

STATE OF NEWHAMPSHIRE
PUBLIC UTILITIES COMMISSION

DE 10-188

Case No.	DE 10-188
Sub No.	# 6
Panel	Panel 1
From File	

In the Matter of:
2010 CORE Electric Energy Efficiency Program
& Natural Gas Energy Efficiency Programs

Direct Testimony
of
James J. Cunningham
&
Al-Azad Iqbal

October 15, 2010

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

2 A. Our names are James J. Cunningham Jr. and Al-Azad Iqbal and we are employed
3 by the New Hampshire Public Utilities Commission (Commission) as Utility
4 Analysts. Our business address is 21 S. Fruit Street, Suite 10, Concord New
5 Hampshire, 03301.

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

7 A. Our educational and professional backgrounds are summarized in Appendix A.

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

9 A. Our joint testimony provides a report on the 2010 activities of the Core Team.
10 These activities pertain to issues identified in the Commission's orders approving
11 2010 Core programs.¹ Also, our testimony provides comments and
12 recommendations pertaining to the proposed 2011-2012 CORE electric and
13 natural gas energy efficiency programs, including planned lifetime savings,
14 design of the Home Performance with Energy Star (R) program, performance
15 incentives and other comments.

16 **Q. You mention that your testimony provides recommendations on natural gas
17 energy efficiency programs. Is this the first time natural gas energy
18 efficiency programs are included in the Core filing?**

19 A. Yes. The natural gas utilities are Energy North Natural Gas, Inc. (d/b/a National
20 Grid NH) and Northern Utilities, Inc. (d/b/a/Unitil). The electric utilities are
21 Granite State Electric Company (d/b/a National Grid), New Hampshire Electric
22 Cooperative, Inc. (NHEC), Public Service Company of New Hampshire (PSNH)
23 and Unitil Energy Systems, Inc. The combined filing is expected to provide

¹ Commission Order No. 24,062 and Order No. 25,099.

1 greater integration of natural gas efficiency with electric energy efficiency
2 programs. Also, given the acquisition of Energy North Natural Gas, Inc., by
3 National Grid and the acquisition of Northern Utilities, Inc. by Unitil Corporation,
4 the combined filing is expected to provide greater administrative efficiency.

5 **CORE TEAM ACTIVITIES DURING 2010**

6 **Q. Please provide a summary of the 2010 Core Team activities.**

7 A. The Core Team met monthly during 2010 and reviewed a number of issues outlined in
8 the Commission orders approving 2010 energy efficiency programs.² Following is a
9 summary of the key issues.

10 **2009 Performance Incentive Filings**

11 The new timelines established by the Commission for reporting and reviewing
12 performance incentive amounts were met in 2010. The electric companies made their
13 initial filings of 2009 Core performance incentives in June. Staff completed its desk
14 audits in June and July and noted that the amounts proposed were calculated properly and
15 the companies were entitled to recognize these performance incentives in July 2010.
16 Table 1 summarizes the final proposed amounts for 2009 performance incentives:

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21 National Grid	\$ 194,887
22 NHEC	\$ 119,851
23 PSNH	\$1,478,171
24 UES	\$ 163,659
25 NGRID NH (Natural Gas)	\$ 291,015
	Unitil (Natural Gas) N/A ³

² Reference Commission Order No. 25,062, dated January 5, 2010 approving the initial Core Budgets; and Order No. 25,099, dated April 30, 2010 approving revised program budgets, pursuant to Senate Bill 300 which was signed into law on January 14, 2010.

³ Table 1 does not include the amounts for Unitil (Natural Gas). The Settlement Agreement, approved by the Commission in Docket DG 09-053, provided for a 20-month period, May 1, 2009 to December 31, 2010. In June 2011, Unitil will submit its performance incentive filing for the entire 20-month period.

1 PSNH and UES amounts exclude performance incentives related to the fossil fuel portion
2 of the budget of the Home Energy Solutions (HES) program⁴, pursuant to Commission
3 Order No. 24,974 (at page 6). Also, the performance incentive filing for each company
4 included an additional schedule that summarized the year-end carry forward balance.

5 **Performance Incentive Working Group**

6 Pursuant to Order No. 25,062 (p. 19) and Order No. 25,099 (p. 14), the Core Team
7 established a Working Group to review the formula for calculating performance
8 incentives.⁵ The Working Group met twice during 2010 and will continue to meet to
9 fully explore all the issues. At this time, no final recommendation has been put forward
10 by the Working Group.

11 The 2011-2012 electric and natural gas filing incorporates one of the possible changes
12 that was discussed by the working group – i.e. the use of “actual” expenditures in lieu of
13 “budget” expenditures for purposes of calculating performance incentives. However, our
14 testimony recommends no change from the existing formula until this issue is explored
15 more fully by the Working Group. Later in our testimony, we address this issue.

16 **Carry Forward Balances**

17 For any program year, funds that are not used by the end of the year are carried forward
18 to the next program year. In the Commission’s Order No. 25,099, in Docket DE 09-170,
19 the Commission directed the Core Management Team to develop a uniform report that
20 demonstrates (1) how the carryover funds are calculated, including details about the
21 sources of fund and uses of funds, and (2) how carryover funds are used in the calculation
22 of performance incentives in order to ensure that carryover funds are not double counted
23 in the determination of performance incentives (Order No. 25,099, page 16). The June

⁴ In 2010, the name of the program was changed from HES to Home Performance with Energy Star (HPwES).

⁵ The original formula was recommended by the NHEEWG and approved by the Commission in Order No. 23,574, dated November 1, 2000.

1 2010 performance incentive filings provided this report; but, the reporting format was not
2 uniform across all utilities, as directed by the Commission.⁶ Also, the reports do not
3 describe how carryover funds are used in the calculation of performance incentives to
4 ensure that carry funds are not double counted. Staff plans to work with the utilities to
5 resolve these issues.

6 **Fuel-Neutral Pilot - Initial Review Report**

7 Pursuant to the settlement agreement in Docket DE 09-170, PSNH and UES engaged the
8 services of KEMA Inc. to conduct a preliminary Review of the fuel neutral pilot for the
9 Home Performance with Energy Star (HPwES), formerly the Home Energy Solutions
10 program (HES). The purpose of the Review was to ensure that the data planned to be
11 tracked is sufficient to support future evaluation of program savings.⁷ PSNH and UES
12 will use this data to conduct a subsequent evaluation of the fuel-neutral pilot for the
13 HPwES program at the end of the 2009-2010 heating season.⁸

14 **Revised Budgets Responding to SB 300 Resolution**

15 Pursuant Commission Order No. 25,062, the utilities met with Staff and the parties to
16 discuss how the 2010 Core Program budgets should be revised to respond to the
17 reduction of SBC funds for energy efficiency resulting from Senate Bill 300.⁹ The
18 reduction in funds was \$3.2 million, reflecting a reduction of 0.3 mills/kWh, from 1.8
19 mills/kWh to 1.5 mills/kWh. National Grid, Unitil and PSNH were able to reconfigure
20 their budgets with carryover funds, reallocation of funds from certain budet items and
21 resources unique to each utility in order to fill the budget shortfall. NHEC projected a
22 budget shortfall of approximately \$148,534 and proposed to eliminate this shortfall with

⁶ Source: Order No. 25,099, page 16.

⁷ Reference filing at page 11.

⁸ The requirement to perform this fuel-neutral pilot evaluation was included in the Settlement Agreement in Docket DE 09-170, approved by the Commission in Order No. 25,062 (p. 15, 18). The companies agreed to provide a report to the parties and Staff at the end of the 2009-2010 heating season.

⁹ SB 300 was signed into law on January 15, 2010.

1 funding from the Greenhouse Gas Emissions Reduction fund. A final budget was filed
2 on February 19, 2010 and, with certain modifications, was approved by the Commission
3 in its Order No. 25,099.

4 **RSA 125-O:5 (2 percent set aside of system benefit charge by PSNH):**

5 The Settlement Agreement approved by the Commission in Docket DE 09-170, Order
6 No. 25,062 specified that the methodology used to determine the amount of the 2 percent
7 set aside of the system benefit charge by PSNH would be reviewed (p. 15). The Core
8 Team met in technical sessions and, subsequently, PSNH, the Office of Consumer
9 Advocate (“OCA”) and the Staff entered into a Settlement Agreement (“Settlement
10 Agreement”) wherein a resolution of the outstanding issues was achieved. With respect
11 to differing views among PSNH, OCA and Staff regarding the past calculation of set
12 aside amounts and management of RSA 125-O funds, it was agreed that, rather than
13 expend the time and resources necessary to fully litigate those issues, the Parties and
14 Staff agreed that no further action should be taken. Instead, the parties and Staff agreed
15 on a starting point for calculation of RSA 125-O funds and a methodology for calculating
16 funds available for RSA 125-O Set-Aside, going forward. In addition, among other
17 points resolved, the parties and Staff agreed that PSNH would consult with all Core
18 Parties and Staff when it considers projects to be funded in the future by the RSA 125-O
19 Set-Aside amounts. The Settlement Agreement was filed with the Commission on July
20 13, 2010 by the OCA. We recommend that the Commission take action on the
21 Settlement Agreement in the context of this instant docket.

22 **Marketing Plan**

23 Pursuant to Commission Order No. 25,062 (p.17), the utilities filed with the Commission,
24 Staff and the parties an initial Core Marketing Plan on February 1, 2010. A modified
25 Core Marketing Plan was filed on May 21, 2010 incorporating more direct mailing of the

1 low income Home Energy Assistance program brochures, as required and wider
2 circulation of the NH Saves catalog.

3 **RFP for Multi-Year M&E Plan**

4 The selection of a vendor to provide a multi-year monitoring and evaluation plan is in-
5 process. The selection of a vendor is still pending due, in part, to consideration of
6 funding issues pertaining to Senate Bill 323 and whether funding for the required Senate
7 Bill 323 study could impact whether sufficient funds could be available for the multi-year
8 monitoring and evaluation plan. SB 323 requires the Public Utilities Commission (PUC)
9 to contract for an independent study utilizing a broad collaborative process, regarding
10 legislative, regulatory, and market-based policy options to address a number of issues
11 including energy efficiency, conservation, demand response, and sustainable energy
12 programs and incentives in the state and recommendations for possible improvements to
13 maximize their effectiveness and increase coordination of those programs and incentives.

14 **Enhancements to 2011-2012 Filing:**

15 A number of enhancements were discussed and some were included in this year's filing
16 including an accelerated filing date, multi-year (2011-2012) filing, inclusion of natural
17 gas programs for the first time, incorporation of additional data pertaining to savings
18 input assumptions, and expanded savings data to include "annual" kWh and MMBtu
19 savings.

20 **2011-2012 ELECTRIC & GAS PROGRAMS**

21 **Q. Please summarize the issues that you will be addressing in your testimony**
22 **pertaining to the 2011 and 2012 electric and gas energy efficiency programs.**

23 **A.** Our testimony addresses the following issues: proposed lifetime savings for Core
24 electric programs and natural gas programs, proposed program design for the Home
25 Performance with Energy Star (HPwES) program for Core electric and natural gas

1 programs, and proposed performance incentive formulas for electric and natural gas
2 programs. In addition, our testimony provides brief comments on other topics.

3 **Proposed Lifetime kWh Savings for Core Electric Programs**

4 **Q. Please summarize your testimony pertaining to proposed lifetime kWh**
5 **savings for Core electric programs.**

6 A. The proposed lifetime kWh savings for the Core electric programs appear to be
7 overly conservative, i.e. low. Actual lifetime savings achieved in 2009 were
8 significantly higher than the levels of savings proposed for 2011-2012 and we
9 believe that the proposed savings should be more reflective of historical
10 performance to ensure that proposed savings budgets represents goals that are
11 sufficiently challenging so that performance incentives earned by the utilities
12 reflect extraordinary savings.

13 **Q. Please explain why you believe the proposed lifetime kWh savings appears to**
14 **be conservative, i.e. too low.**

15 A. Electric utilities outperformed proposed savings goals in the past two years. In
16 2008, actual lifetime kWh savings were 29 percent higher than proposed for 2008.
17 Again, in 2009, the electric utilities outperformed proposed savings goals. Actual
18 lifetime kWh savings were 46 percent higher than proposed for 2009. Table 2
19 summarizes the 2008 and 2009 lifetime kWh savings and related costs.

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Table 2

2008 and 2009 Electric Utility Performance
Utility Costs, Planned Savings and Cost per kWh Saved
(Cost and Lifetime Savings are in Millions)

	<u>Actual</u>	<u>Proposal</u>	<u>% Variance</u>
<u>2008 Performance:</u>			
Utility Cost	\$17.7	\$18.9	(6%)
Lifetime kWh Savings	814.8	630.0	29%
Cost per kWh Saved	\$0.022	\$0.030	(28%)
 <u>2009 Performance:</u>			
Utility Cost	\$17.3	\$18.2	(5%)
Lifetime kWh Savings	805.1	551.4	46%
Cost per kWh Saved	\$0.021	\$0.032	(35%)

Based on the above, electric companies' planned savings targets, as a whole, appear to have been very conservative. Electric companies proposed 630.0 million kWh for lifetime savings in 2008 and achieved 814.8 million kWh. In 2009, electric companies proposed 551.4 million kWh for lifetime savings but actually achieved 805.1 million kWh. In addition to outperforming the savings targets, the companies have been able to achieve higher levels of actual savings at less cost per kWh than proposed in both 2008 and 2009.

Q. Are the actual lifetime savings achieved in 2008 and 2009 reflected in the 2011 proposed levels of savings?

A. Actual lifetime savings do not appear to be fully reflected in the 2011-2012 proposed levels of savings. Electric companies, as a group, are proposing lifetime kWh savings in 2011 that are significantly below the actual levels achieved in 2008 and 2009. Table 3 provides a comparison of proposed lifetime kWh savings and related costs for 2011 versus 2008 and 2009.

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Table 3

2011 Core Proposal vs. 2008-2009 Actual Results
Utility Costs, Planned Savings and Cost per kWh Saved
(Costs and Lifetime Savings are in Millions)

	Proposed	Actual	Actual
	<u>2011</u>	<u>2009</u>	<u>2008</u>
Utility Cost	\$17.9	\$17.3	\$17.7
Lifetime kWh Savings	592.4	805.0	814.8
Cost per lifetime kWh saved	\$0.030	\$0.021	\$0.022

Based on the above, it appears that the 2011 proposal is not fully reflective of the levels of savings that have been achieved in the prior two years. We believe that 2011 proposed kWh savings budgets should reflect actual kWh savings achievements to ensure that proposed savings budgets represent goals that are sufficiently challenging so that performance incentives earned by the utilities reflect extraordinary savings. Although the electric companies achieved actual lifetime kWh savings of greater than 800 million kWh, the proposed level of lifetime savings is less than 600 million kWh. Also, with respect to the cost per kWh to achieve planned lifetime savings, proposed costs per lifetime kWh saved are expected to be approximately 40 percent higher than actually incurred in 2008 and 2009 (i.e. $\$0.030 / \$0.021 = 42.8\%$ increase).

Q. Based on your review of the data, what have you concluded?

A. Based on our review, we believe that proposed lifetime kWh savings for 2011 is very conservative (i.e. low). We believe that the proposal should be more reflective of higher level of lifetime kWh savings recently achieved.

1 **Q. Have you performed a hypothetical savings calculation that incorporates**
2 **actual historical data?**

3 A. Yes, we performed a hypothetical savings calculation that incorporates actual
4 historical data. Our hypothetical calculation reflects only 2009 data¹⁰ for (1) the
5 level of participation and (2) lifetime savings. With respect to participation, we
6 divide the actual 2009 utility cost per participant into the proposed 2011 utility
7 cost to determine the calculated level of participation. With respect to lifetime
8 kWh savings, we multiply actual 2009 lifetime savings per participant by the
9 calculated level of participation. Table 4 summarizes the results of our
10 hypothetical.

11 Table 4

12 Hypothetical vs. 2011 Core Proposal
13 Utility Costs, Planned Savings and Cost per kWh Saved
14 (Costs and Lifetime Savings are in Millions)

	Actual	Proposed	Hypothetical
	<u>2009</u>	<u>2011</u>	<u>2011</u>
15 Utility Cost	\$17.3	\$17.9	\$17.9
16 Lifetime kWh Savings	805.1	592.4	854.9
17 Cost per lifetime kWh saved	\$0.021	\$0.030	\$0.021

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22 By incorporating actual 2009 performance, our hypothetical indicates that the
23 Core filing could provide lifetime savings of 854.0 million kWh, an increase of
24 262.5 million kWh over the proposed 2011 592.4 million kWh. This increase
25 represents a potential 44 percent increase (i.e. 262.5 million kWh / 592.4 million
26 kWh). The increase in lifetime savings in our hypothetical calculation is

¹⁰ Our hypothetical reflects only 2009 data (rather than average 2008 and 2009 data) because 2009 was the most recent full year of program activity and we believe it reflects the most recent rebate amounts, measure lives and estimated savings per measure.

1 consistent with the Commission's goal for the companies to achieve extraordinary
2 savings.¹¹

3 Please refer to Schedule 1 for a summary of lifetime savings, proposal vs.
4 hypothetical.

5 **Q. Does your testimony provide a schedule showing the development of**
6 **hypothetical lifetime savings for each electric company?**

7 A. Yes. Schedules 1A, 1B, 1C and 1D show the development of the hypothetical
8 lifetime savings for each electric company.

9 **Q. Does your hypothetical address both 2011 and 2012.**

10 A. No, our hypothetical calculation covers only year 2011. However, the same
11 calculation could easily be performed for 2012. Year 2012 proposed utility costs
12 would be substituted for 2011 utility costs. Then, the 2012 utility costs could be
13 divided by actual 2009 utility cost per participant to calculate 2012 participation.
14 The calculated participation numbers could then be multiplied by actual 2009
15 lifetime savings per participant to calculate hypothetical lifetime savings.

16 **Q. Do you recommend that actual savings achievements should be reflected in**
17 **performance incentive calculations?**

18 A. Yes. We believe that actual achieved levels of savings should be reflected in
19 budgeted savings estimates for purposes of calculating performance incentives.

20 **Q. Do other states reflect actual savings achievements in their calculations of**
21 **performance incentives?**

22 A. Yes, the Public Service Board of the State of Vermont reflects actual
23 achievements in their calculations of performance incentives.¹²

¹¹ Source: Docket DR 92-024, Order No. 20,457 and Docket DR 96-150, Order No. 23,574, page 19.

1 **Q. Do you recommend any filing and reporting requirements pertaining to the**
2 **development of lifetime kWh savings?**

3 A. Yes. We recommend that energy efficiency filings and actual reports on savings
4 contain a schedule showing the development of lifetime kWh savings. We
5 recommend a side-by-side comparison that shows the build-up of budget and
6 actual savings on a consistent measure-by-measure basis including: number of
7 participants, annual savings per participant, realization rate, measure life and
8 extended lifetime kWh savings. Actual savings data should be provided as part of
9 the annual performance incentive filings in June of each year. Budgeted savings
10 data should be reconciled to the most recent actual program year savings data
11 showing a side-by-side comparison of the build-up of savings for actual vs.
12 budget, including number of participants, annual savings per participant,
13 realization rate, measure life and extended lifetime kWh savings. We recommend
14 that this data be provided in a consistent format for all electric companies.

15 **Q. You recommend that the electric utilities provide savings data for each**
16 **program, on a measure-by-measure basis. Have the companies provided this**
17 **data in the past?**

18 A. No, the electric companies have not provided this data. The electric companies
19 have provided summary data for lifetime kWh savings in the filings. However,
20 the measure-by-measure data for each program is available and some of this data
21 has been provided during the course of discovery. The natural gas companies
22 have provided this data for the past 7 years.

¹² Source: <http://psb.vermont.gov/docketsandprojects/eu/rfpsandcontracts/2009-2011/eucontract>.

1 **Q. What are the benefits of providing program data on a measure-by-measure**
2 **basis?**

3 A. We believe that measure-by-measure savings data for actual vs. budgeted savings
4 provides a necessary side-by-side reconciliation between budgets and actual
5 results. The companies have provided this side-by-side analysis in their responses
6 to our data requests; and, we believe this data could be provided with the filing as
7 part of the documentation to support the budgeted savings. Given the
8 combination of natural gas filings with electric Core filings, and the compressed
9 time-frame allowed for review, discovery, analysis and preparation of testimony,
10 we believe this is a necessary enhancement for energy efficiency filings going
11 forward.

12 **Q. Do you recommend a specific format that captures the lifetime savings data**
13 **on a measure-by-measure basis for each program?**

14 A. Yes. We recommend that the electric companies use a format similar to the
15 format used in discovery responses. This format provides measure-by-measure
16 savings data for each program including numbers of participants, savings per
17 measure, realization rate, measure lifetime and lifetime savings for each measure.

18 **Proposed lifetime MMBtu Savings for Natural Gas Programs.**

19 **Q. Please summarize your testimony pertaining to proposed lifetime MMBtu**
20 **savings for natural gas programs.**

21 A. The proposed lifetime MMBtu savings for the natural gas programs appear to be
22 overly conservative, i.e. low. We believe that the proposed lifetime savings
23 should be more reflective of historical performance.

1 **Q. Please explain why you believe the proposed lifetime MMBtu savings appears**
2 **to be conservative, i.e. too low.**

3 A. With respect to NGRID-NH, for the most recent period, May 2009 through
4 December 31, 2009, the Company outperformed its proposed goals. During this
5 period, actual lifetime MMBtu savings were 81 percent higher. Table 5
6 summarizes the 2009 performance.

7 Table 5

8 2009 NGRID-NH Performance
9 Utility Costs, Planned Savings and Cost per MMBtu Saved
10 (Cost and Lifetime Savings are in Millions)

	2009 <u>Actual</u>	2009 <u>Proposal</u>	<u>% Variance</u>
15 Utility Cost	\$2.5	\$2.8	(12%)
16 Lifetime MMBtu Sav.	2.1	1.2	81%
17 Cost per MMBtu Saved	\$1.18	\$2.43	(51%)

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19 Based on the above, NGRID-NH was able to outperform its proposed savings
20 target. Although the company proposed 1.2 million MMBtu lifetime savings in
21 2009, it achieved 2.1 million MMBtu. In addition to outperforming the savings
22 target, the company was able to achieve higher levels of savings at 51 percent less
23 cost per MMBtu than proposed.

24 **Q. What was the performance for Unitil natural gas programs during the most**
25 **recent period?**

26 A. With respect to Unitil, for the period May 2009 to December 2009, the Company
27 was not required to file performance measurements. Instead, the Company will

1 file its performance measurements at the end of the 20-month period, May 1,
2 2009 to December 31, 2010.

3 **Q. What was the performance for Unitil natural gas programs for prior period?**

4 A. The prior period was the program year May 1, 2008 to April 30, 2009.
5 Unlike NGRID-NH, Unitil did not outperform its budget. Actual lifetime
6 MMBtu savings were 48 percent lower. Table 6 summarizes Unitil's 2009
7 performance.

8 Table 6

9 2009 Unitil Performance
10 Utility Costs, Planned Savings and Cost per MMBtu Saved
11 (Cost and Lifetime Savings are in Millions)

	2009 <u>Actual</u>	2009 <u>Proposal</u>	<u>% Variance</u>
Utility Cost	\$0.6	\$0.8	(25%)
Lifetime MMBtu Sav.	206.9	402.6	(48%)
Cost per MMBtu Saved	\$2.92	\$1.95	50%

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20 Although the company proposed 403 thousand MMBtu lifetime savings in 2009,
21 it achieved only 207 thousand MMBtu. Also, the actual cost per MMBtu saved
22 was 50 percent higher than the budgeted cost.

23 **Q. What are the proposed levels of savings for 2011 for both NGRID-NH and**
24 **Unitil and do the levels of proposed savings reflect the favorable**
25 **performance the companies achieved in 2009?**

26 A. On a combined basis, in 2011, NGRID-NH and Unitil are proposing lifetime
27 MMBtu savings of 2.2 million MMBtu. Table 7 provides a comparison of
28 proposed lifetime MMBtu savings for 2011 versus and 2009.

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Table 7

Natural Gas Companies
2011 Proposal v. 2009 Actual Results
Utility Costs, Planned Savings and Cost per MMBtu Saved
(Costs and Lifetime Savings are in Millions)

	<u>Proposed</u> <u>2011</u>	<u>Actual</u> <u>2009</u>	<u>Variance</u> <u>Percent</u>
Utility Cost	\$7.3	\$2.7	168%
Lifetime MMBtu Savings	2.2	1.8	23%
Cost per lifetime MMBtu	\$3.35	\$1.54	117%

Based on the combined amounts for both companies, utility costs are rising 168 percent; but, savings are not keeping pace, rising only 23 percent above 2009 actual results. Also, proposed costs per MMBtu saved are rising significantly above 2009 actual costs, increasing by 117 percent. With respect to utility cost increases, the overall increase is \$4.6 million, from \$2.7 million in 2009 to \$7.3 million in 2011. National Grid-NH accounts for \$4.2 million of the increase and Unitil accounts for the remaining \$400 thousand. The utility cost increases, by individual cost component, were still under review at the time this testimony was prepared.

- Q. Based on your review of the data, what have you concluded?**
- A. Based on our review, we believe that proposed lifetime MMBtu savings for 2011 for the combined natural gas companies are very conservative (i.e. low). Based on the above, the natural gas companies, as a whole, have been able to outperform their proposed savings targets. We believe that the proposal for the combined companies should be more reflective of actual lifetime MMBtu savings performance achieved in 2009.

1 **Q. Does your testimony provide a hypothetical calculation for lifetime MMBtu**
2 **savings, similar to the one you provide for the electric companies?**

3 A. Yes. Our testimony provides the same hypothetical calculation for lifetime
4 MMBtu savings for the natural gas companies.

5 **Q. What are the results of your hypothetical calculation for the natural gas**
6 **companies?**

7 A. Both companies are proposing 2.2 million lifetime MMBtu savings for 2011. Our
8 hypothetical calculation results in lifetime savings of 5.1 million MMBtu.

9 **Q. Does your testimony provide details supporting the development of the**
10 **hypothetical for both natural gas companies?**

11 A. Yes. The hypothetical is summarized for both companies on Schedule 2, with
12 details broken out for each natural gas company in Schedules 2A and 2B.

13 **Q. How did you calculate hypothetical savings for the natural gas companies?**

14 A. We reviewed the proposed level of participation and the proposed level of lifetime
15 savings. With respect to participation, we divide the actual 2009 utility cost per
16 participant into the proposed 2011 utility cost to determine the hypothetical level
17 of participation. With respect to lifetime kWh savings, we multiply actual 2009
18 lifetime savings per participant by the hypothetical level of participation. Table 8
19 summarizes the results of our hypothetical calculation.

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Table 8
Natural Gas Companies
Hypothetical vs. 2011 Proposal
Utility Costs, Planned Savings and Cost per MMBtu Saved
(Costs and Lifetime Savings are in Millions)

	<u>Actual</u> <u>2009</u>	<u>Proposed</u> <u>2011</u>	<u>Hypothetical</u> <u>2011</u>
Utility Cost	\$2.7	\$7.3	\$7.3
Lifetime MMBtu Savings	1.8	2.2	5.1
Cost per lifetime MMBtu saved	\$1.54	\$3.35	\$1.43

By incorporating actual 2009 performance, our hypothetical indicates lifetime savings of 5.1 million MMBtu, an increase of 2.9 million MMBtu, a 132 percent increase over the proposed level of savings.

Q. Please explain why your hypothetical calculation incorporates actual 2009 data for participation and lifetime MMBtu savings?

A. Similar to our hypothetical calculation for the electric companies, our calculation for the natural gas companies incorporates actual data on participation and lifetime MMBtu savings because actual data provides a good basis for predicting future performance. Our hypothetical calculation incorporates 2009 data because it represents the performance actually achieved by both companies in the most recent full year of program activity. Lifetime savings for NGRID-NH in our calculation are 132 percent higher than proposed. The increase in lifetime savings resulting from our hypothetical calculation is consistent with the Commission's goal for the companies to achieve extraordinary savings.¹³

¹³ Source: Docket DR 92-024, Order No. 20,457 and Docket DR 96-150, Order No. 23,574, page 19.

1 **Q. Does your hypothetical calculation address both 2011 and 2012?**

2 A. No, our hypothetical covers only year 2011. However, the same calculation could
3 be easily performed for 2012. Year 2012 proposed utility costs would be
4 substituted for 2011 utility costs. Then, the 2012 utility costs would be divided by
5 actual 2009 utility cost per participant to calculate 2012 participation.

6 **Q. Do you recommend that actual savings achievements should be reflected in**
7 **performance incentive calculations?**

8 A. Yes. We believe that actual achieved levels of savings should be reflected in
9 budgeted savings estimates for purposes of calculating performance incentives.

10 **Q. Do other states reflect actual savings achievements in their calculation of**
11 **performance incentives?**

12 A. Yes. As noted above for the electric utilities, the Public Service Board of the
13 State of Vermont reflects actual achievements in their calculation of performance
14 incentives.¹⁴

15 **Q. Do you recommend any filing and reporting requirements pertaining to the**
16 **development of lifetime MMBtu savings?**

17 A. Yes. We recommend that energy efficiency filings and actual reports on savings
18 contain a schedule showing the development of lifetime MMBtu savings. We
19 recommend a schedule that shows the build-up of budget and actual savings on a
20 consistent measure-by-measure basis including: number of participants, annual
21 savings per participant, measure life and extended lifetime MMBtu savings.
22 Actual savings data should be provided as part of the annual performance
23 incentive filings in June of each year. Budgeted savings data should be reconciled

¹⁴ Source: <http://psb.vermont.gov/docketsandprojects/eu/rfpsandcontracts/2009-2011/eucontract>.

1 to the most recent actual program year savings data showing a side-by-side
2 comparison of the build-up of savings for actual vs. budget, including the number
3 of participants, annual savings per participant, measure life and extended lifetime
4 MMBtu savings. We recommend that this data be provided in a consistent format
5 for both natural gas companies.

6 **Q. You recommend that the companies' filings and actual reports include**
7 **savings data on a program-by-program basis and on a measure-by-measure**
8 **basis. Have the natural gas companies provided this data in the past?**

9 A. Yes, as noted above, the natural gas companies have provided this data in prior
10 filings. However, in the current filing, the natural gas companies have adopted
11 the exhibit format that the electric companies have been providing. This provides
12 consistency in reporting and we appreciate the companies' initiative in this regard.
13 However, this approach can be further enhanced by providing savings data by
14 program on a measure-by-measure basis.

15 **Q. What are the benefits of providing program data on a measure-by-measure**
16 **basis?**

17 A. We believe that measure-by-measure savings data for actual vs. budgeted savings
18 provides a necessary side-by-side comparison between budgeted and actual
19 results. The companies have provided this side-by-side analysis in their responses
20 to our data requests; but, we believe this data should be provided with the filing as
21 part of the documentation to support the planned savings. Given the combination
22 of natural gas filings with electric Core filings, and the compressed time-frame

1 allowed for review, discovery, analysis and preparation of testimony, we believe
2 this is a necessary enhancement for energy efficiency filings going forward.

3 **Q. Do you recommend a specific format that captures the lifetime savings data
4 on a measure-by-measure basis for each program?**

5 A. Yes. We recommend that the natural gas companies use a format similar to the
6 format used in discovery responses. This format provides measure-by-measure
7 savings data for each program including number of participants, savings per
8 measure, measure lifetime and lifetime savings for each measure.

9 **Proposed design for the Home Performance with Energy Star® (HPwES)**
10 **program for Core electric and natural gas programs,**

11 **Q. What is Home Performance with Energy Star® (HPwES)?**

12 A HPwES offers whole-house solutions to increasing the energy performance and
13 comfort of existing homes with contractor participation and quality assurance
14 while mitigating adverse environmental effects.¹⁵ HPwES is a partnership
15 between program sponsors and EnergyStar®. The goal of HPwES is to make
16 cost-effective, energy-efficient improvements to homes.

17 **Q. What are the requirements for a program to be accepted by EnergyStar®?**

18 A. According to the sponsor guidelines, the design of every HPwES program could
19 be different, but all programs must meet the requirements of the Partnership
20 Agreement. As described in the agreement, the program consists of the following
21 components:

¹⁵http://www.EnergyStar.gov/ia/home_improvement/HPwES_Sponsor_Guide.pdf, Page
5

- 1 1. **Home Performance Assessment or “Test-in”.** An energy specialist trained in
2 building science principles performs a Home Performance Assessment (HPA)
3 which includes a visual and diagnostic energy inspection of the home using a
4 form standardized for the program.
- 5 2. **Inspection Results and Recommended Improvements.** Improvements to
6 the home are recommended, based on the initial inspection and homeowner
7 interview. The homeowner will be provided a review of the findings and
8 provided with a summary report including:
- 9 a. A summary of HPA findings,
10 b. Improvement recommendations,
11 c. An estimation of costs for the improvements, and
12 d. An estimation of energy savings from implementing the
13 recommendations.
- 14 3. **Installation of measures.** The program helps homeowners identify qualified
15 contractors qualified to implement the HPA recommendations. This can
16 either be the participating contractor providing the inspection and
17 recommendations or other contractors qualified in home energy inspection,
18 building science, and proper installation techniques. All installed measures
19 will be in accordance with industry best practices.
- 20 4. **Post-Installation Tests or “Test-out”.** Documentation of improvements and
21 diagnostic testing (test-out) will be used to verify the performance of installed
22 measures as well as to meet health and safety standards. A summary of the
23

1 final tests will be given to the homeowner. The results may be in the form of a
2 “Summary Certificate”.

3 The program also has program Quality Assurance (QA) requirements for the
4 participating contractors, and Program Data Reporting Requirements to
5 EnergyStar®.

6 **Q. Please describe HPwES as it is proposed in the Core filing.**

7 A. Under the CORE residential program, the HPwES replaces the former Home
8 Energy Services program (HES). The HES was a residential retrofit program that
9 supported electric heat customers. For the 2009 program year, PSNH and UES
10 proposed a fuel-neutral HES pilot program and the Commission approved the
11 program limiting the participation level to 200 and 100 for PSNH and UES
12 respectively (Order No 24,974). The pilot was extended with the same
13 participation levels for the 2010 program year (Order No 25,062) to facilitate the
14 program evaluation. Currently a 75% program incentive up to \$4,000 is offered
15 for eligible measures, with a separate prescriptive incentive, which is not under
16 the rebate cap, is available for heating and cooling systems.

17 **Q. What are the issues you want to discuss?**

18 A. Two main issues about HPwES will be discussed: 1) program design, and 2)
19 rebate/customer incentives.

20 **Q. Describe the program design issues.**

21 A. The program basically covers two types of improvements – 1) weatherization and
22 2) other improvements. Although under the HPwES partnership agreement, the
23 home assessment is required, customers may choose the contractor to install the

1 recommended improvements. If a customer decides to install measures listed in
2 the assessment, the agreement requires a post-installation test. Post-installation
3 ‘test out’ is essential to measure the performance of the work done, particularly
4 for weatherization. For other installations, health and safety are the main concern.
5 Under the current program, incentives for weatherization are bundled with the
6 installation of other measures. Staff believes that “bundling” is unnecessary,
7 unclear and wasteful. The bundling of weatherization with other measures limits
8 customer choice and flexibility and is not required under the partnership
9 agreements for HPwES. The bundling makes the program unclear because the
10 program does not provide any details regarding what measures are supported and
11 what incentive levels apply to such measures. Under the current program design,
12 to install a single measure (which was covered under the former Home Energy
13 Services (HES) program), a customer has to go through the assessment process
14 and post-installation test. To implement the suggested measures identified in the
15 assessment report in multiple years, a customer has to go through the whole
16 process every year. It is wasteful and unnecessary to perform these steps year
17 after year. It is also inflexible for customers as it limits their ability to choose to
18 implement one or more measures in one year, or to spread the cost over multiple
19 years according to their financial situations. Not only that, if a customer qualifies
20 for incentives and chooses to install a few measures which might put him/her out
21 of the Home Heating Index (HHI) threshold, s/he cannot participate in the
22 program next year to install the rest of the suggested measures.

1 **Q. What do you suggest?**

2 A. Staff recommends that measures other than weatherization measures should be
3 separate programs, as was the case under the former HES program. Only
4 weatherization should be covered by the proposed HPwES. All other measures
5 should be provided under separate programs, as they were under the former HES
6 program.

7 We believe the HPwES program design, which provides a home performance
8 assessment (HPA) and weatherization, could be enhanced by introducing the
9 customer to other stand-alone programs and encourage the customer to install
10 measures under these other stand-alone programs; so, the customer would have
11 the choice and flexibility to participate in either the HPwES program and/or other
12 programs to implement the suggested measures under the other stand-alone
13 program.

14 **Q. Describe the issues related to customer rebates for measures installed.**

15 A. The issues are as follows:

- 16 1. Given a limited budget, it is reasonable to set the rebate level lower to
17 maximize participation, savings, and private investment (i.e. customer cost).
18 The proposed rebate of 75% for all suggested measures up to a \$4,000 cap
19 combined with other incentives available under HPwES is too high compared
20 to similar programs in the region. For instance, it's Staff understanding that
21 the rebate cap in Massachusetts is \$2,000.
- 22 2. The proposed rebate is based on cost, not savings. Every measure gets a
23 rebate of 75% of cost irrespective of energy savings.

1 3. There is no savings threshold required to receive a 75% rebate. Measures with
2 identical costs – for example, one having a 5% savings and one with 50%
3 savings – receive the same rebate as percentage of cost.

4 **Q. What are the common rebate methods used for HPwES?**

5 A. First of all, under the Department of Energy (DOE) model, rebates or incentives
6 are not required under HPwES. The most common rebate methods used in
7 HPwES around the country are as follows:

- 8 1. Rebates based on savings as percentage of household energy use,
- 9 2. Separate rebate level for assessment/audit, low cost weatherization and
10 other measures,
- 11 3. No rebate, only low cost financing ,
- 12 4. Prescriptive rebates for measures, and
- 13 5. Rebates as bill discounts.

14 **Q. Why do you believe the rebate level is too high?**

15 A. We believe the rebate level for the proposed HPwES is too high for several
16 reasons.

- 17 1. Some measures are provided free of charge which is not counted in the cap
18 (i.e. air sealing and installed domestic hot water measures installed by the
19 implementation contractor (IC) such as showerheads, aerators, pipe wrap
20 and tank wraps.
- 21 2. The program has prescriptive rebates which are not under the cap.
- 22 3. It provides low cost financing. In some states, only financing is used as an
23 incentive for HPwES.

- 1 4. One of the New Hampshire Gas utilities (National Grid NH) ran a
2 successful weatherization program with a 50% incentive with a cap of
3 \$1,500 until last year (the Company is now proposing a new higher
4 incentive level just for the sake of uniformity).
- 5 5. “Additional Opportunities for Energy Efficiency in New
6 Hampshire”¹⁶ shows that with 50% rebate level, there is a lot of untapped
7 achievable energy efficiency opportunity.

8 **Q. What do you recommend about rebates?**

9 A. Staff recommends separate prescriptive rebates for the home performance
10 assessment, including low cost weatherization (air sealing, etc.), and other low
11 cost measures. In addition, we recommend a separate full weatherization
12 component under HPwES with incentives tied to energy savings as a percentage
13 of overall household energy use.

14 **Other HPwES issues**

15 **Q. Do you think HPwES is ready for full implementation?**

16 A. No, in our view, HPwES is not ready for full implementation. Implementation is
17 premature as a full evaluation of the program required pursuant to DE 09-170
18 settlement agreement is not yet completed. We think that implementing a
19 program without full evaluations of its pilot phase nullifies the benefit of such
20 pilot program. As reflected in this testimony, there are several issues in the
21 design of the HPwES program as well as its effectiveness that need to be
22 assessed.

¹⁶ <http://puc.nh.gov/Electric/GDS%20Report/GDS%20Final%20Report.htm>

1 Q. You mentioned earlier in your testimony that KEMA Inc. was engaged to
2 conduct a preliminary report of the fuel neutral pilot. Does the KEMA
3 report meet the evaluation requirement?

4 A. The KEMA report only looked at the data requirement and possible evaluation
5 methodologies that could be used for a full evaluation study. In their initial pilot
6 program proposal, the utilities did not provide any evaluation methods. The
7 Commission directed that “[T]hey shall also file a complete description of the
8 methodology and measures by which they will evaluate the performance of the
9 HES Pilot.” (Order 24, 974). Subsequently, the Utilities submitted an outline of
10 their evaluation plan without sufficient details. The KEMA report just fills the
11 gap by providing a complete description of the methodology and measures by
12 which the evaluation can be done. It does not substitute a replacement of a full
13 evaluation requirement. Going forward, the parties need to have enough time to
14 review the pilot program so that any pilot is fully developed before it is
15 implemented.

16 **Proposed Performance Incentive Formula for Electric and Natural Gas Companies**

17 Q. The electric and natural gas companies are proposing to change the
18 calculation of performance incentives. Please explain the proposed change.

19 A. The companies are proposing a change to the calculation of performance
20 incentives to substitute actual expenditures in lieu of budgeted expenditures in the
21 formula. The utilities state that “in order to ensure that the utilities have the
22 ability to earn on any dollar collected for energy efficiency *only once (emphasis*

1 *added*), the Utilities are proposing to calculate the earned incentive, if any, using
2 actual expenses as the basis for quantifying the target incentive amount.”¹⁷

3 **Q. Does Staff agree that the use of actual expenditures will lessen the potential**
4 **for any double counting of budget amounts for purposes of calculating**
5 **performance incentives?**

6 A. Yes. Double counting takes place when a utility’s budgeted dollars are not spent
7 in the prior year and are carried forward into the following year’s budget and
8 those same dollars are taken into account in calculating performance incentives.
9 However, Staff believes the companies can avoid double counting by excluding
10 unspent prior year budget amounts from the subsequent year budget amounts that
11 are used to calculate performance incentives. This can be done by notifying the
12 Commission of under spending that will not be counted in the subsequent year
13 budgets. Recently, National Grid-NH notified the Commission that it would be
14 carrying forward 2009 funds into 2010 and will not seek performance incentives
15 on these funds.¹⁸ The Company’s letter notified the Commission of its intentions;
16 and, at the same time, allowed the company to earn a performance incentive on
17 every dollar collected for energy efficiency only once.

18 **Q. What is your recommendation on the companies’ proposed change to**
19 **calculate performance incentives on actual vs. budget amounts?**

20 A. At this time, we recommend that the Commission not approve the companies’
21 proposal to use actual utility expenditures, in lieu of budget expenditures, for
22 purposes of calculating performance incentives. Performance incentive amounts

¹⁷ Source: Core Filing at page 16.

¹⁸ Source: Docket DG 09-049, letter from Sara Knowlton, August 10, 2010.

1 are significant, in excess of \$2 million in 2009 (Ref. Table 1); and, we believe that
2 while a working group was established and some discussions have been held
3 among the parties on this issue, additional time needs to be set-aside to review all
4 the relevant issues pertaining to such significant amounts.

5 Also, one of the Commission's performance metrics could be eliminated – i.e.
6 delivering lifetime kWh savings at or below budget. For instance, as the
7 calculation currently works, if actual utility expenditures were substituted for
8 budgeted expenditures, and actual expenditures increased, the companies would
9 receive an increase in performance incentives. In this filing, the companies are
10 calculating performance incentives based on an estimate of 8 percent of utility
11 expenditures. If actual utility expenditures greater than budgeted expenditures,
12 the companies' performance incentives will increase by 8 percent of the increase.
13 This is compounded by the fact that companies typically earn performance
14 incentives in excess of 8 percent. For instance, in 2009, the electric and natural
15 gas companies earned between 9 percent and 11.5 percent of budgeted utility
16 expenditures.

17 Also, we believe the proposed change is premature. As previously mentioned, a
18 working group was established in 2010 to examine, in a comprehensive way, all
19 the issues affecting performance incentives, and the comprehensive examination
20 has not been completed. A lot more work needs to be done to ensure that all the
21 issues are fully explored and that performance incentives earned by the companies
22 reflect extraordinary performance.¹⁹ For instance, the natural gas companies are

¹⁹ Reference Commission Order No. 20,457: "They (incentive payments) are provided only when extraordinary savings are actually achieved."

1 proposing to increase utility costs by 168 percent, while lifetime MMBtu savings
2 are increasing by only 23 percent (ref. Table 7). The overall filing appears to be
3 very conservative with respect to savings (i.e. low) and very conservative with
4 respect to costs (i.e. high). The causes of utility cost increases, while savings are
5 not keeping pace, needs to be better understood so as to not reward the companies
6 with potentially higher performance incentives without corresponding increases in
7 lifetime savings.

8 **Other Comments**

9 **Q. Do you have any other comments?**

10 **A.** Yes. We note that National Grid NH natural gas energy efficiency expenditures
11 continues to ramp up spending.

12 Following is a summary of the actual and proposed energy efficiency expenditures for
13 NGRID-NH energy efficiency programs for the 2006-2012 period:

14 Table 9

15 NGRID-NH Natural Gas Energy Efficiency Expenditures 2006-2012

16		
17	2006-2007 Actual May 1 to April 30	\$1.5 million
18	2007-2008 Actual May 1 to April 30	\$1.4 million
19	2008-2009 Actual May 1 to April 30	\$2.1 million
20	2009 Transition Actual May 1 to Dec 30	\$2.5 million
21	2010 Budget Calendar Year	\$5.0 million
22	2011 Budget Calendar Year	\$6.3 million
23	2012 Budget Calendar Year	\$6.9 million
24		

25 Clearly, National Grid NH expenditures are ramping up significantly. In 2012, National
26 Grid NH proposes to increase energy efficiency expenditures to \$6.9 million. Compared
27 to the current Commission approved budget for 2010 of \$5.0 million, the 2012 proposal
28 represents a 38 percent increase. Compared to latest full year of actual spending from

1 May 1 2008 to April 30, 2009, National Grid NH's 2012 proposal represents a 229
2 percent increase (i.e. \$6.9 million vs. \$2.1 million).

3 **Q. You noted above that the calendar year budget for 2010 is \$5.0 million. Is National**
4 **Grid NH on track to spend this \$5.0 million amount?**

5 A. It's still too early to tell for sure because actual results, at the time of preparation of this
6 testimony, are available for only January through May 2010.²⁰ There are seven months
7 left in the 2010 program year; and, typically, the last three months of the year indicate
8 relatively higher spending than in prior months.²¹

9 **Q. Are the programs proposed by NGRID-NH gas for 2011 and 2012 cost effective?**

10 A. Yes, based on the total resource cost test.²² But, the cost effectiveness is declining based
11 on 2009 actual TRC as compared to proposed 2011 and 2012 TRC. The following table
12 summarizes the trend:

13 Table 10
14 TRC Ratios for National Grid NH Programs²³

15

	<u>2009 Act.</u>	<u>2011 Prop.</u>	<u>2012 Prop.</u>
16 Residential TRC	2.51	1.96	1.87
17 C & I TRC	3.15	1.47	1.51

18
19

20 The proposed TRC ratio for residential programs in 2012 is 25 percent lower than the
21 actual 2009 TRC ratio (.64 / 2.51). The proposed TRC ratio for C&I programs in 2012 is
22 52 percent lower than the actual 2009 TRC ratio (i.e. 1.64 / 3.51). The hypothetical
23 calculations of planned lifetime savings, as noted earlier in our testimony, would improve
24 the proposed TRC ratios. For instance, in 2011, our hypothetical calculation of lifetime

²⁰ Source: Data response Staff 1-12. Spending for the three-month period, March through May 2010 indicates an average monthly spending of approximately \$365 thousand per month. When annualized by multiplying by 12, the annualized amount is \$4.4 million.

²¹ In October to December 2009, National Grid NH gas program expenditures were \$1.5 million, 60 percent of total actual expenditures for this 8-month transition year of May - December 2009.

²² Total Resource Cost (TRC) is calculated by dividing total lifetime benefits from running energy efficiency programs (i.e. kWh's or MMBtu's saved x estimated avoided costs) by total resource costs (i.e. utility costs + performance incentives + customer costs). To illustrate, PSNH's TRC for residential programs in 2011 is between 1.42 (Energy Star Appliances) and 4.76 (Energy Star Homes).the

²³ Source: Performance Incentive filing for 2009 and DE 10-188 filing, page 36 for 2011 and 2012.

1 savings for Core electric Residential programs, for all electric companies combined, is
2 291,812,139 kWh, an increase of 134,375,040 from the proposed level of savings of
3 157,437,099 kWh. This represents an 85 percent increase (ref. Schedule 1). All other
4 factors unchanged, this increase in kWh savings will increase the proposed Residential
5 TRC by 85 percent, from 1.96 to 3.63.

6 With respect to C&I programs, our hypothetical calculation of lifetime savings, for all
7 companies combined, is 563,103,113 kWh, an increase of 134,375,040 kWh from the
8 proposed level of savings of 434,977,824. This represents a 29 percent increase (ref.
9 Schedule 1). All other factors unchanged, this increase in savings will increase the
10 proposed C&I TRC by 29 percent, from 1.47 to 1.90.

11 **Q. Are you recommending any changes to NGRID-NH's energy efficiency**
12 **expenditures?**

13 A. No, we are not recommending any changes to the proposed energy efficiency
14 expenditures in 2011 and 2012. However, we note that, when compared to our
15 hypothetical calculations of lifetime MMBtu savings, as described earlier in our
16 testimony, NGRID's estimates are very conservative (i.e. low). If NGRID-NH
17 were to incorporate our hypothetical calculations, the programs would be more
18 cost effective, generating significantly higher lifetime MMBtu savings.

19 **Q. Do you have any additional comments about performance incentives?**

20 A. Yes. During the course of discovery in this case, we noted that each company
21 appears to be recording performance incentives (PI) differently. With respect to
22 program year 2009 PI, National Grid recognizes a charge against energy
23 efficiency funds in January 2010. NHEC recognizes the charge against energy
24 efficiency funds in December 2010. PSNH recognizes a portion of the PI in

1 December 2009. UES recognizes one twelfth each month during 2009. Staff
2 believes that there should be more uniformity in the recording of performance
3 incentives and will work with the utilities to achieve this goal going forward.

4 **Q. Do you have any other comments?**

5 A. Yes. With respect to customer costs, PSNH is the only company that reports
6 “Customer Costs” for the low income Home Energy Assistance program.²⁴ These
7 costs pertain to Federal Weatherization Assistance Program, (WAP), ARRA or
8 other collaboration funds in the Home Energy Assistance Program. The
9 Company believes that these costs and related benefits should be reported as
10 customer costs because these costs, along with the related benefits, are properly
11 reflected in the total resource cost test.

12 We believe that customer costs should not be reported in the Home Energy
13 Assistance program because low income HEA customers do not incur costs for
14 the program. Also, these costs are not provided from Core funds via the SBC;
15 rather, these funds are provided by WAP, ARRA or other funds that are used in
16 collaboration with Core funds. All these separate funds have separate accounting
17 and savings tracking systems. In addition, the savings from the WAP, ARRA and
18 other funds are reported in other venues; hence, if the savings are also we reported
19 in the Core program, the savings would be double counted.

²⁴ Source: Core Filing at page 105 and 110.

1 **Q. Do you have any comments on the proposal submitted by the NH Energy**
2 **Trust?**

3 A. We have not performed any in-depth analysis of the NH Energy Trust proposal
4 and prefer to reserve judgment until such time as we have an opportunity to fully
5 review it.

6 **Q. Do you have any other comments?**

7 A, Yes. We note that for planning purposes, the electric utilities assumed revenues
8 are based on 1.5 mills/kWh for January to June 2001, and 1.8 mills/kWh for July
9 to December 2011. For January to December 2012, the electric utilities assumed
10 revenues of 1.8 mills/kWh.

11 **Q. Does that complete your testimony?**

12 A. Yes, it does, thank you.

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Appendix A

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. I joined the Commission in 1988 and I've worked on a variety of cases pertaining to New Hampshire electric, natural gas, steam and water 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 have reviewed and filed direct testimony on Depreciation Studies and I am a member of the Society of Depreciation Professionals (SDP).

In 1999, I was a participant in the Commission's Energy Efficiency Working Group, a diverse group of stakeholders that was assembled to take a fresh look at energy efficiency issues. In 2002, I worked on the Staff team that recommended re-institution of the Commission's natural gas energy efficiency programs. In 2008, I was promoted to the position of Utility Analyst IV and have been working on a variety of assignments including electric CORE energy efficiency programs,

1 natural gas energy efficiency programs and rate cases pertaining to the electric,
2 water and natural gas utilities and other cases as assigned.

3 Prior to joining the Commission I was employed by the General Electric
4 Company (GE). While at GE, I graduated from the Corporate Financial
5 Management Training Program and I held assignments in General Accounting,
6 Government Accounting & Contracts and Financial Analysis.

7 **Educational and Professional Background**

8 **Al-Azad Iqbal**

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

12 I received my Bachelor degree in Architecture (B. Arch). Later, I received my
13 Masters (MS) in Environmental Management and another Masters in City and
14 Regional Planning (MCRP). I was a Doctoral Candidate at the City and Regional
15 Planning Department at Ohio State University. After joining the PUC in 2007, I
16 participated in several utility related training courses including Advanced
17 Regulatory Studies at Institute of Public Utilities, Michigan State University.
18 Prior to joining the PUC, I was involved in teaching and research activities in
19 different academic and research organizations. Most of my research work was
20 related to quantitative analysis of regional and environmental issues.

Proposal vs. Hypothetical

	Residential Programs						C&I Programs					Grand Tot.	
	ES Homes	HPwES	ES App.	HEA	ES Ltg.	Co. Spec.	Total	New Eq.	Lge Retro	Sm. Bus.	Co. Spec.		Total
Proposal: (1)													
NGRID	1,501,000	2,652,330	1,206,631	1,230,839	2,905,116	-	9,495,916	7,703,362	39,827,552	6,081,900	-	53,612,814	63,108,730
NHEC	799,900	2,398,200	3,329,756	717,727	8,070,159	6,352,000	21,667,742	2,248,900	9,167,837	3,298,149	-	14,714,886	38,382,628
PSNH	9,644,800	4,396,600	18,253,113	8,948,884	33,221,995	27,205,100	101,668,492	73,895,900	119,761,974	89,551,087	29,295,500	312,504,461	414,172,953
UES	1,402,000	495,527	3,433,384	10,254,887	9,019,151	-	24,604,949	8,431,000	31,107,908	14,608,755	-	54,145,663	78,750,612
Total	13,347,700	9,942,657	26,222,884	21,150,337	53,216,421	33,557,100	157,437,099	92,279,162	199,865,271	113,537,891	29,295,500	434,977,824	592,414,923
Hypothetical: (2)													
NGRID	3,708,110	1,621,970	2,289,627	1,450,217	5,697,791	-	14,787,715	9,225,814	29,396,288	4,723,967	-	43,346,049	58,113,764
NHEC	739,119	1,560,735	2,567,820	654,443	7,406,550	8,767,882	19,696,549	4,179,309	5,649,025	3,135,953	-	12,964,287	32,660,836
PSNH	20,972,746	40,645,033	28,775,522	9,189,469	61,989,277	54,915,534	218,487,581	79,356,634	185,397,709	123,454,089	39,549,714	427,758,145	644,245,726
UES	5,123,524	2,748,069	2,067,207	16,218,773	14,702,722	-	40,660,294	5,388,658	58,343,665	15,302,109	-	79,034,632	119,894,927
Total	30,543,499	48,575,807	35,700,175	27,512,902	89,796,340	61,683,417	291,812,139	98,150,615	278,786,666	146,616,118	98,150,615	563,103,113	854,915,253
Variance:													
NGRID	2,207,110	(1,030,360)	1,082,996	219,378	2,792,675	-	5,271,799	1,522,452	(10,431,284)	(1,357,933)	-	(10,266,765)	(4,994,968)
NHEC	(60,781)	(837,465)	(761,936)	(63,284)	(663,609)	415,882	(1,971,193)	1,930,409	(3,518,812)	(162,196)	-	(1,750,599)	(3,721,792)
PSNH	11,327,946	36,248,433	10,522,409	242,585	28,767,282	27,710,434	114,819,089	5,460,734	65,635,735	33,903,002	10,254,214	115,253,684	230,072,773
UES	3,721,524	2,252,542	(1,366,177)	5,963,888	5,683,571	-	16,255,345	(3,042,142)	27,235,757	695,354	-	(10,266,765)	41,144,315
Total	17,195,799	36,633,150	9,477,291	6,362,565	36,579,919	28,126,317	134,375,040	5,671,453	78,921,395	33,078,227	134,375,040	134,375,040	282,500,330
Percent Incr/(Decr):													
NGRID	60%	-64%	47%	15%	49%	0%	36%	17%	-35%	-29%	0%	-24%	-9%
NHEC	-8%	-35%	-23%	-9%	-8%	7%	-9%	60%	-38%	-5%	0%	-12%	-10%
PSNH	117%	824%	58%	3%	87%	102%	113%	7%	55%	38%	35%	37%	56%
UES	265%	455%	-40%	58%	63%	0%	66%	-36%	88%	5%	0%	46%	52%
Total	129%	368%	36%	30%	69%	84%	85%	6%	39%	29%	35%	29%	44%

footnotes:

(1) Proposal is per Core Filing for 2011 at page 128

(2) Hypothetical reflects the following:

Participation = proposed utility cost / actual 2009 utility cost per participant

Lifetime kWh Savings = participation x 2009 actual lifetime kWh savings per participant

DE 10-188
 CORE Programs
 Staff Hypothetical - Lifetime Savings

Schedule 1A

NGRID - Year 2011

	Proposed (1)			Hypothetical (2)				
	Participation [a]	Lifetime Savings Per Partic. [b]	Lifetime kWh Savings [c] = [a] x [b]	Proposed Utility Costs [d]	Act. 2009 Util. Cost Per Partic. [e]	Calculated No. Of Partic. [f] = [d] / [e]	Act. 2009 Lifetime Saving Per Partic. [g]	Calculated Lifetime Sav. [h] = [f] x [g]
Residential:								
Energy Star Homes	50	30,020	1,501,000	\$ 143,600	\$ 3,463	41	89,428	3,708,110
Home Performance with Energy Si	101	26,261	2,652,330	\$ 102,510	\$ 1,069	96	16,913	1,621,970
Energy Star Appliances	875	1,379	1,206,631	\$ 86,368	\$ 98	880	2,603	2,289,627
Home Energy Assistance	50	24,617	1,230,839	\$ 206,299	\$ 4,186	49	29,430	1,450,217
Energy Star Lighting	13,142	221	2,905,116	\$ 77,038	\$ 4	20,818	274	5,697,791
Company Specific	-	-	-	\$ -	\$ -	-	-	-
Total	14,218		9,495,916	615,815		21,884		14,767,715
C&I:								
New Equipment & Construction	11	700,306	7,703,362	\$ 201,358	\$ 25,649	8	1,175,201	9,225,814
Large C&I Retrofit	26	1,531,829	39,827,552	\$ 391,829	\$ 19,294	20	1,447,532	29,396,268
Small Bus. Energy Solutions	33	184,300	6,081,900	\$ 221,906	\$ 5,436	41	115,720	4,723,967
Company Specific	-	-	-	\$ -	\$ -	-	-	-
Total	70		53,612,814	\$ 815,093		69		43,346,049
Total	14,288		63,108,730	\$ 1,430,908		21,953		58,113,764

footnotes:

(1) Core Filing at page 126

(2) Hypothetical incorporates 2009 actual data for "cost per participant" and "lifetime savings per participant".

DE 10-188
 CORE Programs
 Staff Hypothetical - Lifetime Savings

Schedule 1B

NHEC - Year 2011

	Proposed (1)			Hypothetical (2)				
	Participation	Lifetime Savings Per Partic.	Lifetime kWh Savings	Proposed Utility Costs	Act. 2009 Util. Cost Per Partic.	Calculated No. Of Partic.	Act. 2009 Lifetime Saving Per Partic.	Calculated Lifetime Sav.
	(a)	(b)	(c) = (a) x (b)	(d)	(e)	(f) = (d) / (e)	(g)	(h) = (f) x (g)
Residential:								
Energy Star Homes	37	21,619	799,900	\$ 113,500	\$ 3,495	32	22,762	739,119
Home Performance with Energy S	39	61,492	2,398,200	\$ 127,844	\$ 5,037	25	61,492	1,560,735
Energy Star Appliances	1,735	1,919	3,329,756	\$ 129,759	\$ 97	1,338	1,919	2,567,820
Home Energy Assistance	50	14,355	717,727	\$ 162,417	\$ 3,562	46	14,355	654,443
Energy Star Lighting	35,864	225	8,070,159	\$ 105,109	\$ 3	32,915	225	7,406,550
Company Specific	12	529,333	6,352,000	\$ 129,933	\$ 10,162	13	529,333	6,767,882
Total	37,737		21,667,742	768,562		34,369		19,696,549
C&I:								
New Equipment & Construction	5	449,780	2,248,900	\$ 107,413	\$ 11,560	9	449,780	4,179,309
Large C&I Retrofit	22	416,720	9,167,837	\$ 122,063	\$ 9,004	14	416,720	5,649,025
Small Bus. Energy Solutions	32	103,067	3,298,149	\$ 122,066	\$ 4,012	30	103,067	3,135,953
Company Specific	-	-	-	\$ -	\$ -	0	-	-
Total	59		14,714,886	351,542		53		12,964,287
Total	37,796		36,382,628	\$ 1,120,104		34,422		32,660,836

footnotes:

(1) Core Filing at page 126

(2) Hypothetical incorporates 2009 actual data for "cost per participant" and "lifetime savings per participant".

DE 10-188
 CORE Programs
 Staff Hypothetical - Lifetime Savings

Schedule 1C

PSNH - Year 2011

	Proposed (1)			Hypothetical (2)				
	Participation	Lifetime Savings Per Partic.	Lifetime kWh Savings	Proposed Utility Costs	Act. 2009 Util. Cost Per Partic.	Calculated No. Of Partic.	Act. 2009 Lifetime Saving Per Partic.	Calculated Lifetime Sav.
	[a]	[b]	[c] = [a] x [b]	[d]	[e]	[f] = [d] / [e]	[g]	[h] = [f] x [g]
Residential:								
Energy Star Homes	378	25,515	9,644,800	\$ 948,700	\$ 2,174	436	48,071	20,972,746
Home Performance with Energy Star	945	4,652	4,396,600	\$ 1,626,394	\$ 1,082	1,503	27,045	40,645,033
Energy Star Appliances	12,170	1,500	18,253,113	\$ 721,126	\$ 66	10,868	2,648	28,775,522
Home Energy Assistance	679	13,177	8,946,884	\$ 1,917,400	\$ 3,556	539	17,042	9,189,469
Energy Star Lighting	149,656	222	33,221,995	\$ 774,279	\$ 3	233,861	265	61,989,277
Company Specific	54	503,798	27,205,100	\$ 361,400	\$ 2,301	157	349,676	54,915,534
Total	163,882		101,668,492	6,349,299		247,364		216,487,581
C&I:								
New Equipment & Construction	144	513,166	73,895,900	\$ 1,605,108	\$ 10,325	155	510,491	79,356,634
Large C&I Retrofit	136	880,603	119,761,974	\$ 2,113,476	\$ 10,897	194	955,894	185,397,709
Small Bus. Energy Solutions	573	156,285	89,551,087	\$ 2,508,619	\$ 3,774	665	185,723	123,454,089
Company Specific	6	4,882,583	29,295,500	\$ 646,900	\$ 139,198	5	8,510,176	39,549,714
Total	859		312,504,461	\$ 6,874,103		1,014		427,758,145
Total	164,741		414,172,953	\$ 13,223,402		248,378		644,245,726

footnotes:

(1) Core Filing at page 126

(2) Hypothetical incorporates 2009 actual data for "cost per participant" and "lifetime savings per participant".

CORE Programs

Staff Hypothetical - Lifetime Savings

UES - Year 2011

	Proposed (1)			Hypothetical (2)				
	Participation	Lifetime Savings Per Partic.	Lifetime kWh Savings	Proposed Utility Costs	Act. 2009 Util. Cost Per Partic.	Calculated No. Of Partic.	Act. 2009 Lifetime Saving Per Partic.	Calculated Lifetime Sav.
	[a]	[b]	[c] = [a] x [b]	[d]	[e]	[f] = [d] / [e]	[g]	[h] = [f] x [g]
Residential:								
Energy Star Homes	38	36,895	1,402,000	\$ 198,679	\$ 3,739	53	96,417	5,123,524
Home Performance with Energy S	65	7,623	495,527	\$ 240,000	\$ 5,063	47	57,976	2,748,069
Energy Star Appliances	1,622	2,117	3,433,384	\$ 135,000	\$ 124	1,086	1,904	2,067,207
Home Energy Assistance	61	168,113	10,254,887	\$ 306,057	\$ 3,276	93	173,617	16,218,773
Energy Star Lighting	43,961	205	9,019,151	\$ 135,000	\$ 3	48,253	305	14,702,722
Company Specific	-	-	-	\$ 72,500	\$ -	-	-	-
Total	45,747		24,604,949	\$ 1,087,236		49,533		40,860,294
C&I:								
New Equipment & Construction	13	648,538	8,431,000	\$ 224,957	\$ 46,749	5	1,119,883	5,388,858
Large C&I Retrofit	29	1,072,686	31,107,908	\$ 441,595	\$ 22,499	20	2,972,594	58,343,665
Small Bus. Energy Solutions	58	251,841	14,606,755	\$ 374,935	\$ 8,390	45	342,406	15,302,109
Company Specific	-	-	-	\$ -	\$ -	-	-	-
Total	100		54,145,663	\$ 1,041,487.0		69		79,034,632
Total	45,847		78,750,612	\$ 2,128,723		49,602		119,894,927

footnotes:

(1) Core Filing at page 126

(2) Hypothetical incorporates 2009 actual data for "cost per participant" and "lifetime savings per participant".

Proposal vs. Hypothetical

Lifetime MMBtu Savings Summary (1)

	<u>Residential</u>	<u>C&I</u>	<u>Grand Tot.</u>
Proposal: (2)			
NGRID-NH Natural Gas	736,594	1,091,389	1,827,983
Unitil Natural Gas	<u>123,024</u>	<u>210,921</u>	<u>333,945</u>
Total	<u><u>859,618</u></u>	<u><u>1,302,310</u></u>	<u><u>2,161,928</u></u>
Hypothetical: (3)			
NGRID-NH Natural Gas	1,639,949	3,137,367	4,777,316
Unitil Natural Gas	<u>132,935</u>	<u>187,082</u>	<u>320,017</u>
Total	<u><u>1,772,884</u></u>	<u><u>3,324,449</u></u>	<u><u>5,097,333</u></u>
Variance:			
NGRID-NH Natural Gas	903,355	2,045,978	2,949,333
Unitil Natural Gas	<u>9,911</u>	<u>(23,839)</u>	<u>(13,928)</u>
Total	<u><u>913,266</u></u>	<u><u>2,022,139</u></u>	<u><u>2,935,405</u></u>
Percent Increase:			
NGRID-NH Natural Gas	123%	187%	161%
Unitil Natural Gas	<u>8%</u>	<u>-11%</u>	<u>-4%</u>
Total	<u><u>106%</u></u>	<u><u>155%</u></u>	<u><u>136%</u></u>

footnotes:

(1) Summary is at sector level. 2011 comparison by program is not available.

(2) Proposal is per Natural Gas Filing for 2011

(3) Hypothetical reflects the following:

Participation = Proposal Utility Cost / actual 2009 utility cost per participant

Lifetime MMBtu Savings: Participation x 2009 actual lifetime MMBtu savings per participant

NGRID-NH - Year 2011

	Proposed (1)			Hypothetical (2)				
	Participation [a]	Lifetime Savings Per Partic. [b]	Lifetime MMBtu Sav. (c) = [a] x [b]	Proposed Utility Costs [d]	Act. 2009 Util. Cost Per Partic. [e]	Calculated No. Of Partic. [f] = [d] / [e]	Act. 2009 Lifetime Saving Per Partic. [g]	Calculated Lifetime Sav. [h] = [f] x [g]
Residential:								
Energy Star Homes	30	680	20,400	\$ 79,355	n/a	n/a	n/a	n/a
Home Performance with Energy St	1,200	282	338,400	\$ 1,540,631	n/a	n/a	n/a	n/a
Heat, Hot Water, Controls	1,983	155	306,840	\$ 714,464	n/a	n/a	n/a	n/a
Home Energy Assistance	260	273	70,954	\$ 730,895	n/a	n/a	n/a	n/a
Energy Star Lighting	-	-	-	\$ -	n/a	n/a	n/a	n/a
Company Specific	10	-	-	\$ 25,329	n/a	n/a	n/a	n/a
Total	3,483		736,594	\$ 3,090,674	\$ 343	9,011	182	1,639,949
C&I:								
New Equipment & Construction	226	1,241	280,466	\$ 1,032,155	n/a	n/a	n/a	n/a
Large C&I Retrofit	307	2,277	699,039	\$ 1,856,294	n/a	n/a	n/a	n/a
Small Bus. Energy Solutions	23	4,865	111,884	\$ 286,323	n/a	n/a	n/a	n/a
Economic Redevelopment				\$ -	n/a	n/a	n/a	n/a
Company Specific	-	-	-	\$ -	n/a	n/a	n/a	n/a
Total	556		1,091,389	\$ 3,174,772	\$ 2,716	1,169	2,684	3,137,367
Total	4,039		1,827,983	\$ 6,265,446		10,180		4,777,316

footnotes:

(1) Natural Gas Filing

(2) Hypothetical incorporates 2009 actual data for "cost per participant" and "lifetime savings per participant".

DE 10-188
 Natural Gas Programs
 Staff Hypothetical - Lifetime Savings

Schedule 2B

Northern - Year 2011

	Proposed (1)			Hypothetical (2)				
	Participation [a]	Lifetime Savings Per Partic. [b]	Lifetime MMBtu Sav. [c] = [a] x [b]	Proposed Utility Costs [d]	Act. 2009 Util. Cost Per Partic. [e]	Calculated No. Of Partic. [f] = [d] / [e]	Act. 2009 Lifetime Saving Per Partic. [g]	Calculated Lifetime Sav. [h] = [f] x [g]
Residential:								
Energy Star Homes	-	-	-	\$ -	n/a	n/a	n/a	n/a
Home Performance with Energy Star (incl. Appl.)	26	804	20,896	\$ 135,000	n/a	n/a	n/a	n/a
Heat, Hot Water, Controls	447	193	86,331	\$ 309,617	n/a	n/a	n/a	n/a
Home Energy Assistance	23	687	15,797	\$ 110,000	n/a	n/a	n/a	n/a
Energy Star Lighting	-	-	-	\$ -	n/a	n/a	n/a	n/a
Company Specific	-	-	-	-	n/a	n/a	n/a	n/a
Total	496		123,024	\$ 554,617	\$ 462.03	1,200	111	132,935
C&I:								
New Equipment & Construction	62	892	55,276	\$ 75,000	n/a	n/a	n/a	n/a
Large C&I Retrofit	5	12,230	61,149	\$ 90,000	n/a	n/a	n/a	n/a
Small Bus. Energy Solutions	11	5,664	62,301	\$ 111,800	n/a	n/a	n/a	n/a
Multi-Family	5	6,439	32,195	\$ 153,771	n/a	n/a	n/a	n/a
Company Specific	-	-	-	\$ -	n/a	n/a	n/a	n/a
Total	83		210,921	\$ 430,571	\$ 18,823.9	23	8,179	187,082
Total	\$ 579		333,945	\$ 985,188		1,223		320,017

footnotes:

(1) Natural Gas Filing

(2) Hypothetical incorporates 2009 actual data for "cost per participant" and "lifetime savings per participant".