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May 30, 2017

**Via Electronic and US Mail**

Debra A. Howland, Executive Director  
New Hampshire Public Utilities Commission  
21 South Fruit Street, Suite 10  
Concord, NH 03301-2429

**RE: DE 14-216 Liberty Utilities (EnergyNorth Natural Gas) Corp. d/b/a Liberty Utilities  
Core Electric Energy Efficiency Program – YE 2016**

Dear Ms. Howland:

On behalf of Liberty Utilities, I enclose for filing in the above-captioned docket an original and three copies of the calculation of the shareholder incentive report relating to the Company's energy efficiency programs approved by Commission Order No. 25,856 (December 24, 2015) and operated from January 1 - December 31, 2016.

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

Sincerely,

A handwritten signature in black ink that reads "Stephen R. Hall".

Stephen R. Hall

Enclosure

Cc: Service List

3739

**NEW HAMPSHIRE PUBLIC UTILITIES COMMISSION**

**LIBERTY UTILITIES (ENERGYNORTH NATURAL GAS) CORP.**

**d/b/a**

**LIBERTY UTILITIES**

**CORE PROGRAMS - 2016 YEAR-END REPORT**

**N.H.P.U.C. Docket No. DE 14-262**

**May 30, 2017**



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**Liberty Utilities (EnergyNorth Natural Gas) Corp.**  
**d/b/a Liberty Utilities**

**SUMMARY OF 2016 PROGRAM ACTIVITY**

The following report presents the results of Liberty Utilities (EnergyNorth Natural Gas) Corp. d/b/a Liberty Utilities (“Liberty Utilities” or “Company”) residential and commercial & industrial energy efficiency programs for calendar year 2016.

Table 1 shows a summary of overall program savings results. In total, the Company served 31,093 participants and saved 1,773,981 Lifetime MMBTUs. Annual MMBTU savings were 110,178 with an average savings per participant per year of 3.54. Of the 31,093 participants, 1,952 also had electric savings which totaled 24,358,566 Lifetime kWh’s. Annual kWh savings were 1,155,534 with an average savings per participant per year of 591.97.

Table 2 documents the quantified benefits and costs achieved by program for the residential market. In total, the residential programs generated \$7,758,136 in customer benefits and incurred costs of \$4,389,771, for an overall program benefit cost ratio of 1.77.

Table 3 documents the quantified benefits and costs achieved by program for the commercial & industrial market. In total, the commercial & industrial programs generated \$8,320,745 in customer benefits and incurred costs of \$4,443,597, for an overall program benefit cost ratio of 1.87.

Table 4 documents the MMBTU savings achieved by program for the individual residential and commercial and industrial programs. In summary, the residential program activities resulted in 790,338 in total lifetime MMBTU savings and 11,022,505 lifetime kWh savings. The commercial and industrial program activities resulted in 983,642 in total lifetime MMBTU savings and 13,336,060 lifetime kWh savings.

Table 5 documents footnotes for the residential and commercial & industrial program benefit cost ratios and the rate of savings per MMBTU based on the Avoided Energy Supply Costs in New England 2015 report.

Table 6 documents the Company’s earned 2016 year-end performance incentive of \$437,305. As specified by the Commission, the performance incentive for 2016 has been documented using assumptions that are consistent with assumptions used to develop program-year goals. Table 6 summarizes the performance incentive calculation by component (commercial & industrial and residential). As specified by the Commission, results for all programs have been included in the performance incentive calculation.

Table 7 documents the planned versus actual benefit cost ratio by sector (residential and commercial & industrial), and for the entire portfolio of energy efficiency programs implemented in 2016.

Table 8 documents the Company’s expenses by Program and budget category. Overall, the Company incurred a total of \$4,979,871 of expenses in 2016.

**Liberty Utilities (EnergyNorth Natural Gas) Corp. d/b/a Liberty Utilities**  
**CORE Energy Efficiency Programs 2016 Year End Report**  
 NHPUC Docket No. DE 14-216

**Table 1. Program Savings Summary**

<b>Gas Savings in MMBTU's resulting from Energy Efficiency Measures Installed in the Program Year</b>	
Number of Participants served in the annual program year time period	31,093
MMBTU Savings per Participant Per Year	3.54
Total MMBTU Savings Per Year	110,178
Measure Life of Measures Installed in the annual program year time period	16.10
Grand Total MMBTU Savings Benchmark for Performance Incentive	1,773,981
<b>Electric Savings in kWh's resulting from Energy Efficiency Measures Installed in the Program Year</b>	
Number of Participants served in the annual program year time period	1,952
kWh Savings per Participant Per Year	591.97
Total kWh Savings Per Year	1,155,534
Measure Life of Measures Installed in the annual program year time period	21
Grand Total kWh Savings Benchmark for Performance Incentive	24,358,566

**Table 2. Benefit Cost (B/C) Benchmark for Computing Performance Incentive - Residential Programs**

Residential Programs	Home Energy Assistance	ENERGY STAR Products	Home Performance w/ENERGY STAR	ENERGY STAR Homes	Residential Building Practices & Demo	Total
<b>Benefits:</b>						
<b>Avoided Generation, Transmission &amp; Distribution Costs for:</b>						
Program Participants	\$ 1,304,587	\$ 2,427,945	\$ 2,537,554	\$ 1,261,414	\$ 226,635	\$ 7,758,136
Market effects (e.g., spillover, post-program adoptions)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Customer Benefits (including O&amp;M)</b>	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Quantifiable avoided resource costs (e.g., water, electricity)</b>	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Adder for other non-quantifiable benefits (e.g., environmental and other)</b>	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Total Benefits</b>	<b>\$ 1,304,587</b>	<b>\$ 2,427,945</b>	<b>\$ 2,537,554</b>	<b>\$ 1,261,414</b>	<b>\$ 226,635</b>	<b>\$ 7,758,136</b>
<b>Costs:</b>						
<b>Program costs (e.g. incentives, admin, monitoring, evaluation for:</b>						
Utility Costs (e.g., for admin, monitoring, evaluation, markeing)	\$ 1,003,642	\$ 970,998	\$ 478,819	\$ 99,240	\$ 245,049	\$ 2,797,749
Program participants (e.g., incremental costs not reimbursed)	\$ -	\$ 748,344	\$ 550,456	\$ 46,509	\$ -	\$ 1,345,309
Market effects (e.g., spillover, post-program adoptions)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Customer Costs (including O&amp;M)</b>	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Quantifiable additional resource costs (e.g. water, electricity)</b>	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Total Costs</b>	<b>\$ 1,003,642</b>	<b>\$ 1,719,342</b>	<b>\$ 1,029,276</b>	<b>\$ 145,749</b>	<b>\$ 245,049</b>	<b>\$ 4,143,057</b>
<b>Utility Performance Incentive at the Sector Level</b>	n/a	n/a	n/a	n/a	n/a	\$ 246,714
<b>Total Costs Including Utility Performance Incentives at Sector Level</b>						\$ 4,389,771
<b>Benefit Cost Ratio by Sector (i.e., B/C Benchmark for PI Calc.)</b>	<b>1.30</b>	<b>1.41</b>	<b>2.47</b>	<b>8.65</b>	<b>0.92</b>	<b>1.77</b>

**Table 3. Benefit Cost (B/C) Benchmark for Computing Performance Incentive - Commercial & Industrial Programs**

Commercial & Industrial Programs	Small Business	Large Business	C&I Education	Total
<b>Benefits:</b>				
<b>Avoided Generation, Transmission &amp; Distribution Costs for:</b>				
Program Participants	\$ 2,497,803	\$ 5,822,941	\$ -	\$ 8,320,745
Market effects (e.g., spillover, post-program adoptions)	\$ -	\$ -	\$ -	\$ -
<b>Customer Benefits (including O&amp;M)</b>	\$ -	\$ -	\$ -	\$ -
<b>Quantifiable avoided resource costs (e.g., water, electricity)</b>	\$ -	\$ -	\$ -	\$ -
<b>Adder for other non-quantifiable benefits (e.g., environmental and other)</b>	\$ -	\$ -	\$ -	\$ -
<b>Total Benefits</b>	<b>\$ 2,497,803</b>	<b>\$ 5,822,941</b>	<b>\$ -</b>	<b>\$ 8,320,745</b>
<b>Costs:</b>				
<b>Program costs (e.g. incentives, admin, monitoring, evaluation for:</b>				
Utility Costs (e.g., for admin, monitoring, evaluation, marketing)	\$ 795,989	\$ 1,362,063	\$ 24,070	\$ 2,182,122
Program participants (e.g., incremental costs not reimbursed)	\$ 518,341	\$ 1,552,542	\$ -	\$ 2,070,884
Market effects (e.g., spillover, post-program adoptions)	\$ -	\$ -	\$ -	\$ -
<b>Customer Costs (including O&amp;M)</b>	\$ -	\$ -	\$ -	\$ -
<b>Quantifiable additional resource costs (e.g. water, electricity)</b>	\$ -	\$ -	\$ -	\$ -
<b>Total Costs</b>	<b>\$ 1,314,330</b>	<b>\$ 2,914,605</b>	<b>\$ 24,070</b>	<b>\$ 4,253,006</b>
<b>Utility Performance Incentive at the Sector Level</b>	n/a	n/a	n/a	<b>\$ 190,591</b>
<b>Total Costs Including Utility Performance Incentives at Sector Level</b>				<b>\$ 4,443,597</b>
<b>Benefit Cost Ratio by Sector (i.e., B/C Benchmark for PI Calc.)</b>	<b>1.90</b>	<b>2.00</b>	<b>-</b>	<b>1.87</b>



**Table 4. MMBTU Savings Benchmark for Computing Performance Incentive**

<b>Residential Programs</b>	<b>Home Energy Assistance</b>	<b>ENERGY STAR Products</b>	<b>Home Performance w/ENERGY STAR</b>	<b>ENERGY STAR Homes</b>	<b>Residential Building Practices &amp; Demo</b>	<b>Total</b>
<b>Gas Savings in MMBTU's from Measures Installed in the Program Year</b>						
Number of Participants	246	1,569	668	41	25,000	27,524
MMBTU Savings per Participant Per Year	28	11	21	23	0	2
Total MMBTU Savings Per Year	6,998	16,658	13,901	938	9,622	48,116
Measure Life of Measures Installed During the Program Year	20	17	22	25	3	16
Grand Total MMBTU Savings Benchmark for Performance Incentive	142,640	283,075	311,156	23,438	30,030	790,338
<b>Electric Savings in kWh's from Measures Installed in the Program Year</b>						
Number of Participants	143	836	47	41	-	1,067
kWh Savings per Participant	380	4	3	8,507	-	381
Total kWh Savings Per Participant Per Year	54,303	3,637	118	348,784	-	406,842
Measure Life of Measures Installed in the annual program year time period	20.80	321.92	21.22	25.00	-	27.09
Grand Total kWh Savings Benchmark for Performance Incentive	1,129,653	1,170,743	2,510	8,719,600	-	11,022,505
<b>Commercial &amp; Industrial Programs</b>						
	<b>Small Business</b>	<b>Large Business</b>	<b>C&amp;I Education</b>	<b>Total</b>		
Number of Participants	2,407	1,162	-	3,569		
MMBTU Savings per Participant Per Year	9	36	-	17		
Total MMBTU Savings Per Year	20,732	41,330	-	62,061		
Measure Life of Measures Installed During the Program Year	17	15	-	16		
Grand Total MMBTU Savings Benchmark for Performance Incentive	350,303	633,340	-	983,642		
<b>Electric Savings in kWh's from Measures Installed in the Program Year</b>						
Number of Participants	13	872	-	885		
kWh Savings per Participant	1,379	838	-	846		
Total kWh Savings Per Participant Per Year	17,925	730,766.77	-	748,691.56		
Measure Life of Measures Installed in the annual program year time period	16.82	17.84	-	17.81		
Grand Total kWh Savings Benchmark for Performance Incentive	301,519	13,034,541	-	13,336,060		

**Table 5. Footnotes for Benefit Cost Ratio**

<b>Residential Programs</b>	<b>Home Energy Assistance</b>	<b>ENERGY STAR Products</b>	<b>Home Performance w/ENERGY STAR</b>	<b>ENERGY STAR Homes</b>	<b>Residential Building Practices &amp; Demo</b>	<b>Total</b>
Number of Participants*	246	1,569	668	41	25,000	27,524
MMBTU Savings per Participant Per Year**	28	11	21	23	0	2
Total MMBTU Savings Per Year	6,998	16,658	13,901	938	9,622	48,116
Number of Years in the Measure Life**	20	17	22	25	3	16
Grand Total MMBTU Savings Benchmark for Performance Incentive	142,640	283,075	311,156	23,438	30,030	790,338
Lifetime Therm Savings	1,426,397	2,830,747	3,111,562	234,375	300,303	7,903,383
Rate of Savings per MMBTU ***	\$ 8.91	\$ 8.91	\$ 8.91	\$ 8.91	\$ -	\$ 8.91
Grand Total Dollar Savings	\$ 1,270,919	\$ 2,522,196	\$ 2,772,402	\$ 208,828	\$ -	\$ 7,041,915

<b>Commercial &amp; Industrial Programs</b>	<b>Small Business</b>	<b>Large Business</b>	<b>C&amp;I Education</b>	<b>Total</b>
Number of Participants*	2,407	1,162	-	3,569
MMBTU Savings per Participant Per Year**	9	36	-	17
Total MMBTU Savings Per Year	20,732	41,330	-	62,061
Number of Years in the Measure Life**	17	15	-	16
Grand Total MMBTU Savings Benchmark for Performance Incentive	350,303	633,340	-	983,642
Lifetime Therm Savings	3,503,026	6,333,398	-	9,836,424
Rate of Savings per MMBTU ***	\$ 7.17	\$ 7.17	\$ -	\$ 7.17
Grand Total Dollar Savings	\$ 2,511,670	\$ 4,541,046	\$ -	\$ 7,052,716

\* eTrack (Liberty Utilities Energy Efficiency Program Tracking System)

\*\* The values are variable for program year measurement purposes and based upon the B/C model assumptions.

\*\*\* Source: Avoided Energy Supply Costs in New England: 2015 Report, *Synapse Energy Economics, Inc.* (Cambridge, MA). pp. 1-17

<b>Residential Programs</b>	<b>Home Energy Assistance</b>	<b>ENERGY STAR Appliances</b>	<b>Home Performance w/ENERGY STAR</b>	<b>ENERGY STAR Homes</b>	<b>Residential Building Practices &amp; Demo</b>	<b>Total</b>
Number of Participants*	246	1,569	668	41	25,000	27,524
Participant Incremental Cost	\$ -	\$ 748,344	\$ 550,456	\$ 46,509	\$ -	\$ 1,345,309
Program Participant Cost	\$ -	\$ 477	\$ 824	\$ 1,134	\$ -	\$ 49

<b>Commercial &amp; Industrial Programs</b>	<b>Small Business</b>	<b>Large Business</b>	<b>C&amp;I Education</b>	<b>Total</b>
Number of Participants*	2,407	1,162	-	3,569
Participant Incremental Cost	\$ 518,341	\$ 1,552,542	\$ -	\$ 2,070,884
Program Participant Cost	\$ 215	\$ 1,336	\$ -	\$ 580

**Table 6. Performance Incentive Calculation - 2016**

<b>Commercial &amp; Industrial Incentive</b>	<u>Planned</u>	<u>Actual</u>
1. Benefit/Cost Ratio	1.51	1.87
2. Threshold Benefit / Cost Ratio <sup>1</sup>	1.00	
3. Lifetime MMBTU Savings	1,045,765	983,642
4. Threshold Lifetime MMBTU Savings (65%) <sup>2</sup>	679,747	
5. Budget / Actual Spend	\$2,703,000	\$2,182,122
6. Benefit / Cost Percentage of Budget	4.00%	
7. Lifetime MMBTU Percentage of Budget	4.00%	
<b>8. Commercial &amp; Industrial Incentive</b>	<b>\$216,240</b>	<b>\$190,591</b>
<b>9. Cap</b>	<b>\$324,360</b>	<b>\$324,360</b>
<b>Residential Incentive</b>		
10. Benefit / Cost Ratio	1.47	1.77
11. Threshold Benefit / Cost Ratio <sup>1</sup>	1.00	
12. Lifetime MMBTU Savings	785,379	790,338
13. Threshold Lifetime MMBTU Savings (65%) <sup>2</sup>	510,496	
14. Budget / Actual Spend	\$2,918,815	\$2,797,749
15. Benefit / Cost Percentage of Budget	4.00%	
16. Lifetime MMBTU Percentage of Budget	4.00%	
<b>17. Residential Incentive</b>	<b>\$233,505</b>	<b>\$246,714</b>
<b>18. Cap</b>	<b>\$350,258</b>	<b>\$350,258</b>
<b>19. TOTAL INCENTIVE</b>	<b>\$449,745</b>	<b>\$437,305</b>

**Notes**

1. Actual Benefit / Cost Ratio for each sector must be greater than or equal to 1.0.
2. Actual Lifetime MMBTU Savings for each sector must be greater than or equal to 65% of projected savings.

**Liberty Utilities (EnergyNorth Natural Gas) Corp. d/b/a Liberty Utilities**  
**CORE Energy Efficiency Programs 2016 Year End Report**  
NHPUC Docket No. DE 14-216

**Table 7. Planned Versus Actual Benefit / Cost Ratio by Sector - 2016**

	<u>Planned</u>	<u>Actual</u>
<b>Commercial &amp; Industrial:</b>		
1. Benefits (Value) From Eligible Programs	\$7,185,067	\$8,320,745
2. Implementation Expenses	\$2,703,000	\$2,182,122
3. Customer Contribution	\$1,850,106	\$2,070,884
4. Performance Incentive	\$216,240	\$190,591
5. Total Costs Including Performance Incentive	<b>\$4,769,346</b>	<b>\$4,443,597</b>
6. Benefit/Cost Ratio - C&I Sector	<b>1.58</b>	<b>1.96</b>
7. Benefit/Cost Ratio including PI in cost	<b>1.51</b>	<b>1.87</b>
<b>Residential:</b>		
8. Benefits (Value) From Eligible Programs	\$6,392,021	\$7,758,136
9. Implementation Expenses	\$2,918,815	\$2,797,749
10. Customer Contribution	\$1,181,527	\$1,345,309
11. Performance Incentive	\$233,505	\$246,714
12. Total Costs Including Performance Incentive	<b>\$4,333,847</b>	<b>\$4,389,771</b>
13. Benefit/Cost Ratio - Residential Sector	<b>1.56</b>	<b>1.87</b>
14. Benefit/Cost Ratio including PI in cost	<b>1.47</b>	<b>1.77</b>

**Table 8. Program Expenditures by Category - 2016 Actual**

Program	Evaluation	External Administration	Internal Administration	Internal Implementation	Marketing	Rebates- Services	Total
<b>Residential Programs</b>							
ENERGY STAR Products	\$ 23,055		\$ 7,109	\$ 79,279	\$ 15,349	\$ 846,206	\$ 970,998
ENERGY STAR Homes	\$ 21,747		\$ 1,269	\$ 6,449	\$ 2,209	\$ 67,564	\$ 99,240
Home Energy Assistance	\$ 21,273		\$ 8,143	\$ 59,268	\$ -	\$ 914,958	\$ 1,003,642
Home Performance with ENERGY STAR	\$ 20,371		\$ 12,020	\$ 54,356	\$ 9,950	\$ 382,122	\$ 478,819
Residential Building Practices & Demonstration	\$ 9,300		\$ 2,736	\$ 23,173	\$ 4,952	\$ 204,888	\$ 245,049
<b>Subtotal - Residential</b>	<b>\$ 95,747</b>	<b>\$ -</b>	<b>\$ 31,277</b>	<b>\$ 222,526</b>	<b>\$ 32,460</b>	<b>\$ 2,415,738</b>	<b>\$ 2,797,749</b>
<b>Commercial &amp; Industrial Programs</b>							
C&I Education	\$ -		\$ -	\$ -	\$ 6,000	\$ 18,070	\$ 24,070
Large Business Energy Solutions	\$ 38,587		\$ 10,237	\$ 88,962	\$ 12,283	\$ 1,211,994	\$ 1,362,063
Small Business Energy Solutions	\$ 27,739		\$ 8,428	\$ 87,899	\$ 16,730	\$ 655,192	\$ 795,989
<b>Subtotal - C&amp;I</b>	<b>\$ 66,326</b>	<b>\$ -</b>	<b>\$ 18,665</b>	<b>\$ 176,861</b>	<b>\$ 35,013</b>	<b>\$ 1,885,256</b>	<b>\$ 2,182,122</b>
<b>Total - All</b>	<b>\$ 162,073</b>	<b>\$ -</b>	<b>\$ 49,942</b>	<b>\$ 399,387</b>	<b>\$ 67,473</b>	<b>\$ 4,300,995</b>	<b>\$ 4,979,871</b>