NEW HAMPSHIRE PUBLIC UTILITIES COMMISSION

LIBERTY UTILITIES (GRANITE STATE ELECTRIC) CORP.

d/b/a

LIBERTY UTILITIES

NHSAVES EE PROGRAMS - 2019 YEAR-END REPORT NHPUC Docket No. DE 17-136

Revised October 2, 2020



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SUMMARY OF 2019 PROGRAM ACTIVITY

This report presents the results of Liberty Utilities (Granite State Electric) Corp.'s d/b/a Liberty Utilities ("Liberty Utilities" or "Company") residential and commercial & industrial energy efficiency programs for calendar year 2019.

Table 1a, Table 1b and Table 1c show the 2019 year-end performance for the commercial & industrial and residential programs and the annual goals and spending targets. Overall, the Company achieved 110% and 99% of its goals for annual and lifetime energy savings respectively. The Company achieved 117% and 119% of its goals for winter and summer demand savings. The Company achieved 111% of its planned participation while spending 92% of its planned budget in 2019. In addition, 87% of the annual, and 77% of the lifetime, total energy savings generated were for electricity.

Table 2a, Table 2b and Table 2c document the value created by the 2019 energy efficiency programs. Overall, efforts in 2019 created over \$14.4 million of value through achieved energy, demand and other resource savings.

Table 3a documents the Company's earned 2019 year-end performance incentive of \$201,137. As specified by the Commission, the performance incentive for 2019 has been documented using assumptions that are consistent with assumptions used to develop program-year goals. Table 3a 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 3b provides the actual Total Resource Cost (TRC) benefit/cost ratio for each program, by sector (commercial & industrial and residential), and for the entire portfolio of energy efficiency programs implemented in 2019. The overall benefit/cost ratio for energy efficiency efforts in 2019 for residential was 2.68 and for commercial & industrial was 1.88.

Table 3c documents the Company's savings by sector and program. Overall, the Company achieved 116,700 megawatt hours of lifetime energy savings.

Table 4 documents the Company's expenses by Program. Overall, the Company had a total of \$3,721,019 of expenses in 2019, including \$43,182 in ISO-NE FCM expenses.

Table 5 provides the 2019 year-end energy efficiency fund balance. The table reflects revenues collected in support of energy efficiency efforts, 2019 spending levels, and the 2019 incentive. Table 5 summarizes the 2019 year-end energy efficiency fund balances for both the residential and commercial & industrial sectors.

Table 6 documents the Company's earned 2019 year-end RGGI RFP – Retail & Large Business Energy Reduction Partners Program performance incentive of \$0.

Table 7a documents the Company's forecasted annualized kWh savings by month, commercial & industrial kW savings by month, and the total lost base revenue calculation.

Table 7b, Table 7c and Table 7d document the actual annualized kWh savings by month, the actual commercial & industrial kW savings by month, and the associated lost base revenue calculation. There was a total program actual annualized savings by month of 10,146,797 kWh, a total C&I actual savings by month of 534 kW, and a total lost base revenue of \$107,427 for 2019.

Table 8 details the calculation of average distribution rates, excluding customer, meter and luminaire charges calculation.

Table 1a. Program Cost-Effectiveness - 2019 PLAN

				Pres	ent V	alue	ı								
	Total Resource Benefit/Cost Ratio	Benefit (\$000)	(Utility Costs		ustomer sts (\$000)		rformance incentive (\$000)	Annual MWh Savings	Lifetime MWh Savings	Winter kW Savings	Summer kW Savings	Number of Customers Served	Annual MMBTU Savings	Lifetime MMBTU Savings
Residential Programs															
ENERGY STAR Homes	6.30	\$ 1,663	\$	185	\$	79			329	7,935	33	77	73	1,171	29,189
Home Performance with ENERGY STAR	2.03	\$ 1,230	\$	355	\$	251			88	1,328	10	16	83	2,452	49,020
ENERGY STAR Products ¹	2.10	\$ 729	\$	302	\$	46			988	6,469	269	118	14,459	132	1,886
Home Energy Assistance	1.73	\$ 1,196	\$	690	\$	-			173	1,698	11	14	72	1,998	45,207
Home Energy Reports	1.43	\$ 185	\$	129	\$	-			668	1,991	87	63	12,000	-	-
ISO NE FCM - Residential	0.00	\$ -	\$	-	\$	-			-	-	-	-		-	-
	0.00	\$ -	\$	20	\$	-			-	-	-	-		-	-
Subtotal Residential	2.43	\$ 5,003	\$	1,681	\$	376	\$	92	2,246	19,421	410	288	26,686	5,753	125,301
Commercial & Industrial Programs															
Large Business	2.73	\$ 6,180	\$	1,231	\$	1,030			4,717	67,850	522	617	101	-	-
Small Business	1.66	\$ 2,428	\$	878	\$	587			1,986	26,724	175	248	95	-	-
C&I Education	0.00	\$ -	\$	58	\$	-			-	-	-	-	-	-	-
Municipal	1.36	\$ 396	\$	167	\$	125			275	3,850	25	37	5	59	1,485
ISO NE FCM - C&I	0.00	\$ -	\$	46	\$	-			-	-	-		-	-	-
Subtotal Commercial & Industrial	2.18	\$ 9,003	\$	2,380	\$	1,742	\$	131	6,978	98,424	722	901	202	59	1,485
Total	2.27	\$ 14,006	\$	4,061	\$	2,118	\$	223	9,224	117,845	1,132	1,190	26,888	5,812	126,787

Note: a 10% NEI adder is applied to total benefits, and an additional 10% NEI adder is applied to total benefits of the Home Energy Assistance program, excluding water.

Annual kWh Savings	9,224,361	84%	kWh > 55%
Annual MMBTU Savings (in kWh)	1,703,488	16%	
	10 927 849	100%	

Lifetime kWh Savings	117,844,688	76%	kWh > 55%
Lifetime MMBTU Savings (in kWh)	37,159,052	24%	
	155,003,740	100%	

Table 1b. Program Cost-Effectiveness - 2019 ACTUAL

				Pres	ent V	alue	1								
	Total Resource Benefit/Cost Ratio	Benefit				ustomer	Performance Incentive (\$000)		Annual MWh Savings	Lifetime MWh Savings	Winter kW Savings	Summer kW Savings	Number of Customers Served	Annual MMBTU Savings	Lifetime MMBTU Savings
Residential Programs	111110	(φσσσ)		φσσσ)		πο (φοσο)		(4000)	Suvings	Su i i i i i	Davings.	Suvings	Serveu	Suvings	Suvings
ENERGY STAR Homes	8.52	\$ 1,838	\$	168	\$	48			130	2,909	6	3	40	2,536	58,863
Home Performance with ENERGY STAR	3.15	\$ 1,573	\$	314	\$	185			106	1,877	73	187	62	1,936	41,458
ENERGY STAR Products	2.56	\$ 988	\$	318	\$	67			1,313	8,776	356	160	19,138	171	2,443
Home Energy Assistance	1.06	\$ 713	\$	671	\$	-			199	2,722	27	49	168	587	13,548
Home Energy Reports	2.16	\$ 282	\$	131	\$	-			1,210	3,509	74	54	10,289	-	-
ISO-NE FCM	0.00	\$ -	\$	19	\$	-			-	-	-	-		-	-
Subtotal Residential	2.68	\$ 5,395	\$	1,621	\$	300	\$	94	2,958	19,793	537	453	29,698	5,229	116,311
Commercial & Industrial Programs															
Large Business	2.11	\$ 5,238	\$	968	\$	1,519			4,338	57,940	488	534	33	-	-
Small Business	1.92	\$ 3,073	\$	886	\$	717			2,342	31,415	249	356	118	-	-
C&I Education	0.00	\$ -	\$	54	\$	-			-	-	-	-	-	-	-
Municipal	1.38	\$ 708	\$	167	\$	346			542	7,552	47	68	19	56	1,104
ISO-NE FCM	0.00	\$ -	\$	25	\$	-			-	-	-	-	-	-	-
Subtotal Commercial & Industrial	1.88	\$ 9,019	\$	2,100	\$	2,582	\$	107	7,222	96,907	783	958	170	56	1,104
Total	2.12	\$ 14,414	\$	3,721	\$	2,882	\$	201	10,179	116,700	1,320	1,411	29,868	5,285	117,415

Annual kWh Savings	10,179,064	87%	kWh > 55%
Annual MMBTU Savings (in kWh)	1,548,928	13%	
Total Energy Savings	11,727,992	100%	

Lifetime kWh Savings	116,700,147	77%	kWh > 55%
Lifetime MMBTU Savings (in kWh)	34,412,381	23%	
Total Energy Savings	151,112,528	100%	

Table 1c. Percent of Plan Program Cost-Effectiveness Targets Achieved

				Prese	nt Value								
		Total Resource Benefit/Cost Ratio	Benefit (\$000)	Utility Costs (\$000)	Customer Costs (\$000)	Performance Incentive (\$000)	Annual MWh Savings	Lifetime MWh Savings	Winter kW Savings	Summer kW Savings	Number of Customers Served	Annual MMBTU Savings	Lifetime MMBTU Savings
Residential Programs		110%	108%	96%	80%	102%	132%	102%	131%	157%	111%	91%	93%
Commercial & Industrial Programs		86%	100%	88%	148%	81%	103%	98%	109%	106%	84%	94%	74%
	Total	93%	103%	92%	136%	90%	110%	99%	117%	119%	111%	91%	93%

Table 2a. Present Value Benefits - 2019 PLAN

			CA	PACITY			ENE	RGY								T
	Total Benefits (\$000)	Summer Generation	Winter Generation	Transmission	Distribution	Winter Peak	Winter Off Peak	Summer Peak	Summer Off Peak	Electric DRIPE	Gas Benefits	Gas DRIPE	Other Fuels Benefits	Fossil Emissions	Water Benefits	Other Non Resource Benefits
Residential Programs																
ENERGY STAR Homes	\$1,663	\$116	\$0	\$127	\$113	\$118	\$152	\$49	\$62	\$33	\$0	\$0	\$710	\$34	\$2	\$148
Home Performance w/Energy Star	\$1,230		\$0	\$21	\$18	\$22	\$27	\$8	\$10	\$7	\$0	\$0				
ENERGY STAR Products	\$729	\$39	\$0	\$69	\$61	\$156	\$102	\$65	\$40	\$28	\$4	\$0	\$26	\$2	\$77	7 \$59
Home Energy Assistance	\$1,196		\$0	\$18	\$16	\$34	\$31	\$13	\$12	\$7	\$21	\$1	\$783			
Home Energy Reports	\$185	\$8	\$0	\$17	\$15	\$48	\$41	\$17	\$15	\$8	\$0	\$0	\$0	\$0	\$0	\$17
Subtotal Residential	\$5,003	\$195	\$0	\$252	\$223	\$377	\$352	\$152	\$139	\$83	\$26	\$1	\$2,458	\$146	\$80	\$521
Commercial & Industrial Programs																
Large Business	\$6,180	\$518	\$0	\$679	\$601	\$1,411	\$1,091	\$590	\$434	\$294	\$0	\$0	\$0	\$0	\$0	\$562
Small Business	\$2,428	\$193	\$0	\$260	\$230	\$551	\$445	\$231	\$177	\$119	\$0	\$0	\$0	\$0	\$0	\$221
C&I Education	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0		\$0	\$0
Municipal	\$396	\$31	\$0	\$40	\$36	\$83	\$61	\$34	\$23	\$17	\$0	\$0	\$33	\$2	\$0	\$36
Subtotal Commercial & Industrial	\$9,003	\$742	\$0	\$979	\$866	\$2,045	\$1,598	\$855	\$634	\$431	\$0	\$0	\$33	\$2	\$0	\$818
Total	\$14,006	\$937	\$0	\$1,230	\$1,089	\$2,422	\$1,950	\$1,007	\$773	\$514	\$26	\$1	\$2,490	\$148	\$80	\$1,339

Table 2b. Present Value Benefits - 2019 ACTUAL

			CA	PACITY			ENE	RGY								
	Total Benefits (\$000)	Summer Generation	Winter Generation	Transmission	Distribution	Winter Peak	Winter Off Peak	Summer Peak	Summer Off Peak	Electric DRIPE	Gas Benefits	Gas DRIPE	Other Fuels Benefits	Fossil Emissions	Water Benefits	Other Nor Resource Benefits
Residential Programs																
ENERGY STAR Homes	\$1,838	\$3	\$0	\$4	\$4	\$47	\$53	\$19	\$21	\$4	\$0	\$0	\$1,449	\$67	\$5	\$16
Home Performance w/Energy Star	\$1,573	\$151	\$0	\$177	\$157	\$29	\$38	\$11	\$15	\$44	\$5	\$0	\$761	\$45	\$0	
ENERGY STAR Products	\$988	\$55	\$0	\$96	\$85	\$210	\$138	\$88	\$55	\$40	\$5	\$0	\$33	\$2	\$99	\$8
Home Energy Assistance	\$713	\$50	\$0	\$61	\$54	\$50	\$56	\$17	\$19	\$20	\$0	\$0	\$253	\$17	\$0	
Home Energy Reports	\$282	\$7	\$0	\$14	\$13	\$85	\$72	\$29	\$26	\$12	\$0	\$0	\$0	\$0	\$0	\$20
Subtotal Residential	\$5,395	\$266	\$0	\$354	\$313	\$421	\$356	\$165	\$136	\$119	\$11	\$0	\$2,496	\$132	\$104	\$522
Commercial & Industrial Programs																
Large Business	\$5,238	\$416	\$0	\$558	\$494	\$1,200	\$901	\$538	\$397	\$256	\$0	\$0	\$0	\$0	\$0	\$470
Small Business	\$3,073	\$276	\$0	\$371	\$328	\$674	\$508	\$277	\$198	\$162	\$0	\$0	\$0	\$0	\$0	\$279
C&I Education	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	1	\$0	\$(
Municipal	\$708	\$53	\$0	\$71	\$63	\$164	\$119	\$67	\$46	\$33	\$0	\$0	\$28	\$1	\$0	\$64
Subtotal Commercial & Industrial	\$9,019	\$744	\$0	\$1,000	\$886	\$2,038	\$1,527	\$883	\$641	\$451	\$0	\$0	\$28	\$1	\$0	\$820
Total	\$14,414	\$1,009	\$0	\$1,354	\$1,199	\$2,459	\$1,883	\$1,048	\$777	\$571	\$11	\$0	\$2,524	\$133	\$104	\$1,34

Table 2c. Percent of Plan Present Value Benefits Achieved

			CAPACITY				ENE	RGY								
	Total Benefits (\$000)	Summer Generation	Winter Generation	Transmission	Distribution	Winter Peak	Winter Off Peak	Summer Peak	Summer Off Peak	Electric DRIPE	Gas Benefits	Gas DRIPE	Other Fuels Benefits	Fossil Emissions	Water Benefits	Other Non Resource Benefits
Residential Programs	108%	136%	0%	140%	140%	112%	101%	109%	98%	144%	41%	43%	102%	90%	130%	100%
Commercial & Industrial Programs	100%	100%	0%	102%	102%	100%	96%	103%	101%	105%	0%	0%	85%	64%	0%	100%
Total	103%	108%	0%	110%	110%	102%	97%	104%	100%	111%	41%	43%	101%	90%	130%	100%

Table 3a. Performance Incentive Calculation - 2019

	Planned	Actual
Commercial & Industrial Incentive		
1. Benefit/Cost Ratio	2.18	1.88
2. Threshold Benefit / Cost Ratio ¹	1.00	1.00
3. Lifetime kWh Savings	98,424,088	96,907,071
4. Threshold Lifetime kWh Savings (65%) ²	63,975,657	63,975,657
5. Implementation Expenses	\$ 2,379,917	\$ 2,100,171
6. Benefit / Cost Percentage of Implementation Expenses	2.75%	2.75%
7. Lifetime kWh Percentage of Implementation Expenses	2.75%	2.75%
8. Commercial & Industrial Performance Incentive	\$ 130,895	\$ 106,662
9. Maximum Commercial & Industrial Performance Incentive		
(6.875%)	\$ 163,619	\$ 163,619
Residential Incentive		
10. Benefit / Cost Ratio	2.43	2.68
11. Threshold Benefit / Cost Ratio ¹	1.00	1.00
12. Lifetime kWh Savings	19,420,600	19,793,075
13. Threshold Lifetime kWh Savings (65%)	12,623,390	12,623,390
14. Implementation Expenses	\$ 1,680,951	\$ 1,620,849
15. Benefit / Cost Percentage of Implementation Expenses	2.75%	
16. Lifetime kWh Percentage of Implementation Expenses	2.75%	
17. Residential Performance Incentive	\$ 92,452	\$ 94,475
18. Maximum Residential Performance Incentive (6.875%)	\$ 115,565	\$ 115,565
19. TOTAL PLANNED / EARNED INCENTIVE	\$ 223,348	\$ 201,137

Notes

- 1. Actual Benefit / Cost Ratio for each sector must be greater than or equal to 1.0.
- 2. Actual Lifetime kWh Savings for each sector must be greater than or equal to 65% of projected savings.
- 3. Benefit Cost ratios are Nominal\$/Nominal\$

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Table 3b. Planned Versus Actual Benefit / Cost Ratio by Sector - 2019

		<u> </u>	Planned		Actual		
Cor	nmercial & Industrial:						
1.	Benefits (Value) From Eligible Programs	\$	9,003	\$	9,019		
2.	Implementation Expenses	\$	2,380	\$	2,100		
2. 3.	Customer Contribution	\$ \$	1,742	\$	2,582		
3. 4.	Performance Incentive	\$ \$	1,742	Φ	107		
				<u>\$</u>			
5.	Total Costs Including Performance Incentive	\$	4,253	\$	4,789		
6.	Benefit/Cost Ratio - Commercial & Industrial Sector		2.18		1.93		
7.	Benefit/Cost Ratio - Commercial & Industrial Sector including PI		2.18		1.88		
Res	idential:						
8.	Benefits (Value) From Eligible Programs	\$	5,003	\$	5,395		
9.	Implementation Expenses	\$	1,681	\$	1,621		
10.	Customer Contribution	\$	376	\$	300		
11.	Performance Incentive	\$	92	\$	94		
12.	Total Costs Including Performance Incentive	\$	2,149	\$	2,015		
13.	Benefit/Cost Ratio - Residential Sector		2.43		2.81		
14.	Benefit/Cost Ratio - Residential Sector including PI		2.33		2.68		

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Table 3c. Actual Lifetime Energy Savings by Sector and Program - 2019

	Lifetime kWh Savings						
	Planned	Actual					
Commercial & Industrial:							
Large Business	67,850,378	57,940,088					
Small Business	26,723,868	31,415,220					
C&I Education	0	0					
Municipal	3,849,842	7,551,764					
Total Commercial & Industrial Included for Incentive Calculation	98,424,088	96,907,071					
Residential:							
ENERGY STAR Homes	7,935,055	2,908,931					
NH Home Performance with ENERGY STAR	1,327,806	1,876,918					
ENERGY STAR Products	6,469,068	8,776,072					
Home Energy Assistance	1,697,671	2,722,154					
Home Energy Reports	1,991,000	3,509,000					
Total Residential Included for Incentive Calculation	19,420,600	19,793,075					
Total	117,844,688	116,700,147					

Table 4. Program Expenditures by Category - $2019 \ ACTUAL$

	Ev	aluation	External Administration		Internal Administration		Internal Implementation		Marketing		Rebates- Services		Total
Residential Programs								•					
ENERGY STAR Homes	\$	8,662	\$	25	\$	8,705	\$	9,306	\$	3,608	\$	137,659	\$ 167,964
Home Performance with ENERGY STAR	\$	16,611	\$	48	\$	26,828	\$	21,123	\$	8,574	\$	241,239	\$ 314,424
ENERGY STAR Products	\$	13,637	\$	18	\$	6,141	\$	14,851	\$	5,759	\$	278,041	\$ 318,447
Home Energy Assistance	\$	32,298	\$	93	\$	50,253	\$	42,822	\$	11,171	\$	533,885	\$ 670,522
Home Energy Reports	\$	3,022	\$	8	\$	3,015	\$	5,230	\$	2,055	\$	117,595	\$ 130,924
ISO-NE FCM	\$	18,568	\$	-	\$	-	\$	-	\$	-	\$	-	\$ 18,568
Subtotal Residential	\$	92,798	\$	191	\$	94,941	\$	93,331	\$	31,167	\$	1,308,420	\$ 1,620,849
Commercial & Industrial Programs													
C&I Education	\$	2,943	\$	8	\$	1,394	\$	7,651	\$	438	\$	41,882	\$ 54,316
Large Business Energy Solutions	\$	56,697	\$	166	\$	13,725	\$	96,804	\$	14,281	\$	786,599	\$ 968,272
Small Business Energy Solutions	\$	40,422	\$	118	\$	12,184	\$	78,836	\$	13,939	\$	740,628	\$ 886,127
Municipal	\$	7,693	\$	20	\$	2,481	\$	14,509	\$	2,174	\$	139,966	\$ 166,842
ISO-NE FCM	\$	24,614	\$	-	\$	-	\$	-	\$	-	\$	-	\$ 24,614
Subtotal Commercial & Industrial	\$	132,369	\$	312	\$	29,783	\$	197,800	\$	30,833	\$	1,709,074	\$ 2,100,171
Total	\$	225,167	\$	503	\$	124,725	\$	291,131	\$	62,000	\$	3,017,494	\$ 3,721,019

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Table 5. Revenue and Expense Balance 12 Months Actual 2019

			2019
1	Beginning Balance: 1/1/2019	(Over) / Under	\$843,082.90
Revenu	es		
2 3 4 5	System Benefits Charge RGGI Funding FCM Payments Interest	_	\$3,311,243.43 \$216,195.98 \$738,155.71 \$91,898.86
6	Total Revenues	Sum Lines 2 - 5	\$4,357,493.98
Expense	es		
7	Program Expenses		\$3,721,019.35
8	Performance Incentive - 2019	Table 3a	\$201,136.91
9	Total Expenses	Sum Lines 7 - 8	\$3,922,156.26
10	Ending Balance: 12/31/2019	Lines 1 + 6 - 9	\$1,278,420.62

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Table 6. RGGI RFP – Retail & Large Business Energy Reduction Partners Program Performance Incentive Calculation - 2019

TOTAL RGGI RFP INCENTIVE EARNED	\$0
Percentage for PI calculation	7.50%
Total RGGI Grant Expenses 2019	\$0

Table 7a. Lost Base Revenue - 2019 Forecast Estimated Monthly and Cumulative Savings (kWh) and Lost Base Revenue January 1, 2019 to December 31, 2019

Line		Carryforward :	Forecast Jan 2019	Forecast Feb 2019	Forecast Mar 2019	Forecast Apr 2019	Forecast May 2019	Forecast June 2019	Forecast Jul 2019	Forecast Aug 2019	Forecast Sep 2019	Forecast Oct 2019	Forecast Nov 2019	Forecast Dec 2019	2019 Annual MWh and Monthly MW Savings
Line	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 Annual kWh Savings (2017, 2018, & 2019)	COI. D	187,203	187,203	187,203	187,203	187,203	187,203	187,203	187,203	187,203	187,203	187,203	187,203	2,246,440
2	C&I Annual kWh Savings (2017 & 2018)	-			-			-		-		-	-	-	_,,
3	C&I Annual kWh Savings (2019)	-	581,493	581,493	581,493	581,493	581,493	581,493	581,493	581,493	581,493	581,493	581,493	581,493	6,977,921
4	C&I Monthly Installed kW Savings*		61	61	61	61	61	61	61	61	61	61	61	61	736
												110% capped annualized kWh savings 110% capped annualized kW savings			10,146,797 810 Total 2019
			Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	June 2019	Jul 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019	Lost Base Revenue
5	Monthly Residential Savings (2019)		14,400	14,400	14,400	14,400	14,400	14,400	14,400	14,400	14,400	14,400	14,400	14,400	
6	Cumulative Residential Savings		14,400	28,800	43,200	57,600	72,000	86,400 0.04349	100,800	115,200	129,600	144,000	158,400	172,800	
/	Average Residential Distribution Rate		0.04349	0.04349	0.04349	0.04349	0.04349		0.04349	0.04349	0.04349	0.04349	0.04349	0.04349	
8	Lost Residential Revenue		\$ 626	\$ 1,253	\$ 1,879	\$ 2,505	\$ 3,131	\$ 3,758	\$ 4,384	\$ 5,010	\$ 5,637	\$ 6,263	\$ 6,889	\$ 7,516	\$ 48,851
9	Monthly C&I Savings (2017 & 2018)														
10	Average C&I kWh Distribution Rate		-		-	-	-	-	-	-			-	-	
11	Lost C&I kWh Revenue		s -	s -	•	s -	s -	s -	s -	\$ -	\$ -	•	s -	s -	
11	Lost C&I kwii Reveilue		5 -		3 -	3 -	5 -	5 -	5 -	5 -	5 -	3 -	3 -	5 -	
12	Monthly C&I Savings (2019)		44,731	48,458	48,458	48,458	48,458	48,458	48,458	48,458	48,458	48,458	48,458	48,458	
13	Cumulative C&I Savings		44,731	89,463	134,194	178,925	223,656	268,388	313,119	357,850	402,581	447,313	492,044	536,775	
14	Average C&I kWh Distribution Rate		0.00872	0.00872	0.00872	0.00872	0.00872	0.00872	0.00872	0.00872	0.00872	0.00872	0.00872	0.00872	
15	Lost C&I kWH Revenue		\$ 390	\$ 780	\$ 1,170	\$ 1,560	\$ 1,950	\$ 2,340	\$ 2,730	\$ 3,120	\$ 3,510	\$ 3,900	\$ 4,289	\$ 4,679	\$ 30,416
16	Monthly C&I kW Savings (2019)		31	31	31	31	31	31	31	31	31	31	31	31	
17	Cumulative Monthly C&I kW Savings		31	92	153	215	276	337	399	460	521	583	644	705	
18	Average C&I Demand Rate		\$ 7.77	\$ 7.77	\$ 7.77	\$ 7.77	\$ 7.77	\$ 7.77	\$ 7.77	\$ 7.77	\$ 7.77	\$ 7.77	\$ 7.77	\$ 7.77	
19	Lost C&I Demand Revenue		\$ 238	\$ 715	\$ 1,191	\$ 1,667	\$ 2,144	\$ 2,620	\$ 3,096	\$ 3,573	\$ 4,049	\$ 4,525	\$ 5,002	\$ 5,478	\$ 34,297
20	Total Lost C&I kWh and Demand Revenue		\$ 628	\$ 1,494	\$ 2,361	\$ 3,227	\$ 4,093	\$ 4,960	\$ 5,826	\$ 6,692	\$ 7,559	\$ 8,425	\$ 9,291	\$ 10,157	\$ 64,714
21	Total Lost Revenue	-	\$ 1,254	\$ 2,747	\$ 4,240	\$ 5,732	\$ 7,225	\$ 8,717	\$ 10,210	\$ 11,703	\$ 13,195	\$ 14,688	\$ 16,180	\$ 17,673	\$ 113,565

Lines 1-3: Company Forecast
Line 4: Line 1 + Line 2 + Line 3
Line 5: Company Forecast
Line 6: Line 5
Line 7: Line 2 / 12
Line 8: Prior Month Line 8 + Current Month Line 7
Line 9: Page 8, Column 7
Line 10: Line 8 x Line 9
Line 11: Line 1 / 12
Line 12: Page 8, Column 8
Line 14: Line 3 / 12
Line 15: Prior Month Line 15 + Current Month Line 14
Line 16: Page 8, Column 7
Line 16: Line 15 x Line 16
Line 18: Line 5 / 12
Line 19: Drior Month Line 16
Line 19: Prior Month Line 19 + Current Month Line 18
Line 20: Page 8, Column 6
Line 21: Line 19 x Line 20
Line 22: Line 19 x Line 20
Line 22: Line 10 + Line 13 + Line 17 + Line 21

Table 7b. Lost Base Revenue - 2019 Actual Actual Monthly and Cumulative Savings (kWh) and Lost Base Revenue January 1, 2019 to December 31, 2019

	D	Carryforward as of	Actual Jan 2019	Actual	Actual Mar 2019	Actual Apr 2019	Actual May 2019	Actual June 2019	Actual Jul 2019	Actual	Actual Sep 2019	Actual Oct 2019	Actual Nov 2019	Actual Dec 2019	Cumulative Jan - Dec 2019 LBR Savings
Line	Description Col. A	12/31/2018 Col. B	Col. C	Feb 2019 Col. D	Col. E	Col. F	Col. G	Col. H	Col. I	Aug 2019 Col. J	Sep 2019 Col. K	Col. L	Col. M	Col. N	Col. O
1	Residential Annual kWh Savings (2017, 2018, & 2019) *	Col. B	498,438	204,028	186,872	191,830	184,745	259,243	122,472	252,446	319,469	243,598	259,148	203,002	2,925,291
2	C&I Annual kWh Savings (2017 & 2018)	-			,	. ,	. ,	,	, .		,	.,	,		
3	C&I Annual kWh Savings (2019)		227,589	524,636	829,247	214,183	628,807	138,434	26,415	1,006,971	580,482	616,689	702,543	1,725,509	7,221,506
4	C&I Annual Installed kW Savings		4.935	67.512	79.198	0.000	0.000	16.734	0.000	92.988	0.000	51.733	73.897	147.261	534
												110% capp	ped annualized	d kWh savings	10,146,797
												110% cap	oped annualiz	ed kW savings	810
															Cumulative 2017 - 2019
5	Monthly Residential Savings (2017, 2018 & 2019)	-	41,537	17,002	15,573	15,986	15,395	21,604	10,206	21,037	26,622	20,300	21,596	16,917	
6	Cumulative Residential Savings Average Residential Distribution Rate	-	41,537 0.04739	58,539 0.04739	74,112 0.04739	90,097 0.04739	105,493 0.04739	127,096 0.04739	137,302 0.04739	158,339 0.04739	184,962 0.04739	205,262 0.04739	226,857 0.04739	243,774 0.04739	1,653,370
8	Lost Residential Revenue		\$ 1,968			\$ 4.270	\$ 4,999	\$ 6.023	\$ 6.507	\$ 7,504	\$ 8,765	\$ 9,727	\$ 10.751	\$ 11.552	\$ 78,353
0	Lost Residential Revenue		3 1,700	3 2,774	3 3,312	3 4,270	3 4,777	\$ 0,023	\$ 0,507	3 7,304	\$ 6,705	3 7,121	\$ 10,731	3 11,332	3 76,333
															Cumulative 2017 - 2019
9	Monthly C&I Savings (2017 & 2018)	-	-	-	-	-	-	-	-	-	-	-	-	-	
10 11		-	0.00881	0.00881	0.00881	0.00881	0.00881	0.00881	0.00881	0.00881	0.00881	0.00881	0.00881	0.00881	-
	Lost C&I kWh Revenue		\$ -	\$ -		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		s -
12	Lost C&I k wil Revenue		3 -	3 -	3 -	3 -	3 -	3 -	5 -	3 -	3 -	3 -	3 -	3 -	-
13	Monthly C&I Savings (2019)		18,966	43,720	69,104	17,849	52,401	11,536	2,201	83,914	48,373	51,391	58,545	143,792	
14			18,966	62,685	131,789	149,638	202,039	213,575	215,776	299,690	348,064	399,455	458,000	601,792	3,101,468
15	8		0.00881	0.00881	0.00881	0.00881	0.00881	0.00881	0.00881	0.00881	0.00881	0.00881	0.00881	0.00881	
16	Lost C&I kWH Revenue		\$ 167	\$ 552	\$ 1,161	\$ 1,318	\$ 1,780	\$ 1,882	\$ 1,901	\$ 2,640	\$ 3,066	\$ 3,519	\$ 4,035	\$ 5,302	\$ 27,324
17	Monthly C&I kW Savings (2019)		0.411	5.626	6.600		-	1.394		7.749		4.311	6.158	12.272	
18			0.411	6.037	12.637	12.637	12.637	14.031	14.031	21.780	21.780	26.092	32.250	44.521	219
19	Average C&I Demand Rate		\$ 7.9967	\$ 7.997	\$ 7.997	\$ 7.997	\$ 7.997	\$ 7.997	\$ 7.997	\$ 7.997	\$ 7.997	\$ 7.997	\$ 7.997	\$ 7.997	
20	Lost C&I Demand Revenue		\$ 3	\$ 48	\$ 101	\$ 101	\$ 101	\$ 112	\$ 112	\$ 174	\$ 174	\$ 209	\$ 258	\$ 356	\$ 1,750
21	Total Lost C&I kWh and Demand Revenue		\$ 170	\$ 601	\$ 1,262	\$ 1,419	\$ 1,881	\$ 1,994	\$ 2,013	\$ 2,814	\$ 3,241	\$ 3,728	\$ 4,293	\$ 5,658	\$ 29,074
22	Total Lost Revenue		\$ 2,139	\$ 3,375	\$ 4,774	\$ 5,689	\$ 6.880	\$ 8,017	\$ 8520	\$ 10,318	\$ 12,006	\$ 13.455	\$ 15,044	\$ 17,210	\$ 107.427
			- 2,107	- 5,070	- 1,774	- 2,007	+ 0,000	÷ 0,017	- 0,020	+ -0,010	2,000			/,210	- 101,121

^{*} the kWh savings were adjusted for the 110% cap reached during the month of November 2019

Lines 1-3: Actual Annualized Residential + Commercial Savings
Line 4: Actual Annualized KW Savings
Line 5: Line 1 / 12
Line 6: Prior Month Line 6 + Current Month Line 5
Line 7: GSE Avg Distribution Rates, Line 5, Col. D
Line 8: Prior Month Line 8 + Current Month Line 7
Line 9: Cumalative historical savings
Line 10: GSE Avg Distribution Rates, Line 12 Col. D
Line 11: Prior Month Line 11 + Current Month Line 10
Line 12: Line 10 x Line 11
Line 13: Line 3 / 12
Line 14: Prior Month Line 14 + Current Month Line 13
Line 15: GSE Avg Distribution Rates, Line 14, Col. D
Line 16: Line 14 x Line 15
Line 17: Line 4 / 12
Line 18: Prior Month Line 18 + Current Month Line 17
Line 19: GSE Avg Distribution Rates, Line 17, Col. D
Line 10: Line 14 x Line 15
Line 19: Line 14 x Line 19
Line 20: Line 18 x Line 19
Line 21: Line 12 + Line 16 + Line 20
Line 22: Line 8 + Line 21

Liberty Utilities (Granite State Electric) Corp. d/b/a Liberty Utilities NHSaves Energy Efficiency Programs 2019 Year End Report

NHPUC Docket No. DE 17-136

Table 7b. Lost Base Revenue - 2019 Actual Actual C&I kW Savings - New Component for Year 2019 January 1, 2019 to December 31, 2019

Line No.	Description	Liberty
1	Gross Annualized kWh Savings	4,337,870
2	Maximum Demand Factor (MDF)	Varies by measure
3	Extended Max. Load Reduction kW	816.8
4	% kW Demand Reduction at Customer Peak	Varies by measure
5	Sub-Total Customer Peak kW Reduction	534.3
6	% Net to Gross	100.00%
7	Sub-Total Customer Peak kW Reduction	534.3
8	% In-Service Rate	100.00%
9	Sub-Total Customer Peak kW Reduction	534.3
10	% kW Realization Rate	Varies by measure
11	Sub-Total Customer Peak kW Reduction	218.8
12	% Billing Adjustment to Reflect Ratchets (1)	100.00%
13	Sub-Total Customer Peak kW Reduction	218.8
14	% Retirement Adjustment	100.00%
15	Total Customer Peak kW Reduction, Full Year	218.8
16	% Annual Savings Achieved in First Year	n/a
17	Total Customer Peak Red. in First Year	218.8
18	Annualized (x12)	2,626.2
19	Average Distribution Rate (ADR)	\$ 7.997
20	LBR Calculation	\$ 1,750

Comments:

Above schedule mirrors the Template recommended by the LBRWG Report (p.6)

Liberty Utilities (Granite State Electric) Corp. d/b/a Liberty Utilities NHSaves Energy Efficiency Programs 2019 Year End Report

NHPUC Docket No. DE 17-136

Table 7c. Lost Base Revenue - 2019 Actual Actual Calculation for LBR New Methodology for Year 2019 January 1, 2019 to December 31, 2019

Description	Res	sidential kWh	Con	nmercial kWh	C&I kW	Total		
Legacy (Measures Installed in 2017 and 2018): (1)							_	
1 Program Year 2017 Actual LBR Savings (2)		-		-	-		-	
2 2019 Average Distribution Rate (ADR)	\$	0.0474	\$	0.0088	\$ -			
3 Sub-Total LBR	\$	-	\$	-	\$ -	\$	-	
4 Program Year 2018 Estimated LBR Savings	\$	-	\$	-	-		-	
5 2019 Average Distribution Rate (ADR)	\$	0.0474	\$	0.0088	\$ -			
6 Sub-Total LBR	\$	-	\$	-	\$ -	\$	-	
7 Sub-Total Legacy (Measures Installed in 2017 and 2018)		-		-	-		-	
8 Sub-Total Legacy LBR	\$	-	\$	-	\$ -	\$	-	
New Methodology (Measures Installed in 2019 and forward):								
9 Program Year 2019 Estimated LBR Savings to be achieved (annualized)		2,925,291		7,221,506	534	1	0,147,331	
10 Program Year 2019 Estimated LBR Savings to be achieved in 2019		1,653,370		3,101,468	219		4,755,058	
11 2019 Average Distribution Rate (ADR)	\$	0.0474	\$	0.0088	\$ 7.9967			
12 Sub-Total LBR (Line 2 x Line 3)	\$	78,353	\$	27,324	\$ 1,750	\$	107,427	
13 Total Actual LBR - Year 2019	\$	78,353	\$	27,324	\$ 1,750	\$	107,427	

Comments:

New metholody disaggregates kWh and kW components as specified in the Settlement Agreement in DE 17-136 (Order No. 26,095).

Table 8. Calculation of Average Distribution Rates Excluding Customer, Meter, and per Luminaire Charges
Based on 2019 actual data

		2019										
	•			Distribution								
				Revenue								
		Delivery		Excluding		Average						
<u>Line</u>	Rate Class	<u>kWh</u>		Fixed Charges		<u>\$/kWh</u>						
	Col. A	Col. B		Col. C		Col. D						
1	Residential Rate D	269,097,087	\$	12,930,181								
2	Residential D-6	744,413	\$	31,487								
3	Residential TOU Rate D-10 All kWh	5,390,208	\$	196,947								
4	Residential Electric Heat Rate T	14,723,325	\$	582,575								
5	Residential Subtotal (kWh only)	289,955,033	\$	13,741,189	\$	0.04739						
_			_									
6	General Service Rate G-1 All kWh	377,564,381	\$	1,297,424								
7	General Service Rate G-1 Credit for High Voltage (KV)	-	\$	(234,618)								
8	General Service Rate G-2 All kWh	141,341,341	\$	328,408								
9	General Service Rate G-2 Credit for High Voltage (KV)	-	\$	(1,814)								
10	General Service Rate G-3 All kWh	86,048,678	\$	3,926,553								
11	Commercial Electric Heat Rate V All kWh	325,565	\$	15,239								
12	Commercial and Industrial Subtotal (kWh only)	605,279,965		5,331,192	\$	0.00881						
13	Outdoor Lighting Rate M	_	\$	_								
10	Outdoor Lighting Nate W		Ψ									
14	Total Retail	895,234,998	\$	19,072,381	\$	0.02130						
				Distribution								
Line	Rate Class	<u>KW</u>		Revenue		<u>\$/KW</u>						
15	General Service Rate G-1 Demand Charge (KW)	938,346	\$	7,493,962								
16	General Service Rate G-2 Demand Charge (KW)	488,463	\$	3,915,864								
17	Total Retail per KW	1,426,809	\$	11,409,826	\$	7.99674						

^{*}Excludes customer charge and street light luminaire charges.