Ln	Description	Reference		OP 16 May - Oct
1	**Liberty Utilities (EnergyNorth Natural Gas) Corp.**			
2				
3	**Off Peak 2017 Summer Cost of Gas Filing**			
4	**Summary**			
5				OP 16
6		Reference		May - Oct
7	(a)	(b)		(c)
8				
9	**Anticipated Direct Cost of Gas**			
10	Purchased Gas:			
11	Demand Costs:	Sch. 5A, col (j), ln 43	$	4,376,173
12	Supply Costs	Sch. 6, col (i), ln 44		3,410,974
13				
14	Storage Gas:			
15	Demand, Capacity:	Sch. 5A, col (j), ln 58	$	-
16	Commodity Costs:	Sch. 6, col (i), ln 47		-
17				
18	Produced Gas:	Sch. 6, col (i), ln 53	$	89,297
19				
20	Hedge Contract (Savings)/Loss	Sch. 7, col (i), ln 32	$	-
21				
22				
23	**Total Unadjusted Cost of Gas**		$	7,876,444
24				
25	**Adjustments:**			
26				
27	Prior Period (Over)/Under Recovery)	Sch. 3, col (c) ln 26	$	(727,882)
28	Interest 05/01/15 - 10//31/16	Sch. 3, col (q) ln 2		(21,188)
29	Prior Period Adjustments	Sch. 4, ln 26 col (b)		-
30	Refunds from Suppliers	Sch. 4, ln 26 col (c)		-
31	Broker Revenue	Sch. 4, ln 26 col (d)		-
32	Fuel Financing	Sch. 4, ln 26 col (e)		-
33	Transportation CGA Revenues	Sch. 4, ln 26 col (f)		-
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)		-
36	Hedging Costs	Sch. 4, ln 26 col (j)		-
37	FPO Premium - Collection			-
38	Fixed Price Option Administrative Costs	Sch. 4, ln 26 col (k)		-
39				
40	**Total Adjustments**		$	(749,070)
41				
42	**Total Anticipated Direct Costs**	lns 23 + 40	$	7,127,374
43				
44	**Anticipated Indirect Cost of Gas**			
45	**Working Capital**			
46	Total Unadjusted Anticipated Cost of Gas	Ln 23	$	7,876,444
47	Lead Lag Days / 365	DG 10-017, 14.27 / 365		0.0391
48	Prime Rate			3.50%
49	Working Capital Percentage	ln 47 * ln 48		0.137%
50	Working Capital	ln 46 * ln 49		10,780
51	Plus: Working Capital Reconciliation	Sch. 3, col (c), ln 98		8,141
52				
53	**Total Working Capital Allowance**	lns 50 + 51	$	18,922
54				
55	**Bad Debt**			
56	Total Unadjusted Anticipated Cost of Gas	ln 23	$	7,876,444
57	Less Refunds	ln 30		-
58	Plus Working Capital	ln 53		18,922
59	Plus Prior Period (Over) Under Recovery	ln 27		(727,882)
60	Subtotal		$	7,167,484
61	Bad Debt Percentage	per GTC 16(f), docket 14-220 Sch 6 Pg 3		4.04%
62				
63	Bad Debt Allowance	ln 60 * ln 61	$	289,566
64	Prior Period Bad Debt Allowance	Sch. 3, col (c), ln 161		(22,921)
65				
66	**Total Bad Debt Allowance**	lns 63 + 64	$	266,645
67				
68	**Production and Storage Capacity**	per GTC16(f)	$	-
69				
70	**Miscellaneous Overhead**	per GTC 16(f)	$	13,170
71	Sales Volume	Sch. 10B, ln 23/1000		22,073
72	Divided by Total Sales	Sch. 10B, ln 23/1000		112,609
73	Ratio			19.60%
74				
75	**Miscellaneous Overhead**	lns 70 * 73	$	2,581
76				
77	**Total Anticipated Indirect Cost of Gas**	lns 53 + 66 + 68 + 75	$	288,148
78				
79	**Total Cost of Gas**	lns 42 + 77	$	7,415,522
80				
81	**Projected Forecast Sales (Therms)**	Sch. 3, col (q), ln 52		22,215,128

1 **Liberty Utilities (EnergyNorth Natural Gas) Corp.**
2
3 **Off Peak 2017 Summer Cost of Gas Filing**
4 **Summary of Supply and Demand Forecast**

Ln										
5										
6										Off Peak Period
7	For Month of:		May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	May - Oct
8	(a)	(b)	(c)	(d)	(e)	(d)	(e)	(f)	(g)	(h)
9	**I. Gas Volumes (Therms)**									
10										
11	**A. Firm Demand Volumes**									
12	Firm Gas Sales	Sch. 10B, ln 23	1,296,266	3,668,345	2,196,890	1,930,599	2,507,876	4,375,919	6,239,233	22,215,128
13	Lost Gas (Unaccounted for)		113,864	85,146	74,812	63,679	67,291	135,113		539,905
14	Company Use		2,961	2,214	1,945	1,656	1,750	3,514		14,040
15	Unbilled Therms		3,388,826	(164,912)	881,372	689,544	260,927	1,183,477	(6,239,233)	0
16										
17	**Total Firm Volumes**	Sch. 6, ln 92	4,801,917	3,590,793	3,155,020	2,685,478	2,837,844	5,698,022		22,769,073
18										
19	**B. Supply Volumes (Therms)**									
20	Pipeline Gas:									
21	Dawn Supply	Sch. 6, ln 63	828,493	776,108	788,755	754,758	729,210	796,657		4,673,981
22	Niagara Supply	Sch. 6, ln 64	646,759	606,011	615,738	589,198	569,392	621,906		3,649,004
23	TGP Supply (Gulf)	Sch. 6, ln 65	4,586,108	3,866,311	3,436,809	2,745,128	1,754,359	2,186,308		18,575,023
24	Dracut Supply 1 - Baseload	Sch. 6, ln 66	-	-	-	-	-	-		-
25	Dracut Supply 2 - Swing	Sch. 6, ln 67	2,673	-	-	-	-	433,664		436,336
26	City Gate Delivered Supply	Sch. 6, ln 68	-	-	-	-	-	-		-
27	LNG Truck	Sch. 6, ln 69	23,385	-	-	-	88,721	18,631		130,737
28	Propane Truck	Sch. 6, ln 70	76,836	74,377	73,151	69,998	69,883	35,978		400,222
29	PNGTS	Sch. 6, ln 71	32,739	22,636	20,991	20,086	24,307	39,833		160,593
30	TGP Supply (Zone 4)	Sch. 6, ln 72	1,702,419	1,595,549	1,620,764	1,551,515	1,497,920	1,601,023		9,569,189
31	Subtotal Pipeline Volumes		7,899,410	6,940,992	6,556,209	5,730,683	4,733,790	5,734,000		37,595,084
32										
33	Storage Gas:									
34	TGP Storage	Sch. 6, ln 77	-	-	-	-	-	-		-
35										
36	Produced Gas:									
37	LNG Vapor	Sch. 6, ln 80	19,376	18,109	18,447	17,652	17,015	18,631		109,230
38	Propane	Sch. 6, ln 81	-	-	-	-	-	-		-
39	Subtotal Produced Gas		19,376	18,109	18,447	17,652	17,015	18,631		109,230
40										
41	Less - Gas Refill:									
42	LNG Truck	Sch. 6, ln 86	(23,385)	-	-	-	(88,721)	(18,631)		(130,737)
43	Propane	Sch. 6, ln 87	(76,836)	(74,377)	(73,151)	(69,998)	(69,883)	(35,978)		(400,222)
44	TGP Storage Refill	Sch. 6, ln 88	(3,016,649)	(3,293,931)	(3,346,484)	(2,992,859)	(1,754,359)	-		(14,404,282)
45	Subtotal Refills		(3,116,870)	(3,368,308)	(3,419,635)	(3,062,857)	(1,912,962)	(54,610)		(14,935,241)
46										
47	Total Firm Sendout Volumes	lns 31 + 34 + 39 + 45	4,801,917	3,590,793	3,155,020	2,685,478	2,837,844	5,698,022		22,769,073
48										

Ln	Description	Reference	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Off Peak Period May - Oct
1	**Liberty Utilities (EnergyNorth Natural Gas) Corp.**									
3	**Off Peak 2017 Summer Cost of Gas Filing**									
4	**Summary of Supply and Demand Forecast**									
5										
6										
7	For Month of:		May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	May - Oct
49	**II. Gas Costs**									
50										**REDACTED**
51	**A. Demand Costs**									
52	Supply									
53	Niagara Supply	Sch.5A, ln 12	[redacted]							
54	Subtotal Supply Demand									
55	Less Capacity Credit									
56	Net Pipeline Demand Costs									
57										
58	Pipeline:									
59	Iroquois Gas Trans Service RTS 470-0	Sch.5A, ln 16	[redacted]							
60	Tenn Gas Pipeline 95346 Z5-Z6	Sch.5A, ln 17								
61	Tenn Gas Pipeline 2302 Z5-Z6	Sch.5A, ln 18								
62	Tenn Gas Pipeline 8587 Z0-Z6	Sch.5A, ln 19								
63	Tenn Gas Pipeline 8587 Z1-Z6	Sch.5A, ln 20								
64	Tenn Gas Pipeline 8587 Z4-Z6	Sch.5A, ln 21								
65	Tenn Gas Pipeline (Dracut) 42076 Z6-Z6	Sch.5A, ln 22								
66	Tenn Gas Pipeline (Concord Lateral) Z6-Z6	Sch.5A, ln 23								
67	Portland Natural Gas Trans Service	Sch.5A, ln 24								
68	ANE (TransCanada via Union to Iroquois)	Sch.5A, ln 25								
69	Tenn Gas Pipeline Z4-Z6 stg 632	Sch.5A, ln 26								
70	Tenn Gas Pipeline Z4-Z6 stg 11234	Sch.5A, ln 27								
71	Tenn Gas Pipeline Z5-Z6 stg 11234	Sch.5A, ln 28								
72	National Fuel FST 2358	Sch.5A, ln 29								
73	Subtotal Pipeline Demand		$ 1,143,742	$ 1,149,574	$ 1,149,574	$ 1,149,574	$ 1,149,574	$ 1,149,574		$ 6,891,610
74	Less Capacity Credit		(417,466)	(419,594)	(419,594)	(419,594)	(419,594)	(419,594)		(2,515,438)
75	Net Pipeline Demand Costs		$ 726,276	$ 729,979	$ 729,979	$ 729,979	$ 729,979	$ 729,979		$ 4,376,173
76										
77	Peaking Supply:									
78	Tenn Gas Pipeline (Concord Lateral) Z6-Z6	Sch.5A, ln 34	[redacted]							
79	Granite Ridge Demand	Sch.5A, ln 35								
80	DOMAC Demand NSB041	Sch.5A, ln 36								
81	Subtotal Peaking Demand									
82	Less Capacity Credit									
83	Net Peaking Supply Demand Costs									
84										
85	Storage:									
86	Dominion - Demand	Sch.5A, ln 46	[redacted]							
87	Dominion - Storage	Sch.5A, ln 47								
88	Honeoye - Demand	Sch.5A, ln 48								
89	National Fuel - Demand	Sch.5A, ln 49								
90	National Fuel - Capacity	Sch.5A, ln 50								
91	Tenn Gas Pipeline - Demand	Sch.5A, ln 51								
92	Tenn Gas Pipeline - Capacity	Sch.5A, ln 52								
93	Subtotal Storage Demand		$ -	$ -	$ -	$ -	$ -	$ -		$ -
94	Less Capacity Credit		-	-	-	-	-	-		-
95	Net Storage Demand Costs		$ -	$ -	$ -	$ -	$ -	$ -		$ -
96										
97	Total Demand Charges	lns 54 + 73 + 81 + 93	$ 1,143,742	$ 1,149,574	$ 1,149,574	$ 1,149,574	$ 1,149,574	$ 1,149,574		$ 6,891,610
98	Total Capacity Credit	lns 55 + 74 + 82 + 94	(417,466)	(419,594)	(419,594)	(419,594)	(419,594)	(419,594)		(2,515,438)
99	Net Demand Charges		$ 726,276	$ 729,979	$ 729,979	$ 729,979	$ 729,979	$ 729,979		$ 4,376,173
100										
101					**THIS PAGE HAS BEEN REDACTED**					

1	**Liberty Utilities (EnergyNorth Natural Gas) Corp.**									
3	**Off Peak 2017 Summer Cost of Gas Filing**									
4	**Summary of Supply and Demand Forecast**									
5										
6										Off Peak Period
7	For Month of:		May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	May - Oct
102	**B. Commodity Costs**									**REDACTED**
103	Pipeline:									
104	Dawn Supply	Sch. 6, ln 12	[redacted]							
105	Niagara Supply	Sch. 6, ln 13								
106	TGP Supply (Gulf)	Sch. 6, ln 14								
107	Dracut Supply 1 - Baseload	Sch. 6, ln 15								
108	Dracut Supply 2 - Swing	Sch. 6, ln 16								
109	City Gate Delivered Supply	Sch. 6, ln 17								
110	LNG Truck	Sch. 6, ln 18								
111	Propane Truck	Sch. 6, ln 19								
112	PNGTS	Sch. 6, ln 20								
113	TGP Supply (Zone 4)	Sch. 6, ln 21								
114	Subtotal Pipeline Commodity Costs		$ 1,414,750	$ 1,273,449	$ 1,267,269	$ 1,120,606	$ 924,181	$ 1,075,110		$ 7,075,364
115										
116	Storage:									
117	TGP Storage - Withdrawals	Sch. 6, ln 47	$ -	$ -	$ -	$ -	$ -	$ -		$ -
118										
119	Produced Gas Costs:									
120	LNG Vapor	Sch. 6, ln 50	[redacted]							
121	Propane	Sch. 6, ln 51								
122	Subtotal Produced Gas Costs		$ 15,987	$ 14,824	$ 15,100	$ 14,449	$ 13,928	$ 15,008		$ 89,297
123										
124	Less Storage Refills:									
125	LNG Truck	Sch. 6, ln 37	[redacted]							
126	Propane	Sch. 6, ln 38								
127	TGP Storage Refill	Sch. 6, ln 39								
128	Storage Refill (Trans.)	Sch. 6, ln 40								
129	Subtotal Storage Refill		$ (755,155)	$ (824,823)	$ (863,494)	$ (789,517)	$ (559,534)	$ (43,760)		$ (3,836,284)
130										
131	Total Supply Commodity Costs		$ 675,581	$ 463,449	$ 418,875	$ 345,538	$ 378,575	$ 1,046,359		$ 3,328,377
132										
133	**C. Supply Volumetric Transportation Costs:**									
134	Dawn Supply	Sch. 6, ln 26	[redacted]							
135	Niagara Supply	Sch. 6, ln 27								
136	TGP Supply (Zone 4)	Sch. 6, ln 28								
137	Dracut Supply 1 - Baseload	Sch. 6, ln 29								
138	Dracut Supply 2 - Swing	Sch. 6, ln 30								
139	Subtotal Pipeline Volumetric Trans. Costs		$ 30,799	$ 28,837	$ 30,317	$ 26,948	$ 25,581	$ 29,414		$ 171,894
140										
141	TGP Storage - Withdrawals	Sch. 6, ln 32	$ -	$ -	$ -	$ -	$ -	$ -		$ -
142										
143	Total Supply Volumetric Trans. Costs	lns 139 + 141	$ 30,799	$ 28,837	$ 30,317	$ 26,948	$ 25,581	$ 29,414		$ 171,894
144										
145	Total Commodity Gas & Trans. Costs	lns 131 + 143	$ 706,380	$ 492,286	$ 449,191	$ 372,486	$ 404,156	$ 1,075,772		$ 3,500,271
146										
147					**THIS PAGE HAS BEEN REDACTED**					

1 **Liberty Utilities (EnergyNorth Natural Gas) Corp.**

3 **Off Peak 2017 Summer Cost of Gas Filing**
4 **Summary of Supply and Demand Forecast**

Ln	Description	Reference	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Off Peak Period May - Oct
5										
6										
7	For Month of:		May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	May - Oct
148	**D. Supply and Demand Costs by Source**									**REDACTED**
149										
150	Purchased Gas Demand Costs									
151	Pipeline Gas Demand Costs	Ins 54 + 73	$ 1,143,742	$ 1,149,574	$ 1,149,574	$ 1,149,574	$ 1,149,574	$ 1,149,574		$ 6,891,610
152	Peaking Gas Demand Costs	In 81	-	-	-	-	-	-		-
153	Subtotal Purchased Gas Demand Costs		$ 1,143,742	$ 1,149,574	$ 1,149,574	$ 1,149,574	$ 1,149,574	$ 1,149,574		$ 6,891,610
154	Less Capacity Credit	Ins 55 + 74 + 82	(417,466)	(419,594)	(419,594)	(419,594)	(419,594)	(419,594)		(2,515,438)
155	Net Purchased Gas Demand Costs		$ 726,276	$ 729,979	$ 729,979	$ 729,979	$ 729,979	$ 729,979		$ 4,376,173
156										
157	Storage Gas Demand Costs									
158	Storage Demand	In 93	$ -	$ -	$ -	$ -	$ -	$ -		$ -
159	Less Capacity Credit	In 94	-	-	-	-	-	-		-
160	Net Storage Demand Costs		$ -	$ -	$ -	$ -	$ -	$ -		$ -
161										
162	**Total Demand Costs**	Ins 155 + 160	$ 726,276	$ 729,979	$ 729,979	$ 729,979	$ 729,979	$ 729,979		$ 4,376,173
163										
164	Purchased Gas Supply									
165	Commodity Costs	In 114	$ 1,414,750	$ 1,273,449	$ 1,267,269	$ 1,120,606	$ 924,181	$ 1,075,110		$ 7,075,364
166	Less Storage Inj.(TGP Storage)	In 127	[redacted]							
167	Less Storage Transportation	In 128								
168	Less LNG Truck	In 125								
169	Less Propane Truck	In 126								
170	Plus Transportation Costs	In 139								
171	Subtotal Purchased Gas Supply		$ 690,393	$ 477,462	$ 434,091	$ 358,037	$ 390,228	$ 1,060,764		$ 3,410,974
172										
173	Storage Commodity Costs									
174	Commodity Costs	In 117	$ -	$ -	$ -	$ -	$ -	$ -		$ -
175	Transportation Costs	In 141	-	-	-	-	-	-		-
176	Subtotal Storage Commodity Costs		$ -	$ -	$ -	$ -	$ -	$ -		$ -
177										
178	Produced Gas Commodity Costs	In 122	$ 15,987	$ 14,824	$ 15,100	$ 14,449	$ 13,928	$ 15,008		$ 89,297
179										
180	**Subtotal Commodity Costs**	Ins 171 + 176 + 178	$ 706,380	$ 492,286	$ 449,191	$ 372,486	$ 404,156	$ 1,075,772		$ 3,500,271
181										
182	Hedge Contract (Savings)/Loss	Sch 7, In 32	$ -	$ -	$ -	$ -	$ -	$ -		$ -
183										
184	**Total Commodity Costs**	Ins 180 + 182	$ 706,380	$ 492,286	$ 449,191	$ 372,486	$ 404,156	$ 1,075,772		$ 3,500,271
185										
186	**Total Demand Costs**	In 99	$ 726,276	$ 729,979	$ 729,979	$ 729,979	$ 729,979	$ 729,979		$ 4,376,173
187	**Total Supply Costs**	In 184	706,380	492,286	449,191	372,486	404,156	1,075,772		3,500,271
188										
189	**Total Direct Gas Costs**	Ins 186 + 187	$ 1,432,656	$ 1,222,265	$ 1,179,171	$ 1,102,465	$ 1,134,135	$ 1,805,752		$ 7,876,444
190										

191 **THIS PAGE HAS BEEN REDACTED**

Line	Supplier	Contract	Contract Type	Contract Unit	Unit Dth (MDQ/ACQ)	Off Peak Cost per Unit Dth
1	**Liberty Utilities (EnergyNorth Natural Gas) Corp.**					**REDACTED**
3	**Off Peak 2017 Summer Cost of Gas Filing**					
4	**Contracts Ranked on a per Unit Cost Basis**					
7	(a)	(b)	(c)	(d)	(e)	(f)
8						
9	**Demand Costs**					
10	Granite Ridge Demand		Peaking	MDQ	-	[redacted]
11	Niagara Supply		Supply	MDQ	-	
12	Dominion - Capacity Reservation	GSS 300076	Storage	ACQ	102,700	
13	Tenn Gas Pipeline - Cap. Reservations	FS-MA 523	Storage	ACQ	1,560,391	
14	National Fuel - Capacity Reservation	FSS-1 2357	Storage	ACQ	670,800	
15	Tenn Gas Pipeline - Demand	FS-MA 523	Storage	MDQ	21,844	
16	Dominion - Demand	GSS 300076	Storage	MDQ	934	
17	National Fuel - Demand	FSS-1 2357	Storage	MDQ	6,098	
18	National Fuel	FST N02358	Transportation	MDQ	6,098	
19	Tenn Gas Pipeline	42076 FTA Z6-Z6	Transportation	MDQ	20,000	
20	Honeoye - Demand	SS-NY	Storage	MDQ	1,362	
21	Iroquois Gas Trans Service	RTS 470-01	Transportation	MDQ	4,047	
22	Tenn Gas Pipeline	2302 Z5-Z6	Transportation	MDQ	3,122	
23	Tenn Gas Pipeline (short haul)	11234 Z5-Z6(stg)	Transportation	MDQ	1,957	
24	Tenn Gas Pipeline (short haul)	8587 Z4-Z6	Transportation	MDQ	3,811	
25	Tenn Gas Pipeline (short haul)	632 Z4-Z6 (stg)	Transportation	MDQ	15,265	
26	Tenn Gas Pipeline (short haul)	11234 Z4-Z6(stg)	Transportation	MDQ	7,082	
27	Tenn Gas Pipeline (Concord Lateral) Z6-Z6	Firm Transportation	Transportation	MDQ	30,000	
28	Tenn Gas Pipeline	95346 Z5-Z6	Transportation	MDQ	4,000	
29	ANE (TransCanada via Union to Iroquois)	Union Parkway to Iroquois	Transportation	MDQ	4,047	
30	Tenn Gas Pipeline (long haul)	8587 Z1-Z6	Transportation	MDQ	14,561	
31	Tenn Gas Pipeline (long haul)	8587 Z0-Z6	Transportation	MDQ	7,035	
32	Portland Natural Gas Trans Service	FT-1999-001	Transportation	MDQ	1,000	
33						
34	**Supply Costs - Commodity**					
35	TGP Supply (Zone 4)		Pipeline	Dkt	956,919	
36	Niagara Supply		Pipeline	Dkt	364,900	
37	Dracut Supply 2 - Swing		Pipeline	Dkt	43,634	
38	TGP Citygate Supply		Pipeline	Dkt	-	
39	Dracut Supply 1 - Baseload		Pipeline	Dkt	-	
40	TGP Supply (Gulf)		Pipeline	Dkt	1,857,502	
41	Dawn Supply		Pipeline	Dkt	467,398	
42	PNGTS		Pipeline	Dkt	16,059	
43	LNG Truck		Pipeline	Dkt	13,074	
44	LNG Vapor (Storage)		Produced	Dkt	10,923	
45	Propane		Pipeline	Dkt	-	
46						
47	**Supply Costs - Volumetric Transportation**					
48	Dracut Supply 1 - Baseload		Pipeline	Dkt	-	
49	Dracut Supply 2 - Swing		Pipeline	Dkt	43,634	
50	Dawn Supply		Storage	Dkt	467,398	
51	Niagara Supply		Pipeline	Dkt	364,900	
52	TGP Supply (Zone 4)		Pipeline	Dkt	1,857,502	
53						
54		**THIS PAGE HAS BEEN REDACTED**				

1 **Liberty Utilities (EnergyNorth Natural Gas) Corp.**

3 **Off Peak 2017 Summer Cost of Gas Filing**
4 **COG (Over)/Under Cumulative Recovery Balances and Interest Calculation**

Ln																		
5			Prior Period Balance															
6			Plus Nov Collections	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Off Peak Period
7		Days in Month	October 31, 2016	30	31	31	28	31	30	31	30	31	31	30	31	30	Total
8	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)
9	**Account 8840-2-0000-10-1920-1741 (formerly, 175.40) COG (Over)/Under Balance - Interest Calculation**																	
10																		
11	**Beginning Balance**	Account 1920-1741 1/	**$ (727,882)**	$ (727,882)	$ (729,976)	$ (732,146)	$ (734,322)	$ (736,294)	$ (738,482)	$ (740,607)	$ (815,618)	$ (721,134)	$ (532,747)	$ (273,162)	$ (28,923)	$ (9,588)	$ (727,882)
12	Forecast Direct Gas Costs		-	-	-	-	-	-	-	1,432,656	1,222,265	1,179,171	1,102,465	1,134,135	1,805,752	-	7,876,444
13	Production & Storage & Misc Overhead		-	-	-	-	-	-	-	430	430	430	430	430	430		2,581
14	Projected Revenues w/o Int.	ln 52 * ln 62		-	-	-	-	-	-	(416,620)	(1,179,006)	(706,080)	(620,495)	(806,031)	(1,406,420)	(2,005,290)	(7,139,942)
15	Projected Unbilled Revenue	ln 56 * ln 62								(1,089,169)	(1,036,166)	(1,319,439)	(1,541,058)	(1,624,920)	(2,005,290)		(8,616,042)
16	Reverse Prior Month Unbilled										1,089,169	1,036,166	1,319,439	1,541,058	1,624,920	2,005,290	8,616,042
17	Add Net Adjustments (with TGP Refund)		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	Gas Cost Billed	Account 1920-1741 2/	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	Monthly (Over)/Under Recovery		$ (727,882)	$ (727,882)	$ (729,976)	$ (732,146)	$ (734,322)	$ (736,294)	$ (738,482)	$ (813,309)	$ (718,926)	$ (530,886)	$ (271,966)	$ (28,489)	$ (9,531)	$ (9,588)	$ 11,202
20	Average Monthly Balance	(ln 11 + 19)/ 2	$ -	$ (727,882)	$ (729,976)	$ (732,146)	$ (734,322)	$ (736,294)	$ (738,482)	$ (776,958)	$ (767,272)	$ (626,010)	$ (402,357)	$ (150,826)	$ (19,227)	$ (9,588)	
21																		
22	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%		
23																		
24	Interest Applied	ln 20 * ln 22 /365 *Days/Mo.	$ -	$ (2,094)	$ (2,170)	$ (2,176)	$ (1,972)	$ (2,189)	$ (2,124)	$ (2,310)	$ (2,207)	$ (1,861)	$ (1,196)	$ (434)	$ (57)	$ -	$ (20,790)
25																		
26	**(Over)/Under Balance**	ln 19 + ln 24	$ (727,882)	$ (729,976)	$ (732,146)	$ (734,322)	$ (736,294)	$ (738,482)	$ (740,607)	$ (815,618)	$ (721,134)	$ (532,747)	$ (273,162)	$ (28,923)	$ (9,588)	$ (9,588)	(9,588)
27																		
28																		
29	**Calculation of COG with Interest**																	
30																		
31	**Beginning Balance**	ln 11	$ (727,882)	$ (727,882)	$ (729,976)	$ (732,146)	$ (734,322)	$ (736,294)	$ (738,482)	$ (740,607)	$ (813,745)	$ (717,855)	$ (528,228)	$ (267,581)	$ (22,218)	$ (636)	$ (727,882)
32	Forecast Direct Gas Costs	ln 12		-	-	-	-	-	-	1,432,656	1,222,265	1,179,171	1,102,465	1,134,135	1,805,752	-	7,876,444
33	Prod Storage & Misc Overhead	ln 13		-	-	-	-	-	-	430	430	430	430	430	430	-	2,581
34	Projected Revenues with int.	ln 52 * 64		-	-	-	-	-	-	(416,101)	(1,177,539)	(705,202)	(619,722)	(805,028)	(1,404,670)	(2,002,794)	(7,131,056)
35	Projected Unbilled Revenue	ln 56 * 64								(1,087,813)	(1,034,876)	(1,317,797)	(1,539,140)	(1,622,898)	(2,002,794)		(8,605,318)
36	Reverse Prior Month Unbilled										1,087,813	1,034,876	1,317,797	1,539,140	1,622,898	2,002,794	8,605,318
37	Add Net Adjustments	ln 17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
38	Gas Cost Billed	ln 18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
39	Gas Cost Unbilled									-	-	-	-	-	-	-	-
40	Reverse Prior Month Unbilled										-	-	-	-	-	-	-
41	Add Interest	ln 24		-	-	-	-	-	-	(2,310)	(2,207)	(1,861)	(1,196)	(434)	(57)	-	(8,065)
42	**(Over)/Under Balance**		$ (727,882)	$ (727,882)	$ (729,976)	$ (732,146)	$ (734,322)	$ (736,294)	$ (738,482)	$ (813,744)	$ (717,859)	$ (528,237)	$ (267,595)	$ (22,235)	$ (659)	$ (636)	$ 12,023
43																		
44	Average Monthly Balance			$ (727,882)	$ (729,976)	$ (732,146)	$ (734,322)	$ (736,294)	$ (738,482)	$ (777,176)	$ (765,802)	$ (623,046)	$ (397,911)	$ (144,908)	$ (11,439)		
45																		
46	Interest Applied	ln 22 * ln 44 /365 *Days/Mo.		(2,094)	(2,170)	(2,176)	(1,972)	(2,189)	(2,124)	(2,310)	(2,203)	(1,852)	(1,183)	(417)	(34)	-	$ (20,724)
47																		
48	**(Over)/Under Balance**	ln 41 +ln 42 + ln 46	$ (727,882)	$ (729,976)	$ (732,146)	$ (734,322)	$ (736,294)	$ (738,482)	$ (740,607)	$ (813,745)	$ (717,855)	$ (528,228)	$ (267,581)	$ (22,218)	$ (636)	$ (636)	(636)
49																		
50																		
51	Forecast Sendout Therms	Sch 1								4,801,917	3,590,793	3,155,020	2,685,478	2,837,844	5,698,022		22,769,073
52	Less 'Forecast Billing Therm Sales	Sch. 10B, ln 23 May - Oct								1,296,266	3,668,345	2,196,890	1,930,599	2,507,876	4,375,919	6,239,233	22,215,128
53	Less Forecast Unaccounted For	Sch 1								113,864	85,146	74,812	63,679	67,291	135,113		539,905
54	Less Forecast Company Use	Sch 1								2,961	2,214	1,945	1,656	1,750	3,514		14,040
55	Unbilled Volumes									3,388,826	(164,912)	881,372	689,544	260,927	1,183,477	(6,239,233)	0
56	Gross Unbilled									3,388,826	3,223,914	4,105,286	4,794,830	5,055,757	6,239,233	0	
57																		
58	Beg Balance									-	3,388,826	3,223,914	4,105,286	4,794,830	5,055,757	6,239,233	
59	Incremental									3,388,826	(164,912)	881,372	689,544	260,927	1,183,477	(6,239,233)	
60	Ending Balance									3,388,826	3,223,914	4,105,286	4,794,830	5,055,757	6,239,233	-	
61																		
62	COG w/o Interest	Sch. 3, pg. 4, ln 20 col. (c)								$0.3214	$0.3214	$0.3214	$0.3214	$0.3214	$0.3214	$0.3214	
63																		
64	COG With Interest	Sch. 3, pg. 4, ln 20 col. (d)								$0.3210	$0.3210	$0.3210	$0.3210	$0.3210	$0.3210	$0.3210	
65																		
66																		
67																		
68																		

1 **Liberty Utilities (EnergyNorth Natural Gas) Corp.**

3 **Off Peak 2017 Summer Cost of Gas Filing**
4 **COG (Over)/Under Cumulative Recovery Balances and Interest Calculation**

Line			Prior Period Balance Plus Nov Collections October 31, 2016	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Off Peak Period Total
70		Days in Month		30	31	31	28	31	30	31	30	31	31	30	31	30	
71																	
72	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)
73																	
74	**Account 8840-2-0000-10-1163-1424 (formerly, 142.40) Working Capital (Over)/Under Balance - Interest Calculation**																
75																	
76	**Beginning Balance**	Account 1163-1424 1/	$ 8,141	$ 8,141	$ 8,165	$ 8,189	$ 8,213	$ 8,236	$ 8,260	$ 8,284	$ 6,049	$ 4,584	$ 3,440	$ 2,600	$ 1,666	$ (865)	$ 8,141
77																	
78	Days Lag									0.0391	0.0391	0.0391	0.0391	0.0391	0.0391	0.0391	
79	Prime Rate									3.50%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%	
80	Forecast Working Capital	ln 32 * ln 78 / 365 * ln 79		-	-	-	-	-	-	1,961	1,673	1,614	1,509	1,552	2,471	-	10,780
81																	
82	Projected Revenues w/o Int.	ln 121 * ln 124		-	-	-	-	-	-	(1,167)	(3,302)	(1,977)	(1,738)	(2,257)	(3,938)	(5,615)	(19,994)
83	Projected Unbilled Revenue	ln 122 * ln 124								(3,050)	(2,902)	(3,695)	(4,315)	(4,550)	(5,615)		(24,127)
84	Reverse Prior Month Unbilled										3,050	2,902	3,695	4,315	4,550	5,615	24,127
85																	
86	Add Net Adjustments			-	-		-	-	-	-	-	-	-	-	-	-	-
87																	
88	Working Capital Billed	Account 1163-1424 2/															-
89																	
90	Monthly (Over)/Under Recovery		$ 8,141	$ 8,141	$ 8,165	$ 8,189	$ 8,213	$ 8,236	$ 8,260	$ 6,028	$ 4,569	$ 3,428	$ 2,591	$ 1,660	$ (866)	$ (865)	$ (1,072)
91																	
92	Average Monthly Balance	(ln 76 + 90)/ 2		$ 8,141	$ 8,165	$ 8,189	$ 8,213	$ 8,236	$ 8,260	$ 7,156	$ 5,309	$ 4,006	$ 3,015	$ 2,130	$ 400		
93																	
94	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%		
95																	
96	Interest Applied	ln 92 * ln 94 / 365 * Days of Month		$ 23	$ 24	$ 24	$ 22	$ 24	$ 24	$ 21	$ 15	$ 12	$ 9	$ 6	$ 1		$ 207
97																	
98	**(Over)/Under Balance**	ln 90 + ln 96	$ 8,141	$ 8,165	$ 8,189	$ 8,213	$ 8,236	$ 8,260	$ 8,284	$ 6,049	$ 4,584	$ 3,440	$ 2,600	$ 1,666	$ (865)	$ (865)	(865)
99																	
100																	
101	**Calculation of Working Capital with Interest**																
102																	
103	**Beginning Balance**		$ 8,141	$ 8,141	$ 8,165	$ 8,189	$ 8,213	$ 8,236	$ 8,260	$ 8,284	$ 6,049	$ 4,584	$ 3,440	$ 2,599	$ 1,666	$ (865)	$ 8,141
104	Forecast Working Capital	ln 80		-	-	-	-	-	-	1,961	1,673	1,614	1,509	1,552	2,471	-	10,780
105	Projected Rev. with interest	ln 121 * ln 126		-	-	-	-	-	-	(1,167)	(3,302)	(1,977)	(1,738)	(2,257)	(3,938)	(5,615)	(19,994)
106	Projected Unbilled Revenue	ln 122 * ln 126								(3,050)	(2,902)	(3,695)	(4,315)	(4,550)	(5,615)		(24,127)
107	Reverse Prior Month Unbilled										3,050	2,902	3,695	4,315	4,550	5,615	24,127
108	Add Net Adjustments	ln 86	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
109	Working Capital Billed	ln 88	-			-											-
110	WC Unbilled									-	-	-	-	-	-	-	-
111	Reverse WC Unbilled										-	-	-	-	-	-	-
112	Add Interest	ln 96		-	-	-	-	-	-	21	15	12	9	6	1		65
113	Monthly (Over)/Under Recovery		$ 8,141	$ 8,141	$ 8,165	$ 8,189	$ 8,213	$ 8,236	$ 8,260	$ 6,049	$ 4,584	$ 3,440	$ 2,599	$ 1,666	$ (865)	$ (865)	$ (1,007)
114																	
115	Average Monthly Balance			$ 8,141	$ 8,165	$ 8,189	$ 8,213	$ 8,236	$ 8,260	$ 7,167	$ 5,317	$ 4,012	$ 3,020	$ 2,133	$ 400		
116																	
117	Interest Applied	ln 94 * ln 115 / 365 * Days of Month		23	24	24	22	24	24	21	15	12	9	6	1	-	$ 207
118																	
119	**(Over)/Under Balance**	-ln 112 +ln 113 + ln 117	$ 8,141	$ 8,165	$ 8,189	$ 8,213	$ 8,236	$ 8,260	$ 8,284	$ 6,049	$ 4,584	$ 3,440	$ 2,599	$ 1,666	$ (865)	$ (865)	$ (865)
120																	
121	Forecast Therm Sales	ln 51								1,296,266	3,668,345	2,196,890	1,930,599	2,507,876	4,375,919	6,239,233	22,215,128
122	Unbilled Therm	ln 53								3,388,826	3,223,914	4,105,286	4,794,830	5,055,757	6,239,233	-	
123																	
124	Working Cap. Rate w/out Int.	Sch. 3, pg. 4, ln 37 col. (c)								$0.0009	$0.0009	$0.0009	$0.0009	$0.0009	$0.0009	$0.0009	
125																	
126	Working Capital Rate w/ Int.	Sch. 3, pg. 4, ln 37 col. (d)								$0.0009	$0.0009	$0.0009	$0.0009	$0.0009	$0.0009	$0.0009	

1 **Liberty Utilities (EnergyNorth Natural Gas) Corp.**

3 **Off Peak 2017 Summer Cost of Gas Filing**
4 **COG (Over)/Under Cumulative Recovery Balances and Interest Calculation**

Ln																	
130			Prior Period Balance														
131			Plus Nov Collections	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Off Peak Period
132		Days in Month	October 31, 2016	30	31	31	28	31	30	31	30	31	31	30	31	30	Total
133	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)
135	**Account 8840-2-0000-10-1163-1754 (formerly, 175.54) Bad Debt (Over)/Under Balance - Interest Calculation**																
137	Forecast Direct Gas Costs	ln 32		$ -	$ -	$ -	$ -	$ -	$ -	$ 1,432,656	$ 1,222,265	$ 1,179,171	$ 1,102,465	$ 1,134,135	$ 1,805,752	$ -	7,876,444
138	Forecast Working Capital	ln 104 + (May includes prior period)		-	-	-	-	-	-	10,102	1,673	1,614	1,509	1,552	2,471		18,922
139	Prior Period Balance (with Refund)	ln 19 / 6								(121,314)	(121,314)	(121,314)	(121,314)	(121,314)	(121,314)		(727,882)
140	Total Forecast Direct Gas Costs & Working Capital			-	-	-	-	-	-	1,321,445	1,102,624	1,059,471	982,661	1,014,374	1,686,909	-	7,895,366
142	**Beginning Balance**	Account 1163-1754 1/	**$ (22,921)**	$ (22,921)	$ (22,987)	$ (23,055)	$ (23,124)	$ (23,186)	$ (23,255)	$ (23,322)	$ (26,230)	$ (23,725)	$ (17,924)	$ (9,707)	$ (1,969)	$ (534)	$ (22,921)
143		**Oct Collections & Unbilled**															
144	Forecast Bad Debt	ln 140 * 0.0404		-	-	-	-	-	-	53,386	44,546	42,803	39,699	40,981	68,151		289,566
146	Projected Revenues w/o int	ln 182 * ln 185		-	-	-	-	-	-	(15,555)	(44,020)	(26,363)	(23,167)	(30,095)	(52,511)	(74,871)	(266,582)
147	Projected Unbilled Revenue	ln 183 * ln 185								(40,666)	(38,687)	(49,263)	(57,538)	(60,669)	(74,871)		(321,694)
148	Reverse Prior Month Unbilled										40,666	38,687	49,263	57,538	60,669	74,871	321,694
149																	-
150	Bad Debt Billed	Account 1163-1754 2/			-		-	-	-								-
151	Add Net Adjustments	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-
153	Monthly (Over)/Under Recovery		$ (22,921)	$ (22,921)	$ (22,987)	$ (23,055)	$ (23,124)	$ (23,186)	$ (23,255)	$ (26,157)	$ (23,725)	$ (17,862)	$ (9,666)	$ (1,952)	$ (530)	$ (534)	$ 64
155	Average Monthly Balance	(ln 142 + 153)/ 2		$ (22,921)	$ (22,987)	$ (23,055)	$ (23,124)	$ (23,186)	$ (23,255)	$ (24,739)	$ (24,978)	$ (20,794)	$ (13,795)	$ (5,829)	$ (1,249)	$ (534)	
157	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	Interest Applied	ln 155 * ln 157 / 365 * Days of Mo.		$ (66)	$ (68)	$ (69)	$ (62)	$ (69)	$ (67)	$ (74)	$ (72)	$ (62)	$ (41)	$ (17)	$ (4)		$ (669)
161	**(Over)/Under Balance**	ln 153 + ln 159	$ (22,921)	$ (22,987)	$ (23,055)	$ (23,124)	$ (23,186)	$ (23,255)	**$ (23,322)**	$ (26,230)	$ (23,797)	$ (17,924)	$ (9,707)	$ (1,969)	$ (534)	$ (534)	(606)
164	**Calculation of Bad Debt with Interest**																
166	**Beginning Balance**		$ (22,921)	$ (22,921)	$ (22,987)	$ (23,055)	$ (23,124)	$ (23,186)	$ (23,255)	$ (23,322)	$ (26,230)	$ (23,797)	$ (17,996)	$ (9,780)	$ (2,042)	$ (607)	$ (22,921)
167	Forecast Bad Debt	ln 144		-	-	-	-	-	-	53,386	44,546	42,803	39,699	40,981	68,151	-	289,566
168	Projected Revenues with int.	ln 182 * 187		-	-	-	-	-	-	(15,555)	(44,020)	(26,363)	(23,167)	(30,095)	(52,511)	(74,871)	(266,582)
169	Projected Unbilled Revenue	ln 183 * 187								(40,666)	(38,687)	(49,263)	(57,538)	(60,669)	(74,871)		(321,694)
170	Reverse Prior Month Unbilled										40,666	38,687	49,263	57,538	60,669	74,871	321,694
171	Bad Debt Billed	ln 150	-		-	-	-	-	-								-
172	Add Interest	ln 159		-	-	-	-	-	-	(74)	(72)	(62)	(41)	(17)	(4)		(269)
173	Add Net Adjustments	ln 151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
174	Monthly (Over)/Under Recovery		$ (22,921)	$ (22,921)	$ (22,987)	$ (23,055)	$ (23,124)	$ (23,186)	$ (23,255)	$ (26,230)	$ (23,797)	$ (17,996)	$ (9,779)	$ (2,041)	$ (607)	$ (607)	$ (205)
176	Average Monthly Balance	(ln 166 + 174)/ 2		$ (22,921)	$ (22,987)	$ (23,055)	$ (23,124)	$ (23,186)	$ (23,255)	$ (24,776)	$ (25,014)	$ (20,897)	$ (13,888)	$ (5,910)	$ (1,324)	$ (607)	
178	Interest Applied	ln 157 * ln 176 / 365 * Days of Month		(66)	(68)	(69)	(62)	(69)	(67)	(74)	(72)	(62)	(41)	(17)	(4)	-	$ (671)
180	**(Over)/Under Balance**	-ln 172 +ln 174 + ln 178	$ (22,921)	$ (22,987)	$ (23,055)	$ (23,124)	$ (23,186)	$ (23,255)	$ (23,322)	$ (26,230)	$ (23,797)	$ (17,996)	$ (9,780)	$ (2,042)	$ (607)	$ (607)	$ (607)
182	Forecast Therm Sales	ln 51								1,296,266	3,668,345	2,196,890	1,930,599	2,507,876	4,375,919	6,239,233	22,215,128
183	Unbilled Therm	ln 53								3,388,826	3,223,914	4,105,286	4,794,830	5,055,757	6,239,233		
185	COG Rate Without Interest	Sch. 3, pg. 4, ln 54 col. (c)								$0.0120	$0.0120	$0.0120	$0.0120	$0.0120	$0.0120	$0.0120	
187	COG With Interest	Sch. 3, pg. 4, ln 54 col. (d)								$0.0120	$0.0120	$0.0120	$0.0120	$0.0120	$0.0120	$0.0120	

Ln																	
2	**Total Interest**	lns 46 + 117 + 178		$ (2,136)	$ (2,214)	$ (2,221)	$ (2,012)	$ (2,233)	$ (2,168)	$ (2,363)	$ (2,260)	$ (1,902)	$ (1,215)	$ (428)	$ (37)	$ -	$ (21,188)

1 **Liberty Utilities (EnergyNorth Natural Gas) Corp.**

3 **Off Peak 2017 Summer Cost of Gas Filing**
4 **COG (Over)/Under Cumulative Recovery Balances and Interest Calculation**

Ln			COG Rate Without Interest	COG Rate With Interest
4	**Calculation of COG**			
5	(a)	(b)	(c)	(d)
6	(Over)Under Recovery Balance	ln 11, col. (d)	$ (722,398)	$ (722,398)
7				
8	Unadjusted Forecast of Gas Costs	ln 12, col. (q)	7,876,444	7,876,444
9				
10	Production & Storage and Misc Ove	ln 13, col. (q)	2,581	2,581
11				
12	Adjustments	ln 17, col. (q)	(17,371)	(17,371)
13				
14	Interest May - Oct	ln 46, col. (q)	-	$ (8,065)
15				
16	Total Gas To Be Recovered		$ 7,139,256	$ 7,131,191
17				
18	Forecast Gas Sales (May - Oct)	ln 52, col. (q)	22,215,128	22,215,128
19				
20	Preliminary COG Rate	ln 16 / 18	$0.3214	$0.3210
21				
22				
			Working Capital Rate without interest	Working Capital Rate with Interest
23	**Calculation of Working Capital Rate**			
24	(a)	(b)	(c)	(d)
25	(Over)Under Recovery Balance	ln 76, col. (q)	$ 8,152	$ 8,152
26				
27	Unadjusted Working Capital Forecast	ln 80, col. (q)	10,780	10,780
28				
29	Adjustments without interest	ln 86, col. (q)	-	-
30				
31	Interest May - Oct	ln 117, col. (q)	-	$ (11)
32				
33	Total Gas To Be Recovered		$ 18,933	$ 18,922
34				
35	Forecast Gas Sales	ln 51, col. (q)	22,215,128	22,215,128
36				
37	Preliminary Working Capital COG F	ln 33 / 35	$0.0009	$0.0009
38				
39				
			Bad Debt Rate without Interest	Bad Debt Rate with interest
40	**Calculation of Bad Debt Rate**			
41	(a)	(b)	(c)	
42	(Over)Under Recovery Balance	ln 142, col. (q)	$ (22,898)	$ (22,898)
43				
44	Unadjusted Bad Debt Forecast	ln 144, col. (q)	289,566	289,566
45				
46	Adjustments without interest	ln 151, col. (q)	-	-
47				
48	Interest May - Oct	ln 178, col. (q)	-	$ (23)
49				
50	Total Gas To Be Recovered		$ 266,668	$ 266,645
51				
52	Forecast Gas Sales (May - Oct)	ln 51, col. (q)	22,215,128	22,215,128
53				
54	Preliminary Bad Debt COG Rate	ln 50 / 52	$0.0120	$0.0120

1 **Liberty Utilities (EnergyNorth Natural Gas) Corp.**

3 **Off Peak 2017 Summer Cost of Gas Filing**
4 **Adjustments to Gas Costs**
5

Line	Adjustments	Prior Period Adjustments	Refunds from Suppliers / Pipelines	Broker Revenue	Fuel Financing	Transportation CGA Revenues	Interruptible Sales Margin	Off System Sales Margin	Capacity Release Margin	Net Option Premiums	Fixed Price Option Administrative Costs	Total Adjustments
7	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(m)
8												
9	Nov-16	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
10	Dec-16	-	-	-	-	-	-	-	-	-	-	-
11	Jan-17	-	-	-	-	-	-	-	-	-	-	-
12	Feb-17	-		-	-	-	-	-	-	-	-	-
13	Mar-17	-	-	-	-	-	-	-	-	-	-	-
14	Apr-17	-	-	-	-	-	-	-	-	-	-	-
15	May-17	-	-	-	-	-	-	-	-	-	-	-
16	Jun-17	-	-	-	-	-	-	-	-	-	-	-
17	Jul-17	-	-	-	-	-	-	-	-	-	-	-
18	Aug-17	-	-	-	-	-	-	-	-	-	-	-
19	Sep-17	-	-	-	-	-	-	-	-	-	-	-
20	Oct-17	-	-	-	-	-	-	-	-	-	-	-
21												
22	Total Off Peak Period	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -

1	**Liberty Utilities (EnergyNorth Natural Gas) Corp.**										**REDACTED**
3	**Off Peak 2017 Summer Cost of Gas Filing**										
4	**Demand Costs**										
5											
6										Off Peak	Peak
7										May - Oct	May - Oct
8		Peak	Reference	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Total	Total
9	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
10											
11	**Supply**										
12	Niagara Supply		Sch 5B, ln 9 * Sch 5C ln 9 x days	[redacted]							
13	Subtotal Supply Demand & Reservation Charges										
14											
15	**Pipeline**										
16	Iroquois Gas Trans Service RTS 470-0		Sch 5B, ln 12 * Sch 5C ln 12 x days	[redacted]							
17	Tenn Gas Pipeline 95346 Z5-Z6		Sch 5B, ln 13 * Sch 5C ln 14 x days								
18	Tenn Gas Pipeline 2302 Z5-Z6		Sch 5B, ln 14 * Sch 5C ln 16 x days								
19	Tenn Gas Pipeline 8587 Z0-Z6		Sch 5B, ln 15 * Sch 5C ln 18 x days								
20	Tenn Gas Pipeline 8587 Z1-Z6		Sch 5B, ln 16 * Sch 5C ln 20 x days								
21	Tenn Gas Pipeline 8587 Z4-Z6		Sch 5B, ln 17 * Sch 5C ln 22 x days								
22	Tenn Gas Pipeline (Dracut) 42076 Z6-Z6		Sch 5B, ln 18 * Sch 5C ln 24 x days								
23	Tenn Gas Pipeline (Concord Lateral) Z6-Z6		Sch 5B, ln 19 * Sch 5C ln 26 x days								
24	Portland Natural Gas Trans Service		Sch 5B, ln 20 * Sch 5C ln 28 x days								
25	ANE (TransCanada via Union to Iroquois)		Sch 5B, ln 21 * Sch 5C ln 44 x days								
26	Tenn Gas Pipeline Z4-Z6 stg 632	peak	Sch 5B, ln 22 * Sch 5C ln 30 x days								
27	Tenn Gas Pipeline Z4-Z6 stg 11234	peak	Sch 5B, ln 23 * Sch 5C ln 32 x days								
28	Tenn Gas Pipeline Z5-Z6 stg 11234	peak	Sch 5B, ln 24 * Sch 5C ln 34 x days								
29	National Fuel FST 2358	peak	Sch 5B, ln 25 * Sch 5C ln 36 x days								
30											
31	Subtotal Pipeline Demand Charges			$ 1,362,383	$ 1,368,214	$ 1,368,214	$ 1,368,214	$ 1,368,214	$ 1,368,214	$ 6,891,610	$ 1,311,842
32											
33	**Peaking Supply**										
34	Tenn Gas Pipeline (Concord Lateral) Z6-Z6	peak	Sch 5B, ln 28 * Sch 5C ln 26 x days	[redacted]							
35	Granite Ridge Demand	peak	Sch 5B, ln 29 * Sch 5C ln 47 x days								
36	DOMAC Demand NSB041	peak	Per Contract								
37	Subtotal Peaking Demand Charges										
38											
39	**Subtotal Supply, Pipeline & Peaking**		ln 13 + ln 31 + ln 37	$ 1,362,383	$ 1,368,214	$ 1,368,214	$ 1,368,214	$ 1,368,214	$ 1,368,214	$ 6,891,610	$ 1,311,842
40											
41	Less Transportation Capacity Credit			$ (497,270)	$ (499,398)	$ (499,398)	$ (499,398)	$ (499,398)	$ (499,398)	$ (2,515,438)	$ (478,822)
42											
43	**Total Supply, Pipeline & Peaking Demand**			$ 865,113	$ 868,816	$ 868,816	$ 868,816	$ 868,816	$ 868,816	$ 4,376,173	$ 833,020
44											

1	**Liberty Utilities (EnergyNorth Natural Gas) Corp.**										
2											
3	**Off Peak 2017 Summer Cost of Gas Filing**										
4	**Demand Costs**										
5											
6										Off Peak	Peak
7										May - Oct	May - Oct
8		Peak	Reference	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Total	Total
9	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
45	**Storage**										
46	Dominion - Demand	peak	Sch 5B, ln 33 * Sch 5C ln 51 x days	$ 1,739	$ 1,739	$ 1,739	$ 1,739	$ 1,739	$ 1,739	$ -	$ 10,434
47	Dominion - Storage	peak	Sch 5B, ln 34 * Sch 5C ln 52 x days	1,489	1,489	1,489	1,489	1,489	1,489	-	8,935
48	Honeoye - Demand	peak	Sch 5B, ln 35 * Sch 5C ln 55 x days	8,744	8,744	8,744	8,744	8,744	8,744	-	52,466
49	National Fuel - Demand	peak	Sch 5B, ln 37 * Sch 5C ln 57 x days	14,836	14,836	14,836	14,836	14,836	14,836	-	89,015
50	National Fuel - Capacity	peak	Sch 5B, ln 38 * Sch 5C ln 58 x days	25,021	25,021	25,021	25,021	25,021	25,021	-	150,125
51	Tenn Gas Pipeline - Demand	peak	Sch 5B, ln 39 * Sch 5C ln 61 x days	32,696	32,696	32,696	32,696	32,696	32,696	-	196,177
52	Tenn Gas Pipeline - Capacity	peak	Sch 5B, ln 40 * Sch 5C ln 62 x days	31,988	31,988	31,988	31,988	31,988	31,988	-	191,928
53											
54	**Subtotal Storage Demand Costs**			$ 116,513	$ 116,513	$ 116,513	$ 116,513	$ 116,513	$ 116,513	$ -	$ 699,079
55											
56	Less Transportation Capacity Credit			$ (42,527)	$ (42,527)	$ (42,527)	$ (42,527)	$ (42,527)	$ (42,527)	$ -	$ (255,164)
57											
58	**Total Storage Demand Costs**		ln 54 + ln 56	$ 73,986	$ 73,986	$ 73,986	$ 73,986	$ 73,986	$ 73,986	$ -	$ 443,915
59											
60	**Total Demand Charges**		ln 39 + ln 54	$ 1,478,896	$ 1,484,727	$ 1,484,727	$ 1,484,727	$ 1,484,727	$ 1,484,727	$ 6,891,610	$ 2,010,922
61											
62	Total Transportation Capacity Credit		ln 41 + ln 56	$ (539,797)	$ (541,925)	$ (541,925)	$ (541,925)	$ (541,925)	$ (541,925)	$ (2,515,438)	$ (733,986)
63											
64	**Total Demand Charges less Cap. Cr.**		ln 60 + ln 62	$ 939,099	$ 942,802	$ 942,802	$ 942,802	$ 942,802	$ 942,802	$ 4,376,173	$ 1,276,935
65											
66							**THIS PAGE HAS BEEN REDACTED**				
67	Monthly Off Peak Demand			$ 1,143,742	$ 1,149,574	$ 1,149,574	$ 1,149,574	$ 1,149,574	$ 1,149,574	$ 6,891,610	$ -
68	Monthly Off Peak Transportation Cap Credit			(417,466)	(419,594)	(419,594)	(419,594)	(419,594)	(419,594)	(2,515,438)	-
69	**Total Off Peak Demand**			$ 726,276	$ 729,979	$ 729,979	$ 729,979	$ 729,979	$ 729,979	$ 4,376,173	$ -
70											
71	Monthly Peak Demand			$ 335,154	$ 335,154	$ 335,154	$ 335,154	$ 335,154	$ 335,154	$ -	$ 2,010,922
72	Monthly Peak Transportation Cap Credit			(122,331)	(122,331)	(122,331)	(122,331)	(122,331)	(122,331)	-	(733,986)
73	**Total Peak Demand**			$ 212,823	$ 212,823	$ 212,823	$ 212,823	$ 212,823	$ 212,823	$ -	$ 1,276,935

Liberty Utilities (EnergyNorth Natural Gas) Corp.

Off Peak 2017 Summer Cost of Gas Filing
<u>Demand Volumes</u>

	Peak	Reference	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
Supply								
Niagara Supply			0	0	0	0	0	0
Pipeline								
Iroquois Gas Trans Service		RTS 470-01	4,047	4,047	4,047	4,047	4,047	4,047
Tenn Gas Pipeline		95346 Z5-Z6	4,000	4,000	4,000	4,000	4,000	4,000
Tenn Gas Pipeline		2302 Z5-Z6	3,122	3,122	3,122	3,122	3,122	3,122
Tenn Gas Pipeline (long haul)		8587 Z0-Z6	7,035	7,035	7,035	7,035	7,035	7,035
Tenn Gas Pipeline (long haul)		8587 Z1-Z6	14,561	14,561	14,561	14,561	14,561	14,561
Tenn Gas Pipeline (short haul)		8587 Z4-Z6	3,811	3,811	3,811	3,811	3,811	3,811
Tenn Gas Pipeline		42076 FTA Z6-Z6	20,000	20,000	20,000	20,000	20,000	20,000
Tenn Gas Pipeline (Concord Lateral)		Firm Transportation	30,000	30,000	30,000	30,000	30,000	30,000
Portland Natural Gas Trans Service		FT-1999-001	1,000	1,000	1,000	1,000	1,000	1,000
ANE (TransCanada via Union to Iroquois)		Union Parkway to Iroquois	4,047	4,047	4,047	4,047	4,047	4,047
Tenn Gas Pipeline (short haul)	peak	632 Z4-Z6 (stg)	15,265	15,265	15,265	15,265	15,265	15,265
Tenn Gas Pipeline (short haul)	peak	11234 Z4-Z6(stg)	7,082	7,082	7,082	7,082	7,082	7,082
Tenn Gas Pipeline (short haul)	peak	11234 Z5-Z6(stg)	1,957	1,957	1,957	1,957	1,957	1,957
National Fuel	peak	FST N02358	6,098	6,098	6,098	6,098	6,098	6,098
Peaking								
Tenn Gas Pipeline (Concord Lateral)	peak		0	0	0	0	0	0
Granite Ridge Demand	peak		0	0	0	0	0	0
DOMAC Liquid Demand Charge	peak	NSB041						
Storage								
Dominion - Demand	peak	GSS 300076	934	934	934	934	934	934
Dominion - Capacity Reservation	peak	GSS 300076	102,700	102,700	102,700	102,700	102,700	102,700
Honeoye - Demand	peak	SS-NY	1,362	1,362	1,362	1,362	1,362	1,362
Honeoye - Capacity	peak	SS-NY	245,380	245,380	245,380	245,380	245,380	245,380
National Fuel - Demand	peak	FSS-1 2357	6,098	6,098	6,098	6,098	6,098	6,098
National Fuel - Capacity Reservation	peak	FSS-1 2357	670,800	670,800	670,800	670,800	670,800	670,800
Tenn Gas Pipeline - Demand	peak	FS-MA 523	21,844	21,844	21,844	21,844	21,844	21,844
Tenn Gas Pipeline - Cap. Reservations	peak	FS-MA 523	1,560,391	1,560,391	1,560,391	1,560,391	1,560,391	1,560,391

Liberty Utilities (EnergyNorth Natural Gas) Corp.
d/b/a Liberty Utilities
Off Peak 2017 Summer Cost of Gas Filing
Demand Rates

				May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17
Tariff Rates				31	30	31	31	30	31	30
				Unit Rate	Unit Rate	Unit Rate	Unit Rate	Unit Rate	Unit Rate	Avg Rate
Supply										
Niagara Supply		$0.0000	Per Contract	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
Pipeline										
Iroquois Gas Trans Service	RTS 470-01	$6.5971	First Revised Sheet No. 4	$0.2128	$0.2199	$0.2128	$0.2128	$0.2199	$0.2128	$0.2152
Tenn Gas Pipeline	95346 Z5-Z6	$7.1551	9th Rev Sheet No. 14	$0.4746	$0.4904	$0.4746	$0.4746	$0.4904	$0.4746	$0.4799
Tenn Gas Pipeline	2302 Z5-Z6	$7.1551	9th Rev Sheet No. 14	$0.2308	$0.2385	$0.2308	$0.2308	$0.2385	$0.2308	$0.2334
Tenn Gas Pipeline	8587 Z0-Z6	$23.2157	FT-A (Z0 - Z6)	$0.7489	$0.7739	$0.7489	$0.7489	$0.7739	$0.7489	$0.7572
Tenn Gas Pipeline	8587 Z1-Z6	$20.6076	FT-A (Z1 - Z6)	$0.6648	$0.6869	$0.6648	$0.6648	$0.6869	$0.6648	$0.6721
Tenn Gas Pipeline	8587 Z4-Z6	$8.1463	FT-A (Z4 - Z6)	$0.2628	$0.2715	$0.2628	$0.2628	$0.2715	$0.2628	$0.2657
TGP Dracut	42076 FTA Z6-Z6	$4.7435	9th Rev Sheet No. 14	$0.1530	$0.1581	$0.1530	$0.1530	$0.1581	$0.1530	$0.1547
TGP Concord Lateral	Firm Transportatio	$12.1898	Per contract	$0.3932	$0.4063	$0.3932	$0.3932	$0.4063	$0.3932	$0.3976
Portland Natural Gas	FT-1999-001	$25.9843	Part 4.1 v.5.0.0	$0.8382	$0.8661	$0.8382	$0.8382	$0.8661	$0.8382	$0.8475
Tenn Gas Pipeline	632 Z4-Z6 (stg)	$8.1463	9th Rev Sheet No. 14	$0.2628	$0.2715	$0.2628	$0.2628	$0.2715	$0.2628	$0.2657
Tenn Gas Pipeline	11234 Z4-Z6(stg)	$8.1463	9th Rev Sheet No. 14	$0.2628	$0.2715	$0.2628	$0.2628	$0.2715	$0.2628	$0.2657
Tenn Gas Pipeline	11234 Z5-Z6(stg)	$7.1551	9th Rev Sheet No. 14	$0.2308	$0.2385	$0.2308	$0.2308	$0.2385	$0.2308	$0.2334
National Fuel	FST N02358	$3.7049	4.010 Version 14.0.0 Pg 1	$0.1195	$0.1235	$0.1195	$0.1195	$0.1235	$0.1195	$0.1208
ANE Union Gas		$2.8830								
TransCanada Pipelines Limited		$15.09945	Union Parkway to Iroquois							
Delivery Pressure Demand Charge		1.0123	Union Parkway to Iroquois							
Sub Total Demand Charges		18.9947								
Conversion rate GJ to MMBTU		1.0551								
Conversion rate to US$		1.3361	updated 7/28/15							
Demand Rate/US$		$15.0001		$0.4839	$0.5000	$0.4839	$0.4839	$0.5000	$0.4839	$0.4892
Peaking										
Granite Ridge Demand		$0.0000	Per Contract	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
DOMAC Demand NSB041		$0.0000	Per Contract	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
Storage										
Dominion - Demand	GSS 300076	$1.8618	Rec No 10.30 Ver 16.0.0	$0.0601	$0.0621	$0.0601	$0.0601	$0.0621	$0.0601	$0.0609
Dominion - Capacity	GSS 300076	$0.0145	Rec No 10.30 Ver 16.0.0	$0.0005	$0.0005	$0.0005	$0.0005	$0.0005	$0.0005	$0.0005
		$1.8763		$0.0605	$0.0625	$0.0605	$0.0605	$0.0625	$0.0605	$0.0613
Honeoye - Demand	SS-NY	$6.4187	Sub 1st Rev Sheet No. 5	$0.2071	$0.2140	$0.2071	$0.2071	$0.2140	$0.2071	$0.2098
National Fuel - Demand	FSS-1 2357	$2.4329	4.020 Version 10.0.0 Pg 1	$0.0785	$0.0811	$0.0785	$0.0785	$0.0811	$0.0785	$0.0795
National Fuel - Capacity	FSS-1 2357	$0.0373	4.020 Version 10.0.0 Pg 1	$0.0012	$0.0012	$0.0012	$0.0012	$0.0012	$0.0012	$0.0012
		$2.4702		$0.0797	$0.0823	$0.0797	$0.0797	$0.0823	$0.0797	$0.0807
Tenn Gas Pipeline	FS-MA 523	$1.4968	12th Rev Sheet No.61	$0.0483	$0.0499	$0.0483	$0.0483	$0.0499	$0.0483	$0.0489
Tenn Gas Pipeline - Space	FS-MA 523	$0.0205	12th Rev Sheet No.61	$0.0007	$0.0007	$0.0007	$0.0007	$0.0007	$0.0007	$0.0007
		$1.5173		$0.0489	$0.0506	$0.0489	$0.0489	$0.0506	$0.0489	$0.0496

1 **Liberty Utilities (EnergyNorth Natural Gas) Corp.** **REDACTED**

3 **Off Peak 2017 Summer Cost of Gas Filing**
4 **Supply and Commodity Costs, Volumes and Rates**

Line	For Month of:	Reference	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Off-Peak May - Oct
7	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
9	**Supply and Commodity Costs**								
11	**Pipeline Gas:**								
12	Dawn Supply	ln 63 * ln 102	[redacted]						
13	Niagara Supply	ln 64 * ln 107							
14	TGP Supply (Gulf)	ln 65 * ln 123							
15	Dracut Supply 1 - Baseload	ln 66 * ln 112							
16	Dracut Supply 2 - Swing	ln 67 * ln 117							
17	City Gate Delivered Supply	ln 68 * ln 129							
18	LNG Truck	ln 69 * ln 131							
19	Propane Truck	ln 70 * ln 133							
20	PNGTS	ln 71 * ln 138							
21	TGP Supply (Zone 4)	ln 72 * ln 143							
23	Subtotal Pipeline Gas Costs		$ 1,414,750	$ 1,273,449	$ 1,267,269	$ 1,120,606	$ 924,181	$ 1,075,110	$ 7,074,677
25	**Volumetric Transportation Costs**								
26	Dawn Supply	ln 63 * ln 176	[redacted]						
27	Niagara Supply	ln 64 * ln 187							
28	TGP Supply (Zone 4)	ln 72 * ln 224							
29	Dracut Supply 1 - Baseload	ln 66 * ln 235							
30	Dracut Supply 2 - Swing	ln 67 * ln 235							
31	City Gate Delivered Supply	ln 68 * ln 235							
32	TGP Storage - Withdrawals	ln 77 * ln 165							
34	**Total Volumetric Transportation Costs**		$ 30,799	$ 28,837	$ 30,317	$ 26,948	$ 25,581	$ 29,414	$ 171,894
36	**Less - Gas Refill:**								
37	LNG Truck	ln 86 * ln 150	[redacted]						
38	Propane	ln 87 * ln 151							
39	TGP Storage Refill	ln 88 * ln 121							
40	Storage Refill (Trans.)	ln 88 * ln 214							
42	Subtotal Refills		$ (755,155)	$ (824,823)	$ (863,494)	$ (789,517)	$ (559,534)	$ (43,760)	$ (3,836,284)
44	**Total Supply & Pipeline Commodity Costs**	ln 23 + ln 34 + ln 42	$ 690,393	$ 477,462	$ 434,091	$ 358,037	$ 390,228	$ 1,060,764	$ 3,410,974
46	**Storage Gas:**								
47	TGP Storage - Withdrawals	ln 77 * ln 157	$ -	$ -	$ -	$ -	$ -	$ -	$ -
49	**Produced Gas:**								
50	LNG Vapor	ln 80 * ln 145	[redacted]						
51	Propane	ln 81 * ln 147							
53	**Total Produced Gas**	ln 50 + ln 51	$ 15,987	$ 14,824	$ 15,100	$ 14,449	$ 13,928	$ 15,008	$ 89,297
56	**Total Commodity Gas & Trans. Costs**	ln 44 + ln 47 + ln 53	$ 706,380	$ 492,286	$ 449,191	$ 372,486	$ 404,156	$ 1,075,772	$ 3,500,271

58 **THIS PAGE HAS BEEN REDACTED**

1 **Liberty Utilities (EnergyNorth Natural Gas) Corp.**

3 **Off Peak 2017 Summer Cost of Gas Filing**

4 **Supply and Commodity Costs, Volumes and Rates**

Line									
5									Off-Peak
6	For Month of:	Reference	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	May - Oct
7	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
59									Off-Peak
60	**Volumes (Therms)**								
61									
62	**Pipeline Gas:**	See Schedule 11A							
63	Dawn Supply		828,493	776,108	788,755	754,758	729,210	796,657	4,673,981
64	Niagara Supply		646,759	606,011	615,738	589,198	569,392	621,906	3,649,004
65	TGP Supply (Gulf)		4,586,108	3,866,311	3,436,809	2,745,128	1,754,359	2,186,308	18,575,023
66	Dracut Supply 1 - Baseload		-	-	-	-	-	-	-
67	Dracut Supply 2 - Swing		2,673	-	-	-	-	433,664	436,336
68	City Gate Delivered Supply		-	-	-	-	-	-	-
69	LNG Truck		23,385	-	-	-	88,721	18,631	130,737
70	Propane Truck		76,836	74,377	73,151	69,998	69,883	35,978	400,222
71	PNGTS		32,739	22,636	20,991	20,086	24,307	39,833	160,593
72	TGP Supply (Zone 4)		1,702,419	1,595,549	1,620,764	1,551,515	1,497,920	1,601,023	9,569,189
73									
74	Subtotal Pipeline Volumes		7,899,410	6,940,992	6,556,209	5,730,683	4,733,790	5,734,000	37,595,084
75									
76	**Storage Gas:**								
77	TGP Storage		-	-	-	-	-	-	-
78									
79	**Produced Gas:**								
80	LNG Vapor		19,376	18,109	18,447	17,652	17,015	18,631	109,230
81	Propane		-	-	-	-	-	-	-
82									
83	Subtotal Produced Gas		19,376	18,109	18,447	17,652	17,015	18,631	109,230
84									
85	**Less - Gas Refill:**								
86	LNG Truck		(23,385)	-	-	-	(88,721)	(18,631)	(130,737)
87	Propane		(76,836)	(74,377)	(73,151)	(69,998)	(69,883)	(35,978)	(400,222)
88	TGP Storage Refill		(3,016,649)	(3,293,931)	(3,346,484)	(2,992,859)	(1,754,359)	-	(14,404,282)
89									
90	Subtotal Refills		(3,116,870)	(3,368,308)	(3,419,635)	(3,062,857)	(1,912,962)	(54,610)	(14,935,241)
91									
92	**Total Sendout Volumes**		4,801,917	3,590,793	3,155,020	2,685,478	2,837,844	5,698,022	22,769,073
93									
94									
95									

1 **Liberty Utilities (EnergyNorth Natural Gas) Corp.** **REDACTED**
3 **Off Peak 2017 Summer Cost of Gas Filing**
4 **Supply and Commodity Costs, Volumes and Rates**

5									Off-Peak
6	For Month of:	Reference	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	May - Oct
7	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
96	**Gas Costs and Volumetric Transportation Rates**								**REDACTED**
97									
98	**Pipeline Gas:**								
99	**Dawn Supply**								Average Rate
100	NYMEX Price	Sch 7, ln 10/10	[redacted]						
101	Basis Differential								
102	**Net Commodity Costs**								
103									
104	**Niagara Supply**								
105	NYMEX Price	Sch 7, ln 10/10	[redacted]						
106	Basis Differential								
107	**Net Commodity Costs**								
108									
109	**Dracut Supply 1 - Baseload**								
110	Commodity Costs - NYMEX Price	Sch 7, ln 10 / 10	[redacted]						
111	Basis Differential								
112	**Net Commodity Costs**								
113									
114	**Dracut Supply 2 - Swing**								
115	Commodity Costs - NYMEX Price	Sch 7, ln 10 / 10	[redacted]						
116	Basis Differential								
117	**Net Commodity Costs**								
118									
119									
120	**TGP Supply (Gulf)**								
121	NYMEX Price	Sch 7, ln 10/10	[redacted]						
122	Basis Differential								
123	**Net Commodity Costs**								
124									
125									
126	**TGP Citygate Supply**								
127	NYMEX Price	Sch 7, ln 10/10	[redacted]						
128	Basis Differential								
129	**Net Commodity Costs**								
130									
131	**LNG Truck**	Sch 7, ln 10/10	**$0.7929**	**$0.7967**	**$0.8003**	**$0.8011**	**$0.7986**	**$0.8013**	**$0.7985**
132									
133	**Propane Truck**	NYMEX - Propane	**$0.7929**	**$0.7967**	**$0.8003**	**$0.8011**	**$0.7986**	**$0.8013**	**$0.7985**
134									
135	**PNGTS**								
136	NYMEX Price	Sch 7, ln 10/10	[redacted]						
137	Additional Cost								
138	**Net Commodity Cost**								
139									
140	**TGP Supply (Zone 4)**								
141	NYMEX Price	Sch 7, ln 10/10	[redacted]						
142	Basis Differential								
143	**Net Commodity Cost**								
144									
145	**LNG Vapor (Storage)**	Sch 13, ln 95 /10	**$0.8251**	**$0.8186**	**$0.8186**	**$0.8186**	**$0.8186**	**$0.8055**	**$0.8175**
146									
147	**Propane**	Sch 13, ln 66 /10	**$0.9552**	**$0.9360**	**$0.9217**	**$0.9104**	**$0.9012**	**$0.8936**	**$0.9197**
148									
149	**Storage Refill:**								
150	**LNG Truck**	ln 131	**$0.7929**	**$0.7967**	**$0.8003**	**$0.8011**	**$0.7986**	**$0.8013**	**$0.7985**
151	**Propane**	ln 133	**$0.7929**	**$0.7967**	**$0.8003**	**$0.8011**	**$0.7986**	**$0.8013**	**$0.7985**
152									

153 **THIS PAGE HAS BEEN REDACTED**

1	**Liberty Utilities (EnergyNorth Natural Gas) Corp.**								**REDACTED**
3	**Off Peak 2017 Summer Cost of Gas Filing**								
4	**Supply and Commodity Costs, Volumes and Rates**								
5									Off-Peak
6	For Month of:	Reference	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	May - Oct
7	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
154									**REDACTED**
155									Average Rate
156	**Per Unit Volumetric Transportation Rates**								
157	**Dawn Supply Volumetric Transportation Charge**								
158	**Commodity Costs**	ln 102							
159									
160	TransCanada - Commodity Rate/GJ	Union Parkway to Iroquois	$0.00000	$0.00000	$0.00000	$0.00000	$0.00000	$0.00000	$0.00000
161	Conversion Rate GL to MMBTU		1.0551	1.0551	1.0551	1.0551	1.0551	1.0551	1.0551
162	Conversion Rate to US$	updated 7/28/15	1.3361	1.3361	1.3361	1.3361	1.3361	1.3361	1.3361
163	Commodity Rate/US$	ln 160 x ln 161 x ln 162	$0.00000	$0.00000	$0.00000	$0.00000	$0.00000	$0.00000	$0.00000
164	TransCanada Fuel %	Union Parkway to Iroquois	1.08%	0.95%	1.33%	0.00%	0.00%	0.00%	0.56%
165	TransCanada Fuel * Percentage	ln 158 x ln 164	$0.00218	$0.00197	$0.00280	$0.00000	$0.00000	$0.00000	$0.00116
166	Subtotal TransCanada		**$0.00218**	**$0.00197**	**$0.00280**	**$0.00000**	**$0.00000**	**$0.00000**	**$0.00116**
167	IGTS - Z1 RTS Commodity	First Revised Sheet No. 4	$0.00030	$0.00030	$0.00030	$0.00030	$0.00030	$0.00030	$0.00030
168	IGTS - Z1 RTS ACA Rate Commodity	Fifth Revised Sheet 4A	$0.00014	$0.00014	$0.00014	$0.00014	$0.00014	$0.00014	$0.00014
169	IGTS - Z1 RTS Deferred Asset Surcharge	Fifth Revised Sheet 4A	$0.00000	$0.00000	$0.00000	$0.00000	$0.00000	$0.00000	$0.00000
170	Subtotal IGTS - Trans Charge - Z1 RTS Commodity		**$0.00044**	**$0.00044**	**$0.00044**	**$0.00044**	**$0.00044**	**$0.00044**	**$0.00044**
171	TGP NET-NE - Comm. Segments 3 & 4	12th Rev Sheet No. 15	$0.00014	$0.00014	$0.00014	$0.00014	$0.00014	$0.00014	$0.00014
172	IGTS -Fuel Use Factor - Percentage	Fifth Revised Sheet 4A	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
173	IGTS -Fuel Use Factor - Fuel * Percentage	ln 158 x ln 172	**$0.00202**	**$0.00208**	**$0.00211**	**$0.00215**	**$0.00217**	**$0.00225**	**$0.00213**
174	TGP FTA Fuel Charge % Z 5-6	11th Rev Sheet No. 32	0.62%	0.62%	0.62%	0.62%	0.62%	0.62%	0.62%
175	TGP FTA Fuel * Percentage	ln 158 x ln 174	**$0.00126**	**$0.00129**	**$0.00131**	**$0.00133**	**$0.00134**	**$0.00140**	**$0.00132**
176	**Total Volumetric Transportation Charge - Dawn Supply**		**$0.00604**	**$0.00592**	**$0.00679**	**$0.00406**	**$0.00409**	**$0.00423**	**$0.00519**
177									
178									
179	**Niagara Supply Volumetric Transportation Charge**								
180	**Commodity Costs**	Ln 107	[redacted]						
181									
182	TGP FTA - FTA Z 5-6 Comm. Rate	12th Rev Sheet No. 15							
183	TGP FTA - FTA Z 5-6 - ACA Rate	12th Rev Sheet No. 15							
184	Subtotal TGP FTA - FTA Z 5-6 Commodity Rate								
185	TGP FTA Fuel Charge % Z 5-6	11th Rev Sheet No. 32							
186	TGP FTA Fuel * Percentage	ln 180 x ln 185							
187	**Total Volumetric Transportation Rate - Niagara Supply**								
188									
189									
190			**THIS PAGE HAS BEEN REDACTED**						

Ln		Reference	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Off-Peak May - Oct
1	**Liberty Utilities (EnergyNorth Natural Gas) Corp.**								**REDACTED**
3	**Off Peak 2017 Summer Cost of Gas Filing**								
4	**Supply and Commodity Costs, Volumes and Rates**								
5									
6	For Month of:	Reference	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Off-Peak May - Oct
7	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
191									**REDACTED**
192									
193	**TGP Direct Volumetric Transportation Charge**								Average Rate
194	**Commodity Costs**	Ln 121	[redacted]						
195									
196	TGP - Max Comm. Base Rate - Z 0-6	12th Rev Sheet No. 15	$0.03037	$0.03037	$0.03037	$0.03037	$0.03037	$0.03037	$0.03037
197	TGP - Max Commodity ACA Rate - Z 0-6	12th Rev Sheet No. 15	$0.00014	$0.00014	$0.00014	$0.00014	$0.00014	$0.00014	$0.00014
198	Subtotal TGP - Max Comm. Rate Z 0-6		$0.03051	$0.03051	$0.03051	$0.03051	$0.03051	$0.03051	$0.03051
199	Prorated Percentage		32.60%	32.60%	32.60%	32.60%	32.60%	32.60%	32.60%
200	Prorated TGP - Max Commodity Rate - Z 0-6		**$0.00995**	**$0.00995**	**$0.00995**	**$0.00995**	**$0.00995**	**$0.00995**	**$0.00995**
201	TGP - Max Comm. Base Rate - Z 1-6	12th Rev Sheet No. 15	$0.02648	$0.02648	$0.02648	$0.02648	$0.02648	$0.02648	$0.02648
202	TGP - Max Commodity ACA Rate - Z 1-6	12th Rev Sheet No. 15	$0.00014	$0.00014	$0.00014	$0.00014	$0.00014	$0.00014	$0.00014
203	Subtotal TGP - Max Commodity Rate - Z 1-6		$0.02662	$0.02662	$0.02662	$0.02662	$0.02662	$0.02662	$0.02662
204	Prorated Percentage		67.40%	67.40%	67.40%	67.40%	67.40%	67.40%	67.40%
205	Prorated TGP - Trans Charge - Max Commodity Rate - Z 1-6		**$0.01794**	**$0.01794**	**$0.01794**	**$0.01794**	**$0.01794**	**$0.01794**	**$0.01794**
206	TGP - Fuel Charge % - Z 0 -6	11th Rev Sheet No. 32	3.05%	3.05%	3.05%	3.05%	3.05%	3.05%	3.05%
207	Prorated Percentage		32.6%	32.6%	32.6%	32.6%	32.6%	32.6%	32.6%
208	Prorated TGP Fuel Charge % - Z 0-6		0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%
209	TGP - Fuel Charge % - Z 1 -6	11th Rev Sheet No. 32	2.66%	2.66%	2.66%	2.66%	2.66%	2.66%	2.66%
210	Prorated Percentage		67.40%	67.40%	67.40%	67.40%	67.40%	67.40%	67.40%
211	Prorated TGP Fuel Charge - Fuel Charge % - Z 1-6		1.79%	1.79%	1.79%	1.79%	1.79%	1.79%	1.79%
212	TGP - Fuel Charge % - Z 0-6	ln 194 x ln 208	**$0.00182**	**$0.00189**	**$0.00197**	**$0.00202**	**$0.00204**	**$0.00206**	**$0.00197**
213	TGP - Fuel Charge % - Z 1-6	ln 194 x ln 211	**$0.00327**	**$0.00341**	**$0.00356**	**$0.00364**	**$0.00367**	**$0.00371**	**$0.00355**
214	**Total Volumetric Transportation Rate - TGP (Direct)**		**$0.03298**	**$0.03320**	**$0.03342**	**$0.03355**	**$0.03360**	**$0.03365**	**$0.03340**
215									
216	**TGP (Zone 4 Purchase) Volumetric Transportation Charge**								
217	**Commodity Costs**	Ln 121	[redacted]						
218									
219	TGP - Max Comm. Base Rate - Z 4-6	12th Rev Sheet No. 15	$0.01048	$0.01048	$0.01048	$0.01048	$0.01048	$0.01048	$0.01048
220	TGP - Max Commodity ACA Rate - Z 4-6	12th Rev Sheet No. 15	$0.00014	$0.00014	$0.00014	$0.00014	$0.00014	$0.00014	$0.00014
221	Subtotal TGP - Max Commodity Rate - Z 4-6		**$0.01062**	**$0.01062**	**$0.01062**	**$0.01062**	**$0.01062**	**$0.01062**	**$0.01062**
222	TGP - Fuel Charge % - Z 4-6	11th Rev Sheet No. 32	0.85%	0.85%	0.85%	0.85%	0.85%	0.85%	0.85%
223	TGP - Fuel Charge	ln 217 x ln 222	**$0.00107**	**$0.00111**	**$0.00131**	**$0.00129**	**$0.00098**	**$0.00110**	**$0.00114**
224	**Total Vol. Trans. Rate - TGP (Zone 6)**		**$0.01169**	**$0.01173**	**$0.01193**	**$0.01191**	**$0.01160**	**$0.01172**	**$0.01176**
225									
226									
227	**TGP Dracut**								
228	**Commodity Costs - NYMEX Price**	Ln 112	[redacted]						
229									
230	TGP - Trans Charge - Comm. - Z 6-6	12th Rev Sheet No. 15							
231	TGP - Trans Charge - ACA Rate - Z6-6	12th Rev Sheet No. 15							
232	Subtotal TGP - Trans Charge - Max Commodity Rate - Z 6-6								
233	TGP - Fuel Charge % - Z 6-6	11th Rev Sheet No. 32							
234	TGP - Fuel Charge	ln 228 x ln 233							
235	**Total Volumetric Transportation Rate - TGP Dracut**								
236									

Line									
1	**Liberty Utilities (EnergyNorth Natural Gas) Corp.**								
2									
3	**Off Peak 2017 Summer Cost of Gas Filing**								
4	**NYMEX Futures @ Henry Hub and Hedged Contracts**								May - Oct
5									Off Peak
6	For Month of:	Reference	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Strip Average
7	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
8	**I. NYMEX Opening Prices as of:**								
9	Opening Prices (15 day average)	Line 206	$1.9101	$1.9922	$2.0711	$2.1151	$2.1315	$2.1665	$ 2.0644
10			$1.9101	$1.9922	$2.0711	$2.1151	$2.1315	$2.1665	$ 2.0644
11									
12									
13									
14									
15									
16									
17									
18									
19	**II. Development of Hedging Costs and Savings**								
20									May - Oct
21	**TGP (Direct) Volumes**								Total
22	Hedged Volumes (Dth)	ln 76	-	-	-	-	-	-	-
23	Market Priced Volumes (Dth)	ln 24 - ln 22	-	-	-	-	-	-	-
24	Total Volumes (Dth)	Sch 6, lns 74 + 90 / 10	-	-	-	-	-	-	-
25	Percentage of Volumes Hedged	ln 22 / ln 24	0.00%					0.00%	0.00%
26									
27	Hedge Price	ln 162	$ -	$ -	$ -	$ -	$ -	$ -	$ -
28	NYMEX Price	ln 10	$ -	$ -	$ -	$ -	$ -	$ -	$ -
29									
30	Hedged Volumes at Hedged Price	ln 22 * ln 27	$ -	$ -	$ -	$ -	$ -	$ -	$ -
31	Less Hedged Volumes at NYMEX	ln 22 * ln 28	-	-	-	-	-	-	-
32	Hedge (Savings)/Loss	ln 30 - ln 31	$ -	$ -	$ -	$ -	$ -	$ -	$ -
33									
34									

1 **Liberty Utilities (EnergyNorth Natural Gas) Corp.**

3 **Off Peak 2017 Summer Cost of Gas Filing**

4 **NYMEX Futures @ Henry Hub and Hedged Contracts**

Line										
4										May - Oct
5										Off Peak
6	For Month of:		Reference	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Strip Average
35										
36										
37										May - Oct
38	Hedged Volumes (Dth)									Total
39	Hedge	Trade Date	Swaps	-	-	-	-	-	-	-
40	Hedge	Trade Date	Swaps	-	-	-	-	-	-	-
41	Hedge	Trade Date	Swaps	-	-	-	-	-	-	-
42	Hedge	Trade Date	Swaps	-	-	-	-	-	-	-
43	Hedge	Trade Date	Swaps	-	-	-	-	-	-	-
44	Hedge	Trade Date	Swaps	-	-	-	-	-	-	-
45	Hedge	Trade Date	Swaps	-	-	-	-	-	-	-
46	Hedge	Trade Date	Swaps	-	-	-	-	-	-	-
47	Hedge	Trade Date	Swaps	-	-	-	-	-	-	-
48	Hedge	Trade Date	Swaps	-	-	-	-	-	-	-
49	Hedge	Trade Date	Swaps	-	-	-	-	-	-	-
50	Hedge	Trade Date	Swaps	-	-	-	-	-	-	-
51	Hedge	Trade Date	Swaps	-	-	-	-	-	-	-
52	Hedge	Trade Date	Swaps	-	-	-	-	-	-	-
53	Hedge	Trade Date	Swaps	-	-	-	-	-	-	-
54	Hedge	Trade Date	Swaps	-	-	-	-	-	-	-
55	Hedge	Trade Date	Swaps	-	-	-	-	-	-	-
56	Hedge	Trade Date	Swaps	-	-	-	-	-	-	-
57	Hedge	Trade Date	Swaps	-	-	-	-	-	-	-
58	Hedge	Trade Date	Swaps	-	-	-	-	-	-	-
59	Hedge	Trade Date	Swaps	-	-	-	-	-	-	-
60	Hedge	Trade Date	Swaps	-	-	-	-	-	-	-
61	Hedge	Trade Date	Swaps	-	-	-	-	-	-	-
62	Hedge	Trade Date	Swaps	-	-	-	-	-	-	-
63	Hedge	Trade Date	Swaps	-	-	-	-	-	-	-
64	Hedge	Trade Date	Swaps	-	-	-	-	-	-	-
65	Hedge	Trade Date	Swaps	-	-	-	-	-	-	-
66	Hedge	Trade Date	Swaps	-	-	-	-	-	-	-
67	Hedge	Trade Date	Swaps	-	-	-	-	-	-	-
68	Hedge	Trade Date	Swaps	-	-	-	-	-	-	-
69	Hedge	Trade Date	Swaps	-	-	-	-	-	-	-
70	Hedge	Trade Date	Swaps	-	-	-	-	-	-	-
71	Hedge	Trade Date	Swaps	-	-	-	-	-	-	-
72	Hedge	Trade Date	Swaps	-	-	-	-	-	-	-
73	Hedge	Trade Date	Swaps	-	-	-	-	-	-	-
74	Hedge	Trade Date	Swaps	-	-	-	-	-	-	-
75	Hedge									
76				-	-	-	-	-	-	-
77										
78										

1 **Liberty Utilities (EnergyNorth Natural Gas) Corp.**

3 **Off Peak 2017 Summer Cost of Gas Filing**

4 **NYMEX Futures @ Henry Hub and Hedged Contracts**

5

											May - Oct
5											Off Peak
6	For Month of:			Reference	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Strip Average
79	Strike Price										
80											May - Oct
81	Hedge	Trade Date	1/0/00	Swaps	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
82	Hedge	Trade Date	1/0/00	Swaps	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
83	Hedge	Trade Date	1/0/00	Swaps	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
84	Hedge	Trade Date	1/0/00	Swaps	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
85	Hedge	Trade Date	1/0/00	Swaps	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
86	Hedge	Trade Date	1/0/00	Swaps	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
87	Hedge	Trade Date	1/0/00	Swaps	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
88	Hedge	Trade Date	1/0/00	Swaps	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
89	Hedge	Trade Date	1/0/00	Swaps	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
90	Hedge	Trade Date	1/0/00	Swaps	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
91	Hedge	Trade Date	1/0/00	Swaps	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
92	Hedge	Trade Date	1/0/00	Swaps	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
93	Hedge	Trade Date	1/0/00	Swaps	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
94	Hedge	Trade Date	1/0/00	Swaps	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
95	Hedge	Trade Date	1/0/00	Swaps	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
96	Hedge	Trade Date		Swaps	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
97	Hedge	Trade Date		Swaps	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
98	Hedge	Trade Date		Swaps	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
99	Hedge	Trade Date		Swaps	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
100	Hedge	Trade Date		Swaps	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
101	Hedge	Trade Date		Swaps	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
102	Hedge	Trade Date		Swaps	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
103	Hedge	Trade Date		Swaps	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
104	Hedge	Trade Date		Swaps	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
105	Hedge	Trade Date		Swaps	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
106	Hedge	Trade Date		Swaps	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
107	Hedge	Trade Date		Swaps	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
108	Hedge	Trade Date		Swaps	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
109	Hedge	Trade Date		Swaps	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
110	Hedge	Trade Date		Swaps	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
111	Hedge	Trade Date		Swaps	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
112	Hedge	Trade Date		Swaps	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
113	Hedge	Trade Date		Swaps	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
114	Hedge	Trade Date		Swaps	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
115	Hedge	Trade Date		Swaps	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
116	Hedge	Trade Date		Swaps	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
117	Hedge	Trade Date		Swaps	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
118											
119											

1 **Liberty Utilities (EnergyNorth Natural Gas) Corp.**

3 **Off Peak 2017 Summer Cost of Gas Filing**

4 **NYMEX Futures @ Henry Hub and Hedged Contracts**

Line					Reference	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	May - Oct Off Peak Strip Average
5												
6	For Month of:											
120												
121	Hedge Dollars											May- Oct
122	Hedge		Trade Date	1/0/00	Swaps	$ -	$ -	$ -	$ -	$ -	$ -	$ -
123	Hedge		Trade Date	1/0/00	Swaps	-	-	-	-	-	-	-
124	Hedge		Trade Date	1/0/00	Swaps	-	-	-	-	-	-	-
125	Hedge		Trade Date	1/0/00	Swaps	-	-	-	-	-	-	-
126	Hedge		Trade Date	1/0/00	Swaps	-	-	-	-	-	-	-
127	Hedge		Trade Date	1/0/00	Swaps	-	-	-	-	-	-	-
128	Hedge		Trade Date	1/0/00	Swaps	-	-	-	-	-	-	-
129	Hedge		Trade Date	1/0/00	Swaps	-	-	-	-	-	-	-
130	Hedge		Trade Date	1/0/00	Swaps	-	-	-	-	-	-	-
131	Hedge		Trade Date	1/0/00	Swaps	-	-	-	-	-	-	-
132	Hedge		Trade Date	1/0/00	Swaps	-	-	-	-	-	-	-
133	Hedge		Trade Date	1/0/00	Swaps	-	-	-	-	-	-	-
134	Hedge		Trade Date	1/0/00	Swaps	-	-	-	-	-	-	-
135	Hedge		Trade Date	01/00/00	Swaps	-	-	-	-	-	-	-
136	Hedge		Trade Date	01/00/00	Swaps	-	-	-	-	-	-	-
137	Hedge	##	Trade Date		Swaps	-	-	-	-	-	-	-
138	Hedge	##	Trade Date		Swaps	-	-	-	-	-	-	-
139	Hedge	##	Trade Date		Swaps	-	-	-	-	-	-	-
140	Hedge	##	Trade Date		Swaps	-	-	-	-	-	-	-
141	Hedge	##	Trade Date		Swaps	-	-	-	-	-	-	-
142	Hedge	##	Trade Date		Swaps	-	-	-	-	-	-	-
143	Hedge	##	Trade Date		Swaps	-	-	-	-	-	-	-
144	Hedge	##	Trade Date		Swaps	-	-	-	-	-	-	-
145	Hedge	##	Trade Date		Swaps	-	-	-	-	-	-	-
146	Hedge		Trade Date		Swaps	-	-	-	-	-	-	-
147	Hedge		Trade Date		Swaps	-	-	-	-	-	-	-
148	Hedge		Trade Date		Swaps	-	-	-	-	-	-	-
149	Hedge		Trade Date		Swaps	-	-	-	-	-	-	-
150	Hedge		Trade Date		Swaps	-	-	-	-	-	-	-
151	Hedge		Trade Date		Swaps	-	-	-	-	-	-	-
152	Hedge		Trade Date		Swaps	-	-	-	-	-	-	-
153	Hedge		Trade Date		Swaps	-	-	-	-	-	-	-
154	Hedge		Trade Date		Swaps	-	-	-	-	-	-	-
155	Hedge		Trade Date		Swaps	-	-	-	-	-	-	-
156	Hedge		Trade Date		Swaps	-	-	-	-	-	-	-
157	Hedge		Trade Date		Swaps	-	-	-	-	-	-	-
158	Hedge		Trade Date		Swaps	-	-	-	-	-	-	-
159												
160	Subtotal Hedge Dollars					$0	$0	$0	$0	$0	$0	$0
161												
162	Weighted Average Hedged Cost per Unit					$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
163												
164												
165												

Line		Reference		May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	May - Oct Off Peak Strip Average
1	**Liberty Utilities (EnergyNorth Natural Gas) Corp.**									
3	**Off Peak 2017 Summer Cost of Gas Filing**									
4	**NYMEX Futures @ Henry Hub and Hedged Contracts**									May - Oct
5										Off Peak
6	For Month of:	Reference		May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Strip Average
166										
167	NYMEX Settlement - 15 Day Average									
168		Days	Date							
169			2/13/2015	2.095	2.163	2.233	2.267	2.277	2.308	
170			2/17/2015	2.035	2.104	2.174	2.213	2.228	2.263	
171			2/18/2015	2.076	2.144	2.213	2.252	2.266	2.297	
172			2/19/2015	2.004	2.077	2.15	2.192	2.208	2.238	
173			2/20/2015	1.945	2.018	2.094	2.137	2.154	2.185	
174			2/23/2015	1.934	2.007	2.081	2.123	2.138	2.168	
175			2/24/2015	1.903	1.975	2.048	2.09	2.107	2.14	
176			2/25/2015	1.909	1.982	2.055	2.097	2.112	2.145	
177			2/26/2015	1.867	1.944	2.019	2.063	2.079	2.111	
178			2/27/2015	1.873	1.951	2.028	2.072	2.088	2.121	
179			3/2/2015	1.808	1.896	1.985	2.034	2.054	2.093	
180			3/3/2015	1.848	1.939	2.024	2.074	2.091	2.131	
181			3/4/2015	1.8	1.903	1.992	2.043	2.061	2.102	
182			3/5/2015	1.767	1.88	1.975	2.024	2.044	2.088	
183			3/6/2015	1.787	1.9	1.996	2.046	2.065	2.107	
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17			15 Day Average	1.9101	1.9922	2.0711	2.1151	2.1315	2.1665	

Liberty Utilities (EnergyNorth Natural Gas) Corp.

Off Peak 2017 Summer Cost of Gas Filing
Annual Bill Comparisons, May 16 - Oct 16 vs May 17 - Oct 17 - Residential Heating Rate R-3

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

		Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	Winter Nov-Apr	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Summer May-Oct	Total Nov-Oct
Typical Usage (Therms)		51	95	117	141	130	74	608	57	28	19	15	14	22	156	763
	7/1/2016															
Winter:																
Cust. Chg	$22.10	$22.10	$22.10	$22.10	$22.10	$22.10	$22.10	$132.60								
Headblock	$0.3495	$17.86	$33.20	$34.95	$34.95	$34.95	$25.80	$181.71								
Tailblock	$0.2892	$0.00	$0.00	$4.93	$11.88	$8.53	$0.00	$25.34								
HB Threshold	100															
Summer:																
Cust. Chg	$22.10								$22.10	$22.10	$22.10	$22.10	$22.10	$22.10	$132.60	$265.20
Headblock	$0.3495								$6.99	$6.99	$6.64	$5.23	$5.05	$6.99	$37.89	$219.60
Tailblock	$0.2892								$10.83	$2.25	$0.00	$0.00	$0.00	$0.55	$13.63	$38.97
HB Threshold	20															
Total Base Rate Amount		$39.96	$55.30	$61.98	$68.93	$65.58	$47.90	$339.65	$39.92	$31.34	$28.74	$27.33	$27.15	$29.64	$184.12	$523.77
COG Rate - (Seasonal)		$0.7068	$0.7068	$0.7068	$0.7068	$0.7068	$0.7068	$0.7068	$0.3338	$0.3338	$0.3338	$0.3338	$0.3338	$0.3338	$0.3338	$0.6308
COG amount		$36.11	$67.14	$82.72	$99.72	$91.54	$52.19	$429.41	$19.17	$9.27	$6.34	$5.00	$4.82	$7.31	$51.91	$481.33
LDAC		$0.0553	$0.0553	$0.0640	$0.0640	$0.0640	$0.0640	0.0619	$0.0640	$0.0640	$0.0640	$0.0640	$0.0640	$0.0640	$0.0640	$0.0623
LDAC amount		$2.83	$5.25	$7.49	$9.03	$8.29	$4.72	$37.60	$3.67	$1.78	$1.22	$0.96	$0.92	$1.40	$9.95	$47.55
Total Bill		**$78.89**	**$127.68**	**$152.19**	**$177.68**	**$165.41**	**$104.81**	**$806.66**	**$62.77**	**$42.38**	**$36.30**	**$33.29**	**$32.89**	**$38.35**	**$245.98**	**$1,052.64**

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

	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	Winter Nov-Apr	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Summer May-Oct	Total Nov-Oct
Typical Usage (Therms)	51	95	117	141	130	74	608	57	28	19	15	14	22	156	763
Winter:															
Cust. Chg	$22.04	$22.04	$22.04	$22.04	$22.04	$22.04	$132.24								
Headblock	$17.81	$33.11	$34.86	$34.86	$34.86	$25.74	$181.24								
Tailblock	$0.00	$0.00	$4.91	$11.85	$8.51	$0.00	$25.28								
HB Threshold															
Summer:															
Cust. Chg								$22.04	$22.04	$22.10	$22.10	$22.10	$22.10	$132.48	$264.72
Headblock								$6.97	$6.97	$6.64	$5.23	$5.05	$6.99	$37.85	$219.09
Tailblock								$10.80	$2.24	$0.00	$0.00	$0.00	$0.55	$13.59	$38.88
HB Threshold															
Total Base Rate Amount	$39.85	$55.15	$61.81	$68.75	$65.41	$47.78	$338.76	$39.81	$31.25	$28.74	$27.33	$27.15	$29.64	$183.93	$522.69
COG Rate - (Seasonal)	$0.7516	$0.7516	$0.6256	$0.4436	$0.2634	$0.4423	$0.5141	$0.4117	$0.4400	$0.4400	$0.4200	$0.4200	$0.4200	$0.4229	$0.4956
COG amount	$38.40	$71.39	$73.22	$62.59	$34.11	$32.66	$312.36	$23.65	$12.22	$8.36	$6.29	$6.07	$9.20	$65.78	$378.14
LDAC	$0.1014	$0.1014	$0.1014	$0.1014	$0.1014	$0.1014	0.1014	$0.1014	$0.1014	$0.1014	$0.1014	$0.1014	$0.1014	$0.1014	$0.1014
LDAC amount	$5.18	$9.63	$11.87	$14.31	$13.13	$7.49	$61.60	$5.82	$2.82	$1.93	$1.52	$1.46	$2.22	$15.77	$77.38
Total Bill	**$83.43**	**$136.17**	**$146.90**	**$145.65**	**$112.66**	**$87.92**	**$712.73**	**$69.29**	**$46.29**	**$39.03**	**$35.14**	**$34.68**	**$41.06**	**$265.48**	**$978.21**

DIFFERENCE:

	Nov	Dec	Jan	Feb	Mar	Apr	Winter Nov-Apr	May	Jun	Jul	Aug	Sep	Oct	Summer May-Oct	Total Nov-Oct
Total Bill	**($4.54)**	**($8.49)**	**$5.29**	**$32.03**	**$52.75**	**$16.89**	**$93.93**	**($6.52)**	**($3.91)**	**($2.73)**	**($1.85)**	**($1.79)**	**($2.71)**	**($19.50)**	**$74.44**
% Change	**-5.44%**	**-6.23%**	**3.60%**	**21.99%**	**46.82%**	**19.21%**	**13.18%**	**-9.41%**	**-8.44%**	**-6.99%**	**-5.27%**	**-5.15%**	**-6.59%**	**-7.34%**	**7.61%**
Base Rate	$0.11	$0.15	$0.16	$0.18	$0.17	$0.13	$0.89	$0.10	$0.08	$0.00	$0.00	$0.00	$0.00	$0.19	$1.08
% Change	0.27%	0.26%	0.26%	0.26%	0.26%	0.26%	0.26%	0.26%	0.27%	0.00%	0.00%	0.00%	0.00%	0.10%	0.21%
COG & LDAC	($4.64)	($8.63)	$5.12	$31.85	$52.58	$16.77	$93.04	($6.62)	($3.99)	($2.73)	($1.85)	($1.79)	($2.71)	($19.69)	$73.36
% Change	-10.66%	-10.66%	6.02%	41.43%	111.29%	41.77%	24.88%	-22.48%	-26.53%	-26.53%	-23.71%	-23.71%	-23.71%	-24.14%	16.10%
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

Liberty Utilities (EnergyNorth Natural Gas) Corp.

Off Peak 2017 Summer Cost of Gas Filing
Annual Bill Comparisons, May 16 - Oct 16 vs May 17 - Oct 17 - Commercial Rate G-41

November 1, 2016 - April 30, 2017 / **May 1, 2017 - October 31, 2017**
Commercial Rate (G-41)

		Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	Winter Nov-Apr	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Summer May-Oct	Total Nov-Oct
Typical Usage (Therms)		121	251	293	429	390	202	1,685	145	56	51	27	26	39	344	2,029
Winter:	7/1/2016															
Cust. Chg	$48.36	$48.36	$48.36	$48.36	$48.36	$48.36	$48.36	$290.16								
Headblock	$0.3965	$39.65	$39.65	$39.65	$39.65	$39.65	$39.65	$237.90								
Tailblock	$0.2663	$5.50	$40.15	$51.45	$87.54	$77.11	$27.26	$289.01								
HB Threshold	100															
Summer:																
Cust. Chg	$48.36								$48.36	$48.36	$48.36	$48.36	$48.36	$48.36	$290.16	$580.32
Headblock	$0.3965								$7.93	$7.93	$7.93	$7.93	$7.93	$7.93	$47.58	$285.48
Tailblock	$0.2663								$33.19	$9.60	$8.25	$1.92	$1.62	$5.00	$59.60	$348.61
HB Threshold	20															
Total Base Rate Amount		$93.51	$128.16	$139.46	$175.55	$165.12	$115.27	$817.07	$89.48	$65.89	$64.54	$58.21	$57.91	$61.29	$397.34	$1,214.41
COG Rate - (Seasonal)		$0.7026	$0.7026	$0.7026	$0.7026	$0.7026	$0.7026	$0.7026	$0.3177	$0.3177	$0.3177	$0.3177	$0.3177	$0.3177	$0.3177	$0.6374
COG amount		$84.78	$176.19	$206.01	$301.22	$273.71	$142.17	$1,184.08	$45.95	$17.81	$16.20	$8.65	$8.29	$12.32	$109.23	$1,293.31
LDAC		$0.0370	$0.0370	$0.0450	$0.0450	$0.0450	$0.0450	0.0432	$0.0450	$0.0450	$0.0450	$0.0450	$0.0450	$0.0450	$0.0450	$0.0435
LDAC amount		$4.46	$9.28	$13.20	$19.29	$17.53	$9.11	$72.87	$6.51	$2.52	$2.29	$1.23	$1.17	$1.75	$15.47	$88.34
Total Bill		**$182.75**	**$313.62**	**$358.67**	**$496.06**	**$456.36**	**$266.54**	**$2,074.02**	**$141.95**	**$86.23**	**$83.03**	**$68.09**	**$67.38**	**$75.37**	**$522.04**	**$2,596.06**

November 1, 2015 - April 30, 2016 / **May 1, 2016 - October 31, 2016**
Commercial Rate (G-41)

		Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	Winter Nov-Apr	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Summer May-Oct	Total Nov-Oct
Typical Usage (Therms)		121	251	293	429	390	202	1,685	145	56	51	27	26	39	344	2,029
Winter:																
Cust. Chg		$48.24	$48.24	$48.24	$48.24	$48.24	$48.24	$289.44								
Headblock		$39.56	$39.56	$39.56	$39.56	$39.56	$39.56	$237.36								
Tailblock		$5.49	$40.06	$51.34	$87.34	$76.94	$27.19	$288.36								
HB Threshold																
Summer:																
Cust. Chg									$48.24	$48.24	$48.36	$48.36	$48.36	$48.36	$289.92	$579.36
Headblock									$7.91	$7.91	$7.93	$7.93	$7.93	$7.93	$47.54	$284.90
Tailblock									$33.12	$9.58	$8.25	$1.92	$1.62	$5.00	$59.51	$347.86
HB Threshold																
Total Base Rate Amount		$93.29	$127.86	$139.14	$175.14	$164.74	$114.99	$815.16	$89.27	$65.74	$64.54	$58.21	$57.91	$61.29	$396.97	$1,212.13
COG Rate - (Seasonal)		$0.7454	$0.7454	$0.6194	$0.4374	$0.2572	$0.4361	$0.4951	$0.3976	$0.4259	$0.4259	$0.4059	$0.4059	$0.4059	$0.4086	$0.4805
COG amount		$89.94	$186.92	$181.62	$187.52	$100.20	$88.25	$834.44	$57.51	$23.88	$21.71	$11.05	$10.59	$15.75	$140.50	$974.94
LDAC		$0.0685	$0.0685	$0.0685	$0.0685	$0.0685	$0.0685	0.0685	$0.0685	$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	$9.91	$3.84	$3.49	$1.87	$1.79	$2.66	$23.55	$138.99
Total Bill		**$191.49**	**$331.95**	**$340.84**	**$392.03**	**$291.62**	**$217.10**	**$1,765.04**	**$156.69**	**$93.45**	**$89.75**	**$71.13**	**$70.30**	**$79.70**	**$561.02**	**$2,326.06**

DIFFERENCE:

Total Bill	**($8.74)**	**($18.33)**	**$17.83**	**$104.03**	**$164.74**	**$49.44**	**$308.97**	**($14.74)**	**($7.22)**	**($6.71)**	**($3.04)**	**($2.92)**	**($4.33)**	**($38.97)**	**$270.00**
% Change	**-4.57%**	**-5.52%**	**5.23%**	**26.54%**	**56.49%**	**22.77%**	**17.51%**	**-9.41%**	**-7.73%**	**-7.48%**	**-4.28%**	**-4.15%**	**-5.44%**	**-6.95%**	**11.61%**
Base Rate	$0.22	$0.30	$0.33	$0.41	$0.38	$0.27	$1.91	$0.21	$0.16	$0.00	$0.00	$0.00	$0.00	$0.37	$2.28
% Change	0.24%	0.23%	0.23%	0.23%	0.23%	0.24%	0.23%	0.24%	0.24%	0.00%	0.00%	0.00%	0.00%	0.09%	0.19%
COG & LDAC	($8.97)	($18.63)	$17.51	$103.62	$164.36	$49.17	$307.06	($14.96)	($7.38)	($6.71)	($3.04)	($2.92)	($4.33)	($39.34)	$267.72
% Change	-9.13%	-9.13%	8.68%	47.78%	129.54%	48.16%	32.33%	-22.18%	-26.64%	-26.64%	-23.55%	-23.55%	-23.55%	-23.98%	24.03%
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

Liberty Utilities (EnergyNorth Natural Gas) Corp.

2 **Off Peak 2017 Summer Cost of Gas Filing**
4 **Annual Bill Comparisons, May 16 - Oct 16 vs May 17 - Oct 17 - Commercial Rate G-42**

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

Line									Winter							Summer	Total
10			**Nov-16**	**Dec-16**	**Jan-17**	**Feb-17**	**Mar-17**	**Apr-17**	**Nov-Apr**	**May-17**	**Jun-17**	**Jul-17**	**Aug-17**	**Sep-17**	**Oct-17**	**May-Oct**	**Nov-Oct**
11	**Typical 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
12		7/1/2016															
13	**Winter:**																
14	Cust. Chg	$145.08	$145.08	$145.08	$145.08	$145.08	$145.08	$145.08	$870.48								
15	Headblock	$0.3606	$360.60	$360.60	$360.60	$360.60	$360.60	$360.60	$2,163.60								
16	Tailblock	$0.2402	$2.25	$2.25	$294.99	$404.93	$342.58	$90.77	$1,137.76								
17	HB Threshold	1,000															
18																	
19	**Summer:**																
20	Cust. Chg	$145.08								$145.08	$145.08	$145.08	$145.08	$145.08	$145.08	$870.48	$1,740.96
21	Headblock	$0.3606								$144.24	$144.24	$144.24	$144.24	$100.90	$144.24	$822.10	$2,985.70
22	Tailblock	$0.2402								$171.96	$22.09	$20.53	$183.92	$0.00	$10.62	$409.12	$1,546.89
23	HB Threshold	400															
24																	
25	Total Base Rate Amount		$507.93	$507.93	$800.67	$910.61	$848.26	$596.45	$4,171.84	$461.28	$311.41	$309.85	$473.24	$245.98	$299.94	$2,101.70	$6,273.54
26																	
27	COG Rate - (Seasonal)		$0.7026	$0.7026	$0.7026	$0.7026	$0.7026	$0.7026	$0.7026	$0.3177	$0.3177	$0.3177	$0.3177	$0.3177	$0.3177	$0.3177	$0.5984
28	COG amount		$709.17	$709.17	$1,565.46	$1,887.05	$1,704.66	$968.12	$7,543.63	$354.53	$156.30	$154.24	$370.35	$88.89	$141.12	$1,265.42	$8,809.05
29																	
30	LDAC		$0.0370	$0.0370	$0.0370	$0.0370	$0.0370	$0.0370	0.0370	$0.0450	$0.0450	$0.0450	$0.0450	$0.0450	$0.0450	$0.0450	$0.0392
31	LDAC amount		$37.35	$37.35	$82.44	$99.37	$89.77	$50.98	$397.26	$50.22	$22.14	$21.85	$52.46	$12.59	$19.99	$179.25	$576.51
32																	
33	**Total Bill**		**$1,254.45**	**$1,254.45**	**$2,448.57**	**$2,897.03**	**$2,642.69**	**$1,615.55**	**$12,112.74**	**$866.03**	**$489.84**	**$485.93**	**$896.05**	**$347.46**	**$461.05**	**$3,546.36**	**$15,659.10**

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

Line									Winter							Summer	Total
38			**Nov-15**	**Dec-15**	**Jan-16**	**Feb-16**	**Mar-16**	**Apr-16**	**Nov-Apr**	**May-16**	**Jun-16**	**Jul-16**	**Aug-16**	**Sep-16**	**Oct-16**	**May-Oct**	**Nov-Oct**
39	**Typical 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
40																	
41	**Winter:**																
42	Cust. Chg		$144.73	$144.73	$144.73	$144.73	$144.73	$144.73	$868.38								
43	Headblock		$359.80	$359.80	$359.80	$359.80	$359.80	$359.80	$2,158.80								
44	Tailblock		$2.24	$2.24	$294.25	$403.92	$341.72	$90.55	$1,134.92								
45	HB Threshold																
46																	
47	**Summer:**																
48	Cust. Chg									$144.73	$144.73	$145.08	$145.08	$145.08	$145.08	$869.78	$1,738.16
49	Headblock									$143.92	$143.92	$144.24	$144.24	$100.90	$144.24	$821.46	$2,980.26
50	Tailblock									$171.53	$22.03	$20.53	$183.92	$0.00	$10.62	$408.64	$1,543.56
51	HB Threshold																
52																	
53	Total Base Rate Amount		$506.77	$506.77	$798.78	$908.45	$846.25	$595.08	$4,162.10	$460.18	$310.68	$309.85	$473.24	$245.98	$299.94	$2,099.87	$6,261.98
54																	
55	COG Rate - (Seasonal)		$0.7454	$0.7454	$0.6194	$0.4374	$0.2572	$0.4361	$0.4922	$0.3976	$0.4259	$0.4259	$0.4059	$0.4059	$0.4059	$0.4085	$0.4695
56	COG amount		$752.37	$752.37	$1,380.08	$1,174.77	$624.02	$600.90	$5,284.53	$443.69	$209.52	$206.76	$473.16	$113.57	$180.30	$1,627.01	$6,911.54
57																	
58	LDAC		$0.0685	$0.0685	$0.0685	$0.0685	$0.0685	$0.0685	0.0685	$0.0685	$0.0685	$0.0685	$0.0685	$0.0685	$0.0685	$0.0685	$0.0685
59	LDAC amount		$69.14	$69.14	$152.62	$183.98	$166.20	$94.39	$735.47	$76.44	$33.70	$33.25	$79.85	$19.17	$30.43	$272.84	$1,008.31
60																	
61	**Total Bill**		**$1,328.29**	**$1,328.29**	**$2,331.49**	**$2,267.20**	**$1,636.47**	**$1,290.37**	**$10,182.10**	**$980.31**	**$553.91**	**$549.87**	**$1,026.25**	**$378.72**	**$510.66**	**$3,999.72**	**$14,181.82**
62																	
63	**DIFFERENCE:**																
64	**Total Bill**		**($73.84)**	**($73.84)**	**$117.08**	**$629.83**	**$1,006.22**	**$325.18**	**$1,930.64**	**($114.28)**	**($64.06)**	**($63.94)**	**($130.21)**	**($31.25)**	**($49.62)**	**($453.36)**	**$1,477.28**
65	% Change		**-5.56%**	**-5.56%**	**5.02%**	**27.78%**	**61.49%**	**25.20%**	**18.96%**	**-11.66%**	**-11.57%**	**-11.63%**	**-12.69%**	**-8.25%**	**-9.72%**	**-11.33%**	**10.42%**
66																	
67	**Base Rate**		$1.16	$1.16	$1.89	$2.16	$2.01	$1.38	$9.74	$1.10	$0.73	$0.00	$0.00	$0.00	$0.00	$1.82	$11.57
68	% Change		0.23%	0.23%	0.24%	0.24%	0.24%	0.23%	0.23%	0.24%	0.23%	0.00%	0.00%	0.00%	0.00%	0.09%	0.18%
69																	
70	**COG & LDAC**		($75.00)	($75.00)	$115.19	$627.67	$1,004.21	$323.81	$1,920.89	($115.38)	($64.79)	($63.94)	($130.21)	($31.25)	($49.62)	($455.19)	$1,465.71
71	% Change		-9.13%	-9.13%	7.52%	46.19%	127.08%	46.57%	31.91%	-22.18%	-26.64%	-26.64%	-23.55%	-23.55%	-23.55%	-23.96%	18.51%
	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

Liberty Utilities (EnergyNorth Natural Gas) Corp.

Off Peak 2017 Summer Cost of Gas Filing

Annual Bill Comparisons, May 16 - Oct 16 vs May 17 - Oct 17 - Commercial Rate G-52

November 1, 2016 - April 30, 2017

Commercial Rate (G-52)

		Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	Winter Nov-Apr
Typical Usage (Therms)		1,129	1,453	1,821	1,383	1,955	1,367	9,108
Winter:	7/1/2016							
Cust. Chg	$145.08	$145.08	$145.08	$145.08	$145.08	$145.08	$145.08	$870.48
Headblock	$0.2052	$205.20	$205.20	$205.20	$205.20	$205.20	$205.20	$1,231.20
Tailblock	$0.1367	$17.69	$61.91	$112.22	$52.34	$130.50	$50.23	$424.88
HB Threshold	1,000							
Summer:								
Cust. Chg	$145.08							
Headblock	$0.1487							
Tailblock	$0.0845							
HB Threshold	1,000							
Total Base Rate Amount		$367.97	$412.19	$462.50	$402.62	$480.78	$400.51	$2,526.56
COG Rate - (Seasonal)		$0.7210	$0.7210	$0.7210	$0.7210	$0.7210	$0.7210	$0.7210
COG amount		$814.30	$1,047.52	$1,312.88	$997.06	$1,409.29	$985.92	$6,566.97
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		**$1,224.06**	**$1,513.47**	**$1,857.32**	**$1,461.91**	**$1,978.03**	**$1,447.97**	**$9,482.75**

May 1, 2017 - October 31, 2017

	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Summer May-Oct	Total Nov-Oct
Typical Usage (Therms)	1,263	1,003	799	788	758	847	5,458	14,566
Summer:								
Cust. Chg	$145.08	$145.08	$145.08	$145.08	$145.08	$145.08	$870.48	$1,740.96
Headblock	$148.70	$148.70	$118.75	$117.10	$112.75	$125.97	$771.96	$2,003.16
Tailblock	$22.22	$0.27	$0.00	$0.00	$0.00	$0.00	$22.50	$447.38
Total Base Rate Amount	$316.00	$294.05	$263.83	$262.18	$257.83	$271.05	$1,664.94	$4,191.51
COG Rate - (Seasonal)	$0.3545	$0.3545	$0.3545	$0.3545	$0.3545	$0.3545	$0.3545	$0.5837
COG amount	$447.73	$355.65	$283.10	$279.17	$268.78	$300.30	$1,934.74	$8,501.71
LDAC	$0.0450	$0.0450	$0.0450	$0.0450	$0.0450	$0.0450	$0.0450	$0.0436
LDAC amount	$56.84	$45.15	$35.94	$35.44	$34.12	$38.12	$245.61	$634.83
Total Bill	**$820.57**	**$694.86**	**$582.86**	**$576.80**	**$560.73**	**$609.47**	**$3,845.29**	**$13,328.05**

November 1, 2015 - April 30, 2016

Commercial Rate (G-52)

	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	Winter Nov-Apr
Typical Usage (Therms)	1,129	1,453	1,821	1,383	1,955	1,367	9,108
Winter:							
Cust. Chg	$144.73	$144.73	$144.73	$144.73	$144.73	$144.73	$868.38
Headblock	$204.70	$204.70	$204.70	$204.70	$204.70	$204.70	$1,228.20
Tailblock	$17.65	$61.77	$111.97	$52.22	$130.21	$50.12	$423.95
HB Threshold							
Summer:							
Cust. Chg							
Headblock							
Tailblock							
HB Threshold							
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, 2016 - October 31, 2016

	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Summer May-Oct	Total Nov-Oct
Typical Usage (Therms)	1,263	1,003	799	788	758	847	5,458	14,566
Summer:								
Cust. Chg	$144.73	$144.73	$145.08	$145.08	$145.08	$145.08	$869.78	$1,738.16
Headblock	$148.40	$148.40	$118.75	$117.10	$112.75	$125.97	$771.36	$1,999.56
Tailblock	$22.22	$0.27	$0.00	$0.00	$0.00	$0.00	$22.50	$446.45
Total Base Rate Amount	$315.35	$293.40	$263.83	$262.18	$257.83	$271.05	$1,663.64	$4,184.17
COG Rate - (Seasonal)	$0.4415	$0.4698	$0.4698	$0.4498	$0.4498	$0.4498	$0.4545	$0.5089
COG amount	$557.61	$471.33	$375.17	$354.22	$341.04	$381.04	$2,480.41	$7,412.85
LDAC	$0.0685	$0.0685	$0.0685	$0.0685	$0.0685	$0.0685	$0.0685	$0.0685
LDAC amount	$86.52	$68.72	$54.70	$53.94	$51.94	$58.03	$373.85	$997.76
Total Bill	**$959.48**	**$833.46**	**$693.71**	**$670.35**	**$650.80**	**$710.11**	**$4,517.91**	**$12,594.78**

DIFFERENCE:

	Nov	Dec	Jan	Feb	Mar	Apr	Winter Nov-Apr
Total Bill	**($84.04)**	**($108.27)**	**$108.17**	**$333.97**	**$824.04**	**$332.02**	**$1,405.88**
% Change	**-6.42%**	**-6.68%**	**6.18%**	**29.61%**	**71.41%**	**29.75%**	**17.41%**
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	($84.93)	($109.26)	$107.07	$333.00	$822.90	$331.06	$1,399.85
% Change	-9.03%	-9.03%	8.31%	45.85%	122.03%	46.21%	25.19%
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	**($138.91)**	**($138.60)**	**($110.84)**	**($93.55)**	**($90.07)**	**($100.64)**	**($672.61)**	**$733.27**
% Change	**-14.48%**	**-16.63%**	**-15.98%**	**-13.96%**	**-13.84%**	**-14.17%**	**-14.89%**	**5.82%**
Base Rate	$0.65	$0.65	$0.00	$0.00	$0.00	$0.00	$1.30	$7.33
% Change	0.21%	0.22%	0.00%	0.00%	0.00%	0.00%	0.08%	0.18%
COG & LDAC	($139.56)	($139.25)	($110.84)	($93.55)	($90.07)	($100.64)	($673.91)	$725.94
% Change	-21.67%	-25.78%	-25.78%	-22.92%	-22.92%	-22.92%	-23.61%	8.63%
check	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00

Liberty Utilities (EnergyNorth Natural Gas) Corp.

Off Peak 2017 Summer Cost of Gas Filing

Residential Heating

	Summer 2016	Summer 2017
Customer Charge	$22.10	$22.10
First 20 Therms	$0.3495	$0.3495
Excess 20 Therms	$0.2892	$0.2892
LDAC	$0.1014	$0.0640
COG	$0.4229	$0.3338
Total Adjust	$0.5243	$0.3978

		Summer 2016 COG @	Summer 2017 Cog @	Total		Base Rate		COG		LDAC	
				$ Impact	% Impact	$ Impact	% Impact	$ Impact	% Impact	$ Impact	% Impact
		$0.5243	$0.3978	($0.13)	-24%						
Cooking alone	5	$2.62	$25.84	$23.21	885%	$23.85	910%	-$0.45	-2%	-$0.19	-7%
	10	$5.24	$29.57	$24.33	464%	$25.60	488%	-$0.89	-3%	-$0.37	-7%
	20	$10.49	$37.05	$26.56	253%	$29.09	277%	-$1.78	-5%	-$0.75	-7%
Water Heating alone	30	$15.73	$43.92	$28.18	179%	$31.98	203%	-$2.67	-6%	-$1.12	-7%
	45	$23.60	$54.22	$30.62	130%	$36.32	154%	-$4.01	-7%	-$1.68	-7%
	50	$26.22	$57.65	$31.44	120%	$37.77	144%	-$4.46	-8%	-$1.87	-7%
Heating Alone	80	$39.33	$74.83	$35.50	90%	$45.00	114%	-$6.69	-9%	-$2.81	-7%
	125	$69.74	$114.67	$44.94	64%	$61.77	89%	-$11.86	-10%	-$4.98	-7%
	150	$78.65	$126.35	$47.70	61%	$66.69	85%	-$13.37	-11%	-$5.61	-7%
	200	$104.87	$160.70	$55.83	53%	$81.15	77%	-$17.83	-11%	-$7.48	-7%

Liberty Utilities (EnergyNorth Natural Gas) Corp.

2017 Summer Cost of Gas Filing
Capacity Assignment Calculations 2016-2017
<u>Derivation of Class Assignments and Weightings</u>

Basic assumptions:
1 Residential class pays average seasonal gas cost rate (using MBA method to allocate costs to seasons)
2 Residual gas costs are allocated to C&I HLF and LLF classes based on MBA method
3 The MBA method allocates capacity costs based on design day demands in two pieces:
  a The base use portion of the class design day demand based on base use
  b The remaining portion of design day demand based on remaining design day demand
4 Base demand is composed solely of pipeline supplies
5 Remaining demand consists of a portion of pipeline and all storage and peaking supplies

				Column A	**Column B**	**Column C**	**Column D**	**Column E**	**Column F**
				Design Day Demand. Dekatherm	Adjusted Design Day Demand, Dt	Percent of Total		Avg Daily Base Use Load, Dt	Remaining Design Day Demand
1	RATE R-1-Resi Non-Htg			535	527	0.3%		113	414
2	RATE R-3-Resi Htg			67,508	66,336	42.3%		4,182	62,154
3	RATE G-41 (T)			27,344	26,862	17.1%		1,311	25,551
4	RATE G-51 (S)			2,795	2,756	1.8%		658	2,097
5	RATE G-42 (V)			36,117	35,497	22.6%		2,653	32,845
6	RATE G-52			4,112	4,062	2.6%		1,433	2,629
7	RATE G-43			10,495	10,323	6.6%		1,156	9,166
8	RATE G-53			5,255	5,200	3.3%		2,320	2,880
9	RATE G-54			5,384	5,384	3.4%		5,384	-
10									
11	Total			159,544	156,947	100.0%		19,210	137,737
12									-
13	Residential Total			68,043	66,863	**42.602%**		4,295	62,568
14	LLF Total			73,956	72,682	**46.310%**		5,120	67,562
15	HLF Total			17,545	17,402	**11.088%**		9,795	7,607
16	Total			159,544	156,947	100.0%		19,210	137,737
17									
18	C&I Breakdown								
19	LLF Total							5,120	67,562
20	HLF Total							9,795	7,607
21	Total							14,915	75,169
22									
23	C&I Breakdown Percentage								
24	LLF Total							34.328%	89.881%
25	HLF Total							65.672%	10.119%
26	Total							**100.0%**	**100.0%**
27									
28				Capacity Cost	MDQ, Dt	$/Dt-Mo.			
29	Pipeline			$13,614,436	79,718	$14.2319			
30	Storage			$4,054,486	28,115	$12.0176			
31									
32	Peaking			$1,375,000					
33	Peaking Additional Costs (Concord Lateral Peaking x Differential)			$0					
34	Subtotal Peaking Costs			$1,375,000	49,114	$2.3330			
35	Total			$19,043,922	156,947	$10.1117			
36									
37				Capacity Cost	MDQ, Dt	$/Dt-Mo.			
38	Pipeline - Baseload			3,280,696	19,210	$14.2319			
39	Pipeline - Remaining			10,333,740	60,508	$14.2319			
40	Storage			4,054,486	28,115	$12.0176			
41	Peaking			1,375,000	49,114	$2.3330			
42	Total			19,043,922	156,947	$10.1117			
43									
44									
45	Residential Allocation			Capacity Cost	MDQ, Dt	$/Dt-Mo.			
46	Pipeline - Base	Line 38 * Line 13 Col C	**42.602%**	1,397,642	8,184	$14.2319			
47	Pipeline - Remaining	Line 39 * Line 13 Col C	**42.602%**	4,402,391	25,778	$14.2319			
48	Storage	Line 40 * Line 13 Col C	**42.602%**	1,727,297	11,978	$12.0176			
49	Peaking	Line 41 * Line 13 Col C	**42.602%**	585,788	20,924	$2.3330			
50	Total		**42.602%**	8,113,184	66,863	$10.1117			

Liberty Utilities (EnergyNorth Natural Gas) Corp.

2017 Summer Cost of Gas Filing
Capacity Assignment Calculations 2016-2017
Derivation of Class Assignments and Weightings

							Ratios for COG
51							
52							**Ratios for COG**
53	C&I Allocation			Capacity Cost	MDQ, Dt	$/Dt-Mo.	
54	Pipeline - Base	Line 38 - Line 46		1,883,054	11,026	$14.2319	
55	Pipeline - Remaining	Line 39 - Line 47		5,931,349	34,731	$14.2318	
56	Storage	Line 40 - Line 48		2,327,189	16,137	$12.0175	
57	Peaking	Line 41 - Line 49		789,212	28,190	$2.3330	
58	Total		**57.398%**	10,930,803	90,084	$10.1117	**1.0000**
59							
60							
61	LLF - C&I Allocation			Capacity Cost	MDQ, Dt	$/Dt-Mo.	
62	Pipeline - Base	Line 54 * Line 24 Col E		646,406	3,785	$14.2317	
63	Pipeline - Remaining	Line 55 * Line 24 Col F		5,331,130	31,216	$14.2318	
64	Storage	Line 56 * Line 24 Col F		2,091,691	14,504	$12.0179	
65	Peaking	Line 57 * Line 24 Col F		709,348	25,337	$2.3330	
66	Total		**46.0965%**	8,778,575	74,842	$9.7746	**0.9667**
67			34.328%	80%			(Line 66 / Line 58)
68							
69	HLF - C&I Allocation			Capacity Cost	MDQ, Dt	$/Dt-Mo.	
70	Pipeline - Base	Line 54 - Line 62		1,236,648	7,241	$14.2320	
71	Pipeline - Remaining	Line 55 - Line 63		600,219	3,515	$14.2299	
72	Storage	Line 56 - Line 64		235,498	1,633	$12.0177	
73	Peaking	Line 57 - Line 65		79,864	2,853	$2.3327	
74	Total		**11.3014%**	2,152,229	15,242	$11.7670	**1.1637**
75							(Line 74 / Line 58)
76							
77	Unit Cost			Residential	LLF C&I	HLF C&I	
78							
79	Pipeline			$ 14.2319	$ 14.2319	$ 14.2319	
80	Storage			$ 12.0176	$ 12.0176	$ 12.0176	
81	Peaking			$ -	$ -	$ -	
82	Total			$ 10.1117	$ 9.7746	$ 11.7670	
83							
84							
85	Load Makeup			Residential	**LLF C&I**	**HLF C&I**	
86							
87	Pipeline			50.79%	**46.77%**	**70.57%**	
88	Storage			17.91%	**19.38%**	**10.71%**	
89	Peaking			31.29%	**33.85%**	**18.72%**	
90	Total			100.00%	**100.00%**	**100.00%**	
91							
92							
93	Supply Makeup			Residential	LLF C&I	HLF C&I	Total
94							
95	Pipeline			42.60%	43.91%	13.49%	100.00%
96	Storage			42.60%	51.59%	5.81%	100.00%
97	Peaking			42.60%	51.59%	5.81%	100.00%

Ln									
1	**Liberty Utilities (EnergyNorth Natural Gas) Corp.**								
3	**2017 Summer Cost of Gas Filing**								
4	**Correction Factor Calculation**								
5									
6									
7		d	e	f	g	h	i		
8	Data Source: Schedule 10B							Total	
9		May	June	July	Aug	Sep	Oct	Sales	
10									
11	G-41	716,847	324,784	197,846	150,839	162,644	411,815	1,964,774	
12	G-42	968,195	595,209	298,747	150,160	96,945	294,744	2,404,000	
13	G-43	246,438	160,408	109,128	85,854	98,369	155,659	855,857	
14	High Winter Use	1,931,480	1,080,401	605,721	386,853	357,958	862,217	5,224,630	
15									
16	G-51	153,560	99,000	74,804	75,187	94,881	126,663	624,095	
17	G-52	162,163	109,216	84,998	85,026	104,188	133,224	678,815	
18	G-53	577,253	408,013	327,515	310,877	341,376	400,426	2,365,460	
19	G-54	87,034	71,183	62,417	65,305	76,650	80,762	443,351	
21	Low Winter Use	980,009	687,412	549,734	536,395	617,096	741,074	4,111,720	
22									
23	Gross Total	2,911,489	1,767,812	1,155,455	923,248	975,054	1,603,291	9,336,351	
24									
25									
26	Total Sales				9,336,351				
27	Low Winter Use				4,111,720				
28	Summer Ratio for Low Winter Use				**1.1637**	Schedule 10A p 2, ln 74			
29	High Winter Use				5,224,630				
30	Summer Ratio for High Winter Use				**0.9667**	Schedule 10A p 2, ln 66			
31									
32	Correction Factor =	Total Sales/((Low Winter Use x Winter Ratio for Low Winter Use)+(High Winter Use x Winter Ratio for High Winter Use							
33	Correction Factor =				**94.9254%**				
34									
35									
36	**Allocation Calculation for Miscellaneous Overhead**								
37									
38	Projected Winter Sales Volume				11/1/16 - 4/30/17		90,536,024		Sch.10B, ln 23
39	Projected Annual Sales Volume				11/1/16 - 10/31/17		112,608,831		Sch.10B, ln 23
40	Percentage of Winter Sales to Annual Sales						80.40%		

Liberty Utilities (EnergyNorth Natural Gas) Corp.
d/b/a Liberty Utilities
Off Peak 2017 Summer Cost of Gas Filing
2016 Summer Cost of Gas Filing

Dry Therms

Firm Sales	**Nov-16**	**Dec-16**	**Jan-17**	**Feb-17**	**Mar-17**	**Apr-17**	**Subtotal PK 16-17**	**May-17**	**Jun-17**	**Jul-17**	**Aug-17**	**Sep-17**	**Oct-17**	**Subtotal OP 17**	**Total**
R-1	70,459	88,846	103,149	106,011	97,065	73,827	539,357	53,415	36,398	28,158	29,691	38,681	52,367	238,709	778,066
R-3	4,031,132	7,387,727	10,476,622	11,219,378	9,505,345	6,391,881	49,012,084	3,681,061	1,768,932	1,003,835	979,123	1,477,984	2,652,634	11,563,570	60,575,654
R-4	219,774	414,696	653,018	803,488	711,334	560,041	3,362,351	352,526	174,140	88,379	77,475	95,094	146,564	934,178	4,296,529
Total Residential.	4,321,365	7,891,268	11,232,789	12,128,877	10,313,744	7,025,749	52,913,792	4,087,002	1,979,470	1,120,372	1,086,288	1,611,759	2,851,565	12,736,457	65,650,248
G-41	1,182,681	2,076,272	2,833,652	3,132,273	2,619,842	1,717,413	13,562,134	716,847	324,784	197,846	150,839	162,644	411,815	1,964,774	15,526,908
G-42	1,158,334	2,007,033	2,694,459	2,814,245	2,343,733	1,662,403	12,680,207	968,195	595,209	298,747	150,160	96,945	294,744	2,404,000	15,084,206
G-43	292,288	408,803	594,036	677,602	592,583	484,867	3,050,179	246,438	160,408	109,128	85,854	98,369	155,659	855,857	3,906,036
G-51	181,300	237,351	290,632	303,571	280,033	216,865	1,509,752	153,560	99,000	74,804	75,187	94,881	126,663	624,095	2,133,847
G-52	180,848	226,248	277,604	294,560	277,520	220,752	1,477,531	162,163	109,216	84,998	85,026	104,188	133,224	678,815	2,156,346
G-53	310,728	494,059	1,221,012	1,008,283	914,775	819,021	4,767,878	577,253	408,013	327,515	310,877	341,376	400,426	2,365,460	7,133,338
G-54	87,595	91,233	96,493	101,807	102,951	94,473	574,551	87,034	71,183	62,417	65,305	76,650	80,762	443,351	1,017,903
Total C/I	3,393,774	5,540,998	8,007,887	8,332,341	7,131,438	5,215,793	37,622,232	2,911,489	1,767,812	1,155,455	923,248	975,054	1,603,291	9,336,351	46,958,583
Sales Volume	**7,715,139**	**13,432,266**	**19,240,676**	**20,461,218**	**17,445,182**	**12,241,542**	**90,536,024**	**6,998,491**	**3,747,283**	**2,275,828**	**2,009,537**	**2,586,813**	**4,454,856**	**22,072,807**	**112,608,831**
Transportation Sales															
G-41	552,973	786,788	1,066,119	1,150,430	954,542	749,125	5,259,977	429,916	229,720	129,993	133,351	181,628	315,177	1,419,785	6,679,762
G-42	1,815,257	2,629,105	3,606,269	3,908,155	3,239,795	2,539,566	17,738,147	1,423,880	728,455	369,012	343,352	472,634	924,582	4,261,915	22,000,062
G-43	834,384	1,224,810	1,575,340	1,740,346	1,607,545	1,273,791	8,256,216	872,826	537,779	355,445	305,090	346,787	523,955	2,941,882	11,198,099
G-51	140,704	155,399	182,693	212,005	201,812	194,177	1,086,790	165,595	143,064	136,675	163,925	188,666	170,935	968,859	2,055,649
G-52	491,914	519,764	571,141	614,471	596,043	550,670	3,344,002	493,435	452,960	460,516	563,273	662,650	620,779	3,253,613	6,597,615
G-53	511,053	669,423	863,104	973,343	968,363	886,780	4,872,066	733,736	525,181	360,375	294,550	280,236	348,520	2,542,597	7,414,663
G-54	1,704,041	1,711,976	1,770,549	1,505,866	1,449,738	1,387,328	9,529,499	1,353,780	1,374,214	1,358,987	1,485,751	1,566,278	1,686,025	8,825,035	18,354,534
Total Trans. Sales	**6,050,326**	**7,697,264**	**9,635,215**	**10,104,616**	**9,017,838**	**7,581,437**	**50,086,696**	**5,473,168**	**3,991,372**	**3,171,004**	**3,289,291**	**3,698,879**	**4,589,974**	**24,213,686**	**74,300,383**
Total All Sales	**13,765,466**	**21,129,531**	**28,875,891**	**30,565,834**	**26,463,020**	**19,822,979**	**140,622,721**	**12,471,659**	**7,738,654**	**5,446,831**	**5,298,828**	**6,285,692**	**9,044,830**	**46,286,493**	**186,909,214**

Liberty Utilities (EnergyNorth Natural Gas) Corp.

Off Peak 2017 Summer Cost of Gas Filing

Normal and Design Year Volumes

Schedule 11A
Page 1 of 1

Volumes (Therms) **Normal Year**

For the Months of May 17 -October 17

	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Off Peak May - Oct
Pipeline Gas:							
Dawn Supply	828,493	776,108	788,755	754,758	729,210	796,657	4,673,981
Niagara Supply	646,759	606,011	615,738	589,198	569,392	621,906	3,649,004
TGP Supply (Gulf)	4,586,108	3,866,311	3,436,809	2,745,128	1,754,359	2,186,308	18,575,023
Dracut Supply 1 - Baseload	-	-	-	-	-	-	0
Dracut Supply 2 - Swing	2,673	-	-	-	-	433,664	436,336
City Gate Delivered Supply	-	-	-	-	-	-	0
LNG Truck	23,385	-	-	-	88,721	18,631	130,737
Propane Truck	76,836	74,377	73,151	69,998	69,883	35,978	400,222
PNGTS	32,739	22,636	20,991	20,086	24,307	39,833	160,593
TGP Supply (Z4)	1,702,419	1,595,549	1,620,764	1,551,515	1,497,920	1,601,023	9,569,189
Subtotal Pipeline Volumes	7,899,410	6,940,992	6,556,209	5,730,683	4,733,790	5,734,000	37,595,084
Storage Gas:							
TGP Storage	-	-	-	-	-	-	0
Produced Gas:							
LNG Vapor	19,376	18,109	18,447	17,652	17,015	18,631	109,230
Propane	-	-	-	-	-	-	0
Subtotal Produced Gas	19,376	18,109	18,447	17,652	17,015	18,631	109,230
Less - Gas Refills:							
LNG Truck	(23,385)	-	-	-	(88,721)	(18,631)	(130,737)
Propane	(76,836)	(74,377)	(73,151)	(69,998)	(69,883)	(35,978)	(400,222)
TGP Storage Refill	(3,016,649)	(3,293,931)	(3,346,484)	(2,992,859)	(1,754,359)	-	(14,404,282)
Subtotal Refills	(3,116,870)	(3,368,308)	(3,419,635)	(3,062,857)	(1,912,962)	(54,610)	(14,935,241)
Total Sendout Volumes	4,801,917	3,590,793	3,155,020	2,685,478	2,837,844	5,698,022	22,769,073

1 **Liberty Utilities (EnergyNorth Natural Gas) Corp.**

3 **Off Peak 2017 Summer Cost of Gas Filing**

42 **Normal and Design Year Volumes** — **Schedule 11B**

43 **Page 1 of 1**

44

45 **Volumes (Therms)** — **Design Year**

46

47 **For the Months of May 17 -October 17**

48

Line		May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Off Peak May - Oct
51	Pipeline Gas:							
52	Dawn Supply	828,493	776,108	788,755	754,758	729,210	796,657	4,673,981
53	Niagara Supply	646,759	606,011	615,738	589,198	569,392	621,906	3,649,004
54	TGP Supply (Gulf)	4,680,315	3,824,272	3,158,837	2,693,391	2,157,855	2,220,359	18,735,029
55	Dracut Supply 1 - Baseload	-	-	-	-	-	-	0
56	Dracut Supply 2 - Swing	423,600	-	-	-	-	736,265	1,159,865
57	City Gate Delivered Supply	-	-	-	-	-	-	0
58	LNG Truck	23,385	-	-	-	88,721	18,631	130,737
59	Propane Truck	76,836	74,377	73,151	69,998	69,883	35,978	400,222
60	PNTGS	32,739	22,636	20,991	20,086	24,307	39,833	160,593
61	TGP Supply (Z4)	1,703,087	1,594,902	1,620,764	1,551,515	1,497,920	1,601,023	9,569,210
62	Subtotal Pipeline Volumes	8,415,214	6,898,306	6,278,236	5,678,946	5,137,287	6,070,651	38,478,640
63								
64	Storage Gas:							
65	TGP Storage	-	-	-	-	-	-	0
66								
67	Produced Gas:							
68	LNG Vapor	19,376	18,109	18,447	17,652	17,015	18,631	109,230
69	Propane	-	-	-	-	-	-	-
70	Subtotal Produced Gas	19,376	18,109	18,447	17,652	17,015	18,631	109,230
71								
72	Less - Gas Refills:							
73	LNG Truck	(23,385)	-	-	-	(88,721)	(18,631)	(130,737)
74	Propane	(76,836)	(74,377)	(73,151)	(69,998)	(69,883)	(35,978)	(400,222)
75	TGP Storage Refill	(2,693,269)	(3,272,589)	(3,346,484)	(3,085,378)	(1,984,667)	(642)	(14,383,030)
76	Subtotal Refills	(2,793,490)	(3,346,966)	(3,419,635)	(3,155,376)	(2,143,271)	(55,252)	(14,913,989)
77								
78	Total Sendout Volumes	5,641,100	3,569,450	2,877,048	2,541,222	3,011,031	6,034,031	23,673,881

difference

Liberty Utilities (EnergyNorth Natural Gas) Corp.

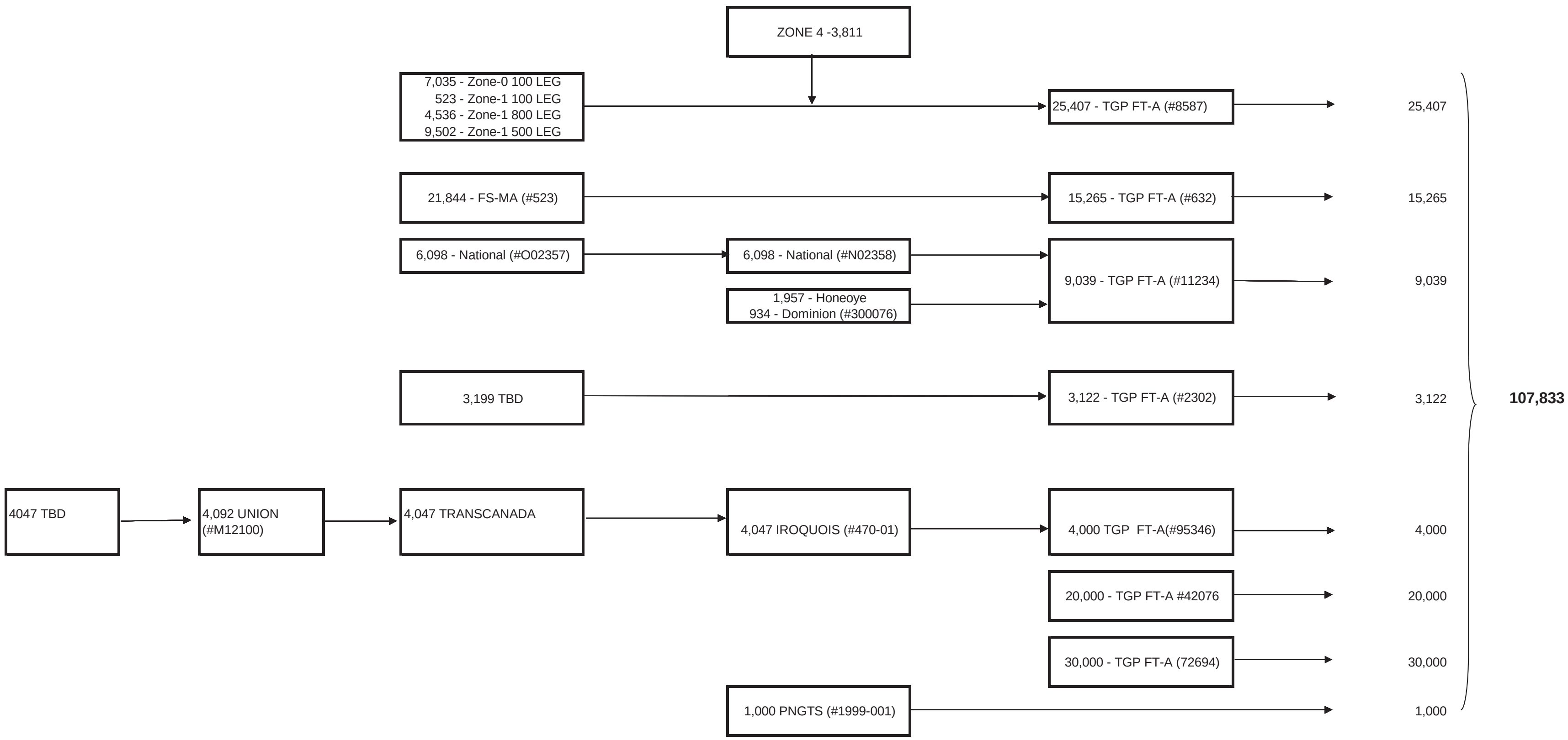
Off Peak 2017 Summer Cost of Gas Filing
Capacity Utilization
Volumes (Therms)

	Off-Peak Period Normal Year Use (Therms)	MDQ (MMBtu/day)	Seasonal Quantity (Therms)	Utilization Rate	Off-Peak Period Design Year Use (Therms)	MDQ (MMBtu/day)	Seasonal Quantity (Therms)	Utilization Rate
Pipeline Gas:								
Dawn Supply	4,673,981	4,000	7,360,000	64%	4,673,981	4,000	7,360,000	64%
Niagara Supply	3,649,004	3,122	5,744,480	64%	3,649,004	3,122	5,744,480	64%
TGP Supply (Gulf)	18,575,023	21,596	39,736,640	47%	18,735,029	21,596	39,736,640	47%
Dracut Supply 1 & 2	436,336	50,000	92,000,000	0%	1,159,865	50,000	92,000,000	1%
LNG Truck	130,737	-	-	-	130,737	-	-	-
Propane Truck	400,222	-	-	-	400,222	-	-	-
PNGTS	160,593	1,000	1,840,000	9%	160,593	1,000	1,840,000	9%
TGP Supply (Z4)	9,569,189	21,596	39,736,640	24%	9,569,210	21,596	39,736,640	24%
Other Purchased Resources	-		-		-		-	
Subtotal Pipeline Volumes	37,595,084				38,478,640			
Storage Gas:								
TGP Storage	0		25,792,710	0%	-		25,792,710	0%
Produced Gas:								
LNG Vapor	109,230				109,230			
Propane	-				-			
Subtotal Produced Gas	109,230				109,230			
Less - Gas Refills:								
LNG Truck	(130,737)				(130,737)			
Propane	(400,222)				(400,222)			
TGP Storage Refill	(14,404,282)				(14,383,030)			
Subtotal Refills	(14,935,241)				(14,913,989)			
Total Sendout Volumes	22,769,073				23,673,881			

Liberty Utilities (EnergyNorth Natural Gas) Corp.

Off Peak 2017 Summer Cost of Gas Filing

Transportation Available for Pipeline Supply and Storage
(MMBtu)



Liberty Utilities (EnergyNorth Natural Gas) Corp.

Off Peak 2017 Summer Cost of Gas Filing
Agreements for Gas Supply and Transportation

SOURCE	RATE SCHEDULE	CONTRACT NUMBER	TYPE	MDQ MMBTU	MAQ * MMBTU	EXPIRATION DATE	NOTIFICATION DATE	RENEWAL OPTIONS
Niagara	-	-	Supply	3,144	1,147,560	3/31/2017	N/a	Terminates
ANE	-	-	Supply	4,047	611,097	Peak Only	N/a	Terminates
GDF Suez	FLS		Liquid Refill	Up to 5 trucks	250,000 -	3/31/2017 Peak Only	-	Terminates
Dracut or Z6	NA	NA	Supply	Up to 20,000 / day -	1,427,000 -	2/29/2017	-	Terminates
TGP Long-Haul	-	-	Supply	21,596	3,908,876	4/30/2017	N/a	Terminates
Northern Transport	-	-	Trucking	28,500 Gallons	900,000 Gallons		N/a	Terminates
Dominion Transmission			Storage	934	102,700	3/31/2021	3/31/2019	Mutually
Honeoye Storage Corporation	SS-NY	11234	Storage	1,957	245,380	3/31/2020	12 months notice	Evergreen Provision
National Fuel Gas Supply Corporation	FSS	O02358	Storage	6,098	670,800	3/31/2018	3/31/2017	Evergreen Provision
National Fuel Gas Supply Corporation	FSST	N02358	Transportation	6,098	670,800	3/31/2018	3/31/2017	Evergreen Provision
Iroquois Gas Transmission System	RTS	47001	Transportation	4,047	1,477,155	11/1/2017	11/1/2016	Evergreen Provision
Portland Natural Gas Transmission System	FT 1999-01	1999-001	Transportation	1,000	365,000	10/31/2019	10/31/2018	Evergreen Provision
Tennessee Gas Pipeline Company	FS-MA	523	Storage	21,844	1,560,391	10/31/2020	10/31/2019	Evergreen Provision
Tennessee Gas Pipeline Company	FTA	8587	Transportation	25,407	9,273,555	10/31/2020	10/31/2019	Evergreen Provision
Tennessee Gas Pipeline Company	FTA	2302	Transportation	3,122	1,139,530	10/31/2020	10/31/2019	Evergreen Provision
Tennessee Gas Pipeline Company	FTA	632	Transportation	15,265	5,571,725	10/31/2020	10/31/2019	Evergreen Provision
Tennessee Gas Pipeline Company	FTA	11234	Transportation	9,039	3,299,235	10/31/2020	10/31/2019	Evergreen Provision
Tennessee Gas Pipeline Company	FTA	72694	Transportation	30,000	10,950,000	10/31/2029	10/31/2029	Evergreen Provision
Tennessee Gas Pipeline Company	FTA	95346	Transportation	4,000	1,460,000	11/30/2021	11/30/2020	Evergreen Provision
Tennessee Gas Pipeline Company	FTA	42076	Transportation	20,000	7,300,000	10/31/2020	10/31/2019	Evergreen Provision
TransCanada Pipeline	FT	29600	Transportation	4,047	1,477,155	10/31/2022	10/31/2021	Evergreen Provision
Union Gas Limited	M12	M12100	Transportation	4,092	1,493,580	10/31/2018	10/31/2016	Evergreen Provision

* MAQ is calculated on a 365 day calendar year.

1 **Liberty Utilities (EnergyNorth Natural Gas) Corp.**

3 **Off Peak 2017 Summer Cost of Gas Filing**
4 **Storage Inventory**

6 **Underground Storage Gas**

Ln	Description	Reference	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Total
8			(Estimate)	(Estimate)	(Estimate)	(Estimate)	(Estimate)	(Estimate)	
9	Beginning Balance (MMBtu)		291,088	441,252	742,917	1,072,310	1,406,959	1,706,245	1,951,935
11	Injections (MMBtu)	Sch 11A ln 37 /10	150,164	301,665	329,393	334,648	299,286	175,436	2,044,482
13	Subtotal		441,252	742,917	1,072,310	1,406,959	1,706,245	1,881,681	
15	Storage Sale								
17	Withdrawals (MMBtu)	Sch 11A ln 27 /10	-	-	-	-	-	-	(1,368,064)
19	Ending Balance (MMBtu)		441,252	742,917	1,072,310	1,406,959	1,706,245	1,881,681	2,628,353
22	Beginning Balance		$ 623,991	$ 862,979	$ 1,356,448	$ 1,973,012	$ 2,593,782	$ 3,039,060	3,609,668
24	Injections	ln 11 * ln 36	238,988	493,469	616,564	620,770	445,278	286,688	3,727,173
26	Subtotal		$ 862,979	$ 1,356,448	$ 1,973,012	$ 2,593,782	$ 3,039,060	$ 3,325,748	
28	Storage Sale								
30	Withdrawals	ln 17 * ln 34	$ -	$ -	$ -	$ -	$ -	$ -	(2,634,626)
32	Ending Balance		$ 862,979	$ 1,356,448	$ 1,973,012	$ 2,593,782	$ 3,039,060	$ 3,325,748	$ 4,702,215
34	Average Rate For Withdrawals	ln 22 /ln 9	$2.1437	$1.9557	$1.8258	$1.8400	$1.8435	$1.7811	
36	TGP Storage Rate for Injections	Actual or NYMEX plus TGP Transportation	$1.5915	$1.6358	$1.8718	$1.8550	$1.4878	$1.6341	

1 **Liberty Utilities (EnergyNorth Natural Gas) Corp.**

3 **Off Peak 2017 Summer Cost of Gas Filing**
4 **Storage Inventory**

Ln			May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Total
5									
39									
40	**Liquid Propane Gas (LPG)**								
41			May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Total
42			(Estimate)	(Estimate)	(Estimate)	(Estimate)	(Estimate)	(Estimate)	
43	Beginning Balance		55,656	55,656	63,340	70,777	78,092	85,092	96,655
44									
45	Injections	Sch 11A ln 36 /10	-	7,684	7,438	7,315	7,000	6,988	49,504
46									
47	Subtotal		55,656	63,340	70,777	78,092	85,092	92,080	
48									
49	Withdrawals	Sch 11A ln 31 /10	-	-	-	-	-	-	(61,632)
50									
51	Adjustment for change in temperature		-	-	-	-	-	-	-
52	Adjustment for Transfer								-
53	Ending Balance		55,656	63,340	70,777	78,092	85,092	92,080	84,527
54									
55									
56	Beginning Balance		$ 531,615	$ 531,615	$ 592,832	$ 652,355	$ 710,956	$ 766,853	$ 1,193,497
57									
58	Injections	ln 45 * ln 68	-	61,217	59,523	58,601	55,898	55,999	460,077
59									
60	Subtotal		$ 531,615	$ 592,832	$ 652,355	$ 710,956	$ 766,853	$ 822,852	
61									
62	Withdrawals	ln 51 * ln 66	-	-	-	-	-	-	(763,126)
63									
64	Ending Balance		$ 531,615	$ 592,832	$ 652,355	$ 710,956	$ 766,853	$ 822,852	$ 890,449
65									
66	Average Rate For Withdrawals		$9.5518	$9.3596	$9.2170	$9.1040	$9.0120	$8.9362	
67									
68	Propane Rate for Injections	Actual or Sch. 6, ln 151 * 10	$7.9293	$7.9673	$8.0029	$8.0110	$7.9857	$8.0133	
69									
70									

1 **Liberty Utilities (EnergyNorth Natural Gas) Corp.**

3 **Off Peak 2017 Summer Cost of Gas Filing**
4 **Storage Inventory**

Ln				May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Total
72	**Liquid Natural Gas (LNG)**									
73				(Estimate)	(Estimate)	(Estimate)	(Estimate)	(Estimate)	(Estimate)	
74	Beginning Balance			9,985	7,888	8,289	6,478	4,633	2,868	12,057
76	Injections	Sch 11A ln 35 /10		-	2,338	-	-	-	8,872	136,159
78	Subtotal			9,985	10,226	8,289	6,478	4,633	11,740	
80	Withdrawals	Sch 11A ln 30 /10		(2,097)	(1,938)	(1,811)	(1,845)	(1,765)	(1,701)	(132,541)
82	Ending Balance			7,888	8,289	6,478	4,633	2,868	10,038	15,675
85	Beginning Balance			82,383	65,080	67,851	53,027	37,926	23,477	$ 135,659
87	Injections	ln 76 * ln 97		-	18,631	-	-	-	71,094	742,823
89	Subtotal			$ 82,383	$ 83,712	$ 67,851	$ 53,027	$ 37,926	$ 94,571	
91	Withdrawals	ln 80 * ln 95		(17,302)	(15,861)	(14,824)	(15,100)	(14,449)	(13,706)	(833,806)
93	Ending Balance			$ 65,080	$ 67,851	$ 53,027	$ 37,926	$ 23,477	$ 80,864	$ 44,676
95	Average Rate For Withdrawals			$8.2508	$8.1859	$8.1859	$8.1859	$8.1859	$8.0554	
97	LNG Rate for Injections	Actual or Sch. 6, ln 150 * 10		$7.9293	$7.9673	$8.0029	$8.0110	$7.9857	$8.0133	