 2 & 5

Row	Category	Granite State Test Planned	Granite State Test Actual	Source
7	Total Benefits	$ 21,846,243	$ 21,122,921	Present Value Benefits (Page 2 of 3)
8	Performance Incentive	$ 479,744	$ 454,900	from row 6 above
9	Total Utility Costs	$ 8,722,615	$ 7,918,253	from row 4 above
10	**Portfolio GST BCR**	**2.37**	**2.52**	Row 7 Divided by Rows 8+9

Costs, Benefits, and PI Expressed in 2021 Dollars.

[1] Note that in order to avoid a circular reference in the calculation of performance incentive, "Total Utility Costs" does not include the value of PI.

Table 4. Program Expenditures by Category - 2021 ACTUAL

	Evaluation	External Administration	Internal Administration	Internal Implementation	Marketing	Rebates-Services	Total
Residential Programs							
ENERGY STAR Homes	$ 17,682	$ 441	$ 12,271	$ 43,421	$ 12,517	$ 474,678	**$ 561,010**
Home Performance with ENERGY STAR	$ 18,864	$ 471	$ 7,357	$ 46,143	$ 19,302	$ 1,187,733	**$ 1,279,870**
ENERGY STAR Products	$ 17,538	$ 438	$ 11,525	$ 41,166	$ 12,415	$ 752,615	**$ 835,696**
Home Energy Assistance	$ 33,889	$ 845	$ 12,247	$ 98,872	$ 23,862	$ 1,479,298	**$ 1,649,014**
Home Energy Reports	$ 5,330	$ 103	$ 1,990	$ 13,979	$ -	$ 196,874	**$ 218,276**
Subtotal Residential	**$ 93,302**	**$ 2,298**	**$ 45,390**	**$ 243,581**	**$ 68,095**	**$ 4,091,199**	**$ 4,543,866**
Commercial & Industrial Programs							
C&I Education	$ 1,778	$ 44	$ 2,531	$ 4,497	$ 2,384	$ 10,982	**$ 22,215**
Large Business Energy Solutions	$ 44,964	$ 1,105	$ 14,139	$ 130,607	$ 63,087	$ 1,549,622	**$ 1,803,524**
Small Business Energy Solutions	$ 39,890	$ 732	$ 27,209	$ 92,025	$ 56,998	$ 1,331,792	**$ 1,548,647**
Subtotal Commercial & Industrial	**$ 86,632**	**$ 1,881**	**$ 43,879**	**$ 227,129**	**$ 122,470**	**$ 2,892,397**	**$ 3,374,386**
Total	**$ 179,934**	**$ 4,179**	**$ 89,269**	**$ 470,710**	**$ 190,565**	**$ 6,983,596**	**$ 7,918,253**

Erica L. Menard
Director, Rates and Regulatory Affairs
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May 31, 2022

Via Electronic Mail Only

Daniel Goldner
Chairman
New Hampshire Public Utilities Commission
21 South Fruit St., Suite 10
Concord, NH 03301-2429

Dear Chairman Goldner:

Re: DE 17-136, DE 20-092; Liberty Utilities (Granite State Electric) Corp. d/b/a Liberty Energy Efficiency Programs
Performance Incentive Calculation — 2021

Attached for filing with the Commission is Liberty's performance incentive calculation relating to the NHSaves Energy Efficiency Programs for the program year 2021.

Pursuant to the Commission's procedural order issued on January 24, 2022, in Docket Nos. DE 17-136 and DE 20-092, this 2021 report is being filed under Docket No. DE 17-136. The order states,

> "To ensure that filings are made in the correct docket, this procedural order clarifies that filings such as monthly, quarterly, or annual reports for program year 2021, as well as notifications regarding program expenditures made prior to January 1, 2022, should be filed in Docket No. DE 17-136. Program filings for January 1, 2022, or thereafter should be filed in Docket No. DE 20-092."

Thank you for your attention to this matter. Please do not hesitate to call if you have any questions.

Sincerely,

Erica L Menard

Erica L. Menard

Attachments

Cc: DE 17-136 and DE 20-092 Service Lists

NEW HAMPSHIRE PUBLIC UTILITIES COMMISSION

LIBERTY UTILITIES (GRANITE STATE ELECTRIC) CORP.

d/b/a

LIBERTY

ENERGY EFFICIENCY PROGRAMS - 2021 YEAR-END REPORT

NHPUC Docket No. DE 17-136

May 31, 2022

TABLE OF CONTENTS

Table 1a. Program Cost-Effectiveness - 2021 PLAN

	Benefit/Cost Ratios: Granite State Test[1]	Benefits: Granite State Test	Utility Costs ($000 - 2021$)[2]	Customer Costs ($000 - 2021$)[2]	Performance Incentive ($000)	Annual MWh Savings	Lifetime MWh Savings	Winter kW Savings	Summer kW Savings	Number of Customers Served	Annual MMBTU Savings	Lifetime MMBTU Savings
Residential Programs												
B1 - Home Energy Assistance	2.36	$ 2,841	$ 1,202	$ -		129	1,553	16	36	124	3,275	72,982
A1 - Energy Star Homes	1.63	$ 585	$ 359	$ 14		62	1,430	19	1	29	613	14,683
A2 - Home Performance with Energy Star	4.27	$ 2,462	$ 577	$ 286		154	2,210	25	37	94	4,634	83,521
A3 - Energy Star Products	1.82	$ 668	$ 367	$ 35		783	5,043	143	127	13,805	(772)	(296)
A4 - Home Energy Reports	0.77	$ 93	$ 121	$ -		796	796	172	111	10,256	-	-
A6b - Res ISO Forward Capacity Market Expenses	0.00	$ -	$ 27	$ -		-	-	-	-		-	-
Sub-Total Residential	**2.51**	**$ 6,649**	**$ 2,654**	**$ 335**		**1,925**	**11,032**	**375**	**311**	**24,308**	**7,750**	**170,890**
Commercial & Industrial Programs												
C1 - Large Business Energy Solutions	3.67	$ 6,977	$ 1,899	$ 1,671		6,852	91,576	375	339	129	(1,162)	(11,974)
C2 - Small Business Energy Solutions	1.99	$ 2,410	$ 1,209	$ 789		2,817	30,943	317	230	247	(680)	(6,799)
C3 - Municipal Energy Solutions	1.66	$ 277	$ 167	$ 31		333	4,652	45	1	11	(216)	(2,179)
C6b - C&I ISO Forward Capacity Market Expenses	0.00	$ -	$ 63	$ -		-	-	-	-	-	-	-
C6c - C&I Education	0.00	$ -	$ 73	$ -		-	-	-	-	-	-	-
Sub-Total Commercial & Industrial	**2.83**	**$ 9,664**	**$ 3,410**	**$ 2,492**		**10,003**	**127,171**	**737**	**571**	**387**	**(2,058)**	**(20,952)**
Total	**2.69**	**$ 16,313**	**$ 6,064**	**$ 2,826**	**$ 334**	**11,927**	**138,203**	**1,111**	**882**	**24,695**	**5,691**	**149,938**

Notes:
(1) The Granite State Test is used as the primary cost test, as approved in Order No. 36,322, and includes an annual NEI adder of $405.71 per weatherization project in the Home Energy Assistance program.
(2) Utility and Customer Costs and Benefits are expressed in 2021 Dollars.
(3) Per past precedent, discount and inflation rates have been updated for the year in which measures will be installed, and were updated in June 2020 for program year 2021.

Annual kWh Savings	11,927,257	**87.7%**	**kWh > 55%**
Annual MMBTU Savings (in kWh)	1,668,026	12.3%	
	13,595,283	100.0%	

Lifetime kWh Savings	138,202,666	**75.9%**	**kWh > 55%**
Lifetime MMBTU Savings (in kWh)	43,942,558	24.1%	
	182,145,224	100.0%	

Table 1b. Program Cost-Effectiveness - 2021 ACTUAL

	Benefit/Cost Ratios: Granite State Test[1]	Benefits: Granite State Test	Utility Costs ($000 - 2021$)[2]	Customer Costs ($000 - 2021$)[2]	Performance Incentive ($000)	Annual MWh Savings	Lifetime MWh Savings	Winter kW Savings	Summer kW Savings	Number of Customers Served	Annual MMBTU Savings	Lifetime MMBTU Savings
Residential Programs												
B1 - Home Energy Assistance	0.89	$ 1,006	$ 1,128	$ -		369	3,343	71	54	228	1,023	24,723
A1 - Energy Star Homes	16.07	$ 2,550	$ 159	$ 45		173	3,874	36	6	76	2,816	70,876
A2 - Home Performance with Energy Star	7.33	$ 4,534	$ 618	$ 154		183	2,824	112	32	152	7,327	166,539
A3 - Energy Star Products	1.39	$ 688	$ 493	$ 34		566	5,092	117	92	8,061	(216)	3,010
A4 - Home Energy Reports	2.13	$ 169	$ 79	$ -		1,437	1,437	310	200	8,892	-	-
A6b - Res ISO Forward Capacity Market Expenses	0.00	$ -	$ 13	$ -		-	-	-	-	-	-	-
Sub-Total Residential	**3.59**	**$ 8,946**	**$ 2,491**	**$ 233**		**2,729**	**16,569**	**645**	**385**	**17,409**	**10,950**	**265,148**
Commercial & Industrial Programs												
C1 - Large Business Energy Solutions	3.36	$ 4,506	$ 1,340	$ 2,215		4,248	59,574	318	269	83	(1,718)	(22,058)
C2 - Small Business Energy Solutions	2.41	$ 3,869	$ 1,608	$ 2,293		3,742	49,571	276	278	303	(1,459)	(18,410)
C3 - Municipal Energy Solutions	6.66	$ 1,110	$ 167	$ 529		292	4,168	41	14	17	1,316	36,316
C6b - C&I ISO Forward Capacity Market Expenses	0.00	$ -	$ 17	$ -		-	-	-	-	-	-	-
C6c - C&I Education	0.00	$ -	$ 22	$ -		-	-	-	-	-	-	-
Subtotal Commercial & Industrial	**3.01**	**$ 9,485**	**$ 3,154**	**$ 5,037**		**8,281**	**113,313**	**635**	**561**	**403**	**(1,861)**	**(4,151)**
Total	**3.26**	**$ 18,430**	**$ 5,645**	**$ 5,270**	**$ 335**	**11,010**	**129,883**	**1,281**	**946**	**17,812**	**9,090**	**260,996**

Notes:
(1) The Granite State Test is used as the primary cost test, as approved in Order No. 36,322, and includes an annual NEI adder of $405.71 per weatherization project in the Home Energy Assistance program.
(2) Utility and Customer Costs and Benefits are expressed in 2021 Dollars.
(3) Per past precedent, discount and inflation rates have been updated for the year in which measures will be installed, and were updated in June 2020 for program year 2021.

Annual kWh Savings	11,009,746	**81%**	**kWh > 55%**
Annual MMBTU Savings (in kWh)	2,663,993	19%	
Total Energy Savings	13,673,739	100%	

Lifetime kWh Savings	129,882,646	**63%**	**kWh > 55%**
Lifetime MMBTU Savings (in kWh)	76,493,684	37%	
Total Energy Savings	206,376,330	100%	

Table 1c. Percent of Plan Program Cost-Effectiveness Targets Achieved

	Benefit/Cost Ratios: Granite State Test[1]	Benefits: Granite State Test	Utility Costs ($000 - 2021$)[2]	Customer Costs ($000 - 2021$)[2]	Performance Incentive ($000)	Annual MWh Savings	Lifetime MWh Savings	Winter kW Savings	Summer kW Savings	Number of Customers Served	Annual MMBTU Savings	Lifetime MMBTU Savings
Residential Programs	143%	135%	94%	70%	n/a	142%	150%	172%	124%	72%	141%	155%
Commercial & Industrial Programs	106%	98%	92%	202%	n/a	83%	89%	86%	98%	104%	90%	20%
Total	121%	113%	93%	186%	100%	92%	94%	115%	107%	72%	160%	174%

Table 2a. Present Value Benefits - 2021 PLAN

	Total Benefits ($000)[1]	Resource Benefits ($000)														Non-Resource Benefits ($000)		
		Electric											Non - Electric					
		CAPACITY					ENERGY											
	Granite State Test	Summer Generation	Winter Generation	Transmission	Distribution	Reliability	Winter Peak	Winter Off Peak	Summer Peak	Summer Off Peak	Electric DRIPE	Total Electric Resource Benefits	Other Fuels Benefits	Fossil Emissions	Total Resource Benefits	Fossil Emissions	Other Non-Resource Benefits[2]	Total Non-Resource Benefits
Residential Programs																		
B1 - Home Energy Assistance	**$2,841**	$51	$0	$52	$45	$0	$19	$17	$35	$27	$5	$252	$1,736	$0	$1,987	$122	$731	$853
A1 - Energy Star Homes	**$585**	$0	$0	$0	$0	$0	$45	$52	$0	$0	$4	$103	$456	$2	$560	$24	$140	$164
A2 - Home Performance with Energy Star	**$2,462**	$51	$0	$54	$46	$0	$40	$42	$34	$26	$8	$301	$2,036	$0	$2,337	$125	$584	$709
A3 - Energy Star Products	**$668**	$66	$0	$80	$69	$0	$117	$107	$63	$47	$30	$579	-$9	$98	$668	$1	$142	$143
A4 - Home Energy Reports	**$93**	$7	$0	$11	$9	$0	$22	$18	$10	$7	$8	$93	$0	$0	$93	$0	$23	$23
A6b - Res ISO Forward Capacity Market Expenses	**$0**	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Sub-Total Residential	**$6,649**	**$175**	**$0**	**$197**	**$171**	**$0**	**$243**	**$236**	**$143**	**$108**	**$55**	**$1,328**	**$4,218**	**$100**	**$5,646**	**$272**	**$1,621**	**$1,893**
Commercial & Industrial Programs																		
C1 - Large Business Energy Solutions	$6,977	$303	$0	$348	$301	$0	$2,099	$1,160	$1,690	$875	$402	$7,177	-$186	$0	$6,992	-$15	$699	$685
C2 - Small Business Energy Solutions	$2,410	$194	$0	$225	$195	$0	$607	$399	$458	$291	$154	$2,523	-$105	$0	$2,418	-$8	$242	$234
C3 - Municipal Energy Solutions	$277	$1	$0	$1	$1	$0	$77	$89	$62	$63	$19	$313	-$34	$0	$279	-$3	$28	$25
C6b - C&I ISO Forward Capacity Market Expenses	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
C6c - C&I Education	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Subtotal Commercial & Industrial	**$9,664**	**$498**	**$0**	**$573**	**$496**	**$0**	**$2,783**	**$1,648**	**$2,211**	**$1,230**	**$574**	**$10,013**	**-$325**	**$0**	**$9,689**	**-$25**	**$969**	**$944**
Total	**$16,313**	**$673**	**$0**	**$770**	**$667**	**$0**	**$3,026**	**$1,884**	**$2,354**	**$1,337**	**$630**	**$11,342**	**$3,893**	**$100**	**$15,335**	**$246**	**$2,590**	**$2,836**

Notes:
(1) The Granite State Test is used as the primary cost test, as approved in Order No. 26,322. Benefits are calculated based on net savings.
(2) Non-resource benefits include NEIs, which are only applied to the Home Energy Asssitance program in the GST primary cost test.
(3) Non-embedded environmental benefits are not included in the GST primary cost test.

Table 2b. Present Value Benefits - 2021 ACTUAL

	Total Benefits ($000)[1]	Resource Benefits														Non-Resource Benefits		
		Electric											Non - Electric					
		CAPACITY					ENERGY											
	Granite State Test	Summer Generation	Winter Generation	Transmission	Distribution	Reliability	Winter Peak	Winter Off Peak	Summer Peak	Summer Off Peak	Electric DRIPE	Total Electric Resource Benefits	Other Fuels Benefits	Fossil Emissions	Total Resource Benefits	Fossil Emissions	Other Non-Resource Benefits[2]	Total Non-Resource Benefits
Residential Programs																		
B1 - Home Energy Assistance	$1,006	$37	$0	$44	$38	$0	$80	$74	$37	$30	$19	$358	$601	$2	$961	$45	$0	$45
A1 - Energy Star Homes	$2,550	$7	$0	$7	$6	$0	$85	$96	$5	$4	$8	$220	$2,193	$17	$2,429	$121	$603	$724
A2 - Home Performance with Energy Star	$4,534	$55	$0	$54	$47	$0	$35	$33	$62	$47	$9	$342	$3,899	$2	$4,243	$291	$1,060	$1,352
A3 - Energy Star Products	$688	$64	$0	$74	$65	$0	$120	$119	$56	$42	$25	$565	$60	$59	$683	$5	$156	$161
A4 - Home Energy Reports	$169	$13	$0	$20	$17	$0	$40	$33	$19	$13	$15	$169	$0	$0	$169	$0	$42	$42
A6b - Res ISO Forward Capacity Market Expenses	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Sub-Total Residential	**$8,946**	**$177**	**$0**	**$200**	**$173**	**$0**	**$359**	**$355**	**$179**	**$136**	**$75**	**$1,654**	**$6,752**	**$79**	**$8,485**	**$461**	**$1,862**	**$2,323**
Commercial & Industrial Programs																		
C1 - Large Business Energy Solutions	$4,506	$288	$0	$320	$278	$0	$1,120	$752	$1,169	$706	$244	$4,876	-$342	$0	$4,534	-$29	$453	$425
C2 - Small Business Energy Solutions	$3,869	$300	$0	$334	$289	$0	$1,016	$619	$914	$488	$213	$4,174	-$285	$4	$3,893	-$24	$389	$365
C3 - Municipal Energy Solutions	$1,110	$21	$0	$22	$19	$0	$70	$72	$60	$51	$16	$331	$703	$0	$1,035	$75	$103	$179
C6b - C&I ISO Forward Capacity Market Expenses	$0	$0	$0	$0	$0		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
C6c - C&I Education	$0	$0	$0	$0	$0		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Sub-Total Commercial & Industrial	**$9,485**	**$610**	**$0**	**$676**	**$586**	**$0**	**$2,206**	**$1,443**	**$2,143**	**$1,245**	**$473**	**$9,381**	**$76**	**$4**	**$9,462**	**$23**	**$946**	**$968**
Total	**$18,430**	**$786**	**$0**	**$876**	**$759**	**$0**	**$2,565**	**$1,798**	**$2,322**	**$1,381**	**$548**	**$11,035**	**$6,828**	**$84**	**$17,947**	**$484**	**$2,807**	**$3,291**

Notes:
(1) The Granite State Test is used as the primary cost test, as approved in Order No. 26,322. Benefits are calculated based on net savings.
(2) Non-resource benefits include NEIs, which are only applied to the Home Energy Asssitance program in the GST primary cost test.
(3) Non-embedded environmental benefits are not included in the GST primary cost test.

Table 2c. Percent of Plan Present Value Benefits Achieved

	Total Benefits ($000)[1]	Resource Benefits														Non-Resource Benefits		
		Electric											Non - Electric					
		CAPACITY					ENERGY											
	Granite State Test	Summer Generation	Winter Generation	Transmission	Distribution	Reliability	Winter Peak	Winter Off Peak	Summer Peak	Summer Off Peak	Electric DRIPE	Total Electric Resource Benefits	Other Fuels Benefits	Fossil Emissions	Total Resource Benefits	Fossil Emissions	Other Non-Resource Benefits	Total Non-Resource Benefits
Residential Programs	135%	101%	0%	101%	101%	0%	148%	151%	126%	126%	136%	125%	160%	79%	150%	170%	115%	123%
Commercial & Industrial Programs	98%	122%	0%	118%	118%	0%	79%	88%	97%	101%	82%	94%	-23%	1153%	98%	-90%	98%	103%
Total	113%	117%	0%	114%	114%	0%	85%	95%	99%	103%	87%	97%	175%	83%	117%	196%	108%	116%

Table 3. Performance Incentive Calculation - 2021

Row	Category	Planned	Threshold	Actual	% of Plan	Design Coefficient	Actual Coefficient	Planned PI	125% of Planned PI	Actual PI	Source
1	Lifetime kWh Savings	138,202,666	*103,651,999*	129,882,646	94%	1.925%	1.809%	$ 116,738	$ 145,922	$ 102,121	Program Cost Effectiveness (Page 1 of 3)
2	Annual kWh Savings	11,927,257	*8,945,443*	11,009,746	92%	0.550%	0.508%	$ 33,354	$ 41,692	$ 28,658	Program Cost Effectiveness (Page 1 of 3)
3	Summer Peak Demand kW	881.8427	*573.1977*	945.7961	107%	0.660%	0.708%	$ 40,024	$ 50,030	$ 39,958	Program Cost Effectiveness (Page 1 of 3)
4	Winter Peak Demand kW	1,111.2308	*722.3000*	1,280.5858	115%	0.440%	0.507%	$ 26,683	$ 33,354	$ 28,623	Program Cost Effectiveness (Page 1 of 3)
5	Total Resource Benefits	$ 15,335,372		17,946,536	117%						Present Value Benefits (Page 2 of 3)
6	Total Utility Costs[1]	$ 6,064,297		5,644,837	93%						Program Cost Effectiveness (Page 1 of 3)
7	Net Benefits	$ 9,271,075	*$ 6,953,307*	$ 12,301,700	133%	1.925%	2.406%	$ 116,738	$ 145,922	$ 135,829	Row 5 Minus Row 6
8	Total					**5.500%**	**5.938%**	**$ 333,536**	**$ 416,920**	**$ 335,189**	Sum of Rows 1, 2, 3, 4 & 7

Row	Category	Granite State Test Planned	Granite State Test Actual	Source
9	Total Benefits	$ 16,312,966	$ 18,430,379	Present Value Benefits (Page 2 of 3)
10	Performance Incentive	$ 333,536	$ 335,189	from row 8 above
11	Total Utility Costs	$ 6,064,297	$ 5,644,837	from row 6 above
12	**Portfolio GST BCR**	**2.55**	**3.08**	row 9 divided by rows 10+11

Costs, Benefits, and PI Expressed in 2021 Dollars.

[1] Note that in order to avoid a circular reference in the calculation of performance incentive, "Total Utility Costs" does not include the value of PI.

Table 4. Program Expenditures by Category - 2021 ACTUAL

	Evaluation	External Administration	Internal Administration	Internal Implementation	Marketing	Rebates-Services	Total
Residential Programs							
ENERGY STAR Homes	$ 8,747	$ 1,022	$ 3,571	$ 26,738	$ 5,169	$ 113,379	**$ 158,626**
Home Performance with ENERGY STAR	$ 11,697	$ 293	$ 5,043	$ 43,358	$ 9,155	$ 548,757	**$ 618,302**
ENERGY STAR Products	$ 7,446	$ 187	$ 5,613	$ 28,941	$ 5,288	$ 446,317	**$ 493,790**
Home Energy Assistance	$ 24,357	$ 610	$ 11,383	$ 90,591	$ 18,643	$ 982,737	**$ 1,128,321**
Home Energy Reports	$ 2,246	$ 44	$ 2,792	$ 6,038	$ -	$ 67,875	**$ 78,995**
ISO-NE FCM	$ 13,147	$ -	$ -	$ -	$ -	$ -	**$ 13,147**
Subtotal Residential	**$ 67,639**	**$ 2,156**	**$ 28,402**	**$ 195,665**	**$ 38,254**	**$ 2,159,065**	**$ 2,491,181**
Commercial & Industrial Programs							
C&I Education	$ 1,508	$ 37	$ 1,778	$ 7,006	$ 1,282	$ 10,409	**$ 22,021**
Large Business Energy Solutions	$ 39,357	$ 964	$ 31,719	$ 128,587	$ 30,741	$ 1,108,668	**$ 1,340,036**
Small Business Energy Solutions	$ 25,214	$ 792	$ 11,139	$ 112,359	$ 19,965	$ 1,438,530	**$ 1,608,000**
Municipal	$ 2,783	$ 44	$ 2,180	$ 9,587	$ 1,889	$ 150,257	**$ 166,740**
ISO-NE FCM	$ 17,428	$ -	$ -	$ -	$ -	$ -	**$ 17,428**
Subtotal Commercial & Industrial	**$ 86,290**	**$ 1,838**	**$ 46,817**	**$ 257,540**	**$ 53,877**	**$ 2,707,864**	**$ 3,154,225**
Total	**$ 153,929**	**$ 3,994**	**$ 75,218**	**$ 453,205**	**$ 92,131**	**$ 4,866,928**	**$ 5,645,406**

Table 5. Revenue and Expense Balance
12 Months Actual 2021

			2021
1	**Beginning Balance: 1/1/2021**	(Over) / Under	$825,576.61
Revenues			
2	System Benefits Charge		$4,762,863.95
3	RGGI Funding		$217,037.00
4	FCM Payments		$599,079.00
5	Interest		$60,747.19
6	**Total Revenues**	Sum Lines 2 - 5	$5,639,727.14
Expenses			
7	Program Expenses		$5,645,405.52
8	Performance Incentive - 2021	Table 3a	$335,188.99
9	**Total Expenses**	Sum Lines 7 - 8	$5,980,594.51
10	**Ending Balance: 12/31/2021**	Lines 1 + 6 - 9	$484,709.25

Table 6a. Lost Base Revenue - 2021 Actual
Actual Monthly and Cumulative Savings (kWh) and Lost Base Revenue
January 1, 2021 to June 30, 2021

Line	Description	Carryforward as of 12/31/2020	Actual Jan 2021	Actual Feb 2021	Actual Mar 2021	Actual Apr 2021	Actual May 2021	Actual June 2021	Actual Total thru Jun-21	Cumulative thru June 2021 LBR Savings
	Col. A	Col. B	Col. C	Col. D	Col. E	Col. F	Col. G	Col. H	Col. I	Col. J
1	Residential Annual kWh Savings (2019 - 2021)	5,922,999	403,638	252,587	212,307	207,972	145,814	231,681	1,453,999	7,376,998
2	C&I Annual kWh Savings (2019-2021)	17,992,446	140,405	202,325	1,221,419	679,065	514,519	753,824	3,511,557	21,504,003
3	C&I Annual Installed kW Savings	1,128	4.910	0.060	210.790	20.880	80.900	0.000	317.540	1445.243
										Cumulative 2017 - 2021
4	Monthly Residential Savings (2021)	493,583	33,637	21,049	17,692	17,331	12,151	19,307		
5	Cumulative Residential Savings	493,583	527,220	548,269	565,961	583,292	595,443	614,750		3,434,934
6	Average Residential Distribution Rate		0.05637	0.05637	0.05637	0.05637	0.05637	0.05637		
7	Lost Residential Revenue		$ 29,719	$ 30,906	$ 31,903	$ 32,880	$ 33,565	$ 34,653		$ 193,627
										Cumulative 2017 - 2021
8	Monthly C&I Savings (2021)	1,499,371	11,700	16,860	101,785	56,589	42,877	62,819		
9	Cumulative C&I Savings	1,499,371	1,511,071	1,527,931	1,629,716	1,686,305	1,729,182	1,792,000		9,876,205
10	Average C&I kWh Distribution Rate		0.01077	0.01077	0.01077	0.01077	0.01077	0.01077		
11	Lost C&I kWH Revenue		$ 16,274	$ 16,456	$ 17,552	$ 18,162	$ 18,623	$ 19,300		$ 106,367
12	Monthly C&I kW Savings (2021)	1,127.703	4.91	0.06	210.79	20.88	80.90	-		
13	Cumulative Monthly C&I kW Savings	1,127.703	1,132.613	1,132.673	1,343.463	1,364.343	1,445.243	1,445.243		7,863.578
14	Average C&I Demand Rate		$ 9.0740	$ 9.074	$ 9.074	$ 9.074	$ 9.074	$ 9.074		
15	Lost C&I Demand Revenue		$ 10,277	$ 10,278	$ 12,191	$ 12,380	$ 13,114	$ 13,114		$ 71,354
16	Total Lost C&I kWh and Demand Revenue		$ 26,552	$ 26,734	$ 29,743	$ 30,542	$ 31,737	$ 32,414		$ 177,721
17	**Total Lost Revenue**		**$ 56,271**	**$ 57,640**	**$ 61,646**	**$ 63,422**	**$ 65,303**	**$ 67,067**		**$ 371,348**

Lines 1-2: Actual Annualized Residential + Commercial Savings
Line 3: Actual Annualized kW Savings
Line 4: Line 1 / 12
Line 5: Prior Month Line 5 + Current Month Line 4
Line 6: GSE Avg Distribution Rates, Line 5, Col. E
Line 7: Line 5 x Line 6
Line 8: Actual Monthly Savings
Line 9: Cumalative Historical Savings Prior Month Line 9 + Current Month Line 8
Line 10: GSE Avg Distribution Rates, Line 12 Col. E
Line 11: Line 9 x Line 10
Line 12: Line 3 / 12
Line 13: Prior Month Line 13 + Current Month Line 12
Line 14: GSE Avg Distribution Rates, Line 17, Col. E
Line 15: Line 13 x Line 14
Line 16: Line 11 + Line 15
Line 17: Line 7 + Line 16

Table 6b. Lost Base Revenue - 2021 Actual
Actual C&I kW Savings - New Component Beginning in Year 2019
January 1, 2021 to June 30, 2021

Line No.	Description		Liberty
1	Gross Annualized kWh Savings		12,564,930
2	Maximum Demand Factor (MDF)		Varies by measure
3	Extended Max. Load Reduction kW		1,921.1
4	% kW Demand Reduction at Customer Peak		Varies by measure
5	Sub-Total Customer Peak kW Reduction		1,471.7
6	% Net to Gross		100.00%
7	Sub-Total Customer Peak kW Reduction		1,471.7
8	% In-Service Rate		100.00%
9	Sub-Total Customer Peak kW Reduction		1,471.7
10	% kW Realization Rate		Varies by measure
11	Sub-Total Customer Peak kW Reduction		7,863.6
12	% Billing Adjustment to Reflect Ratchets (1)		100.00%
13	Sub-Total Customer Peak kW Reduction		7,863.6
14	% Retirement Adjustment		100.00%
15	Total Customer Peak kW Reduction, Full Year		7,863.6
16	% Annual Savings Achieved in First Year		n/a
17	Total Customer Peak Red. in First Year		7,863.6
18	Annualized (x12)		94,362.9
19	Average Distribution Rate (ADR)	$	9.074
20	LBR Calculation	$	71,354

Comments:
Above schedule mirrors the Template recommended by the LBRWG Report (p.6)
Gross Annualized kWh Savings includes 2021 Jan - June (1,689,664 kWh), 2020 (6,537,396 kWh) and 2019 (4,337,870 kWh)
Extended Max. Load Reduction kW includes 2021 Jan - June (317.5 kW), 2020 (786.7 kW) and 2019 (816.80 kW)
Sub-Total Customer Peak kW Reduction includes 2021 Jan - June (26.4 kW), 2020 (593.4 kW) and 2019 (534.3 kW)

Table 6c. Lost Base Revenue - 2021 Actual
Actual Calculation for LBR New Methodology for Year 2019 - 2021
January 1, 2021 to June 30, 2021

	Description	Residential kWh	Commercial kWh	C&I kW	Total
	Legacy (Measures Installed in 2017 and 2018): (1)				
1	Program Year 2017 Actual LBR Savings (2)	-	-	-	-
2	2021 Average Distribution Rate (ADR)	$ 0.0564	$ 0.0108	$ -	
3	Sub-Total LBR	$ -	$ -	$ -	$ -
4	Program Year 2018 Estimated LBR Savings	$ -	$ -	-	-
5	2020 Average Distribution Rate (ADR)	$ 0.0564	$ 0.0108	$ -	
6	Sub-Total LBR	$ -	$ -	$ -	$ -
7	Sub-Total Legacy (Measures Installed in 2017 and 2018)	-	-	-	-
8	Sub-Total Legacy LBR	$ -	$ -	$ -	$ -
	New Methodology (Measures Installed in 2020 and forward):				
9	Program Year 2021 Estimated LBR Savings to be achieved (annualized)	7,376,998	21,504,003	1,445	28,882,446
10	Program Year 2021 Estimated LBR Savings to be achieved in 2021	3,434,934	9,876,205	7,864	13,319,003
11	2021 Average Distribution Rate (ADR)	$ 0.0564	$ 0.0108	$ 9.0740	
12	Sub-Total LBR (Line 2 x Line 3)	$ 193,627	$ 106,367	$ 71,354	$ 371,348
13	**Total Actual LBR - Year 2021**	$ 193,627	$ 106,367	$ 71,354	$ 371,348

Comments:
New methology disaggregates kWh and kW components as specified in the Settlement Agreement in DE 17-136 (Order No. 26,095).

Table 7. Calculation of Average Distribution Rates Excluding Customer, Meter, and per Luminaire Charges
Based on Jan 1, 2021 to June 30, 2021

		2021				
Line	Rate Class	Delivery kWh		Distribution Revenue Excluding Fixed Charges		Average $/kWh
	Col. A	Col. B		Col. C		Col. D
1	Residential Rate D	135,915,277	$	7,792,106		
2	Residential TOU Rate D-10 All kWh	3,171,251	$	135,936		
3	Residential Electric Heat Rate T	8,936,983	$	416,081		
4	Residential Subtotal (kWh only)	148,023,511	$	8,344,122	$	0.05637
5	General Service Rate G-1 All kWh	178,515,935	$	688,939		
6	General Service Rate G-1 Credit for High Voltage (KV)	-	$	-		
7	General Service Rate G-2 All kWh	72,898,353	$	186,987		
8	General Service Rate G-2 Credit for High Voltage (KV)	-	$	-		
9	General Service Rate G-3 All kWh	44,089,496	$	2,298,964		
10	Commercial Electric Heat Rate V All kWh	172,209	$	9,228		
11	Commercial and Industrial Subtotal (kWh only)	295,675,993		3,184,118	$	0.01077
12	Outdoor Lighting Rate M	-	$	-		
13	Total Retail	443,699,504	$	11,528,240	$	0.02598

Line	Rate Class	KW		Distribution Revenue		$/KW
14	General Service Rate G-1 Demand Charge (KW)	451,731	$	4,099,006		
15	General Service Rate G-2 Demand Charge (KW)	-	$	-		
16	Total Retail per KW	451,731	$	4,099,006	$	9.07400

*Excludes customer charge and street light luminaire charges.

Northern Utilities, Inc.
NHPUC Docket No. DE 17-136 (DE 20-092)
2021 Annual Report – Lost Base Revenue

In accordance with the requirements of the Settlement Agreement approved by the New Hampshire Public Utilities Commission in Order No. 26,553, dated November 12, 2021 in DE 20-092, Northern Utilities, Inc. ("NUI") herein provides it's calculation of lost base revenue ("LBR") for 2021. A description of how the Average Distribution Rate ("ADR") for lost revenue was calculated, including information on the inclusion or exclusion of relevant inputs such as customer charges and meter charges is included herein. As required, the billing determinants in these calculations are based on 2021 data and rates in effect throughout 2021. The reconciliation of LBR with revenue collected through the Lost Revenue Rate is also provided as part of this report. The contents of the report are provided below.

Page 1 provides the total LBR for January through December 2021. The calculation is based on the therm savings provided on page 3 and the ADRs provided on page 4.

Page 2 provides a reconciliation of the 2021 LBR from page 1 with revenues collected through the Lost Revenue Rate.

Page 3 provides program year 2021 savings for the LBR calculations.

Pages 4a and 4b provide detail of the savings adjustments associated with the Company's base rate case, DG 21-104.

Page 5 provides the calculation of the ADR for the January 1 to April 30, 2021 period, May-October 2021 period, October 2021 and the November-December 2021 period. The periods reflect seasonal rate changes, the October 1, 2021 rate change reflects temporary rates related to the Company's base rate case, DG 21-104.

Page 6 provides supporting detail for the ADR calculated on page 4.

Pages 7 through 10 provide supporting documentation of the customer charges and distribution rates in effect January 1 to April 30, 2021, which are used in the calculations on page 5.

Pages 11 through 16 provide supporting documentation of the customer charges and distribution rates in effect May 1 to September 30, 2021, which are used in the calculations on page 5.

Pages 17 through 20 provide supporting documentation of the customer charges and distribution rates in effect October 2021, which are used in the calculations on page 5.

Pages 21 through 24 provide supporting documentation of the customer charges and distribution rates in effect November 1 to December 31, 2021, which are used in the calculations on page 5.

Page 25 provides supporting documentation for billing determinants used in the ADR calculations. This data was extracted from the company's billing system. Note that customer counts for each rate class shown on page 5 were derived by dividing customer charge revenue by the customer charge in effect. This method was used since customer counts change throughout the month. Dividing customer charge revenue by the customer charge in effect results in a customer count that reflects the billing determinant for the month. As indicated above, the ADR does not include customer charges so this method has no impact on LBR.

With respect to the calculation of ADR, as shown on page 5, NUI calculated an ADR for each sector by dividing the total therm distribution revenue by the therms for the applicable time period. Details by class are shown on page 6. As shown, the therm distribution revenue is calculated by multiplying the distribution rates that were billed for the period by the billing determinants for the same period. As indicated above, NUI calculated ADR for four periods (January-April 2021, May-September 2021, October 2021 and November-December 2021), corresponding to distribution rate changes in effect in 2021. The January through April period uses rates in effect for the Winter Season. The May through September period uses Summer Season rates. October reflects Summer season plus temporary rates. The November through December period uses Winter Season rates.

Northern Utilities
Actual Monthly and Cumulative Savings (Therms) and Lost Base Revenue
January 1, 2020 to December 31, 2021

Line	Description	12/31/2020	Actual Jan-21	Actual Feb-21	Actual Mar-21	Actual Apr-21	Actual May-21	Actual Jun-21	Actual Jul-21	Actual Aug-21	Actual Sep-21	Actual Oct-21	Actual Nov-21	Actual Dec-21	2021 Annual Savings
	Col. A	Col. B	Col. C	Col. D	Col. E	Col. F	Col. G	Col. H	Col. I	Col. J	Col. K	Col. L	Col. M	Col. N	Col. O
1	Residential Annualized Savings 2017	70,756										(70,756)			(70,756)
2	Residential Annualized Savings 2018	115,768										(115,768)			(115,768)
3	Residential Annualized Savings 2019	162,616										(162,616)			(162,616)
4	Residential Annualized Savings 2020	145,176										(57,842)			(57,842)
5	Residential Annualized Savings 2021	-	11,550	11,661	32,632	4,797	15,086	16,395	13,592	12,079	4,203	3,362	27,109	3,320	155,786
6	Residential Retirements (2020 Savings)		-	-	-	-	-	-	-	(17,586)	-	(12,936)	-	(17,456)	(47,977)
7	Total 2021 Residential Savings Activity		11,550	11,661	32,632	4,797	15,086	16,395	13,592	(5,506)	4,203	(416,555)	27,109	(14,135)	(299,172)
8	C&I Annualized Savings 2017	265,574										(265,574)			(265,574)
9	C&I Annualized Savings 2018	182,120										(182,120)			(182,120)
10	C&I Annualized Savings 2019	241,161										(241,161)			(241,161)
11	C&I Annualized Savings 2020	242,412										(56,057)			(56,057)
12	C&I Annualized Savings 2021	-	-	2,517	15,045	381	-	4,072	6,680	10,660	16,982	354	3,003	137,921	197,615
13	C&I Retirements		-	-	-	-	-	-	-	-	-	-	-	-	-
14	Total 2021 C&I Savings Activity		-	2,517	15,045	381	-	4,072	6,680	10,660	16,982	(744,558)	3,003	137,921	

Line	Description	12/31/2020	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Total 2021 LBR
15	Monthly Incremental Residential Savings		-	-	-	-	-	-	-	-	-	(29,095)	-	-	(29,095)
16	Cumulative Residential Savings (17, 18 & 19)	29,095	29,095	29,095	29,095	29,095	29,095	29,095	29,095	29,095	29,095	-	-	0	261,855
17	Average Residential Distribution Rate		0.6915	0.6915	0.6915	0.6915	0.6109	0.6109	0.6109	0.6109	0.6109	0.6792	0.7598	0.7598	
18	Lost Residential Revenue		$ 20,119	$ 20,119	$ 20,119	$ 20,119	$ 17,774	$ 17,774	$ 17,774	$ 17,774	$ 17,774	$ -	$ -	$ -	$ 169,347
19	Monthly Incremental Residential Savings		-	-	-	-	-	-	-	(1,465)	-	(5,898)	-	(1,455)	(8,818)
20	Cumulative Residential Savings (2020)	12,098	12,098	12,098	12,098	12,098	12,098	12,098	12,098	10,633	10,633	4,734	4,734	3,280	118,700
21	Average Residential Distribution Rate		0.6915	0.6915	0.6915	0.6915	0.6109	0.6109	0.6109	0.6109	0.6109	0.6792	0.7598	0.7598	
22	Lost Residential Revenue		$ 8,366	$ 8,366	$ 8,366	$ 8,366	$ 7,391	$ 7,391	$ 7,391	$ 6,495	$ 6,495	$ 3,216	$ 3,597	$ 2,492	$ 77,931
23	Monthly Incremental Residential Savings		963	972	2,719	400	1,257	1,366	1,133	1,007	350	280	2,259	277	12,982
24	Cumulative Residential Savings (2021)	0	963	1,934	4,654	5,053	6,311	7,677	8,809	9,816	10,166	10,446	12,706	12,982	91,517
25	Average Residential Distribution Rate		0.6915	0.6915	0.6915	0.6915	0.6109	0.6109	0.6109	0.6109	0.6109	0.6792	0.7598	0.7598	
26	Lost Residential Revenue		$ 666	$ 1,338	$ 3,218	$ 3,494	$ 3,855	$ 4,690	$ 5,382	$ 5,997	$ 6,211	$ 7,095	$ 9,654	$ 9,864	$ 61,462
27	Monthly C&I Savings		-	-	-	-	-	-	-	-	-	(57,405)	-	-	(57,405)
28	Cumulative C&I Savings (17, 18 & 19)	57,405	57,405	57,405	57,405	57,405	57,405	57,405	57,405	57,405	57,405	-	-	-	516,641
29	Average C&I Distribution Rate		0.2004	0.2004	0.2004	0.2004	0.1183	0.1183	0.1183	0.1183	0.1183	0.1392	0.2191	0.2191	
30	Lost C&I Revenue		$ 11,504	$ 11,504	$ 11,504	$ 11,504	$ 6,791	$ 6,791	$ 6,791	$ 6,791	$ 6,791	$ -	$ -	$ -	$ 79,970
31	Monthly C&I Savings		-	-	-	-	-	-	-	-	-	(4,671)	-	-	(4,671)
32	Cumulative C&I Savings (2020)	20,201	20,201	20,201	20,201	20,201	20,201	20,201	20,201	20,201	20,201	15,530	15,530	15,530	228,398
33	Average C&I Distribution Rate		0.2004	0.2004	0.2004	0.2004	0.1183	0.1183	0.1183	0.1183	0.1183	0.1392	0.2191	0.2191	
34	Lost C&I Revenue		$ 4,048	$ 4,048	$ 4,048	$ 4,048	$ 2,390	$ 2,390	$ 2,390	$ 2,390	$ 2,390	$ 2,162	$ 3,403	$ 3,403	$ 37,109
35	Monthly C&I Savings		-	210	1,254	32	-	339	557	888	1,415	30	250	11,493	16,468
36	Cumulative C&I Savings (2021)	-	-	210	1,464	1,495	1,495	1,835	2,391	3,280	4,695	4,724	4,975	16,468	43,031
37	Average C&I Distribution Rate		0.2004	0.2004	0.2004	0.2004	0.1183	0.1183	0.1183	0.1183	0.1183	0.1392	0.2191	0.2191	
38	Lost C&I Revenue		$ -	$ 42	$ 293	$ 300	$ 177	$ 217	$ 283	$ 388	$ 555	$ 658	$ 1,090	$ 3,608	$ 7,611
39	**Total Lost Revenue**		**$ 44,703**	**$ 45,417**	**$ 47,548**	**$ 47,831**	**$ 38,378**	**$ 39,252**	**$ 40,010**	**$ 39,835**	**$ 40,216**	**$ 13,130**	**$ 17,743**	**$ 19,367**	**433,430**

Northern Utilities
Lost Revenue Reconciliation
2021

Line	Sector / Description	Unit	Prior	Actual Jan-21	Actual Feb-21	Actual Mar-21	Actual Apr-21	Actual May-21	Actual Jun-21	Actual Jul-21	Actual Aug-21	Actual Sep-21	Actual Oct-21	Actual Nov-21	Actual Dec-21	Total
1	**RESIDENTIAL**															
2	**Beginning Balance - (Over)/Under**	$'s		$ 83,060	$ 45,094	$ (448)	$ (40,386)	$ (44,771)	$ (39,846)	$ (21,380)	$ 862	$ 23,415	$ 46,326	$ 47,197	$ 43,774	
3	**COSTS**															
4	Lost Distribution Revenue	**$'s**		$ 29,151	$ 29,823	$ 31,703	$ 31,979	$ 29,020	$ 29,855	$ 30,546	$ 30,266	$ 30,480	$ 10,311	$ 13,251	$ 12,356	308,740
5																
6	**REVENUE**															
7	Revenue Through Lost Revenue Rate	**$'s**		$ 67,293	$ 75,421	$ 71,584	$ 36,251	$ 23,978	$ 11,307	$ 8,277	$ 7,746	$ 7,662	$ 9,568	$ 16,796	$ 16,064	351,946
8																
9	(Over)/Under-Recovery (Exc interest)			$ 44,918	$ (504)	$ (40,330)	$ (44,658)	$ (39,729)	$ (21,298)	$ 890	$ 23,382	$ 46,233	$ 47,069	$ 43,652	$ 40,066	
10																
11	**INTEREST**															
12	Average Monthly Balance			$ 63,989	$ 22,295	$ (20,389)	$ (42,522)	$ (42,250)	$ (30,572)	$ (10,245)	$ 12,122	$ 34,824	$ 46,697	$ 45,425	$ 41,920	
13	Interest Rate-WSJ Prime Rate	Annual %		3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	Total
14	Days per Month			31	28	31	30	31	30	31	31	30	31	30	31	365
15	Computed Interest	$'s		$ 177	$ 56	$ (56)	$ (114)	$ (117)	$ (82)	$ (28)	$ 33	$ 93	$ 129	$ 121	$ 116	$ 328
16																
17	**Ending Balance**	**$'s**		$ 45,094	$ (448)	$ (40,386)	$ (44,771)	$ (39,846)	$ (21,380)	$ 862	$ 23,415	$ 46,326	$ 47,197	$ 43,774	$ 40,182	
18	**COMMERCIAL & INDUSTRIAL**															
19	**Beginning Balance - (Over)/Under**	**$'s**		$ (13,578)	$ (19,244)	$ (26,453)	$ (32,583)	$ (30,477)	$ (31,904)	$ (30,003)	$ (28,468)	$ (26,138)	$ (23,520)	$ (28,954)	$ (29,554)	
20																
21	**COSTS**															
22	Lost Distribution Revenue	**$'s**		$ 15,552	$ 15,594	$ 15,845	$ 15,852	$ 9,358	$ 9,398	$ 9,464	$ 9,569	$ 9,736	$ 2,819	$ 4,492	$ 7,011	124,690
23																
24	**REVENUE**															
25	Revenue Through Lost Revenue Rate	**$'s**		$ 21,173	$ 22,747	$ 21,894	$ 13,662	$ 10,698	$ 7,414	$ 7,848	$ 7,163	$ 7,053	$ 8,181	$ 5,014	$ 3,764	136,611
26																
27	(Over)/Under-Recovery (Exc interest)	$'s		$ (19,198)	$ (26,397)	$ (32,502)	$ (30,393)	$ (31,818)	$ (29,920)	$ (28,388)	$ (26,062)	$ (23,454)	$ (28,882)	$ (29,476)	$ (26,308)	
28																
29	**INTEREST**															
30	Average Monthly Balance			$ (16,388)	$ (22,820)	$ (29,478)	$ (31,488)	$ (31,148)	$ (30,912)	$ (29,195)	$ (27,265)	$ (24,796)	$ (26,201)	$ (29,215)	$ (27,931)	
31	Interest Rate-WSJ Prime Rate	Annual %		3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	Total
32	Days per Month			31	28	31	30	31	30	31	31	30	31	30	31	365
33	Computed Interest	$'s		$ (45)	$ (57)	$ (81)	$ (84)	$ (86)	$ (83)	$ (81)	$ (75)	$ (66)	$ (72)	$ (78)	$ (77)	$ (886)
34																
35	**Ending Balance**	**$'s**		$ (19,244)	$ (26,453)	$ (32,583)	$ (30,477)	$ (31,904)	$ (30,003)	$ (28,468)	$ (26,138)	$ (23,520)	$ (28,954)	$ (29,554)	$ (26,385)	

Line 2/19: Prior period ending balance
Lines 4/22: Page 1, Line 7/Page 1, Line 11
Line 7/25: Accounting actual data
Line 9: Line 2 + Line 4 -Line 7

Line 12: (Line 2+Line 9)/2
Lines 13/31: Prime Rate
Line 15: Line 12X(Line 13/# days per year)X Line 14
Line 17: Line 9 + Line 15
Line 27: Line 19+Line 22-Line 25
Line 30: (Line 19+Line 27)/2
Line 33: Line 30 X (Line 31/# days per year)X Line 32
Line 35: Line 27 + Line 33

NORTHERN UTILITIES, INC. - NH
Gas Savings for LBR Calculation

		PROGRAM YEAR 2021				
		PLAN	**ACTUAL**	**CAP**	**VARIANCE**	
		Annual Therms	Annual Therms	PLAN @ 110% Therms	Cap minus Actual	Percent of Plan
1.	Residential Programs					
2.	Home Energy Assistance	18,171	11,841			
3.	EnergyStar Homes	14,945	12,760			
4.	Home Performance w/EnergyStar	17,290	32,927			
5.	EnergyStar Products	42,043	38,579			
6.	Home Energy Reports	53,040	59,678			
7.	Residential Financing	-	-			
8.	Residential	145,489	155,786			
9.						
10.	Commercial & Industrial Programs					
11.	Large Business Energy Solutions	163,734	128,249			
12.	Small Business Energy Solutions	58,697	69,366			
13.	C&I Education	-	-			
14.	Commercial & Industrial	222,431	197,615			
15.						
16.	Total 2021 Portfolio	367,920	353,401	404,712	51,311	96%

	Monthly LBR Savings - 2021 Installations		Prior Year	Actual Jan-21	Actual Feb-21	Actual Mar-21	Actual Apr-21	Actual May-21	Actual Jun-21	Actual Jul-21	Actual Aug-21	Actual Sep-21	Actual Oct-21	Actual Nov-21	Actual Dec-21	Total
17.	Residential Programs															
18.	Annualized Therms by Month			11,550	11,661	32,632	4,797	15,086	16,395	13,592	12,079	4,203	3,362	27,109	3,320	155,786
19.	Annualized Retirements by Month	2020 Savings		0	0	0	0	0	0	0	(17,586)	0	(12,936)	0	(17,456)	(47,977)
20.	Remove Therm Savings for Rate Case	2017, 2018, 2019 and 2020 (Note 2		0	0	0	0	0	0	0	0	0	(406,981)	0	0	(406,981)
21.																
22.	Monthly Incremental	(L. 18 + L. 19 + L. 20) / 12		963	972	2,719	400	1,257	1,366	1,133	(459)	350	(34,713)	2,259	(1,178)	(24,931)
23.	Monthly Cumulative	Sum of L. 22 + Prior		963	1,934	4,654	5,053	6,311	7,677	8,809	8,351	8,701	(26,012)	(23,753)	(24,931)	(22,245)
24.	Monthly Cumulative including Prior	Sum of L. 23 + Prior	41,193	42,156	43,127	45,847	46,246	47,504	48,870	50,002	49,544	49,894	15,181	17,440	16,262	472,072
25.																
26.	Commercial & Industrial Programs															
27.	Annualized Therms by Month			0	2,517	15,045	381	0	4,072	6,680	10,660	16,982	354	3,003	137,921	197,615
28.	Annualized Retirements by Month			0	0	0	0	0	0	0	0	0	0	0	0	0
29.	Remove Therm Savings for Rate Case	2017, 2018, 2019 and 2020 (Note 2		0	0	0	0	0	0	0	0	0	(744,912)	0	0	(744,912)
30.																
31.	Monthly Incremental	(L. 27 + L. 28 + L. 29) / 12		0	210	1,254	32	0	339	557	888	1,415	(62,047)	250	11,493	(45,608)
32.	Monthly Cumulative	Sum of L. 31 + Prior		0	210	1,464	1,495	1,495	1,835	2,391	3,280	4,695	(57,352)	(57,101)	(45,608)	(143,197)
33.	Monthly Cumulative including Prior	Sum of L. 32 + Prior	77,606	77,606	77,815	79,069	79,101	79,101	79,440	79,997	80,885	82,300	20,254	20,504	31,998	788,070

NOTES:

1. Equals Actuals divided by Plan. See Settlement in DE 15-137, at 5. "In each calendar year, for each utility, the savings for which lost revenue may be recovered will be capped at 110% of planned annual savings."
2. Effective October 1, 2021: 2017, 2018, 2019 and 2020 savings reflected in the test year were removed from the LBR calculation.

Northern Utilities, Inc.
2020 Residential Installed Therm Savings
Savings Annualization for Rate Case

Line	Description	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	2020 Annual Savings
	Col. A	Col. C	Col. D	Col. E	Col. F	Col. G	Col. H	Col. I	Col. J	Col. K	Col. L	Col. M	Col. N	Col. O
1	**Monthly Residential Therm Savings***	-	16,204	15,242	7,355	918	4,876	3,827	30,944	14,644	24,534	7,203	19,430	**145,176**
2														
3	**Monthly Residential Therms Savings**													
4	January 2020	-	-	-	-	-	-	-	-	-	-	-	-	-
5	February 2020		1,350	1,350	1,350	1,350	1,350	1,350	1,350	1,350	1,350	1,350	1,350	14,853
6	March 2020			1,270	1,270	1,270	1,270	1,270	1,270	1,270	1,270	1,270	1,270	12,702
7	April 2020				613	613	613	613	613	613	613	613	613	5,516
8	May 2020					76	76	76	76	76	76	76	76	612
9	June 2020						406	406	406	406	406	406	406	2,844
10	July 2020							319	319	319	319	319	319	1,913
11	August 2020								2,579	2,579	2,579	2,579	2,579	12,893
12	September 2020									1,220	1,220	1,220	1,220	4,881
13	October 2020										2,044	2,044	2,044	6,133
14	November 2020											600	600	1,201
15	December 2020												1,619	1,619
16	**Total 2020 Therm Savings Realized in 2020**	**-**	**1,350**	**2,621**	**3,233**	**3,310**	**3,716**	**4,035**	**6,614**	**7,834**	**9,879**	**10,479**	**12,098**	**65,169**
17														
18	**2020 Residential Therm Savings Realized in 2021**	**-**	**1,350**	**2,540**	**1,839**	**306**	**2,031**	**1,913**	**18,051**	**9,762**	**18,400**	**6,003**	**17,811**	**80,008**

*Per DE 17-136 Northern Utilities, Inc 2020 Energy Efficiency Revised Annual Report filed on June 29, 2021 Page 1 of 18(Revised)

Northern Utilities, Inc.
2020 C&I Installed Therm Savings Retired in 2021
Savings Annualization Retirements for Rate Case

Line	Description	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	2020 Annual Savings
	Col. A	Col. C	Col. D	Col. E	Col. F	Col. G	Col. H	Col. I	Col. J	Col. K	Col. L	Col. M	Col. N	Col. O
19	**Monthly Residential Therm Savings**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**(17,586)**	**-**	**(17,248)**	**-**	**(19,042)**	**(53,876)**
20														
21	**Monthly Residential Annualized Therm Savings**													
22	January 2020	-	-	-	-	-	-	-	-	-	-	-	-	-
23	February 2020		-	-	-	-	-	-	-	-	-	-	-	-
24	March 2020			-	-	-	-	-	-	-	-	-	-	-
25	April 2020				-	-	-	-	-	-	-	-	-	-
26	May 2020					-	-	-	-	-	-	-	-	-
27	June 2020						-	-	-	-	-	-	-	-
28	July 2020							-	-	-	-	-	-	-
29	August 2020								(1,465)	(1,465)	(1,465)	(1,465)	(1,465)	(7,327)
30	September 2020									-	-	-	-	-
31	October 2020										(1,437)	(1,437)	(1,437)	(4,312)
32	November 2020											-	-	-
33	December 2020												(1,587)	(1,587)
34	**Total 2020 Savings Realized in 2020 Removed October 1, 20**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**(1,465)**	**(1,465)**	**(2,903)**	**(2,903)**	**(4,490)**	**(13,226)**
35														
36	**2020 Residential Therm Savings Realized in 2021**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**(10,258)**	**-**	**(12,936)**	**-**	**(17,456)**	**(40,650)**

*Per DE 17-136 Northern Utilities, Inc 2020 Energy Efficiency Revised Annual Report filed on June 29, 2021 Page 1 of 18(Revised)

Northern Utilities, Inc.
2020 C&I Installed Therm Savings
Savings Annualization for Rate Case

Line	Description	Actual Jan-20	Actual Feb-20	Actual Mar-20	Actual Apr-20	Actual May-20	Actual Jun-20	Actual Jul-20	Actual Aug-20	Actual Sep-20	Actual Oct-20	Actual Nov-20	Actual Dec-20	2020 Annual Savings
	Col. A	Col. C	Col. D	Col. E	Col. F	Col. G	Col. H	Col. I	Col. J	Col. K	Col. L	Col. M	Col. N	Col. O
1	**Monthly C&I Therm Savings***	**10,885**	**3,916**	**3,966**	**2,324**	**14,685**	**4,167**	**494**	**783**	**7,393**	**13,748**	**34,019**	**146,033**	**242,412**
2														
3	**Monthly C&I Annualized Therm Savings**													
4	January 2020	907	907	907	907	907	907	907	907	907	907	907	907	10,885
5	February 2020		326	326	326	326	326	326	326	326	326	326	326	3,590
6	March 2020			331	331	331	331	331	331	331	331	331	331	3,305
7	April 2020				194	194	194	194	194	194	194	194	194	1,743
8	May 2020					1,224	1,224	1,224	1,224	1,224	1,224	1,224	1,224	9,790
9	June 2020						347	347	347	347	347	347	347	2,431
10	July 2020							41	41	41	41	41	41	247
11	August 2020								65	65	65	65	65	326
12	September 2020									616	616	616	616	2,464
13	October 2020										1,146	1,146	1,146	3,437
14	November 2020											2,835	2,835	5,670
15	December 2020												12,169	12,169
16	**Total 2020 C&I Therm Savings Realized in 2020**	**907**	**1,233**	**1,564**	**1,758**	**2,981**	**3,329**	**3,370**	**3,435**	**4,051**	**5,197**	**8,032**	**20,201**	**56,057**
17														
18	**2020 C&I Therm Savings Realized in 2021**	**-**	**326**	**661**	**581**	**4,895**	**1,736**	**247**	**457**	**4,929**	**10,311**	**28,349**	**133,864**	**186,355**

*Per DE 17-136 Northern Utilities, Inc 2020 Energy Efficiency Revised Annual Report filed on June 29, 2021 Page 1 of 18(Revised

Northern Utilities, Inc.
2021 Summary of Average Distribution Rate for Lost Revenue
Calculation of Average Distribution Rate for Lost Revenue (Summary)
Based on Actual Billing Determinants at Current Distribution Rates

January - April 2021

Line		(1) Total Volumetric Revenue	(2) Total Annual therms	(3)=(1)X(2) Average Distribution Rate $/therm
1	R-5	$7,598,545	10,980,557	$0.6920
2	R-10	$201,656	291,410	$0.6920
3	R-6	$75,256	116,316	$0.6470
4	Total Residential Service	**$7,875,457**	**11,388,282**	**$0.6915**
5	G-40	$1,232,778	6,610,070	$0.1865
6	G-50	$118,898	637,522	$0.1865
7	G-41	$2,090,690	8,621,400	$0.2425
8	G-51	$316,225	1,998,314	$0.1582
9	G-42	$497,157	2,505,830	$0.1984
10	G-52	$1,051,996	6,116,257	$0.1720
11	Total General Service	**$5,307,743**	**26,489,394**	**$0.2004**
12	**Total Company**	**$13,183,200**	**37,877,676**	

May - September 2021

Line		(1) Total Volumetric Revenue	(2) Total Annual therms	(3)=(1)X(2) Average Distribution Rate $/therm
1	R-5	$1,554,220	2,548,319	$0.6099
2	R-10	$38,132	62,521	$0.6099
3	R-6	$44,513	68,799	$0.6470
4	Total Residential Service	**$1,636,864**	**2,679,639**	**$0.6109**
5	G-40	$206,015	1,104,638	$0.1865
6	G-50	$124,275	666,355	$0.1865
7	G-41	$380,701	2,008,975	$0.1895
8	G-51	$203,422	1,620,177	$0.1256
9	G-42	$107,607	892,264	$0.1206
10	G-52	$562,344	7,100,299	$0.0792
11	Total General Service	**$1,584,364**	**13,392,708**	**$0.1183**
12	**Total Company**	**$3,221,229**	**16,072,347**	

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14 **October 2021**

Line		(1) Total Volumetric Revenue	(2) Total Annual therms	(3)=(1)X(2) Average Distribution Rate $/therm
17	R-5	$281,681	415,336	$0.6782
18	R-10	$5,568	8,210	$0.6782
19	R-6	$8,088	11,308	$0.7153
20	Total Residential Service	**$295,337**	**434,854**	**$0.6792**
21	G-40	$35,923	171,882	$0.2090
22	G-50	$26,084	124,802	$0.2090
23	G-41	$86,069	405,984	$0.2120
24	G-51	$49,363	334,672	$0.1475
25	G-42	$41,495	289,972	$0.1431
26	G-52	$146,741	1,442,883	$0.1017
27	Total General Service	**$385,675**	**2,770,196**	**$0.1392**
28	**Total Company**	**$681,012**	**3,205,050**	

November - December 2021

Line		(1) Total Volumetric Revenue	(2) Total Annual therms	(3)=(1)X(2) Average Distribution Rate $/therm
17	R-5	$2,649,587	3,484,923	$0.7603
18	R-10	$55,180	72,576	$0.7603
19	R-6	$30,481	42,613	$0.7153
20	Total Residential Service	**$2,735,248**	**3,600,112**	**$0.7598**
21	G-40	$415,087	1,986,064	$0.2090
22	G-50	$59,683	285,564	$0.2090
23	G-41	$773,709	2,919,656	$0.2650
24	G-51	$163,087	899,034	$0.1814
25	G-42	$264,093	1,195,530	$0.2209
26	G-52	$626,493	3,221,044	$0.1945
27	Total General Service	**$2,302,152**	**10,506,892**	**$0.2191**
28	**Total Company**	**$5,037,399**	**14,107,004**	

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30 **Total Company CY 2020** **$22,122,840** **71,262,076**

Northern Utilities, Inc.
2021 Summary of Average Distribution Rate for Lost Revenue
Calculation of Average Distribution Rate for Lost Revenue (Detail)

Jan - April 2021		(1) Number of	(2) Customer Charge Effective Jan - Apr	(3)=(1)X(2) Calculated Customer	(4) Winter - January - April 2021 Billing Determinants First Therms	Excess Therms	(5) Winter Distribution Rates First Therms $/thm	Excess Therms $/thm	(6) = (4) X (5) Calculated Winter Distribution Revenue
R-5	Residential, Heating	101,095	$22.20	$2,244,301	4,564,402	6,416,155	$ 0.6920	$ 0.6920	$7,598,545
R-10	Residential Heating, Low Income	2,326	$12.21	$28,402	143,732	147,677	$ 0.6920	$ 0.6920	$201,656
R-6	Residential, Non-Heating	5,131	$22.20	$113,915	36,071	80,245	$ 0.6470	$ 0.6470	$75,256
Total Residential Service		108,552		$2,386,618	4,744,205	6,644,077			$7,875,457
G-40	Low Annual, High Winter Use	18,581	$75.09	$1,395,221	1,377,171	5,232,899	$ 0.1865	$ 0.1865	$1,232,778
G-50	Low Annual, Low Winter Use	2,964	$75.09	$222,564	154,152	483,370	$ 0.1865	$ 0.1865	$118,898
G-41	Medium Annual, High Winter Us	1,791	$222.64	$398,767	8,621,400	0	$ 0.2425		$2,090,690
G-51	Medium Annual, Low Winter Us	604	$222.64	$134,564	1,171,260	827,054	$ 0.1712	$ 0.1399	$316,225
G-42	High Annual, High Winter Use	50	$1,335.81	$66,791	2,505,830	0	$ 0.1984		$497,157
G-52	High Annual, Low Winter Use	9	$1,335.81	$11,533	6,116,257	0	$ 0.1720		$1,051,996
Total General Service		23,999		$2,229,438	19,946,070	6,543,323			$5,307,743
Total Company		132,551		$4,616,055	24,690,276	13,187,400			$13,183,200

Jan - April 2021	(7) Summer - May - September 2021 Billing Determinants First Therms	Excess Therms	(8) Summer Distribution Rates First Therms $/thm	Excess Therms $/thm	(9) = (7) X (8) Calculated Summer Distribution Revenue	(9) Summer - October 2021 Billing Determinants First Therms	Excess Therms	(10) Summer Distribution Rates First Therms $/thm	Excess Therms $/thm	(9) = (7) X (8) Calculated Summer Distribution Revenue
R-5	2,241,762	306,557	$ 0.6099	$ 0.6099	$1,554,220	394,573	20,763	$ 0.6782	$ 0.6782	$281,681
R-10	54,975	7,547	$ 0.6099	$ 0.6099	$38,132	7,982	228	$ 0.6782	$ 0.6782	$5,568
R-6	42,007	26,792	$ 0.6470	$ 0.6470	$44,513	7,992	3,315	$ 0.7153	$ 0.7153	$8,088
Total Residential Service	2,338,744	340,895			$1,636,864	410,547	24,307			$295,337
G-40	578,575	526,063	$ 0.1865	$ 0.1865	$206,015	105,826	66,055	$ 0.2090	$ 0.2090	$35,923
G-50	191,684	474,672	$ 0.1865	$ 0.1865	$124,275	38,039	86,764	$ 0.2090	$ 0.2090	$26,084
G-41	2,008,975	0	$ 0.1895		$380,701	405,984	0	$ 0.2120		$86,069
G-51	1,092,367	527,810	$ 0.1337	$ 0.1087	$203,422	218,148	116,524	$ 0.1562	$ 0.1312	$49,363
G-42	892,264	0	$ 0.1206		$107,607	289,972	0	$ 0.1431		$41,495
G-52	7,100,299	0	$ 0.0792		$562,344	1,442,883	0	$ 0.1017		$146,741
Total General Service	11,864,164	1,528,544			$1,584,364	2,500,853	269,343			$385,675
Total Company	14,202,908	1,869,440			$3,221,229	2,911,400	293,650			$681,012

Calculation of Average Distribution Rate for Lost Revenue (Detail)

May - October 2021		(1) Number of	(2) Customer Charge	(3)=(1)X(2) Calculated Customer	(4) Winter - November - December 2021 Billing Determinants First Therms	Excess Therms	(5) Winter Distribution Rates First Therms $/thm	Excess Therms $/thm	(6) = (4) X (5) Calculated Winter Distribution Revenue
R-5	Residential, Heating	153,140	$22.20	$3,399,711	2,001,844	1,483,079	$ 0.7603	$ 0.7603	$2,649,587
R-10	Residential Heating, Low Income	4,211	$8.88	$37,393	46,271	26,305	$ 0.7603	$ 0.7603	$55,180
R-6	Residential, Non-Heating	8,056	$22.20	$178,850	17,695	24,917	$ 0.7153	$ 0.7153	$30,481
Total Residential Service		165,407		$3,615,954	2,065,811	1,534,301			$2,735,248
G-40	Low Annual, High Winter Use	32,685	$75.09	$2,454,313	575,972	1,410,091	$ 0.2090	$ 0.2090	$415,087
G-50	Low Annual, Low Winter Use	5,540	$75.09	$415,983	76,344	209,220	$ 0.2090	$ 0.2090	$59,683
G-41	Medium Annual, High Winter Us	6,117	$222.64	$1,361,949	2,919,656	0	$ 0.2650		$773,709
G-51	Medium Annual, Low Winter Us	2,419	$222.64	$538,670	545,812	353,222	$ 0.1937	$ 0.1624	$163,087
G-42	High Annual, High Winter Use	341	$1,335.81	$456,179	1,195,530	0	$ 0.2209		$264,093
G-52	High Annual, Low Winter Use	377	$1,335.81	$503,200	3,221,044	0	$ 0.1945		$626,493
Total General Service		47,480		$5,730,294	8,534,358	1,972,533			$2,302,152
Total Company		212,887		$9,346,248	10,600,169	3,506,834			$5,037,399

November - December 2021		(1) Number of	(2) Customer Charge	(3)=(1)X(2) Calculated Customer
R-5	Residential, Heating	52,291	$22.20	$1,160,854
R-10	Residential Heating, Low Income	1,954	$12.21	$23,857
R-6	Residential, Non-Heating	2,589	$22.20	$57,471
Total Residential Service		56,833		$1,242,182
G-40	Low Annual, High Winter Use	9,262	$75.09	$695,501
G-50	Low Annual, Low Winter Use	1,484	$75.09	$111,431
G-41	Medium Annual, High Winter Us	833	$222.64	$185,400
G-51	Medium Annual, Low Winter Us	294	$222.64	$65,493
G-42	High Annual, High Winter Use	21	$1,335.81	$28,052
G-52	High Annual, Low Winter Use	5	$1,335.81	$7,169
Total General Service		11,899		$1,093,046
Total Company		68,733		$2,335,228

Calculation of Average Distribution Rate for Lost Revenue 2021 (Summary)

	(1)=(3) Total Calculated Customer Charge Revenue	(2) = (6) + (9) Total Volumetric Revenue	(3)=(1)+(2) Total Distribution Revenue	(4)=(4)+(7) Total Annual Therms
R-5	$5,644,012	$12,084,033	$17,728,045	17,429,135
R-10	$65,795	$300,535	$366,330	434,717
R-6	$292,765	$158,338	$451,103	239,035
Total Residential Service	$6,002,571	$12,542,907	$18,545,478	18,102,887
G-40/T-40	$3,849,533	$1,889,804	$5,739,337	9,872,653
G-50/T-50	$638,547	$328,940	$967,486	1,714,243
G-41/T-41	$1,760,716	$3,331,168	$5,091,884	13,956,015
G-51/T-51	$673,234	$732,097	$1,405,331	4,852,197
G-42/T-42	$522,970	$910,351	$1,433,321	4,883,597
G-52/T-52	$514,732	$2,387,574	$2,902,306	17,880,483
Total General Service	$7,959,732	$9,579,933	$17,539,665	53,159,189
Total Company	**$13,962,303**	**$22,122,840**	**$36,085,143**	**71,262,076**

Notes:
Column (1),Column (4), Column (7) & Column (9): 2021 actual billing determinants.
Column (2), Column (5) and Column (8): Winter distribution rates effective November 1, 2020 & November 1, 2021, Summer distribution rates effective May 1, 2021. Column (10) Summer distribution rates effective October 1, 2021.

Northern Utilities - NH

Summary of Rates: Winter Season
Delivery Service and Supply Charges
Effective: November 1, 2020

APPROVED

Service	Winter Rates Blocks	DELIVERY CHARGES: Customer Charge	Distribution Charge	Local Delivery Adjustment Charge (LDAC)(1)	Total Delivery	GAS SUPPLY CHARGES: COG(1)	Total Incl. COG
Residential Heat R-5	Customer Charge	$22.20			**$22.20**		**$22.20**
	First 50 therms		$0.6920	$0.1099	**$0.8019**	$0.7315	**$1.5334**
	Excess 50 therms		$0.6920	$0.1099	**$0.8019**	$0.7315	**$1.5334**
Residential Low Income Heat R-10	Customer Charge	$22.20			**$22.20**		**$22.20**
	First 50 therms		$0.6920	$0.1099	**$0.8019**	$0.7315	**$1.5334**
	Excess 50 therms		$0.6920	$0.1099	**$0.8019**	$0.7315	**$1.5334**
	45% Low Income Discount						
	Monthly Customer Charge	($9.99)			**($9.99)**		**($9.99)**
	First 50 therms		($0.3114)	$0.0000	**($0.3114)**	($0.3292)	**($0.6406)**
	Excess 50 therms		($0.3114)	$0.0000	**($0.3114)**	($0.3292)	**($0.6406)**
Residential NonHeat R-6	Customer Charge	$22.20			**$22.20**		**$22.20**
	First 10 therms		$0.6470	$0.1099	**$0.7569**	$0.7315	**$1.4884**
	Excess 10 therms		$0.6470	$0.1099	**$0.7569**	$0.7315	**$1.4884**
General Service Low Annual, High Winter Use (2) G-40 Less than or equal to 8,000 Therms/Yr.	Customer Charge	$75.09			**$75.09**		**$75.09**
	First 75 therms		$0.1865	$0.0472	**$0.2337**	$0.7437	**$0.9774**
	Excess 75 therms		$0.1865	$0.0472	**$0.2337**	$0.7437	**$0.9774**
General Service Low Annual, Low Winter Use (2) G-50 Less than or equal to 8,000 Therms/Yr.	Customer Charge	$75.09			**$75.09**		**$75.09**
	First 75 therms		$0.1865	$0.0472	**$0.2337**	$0.6465	**$0.8802**
	Excess 75 therms		$0.1865	$0.0472	**$0.2337**	$0.6465	**$0.8802**
General Service Medium Annual, High Winter Use (2) G-41 Greater than 8,000 but less than or equal to 80,000 Therms/Yr.	Customer Charge	$222.64			**$222.64**		**$222.64**
	All Therms		$0.2425	$0.0472	**$0.2897**	$0.7437	**$1.0334**
General Service Medium Annual, Low Winter Use (2) G-51 Greater than 8,000 but less than or equal to 80,000 Therms/Yr.	Customer Charge	$222.64			**$222.64**		**$222.64**
	First 1,300 Therms		$0.1712	$0.0472	**$0.2184**	$0.6465	**$0.8649**
	Excess 1,300 Therms		$0.1399	$0.0472	**$0.1871**	$0.6465	**$0.8336**
General Service High Annual, High Winter Use(2) G-42 Greater than 80,000 Therms/Yr.	Customer Charge	$1,335.81			**$1,335.81**		**$1,335.81**
	All Therms		$0.1984	$0.0472	**$0.2456**	$0.7437	**$0.9893**
General Service High Annual, Low Winter Use(2) G-52 Greater than 80,000 Therms/Yr.	Customer Charge	$1,335.81			**$1,335.81**		**$1,335.81**
	All Therms		$0.1720	$0.0472	**$0.2192**	$0.6465	**$0.8657**

Northern Utilities - NH

Summary of Rates: Winter Season

Delivery Service and Supply Charges

Effective: November 1, 2020

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Service	Winter Rates Blocks	Customer Charge (DELIVERY CHARGES)	Distribution Charge (DELIVERY CHARGES)	Local Delivery Adjustment Charge (LDAC)[1] (DELIVERY CHARGES)	Total Delivery	COG[1] (GAS SUPPLY CHARGES)	Total Incl. COG
General Service Interruptible Transportation IT	Customer Charge	$170.21			**$170.21**		**$170.21**
	First 20,000 therms		$0.1299		**$0.1299**		**$0.1299**
	Excess 20,000 therms		$0.1108		**$0.1108**		**$0.1108**
Greater than 80,000 Therms/Yr.							
General Service Interruptible Stand-by Gas Supply ISGS	All Therms		marginal plus <$0.05			variable	

(1) The LDAC and the COG are broken out into individual rate components. (See page 3). The COG is not applicable to Transportation Only Customers.

(2) High winter use is winter period usage greater than or equal to 67% of annual usage. Low winter use is winter period usage less than 67% of annual usage. The Winter Period is defined as the billing months of November through April. The Summer Period is defined as the billing months of May through October.

Northern Utilities - NH

Summary of LDAC/COG Components: Winter Season
Effective: November 1, 2020

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LOCAL DELIVERY ADJUSTMENT CLAUSE (Winter Season)

Service		GAPRA	EEC	LRR	ERC	ITMC	RCE	RPC	Total LDAC
Rate Classes	R-5, R-6, R-10	$0.0044	$0.0774	$0.0220	$0.0061	$0.0000	$0.0000	$0.0000	**$0.1099**
	G-40, G-50, G-41, G-51, G-42, G-52,	$0.0044	$0.0337	$0.0030	$0.0061	$0.0000	$0.0000	$0.0000	**$0.0472**

RLIARA = Residential Low Income Assistance and Regulatory Assessment Costs, EEC - Energy Efficiency Charge (a.k.a. EE-Energy Efficiency; and DSM-Demand-side Management),
LRR = Lost Revenue Rate (to recover lost revenue related to Energy Efficiency ("CC") Programs),
ERC = Environmental Response Costs, ITMC = Interruptible Transportation Margin Credit,
RCE = Expenses Related to Rate Case, RPC = Reconciliation of Permanent Changes in Delivery Rates.

COST OF GAS ADJUSTMENT CLAUSE (Winter Season)

Service		Demand Cost of Gas	Commodity Cost of Gas	Reconciliation Costs	Working Capital	Bad Debt	Production & Storage Cap	Misc. Overhead	Demand Supplier Refund	Commodity Supplier Refund	Total COG COG
Applies to the following Rate Classes	R-5, R-6, R-10	$0.3731	$0.3110	$0.0163	($0.0004)	$0.0044	$0.0136	$0.0135	$0.0000	$0.0000	**$0.7315**
	G-40, G-41, G-42	$0.3868	$0.3095	$0.0163	($0.0004)	$0.0044	$0.0136	$0.0135	$0.0000	$0.0000	**$0.7437**
	G-50, G-51, G-52	$0.2777	$0.3214	$0.0163	($0.0004)	$0.0044	$0.0136	$0.0135	$0.0000	$0.0000	**$0.6465**

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Delivery Service Miscellaneous Fees: Winter Period

Effective: November 1, 2020

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Season
Winter

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Applies to the following Rate Classes ($ per ccf)	Re-entry Rate
G-40, G-41, G-42, G-50, G-51, G-52	**$0.0012**

Applicable only to capacity assigned customers that switch from Delivery Service to Sales Service. Re-entry Rate is in effect fom the effective re-entry date until the following May 1st

CONVERSION RATE (Winter Season)

Applies to the following Rate Classes ($ per ccf)	Conversion Rate
G-40, G-41, G-42	**$0.0012**
G-50, G-51, G-52	**$0.0984**

Applicable only to capacity exempt customers that switch from Delivery Service to Sales Service. Conversion Rate is in effect from the effective conversion date until the following May 1st.

Supplier Balancing Charge

Applies to the following Rate Classes ($ per MMBtu)		
G-40, G-41, G-42, G-50, G-51, G-52	**$0.71**	per MMBtu of Imbalance volumes

Peaking Service Demand Charge

Applies to Capacity Assigned Customers Only		
G-40, G-41, G-42, G-50, G-51, G-52	**$64.53**	per MMBtu per month

Supplier Services and Associated Fees

Applies to the following Telemeter Types		
Pool Administration (required)	**$0.10**	Per Month / customer billed @ marketer level
Standard Passthrough billing	**$0.60**	customer / month billed @ marketer level
Standard Complete Billing (optional - Pass through fee not required if this service is elected)	**$1.50**	customer / month billed @ marketer level
Customer Administration (required)	**$10.00**	customer /switch billed @ marketer level

Turn-on Charge - Applies to Sales & Delivery Service Customers

Regular Working Hours	**$36.00**	per service
Saturday, Sunday or Holidays	**$75.00**	per service

Meter Read Charge

When customer's phone line is not reporting daily data	**$78.00**	per read

R5 Residential Heat Rate

This rate is for residential customers heating with gas.

Effective: May 1, 2021

Customer Charge		$22.20	per meter per month
Distribution Rate	First 50 therms @	$0.6099	per therm
Distribution Rate	Excess 50 therms @	$0.6099	per therm
Distribution Adjustment Rate	All therms @	$0.1099	per therm
Supplier Service			
Cost of Gas		$0.4970	per therm

R6 Residential Non-Heat Rate

This rate is for residential customers not heating with gas.

Effective: May 1, 2021

Customer Charge		$22.20	per meter per month
Distribution Rate	First 10 therms @	$0.6470	per therm
Distribution Rate	Excess 10 therms @	$0.6470	per therm
Local Delivery Adjustment Charge	All therms @	$0.1099	per therm
Supplier Service			
Cost of Gas		$0.4970	per therm

R10 Residential Low Income Heat Rate

This rate is for income-eligible residential customers heating with gas.

Effective: May 1, 2021

Customer Charge		$22.20	per meter per month
Distribution Rate	First 50 therms @	$0.6099	per therm
Distribution Rate	Excess 50 therms @	$0.6099	per therm
Local Delivery Adjustment Charge	All therms @	$0.1099	per therm
Supplier Service			
Cost of Gas		$0.4970	per therm

	45% Low Income Heat Rate Discount - Applicable to Winter Season Only		
Customer Charge		$0.00	per meter per month
Distribution Rate	First 50 therms @	$0.0000	per therm
Distribution Rate	Excess 50 therms @	$0.0000	per therm
Local Delivery Adjustment Charge[1]	All therms @	$0.0000	per therm
Supplier Service			
Cost of Gas		$0.0000	per therm

[1]Low Income Heat Rate discount does not apply to Local Delivery Adjustment Charge.

Glossary of Terms & Definitions

Delivery Charges

CCF: the basic measurement of the gas you used. Natural gas is measured by volume. One ccf equals one hundred cubic feet of gas.

Competitive Supplier Charge: The charge for gas you purchased from a competitive supplier.

Cost of Gas: The cost of the natural gas we supply to you, if you have not chosen another supplier. This charge includes the cost we pay for the gas, the cost of interstate transportation, and our cost of storing the gas.

Customer Charge: The costs of providing services such as metering, billing and account maintenance. These are fixed costs and are not affected by the amount of natural gas you use.

Distribution Charge: The cost of delivering natural gas through our pipes to your home or business. It includes our investment in, and maintenance of, the pipe and other equipment that makes gas delivery possible.

Local Delivery Adjustment Charge: The costs of environmental, energy efficiency, and low income assistance programs.

Therm: the basic measurement of the heat content of the gas you used. We bill you on the number of therms of natural gas used. The therm factor converts the volume of gas used from ccf to therms. One therm equals 100,000 BTUs (British Thermal Units).

Terms of Payment: The charges for gas service are net, billed monthly and are due and payable upon receipt. A late payment charge at a rate determined by the NH PUC will be assessed from the date of the bill on balances not paid within thirty days. When bills are paid by remittance through the mail, the postmark on the envelope shall be the date of payment.

Typical Rate Change Dates:

Distribution Adjustment - November 1

Gas Cost Adjustment - May 1 and November 1

Additional Information

If you have any questions about our charges, please contact our Customer Service Department by calling toll-free at **1-888-301-7700**. Questions may also be addressed to the New Hampshire Public Utilities Commission (NH PUC) toll-free at **1-800-852-3793**.

G40 — Low Annual - High Winter Use Rates

This rate is for customers with annual gas usage up to 8,000 therms/year and winter usage greater than 67% of annual usage

Effective: May 1, 2021

Customer Charge		$75.09	per meter per month
Distribution Rate	First 75 therms @	$0.1865	per therm
Distribution Rate	Excess 75 therms @	$0.1865	per therm
Local Delivery Adjustment Charge	All therms @	$0.0472	per therm
Supplier Service (Choice of one)			
Until Cost of Gas Charge*		$0.5291	per therm
Competitive Supplier Charge	*Charges established by your competitive supplier*		

* Customers have the right to choose a competitive supplier. If a customer does not choose a competitive supplier, Unitil shall supply gas to the customer at the cost of gas charge.

G41 — Medium Annual - High Winter Use Rates

This rate is for customers with annual gas usage between 8,001 and 80,000 therms/year and winter usage greater than 67% of annual usage

Effective: May 1, 2021

Customer Charge		$222.64	per meter per month
Distribution Rate	All therms @	$0.1895	per therm
Local Delivery Adjustment Charge	All therms @	$0.0472	per therm
Supplier Service (Choice of one)			
Until Cost of Gas Charge*		$0.5291	per therm
Competitive Supplier Charge	*Charges established by your competitive supplier*		

* Customers have the right to choose a competitive supplier. If a customer does not choose a competitive supplier, Unitil shall supply gas to the customer at the cost of gas charge.

G42 High Annual - High Winter Use Rates

This rate is for customers with annual gas usage greater than 80,000 therms/year and winter usage greater than 67% of annual usage

Effective: May 1, 2021

Customer Charge		$1,335.81	per meter per month
Distribution Rate	All therms @	$0.1206	per therm
Local Delivery Adjustment Charge	All therms @	$0.0472	per therm
Supplier Service (Choice of one)			
Until Cost of Gas Charge*		$0.5291	per therm
Competitive Supplier Charge	*Charges established by your competitive supplier*		

* Customers have the right to choose a competitive supplier. If a customer does not choose a competitive supplier, Unitil shall supply gas to the customer at the cost of gas charge.

G50 Low Annual - Low Winter Use Rates

This rate is for customers with annual gas usage up to 8,000 therms/year and winter usage less than 67% of annual usage

Effective: May 1, 2021

Customer Charge		$75.09	per meter per month
Distribution Rate	First 75 therms @	$0.1865	per therm
Distribution Rate	Excess 75 therms @	$0.1865	per therm
Local Delivery Adjustment Charge	All therms @	$0.0472	per therm
Supplier Service (Choice of one)			
Until Cost of Gas Charge*		$0.4501	per therm
Competitive Supplier Charge	*Charges established by your competitive supplier*		

* Customers have the right to choose a competitive supplier. If a customer does not choose a competitive supplier, Unitil shall supply gas to the customer at the cost of gas charge.

G51 Medium Annual - Low Winter Use Rates

This rate is for customers with annual gas usage between 8,001 and 80,000 therms/year and winter usage less than 67% of annual usage

Effective: May 1, 2021

Customer Charge		$222.64	per meter per month
Distribution Rate	First 1,000 Therms @	$0.1337	per therm
Distribution Rate	Excess 1,000 Therms @	$0.1087	per therm
Local Delivery Adjustment Charge	All therms @	$0.0472	per therm
Supplier Service (Choice of one)			
Until Cost of Gas Charge*		$0.4501	per therm
Competitive Supplier Charge	*Charges established by your competitive supplier*		

* Customers have the right to choose a competitive supplier. If a customer does not choose a competitive supplier, Unitil shall supply gas to the customer at the cost of gas charge.

G52 High Annual - Low Winter Use Rates

This rate is for customers with annual gas usage greater than 80,000 therms/year and winter usage less than 67% of annual usage

Effective: May 1, 2021

Customer Charge		$1,335.81	per meter per month
Distribution Rate	All therms @	$0.0792	per therm
Local Delivery Adjustment Charge	All therms @	$0.0472	per therm
Supplier Service (Choice of one)			
Until Cost of Gas Charge*		$0.4501	per therm
Competitive Supplier Charge	*Charges established by your competitive supplier*		

* Customers have the right to choose a competitive supplier. If a customer does not choose a competitive supplier, Unitil shall supply gas to the customer at the cost of gas charge.

Glossary of Terms & Definitions

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Customer Charge: The costs of providing services such as metering, billing and account maintenance. These are fixed costs and are not affected by the amount of natural gas you use.

Distribution Charge: The cost of delivering natural gas through our pipes to your home or business. It includes our investment in, and maintenance of, the pipe and other equipment that makes gas delivery possible.

Local Delivery Adjustment Charge: The costs of environmental, energy efficiency, and low income assistance programs.

Residential Low Income Heat Rate: Customers enrolled in the Gas Assistance Program receive a 45% discount on distribution and gas supply rates from November through April. This discount will apply to all customers enrolled in the Gas Assistance Program. Discount does not apply to Local Delivery Adjustment Charge and is not in effect May through October.

Therm: the basic measurement of the heat content of the gas you used. We bill you on the number of therms of natural gas used. The therm factor converts the volume of gas used from ccf to therms. One therm equals 100,000 BTUs (British Thermal Units).

Terms of Payment: The charges for gas service are net, billed monthly and are due and payable upon receipt. A late payment charge shall be assessed at a rate of one percent per month or fraction thereof from the date of the bill on balances not paid within thirty days. When bills are paid by remittance through the mail, the postmark on the envelope shall be the date of payment.

Typical Rate Change Dates:

Distribution Adjustment - November 1

Gas Cost Adjustment - May 1 and November 1

Additional Information

If you have any questions about our charges, please contact our Customer Service Department by calling toll-free at **1-888-301-7700**. Questions may also be addressed to the New Hampshire Public Utilities Commission (NH PUC) toll-free at **1-800-852-3793**.

Northern Utilities - NH

Summary of Rates: Summer Season
Delivery Service and Supply Charges
Effective: October 1, 2021

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Service	Summer Rates Blocks	DELIVERY CHARGES Customer Charge	Distribution Charge	Local Delivery Adjustment Charge (LDAC)(1)	Total Delivery	GAS SUPPLY CHARGES COG(1)	Total Incl. COG
Residential Heat R-5	Customer Charge	$22.20			**$22.20**		**$22.20**
	First 50 therms		$0.6782	$0.1099	**$0.7881**	$0.5398	**$1.3279**
	Excess 50 therms		$0.6782	$0.1099	**$0.7881**	$0.5398	**$1.3279**
Residential Low Income Heat R-10	Customer Charge	$22.20			**$22.20**		**$22.20**
	First 50 therms		$0.6782	$0.1099	**$0.7881**	$0.5398	**$1.3279**
	Excess 50 therms		$0.6782	$0.1099	**$0.7881**	$0.5398	**$1.3279**
	Winter Only ***Low Income Discount***						
	Monthly Customer Charge	$0.00			**$0.00**		**$0.00**
	First 50 therms		$0.0000	$0.0000	**$0.0000**	$0.0000	**$0.0000**
	Excess 50 therms		$0.0000	$0.0000	**$0.0000**	$0.0000	**$0.0000**
Residential NonHeat R-6	Customer Charge	$22.20			**$22.20**		**$22.20**
	First 10 therms		$0.7153	$0.1099	**$0.8252**	$0.5398	**$1.3650**
	Excess 10 therms		$0.7153	$0.1099	**$0.8252**	$0.5398	**$1.3650**
General Service Low Annual, High Winter Use (2) G-40	Customer Charge	$75.09			**$75.09**		**$75.09**
	First 75 therms		$0.2090	$0.0472	**$0.2562**	$0.5719	**$0.8281**
Less than or equal to 8,000 Therms/Yr.	Excess 75 therms		$0.2090	$0.0472	**$0.2562**	$0.5719	**$0.8281**
General Service Low Annual, Low Winter Use (2) G-50	Customer Charge	$75.09			**$75.09**		**$75.09**
	First 75 therms		$0.2090	$0.0472	**$0.2562**	$0.4929	**$0.7491**
Less than or equal to 8,000 Therms/Yr.	Excess 75 therms		$0.2090	$0.0472	**$0.2562**	$0.4929	**$0.7491**
General Service Medium Annual, High Winter Use (2) G-41	Customer Charge	$222.64			**$222.64**		**$222.64**
Greater than 8,000 but less than or equal to 80,000 Therms/Yr.	All Therms		$0.2120	$0.0472	**$0.2592**	$0.5719	**$0.8311**
General Service Medium Annual, Low Winter Use (2) G-51	Customer Charge	$222.64			**$222.64**		**$222.64**
	First 1,000 Therms		$0.1562	$0.0472	**$0.2034**	$0.4929	**$0.6963**
Greater than 8,000 but less than or equal to 80,000 Therms/Yr.	Excess 1,000 Therms		$0.1312	$0.0472	**$0.1784**	$0.4929	**$0.6713**
General Service High Annual, High Winter Use(2) G-42	Customer Charge	$1,335.81			**$1,335.81**		**$1,335.81**
Greater than 80,000 Therms/Yr.	All Therms		$0.1431	$0.0472	**$0.1903**	$0.5719	**$0.7622**
General Service High Annual, Low Winter Use(2) G-52	Customer Charge	$1,335.81			**$1,335.81**		**$1,335.81**
Greater than 80,000 Therms/Yr.	All Therms		$0.1017	$0.0472	**$0.1489**	$0.4929	**$0.6418**

Northern Utilities - NH

Summary of Rates: Summer Season
Delivery Service and Supply Charges
Effective: October 1, 2021

APPROVED

Service	Summer Rates Blocks	DELIVERY CHARGES: Customer Charge	DELIVERY CHARGES: Distribution Charge	DELIVERY CHARGES: Local Delivery Adjustment Charge (LDAC)(1)	Total Delivery	GAS SUPPLY CHARGES: COG(1)	Total Incl. COG
General Service Interruptible Transportation IT	Customer Charge	$170.21			**$170.21**		**$170.21**
	First 20,000 therms		$0.0407		**$0.0407**		**$0.0407**
	Excess 20,000 therms		$0.0347		**$0.0347**		**$0.0347**
Greater than 80,000 Therms/Yr.							
General Service Interruptible Stand-by Gas Supply ISGS	All Therms		marginal plus <$0.05			variable	

(1) The LDAC and the COG are broken out into individual rate components. (See page 3). The COG is not applicable to Transportation Only Customers.

(2) High winter use is winter period usage greater than or equal to 67% of annual usage. Low winter use is winter period usage less than 67% of annual usage. The Winter Period is defined as the billing months of November through April. The Summer Period is defined as the billing months of May through October.

Northern Utilities - NH

Summary of LDAC/COG Components: Summer Season

Effective: October 1, 2021

APPROVED

APPROVED

LOCAL DELIVERY ADJUSTMENT CLAUSE (Summer Season)

Service		GAPRA	EEC	LRR	ERC	ITMC	RCE	RPC	Total LDAC
Rate Classes	R-5, R-6, R-10	$0.0044	$0.0774	$0.0220	$0.0061	$0.0000	$0.0000	$0.0000	**$0.1099**
	G-40, G-50, G-41, G-51, G-42, G-52,	$0.0044	$0.0337	$0.0030	$0.0061	$0.0000	$0.0000	$0.0000	**$0.0472**

RLIARA = Residential Low Income Assistance and Regulatory Assessment Costs, EEC - Energy Efficiency Charge (a.k.a. EE-Energy Efficiency; and DSM-Demand-side Management),
LRR = Lost Revenue Rate (to recover lost revenue related to Energy Efficiency ("CC") Programs),
ERC = Environmental Response Costs, ITMC = Interruptible Transportation Margin Credit,
RCE = Expenses Related to Rate Case, RPC = Reconciliation of Permanent Changes in Delivery Rates.

COST OF GAS ADJUSTMENT CLAUSE (Summer Season)

Service		Demand Cost of Gas	Commodity Cost of Gas	Reconciliation Costs	Working Capital	Bad Debt	Production & Storage Cap	Misc. Overhead	Demand Supplier Refund	Commodity Supplier Refund	Total COG COG
Applies to the following Rate Classes	R-5, R-6, R-10	$0.1458	$0.3673	$0.0122	($0.0007)	$0.0017	$0.0000	$0.0135	$0.0000	$0.0000	**$0.5398**
	G-40, G-41, G-42	$0.1780	$0.3672	$0.0122	($0.0007)	$0.0017	$0.0000	$0.0135	$0.0000	$0.0000	**$0.5719**
	G-50, G-51, G-52	$0.0990	$0.3672	$0.0122	($0.0007)	$0.0017	$0.0000	$0.0135	$0.0000	$0.0000	**$0.4929**

Northern Utilities - NH

Delivery Service Miscellaneous Fees: Summer Period

Effective: October 1, 2021

APPROVED

APPROVED

Season
Summer

Applies to the following Rate Classes ($ per therm)	Re-entry Rate
G-40, G-41, G-42, G-50, G-51, G-52	**$0.0011**

Applicable only to capacity assigned customers that switch from Delivery Service to Sales Service. Re-entry Rate is in effect fom the effective re-entry date until the following May 1st

CONVERSION RATE (Summer Season)

Applies to the following Rate Classes ($ per therm)	Conversion Rate
G-40, G-41, G-42	**$0.0011**
G-50, G-51, G-52	**$0.0011**

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Applicable only to capacity exempt customers that switch from Delivery Service to Sales Service. Conversion Rate is in effect from the effective conversion date until the following May 1st.

Supplier Balancing Charge

Applies to the following Rate Classes ($ per MMBtu)		
G-40, G-41, G-42, G-50, G-51, G-52	**$0.71**	per MMBtu of Imbalance volumes

Peaking Service Demand Charge

Applies to Capacity Assigned Customers Only		
G-40, G-41, G-42, G-50, G-51, G-52	**$64.53**	per MMBtu per month

Supplier Services and Associated Fees

Applies to the following Telemeter Types		
Pool Administration (required)	**$0.10**	Per Month / customer billed @ marketer level
Standard Passthrough billing	**$0.60**	customer / month billed @ marketer level
Standard Complete Billing (optional - Pass through fee not required if this service is elected)	**$1.50**	customer / month billed @ marketer level
Customer Administration (required)	**$10.00**	customer /switch billed @ marketer level

Turn-on Charge - Applies to Sales & Delivery Service Customers

Regular Working Hours	**$36.00**	per service
Saturday, Sunday or Holidays	**$75.00**	per service

Meter Read Charge

When customer's phone line is not reporting daily data	**$78.00**	per read

Northern Utilities - NH

Summary of Rates: Winter Season

Delivery Service and Supply Charges

Effective: November 1, 2021

APPROVED

Service	Winter Rates Blocks	DELIVERY CHARGES: Customer Charge	Distribution Charge	Local Delivery Adjustment Charge (LDAC)(1)	Total Delivery	GAS SUPPLY CHARGES: COG(1)	Total Incl. COG
Residential Heat R-5	Customer Charge	$22.20			**$22.20**		**$22.20**
	First 50 therms		$0.7603	$0.0631	**$0.8234**	$0.9392	**$1.7626**
	Excess 50 therms		$0.7603	$0.0631	**$0.8234**	$0.9392	**$1.7626**
Residential Low Income Heat R-10	Customer Charge	$22.20			**$22.20**		**$22.20**
	First 50 therms		$0.7603	$0.0631	**$0.8234**	$0.9392	**$1.7626**
	Excess 50 therms		$0.7603	$0.0631	**$0.8234**	$0.9392	**$1.7626**
	45% Low Income Discount						
	Monthly Customer Charge	($9.99)			**($9.99)**		**($9.99)**
	First 50 therms		($0.3421)	$0.0000	**($0.3421)**	($0.4226)	**($0.7647)**
	Excess 50 therms		($0.3421)	$0.0000	**($0.3421)**	($0.4226)	**($0.7647)**
Residential NonHeat R-6	Customer Charge	$22.20			**$22.20**		**$22.20**
	First 10 therms		$0.7153	$0.0631	**$0.7784**	$0.9392	**$1.7176**
	Excess 10 therms		$0.7153	$0.0631	**$0.7784**	$0.9392	**$1.7176**
General Service Low Annual, High Winter Use (2) G-40	Customer Charge	$75.09			**$75.09**		**$75.09**
	First 75 therms		$0.2090	$0.0360	**$0.2450**	$0.9551	**$1.2001**
	Excess 75 therms		$0.2090	$0.0360	**$0.2450**	$0.9551	**$1.2001**
Less than or equal to 8,000 Therms/Yr.							
General Service Low Annual, Low Winter Use (2) G-50	Customer Charge	$75.09			**$75.09**		**$75.09**
	First 75 therms		$0.2090	$0.0360	**$0.2450**	$0.8453	**$1.0903**
	Excess 75 therms		$0.2090	$0.0360	**$0.2450**	$0.8453	**$1.0903**
Less than or equal to 8,000 Therms/Yr.							
General Service Medium Annual, High Winter Use (2) G-41	Customer Charge	$222.64			**$222.64**		**$222.64**
	All Therms		$0.2650	$0.0360	**$0.3010**	$0.9551	**$1.2561**
Greater than 8,000 but less than or equal to 80,000 Therms/Yr.							
General Service Medium Annual, Low Winter Use (2) G-51	Customer Charge	$222.64			**$222.64**		**$222.64**
	First 1,300 Therms		$0.1937	$0.0360	**$0.2297**	$0.8453	**$1.0750**
	Excess 1,300 Therms		$0.1624	$0.0360	**$0.1984**	$0.8453	**$1.0437**
Greater than 8,000 but less than or equal to 80,000 Therms/Yr.							
General Service High Annual, High Winter Use(2) G-42	Customer Charge	$1,335.81			**$1,335.81**		**$1,335.81**
	All Therms		$0.2209	$0.0360	**$0.2569**	$0.9551	**$1.2120**
Greater than 80,000 Therms/Yr.							
General Service High Annual, Low Winter Use(2) G-52	Customer Charge	$1,335.81			**$1,335.81**		**$1,335.81**
	All Therms		$0.1945	$0.0360	**$0.2305**	$0.8453	**$1.0758**
Greater than 80,000 Therms/Yr.							

Northern Utilities - NH

Summary of Rates: Winter Season

Delivery Service and Supply Charges

Effective: November 1, 2021

APPROVED

Service	Winter Rates Blocks	DELIVERY CHARGES: Customer Charge	Distribution Charge	Local Delivery Adjustment Charge (LDAC)(1)	Total Delivery	GAS SUPPLY CHARGES: COG(1)	Total Incl. COG
General Service Interruptible Transportation IT	Customer Charge	$170.21			**$170.21**		**$170.21**
	First 20,000 therms		$0.1299		**$0.1299**		**$0.1299**
	Excess 20,000 therms		$0.1108		**$0.1108**		**$0.1108**
Greater than 80,000 Therms/Yr.							
General Service Interruptible Stand-by Gas Supply ISGS	All Therms		marginal plus <$0.05			variable	

(1) The LDAC and the COG are broken out into individual rate components. (See page 3). The COG is not applicable to Transportation Only Customers.

(2) High winter use is winter period usage greater than or equal to 67% of annual usage. Low winter use is winter period usage less than 67% of annual usage. The Winter Period is defined as the billing months of November through April. The Summer Period is defined as the billing months of May through October.

Northern Utilities - NH

Summary of LDAC/COG Components: Winter Season

Effective: November 1, 2021

APPROVED

APPROVED

LOCAL DELIVERY ADJUSTMENT CLAUSE (Winter Season)

Service		GAPRA	EEC	LRR	ERC	ITMC	RCE	RPC	Total LDAC
Rate Classes	R-5, R-6, R-10	$0.0060	$0.0449	$0.0066	$0.0056	$0.0000	$0.0000	$0.0000	**$0.0631**
	G-40, G-50, G-41, G-51, G-42, G-52,	$0.0060	$0.0238	$0.0006	$0.0056	$0.0000	$0.0000	$0.0000	**$0.0360**

RLIARA = Residential Low Income Assistance and Regulatory Assessment Costs, EEC - Energy Efficiency Charge (a.k.a. EE-Energy Efficiency; and DSM-Demand-side Management),
LRR = Lost Revenue Rate (to recover lost revenue related to Energy Efficiency ("CC") Programs),
ERC = Environmental Response Costs, ITMC = Interruptible Transportation Margin Credit,
RCE = Expenses Related to Rate Case, RPC = Reconciliation of Permanent Changes in Delivery Rates.

COST OF GAS ADJUSTMENT CLAUSE (Winter Season)

Service		Demand Cost of Gas	Commodity Cost of Gas	Reconciliation Costs	Working Capital	Bad Debt	Production & Storage Cap	Misc. Overhead	Demand Supplier Refund	Commodity Supplier Refund	Total COG COG
Applies to the following Rate Classes	R-5, R-6, R-10	$0.3622	$0.5435	$0.0042	$0.0006	$0.0021	$0.0135	$0.0131	$0.0000	$0.0000	**$0.9392**
	G-40, G-41, G-42	$0.3805	$0.5411	$0.0042	$0.0006	$0.0021	$0.0135	$0.0131	$0.0000	$0.0000	**$0.9551**
	G-50, G-51, G-52	$0.2543	$0.5575	$0.0042	$0.0006	$0.0021	$0.0135	$0.0131	$0.0000	$0.0000	**$0.8453**

Northern Utilities - NH

Delivery Service Miscellaneous Fees: Winter Period

Effective: November 1, 2021

APPROVED

APPROVED

Season
Winter

Applies to the following Rate Classes ($ per therm)	Re-entry Rate
G-40, G-41, G-42, G-50, G-51, G-52	**$0.0000**

Applicable only to capacity assigned customers that switch from Delivery Service to Sales Service. Re-entry Rate is in effect fom the effective re-entry date until the following May 1st

CONVERSION RATE (Winter Season)

Applies to the following Rate Classes ($ per therm)	Conversion Rate
G-40, G-41, G-42	**$0.7543**
G-50, G-51, G-52	**$0.8641**

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Applicable only to capacity exempt customers that switch from Delivery Service to Sales Service. Conversion Rate is in effect from the effective conversion date until the following May 1st.

Supplier Balancing Charge

Applies to the following Rate Classes ($ per MMBtu)		
G-40, G-41, G-42, G-50, G-51, G-52	**$0.71**	per MMBtu of Imbalance volumes

Peaking Service Demand Charge

Applies to Capacity Assigned Customers Only		
G-40, G-41, G-42, G-50, G-51, G-52	**$71.85**	per MMBtu per month

Supplier Services and Associated Fees

Applies to the following Telemeter Types		
Pool Administration (required)	**$0.10**	Per Month / customer billed @ marketer level
Standard Passthrough billing	**$0.60**	customer / month billed @ marketer level
Standard Complete Billing (optional - Pass through fee not required if this service is elected)	**$1.50**	customer / month billed @ marketer level
Customer Administration (required)	**$10.00**	customer /switch billed @ marketer level

Turn-on Charge - Applies to Sales & Delivery Service Customers

Regular Working Hours	**$36.00**	per service
Saturday, Sunday or Holidays	**$75.00**	per service

Meter Read Charge

When customer's phone line is not reporting daily data	**$78.00**	per read

	January	February	March	April	May	June	July	August	September	October	November	December	Total
Unit Sales (therms):													
1 **R5:**													
2 R-5 First Step	1,178,984	1,205,270	1,178,954	1,001,194	815,932	459,513	336,681	317,112	312,525	394,573	864,466	1,137,378	9,202,581
3 R-5 Excess	1,783,774	2,109,884	1,946,392	576,105	223,227	29,346	19,710	16,193	18,081	20,763	272,831	1,210,248	8,226,554
4 **Total: R5**	**2,962,758**	**3,315,155**	**3,125,346**	**1,577,298**	**1,039,159**	**488,859**	**356,391**	**333,305**	**330,606**	**415,336**	**1,137,298**	**2,347,625**	**17,429,135**
5 **R6:**													
6 R-6 First Step	9,199	9,108	9,091	8,673	8,919	8,591	8,335	8,184	7,978	7,992	8,797	8,898	103,766
7 R-6 Excess	21,871	24,084	23,014	11,275	8,650	5,432	4,771	4,227	3,712	3,315	7,550	17,367	135,269
8 **Total: R6**	**31,069**	**33,192**	**32,106**	**19,949**	**17,569**	**14,023**	**13,105**	**12,412**	**11,689**	**11,308**	**16,348**	**26,265**	**239,035**
9 **R10:**													
10 R-10 First Step	31,591	34,214	44,027	33,900	26,541	10,081	6,407	6,131	5,815	7,982	10,706	35,565	252,960
11 R-10 Excess	33,386	45,625	52,273	16,393	6,352	740	228	122	105	228	2,262	24,043	181,757
12 **Total: R10**	**64,977**	**79,840**	**96,300**	**50,293**	**32,893**	**10,821**	**6,635**	**6,253**	**5,919**	**8,210**	**12,967**	**59,609**	**434,717**
13 **Total Residential**	**3,058,804**	**3,428,187**	**3,253,751**	**1,647,540**	**1,089,621**	**513,703**	**376,131**	**351,970**	**348,214**	**434,854**	**1,166,613**	**2,433,499**	**18,102,887**
14													
15 **G40T40:**	**January**	**February**	**March**	**April**	**May**	**June**	**July**	**August**	**September**	**October**	**November**	**December**	**Total**
16 G-40 First Step	353,996	365,332	360,121	297,722	233,013	117,768	78,347	75,100	74,347	105,826	240,776	335,196	2,637,545
17 G-40 Excess	1,407,439	1,700,898	1,553,609	570,953	282,357	83,323	50,931	54,460	54,992	66,055	347,985	1,062,107	7,235,109
18 **Total: G40/T40**	**1,761,435**	**2,066,231**	**1,913,730**	**868,675**	**515,370**	**201,091**	**129,278**	**129,560**	**129,338**	**171,882**	**588,761**	**1,397,303**	**9,872,653**
19 **G41/T41:**													
20 **Total: G41/T41**	**2,300,973**	**2,598,577**	**2,450,429**	**1,271,421**	**840,977**	**365,710**	**271,232**	**265,495**	**265,560**	**405,984**	**1,004,573**	**1,915,083**	**13,956,015**
21 **G42/T42:**													
22 **Total: G42T/42**	**733,238**	**738,248**	**627,466**	**406,878**	**263,754**	**161,244**	**152,096**	**132,311**	**182,859**	**289,972**	**517,952**	**677,578**	**4,883,597**
23 **G50/T50:**													
24 G-50 First Step	38,173	39,301	39,457	37,221	37,553	38,198	38,507	38,831	38,595	38,039	37,574	38,770	460,218
25 G-50 Excess Step	119,682	130,704	138,670	94,314	93,522	93,561	95,795	97,511	94,283	86,764	90,932	118,289	1,254,026
26 **Total: G50/T50**	**157,856**	**170,005**	**178,127**	**131,535**	**131,075**	**131,759**	**134,302**	**136,342**	**132,877**	**124,802**	**128,505**	**157,058**	**1,714,243**
27 **G51/T51:**													
28 G-51 -First Step	294,211	303,696	306,219	267,135	242,422	214,989	208,996	213,549	212,411	218,148	244,649	301,164	3,027,587
29 G-51 Excess	197,106	230,275	260,441	139,232	132,072	106,586	86,977	104,878	97,298	116,524	138,908	214,313	1,824,610
30 **Total: G51/T51**	**491,316**	**533,970**	**566,660**	**406,367**	**374,494**	**321,575**	**295,972**	**318,428**	**309,708**	**334,672**	**383,557**	**515,477**	**4,852,197**
31 **G52:**													
32 **Total: G52/T52**	**1,610,433**	**1,475,215**	**1,561,514**	**1,469,095**	**1,440,415**	**1,290,205**	**1,633,321**	**1,405,691**	**1,330,668**	**1,442,883**	**1,613,166**	**1,607,878**	**17,880,483**
33 **Total C&I**	**7,055,251**	**7,582,246**	**7,297,927**	**4,553,970**	**3,566,085**	**2,471,584**	**2,616,202**	**2,387,827**	**2,351,010**	**2,770,196**	**4,236,514**	**6,270,377**	**53,159,189**
34 **TOTAL - ALL CLASSES**	**10,114,055**	**11,010,433**	**10,551,678**	**6,201,510**	**4,655,706**	**2,985,287**	**2,992,333**	**2,739,797**	**2,699,225**	**3,205,050**	**5,403,127**	**8,703,876**	**71,262,076**

Source: Data extracted from billing system.

DE 20-092
Northern Utilities, Inc.
Calculation of Lost Base Revenue for Year 2021* (cumulative 2017-2021)

NHSaves Energy Efficiency Programs
NHPUC Docket No. DE 17-136 (Copied to DE 20-092)
2021 Annual Report
Attachment C

		Therm Savings			
	Description	**Residential**	**C&I**	**Total**	**Ref.**
	Measures Installed in 2017:				
1.	Program Year 2017 Actual Therm Savings (Jan - Apr)	23,585	88,525	112,110	2017 Annual Report, P2, Annualized Savings/12*4
2.	2021 Average Distribution Rates (ADR) (Jan - Apr)	$0.6915	$0.2004		2021 Annual Report, Page 1, Line 17 & 21
3.	Sub-Total LBR	$ 16,309	$ 17,740	$ 34,050	Ln 1 * Ln 2
4.	Program Year 2017 Actual Therm Savings (May - Sept)	29,482	110,656	140,138	2017 Annual Report, P2, Annualized Savings/12*5
5.	2021 Average Distribution Rates (ADR) (May - Sept)	$0.6109	$0.1183		2021 Annual Report, Page 1, Line 17 & 21
6.	Sub-Total LBR	$ 18,010	$ 13,091	$ 31,101	Ln 4 * Ln 5
4.	Program Year 2017 Actual Therm Savings (Oct)[1]	-	-	-	2017 Annual Report, P2, Annualized Savings/12*1
5.	2021 Average Distribution Rates (ADR) (Oct)	$0.6792	$0.1392		2021 Annual Report, Page 1, Line 17 & 21
6.	Sub-Total LBR	$ -	$ -	$ -	Ln 4 * Ln 5
7.	Program Year 2017 Actual Therm Savings (Nov - Dec)[1]	-	-	-	2017 Annual Report, P2, Annualized Savings/12*2
8.	2021 Average Distribution Rates (ADR) (Nov - Dec)	$0.7598	$0.2191		2021 Annual Report, Page 1, Line 17 & 21
9.	Sub-Total LBR	$ -	$ -	$ -	Ln 7 * Ln 8
10.	**Total LBR (Measures Installed in 2017)**	**$ 34,320**	**$ 30,831**	**$ 65,151**	**Ln 3 + Ln 6 + Ln 9**
	Measures Installed in 2018:				
11.	Program Year 2018 Actual Therm Savings (Jan - Apr)	38,589	60,707	99,296	2018 Annual Reports, P2, Annualized Savings/12*4
12.	2021 Average Distribution Rates (ADR) (Jan - Apr)	$0.6915	$0.2004		2021 Annual Report, Page 1, Line 17 & 21
13.	Sub-Total LBR	$ 26,685	$ 12,166	$ 38,850	Ln 11 * Ln 12
14.	Program Year 2018 Actual Therm Savings (May - Sept)	48,237	75,883	124,120	2018 Annual Reports, P2, Annualized Savings/12*6
15.	2021 Average Distribution Rates (ADR) (May - Sept)	$0.6109	$0.1183		2021 Annual Report, Page 1, Line 17 & 21
16.	Sub-Total LBR	$ 29,468	$ 8,977	$ 38,445	Ln 14 * Ln 15
17.	Program Year 2018 Actual Therm Savings (Oct)[1]	-	-	-	2018 Annual Reports, P2, Annualized Savings/12*6
18.	2021 Average Distribution Rates (ADR) (Oct)[1]	$0.6792	$0.1392		2021 Annual Report, Page 1, Line 17 & 21
19.	Sub-Total LBR	$ -	$ -	$ -	Ln 17 * Ln 18
20.	Program Year 2018 Actual Therm Savings (Nov - Dec)[1]	-	-	-	2018 Annual Reports, P2, Annualized Savings/12*2
21.	2021 Average Distribution Rates (ADR) (Nov - Dec)[1]	$0.7598	$0.2191		2021 Annual Report, Page 1, Line 17 & 21
22.	Sub-Total LBR	$ -	$ -	$ -	Ln 20 * Ln 21
23.	**Total LBR (Measures Installed in 2018)**	**$ 56,152**	**$ 21,143**	**$ 77,295**	**Ln 13 + Ln 16 + Ln 22**
	Measures Installed in 2019				
24.	Program Year 2019 Actual Therm Savings (Jan - Apr)	54,205	80,387	134,592	2019 Annual Reports, P2, Annualized Savings/12*4
25.	2021 Average Distribution Rates (ADR) (Jan - Apr)	$0.6915	$0.2004		2021 Annual Report, Page 1, Line 17 & 21
26.	Sub-Total LBR	$ 37,483	$ 16,110	$ 53,592	Ln 24 * Ln 25
27.	Program Year 2019 Actual Therm Savings (May - Sept)	67,756	100,484	168,240	2019 Annual Reports, P2, Annualized Savings/12*6
28.	2021 Average Distribution Rates (ADR) (May - Sept)	$0.6109	$0.1183		2021 Annual Report, Page 1, Line 17 & 21
29.	Sub-Total LBR	$ 41,392	$ 11,887	$ 53,280	Ln 27 * Ln 28
30.	Program Year 2019 Actual Therm Savings (Oct)[1]	-	-	-	2019 Annual Reports, P2, Annualized Savings/12*6
31.	2021 Average Distribution Rates (ADR) (Oct)[1]	$0.6792	$0.1392		2021 Annual Report, Page 1, Line 17 & 21
32.	Sub-Total LBR	$ -	$ -	$ -	Ln 30 * Ln 31
33.	Program Year 2019 Actual Therm Savings (Nov - Dec)[1]	-	-	-	2019 Annual Reports, P2, Annualized Savings/12*2
34.	2021 Average Distribution Rates (ADR) (Nov - Dec)[1]	$0.7598	$0.2191		2021 Annual Report, Page 1, Line 17 & 21
35.	Sub-Total LBR	$ -	$ -	$ -	Ln 33 * Ln 34
36.	**Total LBR (Measures Installed in 2019)**	**$ 78,875**	**$ 27,997**	**$ 106,872**	**Ln 26 + Ln 29 + Ln 35 + Ln 35**
37.	**Total LBR (Measures Installed in 2017-2019)**	**169,347**	**79,970**	**249,317**	
	Measures Installed in 2020				
38.	Program Year 2020 Actual Therm Savings (Jan - Apr)	48,392	80,804	129,196	2021 Annual Report, Page 1, Line 18 & 22
39.	2021 Average Distribution Rates (ADR) (Jan - Apr)	$0.6915	$0.2004		2021 Annual Report, Page 1, Line 19 & 23
40.	Sub-Total LBR	$ 33,463	$ 16,193	$ 49,656	Ln 38 * Ln 39
41.	Program Year 2020 Actual Therm Savings (May - Sept)	57,559	101,005	158,564	2021 Annual Report, Page 1, Line 18 & 22
42.	2021 Average Distribution Rates (ADR) (May - Sept)	$0.6109	$0.1183		2021 Annual Report, Page 1, Line 19 & 23
43.	Sub-Total LBR	$ 35,163	$ 11,949	$ 47,112	Ln 41 * Ln 42
44.	Program Year 2020 Actual Therm Savings (Oct)[1]	4,734	15,530	20,264	2021 Annual Report, Page 1, Line 18 & 22
45.	2021 Average Distribution Rates (ADR) (Oct)[1]	$0.6792	$0.1392		2021 Annual Report, Page 1, Line 19 & 23
46.	Sub-Total LBR	$ 3,216	$ 2,162	$ 5,377	Ln 44 * Ln 45
47.	Program Year 2020 Actual Therm Savings (Nov - Dec)[1]	8,014	31,059	39,073	2021 Annual Report, Page 1, Line 18 & 22
48.	2021 Average Distribution Rates (ADR) (Nov - Dec)[1]	$0.7598	$0.2191		2021 Annual Report, Page 1, Line 19 & 23
49.	Sub-Total LBR	$ 6,089	$ 6,805	$ 12,894	Ln 47 * Ln 48
50.	**Total LBR (Measures Installed in 2020)**	**$ 77,931**	**$ 37,109**	**$ 115,040**	**Ln 40 + Ln 43 + Ln 46 + Ln 49**
	Measures Installed in 2021				
51.	Program Year 2021 Actual Therm Savings (Jan - Apr)	12,604	3,169	15,772	2021 Annual Report, Page 3, Line 20 & 27
52.	2021 Average Distribution Rates (ADR) (Jan - Apr)	$0.6915	$0.2004		2021 Annual Report, Page 1, Line 21 & 25
53.	Sub-Total LBR	$ 8,715	$ 635	$ 9,350	Ln 51 * Ln 52
54.	Program Year 2021 Actual Therm Savings (May - Sept)	42,779	13,696	56,474	2021 Annual Report, Page 3, Line 20 & 27
55.	2021 Average Distribution Rates (ADR) (May - Sept)	$0.6109	$0.1183		2021 Annual Report, Page 1, Line 21 & 25
56.	Sub-Total LBR	$ 26,134	$ 1,620	$ 27,754	Ln 54 * Ln 55
57.	Program Year 2021 Actual Therm Savings (Oct)	10,447	4,724	15,171	2021 Annual Report, Page 3, Line 20 & 27
58.	2021 Average Distribution Rates (ADR) (Oct)	$0.6792	$0.1392		2021 Annual Report, Page 1, Line 21 & 25
59.	Sub-Total LBR	$ 7,095	$ 658	$ 7,753	Ln 57 * Ln 58
60.	Program Year 2021 Actual Therm Savings (Nov - Dec)	25,688	21,442	47,130	2021 Annual Report, Page 3, Line 20 & 27
61.	2021 Average Distribution Rates (ADR) (Nov - Dec)	$0.7598	$0.2191		2021 Annual Report, Page 1, Line 21 & 25
62.	Sub-Total LBR	$ 19,518	$ 4,698	$ 24,216	Ln 60 * Ln 61
63.	**Total LBR (Measures Installed in 2021)**	**$ 61,462**	**$ 7,611**	**$ 69,073**	**Ln 53 + Ln 56 + Ln 62**
64.	**Grand Total 2021 LBR**	**$ 308,740**	**$ 124,690**	**$ 433,430**	

(1): Adjustments to LBR pursuant to the Company's base rate case, DG 21-104.

Program Cost-Effectiveness - 2021 ACTUAL

	Benefit/Cost Ratios Granite State Test	Benefits ($000) Granite State Test	Utility Costs ($000)	Customer Costs ($000)	Annual MWh Savings	Lifetime MWh Savings	Winter kW Savings	Summer kW Savings	Number of Customers Served	Annual MMBTU Savings	Lifetime MMBTU Savings
Residential Programs											
B1 - Home Energy Assistance	1.20	$ 483.437	$ 401.744	$ -	10.462	195.652	2.4	2.7	37	1,184	24,468
A1 - Energy Star Homes	2.46	$ 296.137	$ 120.485	$ 41.450	-	-	-	-	49	1,276	29,951
A2 - Home Performance with Energy Star	1.69	$ 757.834	$ 447.192	$ 105.053	18.170	152.478	8.9	3.1	93	3,293	71,985
A3 - Energy Star Products	1.99	$ 670.553	$ 336.806	$ 302.265	7.338	121.796	2.2	0.3	427	3,858	67,864
A4 - Residential Behavior	2.51	$ 63.453	$ 25.317	$ -	-	-	-	-	13,038	5,968	5,968
Sub-Total Residential	**1.71**	**$ 2,271.414**	**$ 1,331.544**	**$ 448.768**	**35.971**	**469.927**	**13.5**	**6.1**	**13,644**	**15,579**	**200,236**
Commercial, Industrial & Municipal											
C1 - Large Business Energy Solutions	3.55	$ 1,589.340	$ 447.666	$ 148.568	-	-	-	-	4	12,825	192,374
C2 - Small Business Energy Solutions	1.98	$ 957.874	$ 483.665	$ 113.172	1.073	29.546	0.7	-	99	6,937	92,623
C6c - C&I Education	-	$ -	$ 3.733	$ -	-	-	-	-		-	-
Sub-Total Commercial & Industrial	**2.72**	**$ 2,547.215**	**$ 935.064**	**$ 261.740**	**1.073**	**29.546**	**0.7**	**-**	**103**	**19,762**	**284,997**
Total	**2.13**	**$ 4,818.629**	**$ 2,266.608**	**$ 710.508**	**37.044**	**499.473**	**14.1**	**6.1**	**13,747**	**35,340**	**485,234**

Annual Savings as a % of 2019 Sales 0.47%

Low-Income	$ 317.33
Residential	$ 36.56
C&I	$ 133.33

Notes

(1) The Granite State Test is used as the primary cost test, as approved in Order No. 36,322, and includes an annual NEI adder of $405.71 per weatherization project in the Home Energy Assistance program.

(2) Utility and Customer Costs and Benefits are expressed in 2021 Dollars.

(3) Per past precedent, discount and inflation rates have been updated for the year in which measures will be installed, and were updated in June 2020 for program year 2021.

Program Cost Effectiveness - 2021 PLAN

	Benefit/Cost Ratios Granite State Test	Benefits ($000) Granite State Test	Utility Costs ($000)	Customer Costs ($000)	Annual MWh Savings	Lifetime MWh Savings	Winter kW Savings	Summer kW Savings	Number of Customers Served	Annual MMBTU Savings	Lifetime MMBTU Savings
Residential Programs											
B1 - Home Energy Assistance	0.99	$ 408.485	$ 413.000	$ -	11.8	88.4	9.2	6.5	70	1,817	39,238
A1 - Energy Star Homes	1.71	$ 364.510	$ 213.187	$ 57.428	9.6	121.6	1.5	0.9	49	1,495	35,648
A2 - Home Performance with Energy Star	1.63	$ 363.107	$ 222.642	$ 101.709	20.9	215.5	10.9	5.2	54	1,729	34,325
A3 - Energy Star Products	2.04	$ 706.381	$ 347.114	$ 261.405	4.5	59.5	0.9	1.6	812	4,204	70,098
A4 - Residential Behavior	0.81	$ 56.395	$ 69.206	$ -	-	-	-	-	9,100	5,304	5,304
Sub-Total Residential	**1.50**	**$ 1,898.877**	**$ 1,265.149**	**$ 420.542**	**46.8**	**485.0**	**22.5**	**14.1**	**10,085**	**14,549**	**184,612**
Commercial, Industrial & Municipal											
C1 - Large Business Energy Solutions	2.38	$ 1,760.067	$ 740.393	$ 480.718	-	-	-	-	93	16,373	229,189
C2 - Small Business Energy Solutions	2.18	$ 883.739	$ 405.248	$ 342.905	2.5	42.6	0.6	0.2	217	5,870	96,878
C6c - C&I Education	-	$ -	$ 18.567	$ -	-	-	-	-		-	-
Sub-Total Commercial & Industrial	**2.27**	**$ 2,643.806**	**$ 1,164.208**	**$ 823.622**	**2.5**	**42.6**	**0.6**	**0.2**	**310**	**22,243**	**326,067**
Total	**1.87**	**$ 4,542.683**	**$ 2,429.357**	**$ 1,244.164**	**49.2**	**527.6**	**23.2**	**14.3**	**10,395**	**36,792**	**510,680**

Annual Savings as a % of 2014 Sales 0.52%

Low-Income	$ 326.22
Residential	$ 33.51
C&I	$ 166.01

Notes

(1) The Granite State Test is used as the primary cost test, as approved in Order No. 36,322, and includes an annual NEI adder of $405.71 per weatherization project in the Home Energy Assistance
(2) Utility and Customer Costs and Benefits are expressed in 2021 Dollars.
(3) Per past precedent, discount and inflation rates have been updated for the year in which measures will be installed, and were updated in June 2020 for program year 2021.

Present Value Benefits - 2021 ACTUAL

	Total Benefits ($000)	Resource Benefits ($000)																Non-Resource Benefits ($000)			Environ-mental Benefits ($000)
		Electric										Non-Electric			Other Benefit						
		CAPACITY				ENERGY				DRIPE		Gas Benefits									
	Granite State Test	Summer Generation	Winter Generation	Transmission	Distribution	Winter Peak	Winter Off Peak	Summer Peak	Summer Off Peak	Electric DRIPE	Total Electric Benefit	Gas Benefit	Gas DRIPE	Total Gas Benefit	Other Fuels	Water Benefit	Total Resource Benefits	Fossil Emissions	Other Non-Resource Benefits	Total Non-Resource Benefits	
Residential Programs																					
B1 - Home Energy Assistance	**$ 483.4**	$ 4.9	$ -	$ 4.6	$ 4.0	$ 4.1	$ 4.4	$ 2.4	$ 1.9	$ 0.6	**$ 27.0**	$ 206.5	$ 5.9	$ 212.4	$ -	$ 0.2	**$ 239.6**	$ 25.6	$ 218.2	**$ 243.8**	**$ 7.7**
A1 - Energy Star Homes	**$ 296.1**	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**	$ 247.6	$ 6.1	$ 253.7	$ -	$ -	**$ 253.7**	$ 42.5	$ 38.1	**$ 80.5**	**$ -**
A2 - Home Performance with Energy Star	**$ 757.8**	$ 2.3	$ -	$ 2.7	$ 2.4	$ 3.5	$ 3.6	$ 1.7	$ 1.2	$ 0.7	**$ 18.1**	$ 606.1	$ 16.7	$ 622.9	$ 16.9	$ 0.8	**$ 658.7**	$ 99.1	$ 98.7	**$ 197.8**	**$ 6.5**
A3 - Energy Star Products	**$ 670.6**	$ 0.4	$ -	$ 0.4	$ 0.3	$ 3.7	$ 4.4	$ 0.2	$ 0.1	$ 0.5	**$ 9.9**	$ 562.8	$ 17.0	$ 579.7	$ -	$ -	**$ 589.6**	$ 80.9	$ 88.4	**$ 169.4**	**$ 5.1**
A4 - Residential Behavior	**$ 63.5**	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**	$ 56.0	$ 2.9	$ 59.0	$ -	$ -	**$ 59.0**	$ 4.5	$ 8.8	**$ 13.3**	**$ -**
A6e - Res Financing	**$ -**	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	$ -	$ -	**$ -**	$ -	$ -	**$ -**	**$ -**
															$ -						
Sub-Total Residential	**$ 2,271.4**	**$ 7.6**	**$ -**	**$ 7.7**	**$ 6.7**	**$ 11.4**	**$ 12.4**	**$ 4.3**	**$ 3.3**	**$ 1.7**	**$ 55.0**	**$ 1,679.0**	**$ 48.6**	**$ 1,727.7**	$ -	**$ 1.1**	**$ 1,800.6**	**$ 252.6**	**$ 452.2**	**$ 704.8**	**$ 19.3**
															$ -						
Commercial/Industrial Programs															$ -						
C1 - Large Business Energy Solutions	**$ 1,589.3**	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**	$ 1,335.5	$ 41.7	$ 1,377.2	$ -	$ -	**$ 1,377.2**	$ 212.1	$ 206.6	**$ 418.7**	**$ -**
C2 - Small Business Energy Solutions	**$ 957.9**	$ -	$ -	$ -	$ -	$ 1.4	$ 1.6	$ -	$ -	$ 0.1	**$ 3.1**	$ 647.8	$ 21.5	$ 669.3	$ -	$ 181.4	**$ 853.8**	$ 104.1	$ 100.9	**$ 205.0**	**$ 1.7**
C6c - C&I Education	**$ -**	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	$ -	$ -	**$ -**	$ -	$ -	**$ -**	**$ -**
															$ -						
Sub-Total Commercial & Industrial	**$ 2,547.2**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 1.4**	**$ 1.6**	**$ -**	**$ -**	**$ 0.1**	**$ 3.1**	**$ 1,983.3**	**$ 63.2**	**$ 2,046.5**	$ -	**$ 181.4**	**$ 2,231.0**	**$ 316.2**	**$ 307.4**	**$ 623.7**	**$ 1.7**
															$ -						
Total	**$ 4,818.6**	**$ 7.6**	**$ -**	**$ 7.7**	**$ 6.7**	**$ 12.7**	**$ 13.9**	**$ 4.3**	**$ 3.3**	**$ 1.8**	**$ 58.0**	**$ 3,662.4**	**$ 111.8**	**$ 3,774.2**	$ -	**$ 182.5**	**$ 4,031.6**	**$ 568.8**	**$ 759.6**	**$ 1,328.5**	**$ 21.1**

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(2) Non-resource benefits include NEIs, which are only applied to the Home Energy Assistance program in the GST primary cost test.
(3) Non-embedded environmental benefits are not included in the GST primary cost test.

Present Value Benefits - 2021 PLAN

	Total Benefits ($000)	Resource Benefits ($000)																Non-Resource Benefits ($000)			Environmental Benefits ($000)
		Electric										Non-Electric			Other Benefit						
		CAPACITY				ENERGY				DRIPE											
	Granite State Test	Summer Generation	Winter Generation	Transmission	Distribution	Winter Peak	Winter Off Peak	Summer Peak	Summer Off Peak	Electric DRIPE	Total Electric Benefit	Gas Benefit	Gas DRIPE	Total Gas Benefit	Other Fuels	Water Benefit	Total Resource Benefits	Fossil Emissions	Other Non-Resource Benefits	Total Non-Resource Benefits	
Residential Programs																					
B1 - Home Energy Assistance	**$ 408.5**	$ 1.7	$ -	$ 2.7	$ 2.3	$ 1.8	$ 1.8	$ 1.3	$ 1.0	$ 0.3	**$ 12.9**	$ 332.3	$ 9.2	$ 341.5	$ 341.5	$ 2.0	**$ 356.4**	$ 52.1	$ -	**$ 52.1**	**$ 3.6**
A1 - Energy Star Homes	**$ 364.5**	$ 0.7	$ -	$ 0.9	$ 0.8	$ 3.6	$ 2.8	$ 1.0	$ 0.7	$ 0.5	**$ 11.1**	$ 295.3	$ 7.3	$ 302.6	$ 302.6	$ -	**$ 313.7**	$ 50.8	$ 47.1	**$ 97.9**	**$ 5.2**
A2 - Home Performance with Energy Star	**$ 363.1**	$ -	$ -	$ 1.0	$ 0.9	$ 6.9	$ 7.5	$ 0.3	$ 0.2	$ 0.8	**$ 17.6**	$ 293.4	$ 8.8	$ 302.2	$ 302.2	$ -	**$ 319.8**	$ 43.4	$ 48.0	**$ 91.3**	**$ 8.9**
A3 - Energy Star Products	**$ 706.4**	$ 1.9	$ -	$ 2.1	$ 1.8	$ 1.1	$ 1.4	$ 1.1	$ 0.9	$ 0.3	**$ 10.7**	$ 594.4	$ 19.7	$ 614.1	$ 614.1	$ -	**$ 624.8**	$ 81.6	$ 93.7	**$ 175.3**	**$ 3.1**
A4 - Residential Behavior	**$ 56.4**	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**	$ 49.8	$ 2.6	$ 52.4	$ 52.4	$ -	**$ 52.4**	$ 4.0	$ 7.9	**$ 11.8**	**$ -**
Sub-Total Residential	**$ 1,898.9**	**$ 4.4**	**$ -**	**$ 6.7**	**$ 5.8**	**$ 13.4**	**$ 13.5**	**$ 3.7**	**$ 2.8**	**$ 1.9**	**$ 52.2**	**$ 1,565.1**	**$ 47.7**	**$ 1,612.8**	**$ 1,612.8**	**$ 2.0**	**$ 1,667.0**	**$ 231.9**	**$ 196.6**	**$ 428.5**	**$ 20.7**
Commercial/Industrial Programs																					
C1 - Large Business Energy Solutions	**$ 1,760.1**	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**	$ 1,457.5	$ 49.2	$ 1,506.7	$ 1,506.7	$ 0.7	**$ 1,507.4**	$ 252.7	$ 226.0	**$ 478.7**	**$ -**
C2 - Small Business Energy Solutions	**$ 883.7**	$ 0.2	$ -	$ 0.2	$ 0.2	$ 1.3	$ 1.4	$ 0.1	$ 0.1	$ 0.2	**$ 3.7**	$ 727.8	$ 26.4	$ 754.2	$ 754.2	$ 8.0	**$ 765.9**	$ 117.8	$ 113.7	**$ 231.5**	**$ 1.8**
C6c - C&I Education	**$ -**	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	$ -	$ -	**$ -**	$ -	$ -	**$ -**	**$ -**
Sub-Total Commercial & Industrial	**$ 2,643.8**	**$ 0.2**	**$ -**	**$ 0.2**	**$ 0.2**	**$ 1.3**	**$ 1.4**	**$ 0.1**	**$ 0.1**	**$ 0.2**	**$ 3.7**	**$ 2,185.4**	**$ 75.5**	**$ 2,260.9**	**$ 2,260.9**	**$ 8.7**	**$ 2,273.3**	**$ 370.5**	**$ 339.7**	**$ 710.2**	**$ 1.8**
Total	**$ 4,542.7**	**$ 4.6**	**$ -**	**$ 7.0**	**$ 6.0**	**$ 14.6**	**$ 14.9**	**$ 3.8**	**$ 2.9**	**$ 2.1**	**$ 55.9**	**$ 3,750.5**	**$ 123.2**	**$ 3,873.7**	**$ 3,873.7**	**$ 10.7**	**$ 3,940.3**	**$ 602.4**	**$ 536.3**	**$ 1,138.7**	**$ 22.5**

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(2) Non-resource benefits include NEIs, which are only applied to the Home Energy Assistance program in the GST primary cost test.
(3) Non-embedded environmental benefits are not included in the GST primary cost test.

Portfolio Planned Versus Actual Performance - 2021

	Portfolio	Planned	Threshold	Actual	% of Plan	Design Coefficient	Actual Coefficient	Planned PI	125% of Planned PI	Actual PI	Source
1	Lifetime MMBtu Savings	510,680	383,010	485,234	95%	2.475%	2.352%	$ 60,127	$ 75,158	$ 53,303	Planned and Actual from Cost Eff Tab
2	Annual MMBtu Savings	36,792	27,594	35,340	96%	1.100%	1.057%	$ 26,723	$ 33,404	$ 23,949	Planned and Actual from Cost Eff Tab
3	Total Resource Benefits	$ 3,940,270		4,031,610	102%						Planned and Actual from Benefits Tab
4	Total Utility Costs[1]	$ 2,429,357		2,266,608	93%						Planned and Actual from Cost Eff Tab
5	Net Benefits	$ 1,510,913	$ 1,133,184	$ 1,765,002	117%	1.925%	2.249%	$ 46,765	$ 58,456	$ 50,970	Line 5 minus line 6
6	**Total**					**5.500%**	**5.657%**	**$ 133,615**	**$ 167,018**	**$ 128,222**	

		Granite State Test Planned	Granite State Test Actual	Source
7	Total Benefits (GST)	$ 4,542,683	$ 4,818,629	Planned and Actual from Cost Eff Tab
8	Performance Incentive	$ 133,615	$ 128,222	from row 6 above
9	Total Utility Costs	$ 2,429,357	$ 2,266,608	from row 4 above
10	**Portfolio GST BCR**	**1.77**	**2.01**	Row 7 Divided by Rows 8+9

Utility Costs expressed in 2021 dollars.

[1] Note that in order to avoid a circular reference in the calculation of performance incentive, "Total Utility Costs" does not include the value of PI.

2021 Annual Report Reconciliation
Northern Utilities - Unitil Gas
January 1, 2021 - December 31, 2021

				Total 2021
1.	**Ending Balance: 12/31/2020**	**(Over)/Under**	$	317,334
2.	Prior Year(s) True Up		$	(8,334)
3.	**Beginning Balance 1/1/2021**		**$**	**308,999**
Revenues				
4.	Energy Efficiency Charge Revenue		$	3,001,278
5.	Estimated Interest		$	17,266
6.	**Total Funding**	**∑ Lines 4 - 5**	**$**	**3,018,543**
Expenses				
7.	Program Expenses		$	2,266,608
8.	Current Year Planned PI		$	109,979
9.	**Total Expenses**	**∑ Lines 5 thru 7**	**$**	**2,376,586**
10.	**Prelim Ending Balance: 12/31/2021**	**Lines 1 - 4 + 8**	**$**	**(332,958)**
11.	Current Year Actual PI		$	128,222
12.	**Expected Ending Balance: 12/31/2021**		**$**	**(314,715)**

Notes:

Line 2: Prior Year(s) True-Up reflects adjustments to the 2020 ending balance related to 2019 and 2020 PI and interest, as booked in 2021

Line 8: Current Year (2021) Planned PI reflects 65% of the original 2021 planned PI filed on September 1, 2020 in Docket DE 20-092.

Line 9: Current Year (2021) Actual PI reflects the PI calculation from this annual report.

2021 Annual Report Reconciliation
Northern Utilities - Unitil Gas
On-Bill Financing
January 1, 2021 - December 31, 2021
Revenue and Expense Reconciliation

	Resi	C&I	Total
2019 Activity			
New Funding 2019	$30,000	$53,000	$83,000
Loans to Customers 2019	$7,766	$0	$7,766
Payments from Customers 2019	$1,042	$0	$1,042
Ending Balance 2019	**$23,277**	**$53,000**	**$76,277**
2020 Activity			
New Funding 2020	$75,000	$150,000	$225,000
Loans to Customers 2020	$12,952	$0	$12,952
Payments from Customers 2020	$7,249	$0	$7,249
Ending Balance 2020	**$92,573**	**$203,000**	**$295,573**
2021 Activity			
New Funding 2020	$0	$0	$0
Loans to Customers 2020	$29,414	$0	$29,414
Payments from Customers 2020	$8,289	$0	$8,289
Ending Balance 2021	**$71,448**	**$203,000**	**$274,448**

Program Cost-Effectiveness - 2021 Actual

	Benefit/Cost Ratios Granite State Test	Benefits ($000) Granite State Test	Utility Costs ($000 - 2021$)[2]	Customer Costs ($000 - 2021$)[2]	Annual MWh Savings	Lifetime MWh Savings	Winter kW Savings	Summer kW Savings	Number of Customers Served	Annual MMBTU Savings	Lifetime MMBTU Savings
Residential Programs											
B1 - Home Energy Assistance	1.15	791.1	687.2	-	82.2	1,189.7	20.0	5.5	43	856.6	17,454.2
A1 - Energy Star Homes	8.17	1,663.8	203.7	119.4	436.5	10,148.2	131.6	5.8	50	1,149.0	28,069.5
A2 - Home Performance with Energy Star	6.36	7,334.4	1,153.5	334.6	434.4	8,042.6	136.0	3.4	178	13,291.5	276,242.4
A3 - Energy Star Products	1.33	1,581.5	1,185.8	(72.0)	3,371.9	15,772.2	689.7	483.6	76,151	(5,537.1)	(11,478.1)
A6b - Res ISO Forward Capacity Market Expenses	-	-	4.0	-	-	-	-	-	-	-	-
A6c - Res Education	-	-	-	-	-	-	-	-	-	-	-
Sub-Total Residential	**3.52**	**11,370.8**	**3,234.2**	**382.0**	**4,325.1**	**35,152.7**	**977.2**	**498.2**	**76,422**	**9,760.0**	**310,288.1**
Commercial, Industrial & Municipal											
C1 - Large Business Energy Solutions	3.23	1,480.1	457.6	544.5	1,480.2	17,497.9	136.7	93.1	23	(453.5)	(4,570.9)
C2 - Small Business Energy Solutions	1.96	822.8	420.3	332.2	868.5	9,719.1	78.8	70.9	67	(337.3)	(3,433.6)
C3 - Municipal Energy Solutions	3.26	407.0	124.8	41.6	151.9	2,047.5	10.0	9.7	15	292.5	7,018.0
C6b - C&I ISO Forward Capacity Market Expenses	-	-	9.3	-	-	-	-	-	-	-	-
C6c - C&I Education	-	-	7.6	-	-	-	-	-	-	-	-
Sub-Total Commercial & Industrial	**2.66**	**2,709.9**	**1,019.7**	**918.3**	**2,500.7**	**29,264.5**	**225.5**	**173.8**	**105**	**(498.3)**	**(986.5)**
C6e - Smart Start	-	-	-	-	-	-	-	-		-	-
Total	**3.31**	**14,080.8**	**4,253.9**	**1,300.3**	**6,825.7**	**64,417.3**	**1,202.7**	**672.0**	**76,527**	**9,261.7**	**309,301.6**

Notes:

(1) The Granite State Test is used as the primary cost test, as approved in Order No. 36,322, and includes an annual NEI adder of $405.71 per weatherization project in the Home Energy Assistance program.
(2) Utility and Customer Costs Expressed in 2021 Dollars.
(3) Per past precedent, discount and inflation rates have been updated for the year in which measures will be installed, and were updated in June 2020 for program year 2021.

Annual kWh Savings	6,825,734	71.5%	**kWh > 55%**	**Lifetime** kWh Savings	64,417,276	41.5%	**kWh < 55%**
Annual MMBTU Savings (in kWh)	2,714,336	28.5%		**Lifetime** MMBTU Savings (in kWh)	90,647,341	58.5%	
	9,540,070	100.0%			**155,064,617**	100.0%	

Annual Savings as a % of 2019 Sales	0.89%

Spending per Customer		
	Low-Income	$ 283.51
	Residential	$ 36.87
	C&I	$ 25.24

Program Cost-Effectiveness - 2021 Goals

	Benefit/Cost Ratios Granite State Test	Benefits ($000) Granite State Test	Utility Costs ($000 - 2021$)[2]	Customer Costs ($000 - 2021$)[2]	Annual MWh Savings	Lifetime MWh Savings	Winter kW Savings	Summer kW Savings	Number of Customers Served	Annual MMBTU Savings	Lifetime MMBTU Savings
Residential Programs											
B1 - Home Energy Assistance	4.22	3,537.0	838.8	-	75.9	983.1	19.4	4.5	85	2,129.0	41,469.8
A1 - Energy Star Homes	2.72	1,470.2	540.5	187.6	161.3	3,321.8	43.0	5.5	89	1,474.2	36,980.4
A2 - Home Performance with Energy Star	5.37	3,599.7	670.2	447.0	169.4	2,738.0	54.1	2.1	177	6,869.2	136,418.5
A3 - Energy Star Products	2.00	1,714.4	858.4	166.9	2,545.3	13,105.5	438.0	410.9	49,644	(3,261.9)	(7,307.0)
A6b - Res ISO Forward Capacity Market Expenses	-	-	6.0	-	-	-	-	-	-	-	-
A6c - Res Education	-	-	-	-	-	-	-	-	-	-	-
Sub-Total Residential	**3.54**	**10,321.3**	**2,914.0**	**801.5**	**2,951.9**	**20,148.4**	**554.5**	**423.0**	**49,995**	**7,210.5**	**207,561.6**
Commercial, Industrial & Municipal											
C1 - Large Business Energy Solutions	3.39	2,116.1	624.6	903.9	2,380.9	25,748.6	178.7	190.6	39	(1,267.3)	(12,673.5)
C2 - Small Business Energy Solutions	1.59	925.2	581.1	369.4	1,143.9	11,655.3	98.6	80.0	119	(548.7)	(5,487.0)
C3 - Municipal Energy Solutions	1.61	263.1	163.3	85.2	179.5	1,971.8	14.4	16.0	17	128.9	1,910.2
C5 - C&I Active Demand Response	-	-	-	-	-	-	-	-	-	-	-
C6b - C&I ISO Forward Capacity Market Expenses	-	-	14.0	-	-	-	-	-	-	-	-
C6c - C&I Education	-	-	73.9	-	-	-	-	-	-	-	-
C6d - C&I Customer Partnerships	-	-	-	-	-	-	-	-	-	-	-
Sub-Total Commercial & Industrial	**2.27**	**3,304.3**	**1,456.8**	**1,358.5**	**3,704.3**	**39,375.7**	**291.7**	**286.6**	**175**	**(1,687.1)**	**(16,250.3)**
C6e - Smart Start	-	-	5.0	-	-	-	-	-		-	-
Total	**3.11**	**13,625.6**	**4,375.8**	**2,160.0**	**6,656.2**	**59,524.1**	**846.2**	**709.7**	**50,170**	**5,523.4**	**191,311.3**

Notes:

(1) The Granite State Test is used as the primary cost test, as approved in Order No. 36,322, and includes an annual NEI adder of $405.71 per weatherization project in the Home Energy Assistance program.
(2) Utility and Customer Costs Expressed in 2021 Dollars.
(3) Per past precedent, discount and inflation rates have been updated for the year in which measures will be installed, and were updated in June 2020 for program year 2021.

Annual kWh Savings	6,656,215	80.4%	**kWh > 55%**	**Lifetime** kWh Savings	59,524,113	51.5%	**kWh < 55%**
Annual MMBTU Savings (in kWh)	1,618,748	19.6%		**Lifetime** MMBTU Savings (in kWh)	56,067,815	48.5%	
	8,274,962	100.0%			**115,591,928**	100.0%	

Annual Savings as a % of 2019 Sales	0.87%

Spending per Customer	Low-Income	$ 346.03
	Residential	$ 30.04
	C&I	$ 36.06

Present Value Benefits - 2021 Actual

	Total Benefits ($000)			Resource Benefits ($000)														Non-Resource Benefits ($000)			Environ-mental Benefits ($000)
				Electric											Non-Electric						
				CAPACITY					ENERGY												
	Granite State Test	*Utility Cost Test*	*Secondary Granite State Test*	Summer Generation	Winter Generation	Transmission	Distribution	Reliability	Winter Peak	Winter Off Peak	Summer Peak	Summer Off Peak	Electric DRIPE	Total Electric Benefit	Other Fuels	Water Benefit	Total Resource Benefits	Fossil Emissions	Other Non-Resource Benefits	Total Non-Resource Benefits	
Residential Programs																					
B1 - Home Energy Assistance	**$ 791**	*$ 95*	*$ 838*	$ 4	$ -	$ 4	$ 4	$ -	$ 34	$ 37	$ 4	$ 3	$ 4	**$ 95**	$ 413	$ 2	**$ 509**	$ 28	$ 254	**$ 282**	**$ 47**
A1 - Energy Star Homes	**$ 1,664**	*$ 741*	*$ 2,458*	$ 7	$ -	$ 7	$ 6	$ -	$ 317	$ 364	$ 8	$ 5	$ 27	**$ 741**	$ 870	$ 5	**$ 1,617**	$ 47	$ 403	**$ 450**	**$ 392**
A2 - Home Performance with Energy Star	**$ 7,334**	*$ 583*	*$ 9,395*	$ 1	$ -	$ 2	$ 2	$ -	$ 248	$ 295	$ 5	$ 4	$ 26	**$ 583**	$ 6,359	$ -	**$ 6,942**	$ 392	$ 1,736	**$ 2,128**	**$ 325**
A3 - Energy Star Products	**$ 1,582**	*$ 1,732*	*$ 2,669*	$ 164	$ -	$ 214	$ 185	$ -	$ 399	$ 353	$ 180	$ 131	$ 105	**$ 1,732**	$ (245)	$ 104	**$ 1,591**	$ (10)	$ 372	**$ 362**	**$ 715**
A6b - Res ISO Forward Capacity Market Expenses	**$ -**	*$ -*	*$ -*	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**	$ -	$ -	**$ -**	$ -	$ -	**$ -**	**$ -**
Sub-Total Residential	**$ 11,371**	*$ 3,151*	*$ 15,361*	**$ 176**	**$ -**	**$ 227**	**$ 197**	**$ -**	**$ 998**	**$ 1,049**	**$ 197**	**$ 144**	**$ 163**	**$ 3,151**	**$ 7,397**	**$ 112**	**$ 10,659**	**$ 458**	**$ 2,764**	**$ 3,222**	**$ 1,480**
Commercial/Industrial Programs																					
C1 - Large Business Energy Solutions	**$ 1,480**	*$ 1,556*	*$ 2,387*	$ 100	$ -	$ 110	$ 95	$ -	$ 395	$ 415	$ 218	$ 135	$ 88	**$ 1,556**	$ (71)	$ -	**$ 1,486**	$ (5)	$ 149	**$ 143**	**$ 759**
C2 - Small Business Energy Solutions	**$ 823**	*$ 879*	*$ 1,327*	$ 63	$ -	$ 73	$ 63	$ -	$ 220	$ 131	$ 179	$ 99	$ 51	**$ 879**	$ (53)	$ 1	**$ 827**	$ (4)	$ 83	**$ 78**	**$ 421**
C3 - Municipal Energy Solutions	**$ 407**	*$ 173*	*$ 533*	$ 11	$ -	$ 12	$ 11	$ -	$ 43	$ 25	$ 41	$ 21	$ 9	**$ 173**	$ 223	$ -	**$ 395**	$ 12	$ 40	**$ 51**	**$ 87**
C6b - C&I ISO Forward Capacity Market Expenses	**$ -**	*$ -*	*$ -*	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**	$ -	$ -	**$ -**	$ -	$ -	**$ -**	**$ -**
C6c - C&I Education	**$ -**	*$ -*	*$ -*	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**	$ -	$ -	**$ -**	$ -	$ -	**$ -**	**$ -**
Sub-Total Commercial & Industrial	**$ 2,710**	*$ 2,608*	*$ 4,248*	**$ 174**	**$ -**	**$ 194**	**$ 168**	**$ -**	**$ 658**	**$ 572**	**$ 438**	**$ 256**	**$ 148**	**$ 2,608**	**$ 99**	**$ 1**	**$ 2,708**	**$ 2**	**$ 271**	**$ 273**	**$ 1,267**
C6e - Smart Start	**$ -**	*$ -*	*$ -*	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**	$ -	$ -	**$ -**	$ -	$ -	**$ -**	**$ -**
Total	**$ 14,081**	*$ 5,759*	*$ 19,608*	**$ 351**	**$ -**	**$ 422**	**$ 365**	**$ -**	**$ 1,656**	**$ 1,620**	**$ 635**	**$ 399**	**$ 311**	**$ 5,759**	**$ 7,496**	**$ 112**	**$ 13,367**	**$ 460**	**$ 3,034**	**$ 3,494**	**$ 2,747**

Present Value Benefits - 2021 PLAN

	Total Benefits ($000)			Resource Benefits ($000)														Non-Resource Benefits ($000)			Environ-mental Benefits ($000)
				Electric											Non-Electric						
				CAPACITY					ENERGY												
	Granite State Test	*Utility Cost Test*	*Secondary Granite State Test*	Summer Generation	Winter Generation	Transmission	Distribution	Reliability	Winter Peak	Winter Off Peak	Summer Peak	Summer Off Peak	Electric DRIPE	Total Electric Benefit	Other Fuels	Water Benefit	Total Resource Benefits	Fossil Emissions	Other Non-Resource Benefits	Total Non-Resource Benefits	
Residential Programs																					
B1 - Home Energy Assistance	**$ 3,537**	*$ 81*	*$ 3,579*	$ 3	$ -	$ 4	$ 3	$ -	$ 28	$ 32	$ 4	$ 3	$ 4	**$ 81**	$ 932	$ -	**$ 1,013**	$ 61	$ 2,463	**$ 2,524**	**$ 42**
A1 - Energy Star Homes	**$ 1,470**	*$ 254*	*$ 1,950*	$ 6	$ -	$ 7	$ 6	$ -	$ 103	$ 108	$ 8	$ 6	$ 10	**$ 254**	$ 1,144	$ 9	**$ 1,407**	$ 63	$ 350	**$ 413**	**$ 131**
A2 - Home Performance with Energy Star	**$ 3,600**	*$ 199*	*$ 4,563*	$ 0	$ -	$ 0	$ 0	$ -	$ 85	$ 101	$ 1	$ 1	$ 9	**$ 199**	$ 3,210	$ -	**$ 3,409**	$ 191	$ 852	**$ 1,043**	**$ 111**
A3 - Energy Star Products	**$ 1,714**	*$ 1,553*	*$ 2,661*	$ 175	$ -	$ 223	$ 193	$ -	$ 302	$ 255	$ 178	$ 136	$ 90	**$ 1,553**	$ (157)	$ 325	**$ 1,721**	$ (6)	$ 349	**$ 343**	**$ 598**
A6b - Res ISO Forward Capacity Market Expenses	**$ -**	*$ -*	*$ -*	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**	$ -	$ -	**$ -**	$ -	$ -	**$ -**	**$ -**
Sub-Total Residential	**$ 10,321**	*$ 2,087*	*$ 12,754*	**$ 185**	**$ -**	**$ 234**	**$ 203**	**$ -**	**$ 518**	**$ 497**	**$ 191**	**$ 146**	**$ 114**	**$ 2,087**	**$ 5,129**	**$ 333**	**$ 7,550**	**$ 309**	**$ 4,014**	**$ 4,322**	**$ 882**
Commercial/Industrial Programs																					
C1 - Large Business Energy Solutions	**$ 2,116**	*$ 2,328*	*$ 3,460*	$ 153	$ -	$ 179	$ 155	$ -	$ 604	$ 480	$ 412	$ 203	$ 142	**$ 2,328**	$ (196)	$ -	**$ 2,131**	$ (15)	$ 213	**$ 198**	**$ 1,131**
C2 - Small Business Energy Solutions	**$ 925**	*$ 1,017*	*$ 1,532*	$ 63	$ -	$ 74	$ 64	$ -	$ 229	$ 148	$ 239	$ 132	$ 67	**$ 1,017**	$ (85)	$ -	**$ 932**	$ (7)	$ 93	**$ 87**	**$ 514**
C3 - Municipal Energy Solutions	**$ 263**	*$ 188*	*$ 376*	$ 14	$ -	$ 16	$ 14	$ -	$ 68	$ 24	$ 29	$ 12	$ 11	**$ 188**	$ 73	$ -	**$ 261**	$ 2	$ 26	**$ 28**	**$ 86**
C6b - C&I ISO Forward Capacity Market Expenses	**$ -**	*$ -*	*$ -*	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**	$ -	$ -	**$ -**	$ -	$ -	**$ -**	**$ -**
C6c - C&I Education	**$ -**	*$ -*	*$ -*	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**	$ -	$ -	**$ -**	$ -	$ -	**$ -**	**$ -**
Sub-Total Commercial & Industrial	**$ 3,304**	*$ 3,532*	*$ 5,368*	**$ 229**	**$ -**	**$ 269**	**$ 233**	**$ -**	**$ 901**	**$ 652**	**$ 680**	**$ 347**	**$ 220**	**$ 3,532**	**$ (208)**	**$ -**	**$ 3,324**	**$ (19)**	**$ 332**	**$ 313**	**$ 1,731**
C6e - Smart Start	**$ -**	*$ -*	*$ -*	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**	$ -	$ -	**$ -**	$ -	$ -	**$ -**	**$ -**
Total	**$ 13,626**	*$ 5,619*	*$ 18,122*	**$ 414**	**$ -**	**$ 503**	**$ 436**	**$ -**	**$ 1,419**	**$ 1,149**	**$ 872**	**$ 493**	**$ 334**	**$ 5,619**	**$ 4,921**	**$ 333**	**$ 10,873**	**$ 289**	**$ 4,346**	**$ 4,635**	**$ 2,613**

	Portfolio Planned Versus Actual Performance - 2021										
	Portfolio	Planned	Threshold	Actual	% of Plan	Design Coefficient	Actual Coefficient	Planned PI	*125% of Planned PI*	Actual PI	Source
1	Lifetime kWh Savings	59,524,113	*38,690,673*	64,417,276	108%	1.575%	1.704%	$ 68,840	*$ 86,050*	$ 72,506	Planned and Actual from Cost Eff Tab
2	Annual kWh Savings	6,656,215	*4,326,540*	6,825,734	103%	0.450%	0.461%	$ 19,669	*$ 24,586*	$ 19,630	Planned and Actual from Cost Eff Tab
3	Summer Peak Demand kW	710	*462*	672	95%	0.405%	0.383%	$ 17,702	*$ 22,127*	$ 16,305	Planned and Actual from Cost Eff Tab
4	Winter Peak Demand kW	846	*550*	1,203	142%	0.270%	0.338%	$ 11,801	*$ 14,751*	$ 14,357	Planned and Actual from Cost Eff Tab
5	Active Demand kW	-	-		-	0.225%	-	$ 9,834	*$ 12,293*	$ -	Planned and Actual from ADR Cost Eff Tab
6	Total Resource Benefits	$ 10,873,464		13,367,011	123%						Planned and Actual from Benefits Tab
7	Total Utility Costs[1,2]	$ 4,370,805		4,253,862	97%						Planned and Actual from Cost Eff Tab
8	Net Benefits	$ 6,502,659	*$ 4,226,728*	$ 9,113,149	140%	1.575%	1.969%	$ 68,840	*$ 86,050*	$ 83,748	Line 5 minus line 6
9	Total					4.500%	4.855%	$ 196,686	*$ 245,858*	$ 206,546	

		Granite State Test		
		Planned	Actual	Source
10	Total Benefits	$ 13,625,608	$ 14,080,775	Planned and Actual from Cost Eff Tab
11	Performance Incentive	$ 196,686	$ 206,546	from row 9 above
12	Total Utility Costs	$ 4,370,805	$ 4,253,862	from row 7 above
13	**Portfolio GST BCR**	**2.98**	**3.16**	row 10 divided by rows 11+12

Costs, Benefits, and PI Expressed in 2021 Dollars.

[1] Note that in order to avoid a circular reference in the calculation of performance incentive, "Total Utility Costs" does not include the value of PI.

[2] Net of Smart Start

		2021
Carry Forward Balance	$	1,601,977
Funding:		
System Benefit Charge	$	4,206,230
RGGI Funding	$	217,812
FCM Payments	$	106,892
Interest	$	73,576
Total Funding for Energy Efficiency Programs	**$**	**4,604,510**
Expenses:		
Energy Efficiency Expenditures	$	4,253,862
Performance Incentive[1] - 2020		223,781
Performance Incentive[2] - 2021		206,546
Total Program Expenses	**$**	**4,684,189**
Carry Forward Balance	**$**	**1,522,299**

Notes

1. 2020 Performance Incentive accrued in 2020 and booked in 2021
2. 2021 Performance Incentive accrued in 2021 and booked in 2022

NEW HAMPSHIRE ENERGY EFFICIENCY CALCULATION OF PERFORMANCE INCENTIVE BEGINNING IN 2020

Report Issued by the NH Performance Incentive Working Group

Docket No. DE 17-136
July 31, 2019

Table of Contents

I. Introduction

A. Scope and Members of the PI Working Group

The scope of the Performance Incentive Working Group's ("PI Working Group" or "Working Group") activities is defined by New Hampshire Public Utilities Commission ("Commission" or "PUC") Order Nos. 26,095 and 26,207 in Docket DE 17-136, which approved the Settlement Agreements filed on December 8, 2017 and December 13, 2018, respectively. The Settlement Agreements direct the PI Working Group to undertake a review of potential PI methodologies that could further promote the achievement of New Hampshire's EERS goals, with the objective of implementing any changes to the performance incentive calculation beginning in the 2020 program year. The PI Working Group was tasked with considering metrics designed to encourage income eligible participation in energy efficiency programs and to encourage peak load reductions. Per the Settlement Agreement, the intent of the PI Working Group is to make its recommendations in time to incorporate proposed methodologies into the 2020 New Hampshire Statewide Energy Efficiency Plan Update. This Report represents the PI Working Group's fulfilment of that assignment.

During its extensive 16-month review of the issues surrounding the current, and alternative, PI methodologies, the Working Group reviewed and produced many documents, some of which are posted to a page on the Commission website http://www.puc.state.nh.us/EESE%20Board/EERS WorkingGroups.html. These documents are posted for informational purposes only and the PI Working Group members do not necessarily adopt or endorse the information and findings contained in these documents.

This Report is largely a consensus document produced by the Working Group members. However, while this Report was guided by and results from the Settlement Agreements filed December 8, 2017 and December 13, 2018, it is not intended as, and should not be construed as a Settlement Agreement. As such, Working Group members reserve the opportunity to take consistent or contrary positions when PI is at issue in future proceedings before the Commission. The Report is a public document and may be used in future Commission proceedings. The Working Group meetings and related discussions that lead to the Report were not conducted as privileged or confidential sessions.

This Working Group Report, along with any member/stakeholder comments, has been posted to the Commission website under the PI Working Group section.

The members of the PI Working Group devoted many hours to meetings, research, information responses and preparation of slide presentations and this Report is the product of a collaborative effort enriched by the creative ideas each member brought to the table. A full list of members is included in Appendix B.

B. Executive Summary

The PI Working Group met in order to review the current, and alternative, PI calculation methodologies and to recommend an appropriate PI framework to be implemented for the 2020 period. The Working Group considered including potential metrics to encourage electric system peak load reductions and to increase participation by low income groups and households in energy efficiency programs. The discussions of the PI Working Group occurred over a sixteen-month period between January 2018 and July 2019, and the salient documents from these discussions are posted to the Commission website.

A significant portion of the Working Group's time was spent studying and revising minimum PI thresholds, calculation methodologies, and developing a more comprehensive and transparent framework for calculating PI that constitutes a good replacement for the existing methodology. The new proposed framework is based on the following:

- Categorizing and weighting five separate performance indicators (components), at the portfolio level, each involving minimum savings thresholds (as well as other minimum thresholds summarized below) that must be met in order for any PI to be earned for that component.

Performance Incentive Components (Electric)

PI #	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/PUC
2	Annual kWh Savings	Actual/Planned Annual kWh Savings	10%	75%	125%	Annual PI Filing w/PUC
3	Summer Peak Demand Savings	Actual/Planned ISO-NE System-wide Summer Peak Passive kW Savings	12%	65%	125%	Annual PI Filing w/PUC
4	Winter Peak Demand Savings	Actual/Planned ISO-NE System-wide Winter Peak Passive kW Savings	8%	65%	125%	Annual PI Filing w/PUC
5	Value	Actual/Planned Net Benefits[1]	35%	75%	125%	Annual PI Filing w/PUC
Total			100%			

[1] Total resource benefits (See Appendix D) less utility costs (not including PI).

Performance Incentive Components (Gas)

PI #	Component Title	Description	Incentive Weight	Minimum Threshold	Maximum PI Level	Verification
1	Lifetime MMBtu Savings	Actual/Planned Lifetime MMBtu Savings	45%	75%	125%	Annual PI Filing w/PUC
2	Annual MMBtu Savings	Actual/Planned Annual MMBtu Savings	20%	75%	125%	Annual PI Filing w/PUC
3	Value	Actual/Planned Net Benefits[2]	35%	75%	125%	Annual PI Filing w/PUC
Total			100%			

- The source data for the PI value of each performance indicator is taken from the Benefit-Cost model spreadsheets utilized by the utilities in the preparation of their annual PI filings showing calculations of program cost effectiveness and present value of benefits. Note: The reporting requirement and the compilation of this data on an annual basis will not change – only the calculation of PI has changed.

C. Minimum Thresholds and Requirements

- Most of the existing minimum PI requirements/parameters remain unchanged as follows:
  - ✓ Maintain existing target PI equal to 5.5 percent of each company's program spending with a maximum PI equal to 6.875 percent of actual spending.
  - ✓ Maintain actual spending as the basis of the calculation of PI, rather than the budget.
  - ✓ Maintain a minimum portfolio-wide threshold benefit-cost ratio ("BCR") of 1.0 before PI can be earned, but – remove the BCR from calculation of PI.[3]
  - ✓ Maintain the cap on incentives that can be earned equal to 125 percent of design PI, equivalent to 6.875 percent of actual spending.
  - ✓ Maintain existing use of "adjusted gross savings" for annual and lifetime savings calculations, exclusive of market effects (free ridership and spillover) and inclusive of applicable realization rates achieved by the programs as indicated by third party evaluations and adopted by the Evaluation Measurement and Verification ("EM&V") Working Group.
  - ✓ Maintain the minimum portfolio-wide threshold of 55% of lifetime energy savings from electric measures in the electric programs. As is the case currently, if this threshold is not

[2] Id.

[3] The minimum threshold for cost-effectiveness in this PI framework will be based on the current Total Resource Cost test. The Benefit-Cost and EM&V Working Group are currently evaluating the B/C test used by the New Hampshire energy efficiency programs. A final report is expected to be completed by September of 2019. The PI Working Group members did not address in depth as to whether future PI calculations will reflect any changes to the B/C screening test from that review.

met, then a lower coefficient (4.4 percent rather than 5.5 percent) is to be used in the calculation of PI, along with a corresponding cap of 5.5 percent.

- The following PI requirements/parameters were revised or discontinued:
  - ✓ The existing practice of calculating PI based on achievements at the sector level (i.e. Residential/Income Eligible and Commercial/Industrial sectors) will be replaced by a calculation based on achievement at the portfolio level as a whole (i.e. combination of both sectors) .
  - ✓ The existing minimum threshold of 65 percent of planned lifetime savings, which must be met before any PI is earned for that component, will be increased to 75 percent for each of the lifetime and annual savings components as well as the net benefits component. For the new PI components associated with passive electric summer and winter peak demand, the minimum threshold will be 65 percent (see table above).

The Working Group supports the revised PI framework for the following reasons:

- It uses metrics that are transparent – e.g., performance is incentivized within separate key metric areas that are clear and well-defined, and aligned with EERS goals.
- It is administratively expedient – e.g., provides an easy to use one-page template based on the existing data compilation methods used by the utilities.
- It increases focus on targets and promotes various policy objectives by applying incentives to each performance component separately - e.g., peak demand.
- It establishes minimum thresholds for each performance indicator to encourage performance on each of the targets.
- It preserves effective elements of the existing minimum PI requirements as outlined above - e.g., baseline target and cap, BCR, actual savings, etc.
- It uses a portfolio approach, which provides the utilities with greater flexibility in terms of program implementation and innovation, and increasing low income participation through fuel-neutral measures.

II. Review of Existing Performance Incentive Framework

The current energy efficiency program administration performance incentive framework was initially proposed by the Energy Efficiency Working Group in its final report to the Commission on July 6, 1999,[4] and approved by the Commission in November 2000.[5] Aside from Commission modifications to the framework in September 2013,[6] and again when it approved the Energy Efficiency Resource Standard in 2016,[7] the framework developed nearly two decades ago remains the foundation of New Hampshire's energy efficiency program administration performance incentive framework today.

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[4] Docket No. DE 96-150. Energy Efficiency Working Group Final Report. (July 1999) Page 21. Available at: https://www.puc.nh.gov/Electric/96-150%20%20NH%20Energy%20Efficiency%20Working%20Group%20Final%20Report%20(1999).pdf

[5] Order No. 23,574 at 19. See also, Order No. 23,982 at 13.

[6] Order No. 25,569 at 7. The Commission added the tiered incentive described *infra* at note 7 as a means of balancing the Commission's recently approved fuel neutral programs.

[7] Order No. 25,932 at 60. The modification was to the size the of the performance incentive

A. Current Threshold Requirements

To be eligible for a performance incentive for a specific sector (Residential/income-eligible programs, and Commercial/Industrial, inclusive of the Municipal program for electric programs), the gas or electric utility currently must achieve the following:

1. A BCR of greater than 1.0 in that sector for the electric utilities and gas utilities or not receive PI for the BCR portion.
2. Actual lifetime kWh savings at or above 65 percent of the planned savings in that sector for the electric utilities or no PI is earned for the kWh savings portion.
3. Actual lifetime MMBtu savings at or above 65 percent of the planned savings in that sector for the gas utilities or no PI is earned for the MMBtu savings portion.

B. Electric Programs

Once the above-mentioned threshold requirements have been satisfied, the current performance incentive for the electric energy efficiency programs is calculated on a sector specific basis, and based on the following factors:

1. If actual electric lifetime savings (for both electric and non-electric measures) are greater than or equal to 55 percent of total lifetime energy savings, the multiplier for the savings component is 2.75 percent of sector spending; if it is less than 55 percent then the multiplier is 2.2 percent of sector spending[8]
2. The actual dollars spent (by the utility and by customers) to carry out programs;
3. The actual BCR compared to the planned BCR;
4. The actual lifetime electric energy (kWh) savings compared to the planned lifetime electric energy (kWh) savings;
5. The BCR component and the kWh savings ratio component are each capped at 3.4375 percent for each sector and each sector PI is capped at 6.875 percent; and
6. Actual spending amounts for the PI calculation may exceed the total budget by up to 5 percent.

The current performance incentive formula ties these factors together is as follows for each sector:

(1) (2) (3) (4)

PI= [(2.75% or 2.2%) x Actual Spend] x [(BCR Actual/BCR Planned) + (lifetime kWh Actual/lifetime kWh Planned)]

C. Natural Gas Programs

The performance incentive framework for the natural gas programs is similar to the electric programs, except that it uses MMBtu savings from natural gas instead of lifetime kWh and the incentive percentage and total PI cap is not dependent on achieving a minimum portion of total energy savings from gas measures.

[8] If at least 55 percent of the overall energy savings are in the form of electric energy, then the utility earns PI using the higher 5.5 percent (i.e. 2.75 percent for the savings component and 2.75 percent for the benefit-cost component). If less than 55percent of the overall savings are from electric energy, then the utility earns PI using the lower 4.4 percent multiplier (i.e. 2.2 percent for the savings component and 2.2 percent for the benefit-cost component). The 55% electric savings threshold also determines the overall performance incentive cap; if the 55% threshold is reached, the maximum PI is 6.875% of actual expenditures, otherwise it is 5.5% of actual expenditures. This is meant to focus the majority of the SBC-funded budget towards electric savings rather than gas and other fossil fuel savings. .

The current performance incentive formula for the natural gas programs is as follows for each sector:

(1) (2) (3)
PI= [2.75% x Actual Spend] x [(BCR Actual/BCR Planned) + (lifetime MMBtu Actual / lifetime MMBtu Planned)]

III. Opportunities for Improving the Performance Incentive Model

The PI Working Group stakeholders identified several aspects of the current model which could be improved to reflect the State of New Hampshire's priorities, and account for changes that have taken place in our energy systems in the two decades since the framework was originally adopted.

The opportunities for improvement were focused on the following aspects of the existing framework: (1) a narrow focus on lifetime savings and BCR; (2) a limited emphasis on the value of electric peak demand reduction; (3) a threshold for incentive eligibility that begins at 65 percent of lifetime savings goals; (4) a threshold for incentive eligibility at the sector level rather than portfolio level; and (5) a focus on the ratio of benefits to costs rather than on net benefits.

A. Narrow Focus on Lifetime Savings and BCR

The existing performance incentive framework's narrow focus on BCR and lifetime kWh savings excludes other performance metrics or outcomes stakeholders believe the utilities should target based on the policies of the State of New Hampshire and priorities of the Commission. The American Council for an Energy Efficient Economy (ACEEE) suggests, "Multifactor performance incentives that incorporate multiple metrics can also work to meet other policy objectives… like reducing peak demand (and system costs), creating savings for low-income customers, and others."[9] Several jurisdictions, such as Vermont, utilize a framework based on several quantifiable performance indicators (QPIs).

While the working group acknowledged the importance of utility performance as it relates to lifetime energy savings, as well as maximizing the overall benefits and minimizing the overall costs of the programs, it also reached consensus that other performance indicators merited attention in the framework.[10]

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[9] American Council for an Energy Efficient Economy (ACEEE). Topic Brief: Snapshot of Energy Efficiency Performance Incentives for Electric Utilities. (December 2018) Page 3. Available at: https://aceee.org/sites/default/files/pims-121118.pdf

[10] In addition to reviewing the Vermont QPI framework, the Working Group also reviewed Massachusetts' PI framework, which focuses on the gross and net dollar benefits delivered by energy efficiency programs. After including seven program metrics in its PI formula for several years, the Massachusetts Department of Public Utilities subsequently excluded these metrics stating "performance metrics should induce Program Administrators to undertake activities they would not otherwise undertake" Massachusetts DPU Order 13-67 (December 11, 2014), page 10. Available at https://fileservice.eea.comacloud.net/FileService.Api/file/FileRoom/9230369

B. Limited Emphasis on Peak Demand Reduction

The existing performance incentive framework accounts for the benefits associated with electric peak demand reduction indirectly within that framework's benefit cost component. This contrasts with several states in the region that have recently placed a greater emphasis on the value of demand reduction by including a specific incentive associated with the achievement of planned demand reduction goals.[11] The group also notes that the New Hampshire PUC asked the utilities to explore and pursue peak reduction in several recent dockets as a means to control increasing transmission costs.[12]

While the Working Group members acknowledge that the value of summer peak demand reduction is already indirectly accounted for in the current performance incentive framework's BCR component, the group reached consensus on including components for both a passive summer and passive winter peak demand reductions in the electric programs' PI framework. The group also reached consensus that future opportunities for adoption of a demand reduction metric for natural gas programs should be explored as part of the 2021 -2023 planning process.

C. Incentive Eligibility Threshold

Under the existing performance incentive framework, a utility begins earning an incentive on the savings component upon achieving 65 percent of its targeted lifetime savings goal. However, in several other New England states, including Massachusetts,[13] Connecticut,[14] and Rhode Island,[15] the threshold for earning an incentive is 75 percent of the program targets. As a result, consensus emerged among the working group members that New Hampshire should raise its incentive eligibility thresholds to align better with neighboring jurisdictions. However, the Working Group members also agreed that given the uncertainty surrounding passive summer and winter peak demand reductions and their dependence upon the programs' measure mix, a 65 percent minimum threshold would be applied to those new demand-related components.

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[11] National Grid. 2018-20 Energy Efficiency and System Reliability Procurement Plan. (August 2017). Page 63-65. Available at: http://rieermc.wpengine.com/wp-content/uploads/2017/08/2018-2020-3-year-plan-puc-8-30-17.pdf; Order Re: Compensation Set-Aside and Performance Targets for Efficiency Vermont. (November 2017) Page A-1. Available at: https://drive.google.com/file/d/1oFLJ3yOdHyCv-3UmXQsXpf1MBUnTWS9m/view?usp=sharing; Memorandum dated October 19, 2018, Program Administrator Guide to Updates to the September 14, 2019- 2021 Draft Plan. Page 7. Available at: http://ma-eeac.org/wordpress/wp-content/uploads/Memo-from-PAs-to-EEAC-10-22-18.pdf

[12] . See, e.g., Order No. 26,042 at 5 (July 24, 2017) (stating that transmission costs are tied to peak loads and requiring Unitil to consider what measures could be taken to mitigate increases in transmission costs); DE 18-089, Eversource Energy, 2018 Transmission Cost Adjustment Mechanism, Hearing Transcript of July 12, 2018, at 19-20; DE 18-051, Liberty Utilities (Granite State Electric) Corp., Annual Retail Rate Filing, Hearing Transcript of May 9, 2018, at 46-52.

[13] Massachusetts 2019-21 Energy Efficiency Plan. (October 2018) Page 160. Available at: http://ma-eeac.org/wordpress/wp-content/uploads/Exh.-1-Final-Plan-10-31-18-With-Appendices-no-bulk.pdf

[14] Connecticut 2019-21 Conservation and Load Management Plan Update. (March 2019) Page 368. Available at: https://www.energizect.com/sites/default/files/FINAL%202019%202021%20Plan%20%283-1-19%29.pdf

[15] Rhode Island 2019 Energy Efficiency Program Plan. (October 2018) Page 42. Available at: http://www.ripuc.org/eventsactions/docket/4888-NGrid-EEPP2019(10-15-18).pdf

D. Sector Level Incentive Eligibility

Under the existing performance incentive framework, each utility's targets and related performance incentives are calculated on a sector-specific basis. As a result, if a utility under-performs in one sector, it cannot make up for that underperformance by over-performing in the other sector. This sends a signal that is inconsistent with the EERS: rather than pursue a statewide efficiency target as the EERS mandates, the existing framework suggests that there are two targets, one for each sector, thus encouraging the utilities to pursue them independently.

According to the National Efficiency Screening Project's Database of State Efficiency Screening Practices, many states, including Arizona, California, District of Columbia, Illinois, Michigan, New Mexico, New York, Oklahoma, Ohio, Pennsylvania, Rhode Island, Vermont, Washington, and Wisconsin, assess the cost-effectiveness of their programs at the portfolio level.[16]

While there is some inherent logic to incenting performance on a sector specific basis, Working Group members agreed that doing so limits flexibility to implement new programs and might unnecessarily limit the savings or cost-effectiveness pursued in a sector. In such a case, the utility would be reluctant to pursue all-cost effective programs, especially those with a lower BCR, if the utility is unable to offset the savings uncertainty associated with new programs in one sector by investment in highly cost-effective programs in the other sector.

Rewarding a utility's performance at the sector level also has implications for how income eligible programs are delivered. The Commission has the authority to approve income-eligible programs such as Home Energy Assistance (HEA) program where the BCR is less than 1.0.[17] However, for the purposes of the performance incentive eligibility, HEA falls within the residential sector and represents a significant portion of the sector's overall budget goals. This limits the utility's ability to utilize the flexibility provided by the Commission regarding HEA program cost-effectiveness because the PI earned will potentially be less if the sector level BCR is less. By moving the calculation of incentives to the portfolio level, this flexibility is maintained because more programs can be used to offset a lower BCR from the HEA programs.

E. Benefit Cost Ratio Component

The existing performance incentive framework focuses half of the incentive on actual versus planned BCR. This is a primary component of the current framework. In most jurisdictions however, the BCR is treated as a threshold that must be met at either the measure, program or portfolio level before implementation of that measure, program, or portfolio is approved by a Commission, rather than a metric against which a program administrator is rewarded. While there is some inherent logic in encouraging the utilities to maximize the cost effectiveness of the programs, there was consensus among Working Group members that the energy efficiency portfolio should be focused on other metrics so that the BCR should set a floor for portfolio performance at 1.0. Stated another way, using a minimum B/C threshold of 1.0 before PI can be earned ensures that the benefits exceed the costs.

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[16] National Efficiency Screening Project. Database of State Efficiency Screening Practices. Accessed June 21, 2019. Available at: https://nationalefficiencyscreening.org/state-database-dsesp/

[17] *See* Docket No. 96-150, Order No. 23,574 dated 11/01/2000 at 4.

Neighboring jurisdictions, including Massachusetts and Vermont, have embraced this approach to set the BCR as a threshold requirement and focus on other metrics for the PI components.

IV. Revised Framework

A. Current Framework Formula

Assuming a utility meets the minimum threshold of 55 percent of electric program total energy savings (electricity, natural gas, oil, propane, kerosene and wood) coming from electricity, the performance incentive earned by each electric utility under the current framework is as follows:

$PI = [2.75\% \times ACTUAL] \times [(BCR_{ACT} / BCR_{PLN}) + (kWh_{ACT} / kWh_{PLN})]$

Where:

PI = Performance Incentive in dollars
ACTUAL = Total dollars spent less the performance incentive
BCR_{ACT} = Actual Benefit-to-Cost ratio achieved
BCR_{PLN} = Planned Benefit-to-Cost ratio
kWh_{ACT} = Actual Lifetime Kilowatt-hour savings achieved
kWh_{PLN}= Planned Lifetime Kilowatt-hour savings

If the minimum threshold of 55 percent of electric program energy savings from electricity is not achieved, then the PI formula is modified so that the 2.75 percent multiplier is replaced by a 2.2 percent multiplier. Otherwise it remains the same. For each sector, the BCR must be 1.0 or greater or no incentive is earned for the cost-effectiveness performance component for that sector. Actual lifetime savings must be at least 65 percent of the planned lifetime savings or no incentive is earned for the savings performance metric for that sector. Performance incentive is calculated separately for the two sectors Residential/Income Eligible and Commercial/Industrial. Total PI is the sum of the two.

The natural gas programs have no equivalent minimum kWh to total energy threshold requirement. Otherwise the calculation is identical except that the unit used for lifetime savings is MMBtu rather than kWh.

PI is currently capped at the component level for each of the following:

- Residential sector BCR
- Residential sector lifetime savings
- C&I sector BCR
- C&I sector lifetime savings

Taken together, the maximum performance incentive a utility can earn is the sum of 6.875 percent of the spending in each sector, with each sector calculated separately.

B. Revised Framework Formula

Under the revised framework, several additional components have been added, including two components related to summer and winter peak electric system passive demand[18] and an annual savings component and a net benefits component.

PI =
[(1.925% x ACTUAL) x ($kWh_{L\text{-}ACT}/kWh_{L\text{-}PLN}$)] +
[(0.55% x ACTUAL) x ($kWh_{A\text{-}ACT}/kWh_{A\text{-}PLN}$)] +
[(0.66% x ACTUAL) x ($kW_{SUM\text{-}ACT}/kW_{SUM\text{-}PLN}$)] +
[(0.44% x ACTUAL) x ($kW_{WIN\text{-}ACT}/kW_{WIN\text{-}PLN}$)] +
[(1.925% x ACTUAL) x ($NET\text{-}BEN_{ACT}/NET\text{-}BEN_{PLN}$)]

Where:

PI = Performance Incentive in dollars
ACTUAL = Total dollars spent (less PI)
$kWh_{L\text{-}ACT}$ = Actual Lifetime kWh
$kWh_{L\text{-}PLN}$ = Planned Lifetime kWh
$kWh_{A\text{-}ACT}$ = Actual Annual kWh
$kWh_{A\text{-}PLN}$ = Planned Annual kWh
$kW_{SUM\text{-}ACT}$ = Actual passive summer peak kW
$kW_{SUM\text{-}PLN}$= Planned passive summer peak kW
$kW_{WIN\text{-}ACT}$ = Actual passive winter peak kW
$kW_{WIN\text{-}PLN}$= Planned passive winter peak kW
$NET\text{-}BEN_{ACT}$= Actual net benefits (in NPV dollars) (i.e. total benefits less utility costs and NEI's)[19]
$NET\text{-}BEN_{PLN}$= Planned net benefits (in NPV dollars)

Additional requirements are as follows:

- The utility's portfolio of programs must be cost-effective before any PI can be earned, meaning the BCR must be at least 1.0 ;
- If 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 saving in order for any PI to be earned on the lifetime savings component;
- Annual savings must be at least 75 percent of planned annual saving 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;

[18] These demand components are excluded from the calculation of performance incentive for the natural gas programs. See Section C. under "Issues for Future Consideration" below.
[19] See Appendix D.

- 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, without prior Commission authorization. That is, the actual spending may exceed the planned budgets, including all sources of funding 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. PI is then calculated against actual program spending at the portfolio level, up to 105 percent of the revised, Commission-approved budget, or as otherwise ordered.[20]

V. Income Eligible Customers

A. Review by the Working Group

The Commission specifically tasked the Working Group with investigating the participation of income eligible customers in energy efficiency programs. Throughout its discussions, the Working Group weighed whether proposed changes would result in any unintended consequences related to design or implementation of the Home Energy Assistance program (HEA), or negatively impact the interests of income eligible customers. The group carefully considered including a specific metric related to achievement of goals in those programs, including establishing minimum spending or participation requirements. Input and feedback from The Way Home, which represents the interests of low income customers, as well as by the Office of Consumer Advocate, which represents residential customers, was sought throughout the process.[21]

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[20] This represents a departure from the methodology set out in Order No. 25,189, Docket No. DE 10-188 at 9, whereby the performance incentive will be calculated using actual expenditures 'up to a maximum of 5% of the total approved by the Commission for each utility's residential and C&I sectors, <u>including performance incentive</u>…'[emphasis added]. Upon review, it was the conclusion of the Working Group that continuing with including the performance incentive as an expense in calculating the cap under the new proposed framework (now based on the portfolio approach) would introduce a circular component into the calculation that would allow the utilities to earn a performance incentive on the performance incentive. Accordingly, in keeping with the Working Group's assignment to review and propose new and alternative methodologies, it was the consensus of the group to modify the calculation by removing the cost of the performance incentive in setting the 105 percent cap.

[21] On July 24, 2018, the PI Working Group and the B/C Working Group convened a special meeting to review current low-income programs (primarily HEA) and obtain feedback from Community Action Agencies, the utilities, project managers, and low-income advocates on program effectiveness and potential improvements.

[21] On July 24, 2018, the PI Working Group and the B/C Working Group convened a special meeting to review current low-income programs (primarily HEA) and obtain feedback from Community Action Agencies, the utilities, project managers, and low-income advocates on program effectiveness and potential improvements.

B. Funding

Ultimately, the group reached consensus that the current 17 percent budget earmark for spending on low-income energy efficiency programs was sufficient and should be maintained. The Working Group also agreed that the recently instituted mandate to carry over any budgeted but unspent funds from HEA programs would ensure that sufficient funds were dedicated to these programs. Similarly, concerns that cost-effectiveness requirements (involving a BCR of 1.0 or greater) might limit participation of income eligible homes, have been addressed by a move from a sector level approach to a portfolio level approach. By moving to a portfolio level framework, in contrast to the sector level framework with its budgetary requirements, the Working Group was comfortable that the income eligible programs would be served adequately without adding a specific PI metric or component. In addition, the Working Group concluded that the net benefit component would help incent fossil fuel savings, which make up the primary benefit of weatherization activities in the income eligible programs. As a result, the Working Group members agreed that the income eligible programs would receive adequate investment and prioritization without the inclusion of a specific PI metric related to that customer segment in program year 2020. Should the PI framework be adjusted during the planning process for the next three-year plan, the topic of a specific income eligible metric may be revisited.

VI. Issues for Future Consideration

Over the course of the Working Group meetings, members reviewed many presentations from external experts as well as from the utilities and the OCA, and engaged in thoughtful discussion covering various aspects of performance incentive design. As these discussions progressed, several emerging developments in the energy efficiency field were considered but set aside due to the need for additional study and in the interest of reaching group consensus for the 2020 Program Year. This does not preclude future adjustment to the PI Framework to accommodate the evolution of program design, the adoption of new cost-effectiveness testing, the incorporation of a gas demand component, or other methods of calculating savings. Some of the ideas that may merit future investigation are discussed below.

A. Energy Optimization/Electrification

Energy Optimization (EO) is a concept that is known by different names in different jurisdictions. EO is a strategy undertaken by the utilities to provide customers with fuel-neutral education and encourage them to minimize energy usage through various energy efficiency measures. In practice, this has typically (but not exclusively) meant fuel switching from less efficient to more efficient, cleaner sources of energy. Heat pump technology and combined heat and power (CHP) are examples of common technologies considered under energy optimization. EO is also referred to in some circles as strategic electrification.

Both the existing PI Framework and the revised PI Framework focus on electricity savings (for electric programs) and natural gas savings (for natural gas programs), with some consideration given to other fuels saved. The current and revised PI frameworks do not consider overall energy savings, when switching from one fuel to another. Throughout the region, interest and investment in more holistic approaches to energy efficiency is increasingly involving technologies and appliances that shift energy use from dirtier fossil fuels to cleaner and more efficient natural gas and electric power. Massachusetts, Vermont, Connecticut, Maine, and Rhode Island have begun placing a greater emphasis on *energy* savings as opposed to strictly *electric* savings among energy efficiency program planners and implementers.

One of the stumbling blocks encountered by the Working Group in judging the merits of creating a viable PI metric in this area is that EO is an emergent concept in New Hampshire in terms of policy, program design, implementation, and evaluation. An additional impediment was the availability of state-specific data involving deployment and utilization of optimization technologies. Currently, the EM&V Working Group and the B/C Working Group are working with Navigant, a third party evaluation firm, to investigate how other jurisdictions are handling EO in their energy efficiency planning, cost-effectiveness testing, and reporting, and the policies that support implementation. [22]

Depending on the outcome of the Navigant-led study, and the EERS priorities for the 2021-2023 term, the utilities and the stakeholders may want to adjust the PI framework in the future to incent overall energy reductions, rather than just those energy reductions that result from a decrease in the use of electricity or natural gas alone. If that is the case, there will need to be further discussion about how to convert energy savings resulting from the efficiency programs to a common unit of energy, and whether to do so at the customer site or the generating source. A study to investigate these issues is currently being scoped in Massachusetts, the results of which may help to inform future New Hampshire energy efficiency program design.

B. Revised Cost Effectiveness Tests

The EM&V Working Group and the B/C Working Group are working with Synapse, a third-party firm, to review policies related to New Hampshire's cost-effectiveness test for energy efficiency programs, in accordance with the framework established in the National Standard Practice Manual ("NSPM"). Synapse will prepare a report that summarizes the key elements of the NSPM and how the B/C Working Group can apply those elements to the energy efficiency cost-effectiveness analyses in New Hampshire. Any resulting recommendations for the New Hampshire cost-effectiveness test are expected to be implemented beginning in 2021.

As described above, Total Resource Cost test is the current benefit/cost test for program screening and is expected to be the, the basis for the PI for 2020. If the screening cost-effectiveness test changes with a start date of program year 2021, then the PI framework, including the components and requirements, will need to be revisited since the benefit/cost test and the PI calculation overlap.

C. Gas Demand

As coal, oil and nuclear decline as fuels for the generation of electricity in the northeast, natural gas, along with renewables and energy efficiency, have filled in the gap. This additional demand for natural gas to meet the demand for electricity generation has strained already congested gas pipeline capacity in our region. This strain has been particularly acute during the winter months when demand for natural gas for heating homes and businesses reaches a peak. Short-term natural gas supply shortfalls have led

[22] The Commission is currently investigating grid modernization, including strategic electrification, in Docket IR 15-296.

to wholesale price instability that regional energy planners, the Independent System Operator of New England ("ISO-NE"), regulators and the natural gas distribution companies throughout the region are attempting to address. Similarly, at the distribution level, natural gas utilities (including in New Hampshire) are experiencing peak day demand growth that threatens to exceed the level of firm supply that can be accessed without major new infrastructure investments. Reducing end users' natural gas demand will free up more pipeline capacity.

Unlike electricity measures and end uses, for which hourly load-shapes have been developed by energy efficiency evaluators as well as ISO-NE, the Working Group was not aware of readily available studies or related data sources for peak gas demand. Nor did the group find evaluation studies that show the peak gas demand reduction related to specific energy efficiency measures. There is currently no mechanism to put a dollar value on the demand reduction value of natural gas conserving activities during peak periods. This relationship is further complicated by the way in which natural gas is procured for the purpose of generating electricity (short term, spot market) versus the way it is procured by end-using customers who purchase from a natural gas local distribution company to heat their homes and businesses (long-term contracts, regulated rates).

While the Working Group members were in broad agreement that natural gas efficiency programs help ameliorate the winter gas supply issues, the gas utilities said that they do not track peak demand savings in New Hampshire. Without such information, the Working Group could not establish a meaningful goal or determine whether or not the natural gas programs have achieved it. Consequently, the Working Group agreed that the natural gas utilities would stay abreast of various studies in the region that are investigating the issue of natural gas peak demand in order to consider development and inclusion of a peak demand reduction metric for the next three-year plan period.[23]

D. Income Eligible Participation

As noted above, the Working Group examined the feasibility of additional PI metrics to incentivize increased participation by low-income households in energy efficiency programs, including adoption of specific participation and savings targets. After considerable discussion and review, including outreach to other stakeholders outside the working group process, consensus was reached that maintaining adequate levels of investment and funding continues to be the most effective means of serving this community, at least through 2020. However, this is an evolving issue in many other jurisdictions, and

[23] One potential example of a peak day proxy strategy was recently identified by gas program administrators in Connecticut. As a condition of approval of the Connecticut 2019-2021 Statewide Energy Efficiency Plan, the Connecticut Department of Energy and Environmental Protection required the Connecticut Program administrators to "provide a quantification and discussion of the effects of conservation, load management, and energy efficiency investments, both electric and gas, on winter peak demand and as applicable, winter fuel reliability." In response to this condition, the program administrators provided a compliance filing describing the gas peak day savings by end use and measure-type groupings. *See* Connecticut Department of Energy and Environmental Protection. Attachment A: Schedule of Compliance Conditions of Approval. (December 2018) Available at: https://app.box.com/s/zv7bcoe283tjvppnt853ojmwfa89zahg/file/392424970636. *Also see* Connecticut Energy Efficiency Program Administrators. 2019-2021 Plan Compliance Item #7 – July 1 filing. Available at: https://app.box.com/s/u0kn24qi4f7baxypfionf5oeiam8lq2i/file/488657645351

the development and adoption of potential income eligible metrics merits further study and should be a consideration during the planning process for the next three-year plan.

Appendix

Appendix A: 2020 PI calculation templates

Proposed PI Calculation for Electric Utilities

	Portfolio		Planned	Threshold	Actual	% of Plan	Design Coefficient	Actual Coefficient	Planned PI	125% of Planned PI	Actual PI	Source
	Portfolio Planned Versus Actual Performance - 2020											
1	Lifetime kWh Savings		169,249,199	*126,936,899*			1.925%		$ 1,204,667	$ 1,505,834		Planned and Actual from Cost Eff Tab
2	Annual kWh Savings		140,178,883	*105,134,162*			0.550%		$ 344,191	$ 430,238		Planned and Actual from Cost Eff Tab
3	Summer Peak Demand kW		16,769	*10,900*			0.660%		$ 413,029	$ 516,286		Planned and Actual from Cost Eff Tab
4	Winter Peak Demand kW		19,383	*12,599*			0.440%		$ 275,352	$ 344,191		Planned and Actual from Cost Eff Tab
5	Total Resource Benefits	$	206,636,229									Planned and Actual from Benefits Tab
6	Total Utility Costs[1]	$	62,580,111									Planned and Actual from Cost Eff Tab
7	Net Benefits	$	144,056,118	###########			1.925%		$ 1,204,667	$ 1,505,834		Line 5 minus line 6
8	Total						5.500%		$ 3,441,906	$ 4,302,383		

			Total Resource Cost Test		
			Planned	Actual	Source
9	Total Benefits (incl. NEIs)	$	227,299,852		Planned and Actual from Cost Eff Tab
10	Performance Incentive	$	3,441,906		from row 6 above
11	Participant Costs	$	52,022,201		Planned and Actual from Cost Eff Tab
12	Total Utility Costs	$	62,580,111		from row 4 above
13	**Portfolio TRC BCR**		**1.93**		row 9 divided by rows 10+11+12

For illustrative purposes only. All dollar values are expressed in 2020 dollars. The numbers reflect the cumulative budget, savings, benefits, and costs of all the utilities combined based on the original 2020 Plan. Each utlity will file its own utility-specific version of the table as part of the 2020 Plan Update.

[1] Note that in order to avoid a circular reference in the calculation of performance incentive, "Total Utility Costs" does not include the value of PI.

Proposed PI Calculation for Gas Utilities

	Portfolio Planned Versus Actual Performance - 2020										
	Portfolio	**Planned**	**Threshold**	**Actual**	**% of Plan**	**Design Coefficient**	**Actual Coefficie nt**	**Planned PI**	**125% of Planned PI**	**Actual PI**	**Source**
1	Lifetime MMBtu Savings	2,306,693	*1,730,020*			2.475%		$ 226,656	$ 283,320		Planned and Actual from Cost Eff Tab
2	Annual MMBtu Savings	163,616	*122,712*			1.100%		$ 100,736	$ 125,920		Planned and Actual from Cost Eff Tab
3	Total Resource Benefits	$ 21,622,091									Planned and Actual from Benefits Tab
4	Total Utility Costs	$ 9,157,813									Planned and Actual from Cost Eff Tab
5	Net Benefits	$ 12,464,278	*$ 9,348,208*			1.925%		$ 176,288	$ 220,360		Line 5 minus line 6
6	**Total**					**5.500%**		**$ 503,680**	**$ 629,600**		

		Total Resource Cost Test		
		Planned	**Actual**	**Source**
7	Total Benefits (incl. NEIs	$23,784,300		Planned and Actual from Cost Eff Tab
8	Performance Incentive	$ 503,680		from row 8 above
9	Participant Costs	$ 5,999,410		Planned and Actual from Cost Eff Tab
10	Total Utility Costs	$ 9,157,813		from row 6 above
11	**Portfolio TRC BCR**	**1.52**		row 9 divided by rows 10+11+12

For illustrative purposes only. All dollar values are expressed in 2020 dollars. The numbers reflect the cumulative budget, savings, benefits, and costs of all the utilities combined based on the original 2020 Plan.
Each utlity will file its own utility-specific version of the table as part of the 2020 Plan Update.

[1] Note that in order to avoid a circular reference in the calculation of performance incentive, "Total Utility Costs" does not include the value of PI.

Appendix B: The members/participants of the PI Working Group:

- Jay Dudley, PUC
- Jim Cunningham, PUC
- Paul Dexter, PUC
- Elizabeth Nixon, PUC
- Leszek Stachow, PUC
- Brian Buckley, Office of Consumer Advocate
- Donald Kreis, Office of Consumer Advocate
- Rebecca Ohler, New Hampshire Department of Environmental Services (NH DES)
- Joe Fontaine, NH DES
- Christopher Skoglund, NH DES
- Kate Peters, Eversource
- Miles Ingram, Eversource
- Marc Lemenager, Eversource
- Christopher Plecs, Eversource
- Erica Menard, Eversource
- Tom Fuller, Eversource
- Christopher Goulding, Eversource[24]
- Matthew Fossum, Eversource
- Cindy Carroll, Unitil
- Mary Downes, Unitil
- Eric Stanley, Liberty
- Heather Tebbetts, Liberty
- Trish Walker, Liberty
- Mike Sheehan, Liberty
- Carol Woods, NH Electric Coop
- Melissa Birchard, Conservation Law Foundation
- Raymond Burke, NH Legal Assistance/The Way Home
- Ellen Hawes, Acadia Center
- Amy Boyd, Acadia Center
- Scott Albert, GDS Associates
- Madeleine Mineau, Clean Energy NH
- Brianna Brand, Clean Energy NH

[24] Christopher Goulding is now employed by Unitil.

Appendix C: Consultants who assisted and contributed to the work of the PI Working Group:

- Denise Rouleau, Northeast Energy Efficiency Partnerships (NEEP)
- Emily Levin, Vermont Energy Investment Corporation (VEIC)
- David Farnsworth and Jessica Shipley, Regulatory Assistance Project (RAP)
- Philip Mosenthal, Optimal Energy
- Martin Kushler, American Council for an Energy Efficient Economy (ACEEE)
- Lisa Skumatz, Skumatz Economic Research Associates (SERA)
- Ralph Prahl, SERA
- Robert Wirtshafter, SERA

Appendix D: Glossary of Terms

Actual: The amount of savings, spending, net benefits or BCR the programs achieved, as reported in each utility's annual report and associated Benefit Cost models.

Adjusted gross savings: The amount of savings resulting from energy efficiency measures, adjusted to reflect realization rates and other impact factors quantified in third party evaluations, exclusive of free-ridership and spillover.

Annual savings: The reduction in electricity use (kWh) or fossil fuel use (therms or MMBtus) over a one-year period resulting from energy efficiency programs.

Benefit-Cost Ratio ("BCR"): As calculated by the NH Utilities' Benefit/Cost test, currently the Total Resource Cost ("TRC") test, the BCR is the ratio of total benefits and total costs. Total benefits are the net present value of avoided energy and non-energy impacts resulting from program measures. Total costs are the net present value of utility costs, including performance incentive, plus out-of-pocket incremental costs that customers pay for energy efficiency measures, relative to a standard efficiency measure.

Demand savings: Demand savings is the reduction in electricity demand (kW) . Demand savings can result from active resources, which are activated when dispatched (i.e., demand response), or passive resources (e.g., installation of more efficient equipment) and not in response to a dispatch instruction. For purposes of the PI calculation, the peak demand savings are coincident with ISO-NE system peak demand periods.

Independent System Operator of New England ("ISO-NE") peak demand savings: The savings resulting from passive peak demand reduction occurring during the "on-peak" hours defined by ISO-NE. Specifically, summer peak demand reductions are the average reduction in demand during summer peak hours (non-holiday weekdays, 1:00 p.m. to 5:00 p.m., during June, July, and August) and winter peak demand reductions are the average reductions in demand during winter peak hours (non-holiday weekdays, 5:00 p.m. to 7:00 p.m., during December and January).

Lifetime savings: The reduction in electricity use (kWh) or fossil fuel use (therms or MMBtus) over the lifetime of installed energy efficiency measures, based on the life of a measure as determined through evaluation.

Net Benefits: Net Benefits are the Net Present Value of Total Resource Benefits less Total Utility Costs (not including Performance Incentive). Neither the value of customer costs nor non-energy impacts is considered in determining Net Benefits for purposes of calculating the performance incentive.

Planned: The amount of savings, spending, net benefits or BCR the programs are expected to achieve, based on the utilities' Three-Year Plan and typically updated each year in Annual Update filings and associated Benefit Cost models.

Portfolio: The total set of energy efficiency programs offered by a utility, including those activities that do not directly save energy (e.g., education, EM&V, marketing, lending programs, etc.) across all sectors.

Sector: A group of customers with similar characteristics, usage patterns and billing rates. Residential, and Commercial and Industrial (C&I) are the two primary sectors in the NH Saves programs.

Total Resource Benefits: Avoided costs due to program impacts on electric capacity, electric energy, Demand Reduction Induced Price Effects (DRIPE), gas benefits, other fuels, and water resources.

Utility costs: All expenditures by the program administrator to design, plan, administer, deliver, monitor, and evaluate efficiency programs, including performance incentive.

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Energy Efficiency

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June 1, 2022

Via Electronic Mail Only
Daniel Goldner, Chair
Public Utilities Commission
21 South Fruit Street, Suite 10
Concord, New Hampshire 03301

Re: Docket DE 17-136, Energy Efficiency Programs
Eversource's Performance Incentive Calculation – Program Year 2021

Dear Chair Goldner,

Attached for filing with the Commission is Eversource's performance incentive calculation relating to the NHSaves Energy Efficiency Programs for program year 2021.

Pursuant to the Commission's procedural order issued on January 24, 2022 in Docket Nos. DE 17-136 and DE 20-092, this 2021 report is being filed under Docket No. DE 17-136. The order states,

> "To ensure that filings are made in the correct docket, this procedural order clarifies that filings such as monthly, quarterly, or annual reports for program year 2021, as well as notifications regarding program expenditures made prior to January 1, 2022, should be filed in Docket No. DE 17-136. Program filings for January 1, 2022 or thereafter should be filed in Docket No. DE 20-092."

The performance incentive calculations associated with Eversource's delivery of energy efficiency programs under the provisions of RGGI Grant RFP #18-005 and Eversource's delivery of the SmartSTART program are included in this filing. Also attached is the annual reconciliation of the Lost Revenue Adjustment Mechanism ("LRAM"), as required by Order No. 25,932 in DE 15-137 and Order No. 26,207 in DE 17-136. The LRAM calculation and timing for the enclosed reconciliation were approved by the Commission in DE 14-216 in its Order No. 25,976 issued on December 23, 2016 and updated in Order No. 26,207, issued on December 31, 2018.

Please contact me if there are any questions concerning this filing, consistent with current Commission policy this filing is being made electronically only; paper copies will not follow.

Very truly yours,

Marc E. Leménager

Marc E. Leménager
Senior Analyst
Regulatory, Planning & Evaluation - Energy Efficiency

Attachments
cc: DE 17-136 & DE 20-092 Service Lists (by electronic mail only)

Program Cost-Effectiveness - 2021 ACTUAL

	Granite State Test Benefit/ Cost Ratio	Granite State Test Benefits ($000)[1,3]	Utility Costs ($000 - 2021$)[2]	Customer Costs ($000 - 2021$)[2]	Annual MWh Savings	Lifetime MWh Savings	Winter kW Savings	Summer kW Savings	Number of Customers Served	Annual MMBTU Savings	Lifetime MMBTU Savings
Residential Programs											
B1 - Home Energy Assistance	1.46	13,218.6	9,033.6	-	1,927.7	19,965.6	362.7	349.0	928	17,297.6	370,374.5
A1 - Energy Star Homes	8.90	17,145.4	1,925.9	803.9	1,383.3	27,338.9	325.7	103.8	730	20,773.9	497,781.2
A2 - Home Performance with Energy Star	7.76	54,532.7	7,027.4	1,586.3	1,744.2	33,828.1	309.9	414.8	1,551	88,086.0	2,011,194.4
A3 - Energy Star Products	1.80	10,281.3	5,711.9	738.7	16,581.1	89,227.7	3,433.4	2,516.9	359,291	(23,610.4)	(21,454.5)
A5 - Residential Active Demand Response	-	-	91.5	-	-	-	-	-	1,422	-	-
A6a - Res Customer Engagement	-	-	62.5	-	-	-	-	-	-	-	-
A6b - Res ISO Forward Capacity Market Expenses	-	-	6.2	-	-	-	-	-	-	-	-
Sub-Total Residential	**3.99**	**95,178.0**	**23,859.1**	**3,128.9**	**21,636.2**	**170,360.4**	**4,431.7**	**3,384.4**	**363,922**	**102,547.2**	**2,857,895.6**
Commercial, Industrial & Municipal											
C1 - Large Business Energy Solutions	4.39	43,588.3	9,926.2	9,178.0	34,764.2	414,922.7	4,327.6	5,416.8	994	(9,768.5)	(101,027.1)
C2 - Small Business Energy Solutions	4.02	42,958.3	10,679.1	5,997.1	37,632.8	430,036.6	5,095.4	5,853.0	4,930	(23,754.0)	(257,442.1)
C3 - Municipal Energy Solutions	3.79	5,167.9	1,364.3	1,264.0	2,836.7	38,307.5	334.7	382.6	82	1,619.0	36,079.7
C4 - Energy Rewards RFP Program	-	-	47.4	-	-	-	-	-	-	-	-
C5 - C&I Active Demand Response	-	-	105.5	-	-	-	-	-	37	-	-
C6a - C&I Customer Engagement	-	-	88.1	-	-	-	-	-	-	-	-
C6b - C&I ISO Forward Capacity Market Expenses	-	-	13.5	-	-	-	-	-	-	-	-
C6c - C&I Education	-	-	128.0	-	-	-	-	-	-	-	-
C6d - C&I Customer Partnerships	-	-	0.9	-	-	-	-	-	-	-	-
Sub-Total Commercial & Industrial	**4.10**	**91,714.6**	**22,353.2**	**16,439.1**	**75,233.6**	**883,266.8**	**9,757.7**	**11,652.4**	**6,043**	**(31,903.5)**	**(322,389.5)**
C6e - Smart Start	-	-	18.6	-	-	-	-	-		-	-
Total	**4.04**	**186,892.6**	**46,230.9**	**19,568.0**	**96,869.8**	**1,053,627.2**	**14,189.4**	**15,036.8**	**369,965**	**70,643.6**	**2,535,506.2**

Notes:

(1) The Granite State Test is used as the primary cost test, as approved in Order No. 36,322, and includes an annual NEI adder of $405.71 per weatherization project in the Home Energy Assistance program.

(2) Utility and Customer Costs and Benefits are expressed in 2021 Dollars.

(3) Per past precedent, discount and inflation rates have been updated for the year in which measures will be installed, and were updated as of June 2020 for program year 2021.

Annual kWh Savings	96,869,833	82.4%	**kWh > 55%**	**Lifetime** kWh Savings	1,053,627,185	58.6%	**kWh > 55%**
Annual MMBTU Savings (in kWh)	20,703,607	17.6%		**Lifetime** MMBTU Savings (in kWh)	743,083,535	41.4%	
	117,573,440	100.0%			**1,796,710,721**	100.0%	

Annual Savings as a % of 2019 Sales	1.26%

Spending per Customer	Low-Income	$ 380.11
	Residential	$ 35.44
	C&I	$ 287.18

Program Cost-Effectiveness - 2021 Goals

	Granite State Test Benefit/ Cost Ratio	Granite State Test Benefits ($000)[1,3]	Utility Costs ($000 - 2021$)[2]	Customer Costs ($000 - 2021$)[2]	Annual MWh Savings	Lifetime MWh Savings	Winter kW Savings	Summer kW Savings	Number of Customers Served	Annual MMBTU Savings	Lifetime MMBTU Savings
Residential Programs											
B1 - Home Energy Assistance	2.29	18,548.8	8,110.1	-	1,154.7	14,321.0	165.4	262.3	1,083	23,999.0	498,590.2
A1 - Energy Star Homes	4.31	9,800.4	2,271.8	750.8	1,071.6	24,269.7	271.8	13.7	692	11,275.2	269,119.5
A2 - Home Performance with Energy Star	5.22	34,128.8	6,543.7	1,564.8	1,313.5	14,438.4	264.1	229.8	3,129	65,147.5	1,244,664.8
A3 - Energy Star Products	1.92	11,019.8	5,745.9	1,584.7	12,349.9	82,718.7	2,349.6	1,895.1	225,372	(10,611.0)	24,060.7
A5 - Residential Active Demand Response	-	-	128.5	-	-	-	-	-	1,020	-	-
A6a - Res Customer Engagement Platform	-	-	267.7	-	-	-	-	-	-	-	-
A6b - Res ISO Forward Capacity Market Expenses	-	-	48.0	-	-	-	-	-	-	-	-
A6c - Res Education	-	-	-	-	-	-	-	-	-	-	-
A6d - Energy Optimization Pilot	-	-	-	-	-	-	-	-	-	-	-
Sub-Total Residential	**3.18**	**73,497.9**	**23,115.7**	**3,900.3**	**15,889.6**	**135,747.7**	**3,050.9**	**2,401.0**	**231,296**	**89,810.7**	**2,036,435.2**
Commercial, Industrial & Municipal											
C1 - Large Business Energy Solutions	4.75	71,573.6	15,066.8	21,703.0	60,359.5	724,619.6	6,995.0	7,503.9	1,331	(17,026.9)	(171,207.4)
C2 - Small Business Energy Solutions	2.82	18,845.4	6,678.4	7,747.9	19,394.8	217,837.6	2,085.7	2,229.9	1,274	(17,096.1)	(172,930.4)
C3 - Municipal Energy Solutions	2.77	4,013.4	1,448.0	2,254.0	3,141.9	33,803.8	511.9	136.9	55	2,502.7	58,447.1
C5 - C&I Active Demand Response	-	-	380.2	-	-	-	-	-	20	-	-
C6b - C&I ISO Forward Capacity Market Expenses	-	-	102.0	-	-	-	-	-	-	-	-
C6c - C&I Education	-	-	290.5	-	-	-	-	-	-	-	-
C6d - C&I Customer Partnerships	-	-	23.1	-	-	-	-	-	-	-	-
Sub-Total Commercial & Industrial	**3.88**	**94,432.5**	**24,362.1**	**31,704.9**	**82,896.3**	**976,261.0**	**9,592.7**	**9,870.8**	**2,681**	**(31,620.3)**	**(285,690.7)**
C6e - Smart Start	-	-	30.0	-	-	-	-	-		-	-
Total	**3.53**	**167,930.4**	**47,507.8**	**35,605.2**	**98,785.9**	**1,112,008.7**	**12,643.6**	**12,271.7**	**233,976**	**58,190.4**	**1,750,744.5**

Notes:

(1) The Granite State Test is used as the primary cost test, as approved in Order No. 36,322, and includes an annual NEI adder of $405.71 per weatherization project in the Home Energy Assistance program.

(2) Utility and Customer Costs and Benefits are expressed in 2021 Dollars.

(3) Per past precedent, discount and inflation rates have been updated for the year in which measures will be installed, and were updated as of June 2020 for program year 2021.

Annual kWh Savings	98,785,893	85.3%	**kWh > 55%**	**Lifetime** kWh Savings	1,112,008,713	68.4%	**kWh > 55%**
Annual MMBTU Savings (in kWh)	17,053,918	14.7%		**Lifetime** MMBTU Savings (in kWh)	513,092,593	31.6%	
	115,839,811	100.0%			**1,625,101,307**	100.0%	

Annual Savings as a % of 2019 Sales	1.29%

Spending per Customer	Low-Income	$ 341.25
	Residential	$ 35.87
	C&I	$ 312.99

Present Value Benefits - 2021 ACTUAL

	Total Benefits ($000)	Resource Benefits ($000)														Non-Resource Benefits ($000)[2]			Environ-mental Benefits ($000)[3]
		Electric											Non-Electric						
		CAPACITY					ENERGY												
	Granite State Test[1]	Summer Generation	Winter Generation	Transmission	Distribution	Reliability	Winter Peak	Winter Off Peak	Summer Peak	Summer Off Peak	Electric DRIPE	Total Electric Benefit	Other Fuels	Water Benefit	Total Resource Benefits	Fossil Emissions	Other Non-Resource Benefits	Total Non-Resource Benefits	
Residential Programs																			
B1 - Home Energy Assistance	**$ 13,219**	$ 387	$ -	$ 406	$ 352	$ -	$ 405	$ 380	$ 299	$ 229	$ 88	**$ 2,546**	$ 7,242	$ 27	**$ 9,815**	$ 585	$ 2,819	**$ 3,403**	**$ 833**
A1 - Energy Star Homes	**$ 17,145**	$ 150	$ -	$ 154	$ 133	$ -	$ 788	$ 831	$ 130	$ 100	$ 81	**$ 2,366**	$ 13,869	$ 95	**$ 16,330**	$ 815	$ 4,059	**$ 4,874**	**$ 1,070**
A2 - Home Performance with Energy Star	**$ 54,533**	$ 797	$ -	$ 789	$ 683	$ -	$ 614	$ 665	$ 536	$ 405	$ 91	**$ 4,580**	$ 46,570	$ 9	**$ 51,159**	$ 3,373	$ 12,788	**$ 16,161**	**$ 1,299**
A3 - Energy Star Products	**$ 10,281**	$ 1,062	$ -	$ 1,322	$ 1,145	$ -	$ 2,169	$ 1,998	$ 1,051	$ 749	$ 549	**$ 10,046**	$ (464)	$ 700	**$ 10,282**	$ (1)	$ 2,395	**$ 2,395**	**$ 3,982**
A5 - Residential Active Demand Response	**$ -**	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**	$ -	$ -	**$ -**	$ -	$ -	**$ -**	**$ -**
A6a - Res Customer Engagement	**$ -**	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**	$ -	$ -	**$ -**	$ -	$ -	**$ -**	**$ -**
A6b - Res ISO Forward Capacity Market Expenses	**$ -**	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**	$ -	$ -	**$ -**	$ -	$ -	**$ -**	**$ -**
Sub-Total Residential	**$ 95,178**	**$ 2,396**	**$ -**	**$ 2,671**	**$ 2,314**	**$ -**	**$ 3,975**	**$ 3,875**	**$ 2,016**	**$ 1,484**	**$ 809**	**$ 19,539**	**$ 67,217**	**$ 831**	**$ 87,587**	**$ 4,773**	**$ 22,060**	**$ 26,833**	**$ 7,184**
Commercial/Industrial Programs																			
C1 - Large Business Energy Solutions	**$ 43,588**	$ 5,348	$ -	$ 6,025	$ 5,220	$ -	$ 9,354	$ 5,275	$ 7,616	$ 4,381	$ 2,035	**$ 45,255**	$ (1,544)	$ 1	**$ 43,712**	$ (123)	$ 4,371	**$ 4,248**	**$ 17,855**
C2 - Small Business Energy Solutions	**$ 42,958**	$ 5,593	$ -	$ 6,338	$ 5,491	$ -	$ 9,360	$ 5,601	$ 8,340	$ 4,317	$ 2,185	**$ 47,225**	$ (3,971)	$ 21	**$ 43,275**	$ (317)	$ 4,325	**$ 4,008**	**$ 18,651**
C3 - Municipal Energy Solutions	**$ 5,168**	$ 421	$ -	$ 465	$ 403	$ -	$ 917	$ 549	$ 633	$ 372	$ 168	**$ 3,929**	$ 1,179	$ -	**$ 5,108**	$ 60	$ 511	**$ 571**	**$ 1,624**
C5 - C&I Active Demand Response	**$ -**	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**	$ -	$ -	**$ -**	$ -	$ -	**$ -**	**$ -**
C6a - C&I Customer Engagement	**$ -**	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**	$ -	$ -	**$ -**	$ -	$ -	**$ -**	**$ -**
C6b - C&I ISO Forward Capacity Market Expenses	**$ -**	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**	$ -	$ -	**$ -**	$ -	$ -	**$ -**	**$ -**
C6c - C&I Education	**$ -**	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**	$ -	$ -	**$ -**	$ -	$ -	**$ -**	**$ -**
C6d - C&I Customer Partnerships	**$ -**	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**	$ -	$ -	**$ -**	$ -	$ -	**$ -**	**$ -**
Sub-Total Commercial & Industrial	**$ 91,715**	**$ 11,362**	**$ -**	**$ 12,829**	**$ 11,114**	**$ -**	**$ 19,632**	**$ 11,425**	**$ 16,589**	**$ 9,070**	**$ 4,389**	**$ 96,410**	**$ (4,337)**	**$ 22**	**$ 92,095**	**$ (380)**	**$ 9,207**	**$ 8,827**	**$ 38,129**
C6e - Smart Start	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total	**$ 186,893**	**$ 13,757**	**$ -**	**$ 15,500**	**$ 13,428**	**$ -**	**$ 23,607**	**$ 15,300**	**$ 18,605**	**$ 10,554**	**$ 5,198**	**$ 115,948**	**$ 62,880**	**$ 853**	**$ 179,682**	**$ 4,392**	**$ 31,268**	**$ 35,660**	**$ 45,313**

Notes:

(1) The Granite State Test is used as the primary cost test, as approved in Order No. 36,322. Benefits are calculated based on net savings.

(2) Non-resource benefits include NEIs, which are only applied to the Home Energy Asssitance program in the GST primary cost test.

(3) Non-embedded environmental benefits are not included in the GST primary cost test.

Present Value Benefits - 2021 Goals

	Total Benefits ($000)	Resource Benefits ($000)														Non-Resource Benefits ($000)			Environ-mental Benefits ($000)
		Electric											Non-Electric						
		CAPACITY					ENERGY												
	Granite State Test	Summer Generation	Winter Generation	Transmission	Distribution	Reliability	Winter Peak	Winter Off Peak	Summer Peak	Summer Off Peak	Electric DRIPE	Total Electric Benefit	Other Fuels	Water Benefit	Total Resource Benefits	Fossil Emissions	Other Non-Resource Benefits	Total Non-Resource Benefits	
Residential Programs																			
B1 - Home Energy Assistance	**$ 18,549**	$ 342	$ -	$ 356	$ 309	$ -	$ 241	$ 244	$ 239	$ 191	$ 53	**$ 1,975**	$ 10,576	$ -	**$ 12,552**	$ 761	$ 5,237	**$ 5,997**	**$ 585**
A1 - Energy Star Homes	**$ 9,800**	$ 8	$ -	$ 9	$ 8	$ -	$ 652	$ 750	$ 8	$ 7	$ 59	**$ 1,501**	$ 7,868	$ -	**$ 9,369**	$ 431	$ 2,342	**$ 2,774**	**$ 801**
A2 - Home Performance with Energy Star	**$ 34,129**	$ 297	$ -	$ 309	$ 268	$ -	$ 283	$ 308	$ 198	$ 153	$ 58	**$ 1,874**	$ 30,423	$ -	**$ 32,297**	$ 1,832	$ 8,074	**$ 9,906**	**$ 595**
A3 - Energy Star Products	**$ 11,020**	$ 989	$ -	$ 1,201	$ 1,041	$ -	$ 2,009	$ 1,795	$ 973	$ 721	$ 480	**$ 9,210**	$ 383	$ 1,381	**$ 10,973**	$ 47	$ 2,398	**$ 2,445**	**$ 3,663**
A5 - Residential Active Demand Response	**$ -**	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**	$ -	$ -	**$ -**	$ -	$ -	**$ -**	**$ -**
A6a - Res Customer Engagement Platform	**$ -**	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**	$ -	$ -	**$ -**	$ -	$ -	**$ -**	**$ -**
A6b - Res ISO Forward Capacity Market Expenses	**$ -**	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**	$ -	$ -	**$ -**	$ -	$ -	**$ -**	**$ -**
Sub-Total Residential	**$ 73,498**	**$ 1,635**	**$ -**	**$ 1,876**	**$ 1,625**	**$ -**	**$ 3,185**	**$ 3,098**	**$ 1,418**	**$ 1,073**	**$ 650**	**$ 14,559**	**$ 49,251**	**$ 1,381**	**$ 65,191**	**$ 3,071**	**$ 18,051**	**$ 21,122**	**$ 5,644**
Commercial/Industrial Programs																			
C1 - Large Business Energy Solutions	**$ 71,574**	$ 7,453	$ -	$ 8,393	$ 7,271	$ -	$ 21,030	$ 9,192	$ 11,703	$ 5,744	$ 3,645	**$ 74,433**	$ (2,652)	$ -	**$ 71,780**	$ (207)	$ 7,178	**$ 6,971**	**$ 31,269**
C2 - Small Business Energy Solutions	**$ 18,845**	$ 2,067	$ -	$ 2,355	$ 2,040	$ -	$ 5,108	$ 2,811	$ 4,111	$ 2,092	$ 1,148	**$ 21,733**	$ (2,680)	$ -	**$ 19,053**	$ (208)	$ 1,905	**$ 1,697**	**$ 9,471**
C3 - Municipal Energy Solutions	**$ 4,013**	$ 127	$ -	$ 144	$ 125	$ -	$ 752	$ 597	$ 458	$ 394	$ 180	**$ 2,777**	$ 1,128	$ -	**$ 3,905**	$ 109	$ 390	**$ 499**	**$ 1,479**
C5 - C&I Active Demand Response	**$ -**	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**	$ -	$ -	**$ -**	$ -	$ -	**$ -**	**$ -**
C6a - C&I Customer Engagement Platform	**$ -**	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**	$ -	$ -	**$ -**	$ -	$ -	**$ -**	**$ -**
C6b - C&I ISO Forward Capacity Market Expenses	**$ -**	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**	$ -	$ -	**$ -**	$ -	$ -	**$ -**	**$ -**
C6c - C&I Education	**$ -**	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**	$ -	$ -	**$ -**	$ -	$ -	**$ -**	**$ -**
C6d - C&I Customer Partnerships	**$ -**	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**	$ -	$ -	**$ -**	$ -	$ -	**$ -**	**$ -**
Sub-Total Commercial & Industrial	**$ 94,432**	**$ 9,647**	**$ -**	**$ 10,893**	**$ 9,436**	**$ -**	**$ 26,890**	**$ 12,600**	**$ 16,271**	**$ 8,230**	**$ 4,974**	**$ 98,942**	**$ (4,204)**	**$ -**	**$ 94,738**	**$ (306)**	**$ 9,474**	**$ 9,168**	**$ 42,219**
C6e - Smart Start	**$ -**	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**	$ -	$ -	**$ -**	$ -	$ -	**$ -**	**$ -**
Total	**$ 167,930**	**$ 11,282**	**$ -**	**$ 12,769**	**$ 11,062**	**$ -**	**$ 30,076**	**$ 15,698**	**$ 17,689**	**$ 9,303**	**$ 5,624**	**$ 113,502**	**$ 45,047**	**$ 1,381**	**$ 159,929**	**$ 2,765**	**$ 27,525**	**$ 30,290**	**$ 47,863**

(1) The Granite State Test is used as the primary cost test, as approved in Order No. 36,322. Benefits are calculated based on net savings.

(2) Non-resource benefits include NEIs, which are only applied to the Home Energy Asssitance program in the GST primary cost test.

(3) Non-embedded environmental benefits are not included in the GST primary cost test.

Portfolio Planned Versus Actual Performance - 2021

	Portfolio	Planned	Threshold	Actual	% of Plan	Design Coefficient	Actual Coefficient	Planned PI	*125% of Planned PI*	Actual PI	Source
1	Lifetime kWh Savings	1,112,008,713	*834,006,535*	1,053,627,185	95%	1.925%	1.824%	$ 913,947	*$ 1,142,434*	$ 842,882	Planned and Actual
2	Annual kWh Savings	98,785,893	*74,089,420*	96,869,833	98%	0.550%	0.539%	$ 261,128	*$ 326,410*	$ 249,238	Planned and Actual
3	Summer Peak Demand kW	12,272	*7,977*	15,037	123%	0.660%	0.809%	$ 313,353	*$ 391,692*	$ 373,724	Planned and Actual
4	Winter Peak Demand kW	12,644	*8,218*	14,189	112%	0.440%	0.494%	$ 208,902	*$ 261,128*	$ 228,194	Planned and Actual
5	Total Resource Benefits	$ 159,929,067		$ 179,681,503	112%						Planned and Actual
6	Total Utility Costs[1,2]	$ 47,477,758		$ 46,212,263	97%						Planned and Actual
7	Net Benefits	$ 112,451,309	*$ 84,338,481*	$ 133,469,240	119%	1.925%	2.285%	$ 913,947	*$ 1,142,434*	$ 1,055,856	Line 5 - Line 6
8	Total					5.500%	5.951%	$ 2,611,277	*$ 3,264,096*	**$ 2,749,894**	

		Granite State Test Planned	Actual	Source
9	Total Benefits (incl. NEIs)	$ 167,930,352	$ 186,892,624	Planned and Actual from Cost Eff Tab
10	Performance Incentive	$ 2,611,277	$ 2,749,894	from row 8 above
11	Total Utility Costs	$ 47,477,758	$ 46,212,263	from row 6 above
12	**Portfolio GST BCR**	**3.35**	**3.82**	row 9 divided by rows 10+11

All dollar values are expressed in 2021 dollars.

[1] Note that in order to avoid a circular reference in the calculation of performance incentive, "Total Utility Costs" does not include the value of PI.

[2] Net of Smart Start

2021 End of Year Reconciliation

		2021
Beginning Balance - Carryforward Over/(Under) Recovery	**$**	**48,853**
Funding		
System Benefits Charge		41,008,456
RGGI Funding		2,367,135
FCM Payments		5,368,766
2021 Interest		242,547
Total Program Funding	**$**	**48,986,904**
Expenses		
Energy Efficiency Expenditures		46,230,883
2021 Performance Incentive booked as December 31, 2021 (includes 2021 PI and 2020 PI true-up)		2,374,671
Exclude 2020 Performance Incentive true-up booked in 2021		329
2021 Performance Incentive true-up to be booked in 2022		374,894
Eversource Facilities Expenses [1]		-
Eversource Facilities Funds Set Aside [2]		-
Total Program Expenses	**$**	**48,980,777**
Activity	**$**	**6,127**
Ending Balance - Over/(Under) Recovery	**$**	**54,980**

Notes
1. Reference RSA 125-O:5 2021 Compliance Report dated June 1, 2022
No additional funds were aside.

2. Reference RSA 125-O:5 Compliance Report dated June 16, 2021.

Eversource
2021 Reconciliation of General Ledger Transactions and Energy Efficiency Program Transactions

Carry Forward General Ledger - 01/01/2019	$	185,008
Carry Forward General Ledger - 12/31/2019		590,037
2019 Net General Ledger Activity	**$**	**405,029**

		General Ledger Transactions		Deduct 2019 Transactions Included in 2020 GL		Add 2020 Transactions Included in 2021 GL		2020 Program Year
Beginning Balance - Carryforward Over/(Under) Recovery							$	48,853
Funding								
SBC Funding	$	41,008,456	$	-	$	-	$	41,008,456
RGGI Funding		2,367,135		-		-	$	2,367,135
FCM Payments		5,368,766		-		-	$	5,368,766
Interest: GL Dec 2020-Nov 2021, EE YTD		266,226		23,679		-		242,547
Total Funding	**$**	**49,010,583**	**$**	**23,679**	**$**	**-**	**$**	**48,986,904**
Expenses								
Energy Efficiency Programs: Jan-Dec 2021	$	46,230,883	$	-	$	-	$	46,230,883
Eversource Facilities Expenses		-		-		-		-
Eversource Facilities Funds Set-Aside		-		-		-		-
2021 Performance Incentive booked as December 31, 2021 (includes 2021 PI and 2020 PI true-up)		2,374,671		-		-		2,374,671
Exclude 2020 Performance Incentive true-up booked in 2021		-		(329)		-		329
2021 Performance Incentive true-up to be booked in 2022		-		-		374,894		374,894
Total Expenses	**$**	**48,605,554**	**$**	**(329)**	**$**	**374,894**	**$**	**48,980,777**
Net: Funding less Expenses	**$**	**405,029**	**$**	**24,008**	**$**	**(374,894)**	**$**	**6,127**
Ending Balance - Over/(Under) Recovery							**$**	**54,980**

Retail & Large Business Energy Reduction Partners Programs
2021 Performance Incentive Calculation

Energy Efficiency Fund RFP #18-005

	2019	2020	2021	2022	Total
Total Expenses	$ -	$ -	$ 17,963	$ -	**$ 17,963**
Percentage	5.5%	5.5%	5.5%	5.5%	5.5%
Total Peformance Incentive	$ -	$ -	$ 988	$ -	**$ 988**
			Total		**$ 18,951**

Note: Performance Incentive for RGGI Grant from RFP 18-005 is calculated as shown above.

2021 Actuals
January 2021 - December 2021

Smart Start Program

Description	Eversource
Year-to-Date Amount Available to Loan	
Loan Fund Balance	$ 1,430,834
Less: Year-to-Date Loans	854,880
Plus: Loan Repayments (excluding reserve for bad debt)	911,515
Current Balance	$ 1,487,470
Less: Loans in Process	-
Less: Potential Loans	175,198
Less: Future Committed Loans	-
Add: Anticipated Loan Repayments Thru Year End	(652,200)
Amount Available to Loan	$ 1,964,472
Year-to-Date Reserve for Bad Debt (Uncollectibles)	
Initial Balance	$ 124,538
Plus: Bad Debt Collections	40,199
Less: Bad Debt Charges	-
Ending Balance	$ 164,737
Year-to-date Administrative and Implementation Expenses	$ 18,620
Year-to-date Payments to Contractors Supporting Customer Projects	$ 854,880
Year-to-date Performance Incentive [1]	$ 54,691

Notes:
(1) The performance incentive is based on 6% of the loan repayments.

PSNH d/b/a Eversource Energy
Monthly and Cumulative Savings and Lost Base Revenue
January 1, 2021 to December 31, 2021

Line	Description	Cumulative Annual kWh Savings / Monthly kW Savings 12/31/2020	Actual Jan-21	Actual Feb-21	Actual Mar-21	Actual Apr-21	Actual May-21	Actual Jun-21	Actual Jul-21	Actual Aug-21	Actual Sep-21	Actual Oct-21	Actual Nov-21	Actual Dec-21	2021 Annual kWh and Monthly kW Savings	Cumulative Annual kWh Savings / Monthly kW Savings 12/31/2021
	Col. A	Col. B	Col. C	Col. D	Col. E	Col. F	Col. G	Col. H	Col. I	Col. J	Col. K	Col. L	Col. M	Col. N	Col. O	Col. P
1	Residential Annual kWh Savings (2018-2021)	48,938,042	1,893,418	1,354,946	2,218,732	1,908,318	1,725,508	1,766,375	1,779,828	1,943,960	2,835,531	1,457,858	1,094,418	1,657,346	21,636,238	68,846,728
2	C&I Annual kWh Savings (2018)	38,157,478	-	-	-	-	-	-	-	-	-	-	-	-	-	38,157,478
3	C&I Annual kWh Savings (2019-2021)	140,256,835	2,335,218	1,024,262	2,782,529	3,905,058	5,081,709	3,935,024	7,015,714	8,260,819	6,050,408	5,740,693	8,848,523	20,253,639	75,233,594	215,490,430
4	C&I Monthly Installed kW Savings	21,523	463	241	502	614	848	581	1,205	1,365	873	919	1,254	3,050	11,916	33,439

Line	Description		Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Total 2021 Lost Base Revenue
5	Monthly Residential Savings (2021)		157,785	112,912	184,894	159,027	143,792	147,198	148,319	161,997	236,294	121,488	91,202	138,112	
6	Retired Measures		14,219	-	-	29,405	-	-	-	12,569	-	24,608	24,975	38,188	
7	Cumulative Residential Savings	4,078,170	4,221,736	4,334,648	4,519,543	4,649,165	4,792,957	4,940,155	5,088,474	5,237,902	5,474,196	5,571,076	5,637,303	5,737,227	
8	Average Residential kWh Distribution Rate		0.05037	0.05037	0.05037	0.05037	0.05037	0.05037	0.05037	0.05037	0.05037	0.05037	0.05037	0.05037	
9	Total Lost Residential Revenue		$ 212,638	$ 218,325	$ 227,637	$ 234,166	$ 241,408	$ 248,822	$ 256,293	$ 263,819	$ 275,721	$ 280,600	$ 283,936	$ 288,969	$ 3,032,335
10	Monthly C&I Savings (2018)	3,179,790	3,179,790	3,179,790	3,179,790	3,179,790	3,179,790	3,179,790	3,179,790	3,179,790	3,179,790	3,179,790	3,179,790	3,179,790	
11	Average C&I kWh Distribution Rate		0.03162	0.03162	0.03162	0.03162	0.03162	0.03162	0.03162	0.03162	0.03162	0.03162	0.03162	0.03162	
12	Lost C&I kWh Revenue		$ 100,556	$ 100,556	$ 100,556	$ 100,556	$ 100,556	$ 100,556	$ 100,556	$ 100,556	$ 100,556	$ 100,556	$ 100,556	$ 100,556	$ 1,206,676
13	Monthly C&I Savings (2021)		194,602	85,355	231,877	325,421	423,476	327,919	584,643	688,402	504,201	478,391	737,377	1,687,803	
14	Cumulative C&I Savings	11,688,070	11,882,671	11,968,026	12,199,904	12,525,325	12,948,801	13,276,720	13,861,362	14,549,764	15,053,965	15,532,356	16,269,733	17,957,536	
15	Average C&I kWh Distribution Rate		0.01108	0.01108	0.01108	0.01108	0.01108	0.01108	0.01108	0.01108	0.01108	0.01108	0.01108	0.01108	
16	Lost C&I kWH Revenue		$ 131,664	$ 132,610	$ 135,179	$ 138,785	$ 143,477	$ 147,110	$ 153,588	$ 161,216	$ 166,803	$ 172,104	$ 180,274	$ 198,975	$ 1,861,784
17	Monthly C&I kW Savings (2021)		463	241	502	614	848	581	1,205	1,365	873	919	1,254	3,050	
18	Cumulative Monthly C&I kW Savings	21,523	21,986	22,227	22,728	23,343	24,191	24,773	25,977	27,343	28,216	29,135	30,388	33,439	
19	Average C&I Demand Rate		7.81	7.81	7.81	7.81	7.81	7.81	7.81	7.81	7.81	7.81	7.81	7.81	
20	Lost C&I Demand Revenue		$ 171,653	$ 173,533	$ 177,450	$ 182,246	$ 188,871	$ 193,409	$ 202,815	$ 213,476	$ 220,289	$ 227,465	$ 237,253	$ 261,068	$ 2,449,528
21	Total Lost C&I kWh and Demand Revenue		$ 403,873	$ 406,699	$ 413,185	$ 421,588	$ 432,904	$ 441,076	$ 456,960	$ 475,248	$ 487,649	$ 500,125	$ 518,083	$ 560,600	$ 5,517,989
22	**Total Lost Revenue**		**$ 616,511**	**$ 625,023**	**$ 640,822**	**$ 655,754**	**$ 674,313**	**$ 689,898**	**$ 713,253**	**$ 739,068**	**$ 763,369**	**$ 780,725**	**$ 802,019**	**$ 849,568**	**$ 8,550,323**

Lines 1-4: Company Actuals
Line 5: Line 1 / 12
Line 6: Company Forecast
Line 7: Prior Month Line 7 + Current Month Line 5 + Previous Month Line 5 - Current Month Line 6
Line 8: Page 12, Column 8
Line 9: Line 7 x Line 8
Line 10: Line 1, Column B / 12
Line 11: Page 12, Column 8
Line 12: Line 10 x Line 11
Line 13: Line 3 / 12
Line 14: Prior Month Line 14 + Current Month Line 13
Line 15: Page 12, Column 7
Line 16: Line 14 x Line 15
Line 17: Line 4
Line 18: Prior Month Line 18 + Current Month Line 17
Line 19: Page 12, Column 6
Line 20: Line 18 x Line 19
Line 21: Line 12 + Line 16 + Line 20
Line 22: Line 9 + Line 21

PSNH d/b/a Eversource Energy
Lost Base Revenue Reconciliation (Preliminary)
January 1, 2021 to December 31, 2021
($ in 000's)

Line	Description	Actual Carryover 12/31/2020	Actual Jan-21	Actual Feb-21	Actual Mar-21	Actual Apr-21	Actual May-21	Actual Jun-21	Actual Jul-21	Actual Aug-21	Actual Sep-21	Actual Oct-21	Actual Nov-21	Actual Dec-21	2021 Total
	Col. A	Col. B	Col. C	Col. D	Col. E	Col. F	Col. G	Col. H	Col. I	Col. J	Col. K	Col. L	Col. M	Col. N	Col. O
1	Total Revenue Recovery		453	420	427	389	350	416	465	463	478	375	380	428	5,044
2	Total Lost Revenues		617	625	641	656	674	690	713	739	763	781	802	850	8,550
3	Current Month (Over)/Under Recovery		163	205	214	267	324	274	249	276	285	406	422	421	3,506
4	Cumulative (Over)/Under Recovery	(1,619)	(1,456)	(1,251)	(1,037)	(771)	(447)	(172)	76	352	637	1,043	1,465	1,886	
5	Carrying Charge Rate (Prime Rate)		0.2708%	0.2708%	0.2708%	0.2708%	0.2708%	0.2708%	0.2708%	0.2708%	0.2708%	0.2708%	0.2708%	0.2708%	
6	Carrying Charge on Deferral Balance		(4)	(4)	(3)	(2)	(2)	(1)	(0)	1	1	2	3	5	(4)
7	Cumulative (Over)/Under Recovery Incl Carrying Charge		(1,460)	(1,259)	(1,048)	(784)	(462)	(188)	60	337	623	1,031	1,457	1,883	
8	Total Sales (MWh)		697,584	646,103	656,911	598,818	538,530	639,236	714,706	712,642	735,899	576,699	584,577	659,034	7,760,740
9	**SBC Rate (LBR Component in cents per kWh)**		0.065	0.065	0.065	0.065	0.065	0.065	0.065	0.065	0.065	0.065	0.065	0.065	

Line 1: (Line 8 x Line 9) / 100
Line 2: Page 9, Line 22 / 1000
Line 3: Line 2 - Line 1
Line 4: Prior month Line 4 + Current month Line 3
Line 5: Prime Rate / 12
Line 6: (Prior Month Line 4 + Current Month Line 4) / 2 x Line 5
Line 7: Line 4 + Line 6
Line 8: Company Actuals
Line 9: Approved Rate

PSNH d/b/a Eversource Energy
Calculation of Forecasted Average Distribution Rate for Lost Revenue
Based on Actual Billing Determinants and Distribution Rates*

For the Period 01/01/21 Through 12/31/21

	(1)	(2)	(3) = (1) + (2)	(4)	(5)	(6) = (1) + (4)	(7) = (2) / (5)	(8) = (3) / (5)
	Revenue					Average	Average	Average
Rate Class	Demand Charges	kWh Charges	Total Demand and kWh Charges	Delivery kW	Delivery kWh	Distribution Rate $/kW	Distribution Rate $/kWh[(a)]	Distribution Rate $/kWh[(b)]
Residential	$ -	$ 170,901,070	$ 170,901,070	$ -	3,393,092,962	**N/A**	**N/A**	**$ 0.05037**
General Service Rate G	$ 48,260,328	$ 32,260,699	$ 80,521,027	4,124,831	1,611,507,216	$ 7.82	$ 0.02002	$ 0.04997
Primary General Service Rate GV	$ 25,297,610	$ 10,235,658	$ 35,533,268	3,748,552	1,581,856,864	$ 2.73	$ 0.00647	$ 0.02246
Large General Service Rate LG	$ 15,685,071	$ 5,638,221	$ 21,323,292	3,557,237	1,150,784,833	$ 1.59	$ 0.00490	$ 0.01853
Commercial and Industrial	$ 89,243,010	$ 48,134,577	$ 137,377,587	11,430,620	4,344,148,913	**$ 7.81**	**$ 0.01108**	**$ 0.03162**

* Excludes the outdoor lighting rates (Rate OL and Rate EOL), the Customer/Meter charge revenue from each rate,
and the on/off peak kWh associated with Rate B >= 115 kV under Rate LG.

Eversource
Calculation of Distribution Revenue at the Rate Levels in Effect January 1 - December 31, 2021
Based on Billing Determinants for the Twelve Months Ending December 2021

Residential Rate R

		January 1, 2021 - July 31, 2021			August 1, 2021 - December 31, 2021			January 1, 2021 - December 31, 2021	
Rate	Source	Units	Rate/Charge	Revenue	Units	Rate/Charge	Revenue	Units	Revenue
Standard	Customer Charge	3,146,221	$ 13.81	$ 43,449,312	2,253,863	$ 13.81	$ 31,125,848	5,400,084	$ 74,575,160
	All kWh	1,916,286,814	$ 0.05116	$ 98,037,233	1,360,469,098	$ 0.05177	$ 70,431,485	3,276,755,912	$ 168,468,719
Uncontrolled Water Heating	Customer Charge	281,031	$ 4.87	$ 1,368,621	198,190	$ 4.87	$ 965,185	479,221	$ 2,333,806
	All kWh	53,144,012	$ 0.02361	$ 1,254,730	31,460,512	$ 0.02393	$ 752,850	84,604,524	$ 2,007,580
Controlled Water Heating	Customer Charge	1,529	$ 6.38	$ 9,755	1,072	$ 4.87	$ 5,221	2,601	$ 14,976
	All kWh	277,615	$ 0.01241	$ 3,445.2	172,550	$ 0.02393	$ 4,129.1	450,165	$ 7,574.3
LCS - Radio-controlled	Customer Charge	22,793	$ 6.99	$ 159,323	16,200	$ 6.99	$ 113,238	38,993	$ 272,561
	All kWh	21,666,856	$ 0.01241	$ 268,886	8,590,074	$ 0.01273	$ 109,352	30,256,930	$ 378,237
LCS - 8 Hour Switch	Customer Charge	68	$ 6.99	$ 475	43	$ 4.87	$ 209	111	$ 685
	All kWh	24,054	$ 0.01241	$ 299	10,838	$ 0.02393	$ 259	34,892	$ 558
LCS - 8 Hour No Switch	Customer Charge	638	$ 6.38	$ 4,070	441	$ 4.87	$ 2,148	1,079	$ 6,218
	All kWh	208,552	$ 0.01241	$ 2,588	101,430	$ 0.02393	$ 2,427	309,982	$ 5,015
LCS - 10,11 Hour Switch	Customer Charge	28	$ 6.99	$ 196	20	$ 4.87	$ 97	48	$ 293
	All kWh	5,277	$ 0.02361	$ 125	2,569	$ 0.02393	$ 61	7,846	$ 186
LCS - 10,11 Hour No Switch	Customer Charge	540	$ 6.38	$ 3,445	379	$ 4.87	$ 1,846	919	$ 5,291
	All kWh	125,980	$ 0.02361	$ 2,974	73,963	$ 0.02393	$ 1,770	199,943	$ 4,744
Time of Day	Customer Charge	286	$ 32.08	$ 9,175	218	$ 32.08	$ 6,993	504	$ 16,168
	On Peak kWh	105,582	$ 0.15015	$ 15,853	71,238	$ 0.15076	$ 10,740	176,820	$ 26,593
	Off Peak kWh	177,890	$ 0.00818	$ 1,455	118,059	$ 0.00818	$ 966	295,949	$ 2,421
Total Residential	Customer/Meter	3,453,134		$ 45,003,897	2,470,426		$ 32,220,576	5,923,560	$ 77,224,474
	Demand	-		-	-		-	-	-
	kWh	1,992,022,632		$ 99,587,290	1,401,070,330		$ 71,313,780	3,393,092,962	$ 170,901,070
				$ 144,591,187			$ 103,534,356		$ 248,125,544

General Service Rate G

		January 1, 2021 - July 31, 2021			August 1, 2021 - December 31, 2021			January 1, 2021 - December 31, 2021	
Rate	Source	Units	Rate/Charge	Revenue	Units	Rate/Charge	Revenue	Units	Revenue
Standard	Single Phase Customer Charge	399,675	$ 16.21	$ 6,478,732	287,406	$ 16.21	$ 4,658,851	687,081	$ 11,137,583
	Three Phase Customer Charge	142,652	$ 32.39	$ 4,620,498	102,310	$ 32.39	$ 3,313,821	244,962	$ 7,934,319
	Demand Charge > 5 kW	2,152,765	$ 11.69	$ 25,165,823	1,959,739	$ 11.69	$ 22,909,343	4,112,504	$ 48,075,166
	First 500 kWh Charge	161,108,587	$ 0.02807	$ 4,522,318	113,875,459	$ 0.02805	$ 3,194,207	274,984,047	$ 7,716,525
	Next 1,000 kWh Charge	166,973,583	$ 0.02268	$ 3,786,961	116,166,992	$ 0.02268	$ 2,634,667	283,140,575	$ 6,421,628
	All Additional kWh Charge	605,130,242	$ 0.01709	$ 10,341,676	436,913,809	$ 0.01709	$ 7,466,857	1,042,044,051	$ 17,808,533
Time of Day	Single Phase Customer Charge	107	$ 41.98	$ 4,492	86	$ 41.98	$ 3,610	193	$ 8,102
	Three Phase Customer Charge	131	$ 60.00	$ 7,860	100	$ 60.00	$ 6,000	231	$ 13,860
	Demand Charge	6,117	$ 14.92	$ 91,266	6,210	$ 15.12	$ 93,897	12,327	$ 185,162
	On peak kWh	146,490	$ 0.05335	$ 7,815	179,702	$ 0.05335	$ 9,587	326,192	$ 17,402
	Off peak kWh	241,814	$ 0.00836	$ 2,022	259,004	$ 0.00836	$ 2,165	500,818	$ 4,187
Space Heating	Meter Charge	2,711	$ 3.24	$ 8,784	1,922	$ 3.24	$ 6,227	4,633	$ 15,011
	All kWh	2,991,842	$ 0.04088	$ 122,307	1,443,493	$ 0.04124	$ 59,530	4,435,335	$ 181,836
Uncontolled Water Heating	Customer Charge	8,250	$ 4.87	$ 40,178	5,831	$ 4.87	$ 28,397	14,081	$ 68,574
	All kWh	1,864,593	$ 0.02361	$ 44,023	1,120,971	$ 0.02393	$ 26,825	2,985,564	$ 70,848
LCS - Radio-controlled	Customer Charge	1,030	$ 6.99	$ 7,200	722	$ 6.99	$ 5,047	1,752	$ 12,246
	All kWh	2,179,234	$ 0.01273	$ 27,746	847,726	$ 0.01273	$ 10,793	3,026,960	$ 38,539
LCS - 8 Hour No Switch	Customer Charge	25	$ 6.38	$ 160	20	$ 4.87	$ 97	45	$ 257
	All kWh	27,745	$ 0.01241	$ 344	9,264	$ 0.02393	$ 222	37,009	$ 566
LCS - 10,11 Hour No Switch	Customer Charge	7	$ 6.38	$ 45	5	$ 4.87	$ 24	12	$ 69
	All kWh	11,425	$ 0.02361	$ 270	15,240	$ 0.02393	$ 365	26,665	$ 634
Total General Service	Customer/Meter	554,588		$ 11,167,947	398,402		$ 8,022,075	952,990	$ 19,190,022
	Demand	2,158,882		$ 25,257,088	1,965,949		$ 23,003,240	4,124,831	$ 48,260,328
	kWh	940,675,556		$ 18,855,481	670,831,660		$ 13,405,218	1,611,507,216	$ 32,260,699
				$ 55,280,517			$ 44,430,533		$ 99,711,049

Primary General Service Rate GV

		January 1, 2021 - July 31, 2021			August 1, 2021 - December 31, 2021			January 1, 2021 - December 31, 2021	
Rate	Source	Units	Rate/Charge	Revenue	Units	Rate/Charge	Revenue	Units	Revenue
Standard	Customer Charge	9,753	$ 211.21	$ 2,059,931	7,157	$ 211.21	$ 1,511,630	16,910	$ 3,571,561
	Minimum Charge	2	$ 1,062.00	$ 2,124	2	$ 1,062.00	$ 2,124	4	$ 4,248
	First 100 kW Demand Charge	902,422	$ 6.90	$ 6,226,712	444,068	$ 6.98	$ 3,099,595	1,346,490	$ 9,326,306
	All Additional kW Demand Charge	1,366,159	$ 6.64	$ 9,071,296	989,744	$ 6.72	$ 6,651,080	2,355,903	$ 15,722,375
	First 200,000 kWh	787,358,490	$ 0.00656	$ 5,165,072	598,393,701	$ 0.00656	$ 3,925,463	1,385,752,191	$ 9,090,534
	All Additional kWh	107,778,506	$ 0.00583	$ 628,349	85,815,205	$ 0.00583	$ 500,303	193,593,711	$ 1,128,651
Rate B	Administrative Charge	70	$ 372.10	$ 26,047	74	$ 372.10	$ 27,535	144	$ 53,582
	Translation Charge	-	$ 62.42	$ -	-	$ 62.42	$ -	-	$ -
	Demand Charge	25,070	$ 5.37	$ 134,626	21,089	$ 5.42	$ 114,302	46,159	$ 248,928
	First 200,000 kWh	1,390,823	$ 0.00656	$ 9,124	1,120,139	$ 0.00656	$ 7,348	2,510,962	$ 16,472
	All Additional kWh	-	$ 0.00583	$ -	-	$ 0.00583	$ -	-	$ -
Total GV	Customer/Meter	9,823		$ 2,085,978	7,231		$ 1,539,165	17,054	$ 3,625,144
	Demand	2,293,651		$ 15,432,633	1,454,901		$ 9,864,977	3,748,552	$ 25,297,610
	kWh	896,527,819		$ 5,802,544	685,329,045		$ 4,433,113	1,581,856,864	$ 10,235,658
				$ 23,321,156			$ 15,837,256		$ 39,158,411

Large General Service Rate LG

		January 1, 2021 - July 31, 2021			August 1, 2021 - December 31, 2021			January 1, 2021 - December 31, 2021	
Rate	Source	Units	Rate/Charge	Revenue	Units	Rate/Charge	Revenue	Units	Rate/Charge
Standard	Customer Charge	734	$ 660.15	$ 484,550	520	$ 660.15	$ 343,278	1,254	$ 827,828.10
	Demand Charge	1,406,580	$ 5.85	$ 8,228,493	1,078,577	$ 5.92	$ 6,385,176	2,485,157	$ 14,613,668.84
	On peak kWh	267,311,174	$ 0.00554	$ 1,480,904	204,989,709	$ 0.00554	$ 1,135,643	472,300,883	$ 2,616,546.89182
	Off Peak kWh	353,789,849	$ 0.00468	$ 1,655,736	268,402,609	$ 0.00468	$ 1,256,124	622,192,458	$ 2,911,860.70344
Rate B < 115 KV	Administrative Charge	59	$ 372.10	$ 21,954	39	$ 372.10	$ 14,512	98	$ 36,465.80
	Translation Charge	-	$ 62.42	$ -	-	$ 62.42	$ -	-	$ -
	Demand charge	118,183	$ 5.37	$ 634,643	80,583	$ 5.42	$ 436,760	198,766	$ 1,071,402.57
	On peak kWh	5,094,295	$ 0.00554	$ 28,222	3,323,744	$ 0.00554	$ 18,414	8,418,039	$ 46,635.93606
	Off Peak kWh	8,642,373	$ 0.00468	$ 40,446	4,857,098	$ 0.00468	$ 22,731	13,499,471	$ 63,177.52428
Rate B >= 115 KV	Administrative Charge	34	$ 372.10	$ 12,651	26	$ 372.10	$ 9,675	60	$ 22,326.00
	Translation Charge	-	$ 62.42	$ -	-	$ 62.42	$ -	-	$ -
	Demand charge	489,296	$ -	$ -	384,018	$ -	$ -	873,314	$ -
	On peak kWh	4,033,328	$ -	$ -	6,501,964	$ -	$ -	10,535,292	$ -
	Off Peak kWh	9,582,903	$ -	$ -	14,255,787	$ -	$ -	23,838,690	$ -
Total LG	Customer/Meter	827		$ 519,155	585		$ 367,465	1,412	$ 886,620
	Demand	2,014,059		$ 8,863,136	1,543,178		$ 6,821,936	3,557,237	$ 15,685,071
	kWh	648,453,922		$ 3,205,309	502,330,911		$ 2,432,912	1,150,784,833	$ 5,638,221
				$ 12,587,600			$ 9,622,312		$ 22,209,912

Eversource

Calculation of Distribution Revenue at the Rate Levels in Effect January 1 - December 31, 2021

Based on Billing Determinants for the Twelve Months Ending December 2021

Outdoor Lighting Rate OL

Type	Fixture	January 1, 2021 - July 31, 2021 Units	Rate/Charge	Revenue	August 1, 2021 - December 31, 2021 Units	Rate/Charge	Revenue	January 1, 2021 - December 31, 2021 Units	Rate/Charge
High Pressure Sodium	4,000 Lumens	22,774	$ 15.42	$ 351,178	17,562	$ 15.55	$ 273,082	40,336	$ 624,260.28
	5,800 Lumens	3,893	$ 15.42	$ 60,023	2,995	$ 15.55	$ 46,567	6,887	$ 106,590.11
	9,500 Lumens	6,050	$ 20.51	$ 124,080	4,678	$ 20.68	$ 96,750	10,728	$ 220,829.64
	16,000 Lumens	5,433	$ 29.01	$ 157,609	4,130	$ 29.25	$ 120,816	9,563	$ 278,425.86
	30,000 Lumens	8,511	$ 29.73	$ 253,038	6,570	$ 29.97	$ 196,892	15,081	$ 449,930.33
	50,000 Lumens	12,480	$ 30.06	$ 375,138	9,575	$ 30.31	$ 290,206	22,054	$ 665,343.79
	130,000 Lumens	2,762	$ 48.24	$ 133,215	1,712	$ 48.64	$ 83,285	4,474	$ 216,499.87
	12,000 Lumens	53	$ 21.21	$ 1,124	41	$ 21.39	$ 877	94	$ 2,001.12
	34,200 Lumens	32	$ 21.21	$ 679	26	$ 27.38	$ 712	58	$ 1,390.60
Mercury	3,500 Lumens	29,590	$ 13.60	$ 402,418	22,243	$ 13.71	$ 304,947	51,832	$ 707,365.21
	7,000 Lumens	5,853	$ 16.37	$ 95,808	4,588	$ 16.50	$ 75,709	10,441	$ 171,516.99
	11,000 Lumens	387	$ 20.24	$ 7,836	275	$ 20.40	$ 5,610	662	$ 13,446.26
	15,000 Lumens	18	$ 23.15	$ 417	15	$ 23.34	$ 350	33	$ 766.80
	20,000 Lumens	2,591	$ 24.99	$ 64,741	1,952	$ 25.20	$ 49,195	4,543	$ 113,935.43
	56,000 Lumens	908	$ 39.72	$ 36,063	676	$ 40.05	$ 27,073	1,584	$ 63,135.61
Metal Halide	5,000 Lumens	1,431	$ 16.09	$ 23,031	1,082	$ 16.22	$ 17,551	2,513	$ 40,581.34
	8,000 Lumens	837	$ 22.02	$ 18,433	611	$ 22.20	$ 13,560	1,448	$ 31,992.76
	13,000 Lumens	48	$ 30.21	$ 1,457	35	$ 30.46	$ 1,066	83	$ 2,523.24
	13,500 Lumens	831	$ 30.86	$ 25,660	632	$ 31.11	$ 19,653	1,463	$ 45,313.37
	20,000 Lumens	1,816	$ 30.86	$ 56,043	1,365	$ 31.11	$ 42,462	3,181	$ 98,505.22
	36,000 Lumens	2,843	$ 31.14	$ 88,524	2,165	$ 31.40	$ 67,995	5,008	$ 156,518.51
	100,000 Lumens	1,497	$ 46.68	$ 69,902	1,111	$ 47.07	$ 52,300	2,609	$ 122,201.35
Incandescent	600 Lumens	336	$ 8.89	$ 2,987	240	$ 8.96	$ 2,150	576	$ 5,137.44
	1,000 Lumens	1,222	$ 9.92	$ 12,122	841	$ 10.00	$ 8,405	2,063	$ 20,527.24
	2,500 Lumens	7	$ 12.73	$ 89	5	$ 12.83	$ 64	12	$ 153.26
Fluorescent	20,000 Lumens	12	$ 33.90	$ 407	10	$ 34.18	$ 342	22	$ 748.60
Total Rate OL	Fixtures	112,214		$ 2,362,021	85,134		$ 1,797,619	197,348	
	Demand	-			-			-	
	kWh	9,034,316			16,405,473			16,405,473	
				$ 2,362,021			$ 1,797,619		

Outdoor Lighting Rate EOL

Type	Fixture	January 1, 2021 - July 31, 2021 Units	Rate/Charge	Revenue	August 1, 2021 - December 31, 2021 Units	Rate/Charge	Revenue	January 1, 2021 - December 31, 2021 Units	Rate/Charge
High Pressure Sodium	4,000 Lumens	22,936	$ 6.31	$ 144,641	11,529	$ 6.34	$ 73,094	34,465	$ 217,735.03
	5,800 Lumens	799	$ 6.61	$ 5,284	596	$ 6.65	$ 3,963	1,395	$ 9,247.21
	9,500 Lumens	2,163	$ 7.04	$ 15,219	1,441	$ 7.07	$ 10,188	3,604	$ 25,406.97
	16,000 Lumens	3,342	$ 7.69	$ 25,706	2,164	$ 7.73	$ 16,728	5,506	$ 42,433.98
	30,000 Lumens	6,672	$ 8.92	$ 59,506	5,029	$ 8.95	$ 45,010	11,701	$ 104,515.83
	50,000 Lumens	754	$ 10.62	$ 8,009	569	$ 10.66	$ 6,066	1,323	$ 14,074.30
	130,000 Lumens	385	$ 17.30	$ 6,659	275	$ 17.33	$ 4,766	660	$ 11,424.62
Metal Halide	5,000 Lumens	3,867	$ 6.63	$ 25,654	2,530	$ 6.67	$ 16,875	6,397	$ 42,529.48
	8,000 Lumens	129	$ 6.97	$ 899	111	$ 7.01	$ 778	240	$ 1,677.58
	13,000 Lumens	-	$ 7.70	$ -	-	$ 7.74	$ -	-	$ -
	13,500 Lumens	247	$ 7.87	$ 1,944	167	$ 7.91	$ 1,321	414	$ 3,265.28
	20,000 Lumens	248	$ 8.74	$ 2,167	102	$ 8.78	$ 896	350	$ 3,062.83
	36,000 Lumens	(21)	$ 10.45	$ (220)	60	$ 10.49	$ 629	39	$ 409.90
	100,000 Lumens	721	$ 17.12	$ 12,341	515	$ 17.15	$ 8,832	1,236	$ 21,172.86
LED's	Per Fixture	243,369	$ 3.20	$ 778,307	178,029	$ 3.23	$ 575,034	421,398	$ 1,353,340.47
	Per Watt	-	$ 0.0106	$ -	-	$ 0.0106	$ -	-	$ -
	Maintenance credit (contract)	2	($1.90)	$ (4)	7	($1.90)	$ (13)	7	($1.90)
Total Rate EOL	Fixtures	285,611		$ 1,086,114	203,117		$ 764,165	488,728	
	Demand	-		$ -	-		$ -	-	
	kWh	5,174,453		$ -	4,034,324		$ -	9,208,777	
				$ 1,086,114			$ 764,165		

Total Retail

Type	Source	January 1, 2021 - July 31, 2021 Units	Revenue	August 1, 2021 - December 31, 2021 Units	Revenue	January 1, 2021 - December 31, 2021 Units
Total Retail	Customer/Meter	4,018,372	$ 58,776,978	2,876,644	$ 42,149,281	6,895,016
	Fixtures	397,825	$ 3,448,135	288,251	$ 2,561,784	686,076
	Demand	6,466,592	$ 49,552,858	4,964,028	$ 39,690,152	11,430,620
	kWh	4,491,888,698	$ 127,450,624	3,280,001,743	$ 91,585,023	7,762,856,125
			$ 239,228,595		$ 175,986,241	

Lost Base Revenue
Summary of Data Included in the Calculation of the Average Distribution Rates*

Type	Source	January 1, 2021 - July 31, 2021 Units	Revenue	August 1, 2021 - December 31, 2021 Units	Revenue	January 1, 2021 - December 31, 2021 Units
Total Residential	Demand	-	$ -	-	$ -	-
	kWh	1,992,022,632	$ 99,587,290	1,401,070,330	$ 71,313,780	3,393,092,962
			$ 99,587,290		$ 71,313,780	
Total General Service	Demand	2,158,882	$ 25,257,088	1,965,949	$ 23,003,240	4,124,831
	kWh	940,675,556	$ 18,855,481	670,831,660	$ 13,405,218	1,611,507,216
			$ 44,112,570		$ 36,408,457	
Total GV	Demand	2,293,651	$ 15,432,633	1,454,901	$ 9,864,977	3,748,552
	kWh	896,527,819	$ 5,802,544	685,329,045	$ 4,433,113	1,581,856,864
			$ 21,235,178		$ 14,298,090	
Total LG	Demand	1,524,763	$ 8,863,136	1,159,160	$ 6,821,936	2,683,923
	kWh	634,837,691	$ 3,205,309	481,573,160	$ 2,432,912	1,116,410,851
			$ 12,068,445		$ 9,254,848	
Total	Demand	5,977,296	$ 49,552,858	4,580,010	$ 39,690,152	10,557,306
	kWh	4,464,063,697	$ 127,450,624	3,238,804,196	$ 91,585,023	7,702,867,893
			$ 177,003,482		$ 131,275,175	

* The Lost Base Revenue calculation excludes the outdoor lighting rates (Rate OL and Rate EOL), the Customer/Meter charge revenue from each rate, and the on/off peak kWh associated with Rate B >= 115 kV under Rate LG.

Public Service Company of New Hampshire d/b/a Eversource Energy
Docket No. IR 22-042

Date Request Received: September 12, 2022	**Date of Response: September 26, 2022**
Data Request No. RR 1-006	**Page 1 of 2**

Request from: New Hampshire Public Utilities Commission

Witness: N/A

Request:

Reference reporting requirement v from Order No. 26,621. The Joint Utilities submitted costs of intervention per energy efficiency measure but not the monetary net present value associated with the market barriers that were originally listed in Tables 2.1 and 3.1 of the 2022-2023 New Hampshire Energy Efficiency Plan submitted on March 1, 2022.

The Commission directs Joint Utilities to provide this information, with an explanation of how the values were derived for further clarity. For example, for the first market barrier entry, please provide a monetary estimate for the "Incremental price difference between standard and high efficiency goods and services" that was faced by customers benefiting from the NHSaves program in 2022-2023.

Response:

Estimates of the cost associated with the incremental price difference between standard and high efficiency goods and services adopted by customers with the assistance of financial incentives from the NHSaves programs can be found in each utility's annual report for 2021. The sum of the values in the Utility Cost column and the Customer Cost column is equal to the total incremental cost, which is displayed for each program. This value can also be found in the Calculations Yr 1 tab of each utility's BC model in column I labeled "TRC (Total)" at the measure level.

The estimate of incremental costs for program years 2022 and 2023 is provided in a similar manner in the BC models and PDF attachments to the 2022-2023 Plan. The incremental cost for each measure is derived as described in response to Record Request 3 in this set of questions.

Regarding the value of overcoming the market barriers economy-wide, the Utilities direct the Commission to the NHSaves Potential Study: Statewide Assessment of Energy Efficiency and Active Demand Opportunities, 2021-2023, which was filed with the Commission in October of 2020 and is available as report #153 on the PUC's electric EM&V website, located at https://www.puc.nh.gov/electric/Monitoring_Evaluation_Report_List.htm. This comprehensive study examines the technical, economic, and achievable potential from energy efficiency in the state and at various levels of investment. While it is not possible to summarize the report in a single graph, the figure reproduced below provides insight into the estimate of relative costs and benefits of achieving available energy efficiency over the three-year term 2021-2023. The potential study does not take into account the cost of overcoming market barriers related to workforce or supply chain limitations, barriers in the building stock itself, or the awareness of available technical assistance and other supports from the NHSaves programs; it is focused on the potential of unrealized efficiency of equipment in new and existing buildings, both in terms of value and in terms of energy.

Additionally, the Utilities are in the process of finalizing the selection of a third-party evaluation firm, which will be tasked with, among other research, investigating the cost to the New Hampshire economy of market barriers and the failure to fully integrate energy efficiency into the built environment. The specific scope and cost of this research have yet to be finalized but will be guided in part by the Commission's reporting requirements, including its interest in quantifying the cost of such market failures.

Figure 11. 2021-2023 Average Lifetime Granite State Test Benefits Generated Each Year by Scenario