

**Liberty Utilities (EnergyNorth Natural Gas) Corp.
d/b/a Liberty Utilities
Docket No. DG 19-054
Attachment DBS/CAM-1
April 15, 2019**

**Liberty Utilities (EnergyNorth Natural Gas) Corp.
Fiscal Year 2019 Cast Iron/Bare Steel Replacement Program
Computation of Revenue Requirement
April 15, 2019**

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Liberty Utilities (EnergyNorth Natural Gas) Corp.
Fiscal Year 2019 Cast Iron/Bare Steel Replacement Program
Computation of Revenue Requirement

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	
	Actual	July 1, 2009 through March 31, 2010 9 Months	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Estimate	
	FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20	
Incremental Investment													
1	CIBS Program Actual Spend-Mains	1,736,153	4,049,995	3,391,069	1,570,208	2,174,813	2,781,140	3,006,856	3,304,532	5,204,619	8,858,559	11,357,411	-
2	CIBS Program Actual Spend-Service	729,463	798,555	668,631	352,005	161,352	370,655	776,086	705,984	1,209,322	1,389,222	1,469,613	-
3	CIBS Program Estimated Spend-Mains	-	-	-	-	-	-	-	-	-	-	-	16,302,661
4	CIBS Program Estimated Spend-Service	-	-	-	-	-	-	-	-	-	-	-	2,876,940
5	Base Spending Amount	500,000	482,110	500,000	500,000	500,000	506,240	514,244	520,965	527,275	533,119	533,119	-
6	Incremental Amount	1,965,616	4,366,440	3,559,700	1,422,213	1,836,165	2,651,795	3,276,702	3,496,272	5,892,976	9,720,506	12,293,905	18,646,482
7	Cumulative CIBS Program Spend Since July 1, 2009		4,366,440	7,926,140	9,348,353	11,184,518	13,836,312	17,113,015	20,609,287	26,502,263	36,222,769	48,516,674	67,163,156
8													
9	Deferred Tax Calculation												
10	Annual Tax Depreciation	1,031,948	4,366,440	3,559,700	1,422,213	1,836,165	2,651,795	3,276,702	3,496,272	5,892,976	9,720,506	12,293,905	18,646,482
11	Cumulative Tax Depreciation Since July 1, 2009		4,366,440	7,926,140	9,348,353	11,184,518	13,836,312	17,113,015	20,609,287	26,502,263	36,222,769	48,516,674	67,163,156
12													
13	Annual Book Depreciation	49,836	98,794	179,335	212,059	249,951	307,352	384,247	464,177	600,433	814,476	1,009,788	1,490,524
14	Cumulative Book Depreciation Since July 1, 2009		98,794	278,129	490,188	740,138	1,047,490	1,431,737	1,895,914	2,496,347	3,310,822	4,320,610	5,811,134
15													
16	Annual Book/Tax Timer	982,112	4,267,646	3,380,365	1,210,154	1,586,214	2,344,443	2,892,456	3,032,095	5,292,543	8,906,031	11,284,117	17,155,958
17	Cumulative Book/Tax Timer	982,112	4,267,646	7,648,011	8,858,165	10,444,379	12,788,822	15,681,278	18,713,373	24,005,916	32,911,947	44,196,064	61,352,022
18	Statutory Tax Rate	40.53%	40.53%	40.53%	40.53%	40.53%	39.61%	39.61%	39.61%	39.61%	27.24%	27.08%	27.08%
19													
20	Deferred Tax Reserve	398,001	1,729,677	3,099,739	3,590,214	4,233,107	5,161,741	6,211,354	7,412,367	9,508,743	11,934,746	12,020,953	13,611,048
21													
22	Rate Base Calculation												
23	Plant In Service	1,965,616	4,366,440	7,926,140	9,348,353	11,184,518	13,836,312	17,113,015	20,609,287	26,502,263	36,222,769	48,516,674	67,163,156
24	Accumulated Depreciation	(49,836)	(98,794)	(278,129)	(490,188)	(740,138)	(1,047,490)	(1,431,737)	(1,895,914)	(2,496,347)	(3,310,822)	(4,320,610)	(5,811,134)
25	Net Plant in Service	1,915,780	4,267,646	7,648,011	8,858,166	10,444,379	12,788,822	15,681,278	18,713,373	24,005,916	32,911,946	44,196,063	61,352,021
26	Deferred Tax Reserve	(398,001)	(1,729,677)	(3,099,739)	(3,590,214)	(4,233,107)	(5,161,741)	(6,211,354)	(7,412,367)	(9,508,743)	(11,934,746)	(12,020,953)	(13,611,048)
27	Year End Rate Base	1,517,779	2,537,969	4,548,272	5,267,951	6,211,273	7,627,082	9,469,924	11,301,006	14,497,173	20,977,200	32,175,110	47,740,974
28													
29	Revenue Requirement Calculation												
30	Year End Rate Base	1,517,779	2,537,969	4,548,272	5,267,951	6,211,273	7,627,082	9,469,924	11,301,006	14,497,173	20,977,200	32,175,110	47,740,974
31	Pre-Tax ROR	11.53%	11.53%	11.63%	11.63%	11.63%	11.50%	10.22%	9.87%	9.87%	8.51%	8.50%	8.50%
32	Return and Taxes	175,003	292,628	528,964	612,663	722,371	877,114	967,826	1,115,409	1,430,871	1,785,160	2,734,884	4,057,983
33	Book Depreciation	49,836	98,794	179,335	212,059	249,951	307,352	384,247	464,177	600,433	814,476	1,009,788	1,490,524
34	Property Taxes	37,347	88,340	194,259	231,198	241,265	359,366	503,369	490,290	727,379	921,535	1,104,902	1,533,801
35	Annual Revenue Requirement	262,185	479,762	902,558	1,055,920	1,213,587	1,543,832	1,855,442	2,069,876	2,758,683	3,521,171	4,849,574	7,082,308
36													
37	Prior Year Annual Revenue Requirement	-	-	479,762	902,558	1,055,920	1,213,587	1,543,832	1,855,442	2,069,876	2,758,683	3,521,171	4,849,574
38													
39	Low Income Revenue Correction From FY 2018											(7,290)	
40													
41	Incremental Annual Rate Adjustment Since July 1, 2009	262,185	479,762	422,796	153,362	157,667	330,245	311,610	214,434	688,807	762,488	1,321,114	2,232,734
42													
43													
44													
45	Actual Capital Structure/ROR												
46													
47													
48													
49													
50													
51	Long Term Debt	49.85%	4.42%	2.200%									
52	Short Term Debt	0.95%	2.49%	0.02%									
53	Common Equity	49.20%	9.30%	6.280%									
54													
55		100.00%		8.500%									

41(k) includes a low income revenue correction from FY 18 of (\$7,290) = (\$6,911 plus interest)

Liberty Utilities (EnergyNorth Natural Gas) Corp.
Fiscal Year 2019 Cast Iron/Bare Steel Replacement Program
Vintage Year Book Depreciation Schedule

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	
	Actual	July 1, 2009 thru March 31, 2010 9 Months FY10	Actual FY11	Actual FY12	Actual FY13	Actual FY14	Actual FY15	Actual FY16	Actual FY17	Actual FY18	Actual FY19	Estimate FY20	
Book Depreciation Schedule-Mains													
1	Actual CIBS spending	1,736,153	4,049,995	3,391,069	1,570,208	2,174,813	2,781,140	3,006,856	3,304,532	5,204,619	8,858,559	11,357,411	16,302,661
2	Base spending	(352,073)	(402,707)	(417,650)	(408,438)	(465,466)	(441,199)	(402,383)	(423,720)	(422,739)	(455,796)	(472,039)	(472,039)
3	Incremental CIBS spending	1,384,080	3,647,288	2,973,419	1,161,770	1,709,346	2,339,940	2,604,473	2,880,812	4,781,880	8,402,763	10,885,372	15,830,622
4													
5	Book Depreciation Rate:												
6	Year 1	2.54%	35,065	0	0	0	0	0	0	0	0	0	0
7	Year 1 beginning in FY10	1.92%		70,028	57,090	22,306	32,819	44,927	50,006	55,312	91,812	161,333	208,999
8	Year 2	1.92%			70,028	57,090	22,306	32,819	44,927	50,006	55,312	91,812	161,333
9	Year 3	1.92%				70,028	57,090	22,306	32,819	44,927	50,006	55,312	91,812
10	Year 4	1.92%					70,028	57,090	22,306	32,819	44,927	50,006	55,312
11	Year 5	1.92%						70,028	57,090	22,306	32,819	44,927	50,006
12	Year 6	1.92%							70,028	57,090	22,306	32,819	44,927
13	Year 7	1.92%								70,028	57,090	22,306	32,819
14	Year 8	1.92%									70,028	57,090	22,306
15	Year 9	1.92%										70,028	57,090
16	Year 10	1.92%											70,028
17	Year 11	1.92%											70,028
18	Book Depreciation Expense-Mains	35,065	70,028	127,118	149,424	182,243	227,170	277,176	332,487	424,299	585,632	724,604	1,098,580
19													
20	Accumulated Depreciation Mains-Beginning of Year	-	-	70,028	197,146	346,570	528,813	755,982	1,033,158	1,365,646	1,789,945	2,375,577	3,100,181
21	Accumulated Depreciation Mains-End of Year	35,065	70,028	197,146	346,570	528,813	755,982	1,033,158	1,365,646	1,789,945	2,375,577	3,100,181	4,198,761
22													
23													
24	Book Depreciation Schedule-Services												
25													
26	Actual CIBS spending	729,463	798,555	668,631	352,005	161,352	370,655	776,086	705,984	1,209,322	1,389,222	1,469,613	2,876,940
27	Base spending	(147,927)	(79,403)	(82,350)	(91,562)	(34,534)	(58,801)	(103,857)	(90,524)	(98,226)	(71,479)	(61,080)	(61,080)
28	Incremental CIBS spending	581,536	719,152	586,281	260,443	126,818	311,854	672,229	615,460	1,111,096	1,317,743	1,408,533	2,815,860
29													
30	Book Depreciation Rate:												
31	Year 1	2.54%	14,771	0	0	0	0	0	0	0	0	0	0
32	Year 1 beginning in FY10	4.00%		28,766	23,451	10,418	5,073	12,474	26,889	24,618	44,444	52,710	112,634
33	Year 2	4.00%			28,766	23,451	10,418	5,073	12,474	24,618	44,444	52,710	112,634
34	Year 3	4.00%				28,766	23,451	10,418	5,073	12,474	24,618	44,444	112,634
35	Year 4	4.00%					28,766	23,451	10,418	5,073	12,474	24,618	44,444
36	Year 5	4.00%						28,766	23,451	10,418	5,073	12,474	24,618
37	Year 6	4.00%							28,766	23,451	10,418	5,073	12,474
38	Year 7	4.00%								28,766	23,451	10,418	12,474
39	Year 8	4.00%									28,766	23,451	10,418
40	Year 9	4.00%										28,766	10,418
41	Year 10	3.55%											20,813
42	Year 11	3.55%											25,530
43	Book Depreciation Expense-Services	14,771	28,766	52,217	62,635	67,708	80,182	107,071	131,690	176,133	228,843	285,184	391,944
44													
45	Accumulated Depreciation Services-Beginning of Year	-	-	28,766	80,983	143,618	211,326	291,508	398,579	530,268	706,402	935,245	1,220,429
46	Accumulated Depreciation Services-End of Year	14,771	28,766	80,983	143,618	211,326	291,508	398,579	530,268	706,402	935,245	1,220,429	1,612,374
47													
48													
49													
50	Total Mains & Services Depreciation Expense	49,836	98,794	179,335	212,059	249,951	307,352	384,247	464,177	600,433	814,476	1,009,788	1,490,524
51													
52	Total Mains & Services Accumulated Depreciation	49,836	98,794	278,129	490,188	740,138	1,047,490	1,431,737	1,895,914	2,496,347	3,310,822	4,320,610	5,811,134

6(a) & 31(a) FY 2009 filing used the composite depreciation rate for both mains and services.

Liberty Utilities (EnergyNorth Natural Gas) Corp.
Fiscal Year 2019 Cast Iron/Bare Steel Replacement Program
Municipal Taxes as a Percentage of Net Plant

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)
	12/31/2005	12/31/2006	12/31/2007	12/31/2008	12/31/2009	12/31/2010	12/31/2011	12/31/2012	12/31/2013	12/31/2014	12/31/2015	12/31/2016	12/31/2017	12/31/2018
1 Plant in Service	258,573	272,678	289,379	305,221	319,737	332,049	344,966	356,165	381,214	419,215	451,950	494,511	539,666	595,016
2 Depreciation and Amortization Reserve	(82,363)	(88,564)	(94,562)	(102,587)	(108,270)	(114,294)	(119,973)	(121,047)	(129,209)	(137,656)	(149,943)	(163,209)	(171,469)	(134,742)
3 Net Plant	176,209	184,114	194,817	202,634	211,467	217,756	224,993	235,118	252,006	281,559	302,007	331,302	368,198	460,274
4														
5 Average Net Plant														
6 Plant in Service		265,625	281,028	297,300	312,479	325,893	338,508	350,565	368,690	400,214	435,582	456,863	495,808	567,341
7 Depreciation Reserve		(85,463)	(91,563)	(98,575)	(105,429)	(111,282)	(117,133)	(120,510)	(125,128)	(133,432)	(143,799)	(150,432)	(160,706)	(153,105)
8 Net Plant		180,162	189,465	198,726	207,051	214,611	221,375	230,056	243,562	266,782	291,783	306,431	335,102	414,236
9														
10 Municipal Taxes		3,534	3,641	3,771	4,294	5,459	5,776	5,321	6,835	8,560	7,644	9,596	9,380	10,361
11														
12 % Municipal Taxes to Net Plant		1.96%	1.92%	1.90%	2.07%	2.54%	2.61%	2.31%	2.81%	3.21%	2.62%	3.13%	2.80%	2.50%

Note: Source of above data is the December 31 PUC Annual Report to be consistent with data previously provided to the Commission.

Liberty Utilities (EnergyNorth Natural Gas) Corp.
Fiscal Year 2019 Cast Iron/Bare Steel Replacement Program
Bill Impacts due to Cast Iron and Bare Steel Replacement Program

	(a) FY2009	(b) FY2010	(c) FY2011	(d) FY2012	(e) FY2013	(f) FY2014	(g) FY2015	(h) FY2016	(i) FY2017	(j) FY2018	(k) FY2019	(l) Estimate FY2020
1 Annual Increase due to Cast Iron Bare Steel program	262,185	479,762	521,590	(44,226)	157,667	330,245	311,610	214,434	688,807	762,488	1,321,114	2,232,734
2 Annual Throughput (see Winter COG filing - schedule 10B)	154,702,063	150,828,182	154,648,622	163,588,592	158,062,349	160,018,819	166,523,068	172,103,158	186,909,214	182,370,287	183,203,513	183,203,513
3 Increase Factor	\$0.0017	\$0.0032	\$0.0034	(\$0.0003)	\$0.0010	\$0.0021	\$0.0019	\$0.0012	\$0.0037	\$0.0042	\$0.0072	\$0.0122
4												
5 Annual Calendar Year Gross Revenues (Annual Report - Page 11) ¹	\$176,520,000	\$151,224,178	\$132,475,941	\$146,365,316	\$119,363,340	\$137,617,008	\$119,363,341	\$156,933,825	\$120,053,649	\$139,890,158	\$157,495,294	\$157,495,294
6												
7 Annual Percent Increase	0.15%	0.32%	0.39%	-0.03%	0.13%	0.24%	0.26%	0.14%	0.57%	0.55%	0.84%	1.42%
8												
9 Miles of Cast Iron/Bare Steel Main Replaced Annually through CIBS	2.96	3.98	2.79	1.56	1.65	3.51	5.00	5.05	10.26	11.58	9.91	13.38
10 Cumulative Miles of Main Replaced through CIBS	2.96	6.94	9.73	11.29	12.94	16.45	21.45	26.50	36.76	48.34	58.25	71.63
11 Total Miles of Cast Iron/Bare Steel Main Remaining ⁴	149.8	142.0	137.4	132.1	126.30	120.88	113.96	106.46	93.18	78.65	68.74	55.36
12												
13 Services Replaced Annually ²	101	127	282	81	84	174	316	291	572	584	270	399
14 Cumulative Number of Services Replaced	101	228	510	591	675	849	1,165	1,456	2,028	2,612	2,882	3,281
15												
16 Typical Residential bill	\$1,292	\$1,107	\$1,118	\$1,059	\$1,020	\$1,123	\$1,309	\$1,309	\$1,078	\$1,171	\$1,170	\$1,170
17												
18 Typical Usage	800	800	800	800	800	800	800	800	763	779	778	778
19												
20 Annual Increase for Residential Heating customer	\$1.36	\$2.54	\$2.70	(\$0.22)	\$0.80	\$1.65	\$1.50	\$1.00	\$2.81	\$3.26	\$5.61	\$9.48
21												
22 Percent Bill Increase	0.10%	0.23%	0.24%	-0.02%	0.08%	0.15%	0.11%	0.08%	0.26%	0.28%	0.48%	0.81%
23												
24												
25												
26												
27 Typical G-41	\$3,375	\$2,939	\$2,842	\$2,696	\$2,654	\$2,926	\$3,499	\$3,499	\$2,651	\$3,031	\$3,213	\$3,213
28												
29 Typical Usage	2,167	2,167	2,167	2,167	2,167	2,167	2,167	2,167	2,029	2,180	2,260	2,260
30												
31 Annual Increase for G-41 customer	\$3.67	\$6.89	\$7.31	(\$0.59)	\$2.16	\$4.47	\$4.06	\$2.70	\$7.48	\$9.11	\$16.29	\$27.54
32												
33 Percent Bill Increase	0.11%	0.23%	0.26%	-0.02%	0.08%	0.15%	0.12%	0.08%	0.28%	0.30%	0.51%	0.86%
34												
35												
36 Typical G-42	\$22,595	\$18,926	\$18,432	\$17,516	\$16,884	\$18,853	\$22,486	\$22,486	\$16,284	\$18,916	\$21,784	\$21,784
37												
38 Typical Usage	15,567	15,567	15,567	15,567	15,567	15,567	15,567	15,567	14,720	15,883	18,073	18,073
39												
40 Annual Increase for G-42 customer	\$26.38	\$49.52	\$52.50	(\$4.21)	\$15.53	\$32.13	\$29.13	\$19.40	\$54.25	\$66.41	\$130.33	\$220.26
41												
42 Percent Bill Increase	0.12%	0.26%	0.28%	-0.02%	0.09%	0.17%	0.13%	0.09%	0.33%	0.35%	0.60%	1.01%
43												
44												
45 Typical G-52	\$21,973	\$16,707	\$16,605	\$16,025	\$14,629	\$16,555	\$18,667	\$18,667	\$14,087	\$15,714	\$17,730	\$17,730
46												
47 Typical Usage	15,687	15,687	15,687	15,687	15,687	15,687	15,687	15,687	14,566	15,645	17,935	17,935
48												
49 Annual Increase for G-52 customer	\$26.59	\$49.90	\$52.91	(\$4.24)	\$15.65	\$32.37	\$29.35	\$19.55	\$53.68	\$65.41	\$129.33	\$218.57
50												
51 Percent Bill Increase	0.12%	0.30%	0.32%	-0.03%	0.11%	0.20%	0.16%	0.10%	0.38%	0.42%	0.73%	1.23%

Line / Column Notes:

1(b)-16(b) Amounts are cumulative from July 1, 2009

¹Mileage includes Cast Iron/Bare Steel replaced through the CIBS Program as well as City/State Construction.

²These figures include all service replacements and inserts, including bare steel, coated steel and plastic services

³These figures include both ENNG and Keene beginning in FY 2019

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**Liberty Utilities (EnergyNorth Natural Gas) Corp.
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Computation of Revenue Requirement
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Liberty Utilities (EnergyNorth Natural Gas) Corp.
Fiscal Year 2019 Cast Iron/Bare Steel Replacement Program
Computation of Revenue Requirement

RESTATED AS IF RATE CASE WAS NOT FILED. FOR INFORMATIONAL PURPOSES ONLY.

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	
	Actual FY09	12 Months FY10	Actual FY11	Actual FY12	Actual FY13	Actual FY14	Actual FY15	Actual FY16	Actual FY17	Actual FY18	Actual FY19	FY2019 Estimate FY20	
Incremental Investment													
1	CIBS Program Actual Spend-Mains	1,736,153	4,206,295	3,391,069	1,570,208	2,174,813	2,781,140	3,006,856	3,304,532	5,204,619	8,858,559	11,357,411	-
2	CIBS Program Actual Spend-Service	729,463	822,173	668,631	352,005	161,352	370,655	776,086	705,984	1,209,322	1,389,222	1,469,613	-
3	CIBS Program Estimated Spend-Mains	-	-	-	-	-	-	-	-	-	-	-	16,302,661
4	CIBS Program Estimated Spend-Service	-	-	-	-	-	-	-	-	-	-	-	2,876,940
5	Degradation Fees [1]	-	-	-	-	-	-	-	-	-	1,198,059	-	-
6	Base Spending Amount	500,000	500,000	500,000	500,000	500,000	500,000	506,240	514,244	520,965	527,275	533,119	533,119
7	Incremental Amount	1,965,616	4,528,468	3,559,700	1,422,213	1,836,165	2,651,795	3,276,702	3,496,272	5,892,976	10,918,565	12,293,905	18,646,482
8	Cumulative CIBS Program Spend Since July 1, 2009	-	6,494,084	10,053,784	11,475,997	13,312,162	15,963,956	19,240,659	22,736,931	28,629,907	39,548,472	51,842,377	70,488,859
9													
Deferred Tax Calculation													
10	Annual Tax Depreciation	1,031,948	5,462,136	3,559,700	1,422,213	1,836,165	2,651,795	3,276,702	3,496,272	5,892,976	10,918,565	12,293,905	18,646,482
11	Cumulative Tax Depreciation Since July 1, 2009	-	6,494,084	10,053,784	11,475,997	13,312,162	15,963,956	19,240,659	22,736,931	28,629,907	39,548,472	51,842,377	70,488,859
12													
13	Annual Book Depreciation	49,836	152,184	232,725	265,448	303,340	360,741	437,636	517,566	653,822	867,865	1,129,873	1,543,817
14	Cumulative Book Depreciation Since July 1, 2009	-	202,019	434,744	700,192	1,003,532	1,364,273	1,801,909	2,319,475	2,973,297	3,841,162	4,971,035	6,514,852
15													
16	Annual Book/Tax Timer	982,112	5,309,953	3,326,975	1,156,765	1,532,825	2,291,054	2,839,067	2,978,706	5,239,154	10,050,701	11,164,032	17,102,665
17	Cumulative Book/Tax Timer	982,112	6,292,065	9,619,040	10,775,805	12,308,630	14,599,684	17,438,751	20,417,457	25,656,611	35,707,312	46,871,344	63,974,009
18	Statutory Tax Rate	40.53%	40.53%	40.53%	40.53%	40.53%	39.61%	39.61%	39.61%	39.61%	27.24%	27.08%	27.08%
19													
20	Deferred Tax Reserve	398,001	2,550,174	3,898,597	4,367,434	4,988,688	5,896,174	6,907,489	8,087,355	10,162,584	12,900,395	12,749,892	17,324,162
21													
22													
Rate Base Calculation													
23	Plant In Service	1,965,616	6,494,084	10,053,784	11,475,997	13,312,162	15,963,956	19,240,659	22,736,931	28,629,907	39,548,472	51,842,377	70,488,859
24	Accumulated Depreciation	(49,836)	(202,019)	(434,744)	(700,192)	(1,003,532)	(1,364,273)	(1,801,909)	(2,319,475)	(2,973,297)	(3,841,162)	(4,971,035)	(6,514,852)
25	Net Plant in Service	1,915,780	6,292,065	9,619,040	10,775,805	12,308,630	14,599,683	17,438,750	20,417,456	25,656,610	35,707,310	46,871,342	63,974,007
26	Deferred Tax Reserve	(398,001)	(2,550,174)	(3,898,597)	(4,367,434)	(4,988,688)	(5,896,174)	(6,907,489)	(8,087,355)	(10,162,584)	(12,900,395)	(12,749,892)	(17,324,162)
27	Year End Rate Base	1,517,779	3,741,891	5,720,443	6,408,371	7,319,942	8,703,509	10,531,261	12,330,101	15,494,026	22,806,915	34,121,450	46,649,845
28													
29													
Revenue Requirement Calculation													
30	Year End Rate Base	1,517,779	3,741,891	5,720,443	6,408,371	7,319,942	8,703,509	10,531,261	12,330,101	15,494,026	22,806,915	34,121,450	46,649,845
31	Pre-Tax ROR	11.53%	11.53%	11.63%	11.63%	11.63%	11.50%	10.22%	9.87%	9.87%	8.51%	8.50%	8.50%
32	Return and Taxes	175,003	431,440	665,288	745,294	851,309	1,000,904	1,076,295	1,216,981	1,529,260	1,940,868	2,900,323	3,965,237
33	Book Depreciation	49,836	152,184	232,725	265,448	303,340	360,741	437,636	517,566	653,822	867,865	1,129,873	1,543,817
34	Property Taxes	37,347	130,246	244,324	281,249	284,329	410,251	559,784	534,937	777,395	1,015,684	1,171,784	1,599,350
35	Annual Revenue Requirement	262,185	713,870	1,142,337	1,291,991	1,438,978	1,771,896	2,073,715	2,269,484	2,960,477	3,824,417	5,201,980	7,108,404
36													
37	Prior Year Annual Revenue Requirement	-	262,185	713,870	1,142,337	1,291,991	1,438,978	1,771,896	2,073,715	2,269,484	2,960,477	3,824,417	5,201,980
38													
39	Low Income Revenue Correction From FY 2018	-	-	-	-	-	-	-	-	-	-	(7,290)	-
40													
41	Incremental Annual Rate Adjustment Since July 1, 2009	262,185	451,684	428,467	149,654	146,987	332,918	301,819	195,769	690,993	863,940	1,370,274	1,906,424
42													
43													
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54													
55													
56													
57	Long Term Debt	49.85%	4.42%	2.200%									
58	Short Term Debt	0.95%	2.49%	0.02%									
59	Common Equity	49.20%	9.30%	6.280%									
60													
61		100.00%	8.500%										

Liberty Utilities (EnergyNorth Natural Gas) Corp.
Fiscal Year 2019 Cast Iron/Bare Steel Replacement Program
Vintage Year Book Depreciation Schedule

RESTATED AS IF RATE CASE WAS NOT FILED. FOR INFORMATIONAL PURPOSES ONLY.

		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	
		Actual FY09	12 Months FY10	Actual FY11	Actual FY12	Actual FY13	Actual FY14	Actual FY15	Actual FY16	Actual FY17	Actual FY18	Actual FY19	Estimate FY20	
Book Depreciation Schedule-Mains														
1	Actual CIBS spending	1,736,153	4,206,295	3,391,069	1,570,208	2,174,813	2,781,140	3,006,856	3,304,532	5,204,619	8,858,559	11,357,411	16,302,661	
2	Base spending	(352,073)	(418,248)	(417,650)	(408,438)	(465,466)	(441,199)	(402,383)	(423,720)	(422,739)	(455,796)	(472,039)	(472,039)	
3	Incremental CIBS spending	1,384,080	3,788,047	2,973,419	1,161,770	1,709,346	2,339,940	2,604,473	2,880,812	4,781,880	8,402,763	10,885,372	15,830,622	
4														
5	Book Depreciation Rate:													
6	Year 1	2.54%	35,065	35,065	35,065	35,065	35,065	35,065	35,065	35,065	35,065	35,065	35,065	
7	Year 1 beginning in FY10	1.92%		72,731	57,090	22,306	32,819	44,927	50,006	55,312	91,812	161,333	208,999	
8	Year 2	1.92%			72,731	57,090	22,306	32,819	44,927	50,006	55,312	91,812	161,333	
9	Year 3	1.92%				72,731	57,090	22,306	32,819	44,927	50,006	55,312	91,812	
10	Year 4	1.92%					72,731	57,090	22,306	32,819	44,927	50,006	55,312	
11	Year 5	1.92%						72,731	57,090	22,306	32,819	44,927	50,006	
12	Year 6	1.92%							72,731	57,090	22,306	32,819	44,927	
13	Year 7	1.92%								72,731	57,090	22,306	32,819	
14	Year 8	1.92%									72,731	57,090	22,306	
15	Year 9	1.92%										72,731	57,090	
15	Year 10	1.92%											72,731	
16	Year 11	1.92%											72,731	
17	Book Depreciation Expense-Mains	35,065	107,796	164,886	187,191	220,010	264,937	314,943	370,255	462,067	623,400	832,399	1,136,347	
18													0	
19	Accumulated Depreciation Mains-Beginning of Year	-	35,065	142,860	307,746	494,937	714,947	979,884	1,294,827	1,665,081	2,127,148	2,750,548	3,582,947	
20	Accumulated Depreciation Mains-End of Year	35,065	142,860	307,746	494,937	714,947	979,884	1,294,827	1,665,081	2,127,148	2,750,548	3,582,947	4,719,294	
21														
22														
23	Book Depreciation Schedule-Services													
24														
25	Actual CIBS spending	729,463	822,173	668,631	352,005	161,352	370,655	776,086	705,984	1,209,322	1,389,222	1,469,613	2,876,940	
26	Base spending	(147,927)	(81,752)	(82,350)	(91,562)	(34,534)	(58,801)	(103,857)	(90,524)	(98,226)	(71,479)	(61,080)	(61,080)	
27	Incremental CIBS spending	581,536	740,421	586,281	260,443	126,818	311,854	672,229	615,460	1,111,096	1,317,743	1,408,533	2,815,860	
28														
29	Book Depreciation Rate:													
30	Year 1	2.54%	14,771	14,771	14,771	14,771	14,771	14,771	14,771	14,771	14,771	14,771	14,771	
31	Year 1 beginning in FY10	4.00%		29,617	23,451	10,418	5,073	12,474	26,889	24,618	44,444	52,710	56,341	
32	Year 2	4.00%			29,617	23,451	10,418	5,073	12,474	26,889	24,618	44,444	52,710	
33	Year 3	4.00%				29,617	23,451	10,418	5,073	12,474	26,889	24,618	44,444	
34	Year 4	4.00%					29,617	23,451	10,418	5,073	12,474	26,889	24,618	
35	Year 5	4.00%						29,617	23,451	10,418	5,073	12,474	26,889	
36	Year 6	4.00%							29,617	23,451	10,418	5,073	12,474	
37	Year 7	4.00%								29,617	23,451	10,418	5,073	
38	Year 8	4.00%									29,617	23,451	10,418	
39	Year 9	4.00%										29,617	23,451	
40	Year 10	3.55%											26,285	
41	Year 11	3.55%											26,285	
42	Book Depreciation Expense-Services	14,771	44,388	67,839	78,257	83,330	95,804	122,693	147,311	191,755	244,465	297,474	407,470	
43														
44	Accumulated Depreciation Services-Beginning of Year	-	14,771	59,159	126,998	205,255	288,584	384,388	507,081	654,392	846,147	1,090,612	1,388,087	
45	Accumulated Depreciation Services-End of Year	14,771	59,159	126,998	205,255	288,584	384,388	507,081	654,392	846,147	1,090,612	1,388,087	1,795,557	
46														
47														
48														
49	Total Mains & Services Depreciation Expense	49,836	152,184	232,725	265,448	303,340	360,741	437,636	517,566	653,822	867,865	1,129,873	1,543,817	
50														
51	Total Mains & Services Accumulated Depreciation	49,836	202,020	434,745	700,193	1,003,533	1,364,274	1,801,910	2,319,476	2,973,298	3,841,160	4,971,033	6,514,851	

064

6(a) & 30(a) FY 2009 filing used the composite depreciation rate for both mains and services.

Liberty Utilities (EnergyNorth Natural Gas) Corp.
Fiscal Year 2019 Cast Iron/Bare Steel Replacement Program
Municipal Taxes as a Percentage of Net Plant

RESTATED AS IF RATE CASE WAS NOT FILED. FOR INFORMATIONAL PURPOSES ONLY.

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)
	12/31/2005	12/31/2006	12/31/2007	12/31/2008	12/31/2009	12/31/2010	12/31/2011	12/31/2012	12/31/2013	12/31/2014	12/31/2015	12/31/2016	12/31/2017	12/31/2018
1 Plant in Service	258,573	272,678	289,379	305,221	319,737	332,049	344,966	356,165	381,214	419,215	451,950	494,511	539,666	595,016
2 Depreciation and Amortization Reserve	(82,363)	(88,564)	(94,562)	(102,587)	(108,270)	(114,294)	(119,973)	(121,047)	(129,209)	(137,656)	(149,943)	(163,209)	(171,469)	(134,742)
3 Net Plant	176,209	184,114	194,817	202,634	211,467	217,756	224,993	235,118	252,006	281,559	302,007	331,302	368,198	460,274
4														
5 Average Net Plant														
6 Plant in Service		265,625	281,028	297,300	312,479	325,893	338,508	350,565	368,690	400,214	435,582	456,863	495,808	567,341
7 Depreciation Reserve		(85,463)	(91,563)	(98,575)	(105,429)	(111,282)	(117,133)	(120,510)	(125,128)	(133,432)	(143,799)	(150,432)	(160,706)	(153,105)
8 Net Plant		180,162	189,465	198,726	207,051	214,611	221,375	230,056	243,562	266,782	291,783	306,431	335,102	414,236
9														
10 Municipal Taxes		3,534	3,641	3,771	4,294	5,459	5,776	5,321	6,835	8,560	7,644	9,596	9,380	10,361
11														
12 % Municipal Taxes to Net Plant		1.96%	1.92%	1.90%	2.07%	2.54%	2.61%	2.31%	2.81%	3.21%	2.62%	3.13%	2.80%	2.50%

Note: Source of above data is the December 31 PUC Annual Report to be consistent with data previously provided to the Commission.

Liberty Utilities (EnergyNorth Natural Gas) Corp.
Fiscal Year 2019 Cast Iron/Bare Steel Replacement Program
Bill Impacts due to Cast Iron and Bare Steel Replacement Program

RESTATED AS IF RATE CASE WAS NOT FILED. FOR INFORMATIONAL PURPOSES ONLY.

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)
	FY2009	FY2010	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	Estimate FY2020
1 Annual Increase due to Cast Iron Bare Steel program	262,185	713,870	527,261	(92,035)	146,987	332,918	301,819	195,769	690,993	863,940	1,370,274	1,906,424
2												
3 Annual Calendar Year Gross Revenues (Annual Report - Page 11) ³	154,702,063	150,828,182	154,648,622	163,588,592	158,062,349	160,018,819	166,523,068	172,103,158	186,909,214	182,370,287	183,203,513	183,203,513
4												
5 Increase Factor	\$0.0017	\$0.0047	\$0.0034	(\$0.0006)	\$0.0009	\$0.0021	\$0.0018	\$0.0011	\$0.0037	\$0.0047	\$0.0075	\$0.0104
6												
7 Annual Calendar Year Gross Revenues (Annual Report - Page 11)	\$176,520,000	\$151,224,178	\$132,475,941	\$146,365,316	\$119,363,340	\$137,617,008	\$119,363,341	\$156,933,825	\$120,053,649	\$139,890,158	\$157,495,294	\$157,495,294
8												
9 Annual Percent Increase	0.15%	0.47%	0.40%	-0.06%	0.12%	0.24%	0.25%	0.12%	0.58%	0.62%	0.87%	1.21%
10												
11 Miles of Cast Iron/Bare Steel Main Replaced Annually through CIBS	2.96	3.98	2.79	1.56	1.65	3.51	5.00	5.05	10.26	11.58	9.91	13.38
12 Cumulative Miles of Main Replaced through CIBS	2.96	6.94	9.73	11.29	12.94	16.45	21.45	26.50	36.76	48.34	58.25	71.63
13 Total Miles of Cast Iron/Bare Steel Main Remaining ¹	149.8	142.0	137.4	132.1	126.30	120.88	113.96	106.46	93.18	78.65	68.74	55.36
14												
15 Services Replaced Annually ²	101	127	282	81	84	174	316	291	572	584	270	399
16 Cumulative Number of Services Replaced	101	228	510	591	675	849	1,165	1,456	2,028	2,612	2,882	3,281
17												
18 Typical Residential bill	\$1,292	\$1,107	\$1,118	\$1,059	\$1,020	\$1,123	\$1,309	\$1,309	\$1,078	\$1,171	\$1,170	\$1,170
19												
20 Typical Usage	800	800	800	800	800	800	800	800	763	779	778	778
21												
22 Annual Increase for Residential Heating customer	\$1.36	\$3.79	\$2.73	(\$0.45)	\$0.74	\$1.66	\$1.45	\$0.91	\$2.82	\$3.69	\$5.82	\$8.10
23												
24 Percent Bill Increase	0.10%	0.34%	0.24%	-0.04%	0.07%	0.15%	0.11%	0.07%	0.26%	0.32%	0.50%	0.69%
25												
26												
27 Typical G-41	\$3,375	\$2,939	\$2,842	\$2,696	\$2,654	\$2,926	\$3,499	\$3,499	\$2,651	\$3,031	\$3,213	\$3,213
28												
29 Typical Usage	2,167	2,167	2,167	2,167	2,167	2,167	2,167	2,167	2,029	2,180	2,260	2,260
30												
31 Annual Increase for G-41 customer	\$3.67	\$10.26	\$7.39	(\$1.22)	\$2.02	\$4.51	\$3.93	\$2.46	\$7.50	\$10.33	\$16.90	\$23.52
32												
33 Percent Bill Increase	0.11%	0.35%	0.26%	-0.05%	0.08%	0.15%	0.11%	0.07%	0.28%	0.34%	0.53%	0.73%
34												
35												
36 Typical G-42	\$22,595	\$18,926	\$18,432	\$17,516	\$16,884	\$18,853	\$22,486	\$22,486	\$16,284	\$18,916	\$21,784	\$21,784
37												
38 Typical Usage	15,567	15,567	15,567	15,567	15,567	15,567	15,567	15,567	14,720	15,883	18,073	18,073
39												
40 Annual Increase for G-42 customer	\$26.38	\$73.68	\$53.07	(\$8.76)	\$14.48	\$32.39	\$28.21	\$17.71	\$54.42	\$75.24	\$135.18	\$188.07
41												
42 Percent Bill Increase	0.12%	0.39%	0.29%	-0.05%	0.09%	0.17%	0.13%	0.08%	0.33%	0.40%	0.62%	0.86%
43												
44												
45 Typical G-52	\$21,973	\$16,707	\$16,605	\$16,025	\$14,629	\$16,555	\$18,667	\$18,667	\$14,087	\$15,714	\$17,730	\$17,730
46												
47 Typical Usage	15,687	15,687	15,687	15,687	15,687	15,687	15,687	15,687	14,566	15,645	17,935	17,935
48												
49 Annual Increase for G-52 customer	\$26.59	\$74.25	\$53.48	(\$8.83)	\$14.59	\$32.64	\$28.43	\$17.84	\$53.85	\$74.11	\$134.15	\$186.63
50												
51 Percent Bill Increase	0.12%	0.44%	0.32%	-0.06%	0.10%	0.20%	0.15%	0.10%	0.38%	0.47%	0.76%	1.05%

Line / Column Notes:

1(b)-16(b) Amounts are cumulative from July 1, 2009

¹Mileage includes Cast Iron/Bare Steel replaced through the CIBS Program as well as City/State Construction.
²These figures include all service replacements and inserts, including bare steel, coated steel and plastic services
³These figures include both ENNG and Keene beginning in FY 2019