1	**Liberty Utilities (EnergyNorth Natural Gas) Corp.**			
2	**d/b/a Liberty Utilities**			
3	**Peak 2016 - 2017 Winter Cost of Gas Filing**			
4	**Summary**			
5				PK 16-17
6		Reference		Nov - Apr
7	(a)	(b)		(c)
8				
9	**Anticipated Direct Cost of Gas**			
10	Purchased Gas:			
11	Demand Costs:	Sch. 5A, col (k), ln 43	$	7,527,898
12	Supply Costs	Sch. 6, col (i), ln 44		49,523,042
13				
14	Storage Gas:			
15	Demand, Capacity:	Sch. 5A, col (k), ln 58	$	941,660
16	Commodity Costs:	Sch. 6, col (i), ln 47		4,026,000
17				
18	Produced Gas:	Sch. 6, col (i), ln 53	$	1,797,499
19				
20	Hedge Contract (Savings)/Loss	Sch. 7, col (i), ln 34	$	-
21	Hedge Underground Storage Contract (Savings)/Loss	Sch. 16, col (e), ln 172	$	-
22				
23	**Total Unadjusted Cost of Gas**		$	63,816,099
24				
25	**Adjustments:**			
26				
27	Prior Period (Over)/Under Recovery)	Sch. 3, col (c) ln 28	$	2,690,610
28	Interest 05/01/16 - 10/31/17	Sch. 3, col (q) ln 193		14,641
29	Prior Period Adjustments	Sch. 4, ln 26 col (b)		-
30	Refunds from Suppliers	Sch. 4, ln 26 col (c)		-
31	Broker Revenues	Sch. 4, ln 26 col (d)		(1,374,947)
32	Fuel Financing	Sch. 4, ln 26 col (e)		-
33	Transportation CGA Revenues	Sch. 4, ln 26 col (f)		(29,471)
34	Interruptible Sales Margin	Sch. 4, ln 26 col (g)		-
35	Capacity Release and Off System Sales Margins	Sch. 4, ln 26 col (h) + col (i)		(5,448,856)
36	Hedging Costs	Sch. 4, ln 26 col (j)		-
38	Fixed Price Option Administrative Costs	Sch. 4, ln 26 col (k)		41,972
39				
40	**Total Adjustments**		$	(4,106,050)
41				
42	**Total Anticipated Direct Costs**	lns 23 + 40	$	59,710,049
43				
44	**Anticipated Indirect Cost of Gas**			
45	**Working Capital**			
46	Total Unadjusted Anticipated Cost of Gas	Ln 23	$	63,816,099
47	Lead Lag Days / 365	DG 10-017, 14.27 / 365		0.0391
48	Prime Rate			3.50%
49	Working Capital Percentage	per GTC 16(f), ln 47 * ln 48		0.137%
50	Working Capital	ln 46 * ln 49		87,342
51	Plus: Working Capital Reconciliation	Sch. 3, col (c), ln 100		(33,597)
52				
53	**Total Working Capital Allowance**	lns 50 + 51	$	53,745
54				
55	**Bad Debt**			
56	Total Unadjusted Anticipated Cost of Gas	ln 23	$	63,816,099
57	Less Refunds	ln 30		-
58	Plus Working Capital	ln 53		53,745
59	Plus Prior Period (Over) Under Recovery	ln 27		2,690,610
60	Subtotal		$	66,560,454
61	Bad Debt Percentage	per GTC 16(f)		4.04%
62				
63	Bad Debt Allowance	ln 60 * ln 61	$	2,689,042
64	Prior Period Bad Debt Allowance	Sch. 3, col (c), ln 181		(37,241)
65				
66	**Total Bad Debt Allowance**	lns 63 + 64	$	2,651,801
67				
68	**Production and Storage Capacity**	per GTC16(f)	$	1,980,428
69				
70	**Miscellaneous Overhead**	per GTC 16(f)	$	13,170
71	Sales Volume	Sch. 10B, ln 23/1000		90,536
72	Divided by Total Sales	Sch. 10B, ln 23/1000		112,609
73	Ratio			80.40%
74				
75	**Miscellaneous Overhead**	lns 70 * 73	$	10,589
76				
77	**Total Anticipated Indirect Cost of Gas**	lns 53 + 66 + 68 + 75	$	4,696,563
78				
79	**Total Cost of Gas**	lns 42 + 77	$	64,406,611
80				
81	**Projected Forecast Sales (Therms)**	Sch. 3, col (q), ln 52		89,920,078

Liberty Utilities (EnergyNorth Natural Gas) Corp.
d/b/a Liberty Utilities
Peak 2016 - 2017 Winter Cost of Gas Filing
COG (Over)/Under Cumulative Recovery Balances and Interest Calculation

	Days in Month	Prior Period Bal Apr-16 Ending Bal Plus May Billings	May-16 31	Jun-16 30	Jul-16 31	Aug-16 31	Sep-16 30	Oct-16 31	Nov-16 30	Dec-16 31	Jan-17 31	Feb-17 29	Mar-17 31	Apr-17 30	May-17 31	Peak Period Total
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)
Account 1920-1740 COG (Over)/Under Balance - Interest Calculation																
Beginning Balance	Account 1920-1740 1/	$ 2,690,610	$ 2,690,610	$ 2,268,044	$ 1,904,737	$ 1,426,943	$ 955,542	$ 409,309	$ 8,386	$ (2,571,308)	$ (2,408,467)	$ (1,451,936)	$ 2,375,690	$ 1,754,235	$ (893,058)	$ 2,690,610
Fcst Direct Gas Costs(Inc U/G Hedges)	Schedule 5A		212,823	212,823	212,823	212,823	212,823	212,823	4,292,425	11,938,810	15,507,366	16,725,118	10,346,774	3,728,671	-	63,816,099
Production & Storage & Misc Overhead			-	-	-	-	-	-	331,836	331,836	331,836	331,836	331,836	331,836	-	1,991,017
Projected Revenues w/o Int.	ln 52 * 59		-	-	-	-	-	-	(1,012,472)	(9,214,535)	(13,199,104)	(14,036,396)	(11,967,395)	(8,397,698)	(3,857,575)	(61,685,174)
Projected Unbilled Revenue									(5,931,981)	(8,299,983)	(9,416,259)	(8,240,260)	(6,922,863)	(4,768,145)		(43,579,490)
Reverse Prior Month Unbilled										5,931,981	8,299,983	9,416,259	8,240,260	6,922,863	4,768,145	43,579,490
Prior Period Adjustment-Unbilled				-					-							-
Add Net Adjustments	Schedule 4		(642,748)	(582,123)	(695,561)	(687,760)	(761,016)	(614,365)	(255,822)	(517,877)	(561,562)	(370,214)	(656,196)	(466,058)	-	(6,811,301)
Gas Cost Billed	Account 1920-1740 2/	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Monthly (Over)/Under Recovery		$ 2,690,610	$ 2,260,685	$ 1,898,744	$ 1,421,999	$ 952,006	$ 407,349	$ 7,766	$ (2,567,627)	$ (2,401,076)	$ (1,446,207)	$ 2,374,407	$ 1,748,106	$ (894,295)	$ 17,511	$ 1,250
Average Monthly Balance	(ln 12 + 21)/2		$ 2,475,647	$ 2,083,394	$ 1,663,368	$ 1,189,475	$ 681,445	$ 208,538	$ (1,279,620)	$ (2,486,192)	$ (1,927,337)	$ 461,235	$ 2,061,898	$ 429,970	$ (437,774)	
Interest Rate	Prime Rate		3.50%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%		
Interest Applied	ln 22 * ln 24 / 365 * Days of Month		$ 7,359	$ 5,993	$ 4,945	$ 3,536	$ 1,960	$ 620	$ (3,681)	$ (7,390)	$ (5,729)	$ 1,283	$ 6,129	$ 1,237	$ -	$ 16,261
(Over)/Under Balance	ln 21 + ln 26	$ 2,690,610	$ 2,268,044	$ 1,904,737	$ 1,426,943	$ 955,542	$ 409,309	$ 8,386	$ (2,571,308)	$ (2,408,467)	$ (1,451,936)	$ 2,375,690	$ 1,754,235	$ (893,058)	$ 17,511	17,511
Calculation of COG with Interest																
Beginning Balance	ln 12	$ 2,690,610	$ 2,690,610	$ 2,268,044	$ 1,904,737	$ 1,426,943	$ 955,542	$ 409,309	$ 8,386	$ (2,573,341)	$ (2,413,898)	$ (1,461,573)	$ 2,362,274	$ 1,737,679	$ (911,483)	$ 2,690,610
Fcst Direct Gas Costs(Inc U/G Hedges)	ln 13		212,823	212,823	212,823	212,823	212,823	212,823	4,292,425	11,938,810	15,507,366	16,725,118	10,346,774	3,728,671	-	63,816,099
Prod Storage & Misc Overhead	ln 14		-	-	-	-	-	-	331,836	331,836	331,836	331,836	331,836	331,836	-	1,991,017
Projected Revenues with int.	ln 52 * ln 61		-	-	-	-	-	-	(1,012,767)	(9,217,221)	(13,202,952)	(14,040,488)	(11,970,884)	(8,400,146)	(3,858,700)	(61,703,158)
Projected Unbilled Revenue									(5,933,711)	(8,302,402)	(9,419,004)	(8,242,662)	(6,924,881)	(4,769,535)		(43,592,196)
Reverse Prior Month Unbilled										5,933,711	8,302,402	9,419,004	8,242,662	6,924,881	4,769,535	43,592,196
Add Net Adjustments	ln 19		(642,748)	(582,123)	(695,561)	(687,760)	(761,016)	(614,365)	(255,822)	(517,877)	(561,562)	(370,214)	(656,196)	(466,058)	-	(6,811,301)
Gas Cost Billed	ln 20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Add Interest	ln 26		-	-	-	-	-	-	(3,681)	(7,390)	(5,729)	1,283	6,129	1,237	-	(8,152)
(Over)/Under Balance		$ 2,690,610	$ 2,260,685	$ 1,898,744	$ 1,421,999	$ 952,006	$ 407,349	$ 7,766	$ (2,573,333)	$ (2,413,876)	$ (1,461,542)	$ 2,362,304	$ 1,737,715	$ (911,435)	$ (648)	$ (24,886)
Average Monthly Balance			$ 2,475,647	$ 2,083,394	$ 1,663,368	$ 1,189,475	$ 681,445	$ 208,538	$ (1,282,473)	$ (2,493,609)	$ (1,937,720)	$ 450,366	$ 2,049,994	$ 413,122	$ (456,066)	
Interest Applied	ln 24 * ln 44 / 365 * Days of Month		7,359	5,993	4,945	3,536	1,960	620	(3,689)	(7,413)	(5,760)	1,252	6,094	1,188	-	16,086
(Over)/Under Balance	-ln 41 +ln 42 + ln 46	$ 2,690,610	$ 2,268,044	$ 1,904,737	$ 1,426,943	$ 955,542	$ 409,309	$ 8,386	$ (2,573,341)	$ (2,413,898)	$ (1,461,573)	$ 2,362,274	$ 1,737,679	$ (911,483)	$ (648)	(648)
Forecast Sendout Therms	Sch 1								10,382,757	17,317,226	21,403,143	19,227,774	15,922,974	9,333,973		93,587,846
Less Forecast Billing Therm Sales	Sch. 10B, ln 23 Nov - May								1,475,906	13,432,266	19,240,676	20,461,218	17,445,182	12,241,542	5,623,288	89,920,078
Less Forecast Unaccounted For	Sch 1								246,198	410,629	507,515	455,933	377,569	221,329		2,219,173
Less Forecast Company Use	Sch 1								13,450	22,433	27,726	24,908	20,627	12,091		121,234
Unbilled Volumes									8,647,203	3,451,897	1,627,225	-1,714,285	-1,920,403	-3,140,989	-5,623,288	1,327,361
Gross Unbilled									8,647,203	12,099,100	13,726,325	12,012,040	10,091,637	6,950,648	1,327,361	
COB w/o Interest	Sch. 3, pg. 4, ln 211 col. (c)								$0.6860	$0.6860	$0.6860	$0.6860	$0.6860	$0.6860	$0.6860	
COG With Interest	Sch. 3, pg. 4, ln 211 col. (d)								$0.6862	$0.6862	$0.6862	$0.6862	$0.6862	$0.6862	$0.6862	

1/ Beginning Balance for Acct 1920-1740. See Tab 18, Schedule 1, page 1, line 31, April 2010 column.
2/ Gas Cost Billed Acct 1920-1740. See Tab 18, Schedule 1, page 1, line 15, May 2010 column.

	Days in Month	Prior Period Bal Apr-16 Ending Bal + May Collections	May-16 31	Jun-16 30	Jul-16 31	Aug-16 31	Sep-16 30	Oct-16 31	Nov-16 30	Dec-16 31	Jan-17 31	Feb-17 29	Mar-17 31	Apr-17 30	May-17 31	Peak Period Total
(a)	(b)		(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)
Account 1163-1422 Working Capital (Over)/Under Balance - Interest Calculation																
Beginning Balance	Account 1163-1422 1/	$ (33,597)	$ (33,597)	$ (33,405)	$ (33,209)	$ (33,016)	$ (32,823)	$ (32,626)	$ (32,431)	$ (32,723)	$ (26,602)	$ (17,965)	$ (6,356)	$ (1,522)	$ (1,884)	$ (33,597)
Days Lag			0.0391	0.0391	0.0391	0.0391	0.0391	0.0391	0.0391	0.0391	0.0391	0.0391	0.0391	0.0391		
Prime Rate			3.50%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%		
Forecast Working Capital	ln 34 * 0.091%		291	291	291	291	291	291	5,875	16,340	21,224	22,891	14,161	5,103	-	87,342
Projected Revenues w/o Int.	ln 121 * ln 125		-	-	-	-	-	-	(886)	(8,059)	(11,544)	(12,277)	(10,467)	(7,345)	(3,374)	(53,952)
Projected Unbilled Revenue									(5,188)	(7,259)	(8,236)	(7,207)	(6,055)	(4,170)		(38,116)
Reverse Prior Month Unbilled										5,188	7,259	8,236	7,207	6,055	4,170	38,116
Add Net Adjustments			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Working Capital Billed	Account 1163-1422 2/	-														-
Monthly (Over)/Under Recovery		$ (33,597)	$ (33,306)	$ (33,114)	$ (32,918)	$ (32,725)	$ (32,532)	$ (32,334)	$ (32,630)	$ (26,514)	$ (17,899)	$ (6,322)	$ (1,510)	$ (1,879)	$ (1,087)	$ (207)
Average Monthly Balance	(ln 78 + ln 92)/2		$ (33,451)	$ (33,259)	$ (33,064)	$ (32,871)	$ (32,677)	$ (32,480)	$ (32,530)	$ (29,619)	$ (22,250)	$ (12,144)	$ (3,933)	$ (1,700)	$ (1,485)	
Interest Rate	Prime Rate		3.50%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%		
Interest Applied	ln 94 * ln 96 / 365 * Days of Month		$ (99)	$ (96)	$ (98)	$ (98)	$ (94)	$ (97)	$ (94)	$ (88)	$ (66)	$ (34)	$ (12)	$ (5)	$ -	$ (880)
(Over)/Under Balance	ln 92 + ln 98	$ (33,597)	$ (33,405)	$ (33,209)	$ (33,016)	$ (32,823)	$ (32,626)	$ (32,431)	$ (32,723)	$ (26,602)	$ (17,965)	$ (6,356)	$ (1,522)	$ (1,884)	$ (1,087)	(1,087)

1 **Liberty Utilities (EnergyNorth Natural Gas) Corp.**
2 **d/b/a Liberty Utilities**
3 **Peak 2016 - 2017 Winter Cost of Gas Filing**
4 **COG (Over)/Under Cumulative Recovery Balances and Interest Calculation**

103	**Calculation of Working Capital with Interest**																
104																	
105	**Beginning Balance**	ln 78	$ (33,597)	$ (33,597)	$ (33,405)	$ (33,209)	$ (33,016)	$ (32,823)	$ (32,626)	$ (32,431)	$ (32,724)	$ (26,602)	$ (17,965)	$ (6,356)	$ (1,522)	$ (1,884)	$ (33,597)
106	Forecast Working Capital	ln 82		291	291	291	291	291	291	5,875	16,340	21,224	22,891	14,161	5,103	-	87,342
107	Projected Rev. with interest	ln 121 * ln 127		-	-	-	-	-	-	(886)	(8,059)	(11,544)	(12,277)	(10,467)	(7,345)	(3,374)	(53,952)
108	Projected Unbilled Revenue									(5,188)	(7,259)	(8,236)	(7,207)	(6,055)	(4,170)		(38,116)
109	Reverse Prior Month Unbilled										5,188	7,259	8,236	7,207	6,055	4,170	38,116
110	Add Net Adjustments	ln 88	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
111	Working Capital Billed	ln 90	-	-	-	-	-	-	-								-
112	Add Interest	ln 98		-	-	-	-	-	-	(94)	(88)	(66)	(34)	(12)	(5)	-	(298)
113	Monthly (Over)/Under Recovery		$ (33,597)	$ (33,306)	$ (33,114)	$ (32,918)	$ (32,725)	$ (32,532)	$ (32,334)	$ (32,723)	$ (26,602)	$ (17,965)	$ (6,356)	$ (1,522)	$ (1,884)	$ (1,088)	$ (505)
114																	
115	Average Monthly Balance			$ (33,451)	$ (33,259)	$ (33,064)	$ (32,871)	$ (32,677)	$ (32,480)	$ (32,577)	$ (29,663)	$ (22,284)	$ (12,161)	$ (3,939)	$ (1,703)	$ (1,486)	
116																	
117	Interest Applied	ln 96 * ln 115 / 365 * Days of Month		(99)	(96)	(98)	(98)	(94)	(97)	(94)	(88)	(66)	(34)	(12)	(5)	-	$ (880)
118																	
119	**(Over)/Under Balance**	-ln 112 +ln 113 + ln 117	$ (33,597)	$ (33,405)	$ (33,209)	$ (33,016)	$ (32,823)	$ (32,626)	$ (32,431)	$ (32,724)	$ (26,602)	$ (17,965)	$ (6,356)	$ (1,522)	$ (1,884)	$ (1,088)	$ (1,088)
120																	
121	Forecast Therm Sales	ln 52								1,475,906	13,432,266	19,240,676	20,461,218	17,445,182	12,241,542	5,623,288	89,920,078
122	Unbilled Therm	ln 55								8,647,203	3,451,897	1,627,225	(1,714,285)	(1,920,403)	(3,140,989)		
123	Gross Unbilled									8,647,203	12,099,100	13,726,325	12,012,040	10,091,637	6,950,648		
124																	
125	Working Cap. Rate w/out Int.	Sch. 3, pg. 4, ln 228 col. (c)								$0.0006	$0.0006	$0.0006	$0.0006	$0.0006	$0.0006	$0.0006	
126																	
127	Working Capital Rate w/ Int.	Sch. 3, pg. 4, ln 228 col. (d)								$0.0006	$0.0006	$0.0006	$0.0006	$0.0006	$0.0006	$0.0006	
128	1/ Beginning Balance for Acct 1163-1422. See Tab 18 Schedule 5, page 1, line 18, April 2010 column.																
129	2/ Working Capital Billed Acct 1163-1422. See Tab 18, Schedule 5, page 1, line 8, May 2010 column.																
130			Prior Period Bal														
131			Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	DemandPeriod
132		Days in Month	Ending Bal	31	30	31	31	30	31	30	31	31	29	31	30	31	Total
133	(a)	(b)	+ May Collections	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)
134																	
135	**Account 1920-1743 Bad Debt (Over)/Under Balance - Interest Calculation**																
136																	
137	Forecast Direct Gas Costs	ln 34		$ 212,823	$ 212,823	$ 212,823	$ 212,823	$ 212,823	$ 212,823	$ 4,292,425	$11,938,810	$15,507,366	$16,725,118	$10,346,774	$ 3,728,671	$ -	63,816,099
138	Forecast Working Capital	ln 106		291	291	291	291	291	291	(27,722)	16,340	21,224	22,891	14,161	5,103		53,745
139	Prior Period Balance	ln 42								448,435	448,435	448,435	448,435	448,435	448,435		2,690,610
140	Total Forecast Direct Gas Costs & Working Capital			213,114	213,114	213,114	213,114	213,114	213,114	4,713,138	12,403,585	15,977,025	17,196,443	10,809,370	4,182,209	-	63,869,844
141																	
142	**Beginning Balance**	Account 1920-1743 1/	**$ (37,241)**	$ (37,241)	$ (28,729)	$ (20,190)	$ (11,627)	$ (3,039)	$ 5,574	$ 14,214	$ (94,122)	$ (91,375)	$ (61,734)	$ 79,993	$ 58,917	$ (40,562)	$ (37,241)
143																	
144	Forecast Bad Debt	ln 140 * 0.0404		8,610	8,610	8,610	8,610	8,610	8,610	190,411	501,105	645,472	694,736	436,699	168,961		2,689,042
145																	
146	Projected Revenues w/o int	ln 183 * ln 187		-	-	-	-	-	-	(43,539)	(396,252)	(567,600)	(603,606)	(514,633)	(361,125)	(165,887)	(2,652,642)
147	Projected Unbilled Revenue									(255,092)	(356,923)	(404,927)	(354,355)	(297,703)	(205,044)		(1,874,045)
148	Reverse Prior Month Unbilled										255,092	356,923	404,927	354,355	297,703	205,044	1,874,045
149																	
150	Bad Debt Billed	Account 1920-1743 2/	-		-	-	-	-	-		-	-	-	-	-	-	-
151																	
152	Add Net Adjustments		-	-	-	-	-	-	-		-	-	-	-	-	-	-
153																	
154	Monthly (Over)/Under Recovery		$ (37,241)	$ (28,631)	$ (20,119)	$ (11,580)	$ (3,017)	$ 5,571	$ 14,184	$ (94,007)	$ (91,100)	$ (61,507)	$ 79,968	$ 58,711	$ (40,588)	$ (1,405)	$ (841)
155																	
156	Average Monthly Balance	(ln 142 + ln 154)/2		$ (32,936)	$ (24,424)	$ (15,885)	$ (7,322)	$ 1,266	$ 9,879	$ (39,897)	$ (92,611)	$ (76,441)	$ 9,117	$ 69,352	$ 9,164	$ (20,983)	
157																	
158	Interest Rate	Prime Rate		3.50%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%		
159																	
160	Interest Applied	ln 156 * ln 158 / 365 * Days of Month		$ (98)	$ (70)	$ (47)	$ (22)	$ 4	$ 29	$ (115)	$ (275)	$ (227)	$ 25	$ 206	$ 26		$ (564)
161																	
162	**(Over)/Under Balance**	ln 154 + ln 160	$ (37,241)	$ (28,729)	$ (20,190)	$ (11,627)	$ (3,039)	$ 5,574	$ 14,214	$ (94,122)	$ (91,375)	$ (61,734)	$ 79,993	$ 58,917	$ (40,562)	$ (1,405)	(1,405)
163																	
164																	
165	**Calculation of Bad Debt with Interest**																
166																	
167	**Beginning Balance**	ln 142	$ (37,241)	$ (37,241)	$ (28,729)	$ (20,190)	$ (11,627)	$ (3,039)	$ 5,574	$ 14,214	$ (94,122)	$ (91,376)	$ (61,734)	$ 79,993	$ 58,916	$ (40,562)	$ (37,241)
168	Forecast Bad Debt	ln 144		8,610	8,610	8,610	8,610	8,610	8,610	190,411	501,105	645,472	694,736	436,699	168,961	-	2,689,042
169	Projected Revenues with int.	ln 183 * ln 189		-	-	-	-	-	-	(43,539)	(396,252)	(567,600)	(603,606)	(514,633)	(361,125)	(165,887)	(2,652,642)
170	Projected Unbilled Revenue									(255,092)	(356,923)	(404,927)	(354,355)	(297,703)	(205,044)		(1,874,045)
171	Reverse Prior Month Unbilled										255,092	356,923	404,927	354,355	297,703	205,044	1,874,045
172	Bad Debt Billed	ln 150	-		-	-	-	-	-	-	-	-	-	-	-	-	0
173	Add Interest	ln 160		-	-	-	-	-	-	(115)	(275)	(227)	25	206	26	-	(359)
174	Add Net Adjustments	ln 152	-							-	-	-	-	-	-	-	0
175	Monthly (Over)/Under Recovery		$ (37,241)	$ (28,631)	$ (20,119)	$ (11,580)	$ (3,017)	$ 5,571	$ 14,184	$ (94,122)	$ (91,376)	$ (61,734)	$ 79,993	$ 58,916	$ (40,562)	$ (1,405)	$ (1,200)
176																	
177	Average Monthly Balance			$ (32,936)	$ (24,424)	$ (15,885)	$ (7,322)	$ 1,266	$ 9,879	$ (39,954)	$ (92,749)	$ (76,555)	$ 9,129	$ 69,455	$ 9,177	$ (20,984)	
178																	
179	Interest Applied	ln 158 * ln 177 / 365 * Days of Month		(98)	(70)	(47)	(22)	4	29	(115)	(276)	(227)	25	206	26	-	$ (564)
180																	
181	**(Over)/Under Balance**	-ln 173 +ln 175 + ln 179	$ (37,241)	$ (28,729)	$ (20,190)	$ (11,627)	$ (3,039)	$ 5,574	$ 14,214	$ (94,122)	$ (91,376)	$ (61,734)	$ 79,993	$ 58,916	$ (40,562)	$ (1,405)	$ (1,405)
182																	
183	Forecast Term Sales	ln 52								1,475,906	13,432,266	19,240,676	20,461,218	17,445,182	12,241,542	5,623,288	89,920,078
184	Unbilled Therm	ln 55								8,647,203	3,451,897	1,627,225	(1,714,285)	(1,920,403)	(3,140,989)		
185	Gross Unbilled									8,647,203	12,099,100	13,726,325	12,012,040	10,091,637	6,950,648		
186																	
187	COG Rate Without Interest	Sch. 3, pg. 4, ln 245 col. (c)								$0.0295	$0.0295	$0.0295	$0.0295	$0.0295	$0.0295	$0.0295	
188																	
189	COG With Interest	Sch. 3, pg. 4, ln 245 col. (d)								$0.0295	$0.0295	$0.0295	$0.0295	$0.0295	$0.0295	$0.0295	
190	1/ Beginning Balance for Acct 1920-1743. See Tab 18, Schedule 1, page 3, line 20, April 2010 column.																
191	2/ Bad Debt Billed Acct 1920-1743. See Tab 18, Schedule 1, page 3, line 10, May 2010 column.																
192																	
193	**Total Interest**	Ins 46 + 117 + 179	$ -	$ 7,162	$ 5,827	$ 4,799	$ 3,416	$ 1,870	$ 553	$ (3,898)	$ (7,776)	$ (6,054)	$ 1,244	$ 6,288	$ 1,210	$ -	$ 14,641
194																	

			COG Rate Without Interest	COG Rate With Interest
195	**Calculation of COG**			
196	(a)	(b)	(c)	(d)
197	(Over)Under Recovery Balance	ln 12, col. (g)	$ 2,690,610	$ 2,690,610
198				
199	Unadjusted Forecast of Gas Costs	ln 13, col. (g)	63,816,099	63,816,099
200				

1 **Liberty Utilities (EnergyNorth Natural Gas) Corp.**
2 **d/b/a Liberty Utilities**
3 **Peak 2016 - 2017 Winter Cost of Gas Filing**
4 **COG (Over)/Under Cumulative Recovery Balances and Interest Calculation**

201	Production & Storage and Misc Overhead	ln 14, col. (g)	1,991,017	1,991,017
202				
203	Adjustments	ln 19, col. (g)	(6,811,301)	(6,811,301)
204				
205	Interest Nov -Apr	ln 46, col. (g)	-	$ 16,086
206				
207	Total Gas To Be Recovered		$ 61,686,424	$ 61,702,510
208				
209	Forecast Gas Sales (Nov - Apr)	ln 52, col. (g)	89,920,078	89,920,078
210				
211	Preliminary COG Rate	ln. 207 / ln. 209	$0.6860	$0.6862
212				
213				
			Working Capital Rate without interest	Working Capital Rate with Interest
214	**Calculation of Working Capital Rate**			
215	(a)	(b)	(c)	(d)
216	(Over)Under Recovery Balance	ln 78, col. (g)	$ (33,597)	$ (33,597)
217				
218	Unadjusted Working Capital Forecast	ln 82, col. (g)	87,342	87,342
219				
220	Adjustments without interest	ln 88, col. (g)	-	-
221				
222	Interest Nov -Apr	ln 117, col. (g)	-	$ (880)
223				
224	Total Gas To Be Recovered		$ 53,745	$ 52,865
225				
226	Forecast Gas Sales (Nov - Apr)	ln 52, col. (g)	89,920,078	89,920,078
227				
228	Preliminary Working Capital COG Rate		$0.0006	$0.0006
229				
230				
			Bad Debt Rate without Interest	Bad Debt Rate with interest
231	**Calculation of Bad Debt Rate**			
232	(a)	(b)	(c)	
233	(Over)Under Recovery Balance	ln 142, col. (g)	$ (37,241)	$ (37,241)
234				
235	Unadjusted Bad Debt Forecast	ln 144, col. (g)	2,689,042	2,689,042
236				
237	Adjustments without interest	ln 152, col. (g)	-	-
238				
239	Interest Nov -Apr	ln 179, col. (g)	-	$ (564)
240				
241	Total Gas To Be Recovered		$ 2,651,801	$ 2,651,237
242				
243	Forecast Gas Sales (Nov - Apr)	ln 52, col. (g)	89,920,078	89,920,078
244				
245	Preliminary Bad Debt COG Rate		$0.0295	$0.0295

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1 **Liberty Utilities (EnergyNorth Natural Gas) Corp.**
2 **d/b/a Liberty Utilities**
3 **Peak 2016 - 2017 Winter Cost of Gas Filing**
4 **NYMEX Futures @ Henry Hub and Hedged Contracts**

Ln		Reference		Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	Peak Strip Average
7	(a)	(b)		(c)	(d)	(e)	(f)	(g)	(h)	(i)
6	For Month of:									
8	**I. NYMEX Opening Prices as of:**									
9	Opening Prices (15 day average)			2.9640	3.1830	3.3170	3.3240	3.2760	3.0380	$ 3.1837
10	NYMEX	ln 201	**Filed COG**	2.9163	3.0743	3.1769	3.1714	3.1281	2.9695	$ 3.0727
11										
12										
13										
14										
15										
16										
17										
18										
19										
20	**II. Development of Hedging Costs and Savings**									
21										
22	**TGP (Direct) Volumes**									Total
23	Hedged Volumes (Dth)	ln 83		-	-	-	-	-	-	-
24	Market Priced Volumes (Dth)			-	-	-	-	-	-	-
25	Total Volumes (Dth)	Sch 6, lns 63 - 68 / 10		-	-	-	-	-	-	-
26										
27										Weighted Average
28	Hedge Price	ln 170		$ -	$ -	$ -	$ -	$ -	$ -	$ -
29	NYMEX Price	ln 10		$ 2.9640	$ 3.1830	$ 3.3170	$ 3.3240	$ 3.2760	$ 3.0380	$ -
30										
31	Hedged Volumes at Hedged Price	ln 23 * ln 28		$ -	$ -	$ -	$ -	$ -	$ -	$ -
32	Less Hedged Volumes at NYMEX	ln 24 * ln 29		-	-	-	-	-	-	-
33										
34	Hedge Contract (Savings)/Loss	ln 31 - ln 32		$ -	$ -	$ -	$ -	$ -	$ -	$ -
35										
36	Total Financial Hedge	ln 23		-	-	-	-	-	-	-
37	Total Underground Storage	Sch 6, Ln 77		-	-	-	-	-	-	-
38	Sub Total			-	-	-	-	-	-	-
39	Total Throughput	Sch 6, ln 92		10,382,757	17,317,226	21,403,143	19,227,774	15,922,974	9,333,973	93,587,846
40	Hedge Percentage	ln 38 / ln 39		0%	0%	0%	0%	0%	0%	0%

Liberty Utilities (EnergyNorth Natural Gas) Corp.
d/b/a Liberty Utilities
Peak 2016 - 2017 Winter Cost of Gas Filing
Annual Bill Comparisons, Nov 15 - Apr 16 vs Nov 16 - Apr 17 - Residential Heating Rate R-3

November 1, 2016 - April 30, 2017 / **May 1, 2016 - October 31, 2016**
Residential Heating (R3)

PROPOSED			**Nov-16**	**Dec-16**	**Jan-17**	**Feb-17**	**Mar-17**	**Apr-17**	**Winter Nov-Apr**	**May-16**	**Jun-16**	**Jul-16**	**Aug-16**	**Sep-16**	**Oct-16**	**Summer May-Oct**	**Total Nov-Oct**
average Usage (Therms)			51	95	117	141	130	74	608	57	28	19	15	14	22	156	763
	5/1/2016	7/1/2016															
Winter:																	
Cust. Chg	$22.04	$22.10	$22.10	$22.10	$22.10	$22.10	$22.10	$22.10	$132.60								
Headblock	$0.3486	$0.3495	$17.86	$33.20	$34.95	$34.95	$34.95	$25.80	$181.71								
Tailblock	$0.2885	$0.2892	$0.00	$0.00	$4.93	$11.88	$8.53	$0.00	$25.34								
HB Threshold	100	100															
Summer:																	
Cust. Chg	$22.04	$22.10								$22.04	$22.04	$22.10	$22.10	$22.10	$22.10	$132.48	$265.08
Headblock	$0.3486	$0.3495								$6.97	$6.97	$6.64	$5.23	$5.05	$6.99	$37.85	$219.56
Tailblock	$0.2885	$0.2892								$10.80	$2.24	$0.00	$0.00	$0.00	$0.55	$13.59	$38.94
HB Threshold	20	20															
Total Base Rate Amount			$39.96	$55.30	$61.98	$68.93	$65.58	$47.90	$339.65	$39.81	$31.25	$28.74	$27.33	$27.15	$29.64	$183.93	$523.58
COG Rate - (Seasonal)			$0.7162	$0.7162	$0.7162	$0.7162	$0.7162	$0.7162	$0.7162	$0.4117	$0.4400	$0.4400	$0.4200	$0.4200	$0.4200	$0.4229	$0.6564
COG amount			$36.59	$68.03	$83.82	$101.05	$92.75	$52.88	$435.12	$23.65	$12.22	$8.36	$6.29	$6.07	$9.20	$65.78	$500.90
LDAC			$0.0553	$0.0553	$0.0640	$0.0640	$0.0640	$0.0640	$0.0619	$0.1014	$0.1014	$0.1014	$0.1014	$0.1014	$0.1014	$0.1014	$0.0699
LDAC amount			$2.83	$5.25	$7.49	$9.03	$8.29	$4.72	$37.60	$5.82	$2.82	$1.93	$1.52	$1.46	$2.22	$15.77	$53.37
Total Bill			**$79.37**	**$128.58**	**$153.29**	**$179.01**	**$166.62**	**$105.51**	**$812.38**	**$69.29**	**$46.29**	**$39.03**	**$35.14**	**$34.68**	**$41.06**	**$265.48**	**$1,077.85**

November 1, 2015 - April 30, 2016 / **May 1, 2015 - October 31, 2015**
Residential Heating (R3)

CURRENT			**Nov-15**	**Dec-15**	**Jan-16**	**Feb-16**	**Mar-16**	**Apr-16**	**Winter Nov-Apr**	**May-15**	**Jun-15**	**Jul-15**	**Aug-15**	**Sep-15**	**Oct-15**	**Summer May-Oct**	**Total Nov-Oct**
average Usage (Therms)			51	95	117	141	130	74	608	57	28	19	15	14	22	156	763
Winter:	5/1/2015	7/1/2015															
Cust. Chg	$19.85	$22.04	$22.04	$22.04	$22.04	$22.04	$22.04	$22.04	$132.24								
Headblock	$0.3140	$0.3486	$17.81	$33.11	$34.86	$34.86	$34.86	$25.74	$181.24								
Tailblock	$0.2594	$0.2885	$0.00	$0.00	$4.91	$11.85	$8.51	$0.00	$25.28								
HB Threshold	100	100															
Summer:																	
Cust. Chg	$19.85	$22.04								$19.85	$19.85	$22.04	$22.04	$22.04	$22.04	$127.86	$260.10
Headblock	$0.3140	$0.3486								$6.28	$6.28	$6.62	$5.22	$5.03	$6.97	$36.41	$217.65
Tailblock	$0.2594	$0.2885								$9.71	$2.02	$0.00	$0.00	$0.00	$0.55	$12.28	$37.56
HB Threshold	20	20															
Total Base Rate Amount			$39.85	$55.15	$61.81	$68.75	$65.41	$47.78	$338.76	$35.84	$28.15	$28.66	$27.26	$27.07	$29.56	$176.55	$515.31
COG Rate - (Seasonal)			$0.7516	$0.7516	$0.6256	$0.4436	$0.2634	$0.4423	$0.5141	$0.3073	$0.3246	$0.3421	$0.3421	$0.3421	$0.3796	$0.3314	$0.4769
COG amount			$38.40	$71.39	$73.22	$62.59	$34.11	$32.66	$312.36	$17.65	$9.01	$6.50	$5.12	$4.94	$8.32	$51.54	$363.91
LDAC			$0.1014	$0.1014	$0.1014	$0.1014	$0.1014	$0.1014	0.1014	$0.0772	$0.0772	$0.0937	$0.0937	$0.0937	$0.0937	$0.0847	$0.0980
LDAC amount			$5.18	$9.63	$11.87	$14.31	$13.13	$7.49	$61.60	$4.43	$2.14	$1.78	$1.40	$1.35	$2.05	$13.17	$74.77
Total Bill			**$83.43**	**$136.17**	**$146.90**	**$145.65**	**$112.66**	**$87.92**	**$712.73**	**$57.93**	**$39.30**	**$36.94**	**$33.78**	**$33.37**	**$39.93**	**$241.25**	**$953.99**

DIFFERENCE:

Total Bill			**($4.06)**	**($7.60)**	**$6.39**	**$33.36**	**$53.97**	**$17.59**	**$99.64**	**$11.36**	**$6.98**	**$2.08**	**$1.35**	**$1.31**	**$1.13**	**$24.22**	**$123.87**
% Change			**-4.86%**	**-5.58%**	**4.35%**	**22.90%**	**47.90%**	**20.00%**	**13.98%**	**19.61%**	**17.77%**	**5.64%**	**4.01%**	**3.92%**	**2.84%**	**10.04%**	**12.98%**
Base Rate			$0.11	$0.15	$0.16	$0.18	$0.17	$0.13	$0.89	$3.97	$3.11	$0.08	$0.07	$0.07	$0.08	$7.38	$8.27
% Change			0.27%	0.26%	0.26%	0.26%	0.26%	0.26%	0.26%	11.08%	11.04%	0.27%	0.27%	0.27%	0.27%	4.18%	1.61%
COG & LDAC			($4.16)	($7.74)	$6.22	$33.18	$53.80	$17.46	$98.75	$7.39	$3.88	$2.01	$1.28	$1.24	$1.05	$16.84	$115.60
% Change			-10.84%	-10.84%	8.50%	53.02%	157.70%	53.47%	31.62%	41.85%	43.01%	30.87%	25.02%	25.02%	12.67%	32.67%	31.77%
check			$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00

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Liberty Utilities (EnergyNorth Natural Gas) Corp.
d/b/a Liberty Utilities
Peak 2016 - 2017 Winter Cost of Gas Filing
Annual Bill Comparisons, Nov 15 - Apr 16 vs Nov 16 - Apr 17 - Commercial Rate G-41

November 1, 2016 - April 30, 2017
Commercial Rate (G-41)

PROPOSED			**Nov-16**	**Dec-16**	**Jan-17**	**Feb-17**	**Mar-17**	**Apr-17**	**Winter Nov-Apr**
average Usage (Therms)			121	251	293	429	390	202	1,685
Winter:	7/1/2016	5/1/2016							
Cust. Chg	$48.36	$48.24	$48.36	$48.36	$48.36	$48.36	$48.36	$48.36	$290.16
Headblock	$0.3965	$0.3956	$39.65	$39.65	$39.65	$39.65	$39.65	$39.65	$237.90
Tailblock	$0.2663	$0.2657	$5.50	$40.15	$51.45	$87.54	$77.11	$27.26	$289.01
HB Threshold	100	100							
Summer:									
Cust. Chg	$48.36	$48.24							
Headblock	$0.3965	$0.3956							
Tailblock	$0.2663	$0.2657							
HB Threshold	20	20							
Total Base Rate Amount			$93.51	$128.16	$139.46	$175.55	$165.12	$115.27	$817.07
COG Rate - (Seasonal)			$0.7121	$0.7121	$0.7121	$0.7121	$0.7121	$0.7121	$0.7121
COG amount			$85.92	$178.57	$208.80	$305.29	$277.41	$144.09	$1,200.09
LDAC			$0.0370	$0.0370	$0.0450	$0.0450	$0.0450	$0.0450	0.0432
LDAC amount			$4.46	$9.28	$13.20	$19.29	$17.53	$9.11	$72.87
Total Bill			**$183.90**	**$316.00**	**$361.46**	**$500.14**	**$460.06**	**$268.47**	**$2,090.03**

May 1, 2016 - October 31, 2016

	May-16	**Jun-16**	**Jul-16**	**Aug-16**	**Sep-16**	**Oct-16**	**Summer May-Oct**	**Total Nov-Oct**
average Usage (Therms)	145	56	51	27	26	39	344	2,029
Cust. Chg	$48.24	$48.24	$48.36	$48.36	$48.36	$48.36	$289.92	$580.08
Headblock	$7.91	$7.91	$7.93	$7.93	$7.93	$7.93	$47.54	$285.44
Tailblock	$33.12	$9.58	$8.25	$1.92	$1.62	$5.00	$59.51	$348.52
Total Base Rate Amount	$89.27	$65.74	$64.54	$58.21	$57.91	$61.29	$396.97	$1,214.04
COG Rate - (Seasonal)	$0.3976	$0.4259	$0.4259	$0.4059	$0.4059	$0.4059	$0.4086	$0.6607
COG amount	$57.51	$23.88	$21.71	$11.05	$10.59	$15.75	$140.50	$1,340.58
LDAC	$0.0685	$0.0685	$0.0685	$0.0685	$0.0685	$0.0685	$0.0685	$0.0475
LDAC amount	$9.91	$3.84	$3.49	$1.87	$1.79	$2.66	$23.55	$96.42
Total Bill	**$156.69**	**$93.45**	**$89.75**	**$71.13**	**$70.30**	**$79.70**	**$561.02**	**$2,651.04**

November 1, 2015 - April 30, 2016
Commercial Rate (G-41)

CURRENT			**Nov-15**	**Dec-15**	**Jan-16**	**Feb-16**	**Mar-16**	**Apr-16**	**Winter Nov-Apr**
average Usage (Therms)			121	251	293	429	390	202	1,685
Winter:	5/1/2015	7/1/2015							
Cust. Chg	$46.71	$48.24	$48.24	$48.24	$48.24	$48.24	$48.24	$48.24	$289.44
Headblock	$0.3727	$0.3956	$39.56	$39.56	$39.56	$39.56	$39.56	$39.56	$237.36
Tailblock	$0.2424	$0.2657	$5.49	$40.06	$51.34	$87.34	$76.94	$27.19	$288.36
HB Threshold	100	100							
Summer:									
Cust. Chg	$46.71	$48.24							
Headblock	$0.3727	$0.3956							
Tailblock	$0.2424	$0.2657							
HB Threshold	20	20							
Total Base Rate Amount			$93.29	$127.86	$139.14	$175.14	$164.74	$114.99	$815.16
COG Rate - (Seasonal)			$0.7454	$0.7454	$0.6194	$0.4374	$0.2572	$0.4361	$0.4951
COG amount			$89.94	$186.92	$181.62	$187.52	$100.20	$88.25	$834.44
LDAC			$0.0685	$0.0685	$0.0685	$0.0685	$0.0685	$0.0685	0.0685
LDAC amount			$8.27	$17.18	$20.09	$29.37	$26.69	$13.86	$115.44
Total Bill			**$191.49**	**$331.95**	**$340.84**	**$392.03**	**$291.62**	**$217.10**	**$1,765.04**
DIFFERENCE:									
Total Bill			**($7.60)**	**($15.95)**	**$20.62**	**$108.10**	**$168.44**	**$51.37**	**$324.98**
% Change			**-3.97%**	**-4.80%**	**6.05%**	**27.58%**	**57.76%**	**23.66%**	**18.41%**
Base Rate			$0.22	$0.30	$0.33	$0.41	$0.38	$0.27	$1.91
% Change			0.24%	0.23%	0.23%	0.23%	0.23%	0.24%	0.23%
COG & LDAC			($7.82)	($16.25)	$20.29	$107.70	$168.06	$51.09	$323.07
% Change			-8.69%	-8.69%	11.17%	57.43%	167.73%	57.90%	38.72%
check			$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	

May 1, 2015 - October 31, 2015

	May-15	**Jun-15**	**Jul-15**	**Aug-15**	**Sep-15**	**Oct-15**	**Summer May-Oct**	**Total Nov-Oct**
average Usage (Therms)	145	56	51	27	26	39	344	2,029
Cust. Chg	$46.71	$46.71	$48.24	$48.24	$48.24	$48.24	$286.38	$575.82
Headblock	$7.45	$7.45	$7.91	$7.91	$7.91	$7.91	$46.56	$283.92
Tailblock	$30.21	$8.74	$8.23	$1.92	$1.62	$4.99	$55.72	$344.08
Total Base Rate Amount	$84.38	$62.91	$64.38	$58.07	$57.77	$61.15	$388.66	$1,203.82
COG Rate - (Seasonal)	$0.3210	$0.3383	$0.3558	$0.3558	$0.3558	$0.3933	$0.3425	$0.4693
COG amount	$46.43	$18.97	$18.14	$9.69	$9.29	$15.26	$117.77	$952.21
LDAC	$0.0628	$0.0628	$0.0793	$0.0793	$0.0793	$0.0793	$0.0697	$0.0687
LDAC amount	$9.08	$3.52	$4.04	$2.16	$2.07	$3.08	$23.95	$139.39
Total Bill	**$139.89**	**$85.40**	**$86.57**	**$69.92**	**$69.13**	**$79.48**	**$530.38**	**$2,295.42**
Total Bill	**$16.80**	**$8.06**	**$3.18**	**$1.21**	**$1.17**	**$0.22**	**$30.63**	**$355.62**
% Change	**12.01%**	**9.44%**	**3.67%**	**1.73%**	**1.69%**	**0.28%**	**5.78%**	**15.49%**
Base Rate	$4.89	$2.83	$0.16	$0.14	$0.14	$0.15	$8.31	$10.22
% Change	5.80%	4.50%	0.24%	0.25%	0.25%	0.24%	2.14%	0.85%
COG & LDAC	$11.90	$5.23	$3.02	$1.07	$1.03	$0.07	$22.32	$345.40
% Change	25.64%	27.58%	16.67%	11.05%	11.05%	0.46%	18.96%	36.27%
check	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00

093R

Liberty Utilities (EnergyNorth Natural Gas) Corp.
d/b/a Liberty Utilities
Peak 2016 - 2017 Winter Cost of Gas Filing
Annual Bill Comparisons, Nov 15 - Apr 16 vs Nov 16 - Apr 17 - Commercial Rate G-42

November 1, 2016 - April 30, 2017 | **May 1, 2016 - October 31, 2016**
C&I High Winter Use Medium G-42

PROPOSED			**Nov-16**	**Dec-16**	**Jan-17**	**Feb-17**	**Mar-17**	**Apr-17**	**Winter Nov-Apr**	**May-16**	**Jun-16**	**Jul-16**	**Aug-16**	**Sep-16**	**Oct-16**	**Summer May-Oct**	**Total Nov-Oct**
average Usage (Therms)			1,009	1,009	2,228	2,686	2,426	1,378	10,737	1,116	492	485	1,166	280	444	3,983	14,720
	7/1/2016	5/1/2016															
Winter:																	
Cust. Chg	$145.08	$144.73	$145.08	$145.08	$145.08	$145.08	$145.08	$145.08	$870.48								
Headblock	$0.3606	$0.3598	$360.60	$360.60	$360.60	$360.60	$360.60	$360.60	$2,163.60								
Tailblock	$0.2402	$0.2396	$2.25	$2.25	$294.99	$404.93	$342.58	$90.77	$1,137.76								
HB Threshold	1,000	1,000															
Summer:																	
Cust. Chg	$145.08	$144.73								$144.73	$144.73	$145.08	$145.08	$145.08	$145.08	$869.78	$1,740.26
Headblock	$0.3606	$0.3598								$143.92	$143.92	$144.24	$144.24	$100.90	$144.24	$821.46	$2,985.06
Tailblock	$0.2402	$0.2396								$171.53	$22.03	$20.53	$183.92	$0.00	$10.62	$408.64	$1,546.40
HB Threshold	400	400															
Total Base Rate Amount			$507.93	$507.93	$800.67	$910.61	$848.26	$596.45	$4,171.84	$460.18	$310.68	$309.85	$473.24	$245.98	$299.94	$2,099.87	$6,271.72
COG Rate - (Seasonal)			$0.7121	$0.7121	$0.7121	$0.7121	$0.7121	$0.7121	$0.7121	$0.3976	$0.4259	$0.4259	$0.4059	$0.4059	$0.4059	$0.4085	$0.6299
COG amount			$718.76	$718.76	$1,586.63	$1,912.56	$1,727.71	$981.21	$7,645.63	$443.69	$209.52	$206.76	$473.16	$113.57	$180.30	$1,627.01	$9,272.64
LDAC			$0.0370	$0.0370	$0.0450	$0.0450	$0.0450	$0.0450	0.0435	$0.0685	$0.0685	$0.0685	$0.0685	$0.0685	$0.0685	$0.0685	$0.0503
LDAC amount			$37.35	$37.35	$100.27	$120.87	$109.18	$62.01	$467.02	$76.44	$33.70	$33.25	$79.85	$19.17	$30.43	$272.84	$739.86
Total Bill			**$1,264.04**	**$1,264.04**	**$2,487.57**	**$2,944.04**	**$2,685.15**	**$1,639.67**	**$12,284.50**	**$980.31**	**$553.91**	**$549.87**	**$1,026.25**	**$378.72**	**$510.66**	**$3,999.72**	**$16,284.22**

November 1, 2015 - April 30, 2016 | **May 1, 2015 - October 31, 2015**
C&I High Winter Use Medium G-42

CURRENT			**Nov-15**	**Dec-15**	**Jan-16**	**Feb-16**	**Mar-16**	**Apr-16**	**Winter Nov-Apr**	**May-15**	**Jun-15**	**Jul-15**	**Aug-15**	**Sep-15**	**Oct-15**	**Summer May-Oct**	**Total Nov-Oct**
average Usage (Therms)			1,009	1,009	2,228	2,686	2,426	1,378	10,737	1,116	492	485	1,166	280	444	3,983	14,720
	5/1/2015	7/1/2015															
Winter:																	
Cust. Chg	$140.13	$144.73	$144.73	$144.73	$144.73	$144.73	$144.73	$144.73	$868.38								
Headblock	$0.3483	$0.3598	$359.80	$359.80	$359.80	$359.80	$359.80	$359.80	$2,158.80								
Tailblock	$0.2302	$0.2396	$2.24	$2.24	$294.25	$403.92	$341.72	$90.55	$1,134.92								
HB Threshold	1,000	1,000															
Summer:																	
Cust. Chg	$140.13	$144.73								$140.13	$140.13	$144.73	$144.73	$144.73	$144.73	$859.18	$1,727.56
Headblock	$0.3483	$0.3598								$139.32	$139.32	$143.92	$143.92	$100.67	$143.92	$811.07	$2,969.87
Tailblock	$0.2302	$0.2396								$164.80	$22.03	$20.48	$183.46	$0.00	$10.59	$401.37	$1,536.29
HB Threshold	400	400															
Total Base Rate Amount			$506.77	$506.77	$798.78	$908.45	$846.25	$595.08	$4,162.10	$444.25	$301.48	$309.13	$472.11	$245.40	$299.24	$2,071.62	$6,233.73
COG Rate - (Seasonal)			$0.7454	$0.7454	$0.6194	$0.4374	$0.2572	$0.4361	$0.4922	$0.3210	$0.3383	$0.3558	$0.3558	$0.3558	$0.3933	$0.3481	$0.4532
COG amount			$752.37	$752.37	$1,380.08	$1,174.77	$624.02	$600.90	$5,284.53	$358.21	$166.43	$172.73	$414.76	$99.55	$174.70	$1,386.39	$6,670.92
LDAC			$0.0685	$0.0685	$0.0685	$0.0685	$0.0685	$0.0685	0.0685	$0.0628	$0.0628	$0.0793	$0.0793	$0.0793	$0.0793	$0.0726	$0.0696
LDAC amount			$69.14	$69.14	$152.62	$183.98	$166.20	$94.39	$735.47	$70.08	$30.89	$38.50	$92.44	$22.19	$35.22	$289.33	$1,024.79
Total Bill			**$1,328.29**	**$1,328.29**	**$2,331.49**	**$2,267.20**	**$1,636.47**	**$1,290.37**	**$10,182.10**	**$872.54**	**$498.81**	**$520.36**	**$979.31**	**$367.15**	**$509.17**	**$3,747.33**	**$13,929.44**

DIFFERENCE:

Total Bill	**($64.25)**	**($64.25)**	**$156.08**	**$676.84**	**$1,048.68**	**$349.30**	**$2,102.40**	**$107.77**	**$55.10**	**$29.51**	**$46.94**	**$11.57**	**$1.50**	**$252.39**	**$2,354.79**
% Change	**-4.84%**	**-4.84%**	**6.69%**	**29.85%**	**64.08%**	**27.07%**	**20.65%**	**12.35%**	**11.05%**	**5.67%**	**4.79%**	**3.15%**	**0.29%**	**6.74%**	**16.91%**
Base Rate	$1.16	$1.16	$1.89	$2.16	$2.01	$1.38	$9.74	$15.93	$9.20	$0.72	$1.13	$0.57	$0.70	$28.25	$37.99
% Change	0.23%	0.23%	0.24%	0.24%	0.24%	0.23%	0.23%	3.59%	3.05%	0.23%	0.24%	0.23%	0.23%	1.36%	0.61%
COG & LDAC	($65.41)	($65.41)	$154.19	$674.68	$1,046.68	$347.92	$2,092.66	$91.84	$45.90	$28.79	$45.81	$11.00	$0.80	$224.14	$2,316.79
% Change	-8.69%	-8.69%	11.17%	57.43%	167.73%	57.90%	39.60%	25.64%	27.58%	16.67%	11.05%	11.05%	0.46%	16.17%	34.73%
check	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00

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Liberty Utilities (EnergyNorth Natural Gas) Corp.
d/b/a Liberty Utilities
Peak 2016 - 2017 Winter Cost of Gas Filing
Annual Bill Comparisons, Nov 15 - Apr 16 vs Nov 16 - Apr 17 - Commercial Rate G-52

November 1, 2016 - April 30, 2017
Commercial Rate (G-52)

PROPOSED			Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	Winter Nov-Apr
average Usage (Therms)			1,129	1,453	1,821	1,383	1,955	1,367	9,108
Winter:	7/1/2016	5/1/2016							
Cust. Chg	$145.08	$144.73	$145.08	$145.08	$145.08	$145.08	$145.08	$145.08	$870.48
Headblock	$0.2052	$0.2047	$205.20	$205.20	$205.20	$205.20	$205.20	$205.20	$1,231.20
Tailblock	$0.1367	$0.1364	$17.69	$61.91	$112.22	$52.34	$130.50	$50.23	$424.88
HB Threshold	1,000	1,000							
Summer:									
Cust. Chg	$145.08	$144.73							
Headblock	$0.1487	$0.1484							
Tailblock	$0.0845	$0.0843							
HB Threshold	1,000	1,000							
Total Base Rate Amount			$367.97	$412.19	$462.50	$402.62	$480.78	$400.51	$2,526.56
COG Rate - (Seasonal)			$0.7305	$0.7305	$0.7305	$0.7305	$0.7305	$0.7305	$0.7305
COG amount			$825.03	$1,061.33	$1,330.18	$1,010.19	$1,427.86	$998.91	$6,653.50
LDAC			$0.0370	$0.0370	$0.0450	$0.0450	$0.0450	$0.0450	0.0427
LDAC amount			$41.79	$53.76	$81.94	$62.23	$87.96	$61.54	$389.22
Total Bill			**$1,234.79**	**$1,527.27**	**$1,874.62**	**$1,475.05**	**$1,996.60**	**$1,460.96**	**$9,569.28**

May 1, 2016 - October 31, 2016

	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Summer May-Oct	Total Nov-Oct
average Usage (Therms)	1,263	1,003	799	788	758	847	5,458	14,566
Cust. Chg (Summer)	$144.73	$144.73	$145.08	$145.08	$145.08	$145.08	$869.78	$1,740.26
Headblock (Summer)	$148.40	$148.40	$118.75	$117.10	$112.75	$125.97	$771.36	$2,002.56
Tailblock (Summer)	$22.22	$0.27	$0.00	$0.00	$0.00	$0.00	$22.50	$447.38
Total Base Rate Amount	$315.35	$293.40	$263.83	$262.18	$257.83	$271.05	$1,663.64	$4,190.21
COG Rate - (Seasonal)	$0.4415	$0.4698	$0.4698	$0.4498	$0.4498	$0.4498	$0.4545	$0.6271
COG amount	$557.61	$471.33	$375.17	$354.22	$341.04	$381.04	$2,480.41	$9,133.91
LDAC	$0.0685	$0.0685	$0.0685	$0.0685	$0.0685	$0.0685	$0.0685	$0.0524
LDAC amount	$86.52	$68.72	$54.70	$53.94	$51.94	$58.03	$373.85	$763.07
Total Bill	**$959.48**	**$833.46**	**$693.71**	**$670.35**	**$650.80**	**$710.11**	**$4,517.91**	**$14,087.19**

November 1, 2015 - April 30, 2016
Commercial Rate (G-52)

CURRENT			Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	Winter Nov-Apr
average Usage (Therms)			1,129	1,453	1,821	1,383	1,955	1,367	9,108
Winter:	5/1/2015	7/1/2015							
Cust. Chg	$140.13	$144.73	$144.73	$144.73	$144.73	$144.73	$144.73	$144.73	$868.38
Headblock	$0.1929	$0.2047	$204.70	$204.70	$204.70	$204.70	$204.70	$204.70	$1,228.20
Tailblock	$0.1309	$0.1364	$17.65	$61.77	$111.97	$52.22	$130.21	$50.12	$423.95
HB Threshold	1,000	1,000							
Summer:									
Cust. Chg	$140.13	$144.73							
Headblock	$0.1417	$0.1484							
Tailblock	$0.0816	$0.0843							
HB Threshold	1,000	1,000							
Total Base Rate Amount			$367.08	$411.20	$461.40	$401.65	$479.64	$399.55	$2,520.53
COG Rate - (Seasonal)			$0.7647	$0.7647	$0.6387	$0.4567	$0.2765	$0.4554	$0.5415
COG amount			$863.65	$1,111.01	$1,163.02	$631.56	$540.46	$622.73	$4,932.43
LDAC			$0.0685	$0.0685	$0.0685	$0.0685	$0.0685	$0.0685	0.0685
LDAC amount			$77.36	$99.52	$124.73	$94.73	$133.89	$93.67	$623.91
Total Bill			**$1,308.10**	**$1,621.74**	**$1,749.15**	**$1,127.94**	**$1,153.99**	**$1,115.95**	**$8,076.87**

May 1, 2015 - October 31, 2015

	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Summer May-Oct	Total Nov-Oct
average Usage (Therms)	1,263	1,003	799	788	758	847	5,458	14,566
Cust. Chg (Summer)	$140.13	$140.13	$144.73	$144.73	$144.73	$144.73	$859.18	$1,727.56
Headblock (Summer)	$141.70	$141.70	$118.51	$116.87	$112.52	$125.71	$757.01	$1,985.21
Tailblock (Summer)	$21.46	$0.27	$0.00	$0.00	$0.00	$0.00	$21.73	$445.68
Total Base Rate Amount	$303.29	$282.10	$263.24	$261.60	$257.25	$270.44	$1,637.91	$4,158.44
COG Rate - (Seasonal)	$0.2728	$0.2901	$0.3076	$0.3076	$0.3076	$0.3451	$0.3022	$0.4518
COG amount	$344.54	$291.04	$245.64	$242.24	$233.22	$292.34	$1,649.04	$6,581.47
LDAC	$0.0628	$0.0628	$0.0793	$0.0793	$0.0793	$0.0793	$0.0724	$0.0700
LDAC amount	$79.32	$63.00	$63.33	$62.45	$60.13	$67.18	$395.40	$1,019.31
Total Bill	**$727.15**	**$636.14**	**$572.21**	**$566.28**	**$550.60**	**$629.96**	**$3,682.35**	**$11,759.22**

DIFFERENCE:

	Nov	Dec	Jan	Feb	Mar	Apr	Winter Nov-Apr
Total Bill	**($73.31)**	**($94.47)**	**$125.47**	**$347.10**	**$842.61**	**$345.01**	**$1,492.41**
% Change	**-5.60%**	**-5.83%**	**7.17%**	**30.77%**	**73.02%**	**30.92%**	**18.48%**
Base Rate	$0.89	$0.99	$1.10	$0.96	$1.14	$0.96	$6.03
% Change	0.24%	0.24%	0.24%	0.24%	0.24%	0.24%	0.24%
COG & LDAC	($74.20)	($95.45)	$124.37	$346.14	$841.47	$344.05	$1,486.38
% Change	-8.59%	-8.59%	10.69%	54.81%	155.70%	55.25%	30.13%
check	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00

	May	Jun	Jul	Aug	Sep	Oct	Summer May-Oct	Total Nov-Oct
Total Bill	**$232.33**	**$197.31**	**$121.49**	**$104.07**	**$100.21**	**$80.15**	**$835.56**	**$2,327.97**
% Change	**31.95%**	**31.02%**	**21.23%**	**18.38%**	**18.20%**	**12.72%**	**22.69%**	**19.80%**
Base Rate	$12.06	$11.31	$0.59	$0.59	$0.58	$0.60	$25.73	$31.76
% Change	3.98%	4.01%	0.22%	0.22%	0.22%	0.22%	1.57%	0.76%
COG & LDAC	$220.27	$186.00	$120.91	$103.48	$99.63	$79.54	$809.83	$2,296.20
% Change	63.93%	63.91%	49.22%	42.72%	42.72%	27.21%	49.11%	34.89%
check	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00

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Liberty Utilities (EnergyNorth Natural Gas) Corp.
d/b/a Liberty Utilities
Peak 2016 - 2017 Winter Cost of Gas Filing
Residential Heating

	Winter 2015-16	Winter 2016-17
Customer Charge	$22.04	$22.10
First 100 Therms	$0.3486	$0.3495
Excess 100 Therms	$0.2885	$0.2892
LDAC	$0.1014	$0.0619
COG	$0.5141	$0.7162
Total Adjust	$0.6155	$0.7781

				Total		Base Rate		COG		LDAC	
		Winter 2015-16 COG @	Winter 2016-17 COG @	$ Impact	% Impact	$ Impact	% Impact	$ Impact	% Impact	$ Impact	% Impact
		$0.6155	$0.7781	$0.16	26%						
Cooking alone	5	$26.86	$27.67	$0.81	3%	$0.00	0%	$1.01	4%	-$0.20	-1%
	10	$31.68	$33.31	$1.63	5%	$0.00	0%	$2.02	6%	-$0.40	-1%
	20	$41.32	$44.57	$3.25	8%	$0.00	0%	$4.04	9%	-$0.79	-2%
Water Heating alone	30	$50.96	$55.84	$4.88	10%	$0.00	0%	$6.06	11%	-$1.19	-2%
	45	$65.43	$72.74	$7.31	11%	$0.00	0%	$9.09	12%	-$1.78	-3%
	50	$70.25	$78.37	$8.13	12%	$0.00	0%	$10.10	13%	-$1.98	-3%
Heating Alone	80	$94.35	$106.54	$12.19	13%	$0.00	0%	$15.15	14%	-$2.96	-3%
	125	$148.29	$169.91	$21.62	15%	$0.00	0%	$26.87	16%	-$5.25	-4%
	150	$163.66	$188.04	$24.38	15%	$0.00	0%	$30.31	16%	-$5.93	-4%
	200	$208.86	$241.37	$32.51	16%	$0.00	0%	$40.41	17%	-$7.90	-4%

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1 **Liberty Utilities (EnergyNorth Natural Gas) Corp.**
2 **d/b/a Liberty Utilities**
3 **Peak 2016 - 2017 Winter Cost of Gas Filing**
4 **Variance Analysis of the Components of the Winter 2014-15 Actual Results vs Proposed Winter 2014-15 Cost of Gas Rate**
5
6
7

Line		WINTER 2015-16 ACTUAL RESULTS (6 months actual)			WINTER 2016-17 (6 months Proposed)		
10							
11	Therm Sales	67,964,080			89,920,078		
12-14		THERM SENDOUT	COSTS	EFFECT ON COST OF GAS	THERM SENDOUT	COSTS	EFFECT ON COST OF GAS
15							
16	Demand Charges		$ 9,401,686	$ 0.1383		$ 8,469,558	$ 0.0942
17							
18	Purchased Gas		$ 29,925,538	0.4403	69,877,882	49,523,042	0.5507
19							
20	Storage/Produced Gas		812,244	0.0120	23,709,964	5,823,500	0.0648
21							
22	Hedging (Gain)/Loss		0	0.0000		0	0.0000
23							
24							
25	Total Volumes and Cost	70,583,150	$ 40,139,468	$ 0.5906	93,587,846	$ 63,816,099	$ 0.7097
26							
27	Direct Costs						
28	Prior Period Balance		$ (549,989)	$ (0.0081)		2,690,610	$ 0.0299
29	Interest		126,749	0.0019		14,641	0.0002
30	Prior Period Adjustment		-	-		-	-
31	Broker Revenues		(991,052)	(0.0146)		(1,374,947)	(0.0153)
32	Refunds from Suppliers		(431,287)	(0.0063)		-	-
33	Fuel Financing		-	-		-	-
34	Transportation CGA Revenues		(33,912)	(0.0005)		(29,471)	(0.0003)
35	280 Day Margin		-	-		-	-
36	Interruptible Sales Margin		-	-		-	-
37	Capacity Release and Off System Sales Margins		(1,849,179)	(0.0272)		(5,448,856)	(0.0606)
38	Hedging Costs		306,110	0.0045		-	-
39	FPO Admin Costs		9,528	0.0001		41,972	0.0005
40	Indirect Costs						
41	Misc Overhead		10,272	0.0002		10,589	0.0001
42	Occupant Disallowance/Credits		-	-		-	-
43	Production & Storage		1,980,428	0.0291		1,980,428	0.0220
44	Other Indirect Gas Costs		(125,396)	(0.0018)		2,705,546	0.0301
45	Cashout, Broker penalty, Canadian Managed,…		-	-		0	0
46	Total Adjusted Cost		$ 38,591,739	**$ 0.5678**		$ 64,406,611	**$ 0.7163**

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