

**STATE OF NEW HAMPSHIRE**  
**BEFORE THE**  
**PUBLIC UTILITIES COMMISSION**

**DE 12-262**

**2013-2014 CORE Electric Energy Efficiency Programs**

**and**

**Natural Gas Energy Efficiency Programs**

**DIRECT TESTIMONY**

**OF**

**JAMES J. CUNNINGHAM, JR. and LESZEK STACHOW**

**Date: November 1, 2013**

## Table of Contents

<b>Description</b>	<b>Page</b>
I. Introduction and Purpose of Testimony	3
II. Comments on Proposed Changes	4
A. Funding	4
B. Proposed Changes to Existing Programs	5
C. Planned Savings and Cost-Effectiveness	7
D. New RGGI-Funded Municipal Program	12
E. Pilot Programs – New and Previously Approved	14
F. Recommended Pilot Methodology	19
G. Performance Incentives	21
III. Conclusions and Recommendations	21

## **I. Introduction and Purpose of Testimony**

**Q. Please state your names, current positions and business address.**

A. Our names are James J. Cunningham, Jr. and Leszek Stachow and we are employed by the New Hampshire Public Utilities Commission (Commission) as Utility Analysts. Our business address is 21 S. Fruit Street, Suite 10, Concord New Hampshire, 03301.

**Q. What is the purpose of your joint testimony?**

A. Our testimony addresses the proposed changes for the 2014 Core electric and gas energy efficiency programs and provides recommendations for Commission consideration.

**Q. Please summarize your educational and professional background.**

A. Our educational and professional background is summarized in Appendix A.

**Q. What is the purpose of your testimony?**

A. Our testimony provides comments and recommendations on the 2014 Update of electric and gas energy efficiency programs filed on September 13, 2013. We review funding changes, including recent legislative changes pertaining to RGGI funding. In addition, we review proposed changes to existing programs including spending caps on the HEA program, prescriptive rebates for the Mini-Split Heat Pump measure, and proposed changes to the funding level for Until's C&I On-Bill financing program. Also, we provide a limited review of planned savings and cost effectiveness. Our testimony provides comments on the new Municipal program. In addition, our testimony reviews six new and existing Pilot programs, along with a suggested methodology to streamline the process of initiating and implementing pilots in the future. Finally, our testimony provides a recommendation to form a working group to review the performance incentive

(PI) formula for gas companies since the performance incentive (PI) formula for the gas companies has not been reviewed since December 2002.

## **II. Comments on Proposed Changes**

### **II. A. Funding**

**Q. Please provide your comments on the proposed funding for program year 2014.**

A. The electric utilities are proposing funding of \$28,238,227 for their 2014 Core energy efficiency programs and the gas utilities are proposing funding of \$7,084,904 for their energy efficiency programs.

The sources of funding for the Core electric energy efficiency programs are a portion of the System Benefit Charge (SBC\$),<sup>1</sup> a portion of the Regional Greenhouse Gas Initiative (RGGI\$) auction proceeds;<sup>2</sup> and, proceeds from the NH Electric Utilities ISO-NE's Forward Capacity Market (FCM\$). In addition, any unspent monies from prior program years<sup>3</sup> are carried forward to future years, with interest applied.

Funding for gas energy efficiency programs is provided by a portion of the Local Distribution Adjustment Charge (LDAC) mechanism. In addition, any unspent monies from prior program years are carried forward to future years.<sup>4</sup>

**Q. You indicate above that one of the funding sources is RGGI. Please summarize the recent changes in funding pertaining to RGGI.**

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<sup>1</sup> The overall System Benefit Charges (SBC) charge is \$0.0033 per kWh. The Energy Efficiency (EE) portion is \$0.0018 per kWh and the Energy Assistance Program (EAP) portion is \$0.0015 per kWh.

<sup>2</sup> Revenues from the sale of RGGI allowances are divided in two parts: revenues of \$1 per allowance, net of administrative expenses, are allocated to the Core energy efficiency programs; revenues that are above \$1 per allowance are refunded to customers.

<sup>3</sup> Reference Filing at page 2 for the estimated amount of unspent funds for electric utilities at December 31, 2013 (\$434,400). This estimate is net of PSNH's request to transfer \$900,000 in 2012 carryover funds to the Smart Start Revolving Loan and \$190,000 to the Residential energy Efficiency Revolving Loan Fund during program year 2013. On October 28, 2013, the Commission approved the transfer.

<sup>4</sup> According to the filing (p. 3) the gas utilities estimate that there will be no unspent funds at December 31, 2013.

A. With respect to RGGI funds, the filing includes funding pursuant to two bills that have been signed into law recently – one in 2013 (HB 1490) and another in 2014 (HB 306). These laws established, in part, an energy efficiency fund (EEF) and allocated a portion of this fund to electric distribution companies for Core energy efficiency programs that are otherwise funded by the System Benefit Charge (SBC) funds. Based on the provisions of these laws, Staff has estimated that an additional \$5,769,007, net of administrative expenses, will be available for Core electric energy efficiency programs in 2014. This amount includes: (1) carryover of 2012 unencumbered RGGI funds of \$2,257,647, net of performance incentives pursuant to Commission Order No. 25,425, and net of administrative costs for fiscal year ended June 2013, (2) estimated RGGI auction proceeds that are in excess of Commission approved spending for 2013 of \$772,349, and (3) estimated 2014 RGGI auction proceeds of \$2,739,011, net of administrative costs for July-December 2014).

## **II.B. Proposed Changes to Existing Programs**

### **Q. What changes are proposed to existing programs?**

A. Changes are proposed for several existing programs. They include changes to the HEA program, a change to rebates for the mini-split heat pumps which are included in the Energy Star® Appliance Program, and changes in funding for the C&I on-bill financing program.

The new Municipal program and several new and previously approved Pilot programs are discussed separately below.

### **Q. Please describe the proposed changes to the HEA program and provide Staff's recommendation.**

A. The electric utilities are requesting that the Commission retain changes that it authorized in Order No. 25,554 as follows:

- Increase the spending cap per household from \$5,000 to \$8,000
- Allow for expenditures above the \$8,000 cap for replacement of space heating equipment and combined space/water heating equipment
- Strive to limit the amount of funds spent on space and combined space/water heating equipment to 25 percent of each NH Electric Utility's HEA program annual budget to ensure that most of the funds are used for weatherization services

These requests are sought because the amount of money that will be received from the Department of Energy (DOE) - Weatherization Assistance Program (WAP) is expected to be lower compared to historic levels. Approximately \$1,186,108 is expected for the fiscal year ending March 31, 2014 and the level of funding for the following fiscal year has not yet been determined and is not expected to be received until the fall of 2014.

Given the limited funding from DOE-WAP and the gap in timing of receipt of the funds of six months of more, the electric utilities propose to retain the changes as temporarily approved in Order No. 25,554 through the end of program year 2014.

Staff supports the proposed changes to the HEA program, and recommends that the Commission approve them.

**Q. Are there any changes to rebates that are proposed for program year 2014?**

A. Yes, electric utilities are proposing to reduce rebates for the ductless mini-split heat pumps in 2014 to bring them in line with standard practice in other northeast states. Incentives are reduced from \$900 to \$500 and \$450 to \$300 (depending on the efficiency of the equipment), respectively.<sup>5</sup> The changes are proposed in order to reflect the reduced incremental cost the utilities are experiencing in the field.

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<sup>5</sup> Reference Filing at page 6.

Staff supports these rebate changes and recommends that the Commission approve them.

**Q. Unitil proposes to transfer \$50,000 from its C&I On-Bill Financing program to other C&I programs. What is your recommendation?**

A. The current balance of funds in the C&I On-Bill Financing program, as of September 30, 2013 is approximately \$206,000.<sup>6</sup> The proposed transfer of \$50,000 will reduce the balance to approximately \$156,000.<sup>7</sup> Approximately \$40,000 is planned for two loans that will reduce the balance to \$116,000.<sup>8</sup> Although Unitil has identified several other customers as candidates for loans, these customers have not yet confirmed that they will take advantage of the loans in 2013 or 2014. Therefore, according to the filing, Unitil believes that, if the Commission approves the transfer of \$50,000, there will remain a sufficient balance for its commercial and industrial customers during 2014.<sup>9</sup> In addition to the above, Unitil indicates that this transfer will assist in the re-allocation of budget monies to accommodate the new Municipal program.<sup>10</sup>

Based on the above, Staff supports the transfer of funds from the C&I On-Bill Financing program and recommends that the Commission approve the transfer.

**II.C. Planned Savings and Cost-Effectiveness**

**Q. Please provide your comments on the planned savings for the Core electric programs.**

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<sup>6</sup> Reference Appendix B, Staff 2-30.

<sup>7</sup> Reference Appendix B, Staff 2-31, excluding repayments.

<sup>8</sup> Reference Appendix B, Staff 2-30, Staff 2-31, Staff 2-32.

<sup>9</sup> Reference Filing at page 12.

<sup>10</sup> Other monies proposed to be re-allocated to the Municipal program are as follows: approximately \$30,000 from the Small C&I program and approximately \$130,000 from the Large C&I program. Reference Appendix B, Staff 2-32.

A. Based on our limited review, we believe that the planned savings and costs to achieve the savings for 2014 are reasonable, subject to certain anomalies that need to be explored further. We provide the following comments to support our conclusion:

Savings Assumptions: The filing provides a 2012 actual<sup>11</sup> benchmark for purposes of comparing actual annual kWh savings per unit in 2012 with planned savings in 2014. For instance, using PSNH residential data to illustrate, the fuel neutral HPwES program shows actual annual kWh savings per unit for an electrically heated home in 2012 of 6,020.2 kWh, as compared to 2014 planned savings of 6,552.2 kWh,<sup>12</sup> an increase of 532.2 kWh, an increase of 9 percent. However, the filing indicates anomalies that need to be further explored. For instance, using PSNH data to illustrate, the Large Business Solutions Program, New Equipment Tract, for cooling measures, shows actual annual kWh savings per unit in 2012 of 15,502 kWh, as compared to 2014 planned savings of 29,101 kWh,<sup>13</sup> an increase of 13,599, an increase of 88 percent.

Overall Planned Lifetime Savings (kWh): The filing provides overall planned lifetime savings for 2014<sup>14</sup> and we compared them to actual lifetime savings achieved in 2012, the most recent year for which actual data is available.<sup>15</sup> In 2014, the overall planned lifetime savings for all electric programs is 630,230,682 kWh, as compared to 2012 reported lifetime savings of 714,885,650 kWh, a reduction of 84,654,968 kWh, or 12

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<sup>11</sup> “Actual” refers to the column title “Actual” as shown in the attachments to the filing, starting at page 64. For instance, actual savings assumptions are the assumptions used to calculate savings in year 2012.

<sup>12</sup> Reference Filing at page 88.

<sup>13</sup> Reference Filing at page 92.

<sup>14</sup> Reference Filing at page 110.

<sup>15</sup> Reference Commission website for electric Core program [actual 2012 results](#)

[http://www.puc.nh.gov/Electric/NH%20EnergyEfficiencyPrograms/10-188/1\\_NH%20Core%20EE%20Quarterly%20Report,%20Jan%201%20-%20Dec%2031,%202012.pdf](http://www.puc.nh.gov/Electric/NH%20EnergyEfficiencyPrograms/10-188/1_NH%20Core%20EE%20Quarterly%20Report,%20Jan%201%20-%20Dec%2031,%202012.pdf) and [gas Core program actual 2012 results](#)

[http://www.puc.nh.gov/Gas-Steam/GasEnergyEfficiencyPrograms/10-188/1G\\_NH%20Gas%20EE%20Quarterly%20Report,%20Jan%201%20-%20Dec%2031,%202012.pdf](http://www.puc.nh.gov/Gas-Steam/GasEnergyEfficiencyPrograms/10-188/1G_NH%20Gas%20EE%20Quarterly%20Report,%20Jan%201%20-%20Dec%2031,%202012.pdf)



percent. Staff believes that the reduction reflects the build-out in the fuel-neutral program. That is, of the total planned lifetime savings, the percentage that pertains to electric savings for 2014 is 60 percent for PSNH,<sup>16</sup> 58 percent for Liberty<sup>17</sup>; 59 percent for NHEC,<sup>18</sup> and 59 percent for Unitil.<sup>19</sup> Although electric savings still account for the majority of energy savings, clearly fossil savings represent a significant share. We believe these savings projections represent reasonable estimates, consistent with Commission approved fuel-neutral program designs.

Cost per kWh: In 2014, the electric companies' cost per kWh to achieve planned lifetime savings is \$0.042 per kWh, as compared to the actual 2012 cost per kWh of \$0.026 per kWh, an increase of \$0.016, a 62 percent increase. Staff believes the increase reflects the build-out in the fuel-neutral program. For instance, the cost per kWh to achieve planned lifetime savings for the Home Performance with Energy Star® (HPwES) program is \$0.67 per kWh in 2014, as compared to \$0.11 per kWh in 2012, an increase of \$0.56 per kWh, a 509 percent increase.

**Q. Please provide comments on the planned savings for the Core gas programs.**

A. Based on our limited review, Staff believes that the planned savings for program year 2014 and costs to achieve these savings are reasonable, subject to certain anomalies that need to be further explored. We provide the following comments to support our conclusion:

Savings Assumptions: The filing provides 2012 actual benchmarks for purposes of comparing annual MMBtu savings per unit assumptions in 2012 with planned savings

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<sup>16</sup> Reference Filing at page 44.

<sup>17</sup> Reference Filing at page 31.

<sup>18</sup> Reference Filing at page 39.

<sup>19</sup> Reference Filing at page 49.

assumptions in 2014. For instance, using Liberty-Gas residential data to illustrate, the EnergyStar® Homes program shows 2014 actual annual MMBtu savings per unit of 27.2 MMBtu, as compared to 2012 planned savings of 27.2 MMBtu.<sup>20</sup> However, the filing indicates anomalies that need to be further explored. For instance, for Liberty-Gas, the HPwEStar® program shows 2014 actual annual MMBtu savings per unit of 32.9 MMBtu, as compared to 2012 planned savings of 314.1 MMBtu, an increase of 18.8 MMBtu, a 133 percent increase.<sup>21</sup>

With respect to C&I programs, Liberty-Gas Small Business Energy Solutions program for the high efficiency furnace measures show actual annual MMBtu savings per unit of 18 MMBtu in 2012, as compared to 2014 planned savings of 18 MMBtu.<sup>22</sup> However, the filing indicates anomalies that need to be further explored. For instance, the Liberty-Gas Large Business Energy Solutions Program, Large Business Retrofit measure, shows actual annual MMBtu savings per unit of 319.0 MMBtu, as compared to 2014 planned savings of 3,041.4 MMBtu.<sup>23</sup>

Overall Planned Lifetime Savings (MMBtu): The filing provides overall planned lifetime savings for 2014<sup>24</sup> and we compare this to actual lifetime savings achieved in 2012, the most recent year for which actual data is available. In 2014, the overall planned lifetime MMBtu savings for all gas programs is 2,289,002 MMBtu, as compared to 2012 reported lifetime savings of 2,428,533 MMBtu, a decrease of 139,531 MMBtu, or approximately 5.7 percent. The residential and C&I sectors each show lower MMBtu savings in 2014 than in 2012. However, the filing indicates anomalies that need to be further explored.

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<sup>20</sup> Reference Filing at page 74.

<sup>21</sup> Reference Filing at page 73.

<sup>22</sup> Reference Filing at page 77.

<sup>23</sup> Reference Filing at page 76.

<sup>24</sup> Reference Filing at page 110.

For instance, for the Energy Star® Appliance program, the filing shows planned lifetime MMBtu savings for 2014 for the Energy Star® Appliance program of 191,651 MMBtu, as compared to 2012 reported lifetime savings of 435,238 MMBtu, a decrease of 243,587 MMBtu, or 56 percent.

Cost per MMBtu: In 2014, the gas companies' overall cost per MMBtu to achieve planned lifetime MMBtu savings is \$2.86 per MMBtu, as compared to \$3.01 per MMBtu in 2012, a reduction of \$0.15 per MMBtu, or approximately 5 percent. This reduction in cost per MMBtu is driven by a reduction in overall spending from \$7,319,773 in 2012 to \$6,651,270, a reduction of \$768,503, or approximately 10 percent.

**Q. Please provide your comments on the cost effectiveness for the Core electric programs.**

A. The filing contains several instances of programs that are only marginally cost effective, i.e., at or slightly above 1.0 benefit/cost (B/C) ratio. Staff addressed these instances with the utilities and we believe they have adequately explained the reasons. For instance, Unitil-Electric shows a 1.0 B/C ratio for its Energy Star® Lighting program. Unitil advised that the program has been trending toward a greater share of LED and LED fixture rebates and a smaller share of CFLs.<sup>25</sup> NHEC's Home Energy Assistance (HEA) program is only slightly above the 1.0 B/C ratio (i.e. 1.04).<sup>26</sup> NHEC advised that one of the contributing factors of the 1.04 B/C ratio is that a large percentage of the homes weatherized are expected to be heated with oil; and, the avoided cost of oil is 9 percent lower than it was in 2013.<sup>27</sup> PSNH's Customer Engagement Pilot (CEP Pilot) shows a

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<sup>25</sup> Reference Appendix B, Staff 2-38.

<sup>26</sup> Reference Filing at page 39.

<sup>27</sup> Reference Appendix B, Staff 2-36.

B/C ratio of 0.56,<sup>28</sup> well below 1.0. That's because the program year costs in 2014 are significant, reflecting the impact of program implementation and evaluation (\$226,830) while savings in 2014 are only for a partial year. However, if the CEP Pilot is fully implemented, PSNH anticipates that B/C ratio to be greater than 1.0 due to overall lower costs and higher kWh savings.<sup>29</sup> Unitil-Gas shows a 1.0 B/C ratio for its Energy Star® Homes program and Energy Star® Appliance program.<sup>30</sup> Unitil stated that these programs were designed in order to remain cost effective at a 1.0 B/C ratio, noting that total resource cost has increased and the estimated avoided cost of gas has decreased.<sup>31</sup>

**Q. Please provide your comments on the cost effectiveness for the Core gas programs.**

A. The filing indicates that all the Core gas programs are cost effective, with B/C ratios of 1.0 or greater.

**II.D. New RGGI-Funded Municipal Program**

**Q. Have you reviewed the New RGGI-Funded Municipal Program?**

A. Yes. We have reviewed the program and we recommend that the Commission approve it. We offer the following comments in support of our recommendation.

*Background:* On July 24, 2013, Senate Bill 123 (SB 123) was signed into law. This bill amended RSA 125-O:23, II-III (Multiple Pollutant Reduction Program) effective January 1, 2014. The proposed electric energy efficiency expenditures for 2014 include this new municipal program. The utilities are allocating \$2,000,000 per year out of the RGGI proceeds to be used by municipal and local governments for energy efficiency including

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<sup>28</sup> Reference Filing at page 44.

<sup>29</sup> Reference Appendix B, Staff 2-37.

<sup>30</sup> Reference Filing at page 63.

<sup>31</sup> Reference Appendix B, Staff 2-23 and Staff 2-24.

municipalities which are served by municipal utilities. The filing, at pages 9-11, describes the program.

Savings and Cost-Effectiveness: The program provides planned savings of 59,745,222 kWh. The cost per kWh to achieve the planned savings is \$0.033 per kWh (i.e., \$2,000,000 divided by 59,745,222 kWh). The program is cost-effective, with a B/C ratio of 2.09.<sup>32</sup>

Program Design: According to the filing, the new municipal program is available to all municipal and local government customers of the NH electric utilities. The utilities are working closely with the municipalities, focusing on direct outreach to municipal customers to inform them about the program and how to participate. They are soliciting feedback from several municipalities of differing sizes throughout New Hampshire. In addition, they have solicited feedback from the NH Energy Efficiency and Sustainable Energy (EESE) Board and the NH Local Energy Working Group. Based on the feedback received, the electric utilities are proposing a program that contains the following elements:

- Provides technical assistance based on individual needs
- Addresses unique challenges that municipal customers face
- Targets new construction projects and retrofit projects
- Provides service to municipal customers from the utilities' account representatives who will explore efficiency opportunities with municipal representatives and guide them through the participation process

Program success will be defined by attaining the planned participation and energy savings goals, as well as, customer satisfaction with the program. Program evaluation will help shape any program changes needed over time to address market barriers.

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<sup>32</sup> Reference Filing at page 61.

## **II.E. Pilot Programs – New and Previously Approved**

### **Q. What new pilot programs are proposed for 2014?**

A. There are two new pilot programs proposed for 2014. They are:

- Home Energy Report (HER Pilot)
- Third Party Financing Pilot

*HER Pilot:* This pilot is designed to engage residential customers into a long term conversation about how they can save energy and money on their utility bills. The program would be similar to PSNH's existing Customer Engagement Pilot (CEP Pilot); however, the program will be tailored exclusively for gas customers with a focus on the heating season. The purpose of the CEP Pilot would be to provide customers with personalized information regarding their gas usage, comparative energy use information, tips to save energy, and opportunities to participate in other energy efficiency programs. Liberty Utilities-Gas proposes a budget of \$158,500 for 2014-2015 for a new Pilot – i.e., the HER Pilot.<sup>33</sup> Staff believes that certain aspects of this HER Pilot need to be clarified. The budget for the pilot is \$158,500 for both 2014 and 2015 program years. Although the filing indicates that the program is similar to PSNH's program, the filing is not clear about whether the budget provides for costs associated with an independent program evaluator to perform an evaluation requirements review soon after the program implementation kick-off. We believe that, similar to PSNH's CEP Pilot, the gas utility HER Pilot should provide for such evaluation services in order to ensure that the necessary data is collected and is readily available to the evaluation vendor upon the close of the Pilot program and to verify that samples chosen by the vendor are

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<sup>33</sup> For further information pertaining to Liberty-Gas' HER program, please refer to Appendix B, Staff 2-17, Staff 2-18, Staff 2-19 and Staff 2-20.

representative of Liberty-Gas' residential customer population.<sup>34</sup> Upon the close of the Pilot program, the independent evaluation vendor would then be able to verify the gas MMBtu savings, the change in participation levels in Liberty-Gas' other energy efficiency programs and evaluate the participant's overall satisfaction with the pilot program.

Staff recommends that, before approval, the HER Pilot budget should be clarified as to whether or not the budget includes an independent evaluation vendor and, if so, whether the proposed budget is sufficient to cover the cost of such evaluation. If Liberty can provide this information in a timely fashion, Staff will be happy to review it. Staff suggests this information be provided no later than November 18, 2013. That will allow Staff and parties sufficient time to review the information prior to the Settlement Conference.

*Third-Party Financing Pilot:* This pilot is designed to provide low interest third party financing to support residential customers' participation in the Core energy efficiency programs. The primary goal of this Pilot is to determine if lenders are interested in offering unsecured energy efficiency loans to customers and providing the administrative infrastructure for such financing. The gas utilities propose a budget of \$49,000<sup>35</sup> for a new Third Party Financing Pilot. The budget for Liberty-Gas is \$35,000 and the budget for Unutil-Gas budget is \$14,000.<sup>36</sup> Staff believes there are a number of issues that need to be explored more fully: (1) information to support the market barrier to be overcome (i.e., lack of cash up front), (2) whether rebates should be adjusted in light of the buy-

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<sup>34</sup> PSNH's CEP Pilot contains this provision (ref. Filing at page 16).

<sup>35</sup> Reference Appendix B, Staff 2-15.

<sup>36</sup> Reference Filing at page 62. Also, for additional information, reference Appendix B-3, Technical Session Data Request, Staff TS-003, Third-Party Financing Process Flow Chart.

down of the interest rate, (3) whether the gas utilities should receive an up-front performance incentive rather than an incentive when the loan is repaid (the latter is the case for on-bill financing), (4) what the target market is (i.e., gas heating customers only or fuel-neutral heating households). Staff believes that these issues and any other issues the parties might raise can be further explored in the context of our Quarterly Core Team meetings. Based on the above, Staff believes that it is better to consider this Third Party Financing Pilot in the next Core filing after these issues are resolved. Staff recommends that the Commission delay consideration of this Pilot until additional information is provided and allow the gas utilities to suggest this Pilot in the future.

**Q. What changes are proposed for previously approved pilots?**

A. The filing contains four previously approved Pilots as follows:

- Residential Wi-Fi Thermostat (Wi-Fi Pilot) for the gas utilities
- Early Boiler Replacement (EBR Pilot) for Liberty–Gas
- C&I Combined Heat and Power (CHP Pilot) for Unutil-Gas<sup>37</sup>
- PSNH’s Customer Engagement (CEP Pilot)

The status of each of these Pilots is as follows:

Wi-Fi Thermostat Pilot: The Wi-Fi Pilot measure is designed to save energy by replacing existing programmable thermostats with new Wi-Fi enabled programmable thermostats.

This pilot was approved as a pilot for program year 2013 for gas utilities and now it is being proposed for full scale implementation with associated incentive in 2014 for both gas companies and electric companies. The Wi-Fi measure will be added to the list of Energy Star ® Hot Water and Heating System measures. The budget for 2014 is

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<sup>37</sup> Reference Docket DE 12-262, Order No. 25,462, February 1, 2013. For added information, see 2013-2014 Core NH Energy Efficiency Programs, Revised December 14, 2012: Wi-Fi Pilot and EBR Pilot on page 32, and the CHP Pilot on page 58.



\$28,600, \$21,600 for the gas companies and \$7,000 for the electric utilities.<sup>38</sup> The pilot was completed in 2013 and the evaluation was performed by Cadmus Group (Cadmus) and filed with the Commission on August 21, 2013. The evaluation report is available on the Commission’s website.<sup>39</sup> According to Cadmus, the Wi-Fi measure is cost effective. The B/C ratio is 3.3.<sup>40</sup> The primary goal of the pilot was to evaluate savings associated with these installations and to assess customer motivation and satisfaction.<sup>41</sup> The Cadmus analysis shows average savings of 8 percent, or 69 therms (as compared to a benchmark programmable thermostat); and, the Cadmus analysis shows that 88 percent of the participants rated the thermostat installation to be either “Very Easy” or “Easy” or “Neutral”. The proposed rebate for the Wi-Fi measure is \$100, approximately 50% of the retail cost and consistent with the expectations of survey respondents as shown in the Cadmus report.<sup>42</sup>

Staff recommends that the Commission approve the proposal to add the Wi-Fi Pilot measure to the ENERGY STAR® Appliance program in 2014. However, Staff also recommends that before full implementation, the utilities assess any potential security risks and recommend that Wi-Fi/smart home users have a secure firewall to their home network as an extra layer of protection.

Early Boiler Replacement (EBR Pilot): Liberty Utilities-Gas is proposing to add this EBR Pilot measure to its ENERGYSTAR® Appliance program. Liberty-Gas is

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<sup>38</sup> Reference Appendix B, Staff 2-11.

<sup>39</sup> Reference Appendix B, Staff 2-8. A copy of the [Cadmus Report on Wi-Fi](#) can be found on the Commission’s website.

<http://www.puc.nh.gov/Electric/Monitoring%20and%20Evaluation%20Reports/DE%2012-262%202013-08-21%20Wi-Fi%20Thermostat%20Pilot%20Program%20Evaluation%20Report.pdf>

<sup>40</sup> Reference Appendix, Staff 2-12.

<sup>41</sup> Reference 2013-2014 Core Program, revised December 14, 2012, page 32.

<sup>42</sup> Reference Appendix B, Staff 2-9.

proposing to offer the EBR Pilot to 20 customers and has a proposed program budget of \$55,600 with a proposed \$3,000 rebate.<sup>43</sup> In response to technical session questions, Liberty-Gas provided a process flow chart and EBR Rebate Form describing program delivery.<sup>44</sup> According to discovery, Liberty-Gas indicates that, in Massachusetts, the EBR Pilot is cost effective.<sup>45</sup> Liberty-Gas is not planning to perform an evaluation.<sup>46</sup> Although Staff believes that the EBR measure has merit, the proposal to move beyond pilot-status is premature. We believe that the Pilot should first be completed and then an evaluation should be performed and provided to the Commission.

Based on the above, we recommend postponement of adding the EBR measure to the ENERGY STAR® programs until after the evaluation is performed and provided to the Commission.

Combined Heat and Power (CHP Pilot): According to the filing, the CHP Pilot is ongoing. Unitil plans to conduct an evaluation that spans at least the larger part of a heating season; therefore, the evaluation may not be concluded until 2015. In discovery, Unitil indicated that its Large C&I budget includes \$100,000 for the CHP Pilot in 2014; and, that it intends to spend all of its budget and meet its planned savings kWh target in 2014. Staff supports Unitil's continuation of the CHP Pilot in 2014.

Residential Customer Engagement Pilot (CEP Pilot): According to the filing, Opower was the selected vendor. The initial project implementation date was forecasted to be in January 2013. Due to more extensive reviews, Opower was not selected until March

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<sup>43</sup> Reference Appendix B, Staff 2-2 and Filing at page 6 for rebate amount, Staff 2-5 for budget and participation.

<sup>44</sup> Reference Appendix B, B-2, Technical Session Data Requests, Staff TS-001, EBR Process Flow Chart, and Staff TS-002, EBR Rebate Form.

<sup>45</sup> Reference Appendix B, Staff 2-6, cost effectiveness is per the Massachusetts Technical Reference Manual 2013-2015 Version.

<sup>46</sup> Reference Appendix B, Staff 2-1.

2013. Several measures of success for the CEP Pilot were identified: change in electric kWh consumption, change in participation levels in PSNH's other energy efficiency programs and overall participant customer satisfaction with the pilot program. In May 2013, Navigant Consulting was awarded the evaluation contract to ensure that the necessary data was collected to do the evaluation upon close of the Pilot. The program launch date is now scheduled to occur in October 2013 and the program is anticipated to conclude in September 2014 with the final evaluation report from Opower completed in October 2014 and Navigant Consulting's independent program evaluation completed in November 2014.<sup>47</sup>

Staff supports PSNH's plans and budgets for continuation of the CEP Pilot in 2014 and we recommend that the Commission approve it.

#### **II.F. Recommended Pilot Methodology**

**Q. Do you have any overall comments on the pilot programs?**

A. Yes, while we believe pilot programs can provide valuable information, we believe they should be explored in the Quarterly Core Team meetings, prior to being incorporated in the multi-year filings. By exploring potential pilots in the Quarterly Core Team meetings, we believe the process would be more transparent, allowing all the parties to participate and exchange ideas that could improve the design of the pilots. Further, by exploring potential pilots in the Quarterly Core Team meetings would allow more time to ensure that the final product is "polished" and ready for review by the Commission in the context of the proposed multi-year filings, rather than in the mid-cycle update filings.

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<sup>47</sup> Reference Filing at page 16. Also, the proposed budget for CHP budget is part of the larger C&I program budget.

**Q. There are six different pilots in various stages of completion. Given the volume of pilots, do you have any suggestions as to a template that could be used for designing pilots?**

A. Staff believes that the development and implementation of pilots is important and, to further encourage pilot initiatives, Staff suggests some standardization of the pilot process. Staff recommends a methodology similar to the one used for the Wi-Fi Pilot and the CEP Pilot including the following:

- Define what is meant by success up front
- Identify the metrics to measure success up front
- Provide for an evaluation of the Pilot before implementation

*Define what is meant by success up front:* The measure of success should be clearly defined and measurable.

*Identify the metrics to measure success up front:* The metrics to measure success should be identified up front in order to ensure that the necessary data is collected and is readily available to the evaluation vendor upon close of the pilot program. A process flow diagram should be provided to identify all inputs and outputs from the process and all responsible parties and all associated document flows.

*Provide for an evaluation of the Pilot before implementation:* Upon close of the pilot, the pilot vendor should evaluate the data and the evaluation vendor should complete the independent program evaluation.

Staff suggests that these three components be discussed at the Quarterly Core Team meetings. Staff believes this would improve the transparency of the pilot process since it would allow for more feedback from the parties and Staff regarding the “pros” and “cons” before pilots are included in filings.

## **II.G. Performance Incentives**

**Q. Do the gas utilities use the same formula for performance incentive (PI) as electric utilities?**

A. For the most part, gas and electric utilities use the same formula with some minor differences. In Order No. 25,569, dated September 6, 2013, the Commission approved a change in the performance incentive (PI) formula for the electric utilities beginning with the 2014 program year. This action updated the electric utilities' PI formula from what had been previously approved in Order No. DR 96-150 dated November 1, 2000. By comparison, the Commission has not updated the gas utilities PI formula; that formula has been in existence since it was initially approved in Order No. 24,109, dated December 31, 2002. Similar to what the Commission did for the electric performance incentive, Staff recommends that the Commission direct the Core Team to form a working group to review the PI formula for the gas utilities and to provide a proposal to the Commission for its review by June 30, 2014. Staff is not recommending any changes to the PI formula for the gas utilities for program year 2014.

## **III. Conclusions and Recommendations**

**Q. Please summarize your conclusions and recommendations.**

A. Following is a summary of our conclusions and recommendations.

Funding: RGGI funding, pursuant to HB 1490 and HB 306, are incorporated in the 2014 filing. Based on the provisions of these laws, Staff has estimated that an additional \$5,769,007, net of administrative expenses, will be available for Core electric energy efficiency programs in 2014. The instant filing includes these funds.

Changes to Existing Programs: Staff supports the proposed changes for the HEA program – i.e., an increase in the cap from \$5,000 to \$8,000, an allowance for expenditures above \$8,000 cap for replacement of space heating equipment and the related efforts to strive to limit space/water heating equipment to 25% of each electric utility’s HEA program annual budget to ensure that most of the funds are used for weatherization services. Also, Staff supports the electric utilities’ proposed reduction in rebates for mini-split heat pumps; and, the Unutil’s proposed transfer of funds from its C&I on-bill financing program to other C&I programs.

Planned Savings and Cost Effectiveness: We believe that the planned savings and cost-effectiveness for the electric and gas energy efficiency programs are reasonable, subject to several anomalies that we illustrated earlier in our testimony that need to be further explored.

New RGGI-Funded Municipal Program: We believe that the program is still developing but is well designed and enables the utilities to gain insights and experience that can be utilized in 2014 and subsequent years to implement municipal energy efficiency programs. The proposed program, as noted in the filing, addresses unique challenges faced by municipal customers while at the same time makes municipal customers more aware of potential energy efficiency savings opportunities. We believe that the proposed marketing plan that focuses on direct outreach to municipal customers is a particularly valuable feature. We recommend that the Commission approve the new Municipal program.

Status of Prior Approved Pilot Programs: There are four previously approved Pilots. We support the proposed transition of the Wi-Fi Pilot to full implementation and the

continuation of the work of the CHP Pilot and the CEP Pilot. Although we believe the EBR Pilot has merit, we believe the Commission should defer a decision on the implementation of the program until after the evaluation of the Pilot is performed and provided to the Commission.

New Pilots for 2014 - HER Pilot and Third Party Financing Pilot: Staff recommends that the HER Pilot should be clarified as to whether or not an independent evaluator will be hired to perform an evaluation requirements review and when this review will be performed. Other clarifications include the date the Pilot program is anticipated to conclude and the date the independent program evaluation will be completed. Staff will be happy to review this information if it is provided no later than November 18, 2013. That will allow Staff and parties sufficient time to review the information prior to the Settlement Conference.

With respect to the Third-Party Financing Pilot, Staff believes that it is premature to include this Pilot in the budget at this time. Staff recommends that the Commission require further exploration of the issues noted in our testimony above, along with any other issues that might be raised by the parties, in the context of the Quarterly Core Team meetings.

Recommended Pilot Methodology: Staff believes that the development and implementation of pilots is important; and, to further encourage pilot initiatives, Staff suggests some standardization of the pilot process. Staff recommends a methodology similar to the one used for the Wi-Fi Pilot and the CEP Pilot for future Pilots that:

- Defines what is meant by success up front
- Identifies the metrics to measure success up front
- Provides for an evaluation of the Pilot

Staff believes that this methodology should be explored in the context of the Quarterly Core Team meetings.

Performance Incentives (PI) for Gas Companies: Staff recommends that the Commission direct the Core Team to form a working group to review the PI formula for the gas utilities and to provide a proposal to the Commission for its review by June 30, 2014.

Staff is not recommending any changes to the PI formula for the gas utilities for program year 2014.



## **Educational and Professional Background**

### **James J. Cunningham, Jr.**

I am employed by the New Hampshire Public Utilities Commission (Commission) as a Utility Analyst. My business address is 21 S. Fruit Street, Suite 10, Concord New Hampshire, 03301.

I am a graduate of Bentley University, Waltham, Massachusetts, and I hold a Bachelor of Science-Accounting Degree. Prior to joining the Commission I was employed by the General Electric Company (GE). While at GE, I graduated from the Corporate Financial Management Training Program and held assignments in General Accounting, Government Accounting & Contracts and Financial Analysis.

In 1988, I joined the staff of the NHPUC. I have provided expert testimony pertaining to depreciation studies, actuarial studies for pension and retirement benefits, energy efficiency programs and other topics pertaining to NH electric, natural gas, water, and steam utilities. In 1995, I completed the NARUC Annual Regulatory Studies Program at Michigan State University, sponsored by the National Association of Regulatory Utility Commissioners. In 1998, I completed the Depreciation Studies Program, sponsored by the Society of Depreciation Professionals, Washington, D.C. I am a member of the Society of Depreciation Professionals (SDP). In 2008, I was promoted to my current position of Utility Analyst.

### **Appendix A (page 2 of 2)**

## **Educational and Professional Background**

### **Leszek Stachow**

I am employed by the New Hampshire Public Utilities Commission (Commission) as a Utility Analyst. My business address is 21 S. Fruit Street, Suite 10, Concord, New Hampshire, 03301.

I am a graduate of the following institutions of higher learning, University of Keele, Keele, Staffordshire, United Kingdom, from which I received a BA Triple Honors in Economics, Politics and History, and subsequently from the University of Sussex, Brighton, United Kingdom, from which I received a Masters in Political Economy.

While pursuing a PhD at University of Massachusetts in Cambridge, Mass, I concurrently served as a faculty member at St. Anselm College, NH and adjunct faculty at the Whittemore School of Business and Economics of the University of New Hampshire where I taught regulatory economics. In 1987 I joined the economics department of the NHPUC where I primarily supported rate cases in the telecommunications and energy sectors.

In 1992, I was appointed regional manager for Central Europe on behalf of management consulting firm, Booz Allen & Hamilton. In that capacity I advised numerous government agencies in Central and Eastern Europe, the Middle East, Africa and Latin America on optimizing the functioning of energy, telecommunications, water/waste water and gas sector regulatory bodies and markets.

In 2004, I was employed by Camp Dresser McKee to develop their Central European engineering consulting business. Beyond a primary focus on mergers and acquisitions, I was appointed President and manager of CDM Poland, as well as director of CDM AG in Germany.

I returned to the Commission in 2010, where I initially supported the telecommunications division and latterly the gas and electric divisions.

In 1988, I completed the NARUC Annual Regulatory Studies Program at Michigan State University, sponsored by the National Association of Regulatory Utility Commissioners as well as sundry other targeted regulatory courses.

## **Appendix B**

### **References to Staff Data Requests and Staff Technical Session Requests**

#### **B-1 References to Staff Data Requests:**

Staff 2-001  
Staff 2-002  
Staff 2-005  
Staff 2-006  
Staff 2-008  
Staff 2-009  
Staff 2-011  
Staff 2-015  
Staff 2-017  
Staff 2-018  
Staff 2-019  
Staff 2-020  
Staff 2-023  
Staff 2-024  
Staff 2-030  
Staff 2-031  
Staff 2-032  
Staff 2-036  
Staff 2-038

#### **B-2 References to Technical Session Requests:**

Staff TS-001 EBR Process Flow Chart  
Staff TS-002 EBR Rebate Form  
Staff TS-003 Third Party Process Flow Chart