

NEW HAMPSHIRE PUBLIC UTILITIES COMMISSION

LIBERTY UTILITIES (ENERGYNORTH NATURAL GAS) CORP. d/b/a

LIBERTY UTILITIES

NHSAVES EE PROGRAMS - 2018 YEAR-END REPORT

N.H.P.U.C. Docket No. DE 17-136

May 30, 2019



TABLE OF CONTENTS

Summary of 2018 Program Activity.....	2
Table 1 - Program Savings Summary.....	3
Table 2 - Benefit Cost (B/C) Benchmark for Computing Performance Incentive – Residential Programs	4
Table 3 - Benefit Cost (B/C) Benchmark for Computing Performance Incentive – Commercial & Industrial Programs	5
Table 4 - MMBTU Savings Benchmark for Computing Performance Incentive	6
Table 5 - Footnotes for Benefit Cost Ratio.....	7
Table 6 - Performance Incentive Calculation – 2018 Planned versus Actual.....	8
Table 7 - Planned Versus Actual Benefit / Cost Ratio by Sector – 2018.....	9
Table 8 - Program Expenditures by Category – 2018 Actual.....	10
Table 9 - Lose Base Revenue and Savings – 2018 Forecast.....	11
Table 10 - Lose Base Revenue and Savings – 2018 Actual.....	12
Table 11 - Calculation of Average Distribution Rates for Lost Revenue.....	13

SUMMARY OF 2018 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 2018.

Table 1 shows a summary of overall program savings results. In total, the Company served 44,828 participants and saved 2,088,370 Lifetime MMBTUs. Annual MMBTU savings were 139,250 with an average savings per participant per year of 3.11. Of the 44,828 participants, 4,837 also had electric savings which totaled 3,871,811 Lifetime kWh’s. Annual kWh savings were 324,571 with an average savings per participant per year of 67.10.

Table 2 documents the quantified benefits and costs achieved by program for the residential market. In total, the residential programs generated \$8,012,591 in customer benefits and incurred costs of \$5,837,235, for an overall program benefit cost ratio of 1.37.

Table 3 documents the quantified benefits and costs achieved by program for the commercial & industrial market. In total, the commercial & industrial programs generated \$9,765,013 in customer benefits and incurred costs of \$4,680,028 for an overall program benefit cost ratio of 2.09.

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 887,976 in total lifetime MMBTU savings and 2,146,811 lifetime kWh savings. The commercial and industrial program activities resulted in 1,200,395 in total lifetime MMBTU savings and 1,725,000 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 Components in New England: 2018 Report.

Table 6 documents the Company’s earned 2018 year-end performance incentive of \$387,978. As specified by the Commission, the performance incentive for 2018 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 2018.

Table 8 documents the Company’s expenses by Program and budget category. Overall, the Company incurred a total of \$5,902,020 of expenses in 2018.

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 817,220 therms and a total lost base revenue of \$351,097 for 2018.

Table 11 documents the calculation of average distribution rates for lost revenue based on actual billing determinants and actual distribution rates for 2018. 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 – April 2018, May – June 2018, and July – October 2018). 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.

Liberty Utilities (EnergyNorth Natural Gas) Corp. d/b/a Liberty Utilities
NHSaves Energy Efficiency Programs 2018 Year End Report
 NHPUC Docket No. DE 17-136

Table 1. Program Savings Summary

Gas Savings in MMBTU's resulting from Energy Efficiency Measures Installed in the Program Year	
Number of Participants served in the annual program year time period	44,828
MMBTU Savings per Participant Per Year	3.11
Total MMBTU Savings Per Year	139,250
Measure Life of Measures Installed in the annual program year time period	15.00
Grand Total MMBTU Savings Benchmark for Performance Incentive	2,088,370
Electric Savings in kWh's resulting from Energy Efficiency Measures Installed in the Program Year	
Number of Participants served in the annual program year time period	4,837
kWh Savings per Participant Per Year	67.10
Total kWh Savings Per Year	324,571
Measure Life of Measures Installed in the annual program year time period	12
Grand Total kWh Savings Benchmark for Performance Incentive	3,871,811

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
Benefits:						
Avoided Generation, Transmission & Distribution Costs for:						
Program Participants	\$ 978,954	\$ 4,902,879	\$ 1,268,665	\$ 594,352	\$ 267,742	\$ 8,012,591
Market effects (e.g., spillover, post-program adoptions)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Customer Benefits (including O&M)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Quantifiable avoided resource costs (e.g., water, electricity)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Adder for other non-quantifiable benefits (e.g., environmental and other)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Benefits	\$ 978,954	\$ 4,902,879	\$ 1,268,665	\$ 594,352	\$ 267,742	\$ 8,012,591
Costs:						
Program costs (e.g. incentives, admin, monitoring, evaluation for:						
Utility Costs (e.g., for admin, monitoring, evaluation, marketing)	\$ 984,077	\$ 1,230,077	\$ 688,212	\$ 234,317	\$ 264,914	\$ 3,401,597
Program participants (e.g., incremental costs not reimbursed)	\$ -	\$ 1,438,469	\$ 309,517	\$ 453,793	\$ -	\$ 2,201,778
Market effects (e.g., spillover, post-program adoptions)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Customer Costs (including O&M)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Quantifiable additional resource costs (e.g. water, electricity)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Costs	\$ 984,077	\$ 2,668,546	\$ 997,729	\$ 688,110	\$ 264,914	\$ 5,603,375
Utility Performance Incentive at the Sector Level	n/a	n/a	n/a	n/a	n/a	\$ 233,860
Total Costs Including Utility Performance Incentives at Sector Level						\$ 5,837,235
Benefit Cost Ratio by Sector (i.e., B/C Benchmark for PI Calc.)	0.99	1.84	1.27	0.86	1.01	1.37

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
Benefits:				
Avoided Generation, Transmission & Distribution Costs for:				
Program Participants	\$ 4,206,997	\$ 5,558,016	\$ -	\$ 9,765,013
Market effects (e.g., spillover, post-program adoptions)	\$ -	\$ -	\$ -	\$ -
Customer Benefits (including O&M)	\$ -	\$ -	\$ -	\$ -
Quantifiable avoided resource costs (e.g., water, electricity)	\$ -	\$ -	\$ -	\$ -
Adder for other non-quantifiable benefits (e.g., environmental and other)	\$ -	\$ -	\$ -	\$ -
Total Benefits	\$ 4,206,997	\$ 5,558,016	\$ -	\$ 9,765,013
Costs:				
Program costs (e.g. incentives, admin, monitoring, evaluation for:				
Utility Costs (e.g., for admin, monitoring, evaluation, marketing)	\$ 1,226,552	\$ 1,253,657	\$ 20,213	\$ 2,500,423
Program participants (e.g., incremental costs not reimbursed)	\$ 1,074,918	\$ 950,570	\$ -	\$ 2,025,488
Market effects (e.g., spillover, post-program adoptions)	\$ -	\$ -	\$ -	\$ -
Customer Costs (including O&M)	\$ -	\$ -	\$ -	\$ -
Quantifiable additional resource costs (e.g. water, electricity)	\$ -	\$ -	\$ -	\$ -
Total Costs	\$ 2,301,470	\$ 2,204,227	\$ 20,213	\$ 4,525,911
Utility Performance Incentive at the Sector Level	n/a	n/a	n/a	\$ 154,118
Total Costs Including Utility Performance Incentives at Sector Level				\$ 4,680,028
Benefit Cost Ratio by Sector (i.e., B/C Benchmark for PI Calc.)	1.83	2.52	-	2.09

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
Gas Savings in MMBTU's from Measures Installed in the Program Year						
Number of Participants	216	5,024	436	78	38,000	43,754
MMBTU Savings per Participant Per Year	26	7	20	31	0.2	1
Total MMBTU Savings Per Year	5,636	35,151	8,527	2,385	8,116	59,815
Measure Life of Measures Installed During the Program Year	19	16	16	25	4	15
Grand Total MMBTU Savings Benchmark for Performance Incentive	109,394	548,424	140,554	59,576	30,027	887,976
Electric Savings in kWh's from Measures Installed in the Program Year						
Number of Participants	38	4,635	123	23	-	4,819
kWh Savings per Participant	344	7	945	1,532	-	41
Total kWh Savings Per Participant Per Year	13,069	31,248	116,260	35,233	-	195,810
Measure Life of Measures Installed in the annual program year time period	20.40	17.00	6.58	16.57	-	10.96
Grand Total kWh Savings Benchmark for Performance Incentive	266,644	531,216	765,217	583,735	-	2,146,811
Commercial & Industrial Programs						
	Small Business	Large Business	C&I Education	Total		
Number of Participants	1,013	61	-	1,074		
MMBTU Savings per Participant Per Year	29	825	-	74		
Total MMBTU Savings Per Year	28,935	50,500	-	79,435		
Measure Life of Measures Installed During the Program Year	17	14	-	15		
Grand Total MMBTU Savings Benchmark for Performance Incentive	501,103	699,292	-	1,200,395		
Electric Savings in kWh's from Measures Installed in the Program Year						
Number of Participants	17	1	-	18		
kWh Savings per Participant	3,904	62,399	-	7,153		
Total kWh Savings Per Participant Per Year	66,362	62,399.00	-	128,761.00		
Measure Life of Measures Installed in the annual program year time period	16.59	10.00	-	13.40		
Grand Total kWh Savings Benchmark for Performance Incentive	1,101,010	623,990	-	1,725,000		

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*	216	5,024	436	78	38,000	43,754
MMBTU Savings per Participant Per Year**	26	7	20	31	0.2	1
Total MMBTU Savings Per Year	5,636	35,151	8,527	2,385	8,116	59,815
Number of Years in the Measure Life**	19	16	16	25	4	15
Grand Total MMBTU Savings Benchmark for Performance Incentive	109,394	548,424	140,554	59,576	30,027	887,976
Lifetime Therm Savings	1,093,939	5,484,243	1,405,538	595,763	300,274	8,879,757
Rate of Savings per MMBTU ***	\$ 8.28	\$ 8.28	\$ 8.28	\$ 8.28	\$ 8.28	\$ 8.28
Grand Total Dollar Savings	\$ 905,781	\$ 4,540,953	\$ 1,163,786	\$ 493,292	\$ 248,627	\$ 7,352,439
Commercial & Industrial Programs						
	Small Business	Large Business	C&I Education	Total		
Number of Participants*	1,013	61	-	1,074		
MMBTU Savings per Participant Per Year**	29	825	-	74		
Total MMBTU Savings Per Year	28,935	50,500	-	79,435		
Number of Years in the Measure Life**	17	14	-	15		
Grand Total MMBTU Savings Benchmark for Performance Incentive	501,103	699,292	-	1,200,395		
Lifetime Therm Savings	5,011,031	6,992,916	-	12,003,946		
Rate of Savings per MMBTU ***	\$ 7.34	\$ 7.34	\$ -	\$ 7.34		
Grand Total Dollar Savings	\$ 3,678,096	\$ 5,132,800	\$ -	\$ 8,810,896		
* 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 Components in New England: 2018 Report, Synapse Energy Economics, Inc., (Amended June 1, 2018). Pg.47, Table 14						
Residential Programs	Home Energy Assistance	ENERGY STAR Appliances	Home Performance w/ENERGY STAR	ENERGY STAR Homes	Residential Building Practices & Demo	Total
Number of Participants*	216	5,024	436	78	38,000	43,754
Participant Incremental Cost	\$ -	\$ 1,438,469	\$ 309,517	\$ 453,793	\$ -	\$ 2,201,778
Program Participant Cost	\$ -	\$ 286	\$ 710	\$ 5,818	\$ -	\$ 50
Commercial & Industrial Programs						
	Small Business	Large Business	C&I Education	Total		
Number of Participants*	1,013	61	-	1,074		
Participant Incremental Cost	\$ 1,074,918	\$ 950,570	\$ -	\$ 2,025,488		
Program Participant Cost	\$ 1,061	\$ 15,538	\$ -	\$ 1,886		

Table 6. Performance Incentive Calculation - 2018

Commercial & Industrial Incentive	<u>Planned</u>	<u>Actual</u>
1. Benefit/Cost Ratio	1.44	2.09
2. Threshold Benefit / Cost Ratio ¹	1.00	
3. Lifetime MMBTU Savings	1,210,888	1,200,395
4. Threshold Lifetime MMBTU Savings (65%) ²	787,077	
5. Budget / Actual Spend	\$3,580,741	\$2,500,423
6. Benefit / Cost Percentage of Budget	2.75%	
7. Lifetime MMBTU Percentage of Budget	2.75%	
8. Commercial & Industrial Incentive	\$196,941	\$154,118
9. Cap	\$246,176	\$246,176
Residential Incentive		
10. Benefit / Cost Ratio	1.07	1.37
11. Threshold Benefit / Cost Ratio ¹	1.00	
12. Lifetime MMBTU Savings	615,741	887,976
13. Threshold Lifetime MMBTU Savings (65%) ²	400,232	
14. Budget / Actual Spend	\$3,579,834	\$3,401,597
15. Benefit / Cost Percentage of Budget	2.75%	
16. Lifetime MMBTU Percentage of Budget	2.75%	
17. Residential Incentive	\$196,891	\$233,860
18. Cap	\$246,114	\$246,114
19. TOTAL INCENTIVE	\$393,832	\$387,978

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
NHSaves Energy Efficiency Programs 2018 Year End Report
NHPUC Docket No. DE 17-136

Table 7. Planned Versus Actual Benefit / Cost Ratio by Sector - 2018

Commercial & Industrial:	<u>Planned</u>	<u>Actual</u>
1. Benefits (Value) From Eligible Programs	\$9,492,221	\$9,765,013
2. Implementation Expenses	\$3,580,741	\$2,500,423
3. Customer Contribution	\$2,791,851	\$2,025,488
4. Performance Incentive	\$196,941	\$154,118
5. Total Costs Including Performance Incentive	\$6,569,532	\$4,680,028
6. Benefit/Cost Ratio - C&I Sector	1.49	2.16
7. Benefit/Cost Ratio including PI in cost	1.44	2.09
Residential:		
8. Benefits (Value) From Eligible Programs	\$5,641,977	\$8,012,591
9. Implementation Expenses	\$3,579,834	\$3,401,597
10. Customer Contribution	\$1,475,247	\$2,201,778
11. Performance Incentive	\$196,891	\$233,860
12. Total Costs Including Performance Incentive	\$5,251,972	\$5,837,235
13. Benefit/Cost Ratio - Residential Sector	1.12	1.43
14. Benefit/Cost Ratio including PI in cost	1.07	1.37

Table 8. Program Expenditures by Category - 2018 Actual

Program	Evaluation	External Administration	Internal Administration	Internal Implementation	Marketing	Rebates- Services	Total
Residential Programs							
ENERGY STAR Products	\$ 48,542	\$ 496	\$ 25,104	\$ 36,591	\$ 21,750	\$ 1,097,595	\$ 1,230,077
ENERGY STAR Homes	\$ 6,772	\$ 94	\$ 7,799	\$ 13,669	\$ 3,832	\$ 202,150	\$ 234,317
Home Energy Assistance	\$ 39,804	\$ 553	\$ 27,357	\$ 52,834	\$ 24,892	\$ 838,637	\$ 984,077
Home Performance with ENERGY STAR	\$ 25,085	\$ 348	\$ 17,150	\$ 50,509	\$ 37,895	\$ 557,225	\$ 688,212
Home Energy Reports	\$ 10,495	\$ 135	\$ 4,304	\$ 14,604	\$ 5,376	\$ 230,000	\$ 264,914
Subtotal - Residential	\$ 130,699	\$ 1,626	\$ 81,713	\$ 168,207	\$ 93,744	\$ 2,925,608	\$ 3,401,597
Commercial & Industrial Programs							
C&I Education	\$ 550	\$ 35	\$ 86	\$ 16	\$ 799	\$ 18,728	\$ 20,213
Large Business Energy Solutions	\$ 65,173	\$ 900	\$ 19,877	\$ 134,801	\$ 51,975	\$ 980,932	\$ 1,253,657
Small Business Energy Solutions	\$ 50,039	\$ 691	\$ 22,172	\$ 105,441	\$ 52,982	\$ 995,227	\$ 1,226,552
Subtotal - C&I	\$ 115,761	\$ 1,627	\$ 42,135	\$ 240,258	\$ 105,755	\$ 1,994,886	\$ 2,500,423
Total - All	\$ 246,460	\$ 3,253	\$ 123,848	\$ 408,466	\$ 199,500	\$ 4,920,494	\$ 5,902,020

Table 9. Lost Base Revenue and Savings - 2018 Forecast
Estimated Monthly and Cumulative Savings (therm) and Lost Base Revenue
January 1, 2018 to December 31, 2018

Line	Description	12/31/2017	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	2018
			Jan 2018	Feb 2018	Mar 2018	Apr 2018	May 2018	June 2018	Jul 2018	Aug 2018	Sep 2018	Oct 2018	Nov 2018	Dec 2018	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	358,104	19,321	19,321	19,321	32,202	32,202	32,202	32,202	32,202	32,202	45,082	-	-	-	296,255
2	C&I Annualized Savings	876,732	45,715	45,715	45,715	76,192	76,192	76,192	76,192	76,192	76,192	106,668	-	-	-	700,964
3	Total	1,234,836	65,036	65,036	65,036	108,393	108,393	108,393	108,393	108,393	108,393	151,751	-	-	-	997,219
																Cumulative
			Jan 2017	Feb 2017	Mar 2017	Apr 2017	May 2017	June 2017	Jul 2017	Aug 2017	Sep 2017	Oct 2017	Nov 2017	Dec 2017		LBR Savings
4	Monthly Residential Savings	29,842	1,610	1,610	1,610	2,683	2,683	2,683	2,683	2,683	2,683	3,757	-	-	-	
5	Cumulative Residential Savings	29,842	31,452	33,062	34,672	37,356	40,039	42,723	45,406	48,090	50,773	54,530	-	-	-	418,103
6	Average Residential Distribution Rate		0.35019	0.35019	0.35019	0.35019	0.35019	0.35019	0.35019	0.35019	0.35019	0.35019	-	-	-	
7	Lost Residential Revenue		\$ 11,014	\$ 11,578	\$ 12,142	\$ 13,082	\$ 14,021	\$ 14,961	\$ 15,901	\$ 16,840	\$ 17,780	\$ 19,096	\$ -	\$ -	\$ -	\$ 146,414
8	Monthly C&I Savings	73,061	3,810	3,810	3,810	6,349	6,349	6,349	6,349	6,349	6,349	8,889	-	-	-	
9	Cumulative C&I Savings	73,061	76,871	80,680	84,490	90,839	97,188	103,538	109,887	116,236	122,586	131,475	-	-	-	1,013,789
10	Average C&I Distribution Rate		0.22845	0.22845	0.22845	0.22845	0.22845	0.22845	0.22845	0.22845	0.22845	0.22845	-	-	-	
11	Lost C&I Revenue		\$ 17,561	\$ 18,432	\$ 19,302	\$ 20,752	\$ 22,203	\$ 23,653	\$ 25,104	\$ 26,554	\$ 28,005	\$ 30,036	\$ -	\$ -	\$ -	\$ 231,602
12	Total Lost Revenue		\$ 28,575	\$ 30,010	\$ 31,444	\$ 33,834	\$ 36,224	\$ 38,614	\$ 41,005	\$ 43,395	\$ 45,785	\$ 49,131	\$ -	\$ -	\$ -	378,017

Line 1: Estimated Annualized Residential Savings
 Line 2: Estimated 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: ENNG Estimated Avg Distribution Rates
 Line 7: Line 5 x Line 6
 Line 8: Line 2 / 12
 Line 9: Prior Month Line 9 + Current Month Line 8
 Line 10: ENNG Estimated Avg Distribution Rates
 Line 11: Line 9 x Line 10
 Line 12: Line 7 + Line 11

Table 10. Lost Base Revenue and Savings - 2018 Actual
Actual Monthly and Cumulative Savings (therm) and Lost Base Revenue
January 1, 2018 to December 31, 2018

Line	Description	12/31/2017	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Cumulative
		Col. A	Jan 2018	Feb 2018	Mar 2018	Apr 2018	May 2018	June 2018	Jul 2018	Aug 2018	Sep 2018	Oct 2018	Nov 2018	Dec 2018	LBR Savings
1	Residential Annualized Savings	317,225	61,091	26,652	26,188	23,989	23,168	20,726	14,374	22,377	27,216	35,863	-	-	281,644
2	C&I Annualized Savings	700,195	76,897	11,531	46,542	158,159	57,342	32,107	38,304	29,209	61,214	24,271	-	-	535,576
3	Total	1,017,420	137,989	38,183	72,730	182,148	80,511	52,833	52,678	51,585	88,430	60,134	-	-	817,220
4	Monthly Residential Savings	26,435	5,091	2,221	2,182	1,999	1,931	1,727	1,198	1,865	2,268	2,989	-	-	
5	Cumulative Residential Savings	26,435	31,526	33,747	35,930	37,929	39,860	41,587	42,785	44,649	46,917	49,906	-	-	404,836
6	Average Residential Distribution Rate		0.34860	0.34860	0.34860	0.34860	0.52963	0.52963	0.53690	0.53690	0.53690	0.53690	-	-	
7	Lost Residential Revenue		\$ 10,990	\$ 11,764	\$ 12,525	\$ 13,222	\$ 21,111	\$ 22,026	\$ 22,971	\$ 23,972	\$ 25,190	\$ 26,795	\$ -	\$ -	\$ 190,566
8	Monthly C&I Savings	58,350	6,408	961	3,878	13,180	4,779	2,676	3,192	2,434	5,101	2,023	-	-	
9	Cumulative C&I Savings	58,350	64,758	65,719	69,597	82,777	87,556	90,231	93,423	95,857	100,958	102,981	-	-	853,856
10	Average C&I Distribution Rate		0.25546	0.25546	0.25546	0.25546	0.15364	0.15364	0.15503	0.15503	0.15503	0.15503	-	-	
11	Lost C&I Revenue		\$ 16,543	\$ 16,788	\$ 17,779	\$ 21,146	\$ 13,452	\$ 13,863	\$ 14,483	\$ 14,861	\$ 15,651	\$ 15,965	\$ -	\$ -	\$ 160,531
12	Total Lost Revenue		\$ 27,533	\$ 28,553	\$ 30,304	\$ 34,368	\$ 34,563	\$ 35,889	\$ 37,454	\$ 38,833	\$ 40,841	\$ 42,760	\$ -	\$ -	\$ 351,097

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

	10 mo
original filing	\$ 378,017
110% of total	\$ 415,818
actual to be received	\$ 351,097

**Table 11. Calculation of Average Distribution Rates for Lost Revenue
 Based on Actual Billing Determinants and Actual Distribution Rates for 2018**

January - April 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	3,094	\$16.88	326,395		\$ 0.2231		\$72,819	0		\$ -		\$0	\$125,045	\$72,819		
2	R-3	Residential, Heating	71,075	\$24.43	21,860,317	9,358,649	\$ 0.3863	\$ 0.3197	\$11,436,601	0	0	\$ -	\$ -	\$0	\$13,172,963	\$11,436,601		
3	R-4	Residential Heating, Low Income	6,042	\$9.77	1,871,839	677,204	\$ 0.1545	\$ 0.1278	\$375,746	0	0	\$ -	\$ -	\$0	\$434,776	\$375,746		
4	Total Residential Service				24,058,551	10,035,853			\$11,885,165	0	0			\$0	\$13,732,784	\$11,885,165	34,094,404	\$ 0.3486
5																		
6	G-41	Low Annual, High Winter Use	9,057	\$53.45	3,023,688	10,925,654	\$ 0.4383	\$ 0.2944	\$4,541,795	0	0	\$ -	\$ -	\$0	\$5,025,892	\$4,541,795		
7	G-42	Medium Annual, High Winter Use	1,405	\$160.36	5,265,769	12,779,981	\$ 0.3986	\$ 0.2655	\$5,492,020	0	0	\$ -	\$ -	\$0	\$5,717,326	\$5,492,020		
8	G-43	High Annual, High Winter Use	54	\$688.20	5,721,941		\$ 0.2449		\$1,401,303	0		\$ -		\$0	\$1,438,466	\$1,401,303		
9	G-51	Low Annual, Low Winter Use	1,157	\$53.45	337,273	1,286,996	\$ 0.2642	\$ 0.1717	\$310,085	0	0	\$ -	\$ -	\$0	\$371,926	\$310,085		
10	G-52	Medium Annual, Low Winter Use	375	\$160.36	1,423,363	2,350,544	\$ 0.2268	\$ 0.1511	\$677,986	0	0	\$ -	\$ -	\$0	\$738,121	\$677,986		
11	G-53	High Annual, Load Factor Less Than 90%	37	\$708.24	4,274,759		\$ 0.1585		\$677,549	0		\$ -		\$0	\$703,754	\$677,549		
12	G-54	High Annual, Load Factor Greater Than 90%	28	\$708.24	5,101,475		\$ 0.0605		\$308,639	0		\$ -		\$0	\$328,470	\$308,639		
13	Total Commercial/Industrial Service				25,148,268	27,343,175			\$13,409,378	0	0			\$0	\$14,323,956	\$13,409,378	52,491,443	\$ 0.2555
14																		
15	Total Company January - April				49,206,819	37,379,028			\$25,294,543	0	0			\$0	\$28,056,740	\$25,294,543	86,585,847	
16																		
17																		
18	May - June 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																		
22																		
23																		
24																		
25	R-1	Residential, Non-Heating	3,095	\$14.88	0	0	\$ -	\$ -	\$0	72,911		\$ 0.3902		\$28,450	\$74,504	\$28,450		
26	R-3	Residential, Heating	71,944	\$14.88	0	0	\$ -	\$ -	\$0	2,990,226		\$ 0.5580		\$1,668,546	\$2,739,073	\$1,668,546		
27	R-4	Residential Heating, Low Income	11,665	\$5.95	0	0	\$ -	\$ -	\$0	243,635		\$ 0.2232		\$54,379	\$123,786	\$54,379		
28	Total Residential Service				0	0			\$0	3,306,772	0			\$1,751,375	\$2,937,362	\$1,751,375	3,306,772	\$ 0.5296
29																		
30	G-41	Low Annual, High Winter Use	8,908	\$56.07	0	0	\$ -	\$ -	\$0	224,684	658,524	\$ 0.4597	\$ 0.3088	\$306,640	\$806,111	\$306,640		
31	G-42	Medium Annual, High Winter Use	1,410	\$168.21	0	0	\$ -	\$ -	\$0	767,601	866,828	\$ 0.4181	\$ 0.2785	\$562,345	\$799,522	\$562,345		
32	G-43	High Annual, High Winter Use	55	\$721.86	0		\$ -		\$0	706,683		\$ 0.1174		\$82,965	\$122,667	\$82,965		
33	G-51	Low Annual, Low Winter Use	1,166	\$56.07	0	0	\$ -	\$ -	\$0	141,691	324,214	\$ 0.2271	\$ 0.1801	\$90,569	\$155,946	\$90,569		
34	G-52	Medium Annual, Low Winter Use	381	\$168.21	0	0	\$ -	\$ -	\$0	613,316	509,179	\$ 0.1724	\$ 0.0980	\$155,635	\$219,723	\$155,635		
35	G-53	High Annual, Load Factor Less Than 90%	37	\$742.88	0		\$ -		\$0	1,371,047		\$ 0.0798		\$109,410	\$136,896	\$109,410		
36	G-54	High Annual, Load Factor Greater Than 90%	28	\$742.88	0		\$ -		\$0	2,998,212		\$ 0.0344		\$103,138	\$123,939	\$103,138		
37	Total Commercial/Industrial Service				0	0			\$0	6,823,233	2,358,745			\$1,410,702	\$2,364,804	\$1,410,702	9,181,977	\$ 0.1536
38																		
39	Total Company May - June				0	0			\$0	10,130,005	2,358,745			\$3,162,077	\$5,302,167	\$3,162,077	12,488,749	
40																		
41																		
42	July - October billing determinants & rates		(y)	(z)	(aa)		(bb)		(cc) = (aa) X (bb)	(dd)		(ee)		(ff) = (dd) X (ee)	(gg) = ((y) x (z)) + (cc) + (ff)	(hh) = (cc) + (ff)	(ii) = (aa) + (dd)	(jj) = (hh) / (ii)