

**BEFORE THE
NEW HAMPSHIRE PUBLIC UTILITIES COMMISSION**

In Re.)	
)	
2018-2020 New Hampshire Statewide)	Docket No. DE-17-136
Energy Efficiency Plan)	
)	

DIRECT TESTIMONY OF
ROGER D. COLTON

ON BEHALF OF THE
The Way Home

November 2, 2018

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1 **Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

2 A. My name is Roger Colton. My business address is 34 Warwick Road, Belmont, MA
3 02478.

4
5 **Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT POSITION?**

6 A. I am a principal in the firm of Fisher Sheehan & Colton, Public Finance and General
7 Economics of Belmont, Massachusetts. In that capacity, I provide technical assistance to
8 a variety of federal and state agencies, consumer organizations and public utilities on rate
9 and customer service issues involving telephone, water/sewer, natural gas and electric
10 utilities.

11
12 **Q. ON WHOSE BEHALF ARE YOU TESTIFYING IN THIS PROCEEDING?**

13 A. I am testifying on behalf of The Way Home.

14
15 **Q. PLEASE DESCRIBE YOUR PROFESSIONAL BACKGROUND.**

16 A. I work primarily on low-income utility issues. This involves regulatory work on rate and
17 customer service issues, as well as research into low-income usage, payment patterns,
18 and affordability programs. At present, I am working on various projects in the states of
19 Maryland, Pennsylvania, Michigan and Illinois, as well as in the provinces of Ontario and
20 British Columbia. My clients include state agencies (e.g., Pennsylvania Office of
21 Consumer Advocate, Maryland Office of People's Counsel, Iowa Department of Human
22 Rights), federal agencies (e.g., the U.S. Department of Health and Human Services),
23 community-based organizations (e.g., Energy Outreach Colorado, Action Centre Tenants

1 Ontario), and private utilities (e.g., Unitil Corporation d/b/a Fitchburg Gas and Electric
2 Company, Entergy Services, Xcel Energy d/b/a Public Service of Colorado). In addition
3 to state- and utility-specific work, I engage in national work throughout the United States.
4 For example, in 2011, I worked with the U.S. Department of Health and Human Services
5 (the federal agency that administers the Low-Income Home Energy Assistance Program,
6 LIHEAP)¹ to create the Home Energy Insecurity Scale and to advance its utilization as an
7 outcomes measurement tool for LIHEAP and other low-income utility bill affordability
8 programs. In 2016, I was part of a team that engaged in a study for the Water Research
9 Foundation on how to reach “hard to reach” customers. A description of my professional
10 background is provided in Appendix A.

11
12 **Q. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND.**

13 A. After receiving my undergraduate degree in 1975 (Iowa State University), I obtained
14 further training in both law and economics. I received my law degree in 1981 (University
15 of Florida). I received my Master’s Degree (regulatory economics) from the MacGregor
16 School in 1993.

17
18 **Q. HAVE YOU EVER PUBLISHED ON PUBLIC UTILITY REGULATORY**
19 **ISSUES?**

20 A. Yes. I have published three books and more than 80 articles in scholarly and trade
21 journals, primarily on low-income utility and housing issues. I have published an equal
22 number of technical reports for various clients on energy, water, telecommunications and

¹ LIHEAP is the federal home energy assistance program. It is a block grant program that provides funding for states to distribute to income-eligible households.

1 other associated low-income utility issues. A list of my publications is included in
2 Appendix A.

3

4 **Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE THE NEW HAMPSHIRE**
5 **PUBLIC UTILITIES COMMISSION?**

6 A. Yes. I have testified before the New Hampshire PUC on numerous occasions regarding
7 low-income programs, including low-income energy efficiency programs. I have also
8 worked directly for the New Hampshire PUC Staff, as a consultant, on issues involving
9 low-income program design.

10

11 **Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE OTHER REGULATORY**
12 **COMMISSIONS AS AN EXPERT WITNESS?**

13 A. Yes. Over the past 30+ years, I have testified in more than 250 cases throughout the
14 United States and Canada regarding a range of issues involving low-income programs,
15 energy efficiency programs, and other regulatory issues.

16

17 **Q. PLEASE EXPLAIN THE PURPOSE OF YOUR TESTIMONY IN THIS**
18 **PROCEEDING.**

19 A. In this proceeding, I have been asked to assess a variety of issues as they affect the
20 interests of low-income customers. In particular, I will examine the following issues:

- 21 ➤ The appropriate treatment of unspent Home Energy Assistance (“HEA”)
22 funds from previous years;
- 23
- 24 ➤ The appropriate budget to be approved for the 2019 program year for electric
25 and natural gas energy efficiency as a whole (not limited to the HEA
26 program);

- 1
- 2 ➤ The reasonableness of removing barriers and disincentives to an equitable
- 3 distribution of HEA investments using the limited HEA funds that are
- 4 available; and
- 5
- 6 ➤ The reasonableness of applying a separate low-income “adder” to account for
- 7 non-energy benefits that are unique to low-income customers.
- 8

9 **Part 1. The Proper Treatment of Unspent HEA Funds.**

10

11 **Q. PLEASE EXPLAIN THE PURPOSE OF THIS SECTION OF YOUR**

12 **TESTIMONY.**

13 A. In this section of my testimony, I examine the extent to which New Hampshire’s utilities

14 failed to spend their HEA budgets in prior years. I assess the proper forward-looking

15 treatment of those unexpended dollars.

16

17 **Q. WHAT GIVES RISE TO CONCERN WITH RESPECT TO HEA FUNDING?**

18 A. In 2017, the New Hampshire electric and natural gas utilities substantially under-spent

19 their low-income HEA budgets. As shown in the Table below, in 2017, collectively the

20 electric and natural gas utilities under-spent their HEA budgets by \$914,171, or by 15%.

21 While the gas and electric utilities budgeted \$5,912,529 for the HEA program, they spent,

22 in aggregate, \$4,998,360.

23

24 Every New Hampshire utility under-spent its HEA budget in 2017, with some utilities

25 under-spending by a higher percent than others. As can be seen from the 2017 Fourth

26 Quarter report for the energy efficiency programs, Unitil underspent its HEA budget by

27 28%, while Eversource underspent its HEA budget by 15%. Similarly, while LU Gas

1 underspent its budget by 18%, Unutil Gas unspent its budget by eight percent (8%). 2018,
 2 of course, is not yet complete and final spending figures are not yet known.

HEA	Liberty	NHEC	Eversource	Unutil	Sub-Total (elec)	LU Gas	Unutil Gas	Sub-total (gas)	Total
Budget	\$392,168	\$284,308	\$3,450,394	\$538,874	\$4,665,744	\$1,005,700	\$241,086	\$1,246,786	\$5,912,530
Actual	\$352,518	\$280,148	\$2,930,672	\$388,231	\$3,951,569	\$825,671	\$221,119	\$1,046,790	\$4,998,359
Difference	\$39,650	\$4,160	\$519,722	\$150,643	\$714,175	\$180,029	\$19,967	\$199,996	\$914,171
% difference	10.11%	1.46%	15.06%	27.96%	15.31%	17.90%	8.28%	16.04%	15.46%

SOURCE: 2017 4th quarter report, New Hampshire statewide energy efficiency programs (NHPUC Docket No. DE-14-216)

3
 4 The underspending of HEA funding poses both process and substantive problems. The
 5 cause of these problems is that New Hampshire’s utilities do not propose to carry-
 6 forward most unspent HEA funds to be added to future year’s program budgets.

7
 8 **Q. PLEASE EXPLAIN THE PROCESS QUESTIONS ASSOCIATED WITH THIS**
 9 **FAILURE TO CARRY-FORWARD FUNDS TO BE USED IN FUTURE HEA**
 10 **BUDGETS.**

11 A. The failure to carry-forward unspent HEA funds to devote to future year HEA budgets
 12 gives rise to two process concerns. On the one hand, a failure of the utilities to spend
 13 their full HEA budgets means that the utilities are falling short of the negotiated
 14 agreement to spend 17% of the total annual budget on the HEA program. Indeed, to the
 15 extent that the utilities under-spend the HEA budget in any given year, without an
 16 obligation to carry-forward the amount of the under-spending to future program years,
 17 this undermines the commitment to devote 17% of the annual budget to HEA. Utilities
 18 can avoid the 17% commitment simply by under-spending their budgets and failing to
 19 make-up that short-fall in future years.

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The second process issue posed by the New Hampshire utilities’ under-spending of the HEA budget is the seeming conflict that is created with the agreed-upon requirement that no funding can be transferred from the HEA program to another program without *prior approval* of the New Hampshire PUC. The 2018 – 2020 Plan could not have been clearer when it explicitly stated that “In addition, no funds shall be transferred from the Home Energy Assistance Program without prior approval by the Commission.” (2018 – 2020 New Hampshire Statewide Energy Efficiency Plan, page 35).

Q. WAS THE AGREED-UPON HEA BUDGET SPECIFICALLY TIED TO THE NUMBER OF HEA HOUSING UNITS SERVED BY THE UTILITIES?

A. No. As the 2018 – 2020 Energy Efficiency Plan states, “The income-eligible Home Energy Assistance (HEA) program budget is equal to 17 percent of each utility’s total portfolio budget, excluding any funds carried forward from prior years in the Municipal Program. This exclusion is made to avoid applying the income-eligible set aside to the previously budgeted, but unspent, funds for a second time.” (2018 -2020 Plan, at 34). No limitation is placed upon that budget which ties the amount of spending to the number of housing units served.

Q. IS THE PROPOSAL BY THE UTILITIES TO NOT CARRY-FORWARD THE UNDER-SPENT HEA FUNDS IN ANY WAY INCONSISTENT WITH OTHER PRIOR ORDERS AND SETTLEMENT PROVISIONS?

1 A. Yes. As I discuss immediately above, even when the low-income set-aside was proposed
2 (and adopted), it was recognized that the low-income budget would not be sufficient to
3 serve the overall need for low-income efficiency services in New Hampshire. The PUC
4 recognized that reality when, in approving an increase in the percentage set-aside, it made
5 clear that the 17% was not to be a ceiling on HEA expenditures. According to the PUC
6 in approving the HEA funding, “the Settlement Agreement provides for an increase in the
7 minimum low-income share of the overall energy efficiency budget from 15.5 percent to
8 17 percent.” (Order 25,932, at page 23, emphasis added). The 2019 Plan Update is
9 directly contrary to this requirement that the 17% be a “minimum low-income share.”
10 The utilities propose to reduce the HEA funding below the level identified as “the
11 minimum low-income share” simply by failing to spend the total HEA budget and then
12 refusing to carry-forward the amounts under-spent.

13
14 **Q. IS THERE OTHER LANGUAGE IN THAT ORDER APPROVING THE 17%**
15 **THAT IS INCONSISTENT WITH THE CURRENT PROPOSAL OF THE**
16 **UTILITIES?**

17 A. Yes. In approving the low-income carve-out, the PUC stated that “as proposed, the
18 increase would take effect on January 1, 2017 and remain in effect through the first three-
19 year period of the EERS. During that time, the Settling Parties will explore additional
20 funding sources to augment ratepayer funding.” (Order 25,932, at page 23, emphasis
21 added). What the utilities propose in the 2019 Plan Update is contrary to this notion that
22 any “additional funding sources” would be used to “augment ratepayer funding.” The
23 effect of the utilities’ failure to carry forward unspent HEA funds is that increases in

1 “additional funding sources” would *supplant*, rather than augment, ratepayer funding. As
2 funding from the federal Weatherization Assistance Program (WAP) and/or Low-Income
3 Home Energy Assistance Program (LIHEAP) increases, in other words, the utilities will
4 be able to reduce their ratepayer contributions to low-income efficiency by under-
5 spending their HEA budgets and then failing to carry-forward those under-spent funds.

6
7 If supplanting ratepayer funds is adopted as the response to any increase in external
8 funding, there is little incentive to try to access “additional funding sources to augment
9 ratepayer funding.” The proposal of the utilities would mean that despite any “additional
10 funding sources,” there would be minimal progress in reducing waiting lists, or in serving
11 the needs left unmet through utility dollars. Any additional external funding, matched
12 with utility funding, would be a zero sum game.

13
14 **Q. IS THE NOTION OF REQUIRING A CARRY-FORWARD OF UNSPENT LOW-**
15 **INCOME FUNDS A NEW CONCEPT FOR NEW HAMPSHIRE UTILITIES?**

16 A. No. The New Hampshire PUC, in its Order 24,109 (December 31, 2002) noted that low-
17 income energy efficiency funding was a “dedicated” funding stream (pages 15-16).

18 Under this principle of “dedication,” low-income funding could not be siphoned away to
19 other programs. This siphoning could occur through a direct transfer of funds from HEA
20 to some other non-low-income program. In the alternative, but achieving the same
21 siphoning result, would be for the utilities to under-spend the HEA funds in one year, and
22 then to use those unspent HEA funds in future years for programs other than HEA.

23 Attached to my Testimony as Appendix B is an opinion by the Staff Counsel to the PUC

1 (September 23, 2013) in Docket DE 12-262 reaching this conclusion that low-income
2 efficiency funding is a “dedicated” stream of revenue to be used exclusively for low-
3 income efficiency investments.
4

5 The Commission has addressed this issue over the years. For example, the PUC
6 addressed the issue of the carry-forward of low-income efficiency funding in approving
7 the Settlement of Docket No. DG 06-032. In that Settlement Agreement, all parties
8 agreed that “[e]nergy efficiency funding and expenditures will be reconciled each year
9 and any over- or under-expenditures within a customer sector will be carried forward to
10 the subsequent year’s budget for that customer sector. For this purpose only, low-income
11 shall be treated as a separate budget category.” (Docket DG 06-032, Settlement, page 7,
12 approved by Order 24,636, June 8, 2006) (emphasis added). The joint utilities’ proposed
13 treatment of the under-spending of their HEA budget, declining to carry-forward those
14 unspent funds in the HEA budgets to future years, is contrary to the PUC’s directive that
15 the carry-forward be “for that customer sector” and that low-income programs “shall be
16 treated as a separate budget category.”
17

18 The Commission has addressed the carry-over of HEA funding in other circumstances as
19 well. In Docket DG 11-207, for example, Northern Utilities reported having unspent
20 funds. Eventually, after a Commission review (Order 25,315, January 9, 2012), Northern
21 proposed to carry-over its residential funding, devoting some of those dollars to its
22 residential low-income program. Northern did not carry-over its commercial and
23 industrial funds. Importantly, however, it did not do so because it reported that “despite

1 its increased marketing efforts, it did not believe it could spend the approximately \$1.9
2 million in carryover funds. (Docket 10-188, Order 25,365, at 2, May 15, 2012). That is
3 clearly not the case with HEA funds in the present situation. As the Commission said in
4 Order 25,365, “attempts to spend the carryover funds could benefit customers if the
5 companies made cost-effective use of already budgeted energy efficiency funds over the
6 upcoming months.” (Order 25,365, at 4).

7
8 Similarly, in Docket 12-262, it was determined that carryover HEA funds need not even
9 be spent in the immediately succeeding year. (See Staff Counsel letter attached as
10 Appendix B). In that docket, both Liberty Utilities (Energy North) and Northern Utilities
11 had unspent HEA funding. The CAAs specifically requested that the funds be carried-
12 over because demand for the program was high and the need was substantial. Liberty
13 carried-over its unspent 2012 HEA funds to its 2013 HEA budget, while Northern
14 carried-over its unspent HEA funds to its 2014 HEA budget. As I discuss throughout my
15 testimony, as was the case in 2012, the need for HEA funding is high, and the demand is
16 great (with a waiting list of more than 8,000 households who have applied for, but not yet
17 been served by HEA).

18
19 **Q. PLEASE IDENTIFY THE FIRST SET OF SUBSTANTIVE CONCERNS THAT**
20 **YOU HAVE WITH THE UTILITIES’ UNDER-SPENDING OF THEIR HEA**
21 **BUDGET.**

22 A. Under-spending the HEA budget, and failing to carry-forward those dollars to future
23 years, is at odds with the purposes sought to be served by HEA and with the manner in

1 which the HEA budget was originally agreed upon. In reaching this conclusion, I first
2 reviewed the *Energy Efficiency Working Group Report to the New Hampshire Public*
3 *Utilities Commission on Ratepayer-Funded Energy Efficiency Issues in New Hampshire*,
4 Docket No. DR 96-150 (July 6, 1999) (hereafter “Working Group Report”). In addition,
5 I reviewed the *Order Establishing Guidelines for Post-Competition Energy Efficiency*
6 *Programs*, Order 23,574 (November 1, 2000). I further reviewed the Commission’s
7 *Order Approving Settlement Agreement and Joint Request for Modification of Previous*
8 *Commission Determination* in Docket No. DR 01-057. Order 23,850 (November 29,
9 2001). I also read various statutes, including RSA 374-F:3,V; 3,VI; 3,X; RSA 374-
10 F:4,VIII. These appear to be some of the foundational documents for the low-income
11 efficiency program. I also reviewed the 2009 GDS “Additional Opportunities” Report;²
12 and the January 2006 HEA impact evaluation.³

13
14 These foundational documents are critical to understanding the background of the HEA
15 Program because The Working Group Report recommendations were based on
16 substantial research and documentation provided in the Appendices attached to that
17 Report. My purpose here is not to re-state the documentation and analysis contained in
18 that Report. Based on those Appendices,⁴ the Low-Income Subcommittee of the
19 Working Group recommended that New Hampshire’s low-income efficiency program
20 should support the “funding and infrastructure to ultimately serve 2,500 low-income
21 customers per year.” (Working Group Report, 10). Under the program design and budget

² GDS Associates, Inc. (Jan. 2009). *Additional Opportunities for Energy Efficiency in New Hampshire: Final Report*, prepared for the New Hampshire Public Utilities Commission.

³ *Low-Income Retrofit Program – Impact Evaluation* (January 16, 2006).

⁴ Appendices 5, 5A, 5B and 5C were referenced as the documentation for the conclusions of the Working Group regarding low-income efficiency.

1 proposed at the time, the Working Group found, “it would take 10 years to serve one-half
2 of the low-income subsector.” (Working Group Report, A40).⁵ This number, which is
3 substantially higher than the number of units being served today, is particularly
4 significant given that the income-eligibility at the time was set at 150% of Federal
5 Poverty Level. Today, with income-eligibility set at 200% of Poverty, there are far more
6 customers that qualify for assistance.

7
8 While the Commission did not adopt the entire Working Group Report in its Order in DR
9 96-150 (Order 23,574, November 1, 2000), the Commission did provide significant
10 guidance on how to approach low-income energy efficiency investments. The
11 Commission cited the statutory language, for example, providing that “utility sponsored
12 energy efficiency programs should target cost-effective opportunities that may otherwise
13 be lost due to market barriers.” (Order 23,574, page 10; *see also* RSA 374-F:3, X). In
14 addition, the Commission noted that low-income efficiency programs represent “an area
15 where we believe well-designed, statewide programs could help to alleviate the apparent
16 persistence of ‘undesirable market conditions,’ to use the language of the (Working)
17 Group, characteristic of this group of customers.” (Order 23,574, page 17).

18
19 The “undesirable market conditions” cited by the Commission included:

- 20 ➤ High initial capital costs;
- 21 ➤ Lack of access to capital;
- 22 ➤ High implicit discount rates/payback periods;

⁵ By extension, the Working Group report would find that the low-income efficiency program could, absent duplication in the provision of services, treat all low-income households within a 20 year period.

- 1 ➤ High proportion of low-income renters;
- 2 ➤ Split incentives between landlord and tenants;
- 3 ➤ High mobility rate of low-income renters;
- 4 ➤ Low education levels;
- 5 ➤ Language barriers.

6 (Working Group Report, A39). In addition, the low-income market barriers to the
7 installation of energy efficiency without public assistance included the high penetration
8 of households at or below 150% of Federal Poverty Level; the small number of low-
9 income units weatherized each year relative to the number of applicants (4,800
10 applicants; 660 units weatherized); and the high proportion of older housing units
11 amongst low-income households (40% of low-income homes built before 1960).

12 (Working Group Report, A40).

13
14 The “undesirable market conditions” cited by the Commission in its Order 23,574
15 continue today. In many instances, the undesirable conditions cited by the Commission
16 are as challenging today as they were at the time the Commission first cited them in
17 support of the need for the low-income efficiency program approved at that time. I know
18 from my review of empirical data relating to low-income households in New Hampshire:

- 19 ➤ Just as was true at the time of the Working Group Report, low-income households
20 today continue to remain shut out of the energy efficiency market by high capital
21 costs. This includes not only the high capital costs associated with building shell
22 improvements, but the high capital costs associated with appliance replacement as
23 well.
- 24
25 ➤ Just as was true at the time of the Working Group Report, low-income New
26 Hampshire households today continue to lack access to capital for efficiency
27 improvements.

- 1
- 2 ➤ While I have not performed a recent study, my experience leads me to conclude that
- 3 low-income households today demand high implicit discount rates. When funds are
- 4 limited, households tend to commit those funds only to investments with quick
- 5 payback periods. Low-income discount rates in the range of 100% would not be
- 6 unreasonable to find.
- 7
- 8 ➤ Just as was true at the time of the Working Group Report, New Hampshire continues
- 9 to have a high proportion of low-income renters. Renters not only lack the authority
- 10 to make decisions regarding major energy consuming systems in their homes, but
- 11 energy efficiency investments are impeded in low-income renter households by the
- 12 split incentives between landlord and tenants that continue in New Hampshire today.
- 13 Split incentives arise when the authority and ability to implement efficiency measures
- 14 lies with the property owner, but the home energy bill is paid by the tenant.
- 15
- 16 ➤ Just as was true at the time of the Working Group Report, low-income New
- 17 Hampshire households, particularly low-income renters, continue to have a
- 18 disproportionately high mobility rate. This mobility rate can both be measured
- 19 directly through an examination of the date in which New Hampshire households
- 20 moved into their homes (reported in the U.S. Census Bureau’s *American Community*
- 21 *Survey*), and can be measured indirectly through an examination of the median date in
- 22 which a household moved into its home (or, seen conversely, out of their prior home).
- 23

24 The empirical data available for New Hampshire today supports the conclusion that the

25 same “undesirable market conditions” that the Commission previously cited in support of

26 adopting a low-income efficiency program persist at the same or increased levels today.

27 No reason exists for the Commission to retreat from the finding that an appropriate level

28 of funding would be that level sufficient to respond to those undesirable market

29 conditions.

30

31 In short, the utilities’ HEA budget has never been sufficient to address the need for low-

32 income energy efficiency funding in New Hampshire. The decision was made, however,

33 and was incorporated into the 2018 – 2020 program plan, that 17% of the total portfolio

1 budget would be devoted to the HEA program. In years where utilities under-spend their
2 HEA budgets, therefore, those under-spent funds should be carried forward to future
3 years to address the persistent need for low-income energy efficiency services.
4

5 **Q. PLEASE EXPLAIN THE SECOND SUBSTANTIVE PROBLEM CREATED BY**
6 **THE FAILURE OF NEW HAMPSHIRE’S UTILITIES TO FULLY SPEND**
7 **THEIR HEA BUDGETS.**

8 A. There are two separate, but related, problems caused by the utilities’ proposal to not
9 carry-forward under-spent funds. First and foremost, of course, is that the failure to
10 spend the HEA budget simply continues New Hampshire’s unmet need for low-income
11 efficiency investments. If nothing else, this unmet need is evidenced by the fact that all
12 New Hampshire utilities (through the state’s CAAs) maintain considerable “waiting
13 lists,” on which low-income households have applied for efficiency services but have not
14 yet been able to access those services due to a lack of funding. So long as there is an
15 unmet need attributable to a lack of resources to serve that need, it would be unreasonable
16 to allow New Hampshire utilities to under-spend the budgets that have been previously
17 agreed to.
18

19 **Q. HOW DOES THE PRODUCTION OF HEA UNITS COMPARE TO THE**
20 **NUMBER OF LOW-INCOME HOUSEHOLDS ON THE WAITING LIST?**

21 A. New Hampshire’s utilities have a substantial waiting list for the HEA program. Those on
22 the waiting list are households who *both* qualify for HEA services *and* have expressed an
23 interest in receiving HEA services. (TWH-2-012(a)). As of July 24, 2018, 8,268

1 households were on the HEA waiting list. (TWH-2-012(a)). At the present rate of
2 housing units being treated, and if no new household applied for HEA services, in other
3 words, it would take more than eight (8) years to clear the existing waiting list. In
4 contrast to those already on the waiting list, as of the same date (July 24, 2018), there
5 were 29,791 households who qualified for the state’s Fuel Assistance Program (“FAP”)
6 (FAP is the name of the federal Low-Income Home Energy Assistance Program,
7 LIHEAP, which operates in New Hampshire). (TWH 2-012(b)). This number, however,
8 does *not* represent all New Hampshire low-income households who qualify for federal
9 fuel assistance. Similar to my comment above, given existing numbers of units being
10 treated through HEA, and if no new households ever applied for FAP, it would still take
11 at least 30 years for the New Hampshire utilities to treat all FAP participants through
12 HEA.

13
14 The numbers do change, however. As of October 26, 2018, there were 8,318 households
15 on the HEA waiting list. (TWH 2-013, Attachment A). The one group is not necessarily
16 a subset of the other group. It is not known what the unduplicated count is from
17 households on the waiting list at the two different times. While the 8,318 waiting list
18 households (October 26, 2018) and the 8,268 waiting list households (July 24, 2018)
19 “correspond” to each other (i.e., they are both comprised of those who are income
20 eligible for FAP and requested weatherization services in the respective years), they are
21 not necessarily duplicated numbers. It is not known what the unduplicated number of
22 households is from the two waiting lists combined. It would, however, be larger than
23 8,318. From one year to the next, in other words, some customers may have moved off of

1 the list while other customers join the list with the net number remaining relatively
2 constant. It is likely that there is some overlap (i.e., duplication), but the overlap would
3 not be total. By definition, therefore, the minimum number of unduplicated number of
4 people on the waiting list would be the larger of the two numbers.

5
6 **Q. CAN YOU COMPARE THE SIZE OF THE HEA WAITING LIST TO THE**
7 **NUMBER OF HEA PARTICIPANTS?**

8 A. Yes. It is important to understand, however, that New Hampshire's utilities do not track
9 households on the waiting list by where they live. The utilities concede that they do not
10 know whether waiting list HEA applicants are urban or rural households; nor do they
11 know the county of residence; nor do they know the utility service territory in which
12 waiting list applicants live. (TWH 2-014(a), (b) and (d)). All the utilities know is the
13 CAA service territory in which waiting list applicants live. (TWH 2-014(c)). Not
14 knowing this information means that the utilities cannot determine to what extent they are
15 serving households on the waiting list, or whether they have even structured the delivery
16 of their HEA services to serve those households.

CAA ⁶	HEA Waiting List	HEA Participants (2017)	Pct Served (2017)	HEA Participants (2019)	Pct Served (Expected) (2019)
CAPBMC	1,338	130	9.7%	206	15.4%
SNHS	3,711	631	17.0%	767	20.7%
SCS	425	26	6.1%	61	14.4%
CAPSC	808	43	5.3%	89	11.0%
TCCAP	2,036	152	7.5%	289	14.2%

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In contrast, while New Hampshire’s utilities track HEA production on a utility service territory basis, as well as by county, they cannot match those production numbers against the number of households on the waiting list.

	By County (gas in parentheses) /a/ /b/		By Utility	
	Electric HEA-19	Waiting List	HEA-19	Waiting List
Belknap	88 (24)	Not known	LU-electric	56
Carroll	67		NHEC	59
Cheshire	30		Eversource	800
Coos	72		Unitil-electric	110
Grafton	70		LU-gas	245
Hillsborough	546 (193)		Unitil-gas	62
Merrimack	118 (24)		Total electric	1,025
Rockingham	221 (43)		Total gas	307
Strafford	89 (23)			
Sullivan	131			

/a/ 2019 Plan Update, page 19.

/b/ The gas numbers are not a subset of the electric. The numbers in parentheses are natural gas. The numbers not in parentheses are electric.

5

⁶ The numbers presented in this table were taken from the Attachment to TWH-2-013, the 2017 4th Quarter Report at page 4, the 2019 Plan Update at page 19, and the Attachment to TWH-2-007 – TWH-2-009 at Tab 4. The utilities report actual and projected HEA Participants by county, but I matched the counties with the appropriate CAA for presentation in this table.

1 Given this lack of knowledge about the extent to which the HEA program is serving
2 people on the HEA waiting list, or even whether the utilities are directing their HEA
3 investments to those areas of the state where people are going under-served (as evidenced
4 by large waiting lists), it would be unreasonable to allow the utilities to justify under-
5 spending their HEA budgets, and failing to carry-forward those underspent dollars, by
6 asserting that, on a statewide level, their savings targets have been met.

7
8 **Q. ARE THERE REASONS OTHER THAN THE EXTENSIVE WAITING LISTS**
9 **THAT DOCUMENT THE UNMET NEED IN NEW HAMPSHIRE?**

10 A. Yes. Even aside from the waiting lists for the utilities' HEA programs, the fact that New
11 Hampshire's utilities are failing to address the need for low-income energy efficiency
12 services in the state is evident. According to the most recent Home Energy Affordability
13 Gap data that my firm publishes on an annual basis, in 2017, New Hampshire had
14 113,548 households with income at or below 200% of the Federal Poverty Level.
15 Assuming (simply for the sake of analysis) that 50% of those households have either
16 previously been treated, or would not seek to be treated, New Hampshire would have
17 roughly 57,000 households (with incomes below 200% of Poverty) that could be served
18 through HEA. If I limit the income eligibility to at or below 150% of Poverty, there
19 would nonetheless still be more than 77,000 income-eligible households, 50% of which
20 would result in nearly 39,000 untreated housing units. At the rate of 1,000 units being
21 treated per year (2017's 984 HEA units served, rounded to 1,000), and assuming that no
22 unit that has been treated would ever need to re-treated, it would take nearly 40 years to
23 treat all units needing, and seeking, efficiency services at or below 150% of Poverty, and

1 nearly 80 years to treat all units needing, and seeking, efficiency services at or below
2 200% of Poverty. I understand that current proposals involve increasing the number of
3 units served on an annual basis.

4
5 To place that number in context, when I last examined this same question, in 2009, I
6 found that it would take 41 years to treat all units at or below 150% of Poverty and 65
7 years to treat all units at or below 200% of Poverty.⁷ One reason New Hampshire is
8 losing ground, in this regard, is that there is a substantially greater number of low-income
9 New Hampshire households today.

10
11 **Q. YOU WOULD NOT SUGGEST THAT IT IS THE RESPONSIBILITY OF NEW**
12 **HAMPSHIRE UTILITIES TO FUND EFFICIENCY TREATMENT FOR ALL**
13 **THOSE HOUSEHOLDS IN NEED, WOULD YOU?**

14 A. Indeed, I am *not* suggesting that New Hampshire's utilities be responsible for funding the
15 treatment of all those low-income households needing efficiency improvements.
16 However, that is one of the big problems with the utilities' proposal to fail to carry-
17 forward unexpended funds to future years when those funds have already been budgeted
18 for HEA. Under the approach proposed by the utilities, New Hampshire has no
19 mechanism for making further or faster progress toward filling the unmet need with non-
20 utility funds. If, as has occurred in recent years, the federal Weatherization Assistance
21 Program (WAP), funded by the U.S. Department of Energy (DOE), substantially
22 increased its low-income weatherization funding, or if the federal Low-Income Home
23 Energy Assistance Program (LIHEAP) made a substantial transfer of funding from fuel

⁷ Direct Testimony of Roger Colton, Docket DG 09-170, pages 28-29 (submitted November 6, 2009).

1 assistance to weatherization assistance, the utilities use of the state’s Community Action
2 Agencies (CAAs) to deliver its HEA programs would decline, HEA program
3 expenditures would correspondingly decline, and those unexpended funds would either
4 not be used at all, or would be used for non-HEA programs. Given this process of
5 supplanting utility funding rather than supplementing it, an influx of external resources to
6 help fund low-income efficiency improvements, rather than addressing the unmet low-
7 income need faster, or more completely, would simply supplant rather than supplement
8 the utilities’ HEA dollars. The State could never make faster progress toward meeting
9 unmet needs of its low-income population.

10
11 **Q. PLEASE EXPLAIN THE THIRD SUBSTANTIVE PROBLEM THAT YOU FIND**
12 **WITH THE FAILURE BY THE NEW HAMPSHIRE UTILITIES TO CARRY**
13 **FORWARD THEIR UNEXPENDED HEA FUNDS.**

14 A Allowing New Hampshire’s utilities to under-spend their HEA budgets so long as the
15 utilities meet their goals (whether those goals be participation goals or savings goals)
16 does not ensure that customer accounts, low-income expenditures, or low-income savings
17 are, in fact, directed to serving low-income households or in reducing the low-income
18 waiting list. The problem arises with the way in which New Hampshire’s utilities treat
19 and account for multi-family housing.

20
21 New Hampshire’s utilities treat multi-family properties with fewer than 100% of the
22 residents being income-qualified using HEA funds. The utilities state that they do not

1 allocate multi-family unit counts between low-income and non-low-income programs.

2 They explain:

3 Multi-family housing projects are not split between programs. The utilities
4 follow the guidelines established by Department of Energy for the
5 Weatherization Assistance program when qualifying multifamily properties.
6 For properties with 2-4 units, if at least 50% of the tenants are income
7 qualified for HEA then the entire property is processed as an HEA project.
8 For larger multi-family properties with 5 or more units, if at least 66% of the
9 tenants are income qualified for HEA then the entire property is treated as an
10 HEA project.

11
12 (TWH-2-003). Moreover, the utilities concede that “when a multi-family building is
13 treated and paid for through HEA as described in TWH 2-003, the savings are credited to
14 the HEA program.” (TWH-2-004). Finally, the utilities concede that “when a multi-
15 family building is treated through HEA as described in TWH 2-003, the expenditures are
16 booked to the HEA program.” (TWH-2-005).

17
18 These concessions are significant because the utilities serve a reasonably substantial
19 number of multi-family units through HEA. The utilities do not even separately track the
20 number of multi-family units served through HEA when those units have from two (2) to
21 four (4) units. The utilities note that “housing units in HEA are only tracked as Single
22 family (1-4 units) and multi-family (5 or more units).” (TWH-2-007, Tab 4, TWH-2-
23 009). With that limitation noted, 34.6% of the HEA units New Hampshire’s utilities
24 served in 2016 (335 of 967), and 36.4% of those served in 2017 (358 of 984) were

1 “multi-family.” (TWH-2-007, Tab 4, TWH-2-009).⁸ Including multi-family housing
2 with from two to four units would obviously increase those percentages even higher.

3
4 The argument that the utilities should be allowed to under-spend their HEA budget
5 because they are meeting their energy efficiency commitments to low-income households
6 may not be completely accurate. A major portion of the units served through HEA are
7 multi-family housing units, and those units may, but need not be, occupied by low-
8 income households.

9
10 **Q. DO YOU QUESTION WHY NEW HAMPSHIRE’S UTILITIES SERVE MULTI-**
11 **FAMILY UNITS IN THE FASHION THAT THEY DO?**

12 A. No. The utilities reason as follows:

13 In order for weatherization work to be most effective the shell of the entire
14 building needs to be treated as a whole. Insulating only a portion of the attic
15 space or air sealing some walls but not others will not lead to effective energy
16 use reductions in any of the units. If only the income eligible units were
17 treated they would not be realize significant energy savings or other benefits.
18 Because we cannot force a nonqualifying unit to pay for their portion of the
19 job outside of the HEA program, treating the entire multifamily building
20 through HEA, when the appropriate percentage of tenants qualify, is the best
21 way to serve the qualified customers and is also energy efficiency standard
22 practice in other states.

23
24 (TWH 2-003). I do not dispute that reasoning and I don’t propose a change in the
25 decision-rule of when or whether to serve a multi-family unit. I agree that a multi-family
26 building needs to be treated as a whole. I further agree that the federal WAP program
27 defines a “low-income” building in the manner suggested by the utilities. I do not agree

⁸ The Joint Utilities response to TWH-2-007, Tab 4, TWH-2-009 provides, by utility, the number of 1-family and multi-family units served.

1 that the allocation of costs, savings, and unit counts between low-income and non-low-
2 income budgets is necessarily “energy efficiency standard practice in other states”
3 (TWH-2-003). For example, in Pennsylvania, where I do a lot of work (see, Appendix
4 A), the Low-Income Usage Reduction Program (LIURP), Pennsylvania’s equivalent to
5 HEA, does not allow LIURP funds to be allocated to the non-low-income units of multi-
6 family buildings, even when the buildings as a whole meet the definition of being a “low-
7 income building.”

8
9 In this particular proceeding, however, none of that matters. The *only* issue presented in
10 this proceeding is whether the utilities should be required to carry-over under-spent HEA
11 budgets from one year to the next, keeping those funds within the HEA program as
12 “dedicated” to low-income households. The utilities justify their proposal *not* to do so by
13 arguing that they have met their savings targets for low-income households. The above
14 discussion, however, documents that those savings targets were met in large part by
15 allocating non-low-income savings to the low-income HEA program.⁹

16
17 **Q. WHAT DO YOU RECOMMEND?**

18 A. My immediate recommendation is that HEA funds be carried over from one year to the
19 next, to remain in the HEA’s future year budgets. I further recommend that, while the
20 issue is not presented in this proceeding, New Hampshire should address in a Working
21 Group the decision by the utilities to allocate the totality of multi-family savings, unit

⁹ Even if savings per housing unit are lower for multi-family housing, given that more than 36% of the units served through HEA is multi-family, and given further that the definition of “multi-family” excludes buildings with from 2 – 4 units, we can conclude that a substantial part of total HEA savings accrue from multi-family housing.

1 counts and expenditures to “low-income” even when those unit counts, savings, and
2 expenditures are associated with non-low-income units.

3
4 **Q. PLEASE EXPLAIN THE RATE/BILL IMPACT OF REQUIRING NEW**
5 **HAMPSHIRE’S UTILITIES TO CARRY FORWARD THEIR UNEXPENDED**
6 **HEA DOLLARS.**

7 A. Requiring utilities to carry-forward their unexpended HEA funds to be used exclusively
8 for HEA programming in future years would have a small impact for customers paying
9 the System Benefits Charge (“SBC”). Without a carry-forward, the unexpended HEA
10 funds would contribute to those carry-forward funds that would otherwise reduce the
11 need to generate new program funding through the SBC. In essence, those unexpended
12 HEA funds would be transferred out of the HEA (thus reducing the HEA proportion to
13 below 17% as discussed above) and used for other energy efficiency programs.

14
15 Having acknowledged that there would be *some* bill impact, it is important to recognize
16 that the magnitude of that impact would be minimal. With respect to the 2017 under-
17 spending, to carry-forward those under-spent dollars into the current year budget would
18 have a minimal impact on the System Benefits Charge and/or the bills paid by residential
19 customers reflecting that SBC. The comparison for New Hampshire’s electric utilities is
20 set forth below:

Bill Impacts of Roll-Over of Unexpended HEA Electric Funding		
	2019 Proposed	2019 with HEA Carry-Over
HEA roll-over	\$0	\$714,175
Total EE budget	\$47,412,000	\$48,126,175
FCM and RGGI	\$9,646,000	\$9,646,000
Balance	\$37,766,000	\$38,480,175
MWH	10,729,062	10,729,062
Kwh	10,729,062,000	10,729,062,000
2019 SBC	\$0.00352	\$0.00359
2018 SBC	\$0.00275	\$0.00275
Difference (2019 vs. 2018)	\$0.00077	\$0.00084
Difference (with & without carryforward)		\$0.000067
Average mo usage	625	625
Avg mo bill	\$2.20	\$2.24

1
2 As can be seen from the Table above, carrying forward \$714,175 in unspent electric HEA
3 funds¹⁰ would increase the SBC rate by only \$0.000067 per kWh (67 ten-thousandths of
4 one cent) over the utilities’ 2019 SBC budget without the carry-forward. The resulting
5 increase in a typical residential monthly bill (625 kWh) would be roughly four-and-a-half
6 cents (\$0.045) per month ($\$0.52/\text{year} / 12 = \0.043) ($\$0.52/\text{year}$). In any event, even
7 with the roll-over that I recommend, the SBC rate would still be lower than the original
8 forecasted SBC rate (\$0.00425) that was agreed to for 2019 in the Settlement of the 2017
9 proceeding regarding the 2018 – 2020 Energy Efficiency Plan (2019 Plan Update, pages
10 10 – 11).
11

¹⁰ While the Table above reflects only the electric portion of HEA funding, and the electric SBC, similar results would pertain to an assessment of the natural gas under-spending.

1 **Q. WHAT DO YOU RECOMMEND?**

2 A. I recommend that New Hampshire’s electric and natural gas utilities be directed to carry
3 forward any under-spending they may experience with their HEA programs to future
4 years. The HEA budget should not be allowed to fall below 17% in a given year because
5 a utility under-spends that HEA budget.

6

7 **Part 2. The Appropriate Total Budget for 2019 Efficiency Programs.**

8

9 **Q. PLEASE EXPLAIN THE PURPOSE OF THIS SECTION OF YOUR**
10 **TESTIMONY.**

11 A. In this section of my testimony, I assess the reasonableness of the New Hampshire
12 utilities’ proposal to reduce the overall 2019 budget for their energy efficiency programs.
13 I explain why it is more reasonable to maintain the budgets that were agreed to in the
14 Settlement of the 2018-2020 energy efficiency plan and examine the rate impacts of
15 continuing that budget.

16

17 **Q. PLEASE EXPLAIN YOUR UNDERSTANDING OF THE TOTAL ENERGY**
18 **EFFICIENCY BUDGET PROPOSED BY THE UTILITIES FOR 2019.**

19 A. The New Hampshire electric utilities have proposed a total energy efficiency budget of
20 \$44,943,559,¹¹ a noticeable reduction (\$1,967,625 / 4.2%) from the electric utility budget
21 approved for the 2018 – 2020 three year plan of \$46,911,184. (2019 Plan Update, at
22 Table 2.16). Similarly, the natural gas utilities propose to reduce their energy efficiency

¹¹ Including the utilities performance incentive of \$2,468,761 yields a total budget of \$47,412,000. See, 2019 Plan Update, Attachment D, page 1.

1 investments by \$132,044 (1.3%), from \$10,028,543 to \$9,896,499). (2019 Plan Update,
2 at Table 2.18).

3
4 The proposals to reduce the energy efficiency budgets, of course, have a direct impact on
5 the HEA budget. The HEA electric budget under the proposed Plan Update would be
6 \$7,821,904, a reduction from the \$7,974,902 approved as part of the settlement of the
7 2018 – 2020 three year plan. (2019 Plan Update, at Table 3.1). The HEA natural gas
8 budget under the proposed Plan Update would be \$1,684,368, a decrease from the
9 \$1,704,868 approved as part of the settlement of the 2018 – 2020 three year plan. (2019
10 Plan Update, at Table 3.1). The lower budgets are reflected in the Attachments to the
11 narrative of the 2019 Plan Update (*see, e.g.*, Attachment B, page 2; Attachment C, page
12 1; Attachment D, pages 1, 2, 5). The reductions would equal approximately \$153,000 for
13 the HEA electric budget and approximately \$20,000 for the HEA gas budget, for a total
14 reduction of \$173,000 in the HEA program budget. Neither value includes the
15 Performance Incentive. The utilities state that “the amounts for the 2019 update are
16 lower because the overall budgets are lower than originally estimated.” (Staff 2-031).

17
18 **Q. DID THE SETTLEMENT OF THE 2018 – 2020 THREE YEAR PLAN FOCUS ON**
19 **THE ACHIEVEMENT OF THE SAVINGS GOALS TO THE EXCLUSION OF**
20 **THE PARTICIPATION GOALS?**

21 A. No. This is particularly the case with the HEA program. The Settlement of the Three
22 Year Plan in 2017, for example, specifically referred the issue of the level of income-
23 eligible participants to the performance incentive working group. (Three Year Plan

1 Settlement, at 6). The clear intent of the Settlement was not to figure out how to reduce
2 the participation of income-eligible households. The question that had been presented in
3 the proceeding was how to increase that participation.

4
5 **Q. IS THE PROPOSAL TO DECREASE THE TOTAL ENERGY EFFICIENCY**
6 **BUDGET REQUIRED TO KEEP THE SBC AT A REASONABLE LEVEL?**

7 A. No. Using the “original” 2019 (electric) budget data presented in Table 2.9 of the 2019
8 Plan Update Narrative, it is possible to determine that that original 2019 budget would
9 have resulted in an SBC commitment of \$0.00373 per kilowatthour (kWh).

Total EE budget (2019 Plan Update, Table 2.9)	\$49,488,162
Carry-forward (2019 Plan Update, Table 2.9)	\$0
FCM and RGGI (2019 Plan Update, Table 2.9)	\$9,491,966
Balance (SBC commitment) (2019 Plan Update, Table 2.9)	\$39,996,196
MWh (2019 Plan Update, Attachment K, page 3)	10,729,062
Kwh	10,729,062,000
Cost/kWh (SBC commitment / MWh)	\$0.00373

10
11 Using an average monthly residential consumption of 625 kWh, the same consumption
12 used by the utilities (see, e.g., Attachment E3, page 9), the total bill impact would be
13 \$2.33 ($\$0.00373/\text{kWh} \times 625 \text{ kWh} = \2.33). This bill impact would be in contrast to the
14 bill impact of using the SBC rate of \$0.00352 proposed by the utilities in the 2019 Plan
15 Update. That SBC would yield a total bill impact of \$2.20 ($\$0.00352/\text{kWh} \times 625 \text{ kWh} =$
16 $\$2.20$). The monthly impact of using the original budget, in other words, would be \$0.13
17 per month ($\$2.33 - \$2.20 = \$0.13$). The annual bill increase, therefore, would be \$1.56.

	Proposed SBC (2019 Update)	Proposed SBC (2017 Settlement)
Proposed SBC	\$0.00352	\$0.00373
Average monthly usage	625 kWh	625 kWh
Average monthly bill	\$2.20	\$2.33
Difference		\$0.013

1

2 **Q. WOULD ADDING THE CARRY-FORWARD FROM PRIOR YEAR UNDER-**
3 **SPENDING HAVE ANY ADDED BILL IMPACT?**

4 A. Using the same methodology as presented immediately above, it is possible to determine
5 the bill impact of including the \$714,175 of unspent HEA funds in the 2019 electric
6 budget going forward. Including the HEA carry-forward, as can be seen, would increase
7 the SBC by 67 ten-thousandths of one cent per kWh. The average monthly bill impact
8 would be four cents a month. Similar results attach to the natural gas budgets as well.

HEA carry-forward	\$0	\$714,175
Total EE budget	\$49,488,162	\$50,202,337
Carry-forward	\$0	\$0
FCM and RGGI	\$9,491,966	\$9,491,966
Balance	\$39,996,196	\$40,710,371
MWH	10,729,062	10,729,062
Kwh	10,729,062,000	10,729,062,000
Cost/kWh	\$0.00373	\$0.00379

9

10 **Q. IS THE REDUCTION IN THE PROPOSED ENERGY EFFICIENCY BUDGET**
11 **NECESSARY TO REFLECT A REDUCTION OF OPPORTUNITIES TO**
12 **ACHIEVE ENERGY AND FINANCIAL SAVINGS?**

1 A. No. When the utilities were asked whether they “could effectively accomplish additional
2 efficiency measures if they did not lower their spending for 2019 from previously
3 planned spending levels for 2019,” they responded in relevant part that “if the Utilities
4 had additional funding for 2019, that additional funding could be utilized to achieve
5 additional energy savings.” (Joint Utility Response to CLF-2-011). Moreover, when the
6 utilities were asked whether they “could save NH ratepayers additional money by
7 maintaining planned efficiency spending levels for 2019,” they responded in relevant part
8 that “if the Utilities had additional funding for 2019, that additional funding could be
9 utilized to achieve additional energy cost savings.” (Joint Utility Response to CLF-2-
10 012).

11

12 **Q. PLEASE RESPOND TO THE UTILITY ASSERTION THAT ONCE THEY**
13 **ACHIEVE THEIR SAVINGS GOALS, THEIR OBLIGATION TO PURSUE**
14 **ADDITIONAL ENERGY EFFICIENCY INVESTMENTS ENDS.**

15 A. In further response to the Conservation Law Foundation (CLF) discovery requests I cite
16 immediately above, the Joint Utilities assert that there are limitations on their obligation
17 to make cost-effective energy efficiency investments. According to the utilities (Joint
18 Response to CLF-02-011, CLF-02-012):

19 the specific goals of the EERS for 2019 are to achieve an energy savings goal
20 of 1% of 2014 sales for electric and 0.75% of 2014 sales for natural gas. The
21 EERS goals were set with the agreement of all parties in DE 15-137. Page 8
22 of the Settlement Agreement states: ‘The Settling Parties agree that the
23 savings goals balance the goals of capturing more cost effective energy
24 efficiency and benefits to ratepayers with the goal of gradually increasing
25 funding for efficiency while minimizing the impacts on all ratepayers.’ It is
26 the role of the utilities to develop budgets and propose the funding levels that
27 are required in order to cost-effectively meet the agreed-upon goals. See

1 OCA 2-001 for additional detail regarding the requirements of the EERS and
2 the utility funding proposal.
3

4 In their referenced response to OCA-2-001, the Joint Utilities assert that “as an initial
5 matter, the question appears to be based upon the premise that the purpose of the EERS is
6 to reach a specific spending target. *Instead, the purpose of the EERS is to reach certain*
7 *savings goals.*” (Joint Response to OCA-2-001, para. (a), emphasis added). To ensure
8 that the entire reasoning set forth by the utilities is acknowledged, I have attached the
9 Joint Utilities Response to OCA-2-001 to this Direct Testimony as Appendix C.
10

11 Unfortunately, this approach proposed by the utilities can affect their approach to their
12 under-spending of HEA budgets as well. It is thus important to understand why this
13 utility assertion, that their obligation is exclusively to achieve the savings “goals” agreed
14 to in the 2018 – 2020 Three Year Plan is in error.
15

16 **Q. IS THE OBLIGATION OF NEW HAMPSHIRE UTILITIES TO INVEST IN**
17 **ENERGY EFFICIENCY LIMITED BY THE GOALS ESTABLISHED IN THE**
18 **THREE YEAR PLAN?**

19 A. No. The goals established in the Three Year Plan submitted by New Hampshire’s
20 utilities are minimum thresholds of energy efficiency investments. Those goals should
21 not be, and have never been, considered to be ceilings on the efficiency investments that
22 should occur. Energy efficiency investments have long been considered to be an
23 essential element of the provision of utility service. They are not, in other words, some

1 special expenditure the pursuit of which is capped by the goals agreed upon in the Three
2 Year Plan.

3
4 New Hampshire's utilities, both electric and natural gas, have certain basic obligations to
5 pursue attributable to their nature as a public utility. One of those obligations is to operate
6 in an efficient manner. Another of those obligations is to operate in a least-cost manner.
7 In other words, if New Hampshire's utilities can generate efficiency investments that
8 would improve the efficiency, and the least-cost nature, of their operations, they have a
9 duty to pursue those investments. Moreover, one goal of the utilities' pursuit of energy
10 efficiency is to avoid lost opportunities. For example, with low-income households, state
11 policymakers have made clear that avoiding lost opportunities attributable to market
12 barriers should be at the heart of efficiency investments. *See* RSA 374-F:3, X.

13
14 In short, the performance goals established for New Hampshire's electric and natural gas
15 utilities represent performance floors, not performance ceilings. The obligation to invest
16 in improved operations does not come to an end simply because the "goal" for the year
17 has been achieved.

18
19 **Q. WHAT DO YOU RECOMMEND?**

20 A. I recommend that the utilities' proposal to reduce the energy efficiency budget agreed to
21 in the 2017 Settlement of the 2018 – 2020 Energy Efficiency Plan be rejected. I
22 recommend, instead, that the 2019 budget agreed to in the 2017 Settlement be continued
23 for 2019.

1 **Part 3. Removing a Significant Barrier and Disincentives to Doing More Low-Income**
2 **Energy Efficiency within the Limited HEA Budget.**

3
4 **Q. PLEASE EXPLAIN THE PURPOSE OF THIS SECTION OF YOUR**
5 **TESTIMONY.**

6 A. In this section of my testimony, I review whether there exist barriers and disincentives to
7 pursuing more low-income energy efficiency within the limited HEA budget in New
8 Hampshire. This question gives rise to concern not only in the energy efficiency
9 planning process, but in the process of delivering the HEA program.

10
11 The New Hampshire PUC has previously decided, and each energy efficiency plan has
12 adopted, the principle that the low-income HEA program need not achieve a benefit-cost
13 ratio of 1.0 in order to be justified. That decision reflects, in part, the underlying New
14 Hampshire policy that energy efficiency measures directed toward low-income
15 households serve a public purpose that extends beyond mere energy savings. It reflects,
16 further, the importance that the State of New Hampshire attaches to making energy
17 efficiency widely available as a means to reduce bills and, correspondingly, to improve
18 home energy affordability.

19
20 From a utility perspective, the improved payment patterns and reduced arrearages from
21 targeted low-income energy efficiency investments are not incidental benefits of the
22 energy efficiency programs. Improved bill affordability is one of the primary reasons for
23 targeting the program toward low-income customers in the first instance. Similarly, one
24 of the important public policy goals of ratepayer-funded low-income energy efficiency
25 programs is to pursue an equity in the distribution of energy efficiency funds. If low-

1 income programs are limited due to a perceived lower cost-effectiveness, low-income
2 ratepayers are left with paying for programs from which they are disproportionately
3 excluded from participation. The public policy to be pursued involves the equitable
4 distribution of energy efficiency dollars.¹²

5
6 Both the equitable distribution of benefits and the assurance of benefits to low-income
7 households have been explicitly recognized as public policy in New Hampshire statutes.
8 New Hampshire’s RSA 374-F:3, for example, states that “Restructuring of the electric
9 utility industry should be implemented in a manner that benefits all consumers equitably .
10 . . . Such benefits, as approved by regulators, may include, but not necessarily be limited
11 to, programs for low-income customers . . .” (RSA 374-F:3(VI)). New Hampshire’s
12 statutes continue to recognize the need for energy efficiency investments. The legislature
13 has provided that “Restructuring should be designed to reduce market barriers to
14 investments in energy efficiency and provide incentives for appropriate demand-side
15 management and not reduce cost-effective customer conservation. Utility sponsored
16 energy efficiency programs should target cost-effective opportunities that may otherwise
17 be lost due to market barriers.” (RSA 374-F:3(X)). It has long been recognized that the
18 market barriers which impede low-income investments in energy efficiency are far more
19 prevalent than the market barriers that impede residential investments in general. I
20 discussed the nature and extent of market barriers for low-income customers in more
21 detail above.

¹² See generally, Roger Colton (November 2014). *The Equities of Efficiency: Distributing Utility Usage Reduction Dollars for Affordable Multi-Family Housing*.

1 **Q. HOW DOES INCLUDING THE INVESTMENTS IN HEA IN THE PORTFOLIO**
2 **BENEFIT-COST ANALYSIS WORK AT ODDS WITH THIS POLICY?**

3 A. Even though HEA investments are not required to meet a benefit-cost test of 1.0, these
4 investments are included in the portfolio as a whole when the benefit-cost ratio for the
5 portfolio is determined. To the extent that the HEA benefit-cost ratios are lower than
6 those for other sectors, inclusion of HEA in the portfolio analysis will pull the portfolio
7 benefit-cost ratio down.

8
9 Because of this impact, even though HEA investments have been explicitly held to be not
10 subject to a benefit-cost threshold of 1.0, in reality, the utilities track the benefit-cost
11 ratios of HEA investments. In circumstances where a particular CAA is not achieving a
12 benefit-cost ratio of 1.0, for example, the utilities report that “Projects with B/C ratios of
13 <1 are treated on a case by case basis. The decision to pursue the job is made by the
14 utility implementation staff after discussing the individual issues and needs of the home
15 with the CAA auditor.” (TWH 2-011(d)). Indeed, conversations occur between the
16 utilities and the CAAs not simply if the HEA investment generates a benefit-cost ratio of
17 below 1.0. The utilities report that “If the average project has been coming in with a B/C
18 ratio lower than the planning number used to set the filing goal, the implementation staff
19 may inform CAAs that they need to aim for a higher B/C on remaining jobs.” (TWH 2-
20 011(e)). Moreover, the utilities acknowledge that the benefit-cost ratio will impede the
21 treatment of certain low-income units. (Staff 2-042).

22

1 The utilities implicitly acknowledge contacting CAAs when benefit-cost ratios fall below
2 1.0 for HEA investments. For example, The Way Home requested the utilities to provide
3 copies of all written correspondence (including e-mails) from a utility to a CAA
4 “discussing or otherwise giving direction to a CAA regarding the timing and/or the
5 priority of HEA treatments based on the expected. . .(a) benefit-cost ratio of the
6 treatment. . .” The utilities objected to the request, saying that “collecting the information
7 sought would be unduly burdensome and time consuming.” (TWH-2-017(a)). Moreover,
8 The Way Home requested the utilities to provide copies of all written correspondence
9 (including e-mails) from a utility to a CAA “discussing or otherwise giving direction to a
10 CAA regarding the expenditure of HEA funds on homes with an expected benefit-cost
11 ratio of: (a) less than 1.0; or (b) more than 1.0 but less than a prescribed target ratio.”
12 Again, the utilities objected to responding, saying that “collecting the information sought
13 would be unduly burdensome and time consuming.” (TWH-2-018). I conclude that this
14 is an implicit acknowledgement of the existence of such correspondence because, if such
15 correspondence did *not* occur, the utilities could simply have responded by saying so.
16 Instead, however, such correspondence was sufficiently prevalent that it would be both
17 “burdensome” and “time-consuming” to compile (or “collect” in the terminology of the
18 utilities) it.

19
20 **Q. WHY IS THIS IMPOSITION OF A DE FACTO REQUIRED BENEFIT-COST**
21 **RATIO FOR HEA INVESTMENTS OF CONCERN?**

22 A. Allowing New Hampshire’s utilities to impose a de facto threshold benefit-cost ratio on
23 their HEA investments creates a bad incentive from the perspective of low-income

1 households. Imposing such a requirement, when the need for such a requirement has
2 been explicitly disclaimed by the PUC, will create an incentive to serve the lowest cost
3 households that will meet their savings performance targets.

4
5 It is, in other words, not the homes that are served that are harmed by this incentive. It is
6 the homes that will be systematically excluded by the creation of this incentive. The
7 homes that will be excluded include those homes that cost somewhat more to serve.

8 Rural homes are one example. Housing units that are rural have a somewhat higher cost
9 because, by definition, the lack of density requires more time for such units to be reached.

10

11 **Q. CAN YOU ILLUSTRATE THESE HIGHER COST HOUSING UNITS?**

12 A. Yes. Consider the cost differences between multi-family and single-family housing
13 (remembering that the utilities define “single-family” to include buildings with from one
14 to four units). In 2017, the average of administrative costs plus rebates was as follows for
15 New Hampshire’s electric utilities (TWH 2-007, Attachment, Tab 1):

2017 HEA	Eversource	Liberty	NHEC	Unitil
Multi-family	\$674.36	\$2,089.66	---	\$5,462.91
Single-family	\$4,493.05	\$5,517.99	\$5,432.64	\$4,647.16

16

17 With the exception of Unitil, the multi-family costs were substantially lower than the
18 single-family costs were.

19

20 Similar findings can be made from the perspective of the number of units served. The
21 data below ranks New Hampshire’s counties by the number of HEA units served (most =

1 “1”). The data further ranks the counties by the cost per unit. Only data for Eversource
 2 and NHEC is used given that other electric utilities do not serve a majority of the New
 3 Hampshire counties. In the case of Eversource (electric), the four counties with the
 4 largest number of HEA units served all fell within the six counties with the lowest costs.
 5 In the case of NHEC, which served four fewer counties with which to begin, two of the
 6 three counties with the largest number of units served fell within the three counties with
 7 the lowest costs per unit. With neither of these two utilities (which were the only two
 8 utilities serving all or most of New Hampshire’s counties) were higher per unit costs
 9 associated with greater numbers of units served by HEA. As can be seen, there is a
 10 reasonably clear relationship between the number of HEA units served in a county and
 11 the per-unit cost of serving an HEA unit.

	Units	Pct	Pct Rank	Eversource Cost	Eversource Cost Rank	NHEC Cost	NHEC Cost Rank
Cheshire	30	2.70%	10	\$3,462.08	4	---	---
Belknap	64	5.70%	9	\$6,193.54	10	\$7,992.30	7
Strafford	66	5.90%	8	\$2,447.10	2	---	---
Carroll	67	6.00%	7	\$6,133.40	9	\$6,084.61	6
Grafton	70	6.20%	6	\$4,343.21	7	\$5,463.47	3
Coos	72	6.40%	5	\$5,826.78	8	\$5,639.43	4
Merrimack	94	8.40%	4	\$2,300.78	1	\$4,963.91	2
Sullivan	131	11.60%	3	\$4,337.80	6	\$4,539.60	1
Rockingham	178	15.80%	2	\$4,020.51	5	\$5,966.70	5
Hillsborough	353	31.40%	1	\$3,176.78	3	---	---

SOURCE: TWH 2-007 (Attachment, Tab 3, TWH 2-008(b)).

12

13 **Q. DO YOU HAVE REASON TO BELIEVE THAT RURAL HOUSEHOLDS ARE**
 14 **BEING EXCLUDED FROM HEA SERVICES?**

1 A. Yes. Before I begin, let me acknowledge that the utilities state that they cannot provide
2 data on the distribution of their respective waiting lists between “rural” and “urban”
3 areas. (TWH-2-14(d)). Nor can the utilities provide data on the distribution of the
4 number of units served through HEA, broken down by the urban or rural status of where
5 the treated homes are located. (TWH-2-007, Tab 4, TWH-2-009(h)). However, I would
6 note that when the utilities were asked to provide a breakdown of per-unit costs by
7 urban/rural status, the utilities provided an average cost per community. (TWH-2-007,
8 Attachment Tab 3, TWH 2-8(b)). No category for units not located in a “community”
9 existed.

10

11 **Q. DO YOU HAVE A FINAL CONCERN ABOUT THE WAY IN WHICH LOW-**
12 **INCOME HOUSING UNITS ARE BEING SELECTED TO BE SERVED**
13 **THROUGH HEA?**

14 A. Yes. When asked to provide the internal policies and procedures for prioritizing the
15 selection of housing units to treat through the HEA Program, the Joint Utilities replied
16 that “The CAAs prioritize each job using the statewide Priority Scorecard developed by
17 the State Office of Strategic Initiatives, which includes demographics such as elderly,
18 disabled, children, etc. The CAAs follow the same prioritization rules in HEA as those
19 used with the DOE Weatherization Assistance Program (WAP), as often times they are
20 trying to leverage both DOE and HEA funds.” (TWH-2-010). (emphasis added). I note,
21 and acknowledge, that the utilities state further that “The Utilities have coordinated with
22 the CAAs on this response, as many of the items refer to activity or policy that originates
23 at the CAA's.” (Id.)

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While I understand and appreciate the benefits to the utilities of ceding a large degree of the activity in “originating” such policies to the CAAs, and the benefits to the CAAs of following the same prioritization policies for HEA as are used for the federal DOE WAP program, this process does raise some concerns. The federal WAP prioritization policies are not identical to the state HEA eligibility criteria. Low-income New Hampshire residents, who are helping to pay for the HEA program, and who qualify for HEA services, should not be systematically and permanently excluded from receiving HEA services because they do not meet the federal prioritization policies.

The Utilities state that “It is possible for a customer to be bumped up on the list. Customers may apply and fit a new demographic (i.e. customer applies this year and now has a child or a disability). The primary reason for a customer to be bumped up on the list is an emergency situation.” (TWH-2-010) (emphasis added). While such a limitation on the ability to be “bumped up on the list” may meet federal priorities, this limitation is not necessarily consistent with state energy efficiency priorities. A low-income New Hampshire resident, who qualifies for HEA, should have an equitable opportunity to receive HEA services irrespective of whether they fit federal demographic profile priorities. The issue of how to identify, and resolve, conflicts between DOE WAP prioritization policies, and HEA prioritization policies, should be addressed by the appropriate Working Group.

1 **Q. WHAT DO YOU RECOMMEND?**

2 A. I recommend that the PUC assign the issue of how to ensure that low-income households,
3 including higher-cost households such as those living in rural areas, are not
4 systematically excluded from HEA participation to the appropriate Working Group for
5 consultation and a resulting recommendation. In such Working Group discussions, I
6 would recommend for consideration that, given that HEA investments are not required to
7 meet a benefit-cost ratio of 1.0, the benefit-cost analysis for HEA investments not be
8 incorporated into the benefit-cost analysis either of the energy efficiency portfolio as a
9 whole, or of the residential sector portfolio more specifically.

10

11 In addition, I recommend that the Working Group discuss further additional data
12 collection that would allow New Hampshire's utilities to more closely track the
13 characteristics of low-income housing units that are being served. Without seeking to
14 develop that data collection in detail here –that is the purpose of assigning the task to the
15 Working Group—the ability to determine whether higher cost units (such as rural units)
16 are being unreasonably excluded, and the ability to determine the extent to which, if at
17 all, units that meet the HEA eligibility guidelines (though not the WAP prioritization
18 guidelines) are being disproportionately excluded, should be objectives of this discussion
19 of data collection and reporting.

20

1 **Part 4. The Reasonableness of a Separate Low-Income Adder.**

2
3 **Q. PLEASE EXPLAIN THE PURPOSE OF THIS SECTION OF YOUR**
4 **TESTIMONY.**

5 A. In this section of my testimony, I examine whether it would be appropriate to use a
6 separate non-energy benefits (NEB) adder in the benefit-cost analyses for low-income
7 residential energy efficiency programs in New Hampshire. I conclude that such an adder
8 is reasonable. I recommend that the 10% adder specific to low-income investments,
9 proposed by the utilities in this year's Plan Update, be adopted pending completion of the
10 state-specific non-energy benefits research for New Hampshire.

11
12 **Q. ARE THERE PARTICULAR CONDITIONS THE EXISTENCE OF WHICH**
13 **COUNSELS THE USE OF AN "ADDER" TO QUANTIFY NON-ENERGY**
14 **IMPACTS?**

15 A. Yes. One set of circumstances involves when an evaluator (or planner or other
16 decisionmaker) wants to bundle the dollar values of NEIs without apportioning those
17 impacts to particular individual impacts. This is one reason that stakeholders beginning
18 the process of incorporating NEIs rely upon adders. A utility, or utility commission, can
19 know with certainty, as we all know in New Hampshire, that the value of NEIs is greater
20 than \$0. They can know with substantial certainty that the aggregated value of the NEIs
21 approaches, if not exceeds, the aggregate value of the energy savings. That knowledge,
22 however, does not necessarily allow the stakeholder to allocate a particular dollar value to
23 comfort; a different dollar value to health and safety; and yet a different dollar value to
24 avoided wage losses, whether attributable to health reasons or to frequent mobility.

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Q. IS THERE A SECOND SET OF CIRCUMSTANCES APPLICABLE TO NEW HAMPSHIRE WHICH MAKES THE USE OF AN ADDER APPROPRIATE?

A. Yes. The use of an adder is appropriate when the user wanting to account for NEIs is unsure of how to account for the fact that the whole is often less than the sum of its parts. This impact is commonly referred to as the “part-whole bias.”¹³ Part-whole bias is not unique to the valuation of NEIs. This principle reflects the proposition that individuals often place a greater value on individual components of a transaction than they do on the transaction as a whole.¹⁴ As this principle shows, in other words, even when one can quantify the dollar values for individual NEIs, you do not necessarily know what the appropriate value would be for NEIs as a whole. Under such circumstances, the use of an adder would be an appropriate decision.

Q. PLEASE EXPLAIN YOUR THIRD REASON FOR SUPPORTING THE USE OF A SEPARATE ADDER THROUGH WHICH TO VALUE LOW-INCOME NON-ENERGY IMPACTS IN NEW HAMPSHIRE.

A. A third situation in which the use of adders is appropriate is when one state seeks to import the use of a quantification of NEIs from a different state. While the specific dollar value found to exist in one state may not be entirely transferable to another state, the value of the NEIs relative to the value of program energy savings can be. It has

¹³ It is also sometimes referred to as the “sub-additivity effect.” Not everyone agrees that such a bias exists in research on contingent valuations or that it cannot be reasonably remedied through proper design of the survey instrument.
¹⁴ The classic “test” of part-whole bias involved an experiment during which respondents placed greater values on vouchers for different components of a meal at a restaurant than they placed on the meal as a whole.

1 frequently been found that NEIs are sufficiently well-studied and well-documented that
2 the NEIs as a percentage of savings are reasonably consistent.

3
4 **Q. DO YOU HAVE A FINAL OBSERVATION ABOUT THE USE OF ADDERS AS A**
5 **MECHANISM TO VALUE NON-ENERGY IMPACTS?**

6 A. Yes. The use of adders can be appropriate if/when a state is seeking to implement specific
7 public policies. One such public policy, for example, is to promote the delivery of energy
8 efficiency services to low-income households. The importance of that policy can be
9 weighed against the uncertainty inhering in the adder. The greater the importance of the
10 policy, the closer the PUC can weight the adder to 100% of expected NEIs. The lesser
11 the importance of the policy, the more the NEI adder can be discounted to less than 100%
12 of its expected value. This process of weighting the importance of public policy
13 considerations against the desire for precision in the NEI documentation is more easily
14 implemented through the use of an adder for NEIs.

15
16 **Q. WHY IS THERE A NEED FOR A SEPARATE LOW-INCOME ADDER WHEN**
17 **THERE IS NOW AN ADDER FOR RESIDENTIAL PROGRAMS GENERALLY?**

18 A. In 2017, I presented a detailed analysis of the empirical studies of non-energy benefits,
19 including those benefits that are applicable to low-income households in particular.
20 Studies available to New Hampshire's utilities, prepared subsequent to the time I
21 prepared my 2017 analysis, further confirm the conclusions I reached in that analysis.
22 (TWH 2-001, TWH 2-002). To bring that detailed analysis forward into this proceeding,
23 I have attached the quantitative analysis I prepared at that time to this testimony as

1 Appendix D. Based on that data and discussion, supplemented by my review of the more
2 recent additional data provided by New Hampshire’s utilities, I conclude, as I did in
3 2017, that the adder to be applied to low-income residential customer programs should be
4 equal to twice (2.0x) whatever adder is adopted for non-low-income programs. (see also,
5 Staff 2-020, Staff 2-021, Staff 2-041, Staff 2-042).

6
7 **Q. WHAT DO YOU RECOMMEND?**

8 A. I recommend approval of the utilities’ proposal to incorporate a low-income adder of
9 10% above and beyond the 10% adder applied to residential energy efficiency
10 investments generally. Recognizing that both of these adders are substantially less than
11 the level of non-energy benefits that can be justified for residential, and for low-income
12 residential, efficiency investments, I recommend that this 10% low-income adder be
13 continued pending completion of the ongoing New Hampshire-specific studies
14 developing specific quantification of non-energy benefits.

15
16 **Conclusions and Recommendations**

17 **Q. PLEASE SUMMARIZE THE RECOMMENDATIONS YOU MAKE IN YOUR**
18 **TESTIMONY ABOVE.**

19 A. Based on the data and discussion presented in my Direct Testimony above, I offer the
20 following recommendations:

- 21 ➤ I recommend that HEA funds be carried over from one year to the next, to
22 remain in the HEA’s future year budgets. The HEA budget should not be
23 allowed to fall below 17% in a given year because a utility under-spends that
24 HEA budget.

- 1 ➤ I recommend that the utilities’ proposal to reduce the energy efficiency budget
2 agreed to in the 2017 Settlement of the 2018 – 2020 Energy Efficiency Plan
3 be rejected. I recommend, instead, that the 2019 budget agreed to in the 2017
4 Settlement be continued for 2019.
5
- 6 ➤ As discussed in more detail in Parts 2 and 3 of my testimony, I recommend
7 that the Commission consider directing the appropriate Working Groups to
8 meet during 2019 to discuss ways to remove barriers and disincentives to an
9 equitable distribution of HEA investments. Such discussions could include
10 whether to track additional data in the HEA Program.
11
- 12 ➤ I recommend approval of the utilities’ proposal to incorporate a low-income
13 adder of 10% above and beyond the 10% adder applied to residential energy
14 efficiency investments generally.
15
- 16 ➤ I recommend that this 10% low-income adder be continued pending
17 completion of the ongoing New Hampshire-specific studies developing
18 specific quantification of non-energy benefits.
19

20 **Q. DOES THIS COMPLETE YOUR TESTIMONY?**

21 **A. Yes, it does.**