



STATE OF NEW HAMPSHIRE  
PUBLIC UTILITIES COMMISSION

DOCKET DE 17-136

IN THE MATTER OF:      2018-2020 New Hampshire Statewide Energy Efficiency  
Plan.

DIRECT TESTIMONY

OF

**LESZEK STACHOW**  
Assistant Director,  
NHPUC Electric Division

November 01, 2017

1

2 **Introduction**

3 **Q. Please state your full name?**

4 A. My name is Leszek Stachow, and I am employed by the New Hampshire Public Utilities  
5 Commission (Commission) as Assistant Director of the Electric Division. My business  
6 address is 21 South Fruit Street, Suite 10, Concord, New Hampshire

7 **Q. Please summarize your education and professional work experience.**

8 A. My educational and professional background is summarized in Exhibit 1.

9 **Q. What is the purpose of your testimony in this proceeding?**

10 A. The purpose of my testimony is to review the 2018-2020, New Hampshire Statewide Energy  
11 Efficiency Plan( NH Saves Report)<sup>1</sup> and provide recommendations concerning acceptance  
12 and/or further action.

13 **Q. How is your testimony organized?**

14 A. My testimony will principally address the issue of future funding for the Energy Efficiency  
15 Resource Standard (EERS). Additionally I shall address the need to strengthen the proposed  
16 Evaluation, Measurement and Verification (EM&V) Process and offer comment concerning  
17 the Eversource derived Customer Engagement Platform.

18

19 **Future EERS Funding**

20

21 **Q. Please state the potential problems faced by the EERS going forward.**

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<sup>1</sup> New Hampshire Statewide Energy Efficiency Plan submitted on Sept 1, 2017 in Docket DE 17-136

1 A. The adoption of the EERS means that the cumulative energy savings goal over the 3 year  
2 planning period equates to 3.10 percent of retail electric sales and 2.25% of retail gas sales  
3 relative to a 2014 baseline.

4 The achievement of this target is predicated on the assumption that the NH utilities will  
5 request that the Commission approve any necessary changes to the System Benefit Charge  
6 (SBC) annually for the electric utilities as well as the Local Delivery Adjustment Clause  
7 (LDAC) for the natural gas utilities.

8 Thus as EERS targets increase, the NH Utilities will turn to the NH ratepayers to contribute  
9 an increasing amount each year in their SBC and LDAC charges.

10 Staff believes that as the EERS targets increase in support of greater energy efficiency (EE)  
11 then there is a need to seek supplemental means to fund EE programs that minimize the  
12 burden on the ratepayer. Increasingly marshalling the resources of the private sector may  
13 prove to be one such approach.

14 Many EE advocates have recorded their position that private sector participation in EE  
15 programs will not safeguard funding for EE or replace the existing primarily ratepayer  
16 funded mechanism and for this reason they do not advocate it, or propose delaying  
17 consideration until the threshold of EE activities is much greater.

18 Staff is sympathetic to this view and does not seek at present to erode the current level of  
19 ratepayer support of EE program budgets. However, with the potential arising from new  
20 sources of energy efficiency funding, like for example, the Clean Energy Fund<sup>2</sup>, Staff  
21 believes that there exists an opportunity to leverage these funds in a manner that will  
22 encourage revolving project funding and through a Loan Loss Reserve Fund encourage more

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<sup>2</sup> The Settlement Agreement filed June 10, 2015 in dockets DE 14-238 and DE 11-250 established a Clean Energy Fund. This was subsequently approved by the Commission on July 1, 2016 by Order No 25,920

1 financial institutions to offer financing in the marketplace at discounted rates. In addition to  
2 making these marketplace financing options available to customers to help fund the out-of-  
3 pocket costs for installation of EERS Program sponsored energy efficiency measures, Staff  
4 believes there may exist other innovative funding sources to supplement the rebate portion of  
5 the EERS Program offerings that should be researched and validated during the 2018 to  
6 2020 program implementation period.

7 **Q. What is the current position of the Utilities with respect to funding and finance?**

8 A. According to the NH Saves Report, the utilities EERS vision includes “expanding the reach  
9 of existing programs by serving more customers, implementing new and innovative  
10 initiatives and deepening our relationships with skilled tradespeople and other key energy  
11 efficiency stakeholders.”<sup>3</sup>

12 Amongst the main elements of the Utilities’ plan is the desire to “stimulate customer and  
13 other private investment.” “Further, the Utilities state that “partnerships with lenders and  
14 financing institutions help to make private capital available so that customers can invest in  
15 comprehensive projects.” Staff supports this goal.

16 **Q. Please describe the utilities current funding mechanism?**

17 A. According to the utilities there are three primary<sup>4</sup> sources of funding, (a) a portion of the  
18 system benefits charge that is applied to the electric bills of all customers receiving delivery  
19 service through one of the NH Electric Utilities (b) a portion of the Regional Greenhouse Gas  
20 Initiative( RGGI) auction proceeds and (c) proceeds earned by each of the utilities from ISO  
21 –NE for participation in ISO-NE’s Forward Capacity Market( FCM) . Additionally all

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<sup>3</sup> NH Saves ,Sept 1, 2017, Page 18

<sup>4</sup> Ibid, Page 30

1 unspent funds from prior program years are carried forward to future years. On the gas side  
 2 the programs are funded by a portion of LDAC.<sup>5</sup>

3 **Q. Do the Utilities make use of private investment funding?**

4 A. According to the NH Saves report, the utilities anticipate making use of private investment as  
 5 follows:

<b>Program</b>	<b>Utility encouragement of customer and other private investment</b>	<b>Utility Financing available</b>
HEA	“The NH Utilities will continue to work with NH OSI, the CAA’s, NH Legal Assistance , NH Housing Finance Authority and local affordable housing agencies and other partners engaged with the income eligible population to identify other collaborative funding opportunities.” ( Page 52)	Yes, through donations via partner agencies
HPwES	“By offering easy to access financing in the form of low interest loans from NH based banks and credit unions as well as on bill financing for smaller loans, customers have options to more easily invest in EE home improvement.” “Interest rate buy downs are available through the third party loan offering.” (Page 61)	Yes, via savings banks and credit unions
Energy Star Homes.	“Builders and investors are investing significant funds in NH’s efficient new housing stock.”(Page 72)	No
ES Products	“Some HVAC contractors further stimulate private investment by facilitating customer financing for the installation of air source and ductless heat pump mini split systems as well as natural gas heating and hot water systems.”(Page 81)	No
HER	“ Customers can then choose to invest in other energy efficiency measures and behaviors that are highlighted or recommended in the HER( Page 89)	No
Customer Engagement Platform	Not available	No
Large Business Energy Solutions	“Large Business customers have the capacity to invest significant resources in their energy efficient projects”(Page 102)	No
Small Business Energy Solutions	“Customers make this investment in a variety of ways, through existing capital, operations budgets, loans from	No

<sup>5</sup> Please note also the existence of a Revolving Loan Funded by a 2009 RGGI grant, as well as some utility initiated performance contracting.

	their existing lenders or in some case loans from their utility. ....The NH Utilities will explore additional lending options for small business over the course of the 3 year plan to overcome barriers faced by customers in making investments in energy efficiency.” (Page 112)	
Municipal Program	“The NH Utilities all offer either Smart Start or on bill financing for our Municipal customers.”	Yes
Combined Heat and Power	N A	No
Energy Rewards Program	The Energy Rewards program encourages market growth and demand for energy efficiency by awarding funds for cost effective projects on a competitive basis.(Page 130)	Yes

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2 **Q. What kind of financing options do the NH Utilities provide and what is the source of**  
 3 **their funds?**

4 A. Four types of financing program are available at present<sup>6</sup>. They include the following:

	Target market	Financing Program	Details
1A	Residential Financing: Third Party Financing	Utilities partner with local lending institutions to ensure capital and lending expertise is available to residential customers  Utilities plan to increase availability for moderate income customers over the three year EERS period using a tiered interest rate approach.	<ul style="list-style-type: none"> <li>• 2015-2016 supported 105 loans.</li> <li>• Average project size supported is \$10,142.00</li> <li>• Make use of five savings banks and credit unions.</li> <li>• By down interest rate from average of 6.46% to 2.0%</li> <li>• Loans from \$1,000 to \$15,000 over a seven year term</li> </ul>
1B	Residential Financing: On bill financing(OBF)	OBF available for HPwES program customers via revolving fund. Originally capitalized by grant from Greenhouse Gas Emissions Reduction	<ul style="list-style-type: none"> <li>• Offered at zero interest rate for consumer loans of \$2,000 or less.</li> </ul>

<sup>6</sup> NH Saves, page 134 -138.

		Fund (GGEF) in 2009.	
2	Municipal Financing: Smart Start	Smart Start financing is offered by Eversource and NHEC and provides municipal customers with an opportunity to install energy savings measures with no up-front costs and the ability to pay for the measures with the savings from lower energy costs.	<ul style="list-style-type: none"> <li>Eversource / NHEC pays all costs associated with purchase and installation of approved measures. The municipality reimburses the utility through charges added to the customers' regular monthly electric bill.</li> </ul>
3	Municipal Financing: On bill financing	Liberty and UES offer a zero percentage OBF revolving loan program pursuant to a grant award from the GGEF	<ul style="list-style-type: none"> <li>Under the program Liberty and UES pay all costs associated with the purchase and installation of approved measures up to the incentive amount plus a loan amount not to exceed \$50,000 per measure for commercial, municipal and industrial customers.</li> </ul>
4	Commercial Financing	NHEC, UES and Liberty extend existing municipal financing options to business customers	<ul style="list-style-type: none"> <li>See 3 above for details.</li> </ul>

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2 In discussions with a number of the Utilities' five lending partners Staff has learned that:

- 3
- 4 In 2016, one bank offered 28 loans for a total lending volume of \$164,000; a second
  - 5 offered 16 loans for a total lending volume of \$111,594 and a third bank offered 23 loans
  - 6 for a total lending volume of \$122,322.
  - 7
  - 8
  - Under current market conditions, lenders would offer unsecured EE loans at between
  - 6.49-14.5% interest rates.
  - The utilities have bought down the interest rate imposed by the banks to 2.00%

- 1 • One lender believes that if it were possible to secure loans via a loan loss reserve fund,  
2 then there would be little or no need for a buy down, thus freeing up more utility program  
3 funding.
- 4 • At present the average loan is approximately \$8,000 with a 7 year maximum loan period  
5 as agreed with the utilities.

6 Staff believes that given that the electric and gas utility EE Budget for 2018 is of the order of  
7 \$45,782,000,<sup>7</sup> then an average lending total per bank of approximately \$132,638 is a  
8 miniscule drop in the bucket of potential lending. Of course the amount will vary by savings  
9 bank and credit union but even at five times (five lending partners) that amount, i.e.  
10 \$ 663,190 represents only 1.4 % of the overall budget. In addition to facilitate the lending,  
11 the utilities had to buy down bank interest charges to enable the banks to offer unsecured  
12 lending under reasonable terms, thereby reducing program spending and savings. Finally, one  
13 lender made clear that under suitable conditions, the establishment of a loan loss reserve  
14 could obviate the need for any buy downs and could increase the lending overall.

15 **Q. What opportunity does the Clean Energy Fund arising from the Eversource divestiture**  
16 **process afford?**

17 A. The Settlement Agreement filed in June 10, 2015 in dockets DE 14-238 and DE 11-250,  
18 which was approved by the NH PUC on July 1, 2016 in Order 25,920 would establish a  
19 Clean Energy Fund. According to the terms of the Agreement, PSNH was to provide \$5.0  
20 million to capitalize a Clean Energy Fund to be established via a collaborative process  
21 overseen by Commission Staff and the Office of Energy and Planning. The Settlement  
22 Agreement states:

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<sup>7</sup> NH Saves, page 32-33.



1 “General principles governing the uses of the Clean Energy Fund and any programs  
2 supported by the Fund will include but not be limited to: innovation in achieving clean  
3 energy benefits, leveraging of various sources of funds including attracting private capital to  
4 the fund and to programs supported by the fund; expanded access to clean energy across  
5 customer classes in a cost effective manner; and avoiding undue administrative costs.”

6 Staff recommends that as other funding becomes available to support existing SBC and  
7 LDAC resources, such as the Clean Energy Fund, the Commission should consider whether a  
8 portion of the funds could be used to mitigate bank risk and to establish revolving credit.  
9 Mechanisms to be used may include a loan loss reserve, a revolving loan fund, technical  
10 assistance, or other mechanisms to encourage greater participation by commercial, nonprofit  
11 and municipal entities in energy efficiency and renewable energy activities and of private  
12 capital to finance these clean energy investments.<sup>8</sup> .

13 **Q. What is a Loan Loss Reserve and how does it work?**

14 A. All lenders must account for the fact that despite careful lending practices their loan  
15 recipients may make payments late or stop making payments altogether. Loan loss reserves  
16 (LLR) exist to safeguard the lender’s assets against these losses. Lenders typically set aside  
17 their own capital to fund their LLRs as a precautionary measure. LLRs can also be set up by  
18 a third party to offset risk on behalf of another lender taking on all or part of the potential  
19 loss should nonpayment occur.

20 **Q. How is a third party Loan Loss Reserve (LLR) structured?**

21 A. When a state institution sets up an LLR on behalf of a financing partner, the LLR amount is  
22 determined by available funding and the financial partner’s risk appetite. If the state has a

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<sup>8</sup> Monitoring and Verification of post-project energy and cost savings as well metrics to measure impact of each of the outlined financing mechanisms should be intrinsic to the deployment of Clean Energy Fund supported projects.

1 specific amount of money to allocate to an LLR, it can work with a prospective financial  
2 partner to determine the size of the loan portfolio based on risk and institutional goals that the  
3 LLR can support. This relationship is typically expressed in percentage form, calculated by  
4 dividing the dollar amount in the LLR by the dollar amount in the loan portfolio.

5 For example, a \$5 million LLR created to support a \$100 million portfolio would be a 5%  
6 LLR with a 20:1 leverage ratio. The higher the leverage, the larger the overall portfolio can  
7 be and the more loans that can be made, but higher leverage also decreases the available risk  
8 protection

9 A lower leverage implies more risk protection, but constricts total lending.

10 For example, Michigan Saves,<sup>9</sup> a nonprofit organization that finances energy improvements,  
11 increased the leverage on one of its LLRs after a few years of low-default lending increasing  
12 its financing partners' willingness to make loans with less risk coverage. Another  
13 consideration is the percentage of each individual loan that the LLR will cover. Typically,  
14 LLRs do not cover 100% of losses from each loan, so the lender has some of its own funds at  
15 risk, ensuring prudent lending practices. Coverage ratios of 80–100% are typical, (DOE  
16 2016)<sup>10</sup>

17 **Q. What are the benefits of establishing a Loan Loss Reserve Program?**

18 A. LLRs can open new markets, products, and customers for lenders. Typically, LLRs are set up  
19 as mission-driven lending to support investment in underserved markets. By having the risk  
20 partially offset, lenders are encouraged to reach these underserved markets. Lenders can also  
21 expand into new customer bases or appeal to a broader applicant

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<sup>9</sup> <https://michigansaves.org/>

<sup>10</sup> <https://www.energy.gov/eere/slsc/primary-characteristics-loan-loss-reserve-funds#leverage>

1 pool by reducing the minimum required credit score, increasing or eliminating the loan-to-  
2 value ratio, or increasing the debt-to-income ratio.

3 For customers, better financing terms may be available. LLRs serve as a credit enhancement,  
4 and terms can be constructed to offer below-market-rate terms to increase participation.

5 For state or local government entities with energy efficiency or clean energy goals that  
6 exceed their funding capacity, LLRs can offer a way to incentivize private investment in  
7 clean energy lending. In this way, LLRs can be considered public-private partnerships that  
8 leverage a smaller amount of public funding to increase private sector engagement.

9 **Q. Are there successful paradigms that we can learn from?**

10 A. In addition to the activities of the New Hampshire Community Development Finance  
11 Authority (CDFA) through its Better Buildings Program, other examples of successful loan  
12 loss reserves include Michigan Saves<sup>11</sup> and the California Alternative Energy and Advanced  
13 Transportation Financing Authority.<sup>12</sup>

14 **Q. What is a revolving loan fund?**

15 A. Revolving loan funds (RLFs) are pools of capital from which loans can be made for clean  
16 energy projects, as loans are repaid, the capital supports new loans for additional projects.  
17 Assuming that defaults remain low, RLFs can be "evergreen" sources of capital that are  
18 recycled over and over again to fund projects well into the future. State and local  
19 governments can establish RLFs to support both their own energy upgrades (i.e., internal),  
20 and those in the private sector (i.e., external). One example of such a revolving loan program  
21 is operated by the New Hampshire Business Finance Authority (BFA)<sup>13</sup> which operates a

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<sup>11</sup> See Michigan Saves above.

<sup>12</sup><http://www.treasurer.ca.gov/caeatfa/>

<sup>13</sup> <http://www.nhbfa.com/>

1 revolving loan program dedicated to energy generation and efficiency in the agricultural and  
2 industrial sectors.

3 **Q. How can revolving loan funds (RLF) be administered?**

4 A. A number of entities can administer RLF's, including state 'near financial  
5 institutions'(NFI's) like the New Hampshire Business Finance Authority (BFA).or the New  
6 Hampshire Community Development Finance Authority (CDFA). Government-sponsored  
7 RLFs typically offer lower interest rates and/or more flexible terms than are available in  
8 commercial capital markets. These programs often focus on financing the cost of efficiency  
9 upgrades, such as appliances, lighting, insulation, and heating and cooling system upgrades.  
10 Depending upon each government's situation and need, RLFs can be capitalized through a  
11 variety of sources, including state bond proceeds, treasury investments, ratepayer funds, or  
12 auction proceeds.

13 To date, more than 30 states have established loan programs for energy efficiency and  
14 renewable energy improvements. Some programs require loans to be secured by additional  
15 collateral, while others create loan loss reserve funds to serve as a cushion for potential  
16 defaults.

17 **Q. Is there a need to stimulate greater private investment in the NH EE marketplace?**

18 A. Staff believes that NH ratepayer funds should not be required to support increasing  
19 SBC/LDAC charges over time, if avoidable. Absent increases in funding, the EE targets may  
20 stall.

21 The NH utilities have recognized this problem by accessing of grants to supplement existing  
22 programs.<sup>14</sup> They have also been successful in tapping federal funds through their  
23 cooperation with the Office of Strategic Initiatives, formerly known as the Office of Energy

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<sup>14</sup> NH Saves page 150.

1 and Planning and the CDFR.<sup>15</sup> However, the utilities have caveated this activity by stating  
2 that “there is little potential for grant funding to become the primary or even a significant  
3 source of funds for the program.”<sup>16</sup>

4 However from Staff’s position, the objective is less to complete a one-time transaction, but to  
5 find a way to leverage every rate payer dollar so that through private funding, the rate payer  
6 funds can be multiplied several times.

7 Concurrently the Union of Concerned Scientists (UCS)<sup>17</sup> in its paper of December 2016 has  
8 observed the following: “By encouraging private sector investment in renewable energy and  
9 energy efficiency, strategies to finance clean energy are playing an important role in  
10 transforming clean energy markets in the US and in other countries. Institutions that run  
11 clean energy financing programs can provide underwriting support, facilitate conversations  
12 with key stakeholders and educate the public and lenders on technological options.” Based on  
13 analysis of existing clean energy financing initiatives the UCS analyzed the potential impact  
14 of creating such an enterprise in NH and found that the state could leverage an initial  
15 capitalization of \$14 million into a \$300 million investment in renewable energy and energy  
16 efficiency projects over the next 15 years. The report goes on to clarify that the basic  
17 approach of clean energy financing programs is to leverage a pool of public sector funds to  
18 garner a larger pool of private sector investments. For example, Connecticut and New York  
19 have achieved an average leverage ratio across their programs of more than \$5.00 of private  
20 funds to every \$1.00 of public funds.

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<sup>15</sup> Ibid page 151

<sup>16</sup> Ibid page 152

<sup>17</sup> <http://www.ucsusa.org/sites/default/files/attach/2016/12/new-hampshire-clean-energy-finance.pdf>

Ibid, Page 5.

1 Staff concurs with the recommendations of the report to build on the achievements of  
2 existing EE programs and also on the potential to leverage the knowledge and expertise of  
3 the New Hampshire NFI's to host and help promote a more comprehensive financing policy.

4 **Q. How can we leverage existing state institutions to advance greater private investment in**  
5 **energy efficiency?**

6 A. Based on discussions held with one of two possible state institutions, Staff believes that  
7 either the BFA or the CDFFA, as near banking institutions, could become a suitable nexus for  
8 stimulating greater private investment in energy efficiency in New Hampshire.

9 The utilities have stated many times that they do not wish to be in the 'banking' business and  
10 do not see that as their role.

11 Either the BFA or the CDFFA, as NFI's could be well placed to make use of available energy  
12 efficiency funds in order to stimulate greater private sector investment in the NH energy  
13 efficiency economy and limit or avoid successive increases in ratepayer contributions.

14 For example, the CDFFA already administers several programs as part of its \$9.0 million  
15 existing Clean Energy Fund, making use of a revolving loan fund that provides financing to  
16 municipalities, non-profits and businesses. Available energy efficiency funds could be used  
17 to establish a revolving loan fund, thereby ensuring that financial support for energy  
18 efficiency transactions would not be on a one time transaction basis but as the funds are  
19 returned to CDFFA they are used again to support subsequent lending.

20 The CDFFA already provides low interest loans via the Enterprise Energy Fund and the Better  
21 Buildings Program to businesses and non-profits, with a loan loss reserve fund for the latter.

22 Thus a portion of the auction proceeds could be utilized to establish a loan loss reserve that  
23 would enable banks and other financial institutions to offer lending at preferential terms in

1 the knowledge that risks associated with unsecured lending could be mitigated through the  
2 LLR.

3 On the other hand, the BFA as another near financial institution also operates a revolving  
4 loan program for energy generation and efficiency for the agricultural and industrial sectors.

5 As the UCS report has suggested, “In any scenario, new clean energy financing programs  
6 would need to be coordinated with these state institutions to make use of their knowledge and  
7 expertise.”<sup>18</sup>

8 Model approach.

9 In discussion with near financial institution (NFI) counterparts, Staff has fleshed out a  
10 possible model approach that would permit optimal leverage of any available energy  
11 efficiency funds. Under this model, the following parties would support the establishment of  
12 a sales channel coordinated via the NFI, which would work in parallel with the Utilities and  
13 make use of the programs already approved by the Commission.

14 Accordingly, the NFI drawing on its experience would act to manage the revolving loan  
15 funds and establish a loan loss reserve in order to increase the number of banking institutions  
16 willing to provide EE financing under preferential conditions. It is expected that the portfolio  
17 of banking institutions willing to come forward to support the NFI would increase, thus  
18 further transforming the economy.

19 In support of, and in parallel with the work already performed by the utilities in energy  
20 efficient participant acquisition, Staff proposes that the NFI pre-approves contractors who  
21 will then seek potential EE participants themselves. It is assumed that contractors are well  
22 versed in available energy efficiency products and programs as well as in understanding

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<sup>18</sup> <http://www.ucsusa.org/sites/default/files/attach/2016/12/new-hampshire-clean-energy-finance.pdf>. Page 4.

1 customer needs. Participant acquisition by contractors will potentially bring a much larger  
2 pool of contractors to participate in the energy efficiency marketplace and thus further effect  
3 market transformation. The NFI would provide relevant training in EE financial products and  
4 programs to enable the contractors to be most effective.

5 Under this model, the contractor, having found a customer who is interested in benefitting  
6 from existing EE programs would inform the customer of financial institutions participating  
7 in EE financing. The customer could then work with the financial institution to arrange for  
8 the financing of their project. The use of the LLR coupled with the close relationship  
9 between the NFI and the financing institutions would enable lenders to better understand the  
10 marketplace thus lowering their risk.

11 Participants first acquired by contractors would benefit from the NFI's existing partnership  
12 with utilities, knowledge of EE programs, and future relationships with a broad range of  
13 financial institutions providing a variety of rebate, incentive, and financing options and  
14 technical assistance. In this case the NFI would perform the following functions:

- 15 • Identify and train contractors about available financing products.
- 16 • Identify and collaborate with a growing set of financial institutions.
- 17 • Train the financial institutions in EE programs and products.
- 18 • Make use of revolving loan funds.
- 19 • Utilize the loan loss reserve funds to mitigate lending risks of financial  
20 institutions.
- 21 • Continue its existing collaboration with the utilities.
- 22 • Make use of programs and measures already pre-approved by the Commission.



1 Staff envisions that initially the recipients of this approach would be small business  
2 customers who are often caught between the two constraints of having insufficient resources  
3 to take out loans in the commercial marketplace and due to their business have limited access  
4 to other assistance. Gradually as more knowledge and success were achieved the proposed  
5 program would be offered to wider market segments.

6 If there is support from the Commission, the utilities, Staff and stakeholders to adopt this  
7 model approach, a Work Group would need to be established to address such questions as:

8 (a) Would the Commission require screening of NFI programs to determine if they are cost  
9 effective?

10 (b) Will there be a need to establish savings targets that the NFI must achieve?

11 (c) Will the Commission require quarterly business meetings to share the NFI's progress?

12 (d) Will there be a preliminary timeframe in which the NFI will need to achieve milestones  
13 as a condition for continued Commission support?

14

15 Following attendance at the 2017 Energy Efficiency Finance Forum<sup>19</sup> in Chicago, Staff came  
16 away with the impression that with a state NFI as the financial nexus, acting as what the UCS  
17 refer to as 'Clean Energy Finance Authority', capital would be attracted to the New  
18 Hampshire energy efficiency marketplace from philanthropic investors such as the Kresge  
19 Foundation, The MacArthur Foundation, and the Surdina Foundation, as well as more local  
20 foundations. Preliminary discussions between Staff and Foundation representatives suggested  
21 that they would consider supporting NH energy efficiency programs if the particular energy  
22 efficiency objectives of the EERS overlapped or coincided with their own Board missions.

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<sup>19</sup> <http://aceee.org/conferences/2017/eeff>

1 This opportunity might be a challenge and may take time and negotiation to capture,  
2 however, a near financial institution might be better placed to coordinate such efforts.

3 **Q. What is your recommendation in the matter of advancing marketplace financing**  
4 **options?**

5 A. Staff would like to put forward the above mentioned model whereby a state NFI would use  
6 any available energy efficiency monies to leverage additional financing options for energy  
7 efficiency programs by using the funds as a loan loss reserve and revolving loan funds. After  
8 receiving an allocation of available energy efficiency funds, the NFI would broaden its  
9 existing scope of activities to (a) guide a growing portfolio of contractors with EE financing  
10 options for their customers, (b) increase the number of financial institutions participating in  
11 the NH energy efficiency marketplace, and (c) act as a Clean Energy Financing Authority  
12 drawing on its existing expertise and the use of revolving loan funds and loan loss reserves to  
13 provide credit enhancements, (d) offer direct lending initially to the small business segment  
14 of the market, ( e) make use of a growing palette of financing tools and (f) provide technical  
15 expertise to the contractors and the private lenders. In this way, Staff believes that energy  
16 efficiency programs can begin to move away from SBC and LDAC dependency towards a  
17 future scenario where private lending will play a greater part. One possible source of energy  
18 efficiency funding may be the Clean Energy Fund arising from the proceeds of the  
19 Eversource auction process. Staff recognizes that according to the terms of the Commission  
20 Order 25,920 dated July 1, 2016, details regarding the Clean Energy Fund are to be  
21 determined via a collaborative process overseen by Commission Staff and the Office of  
22 Energy and Planning (now presumably the Office of Strategic Initiatives), and Staff

1 welcomes collaborative discussions which will provide an opportunity to discuss this  
2 proposal amongst relevant stakeholders.

3 **Q. In addition to these marketplace financing options, earlier in your testimony you stated**  
4 **that Staff believes there may exist other innovative funding sources to supplement the**  
5 **rebate portion of the EE Program offerings. Please explain the difference between**  
6 **marketplace financing options and options for supplementing the rebate portion of EE**  
7 **Program offerings.**

8 A. It is important to draw a distinction between financing and funding. The financing options  
9 discussed in my testimony above are targeted to assisting customers interested in taking out a  
10 loan to fund their share (customer co-payment) of the total cost for installation of EERS  
11 Program-supported energy efficiency measures, or 100% of the cost for installation of non-  
12 EERS Program-supported measures. Not all customers are interested in or require loan  
13 products to fund their co-payment share. The rebate portion of the EERS Program offerings  
14 are strategically used by utilities here in New Hampshire and nationwide to reduce the up-  
15 front cost that customers would otherwise have to pay. A significant portion of the current  
16 Core Program's and subsequent EERS budgets, funded through the SBC and other sources,  
17 are and will be expended in the form of rebates directly provided to participating customers,  
18 their contractors, or in support of up-stream distributor/manufacturer product buy-downs. To  
19 the extent that supplemental funding sources could be researched, tested and validated during  
20 the 2018-2020 program implementation period, all parties would be better positioned in the  
21 subsequent three-year plan (2021-2024) to more actively procure any identified viable  
22 options. All such funding could be used at that time to supplement the then existing SBC  
23 rates, thus allowing potentially more energy savings to be achieved with no additional burden

1 on ratepayers. Or, this funding could be used to reduce the amount of SBC funding required  
2 from New Hampshire's ratepayers while allowing achievement of potentially the same level  
3 of energy savings.

4 **Q. What are some of these innovative funding sources?**

5 A. Based on preliminary research, at least four potential funding source categories have been  
6 identified as follows: grants, socially-conscious equity investors, powerplant owners and  
7 commercial/industrial customers around the region, nation and internationally that have  
8 carbon offset requirements, and issuance of green energy bonds. More research into each of  
9 these, and potentially other funding options would be prudent to validate their availability  
10 and quantify their potential as supplemental or alternative sources to SBC funds.

11 **Q. What is your recommendation in the matter of supplementing the rebate portion of**  
12 **current Core and future EERS Program offerings?**

13 A. Staff believes that the NH Utilities' current 2018-2020 Energy Efficiency plan lacks  
14 specificity regarding a commitment toward reviewing and researching opportunities and  
15 models to provide program funding sources. Without more details and a roadmap of research  
16 and validation testing during this upcoming three -year program implementation period, Staff  
17 is concerned that ratepayers and other stakeholders will be in the same position, three years  
18 hence that we are in right now, with total reliance on SBC, LDAC and other tangential  
19 funding sources and no further identification of other potential options that might supplement  
20 or reduce ratepayers' burden. Therefore, Staff recommends formation of a working group  
21 tasked with design and implementation of a modest effort starting in 2018 that includes: Year  
22 1 research focused on identifying potentially viable supplemental funding sources, Year 2  
23 testing of procurement strategies and quantification of potential dollar amounts available

1 through each sources (along with assessment of barriers and development of strategies to  
2 overcome them), and Year 3 pilot efforts for procurement of any such viably identified  
3 sources. In this way, results from this research will be ready for incorporation into and  
4 implementation within the following three year planning period.

5

## 6 **EM & V Framework**

7

### 8 **Q. Why do you think the EM&V process needs to be strengthened?**

9 A. This section of my testimony addresses possible ways to further strengthen the proposed  
10 EM&V process in light of the greater demands posed by the implementation of the EERS.  
11 Given the fact that the EERS adopted targets will ramp up the volume of savings activities  
12 well beyond existing Core levels, the need for reliable and timely E M & V activities will  
13 become more critical in order to more accurately calculate and evaluate savings, assist in  
14 performing reliable benefit cost comparisons and ensuring that non-energy impacts (NEI) are  
15 rigorous and evidence based. In addition the level of verified savings will need to be as up to  
16 date as possible to meet the ISO-NE's FCM needs.

17 **Q. Please discuss the findings of the TecMarket team report submitted in June 2014, and**  
18 **contracted by the Commission to develop an energy efficiency program evaluation**  
19 **plan?**

20 A. The contents of the TecMarket<sup>20</sup> Six year Evaluation Plan for Core Energy Efficiency  
21 Programs included the following elements:

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<sup>20</sup> NHPUC; Six year Evaluation Plan for Core Energy Efficiency Programs: Final Report, Prepared for the New Hampshire Public Utilities Commission, Sept 15, 2014 , TecMarket Works.

1 (a) A statement of the specific objectives and priorities developed through research and  
2 analysis during the project that guided the development of the Monitoring and Evaluation  
3 (M&E) plan.

4 (b) A detailed description of evaluation projects and budgets for the 2015-2016 Core energy  
5 efficiency program implementation period, and

6 (c) The identification of specific evaluation projects and assigned priorities that can be  
7 completed by January 1, 2020.

8 Accordingly, the TecMarket evaluators recommended that impact evaluations of six of the so  
9 called CORE programs be undertaken during the 2015-2016 time period.<sup>21</sup> They included the  
10 following:

<b>Program</b>	<b>To be undertaken during 2015-2016</b>
Small Business Energy Solutions	Yes
Energy Star Appliances	Yes
Energy Star Lighting	Yes
Municipal	Yes
Home Energy Assistance	Yes
Home Performance with Energy Star	Yes

11  
12 Much effort has been devoted by the utilities, stakeholders and Staff to address the transition  
13 from Core to the EERS, however to date both Staff and Utility counterparts have been slow  
14 to respond to the guidance provided by the TecMarket consultant. Thus by 2017, no updated  
15 impact evaluation studies were conducted for the following: Small Business Energy

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<sup>21</sup> Ibid, Page 2, Table 1

1 Solutions Program; The Municipal Program, Energy Star Lighting, Energy Star Appliances  
2 Home Energy Assistance and Home Performance with Energy Star; however, an evaluation  
3 of the New Construction Homes Program will be completed by the end of 2017. ,  
4 Fortunately even with delays, FCM revenues are up 50% so funding has not been at risk as a  
5 result of the delays. Further Staff has recognized that the utilities have been incorporating  
6 savings cuts to program electric saving assumptions, i.e. 50% on ES Homes programs.

7 **Q. What have the utilities indicated as the proposed evaluation schedule?**

8 A. The utilities have indicated that once the proposed Evaluation Framework<sup>22</sup> is in place, they  
9 will develop a Strategic Evaluation Plan. (SEP). Accordingly the proposed SEP will be  
10 updated each year and will identify evaluation work currently in progress, the studies and  
11 assessments proposed to be initiated during the coming program year, changes from prior  
12 years and trends in evaluation or market that merit further review and consideration.  
13 Recognizing the rapid expansion in program activity under the EERS, the utilities indicate  
14 that evaluation priorities need to be established strategically. Referring to the above-  
15 mentioned TecMarket document, the utilities claim that the highest SEP priority is timely  
16 impact evaluations of all electricity and gas savings programs, which will serve to verify  
17 savings and meet the requirements of the ISO –NE FCM.  
18 The utilities have indicated that priority for impact evaluation will be drive not only by the  
19 length of time since the last evaluation but also by consideration of the relative size of  
20 program savings in the portfolio, the degree of innovation within the program and recent  
21 program changes that might affect savings.

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<sup>22</sup> NH Saves, Page 158

1 Recognizing the vital role of the parties, the utilities have therefore proposed a tentative  
 2 evaluation schedule. The following table <sup>23</sup> is a fragment of their proposed list of evaluation  
 3 activities.

<b>Evaluation of project</b>	<b>Priority</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>
RGGI Retail/Large Bus fuel blind	Required				
Small business and muni lighting impact	In process				
Consumer products process and impact evaluation	In process				
Home evaluations follow up( mkt transformation study)					
HPwES process and impact evaluation					
HEA process and impact evaluation					
C & I Non Lighting process and impact					

4  
 5 Of the project evaluations proposed, HPwES, HEA, and Consumer products appear to  
 6 overlap with the recommendations of the Staff consultant, and small business and municipal  
 7 lighting may overlap in part. More importantly the Consultant had recommended that these  
 8 evaluations should take place in the 2015/16 timeframe, whereas in fact we are now about to  
 9 commence 2018 and according to the utilities tentative evaluation schedule, the HPwES and  
 10 HEA evaluation will not be completed till the end of 2019 two years into the EERS program.

11 **Q. Why is the schedule critical?**

12 A. With the ramping up of the savings targets, it is vital to capture the most up to date  
 13 information about measure and portfolio savings levels, estimating future energy savings of  
 14 specific measures and behaviors and identifying ways to improve program delivery and  
 15 results as well as to be able to accurately measure benefit by program and measure to ensure  
 16 that the measures supported by the utilities are sound and in the ratepayers interests. In  
 17 addition the utilities are currently collecting lost based revenues and performance incentives

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<sup>23</sup>NH Saves, page 172



1 which are calculated based on estimated savings, and therefore it is crucial that these savings  
2 estimates be as accurate as possible.

3 The Utilities have proposed that they will first assist in the establishment of EM & V  
4 Framework which will then collectively develop a 2018-2020 Strategic Evaluation Plan.

5 **Q. What does Staff recommend?**

6 A. While Staff broadly supports such an approach, we believe that the urgent need for updated  
7 evaluations of critical programs should not delay the utilities from moving forward more  
8 aggressively with their evaluation schedule so as to be able to adjust deemed savings levels  
9 and amend benefit cost calculations as quickly as possible. Staff therefore recommends that  
10 the utilities amend and accelerate the tentative evaluation schedule proposed in the NH Saves  
11 report and do not delay with implementation until after the Evaluation Framework and  
12 Strategic Evaluation Plans are in place.

13 In addition to the outstanding program evaluation updates discussed above, the E M & V  
14 workgroup should address other urgent projects identified by TecMarket and listed below if  
15 budgets permit:

- 16 • Calculation of savings impact studies in support of lost revenues
- 17 • Market characterization studies
- 18 • NEI evidence based program analysis
- 19 • Development of the Technical Resource Manual
- 20 • Market assessment studies,
- 21 • Saturation studies,
- 22 • EM & V protocol development,
- 23 • Utility program database consistency, and

- 1           • Utility program database documentation

2           Additional topics that the EM & V workgroup may wish to identify and track key market  
3           indicators.

4           In order to achieve these objectives, Staff recommends making greater use of opportunities to  
5           share analyses across jurisdictions and leverage the capabilities of the Northeast Energy  
6           Efficiency Partnership (NEEP).

7

8           **Customer Engagement Platform.**

9

10          **Q. What are Staff's comments with respect to the Customer Engagement Platform?**

11          A. The Customer Engagement Platform (CEP)<sup>24</sup> is a software driven marketing and analysis tool  
12          designed to increase EE program participation and encourage continuous customer  
13          engagement and increase “the adoption of conservation activities” across Eversource’s  
14          operating companies. According to Eversource, the CEP is designed to do the following:  
15          generate actionable customer insights, personalize inbound customer interactions and  
16          personalize outbound communications.<sup>25</sup>

17          In its CEP presentation to the Commission Staff in March 2016,<sup>26</sup> the company indicated that  
18          once the customer completes their profile, Eversource can use the data to improve the  
19          customer experience and deepen engagement through analysis to identify roadblocks or  
20          levers to increase participation; identify latent needs to fill the product pipeline; identify

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<sup>24</sup> Eversource Customer Engagement Platform, Presentation to NHPUC Staff by Jeff Pollock and Geoff Phillips, dated March 18, 2016;  
<https://www.puc.nh.gov/EESE%20Board/Meetings/2016/031816Mtg/Eversource%20Customer%20Engagement%20Platform.pdf>

<sup>25</sup> Ibid, page 2

<sup>26</sup> Ibid.

1 barriers to adoption; targeting messaging to move customers to action; and analyze marketing  
 2 messages to drive continuous improvement. The presentation summed up the CEP with the  
 3 comment that the customer gets personalized recommendations, while Eversource gets  
 4 data.<sup>27</sup>

5 **Q. Why is Staff concerned about the CEP?**

6 A. Given that the CEP was rolled out in March 2016, Staff is concerned that given an  
 7 approximate Eversource customer base of 512,000, to date only 5465 overall customers  
 8 overall have logged on to the platform.  
 9 Additionally according to the Eversource presentation, using a digital marketing campaign in  
 10 Connecticut and Massachusetts, residential and small business usage increased from 20,000  
 11 in September to 100,000 in February of the following year. We have not observed similar  
 12 growth in NH.

13 **Q. What about the projected costs of the CEP?**

14 A. According to the NH Saves report, the CEP budget for the period 2018-2020 is as follows<sup>28</sup>:

	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2018-2020</b>
<b>Total \$'s</b>	593,000	616,720	641,389	1,851,109

15

16 In response to Staff data requests,<sup>29</sup> Eversource indicated that the budget is further  
 17 disaggregated as follows:

	<b>Item</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>
1	License fees	\$341,718	\$355,387	\$369,602
2	Information technology	\$150,980	\$157,020	\$163,300
3	Program management/Admin	\$73,906	\$76,863	\$79,937
4	Marketing	\$26,396	\$27,450	\$28,550
	<b>Total</b>	<b>\$593,000</b>	<b>\$616,720</b>	<b>\$641,388</b>

18

<sup>27</sup> Ibid, page 14

<sup>28</sup> Staff data response 1-032, received 10/23/17

<sup>29</sup> DE 17-136; Staff data response 1-011

1 In response to Staff data requests<sup>30</sup> the company further indicated that the budget breakdown  
2 between residential and business customers is proposed as follows:

<b>Total annual costs</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>
Residential	\$237,201	\$246,689	\$256,557
C & I	\$355,801	\$370,033	\$384,834
Total	\$593,000	\$616,720	\$641,389

3  
4 Finally, the company indicated that the total actual costs for the CEP for the years 2016 and  
5 2017 including the licensing fee were as follows:

Actual 2016	Actual 2017
\$531,156	\$507,297

6  
7 Note that an additional \$107, 221 was expended in 2015 during the development phase, but  
8 was not included since the program was not up and running. Staff determined that for the  
9 period 2018-2020 the costs were apportioned 40% for Residential and 60% for C & I.

10 Applying the same proportion to the 2016 and 2017 costs and the number of unique  
11 residential and C& I customers who have logged on to the CEP we can determine that the  
12 total cost for the period on the residential side when the CEP was up and running and all  
13 licensing costs were included was \$415,380/5271 or \$72.60 per customer.

14 Replicating the calculation for the C & I side we find that the total cost per customer for  
15 2016-2017 was \$623,071/194 or \$3,211.00 for each C& I customer who logged onto the  
16 CEP.

17 Staff would like to draw attention to a number of concerns:

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<sup>30</sup> DE 17-136; Ibid

1 (a) Over the past two years the number of customers logging into the system is quite low,  
2 given the above mentioned costs and the total number of customers in NH's Eversource  
3 service territory.

4 (b) It appears that absent significant increases in customer uptake, the increasing costs of the  
5 CEP from 2018-2020 will further increase the per customer costs.

6 (c) Staff notes that a digital marketing campaign<sup>31</sup> is scheduled for the 4<sup>th</sup> quarter of 2017  
7 and believes that based on the increase in customer adoption in Connecticut and  
8 Massachusetts the cost per customer will decrease.

9 (d) Staff has noted that the utilities plan, beginning in 2018, to increase their understanding  
10 of New Hampshire customer behavior to inform specific marketing campaign  
11 strategies<sup>32</sup>. Staff applauds these marketing efforts but wonders whether absent a deeper  
12 and more segmented understanding of its customers and their needs, whether the roll out  
13 of the CEP may have been premature.

14 (e) Finally, Staff has attempted to access the CEP from 10/23-1025 without success  
15 suggesting that some hurdles may still need to be overcome.

16  
17 **Q. What is the Staff recommendation for the Eversource CEP?**

18 A. Staff recommends that Eversource formally announce when the digital marketing program  
19 will commence. Staff and stakeholders will observe the take up rate for new customers for  
20 the CEP platform over the subsequent six months and absent a significant increase in  
21 customers logging into the CEP, (i.e. a fivefold increase) with a correlated increase in EE  
22 program participation, Staff will examine the continued marginal utility of the program for

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<sup>31</sup> DE 17-138, Staff data response 1-011

<sup>32</sup> NH Saves, Page 39

1 ratepayers and whether a greater portion of the costs should be absorbed by the company  
2 shareholders, in light of the fact that the platform at present is a data gathering tool for  
3 Eversource. Staff would then submit its recommendations prior to the annual program  
4 update.

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