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July 3, 2018

Via Hand Delivery and Electronic 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 Energy Efficiency Programs – Program Year 2017 (Revised)

Dear Ms. Howland:

On behalf of Liberty Utilities (EnergyNorth Natural Gas) Corp. d/b/a Liberty Utilities, I enclose for filing an original and three copies of Liberty Utilities' revised performance incentive calculations relating to the NHSaves Energy Efficiency Programs for program year 2017. The Commission approved the 2017 programs in its Order No. 25,976 issued on December 23, 2016. Please note this report has been revised with an updated average distribution rate for the Lost Base Revenue ("LBR") calculation.

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

Sincerely,

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 - 2017 YEAR-END REPORT**

**N.H.P.U.C. Docket No. DE 14-216**

**REVISED July 3, 2018**



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## SUMMARY OF 2017 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 2017.

Table 1 shows a summary of overall program savings results. In total, the Company served 44,745 participants and saved 1,568,358 Lifetime MMBTUs. Annual MMBTU savings were 101,645 with an average savings per participant per year of 2.27. Of the 44,745 participants, 492 also had electric savings which totaled 4,193,724 Lifetime kWh’s. Annual kWh savings were 226,338 with an average savings per participant per year of 460.04.

Table 2 documents the quantified benefits and costs achieved by program for the residential market. In total, the residential programs generated \$4,594,777 in customer benefits and incurred costs of \$3,978,740, for an overall program benefit cost ratio of 1.12.

Table 3 documents the quantified benefits and costs achieved by program for the commercial & industrial market. In total, the commercial & industrial programs generated \$9,435,393 in customer benefits and incurred costs of \$4,345,415 for an overall program benefit cost ratio of 2.17.

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 464,267 in total lifetime MMBTU savings and 1,501,061 lifetime kWh savings. The commercial and industrial program activities resulted in 1,104,091 in total lifetime MMBTU savings and 2,692,663 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 Update report.

Table 6 documents the Company’s earned 2017 year-end performance incentive of \$237,145. As specified by the Commission, the performance incentive for 2017 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 2017.

Table 8 documents the Company’s expenses by Program and budget category. Overall, the Company incurred a total of \$4,501,788 of expenses in 2017.

Table 9 documents the forecast of annualized therm savings by month and the total lost base revenue calculation.

Table 10 documents the actual annualized therm savings by month and the associated lost base revenue calculation. There was a total program actual annualized savings by month of 1,017,420 therms and a total lost base revenue of \$129,610 for 2017.

Table 11 documents the calculation of average distribution rates for lost revenue based on actual billing determinants and actual distribution rates for 2017. The Average Distribution Revenue was calculated for each sector by dividing the total therm distribution revenue by the therms for the applicable time period (January – June 2017 and July – December 2017). The distribution revenue is calculated by multiplying the volumetric distribution rates that were billed for the period (month) by the billing determinants for the same period.

**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	44,745
MMBTU Savings per Participant Per Year	2.27
Total MMBTU Savings Per Year	101,645
Measure Life of Measures Installed in the annual program year time period	15.43
Grand Total MMBTU Savings Benchmark for Performance Incentive	1,568,358
<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	492
kWh Savings per Participant Per Year	460.04
Total kWh Savings Per Year	226,338
Measure Life of Measures Installed in the annual program year time period	19
Grand Total kWh Savings Benchmark for Performance Incentive	4,193,724

**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	Home Energy Reports	Total
<b>Benefits:</b>						
<b>Avoided Generation, Transmission &amp; Distribution Costs for:</b>						
Program Participants	\$ 945,103	\$ 2,002,832	\$ 727,184	\$ 488,748	\$ 430,910	\$ 4,594,777
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>\$ 945,103</b>	<b>\$ 2,002,832</b>	<b>\$ 727,184</b>	<b>\$ 488,748</b>	<b>\$ 430,910</b>	<b>\$ 4,594,777</b>
<b>Costs:</b>						
<b>Program costs (e.g. incentives, admin, monitoring, evaluation for:</b>						
Utility Costs (e.g., for admin, monitoring, evaluation, markeing)	\$ 826,371	\$ 989,619	\$ 354,067	\$ 111,025	\$ 224,350	\$ 2,505,433
Program participants (e.g., incremental costs not reimbursed)	\$ -	\$ 1,230,895	\$ 187,029	\$ 55,384	\$ -	\$ 1,473,307
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>\$ 826,371</b>	<b>\$ 2,220,514</b>	<b>\$ 541,096</b>	<b>\$ 166,409</b>	<b>\$ 224,350</b>	<b>\$ 3,978,740</b>
<b>Utility Performance Incentive at the Sector Level</b>	n/a	n/a	n/a	n/a	n/a	\$ 126,052
<b>Total Costs Including Utility Performance Incentives at Sector Level</b>						<b>\$ 4,104,792</b>
<b>Benefit Cost Ratio by Sector (i.e., B/C Benchmark for PI Calc.)</b>	<b>1.14</b>	<b>0.90</b>	<b>1.34</b>	<b>2.94</b>	<b>1.92</b>	<b>1.12</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	\$ 3,435,202	\$ 6,000,191	\$ -	\$ 9,435,393
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>\$ 3,435,202</b>	<b>\$ 6,000,191</b>	<b>\$ -</b>	<b>\$ 9,435,393</b>
<b>Costs:</b>				
<b>Program costs (e.g. incentives, admin, monitoring, evaluation for:</b>				
Utility Costs (e.g., for admin, monitoring, evaluation, marketing)	\$ 852,560	\$ 1,118,670	\$ 25,125	\$ 1,996,355
Program participants (e.g., incremental costs not reimbursed)	\$ 356,217	\$ 1,881,750	\$ -	\$ 2,237,967
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>\$ 1,208,777</b>	<b>\$ 3,000,420</b>	<b>\$ 25,125</b>	<b>\$ 4,234,322</b>
<b>Utility Performance Incentive at the Sector Level</b>	n/a	n/a	n/a	<b>\$ 111,093</b>
<b>Total Costs Including Utility Performance Incentives at Sector Level</b>				<b>\$ 4,345,415</b>
<b>Benefit Cost Ratio by Sector (i.e., B/C Benchmark for PI Calc.)</b>	<b>2.84</b>	<b>2.00</b>	<b>-</b>	<b>2.17</b>

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

Residential Programs	Home Energy Assistance	ENERGY STAR Products	Home Performance w/ENERGY STAR	ENERGY STAR Homes	Home Energy Reports	Total
<b>Gas Savings in MMBTU's from Measures Installed in the Program Year</b>						
Number of Participants	227	1,398	93	44	38,000	39,762
MMBTU Savings per Participant Per Year	20	8	38	48	0	1
Total MMBTU Savings Per Year	4,476	11,846	3,508	2,103	9,708	31,642
Measure Life of Measures Installed During the Program Year	21	18	22	25	3	15
Grand Total MMBTU Savings Benchmark for Performance Incentive	93,955	207,528	76,319	52,587	33,878	464,267
<b>Electric Savings in kWh's from Measures Installed in the Program Year</b>						
Number of Participants	196	165	53	44	-	458
kWh Savings per Participant	213	166	91	47	-	166
Total kWh Savings Per Participant Per Year	41,806	27,419	4,817	2,051	-	76,093
Measure Life of Measures Installed in the annual program year time period	21.16	16.99	20.63	25.00	-	19.73
Grand Total kWh Savings Benchmark for Performance Incentive	884,712	465,724	99,360	51,266	-	1,501,061
<b>Commercial &amp; Industrial Programs</b>						
	Small Business	Large Business	C&I Education	Total		
Number of Participants	4,811	172	-	4,983		
MMBTU Savings per Participant Per Year	5	257	-	14		
Total MMBTU Savings Per Year	25,815	44,189	-	70,004		
Measure Life of Measures Installed During the Program Year	15	16	-	16		
Grand Total MMBTU Savings Benchmark for Performance Incentive	396,122	707,968	-	1,104,091		
<b>Electric Savings in kWh's from Measures Installed in the Program Year</b>						
Number of Participants	28	6	-	34		
kWh Savings per Participant	3,237	9,933	-	4,419		
Total kWh Savings Per Participant Per Year	90,647	59,599.14	-	150,245.69		
Measure Life of Measures Installed in the annual program year time period	17.72	18.22	-	17.92		
Grand Total kWh Savings Benchmark for Performance Incentive	1,606,488	1,086,175	-	2,692,663		

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

Residential Programs	Home Energy Assistance	ENERGY STAR Products	Home Performance w/ENERGY STAR	ENERGY STAR Homes	Home Energy Reports	Total
Number of Participants*	227	1,398	93	44	38,000	39,762
MMBTU Savings per Participant Per Year**	20	8	38	48	0	1
Total MMBTU Savings Per Year	4,476	11,846	3,508	2,103	9,708	31,642
Number of Years in the Measure Life**	21	18	22	25	3	15
Grand Total MMBTU Savings Benchmark for Performance Incentive	93,955	207,528	76,319	52,587	33,878	464,267
Lifetime Therm Savings	939,547	2,075,281	763,185	525,874	338,783	4,642,670
Rate of Savings per MMBTU ***	\$ 8.67	\$ 8.67	\$ 8.67	\$ 8.67	\$ 8.67	\$ 8.67
Grand Total Dollar Savings	\$ 814,587	\$ 1,799,269	\$ 661,681	\$ 455,933	\$ 293,725	\$ 4,025,195
<b>Commercial &amp; Industrial Programs</b>						
	Small Business	Large Business	C&I Education	Total		
Number of Participants*	4,811	172	-	4,983		
MMBTU Savings per Participant Per Year**	5	257	-	14		
Total MMBTU Savings Per Year	25,815	44,189	-	70,004		
Number of Years in the Measure Life**	15	16	-	16		
Grand Total MMBTU Savings Benchmark for Performance Incentive	396,122	707,968	-	1,104,091		
Lifetime Therm Savings	3,961,224	7,079,684	-	11,040,908		
Rate of Savings per MMBTU ***	\$ 7.47	\$ 7.47	-	\$ 7.47		
Grand Total Dollar Savings	\$ 2,959,034	\$ 5,288,524	-	\$ 8,247,558		
* 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 Update Report, Tabors Caramanis Rudkevich, (December 13, 2016). Pg.11, Table 8						
<b>Residential Programs</b>						
	Home Energy Assistance	ENERGY STAR Appliances	Home Performance w/ENERGY STAR	ENERGY STAR Homes	Residential Building Practices & Demo	Total
Number of Participants*	227	1,398	93	44	38,000	39,762
Participant Incremental Cost	\$ -	\$ 1,230,895	\$ 187,029	\$ 55,384	\$ -	\$ 1,473,307
Program Participant Cost	\$ -	\$ 880	\$ 2,011	\$ 1,259	\$ -	\$ 37
<b>Commercial &amp; Industrial Programs</b>						
	Small Business	Large Business	C&I Education	Total		
Number of Participants*	4,811	172	-	4,983		
Participant Incremental Cost	\$ 356,217	\$ 1,881,750	\$ -	\$ 2,237,967		
Program Participant Cost	\$ 74	\$ 10,940	\$ -	\$ 449		

**Table 6. Performance Incentive Calculation - 2017**

<b>Commercial &amp; Industrial Incentive</b>	<b><u>Planned</u></b>	<b><u>Actual</u></b>
1. Benefit/Cost Ratio	2.01	2.17
2. Threshold Benefit / Cost Ratio <sup>1</sup>	1.00	
3. Lifetime MMBTU Savings	1,172,123	1,104,091
4. Threshold Lifetime MMBTU Savings (65%) <sup>2</sup>	761,880	
5. Budget / Actual Spend	\$3,000,600	\$1,996,355
6. Benefit / Cost Percentage of Budget	2.75%	
7. Lifetime MMBTU Percentage of Budget	2.75%	
<b>8. Commercial &amp; Industrial Incentive</b>	<b>\$165,033</b>	<b>\$111,093</b>
<b>9. Cap</b>	<b>\$206,291</b>	<b>\$206,291</b>
<b>Residential Incentive</b>		
10. Benefit / Cost Ratio	1.20	1.12
11. Threshold Benefit / Cost Ratio <sup>1</sup>	1.00	
12. Lifetime MMBTU Savings	519,505	464,267
13. Threshold Lifetime MMBTU Savings (65%) <sup>2</sup>	337,678	
14. Budget / Actual Spend	\$2,913,120	\$2,505,433
15. Benefit / Cost Percentage of Budget	2.75%	
16. Lifetime MMBTU Percentage of Budget	2.75%	
<b>17. Residential Incentive</b>	<b>\$160,222</b>	<b>\$126,052</b>
<b>18. Cap</b>	<b>\$200,277</b>	<b>\$200,277</b>
<b>19. TOTAL INCENTIVE</b>	<b>\$325,255</b>	<b>\$237,145</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 2017 Year End Report**  
NHPUC Docket No. DE 14-216

**Table 7. Planned Versus Actual Benefit / Cost Ratio by Sector - 2017**

<b>Commercial &amp; Industrial:</b>	<b><u>Planned</u></b>	<b><u>Actual</u></b>
1. Benefits (Value) From Eligible Programs	\$10,312,524	\$9,435,393
2. Implementation Expenses	\$3,000,600	\$1,996,355
3. Customer Contribution	\$1,971,268	\$2,237,967
4. Performance Incentive	\$165,033	\$111,093
5. Total Costs Including Performance Incentive	<b>\$5,136,901</b>	<b>\$4,345,415</b>
6. Benefit/Cost Ratio - C&I Sector	<b>2.07</b>	<b>2.23</b>
7. Benefit/Cost Ratio including PI in cost	<b>2.01</b>	<b>2.17</b>
<b>Residential:</b>		
8. Benefits (Value) From Eligible Programs	\$5,427,042	\$4,594,777
9. Implementation Expenses	\$2,913,120	\$2,505,433
10. Customer Contribution	\$1,463,879	\$1,473,307
11. Performance Incentive	\$160,222	\$126,052
12. Total Costs Including Performance Incentive	<b>\$4,537,221</b>	<b>\$4,104,792</b>
13. Benefit/Cost Ratio - Residential Sector	<b>1.24</b>	<b>1.15</b>
14. Benefit/Cost Ratio including PI in cost	<b>1.20</b>	<b>1.12</b>

**Table 8. Program Expenditures by Category - 2017 Actual**

Program	Evaluation	External Administration	Internal Administration	Internal Implementation	Marketing	Rebates- Services	Total
<b>Residential Programs</b>							
ENERGY STAR Products	\$ 28,008	\$ 1,486	\$ 10,846	\$ 70,177	\$ 22,526	\$ 856,577	\$ 989,619
ENERGY STAR Homes	\$ 14,517	\$ 248	\$ 3,721	\$ 10,373	\$ 3,935	\$ 78,233	\$ 111,025
Home Energy Assistance	\$ 32,793	\$ 1,833	\$ 12,990	\$ 77,907	\$ 27,789	\$ 673,059	\$ 826,371
Home Performance with ENERGY STAR	\$ 24,461	\$ 1,329	\$ 7,275	\$ 49,311	\$ 24,830	\$ 246,861	\$ 354,067
Home Energy Reports	\$ 8,812	\$ 414	\$ 5,720	\$ 20,856	\$ 6,272	\$ 182,276	\$ 224,350
<b>Subtotal - Residential</b>	<b>\$ 108,591</b>	<b>\$ 5,310</b>	<b>\$ 40,551</b>	<b>\$ 228,624</b>	<b>\$ 85,352</b>	<b>\$ 2,037,006</b>	<b>\$ 2,505,433</b>
<b>Commercial &amp; Industrial Programs</b>							
C&I Education	\$ -	\$ -	\$ 493	\$ -	\$ -	\$ 24,633	\$ 25,125
Large Business Energy Solutions	\$ 52,468	\$ 2,849	\$ 18,930	\$ 126,941	\$ 36,700	\$ 880,781	\$ 1,118,670
Small Business Energy Solutions	\$ 46,528	\$ 2,502	\$ 18,422	\$ 111,889	\$ 42,625	\$ 630,593	\$ 852,560
<b>Subtotal - C&amp;I</b>	<b>\$ 98,996</b>	<b>\$ 5,351</b>	<b>\$ 37,845</b>	<b>\$ 238,830</b>	<b>\$ 79,325</b>	<b>\$ 1,536,008</b>	<b>\$ 1,996,355</b>
<b>Total - All</b>	<b>\$ 207,587</b>	<b>\$ 10,661</b>	<b>\$ 78,396</b>	<b>\$ 467,454</b>	<b>\$ 164,677</b>	<b>\$ 3,573,013</b>	<b>\$ 4,501,788</b>

**Table 9. Lost Base Revenue and Savings - 2017 Forecast**  
**Estimated Monthly and Cumulative Savings (therm) and Lost Base Revenue**  
**January 1, 2017 to December 31, 2017**

Line	Description	12/31/2016	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	2017
			Jan 2017	Feb 2017	Mar 2017	Apr 2017	May 2017	June 2017	Jul 2017	Aug 2017	Sep 2017	Oct 2017	Nov 2017	Dec 2017	Annual Savings	
Col. A	Col. B	Col. C	Col. D	Col. E	Col. F	Col. G	Col. H	Col. I	Col. J	Col. K	Col. L	Col. M	Col. N	Col. O		
1	Residential Annualized Savings		17,905	17,905	17,905	23,874	23,874	23,874	27,455	27,455	27,455	50,134	50,134	50,134		358,104
2	C&I Annualized Savings		43,837	43,837	43,837	58,449	58,449	58,449	67,216	67,216	67,216	122,743	122,743	122,743		876,735
3	Total		61,742	61,742	61,742	82,323	82,323	82,323	94,671	94,671	94,671	172,877	172,877	172,877		1,234,839
																<b>Cumulative</b>
			<b>Jan 2017</b>	<b>Feb 2017</b>	<b>Mar 2017</b>	<b>Apr 2017</b>	<b>May 2017</b>	<b>June 2017</b>	<b>Jul 2017</b>	<b>Aug 2017</b>	<b>Sep 2017</b>	<b>Oct 2017</b>	<b>Nov 2017</b>	<b>Dec 2017</b>		<b>LBR Savings</b>
4	Monthly Residential Savings		1,492	1,492	1,492	1,990	1,990	1,990	2,288	2,288	2,288	4,178	4,178	4,178		
5	Cumulative Residential Savings		1,492	2,984	4,476	6,466	8,455	10,445	12,733	15,021	17,309	21,486	25,664	29,842		156,373
6	Average Residential Distribution Rate		0.57720	0.57720	0.57720	0.57720	0.57720	0.57720	0.57720	0.57720	0.57720	0.57720	0.57720	0.57720		
7	Lost Residential Revenue		\$ 861	\$ 1,722	\$ 2,584	\$ 3,732	\$ 4,880	\$ 6,029	\$ 7,349	\$ 8,670	\$ 9,990	\$ 12,402	\$ 14,813	\$ 17,225	\$	90,258
8	Monthly C&I Savings		3,653	3,653	3,653	4,871	4,871	4,871	5,601	5,601	5,601	10,229	10,229	10,229		
9	Cumulative C&I Savings		3,653	7,306	10,959	15,830	20,701	25,572	31,173	36,774	42,376	52,604	62,833	73,061		382,841
10	Average C&I Distribution Rate		0.24850	0.24850	0.24850	0.24850	0.24850	0.24850	0.24850	0.24850	0.24850	0.24850	0.24850	0.24850		
11	Lost C&I Revenue		\$ 908	\$ 1,816	\$ 2,723	\$ 3,934	\$ 5,144	\$ 6,355	\$ 7,746	\$ 9,138	\$ 10,530	\$ 13,072	\$ 15,614	\$ 18,156	\$	95,136
<b>12</b>	<b>Total Lost Revenue</b>		<b>\$ 1,769</b>	<b>\$ 3,538</b>	<b>\$ 5,307</b>	<b>\$ 7,666</b>	<b>\$ 10,025</b>	<b>\$ 12,383</b>	<b>\$ 15,096</b>	<b>\$ 17,808</b>	<b>\$ 20,521</b>	<b>\$ 25,474</b>	<b>\$ 30,427</b>	<b>\$ 35,381</b>		<b>185,394</b>

Line 1: Estimated Savings per 2017 Core Filing  
 Line 2: Estimated Savings per 2017 Core Filing  
 Line 3: Line 1 + Line 2  
 Line 4: Line 1 / 12  
 Line 5: Prior Month Line 5 + Current Month Line 4  
 Line 6: Page addition to NHPUC Docket No. DE 14-216 Attachment OG-1 Proposed Distribution Rate  
 Line 7: Line 5 x Line 6  
 Line 8: Line 2 / 12  
 Line 9: Prior Month Line 9 + Current Month Line 8  
 Line 10: Page addition to NHPUC Docket No. DE 14-216 Attachment OG-1 Proposed Distribution Rate  
 Line 11: Line 9 x Line 10  
 Line 12: Line 7 + Line 11

**Table 10. Lost Base Revenue and Savings - 2017 Actual**  
**Actual Monthly and Cumulative Savings (therm) and Lost Base Revenue**  
**January 1, 2017 to December 31, 2017**

Line	Description	12/31/2016	Actual	Actual	Actual	Actual	Actual	Actual	Cumulative LBR Savings						
			Jan 2017	Feb 2017	Mar 2017	Apr 2017	May 2017	June 2017	Jul 2017	Aug 2017	Sep 2017	Oct 2017	Nov 2017	Dec 2017	
	Col. A	Col. B	Col. C	Col. D	Col. E	Col. F	Col. G	Col. H	Col. I	Col. J	Col. K	Col. L	Col. M	Col. N	Col. O
1	Residential Annualized Savings		17,842	27,158	46,156	21,842	15,642	32,042	14,089	16,291	20,687	20,172	34,692	50,612	317,225
2	C&I Annualized Savings		54,517	25,317	55,872	68,661	19,562	90,472	65,717	36,950	129,884	78,010	38,065	37,169	700,195
3	Total		72,358	52,475	102,028	90,503	35,204	122,514	79,806	53,240	150,571	98,182	72,757	87,782	1,017,420
4	Monthly Residential Savings		1,487	2,263	3,846	1,820	1,304	2,670	1,174	1,358	1,724	1,681	2,891	4,218	
5	Cumulative Residential Savings	-	1,487	3,750	7,596	9,416	10,720	13,390	14,564	15,922	17,646	19,327	22,218	26,435	162,471
6	Average Residential Distribution Rate		0.31444	0.31444	0.31444	0.31444	0.31444	0.31444	0.34929	0.34929	0.34929	0.34929	0.34929	0.34929	
7	Lost Residential Revenue		\$ 468	\$ 1,179	\$ 2,389	\$ 2,961	\$ 3,371	\$ 4,210	\$ 5,087	\$ 5,561	\$ 6,163	\$ 6,751	\$ 7,760	\$ 9,234	\$ 55,134
8	Monthly C&I Savings		4,543	2,110	4,656	5,722	1,630	7,539	5,476	3,079	10,824	6,501	3,172	3,097	
9	Cumulative C&I Savings	-	4,543	6,653	11,309	17,030	18,661	26,200	31,676	34,756	45,579	52,080	55,252	58,350	362,088
10	Average C&I Distribution Rate		0.21600	0.21600	0.21600	0.21600	0.21600	0.21600	0.20255	0.20255	0.20255	0.20255	0.20255	0.20255	
11	Lost C&I Revenue		\$ 981	\$ 1,437	\$ 2,443	\$ 3,679	\$ 4,031	\$ 5,659	\$ 6,416	\$ 7,040	\$ 9,232	\$ 10,549	\$ 11,191	\$ 11,819	\$ 74,476
<b>12</b>	<b>Total Lost Revenue</b>		<b>\$ 1,449</b>	<b>\$ 2,616</b>	<b>\$ 4,831</b>	<b>\$ 6,639</b>	<b>\$ 7,401</b>	<b>\$ 9,870</b>	<b>\$ 11,503</b>	<b>\$ 12,601</b>	<b>\$ 15,396</b>	<b>\$ 17,299</b>	<b>\$ 18,952</b>	<b>\$ 21,052</b>	<b>\$ 129,610</b>

Line 1: Actual Annualized Residential Savings  
 Line 2: Actual Annualized Commercial Savings  
 Line 3: Line 1 + Line 2  
 Line 4: Line 1 / 12  
 Line 5: Prior Month Line 5 + Current Month Line 4  
 Line 6: Page addition to NHPUC Docket No. DE 14-216 Attachment OG-1 Proposed Distribution Rate  
 Line 7: Line 5 x Line 6  
 Line 8: Line 2 / 12  
 Line 9: Prior Month Line 9 + Current Month Line 8  
 Line 10: Page addition to NHPUC Docket No. DE 14-216 Attachment OG-1 Proposed Distribution Rate  
 Line 11: Line 9 x Line 10  
 Line 12: Line 7 + Line 11

**Table 11. Calculation of Average Distribution Rates for Lost Revenue  
 Based on Actual Billing Determinants and Actual Distribution Rates for 2017**

January - June billing determinants & rates			(a)	(b)	(c)		(d)		(e) = (c) X (d)	(f)		(g)		(h) = (f) X (g)	(i) = ((a) x (b)) + (e) + (h)	(j) = (e) + (h)	(k) = (c) + (f)	(l) = (j) / (k)	
Line	Rate	Description	Avg # of Customers	Customer Charge	Billing Determinants - Winter		Winter Distribution Rates		Distribution Volumetric Revenue	Billing Determinants - Summer		Summer Distribution Rates		Summer Distribution Volumetric Revenue	Total Distribution Revenue	Total Volumetric Distribution Revenue	Total Period Therms	Avg Distribution Rate \$/therm	
					First Therms	Excess Therms	First Therms \$/thm	Excess Therms \$/thm		First Therms	Excess Therms	First Therms \$/thm	Excess Therms \$/thm						
1	R-1	Residential, Non-Heating	3,060	\$15.27	312,075		\$ 0.2018		\$62,977	79,940		\$ 0.2018		\$16,132	\$125,835	\$79,109			
2	R-3	Residential, Heating	70,428	\$22.10	21,070,923	9,964,920	\$ 0.3495 \$ 0.2892		\$10,246,142	2,436,603	1,043,869	\$ 0.3495 \$ 0.2892		\$1,153,480	\$12,956,081	\$11,399,622			
3	R-4	Residential Heating, Low Income	5,881	\$8.84	1,785,690	701,630	\$ 0.1398 \$ 0.1156		\$330,748	200,398	79,707	\$ 0.1398 \$ 0.1156		\$37,230	\$419,966	\$367,978			
4	Total Residential Service				23,168,688	10,666,550			\$10,639,867	2,716,941	1,123,576			\$1,206,841	\$13,501,881	\$11,846,708	37,675,755	\$ 0.3144	
5																			
6	G-41	Low Annual, High Winter Use	8,731	\$48.36	2,764,363	10,629,522	\$ 0.3965 \$ 0.2663		\$3,926,712	247,711	758,655	\$ 0.3965 \$ 0.2663		\$300,247	\$4,649,190	\$4,226,959			
7	G-42	Medium Annual, High Winter Use	1,449	\$145.08	5,303,052	12,959,936	\$ 0.3606 \$ 0.2402		\$5,025,257	853,715	1,013,465	\$ 0.3606 \$ 0.2402		\$551,284	\$5,786,762	\$5,576,541			
8	G-43	High Annual, High Winter Use	49	\$622.61	5,821,825		\$ 0.2216		\$1,290,116	894,302		\$ 0.1013		\$90,593	\$1,411,217	\$1,380,709			
9	G-51	Low Annual, Low Winter Use	1,180	\$48.36	338,478	1,173,910	\$ 0.2390 \$ 0.1553		\$263,204	148,060	314,710	\$ 0.2390 \$ 0.1553		\$84,261	\$404,530	\$347,465			
10	G-52	Medium Annual, Low Winter Use	354	\$145.08	1,278,772	2,239,200	\$ 0.2052 \$ 0.1367		\$568,503	642,102	522,743	\$ 0.1487 \$ 0.0845		\$139,652	\$759,513	\$708,155			
11	G-53	High Annual, Load Factor Less Than 90%	215	\$640.74	3,969,429		\$ 0.1434		\$569,216	1,487,039		\$ 0.0688		\$102,308	\$809,284	\$671,524			
12	G-54	High Annual, Load Factor Greater Than 90%	27	\$640.74	4,846,480		\$ 0.0547		\$265,102	3,240,008		\$ 0.0297		\$96,228	\$378,631	\$361,331			
13	Total Commercial/Industrial Service				24,322,399	27,002,568			\$11,908,111	7,512,937	2,609,573			\$1,364,574	\$14,199,127	\$13,272,685	61,447,477	\$ 0.2160	
14																			
15	Total Company January - June				47,491,087	37,669,118			\$22,547,978	10,229,878	3,733,149			\$2,571,415	\$27,701,008	\$25,119,393	99,123,232		
16																			
17																			
18	July - December billing determinants & rates			(m)	(n)	(o)		(p)		(q) = (o) X (p)	(r)		(s)		(t) = (r) X (s)	(u) = ((m) x (n)) + (q) + (t)	(v) = (q) + (t)	(w) = (o) + (r)	(x) = (v) / (w)
19																			
20																			
21	Rate	Description	Avg # of Customers	Customer Charge	Billing Determinants - Winter		Winter Distribution Rates		Distribution Volumetric Revenue	Billing Determinants - Summer		Summer Distribution Rates		Summer Distribution Volumetric Revenue	Total Distribution Revenue	Total Volumetric Distribution Revenue	Total Period Therms	Avg Distribution Rate \$/therm	
22					First Therms	Excess Therms	First Therms \$/thm	Excess Therms \$/thm		First Therms	Excess Therms	First Therms \$/thm	Excess Therms \$/thm						
23																			
24																			
25	R-1	Residential, Non-Heating	3,166	\$16.88	150,649		\$ 0.2231		\$33,610	142,848		\$ 0.2231		\$31,869	\$118,921	\$65,479			
26	R-3	Residential, Heating	71,992	\$24.43	10,724,757	4,073,888	\$ 0.3863 \$ 0.3197		\$5,445,396	4,104,373	2,164,321	\$ 0.3863 \$ 0.3197		\$2,277,453	\$9,481,613	\$7,722,848			
27	R-4	Residential Heating, Low Income	5,358	\$9.77	909,853	271,680	\$ 0.1545 \$ 0.1278		\$175,293	294,796	146,164	\$ 0.1545 \$ 0.1278		\$64,226	\$291,866	\$239,519			
28	Total Residential Service				11,785,259	4,345,568			\$5,654,298	4,542,017	2,310,485			\$2,373,548	\$9,892,401	\$8,027,846	22,983,329	\$ 0.3493	
29																			
30	G-41	Low Annual, High Winter Use	8,773	\$53.45	1,495,550	4,895,620	\$ 0.4383 \$ 0.2944		\$2,096,770	347,073	1,464,430	\$ 0.4383 \$ 0.2944		\$583,250	\$3,148,937	\$2,680,020			
31	G-42	Medium Annual, High Winter Use	1,407	\$160.36	2,665,587	5,808,208	\$ 0.3986 \$ 0.2655		\$2,604,582	1,350,619	2,273,160	\$ 0.3986 \$ 0.2655		\$1,141,881	\$3,972,089	\$3,746,463			
32	G-43	High Annual, High Winter Use	52	\$688.20	2,741,062		\$ 0.2449		\$671,286	1,541,011		\$ 0.1120		\$172,593	\$879,666	\$843,879			
33	G-51	Low Annual, Low Winter Use	1,161	\$53.45	172,852	614,198	\$ 0.2642 \$ 0.1717		\$151,125	285,643	594,057	\$ 0.2642 \$ 0.1717		\$177,466	\$390,647	\$328,592			
34	G-52	Medium Annual, Low Winter Use	376	\$160.36	735,183	1,137,580	\$ 0.2268 \$ 0.1511		\$338,628	1,247,384	1,091,806	\$ 0.1644 \$ 0.0934		\$307,045	\$705,968	\$645,672			
35	G-53	High Annual, Load Factor Less Than 90%	229	\$708.24	2,017,901		\$ 0.1585		\$319,837	2,802,275		\$ 0.0760		\$212,973	\$694,997	\$532,810			
36	G-54	High Annual, Load Factor Greater Than 90%	28	\$708.24	3,319,140		\$ 0.0605		\$200,808	6,831,918		\$ 0.0328		\$224,087	\$444,726	\$424,895			
37	Total Commercial/Industrial Service				13,147,275	12,455,606			\$6,383,037	14,405,923	5,423,453			\$2,819,295	\$10,237,030	\$9,202,332	45,432,257	\$ 0.2026	
38																			
39	Total Company July - December				24,932,534	16,801,174			\$12,037,335	18,947,940	7,733,938			\$5,192,843	\$20,129,431	\$17,230,178	68,415,586		
40																			
41	Total Company Residential January - December														\$19,874,555	\$60,659,084	60,659,084	\$ 0.3276	
42	Total Commercial/Industrial Service January - December														\$22,475,016	\$106,879,734	106,879,734	\$ 0.2103	