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**STATE OF NEW HAMPSHIRE
BEFORE THE
PUBLIC UTILITIES COMMISSION**

Docket No. DG 20-XXX

Liberty Utilities (EnergyNorth Natural Gas) Corp. d/b/a Liberty Utilities
Winter 2020/2021 Cost of Gas
Summer 2021 Cost of Gas

DIRECT TESTIMONY

OF

DAVID B. SIMEK

AND

CATHERINE A. MCNAMARA

September 1, 2020

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1 **I. INTRODUCTION**

2 **Q. Please state your full name and business address.**

3 A. (DS) My name is David B. Simek. My business address is 15 Buttrick Road,
4 Londonderry, New Hampshire.

5 (CM) My name is Catherine A. McNamara. My business address is 15 Buttrick Road,
6 Londonderry, New Hampshire.

7 **Q. Please state by whom you are employed.**

8 A. We are employed by Liberty Utilities Service Corp. (“Liberty”), which provides service
9 to Liberty Utilities (EnergyNorth Natural Gas) Corp. d/b/a Liberty Utilities
10 (“EnergyNorth” or “the Company”).

11 **Q. Please describe your educational background and your business and professional
12 experience.**

13 A. (DS) I graduated from Ferris State University in 1993 with a Bachelor of Science in
14 Finance. I received a Master’s of Science in Finance from Walsh College in 2000. I also
15 received a Master’s of Business Administration from Walsh College in 2001. In 2006, I
16 earned a Graduate Certificate in Power Systems Management from Worcester
17 Polytechnic Institute. In August 2013, I joined Liberty as a Utility Analyst and I was
18 promoted to Manager, Rates and Regulatory Affairs in August 2017. Prior to my
19 employment at Liberty, I was employed by NSTAR Electric & Gas (“NSTAR”) as a
20 Senior Analyst in Energy Supply from 2008 to 2012. Prior to my position in Energy

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1 Supply at NSTAR, I was a Senior Financial Analyst within the NSTAR Investment
2 Planning group from 2004 to 2008.

3 (CM) I graduated from the University of Massachusetts, Boston, in 1993 with a Bachelor
4 of Science in Management with a concentration in Accounting. In November 2017, I
5 joined Liberty as an Analyst in Rates and Regulatory Affairs. Prior to my employment at
6 Liberty, I was employed by Eversource as a Senior Analyst in the Investment Planning
7 group from 2015 to 2017. From 2008 to 2015, I was a Supervisor in the Plant
8 Accounting department. Prior to my position in Plant Accounting, I was a Financial
9 Analyst/General Ledger System Administrator within the Accounting group from 2000 to
10 2008.

11 **Q. Have you previously testified in regulatory proceedings before the New Hampshire**
12 **Public Utilities Commission (the “Commission”)?**

13 A. (DS) Yes. I have testified on numerous occasions before the Commission.

14 (CM) Yes. I have testified on multiple occasions before the Commission.

15 **Q. What is the purpose of your testimony?**

16 A. The purpose of our testimony is to explain the Company’s proposed firm sales cost of gas
17 rates for the 2020/2021 Winter (Peak) Period and the Company’s proposed 2020/2021
18 Local Delivery Adjustment Clause, both effective November 1, 2020. Our testimony
19 also explains the Company’s proposed firm sales cost of gas rates for the 2021 Summer
20 (Off-Peak) Period.

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1 **II. WINTER 2020/2021 COST OF GAS FACTOR**

2 **Q. What are the proposed firm Winter sales and firm transportation cost of gas rates?**

3 A. The Company proposes a firm sales cost of gas rate of \$0.5571 per therm for residential
4 customers, \$0.5552 per therm for commercial/industrial high winter use customers, and
5 \$0.5660 per therm for commercial/industrial low winter use customers as shown on
6 Proposed Eleventh Revised Page 92 (Bates 047). The Company proposes a firm
7 transportation cost of gas rate of \$0.0001 per therm as shown on Proposed Fourth
8 Revised Page 94 (Bates 049).

9 **Q. Please explain tariff page and Proposed Eleventh Revised Page 92 (Bates 047).**

10 A. Proposed Eleventh Revised Page 92 contains the calculation of the 2020/2021 Winter
11 Period Cost of Gas Rate and summarize the Company's forecast of firm gas costs and
12 firm gas sales. As shown on Page 92, the proposed 2020/2021 Average Cost of Gas of
13 \$0.5571 per therm is derived by adding the Direct Cost of Gas Rate of \$0.5319 per therm
14 to the Indirect Cost of Gas Rate of \$0.0252 per therm. The estimated total Anticipated
15 Direct Cost of Gas, derived on Page 92, is \$46,922,854. The estimated Indirect Cost of
16 Gas, also derived on Page 92, is \$2,220,114. The Direct Cost of Gas Rate of \$0.5319 and
17 the Indirect Cost of Gas Rate of \$0.0252 are determined by dividing each of these total
18 cost figures by the projected winter period firm sales volumes of 88,213,529 therms.

19 To calculate the total Anticipated Direct Cost of Gas, the Company adds a list of
20 allowable adjustments from deferred gas cost accounts to the projected demand and
21 commodity costs for the winter period supply portfolio. These allowable adjustments,
22 shown on Page 92.1, total \$1,012,447. These adjustments are added to the Unadjusted

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1 Anticipated Cost of Gas of \$45,910,407 to determine the Total Anticipated Direct Cost of
2 Gas of \$46,922,854.

3 **Q. What are the components of the Unadjusted Anticipated Cost of Gas?**

4 A. The Unadjusted Anticipated Cost of Gas shown on Proposed Original Page 92.1 consists
5 of the following components:

6	1. Purchased Gas Demand Costs	\$12,022,922
7	2. Purchased Gas Commodity Costs	28,276,980
8	3. Storage Demand and Capacity Costs	955,766
9	4. Storage Commodity Costs	3,064,149
10	5. Produced Gas Cost	<u>1,590,589</u>
11	Total	** <u>\$45,910,406</u>

12 **Slightly off due to rounding

13 **Q. What are the components of the allowable adjustments to the Cost of Gas?**

14 A. The allowable adjustments to gas costs, listed on Proposed Original Page 92.1, are as
15 follows:

16	1. Deferred Gas Cost Prior Period Under Collection	\$2,227,421
17	2. Interest	72,812
18	3. Fuel Inventory Revenue Requirement	441,037
19	4. Broker Revenues	(32,725)
20	5. Transportation COG Revenue	(4,516)
21	6. Capacity Release Margin	(1,736,581)
22	7. Fixed Price Administrative Cost	<u>45,000</u>
23	Total Adjustments	** <u>\$1,012,448</u>

24 **Slightly off due to rounding

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1 These allowable adjustments are standard adjustments made to the deferred gas cost
2 balance through the operation of the Company's cost of gas adjustment clause. We
3 discuss the factors contributing to the prior period under collection later in this testimony.

4 **Q. How does the proposed average cost of gas rate in this filing compare to the average**
5 **cost of gas rate approved by the Commission in Docket No. DG 19-145 for the**
6 **2019/2020 winter period?**

7 A. The average cost of gas rate proposed in this filing of \$0.5571 per therm is \$0.0632 per
8 therm less than the initial rate of \$0.6203 per therm approved by the Commission in
9 Order No. 26,306 (October 31, 2019) in Docket No. DG 19-145. The \$0.0632 per therm
10 decrease in the rate reflects a \$6,025,265 decrease in the Total Unadjusted Direct Cost of
11 Gas.

12 **Q. How does the proposed firm transportation winter cost of gas rate compare to the**
13 **rate approved by the Commission for the 2019/2020 winter period?**

14 A. The proposed firm transportation winter cost of gas rate is \$0.0001 per therm. The rate
15 approved in Docket No. DG 19-145 was \$0.0009 per therm. The decrease in the rate
16 relates primarily to an estimated \$29,483 decrease in commodity costs and the difference
17 between the winter season 2019/2020 beginning balance of \$29,161 (an over-collection)
18 and the winter season 2020/2021 beginning balance of \$40,053 (an over-collection).

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1 **Q. In the calculation of its firm transportation winter cost of gas rate, has the Company**
2 **updated the estimated percentage used for pressure support purposes?**

3 A. No. The Company used, for pressure support purposes, a rate of 8.7% based on the
4 marginal cost study used for the rate design approved in Docket No. DG 17-048.

5 **Q. Did the Company include a fuel inventory revenue requirement calculation in this**
6 **filing?**

7 A. Yes (Bates 198). The Company is proposing to collect \$441,037 in fuel inventory
8 revenue requirement consistent with Order No. 26,156 (July 10, 2018) in Docket No. DG
9 17-048. The impact of this amount to the overall Cost of Gas rate is \$0.0050 per therm
10 which is determined by dividing the \$441,037 by the estimated November 2019 through
11 October 2020 COG sales volumes of 87,788,508 therms.

12 **Q. How was the statutory tax rate of 27.08% calculated (Bates 198)?**

13 A. The statutory rate of 27.08% was calculated by using a 21% federal tax rate and a 7.7%
14 tax rate for the State of New Hampshire ($0.21 + 0.077 - (0.21 \times 0.077) = 0.27083$).

15 **Q. How was the common equity pre-tax rate of 6.280% calculated (Bates 198)?**

16 A. The common equity pre-tax rate of 6.280% was calculated by dividing the 9.30% rate of
17 return on common equity, approved in Docket No. DG 17-048, by 0.72917 ($1 - 0.27083$)
18 [statutory tax rate – see previous question]) and multiplied by 49.20% (equity component
19 of the capital structure approved in DG 17-048) [$0.093 / 0.72917 \times 0.4920 = 0.0628$].

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1 **Q. Has the bad debt percentage in this filing of 1.11% changed from the bad debt**
2 **percentage calculated in the Winter 2019/2020 Cost of Gas Reconciliation?**

3 A. No. The bad debt percentage of 1.11% used in this filing is the calculated rate for the
4 period of May 2019–April 2020.

5 **Q. What was the actual weighted average firm sales cost of gas rate for the 2019/2020**
6 **winter period?**

7 A. The weighted average cost of gas rate was \$0.4632 per therm (Bates 085 Line 54). This
8 was calculated by applying the actual monthly cost of gas rates for November 2019
9 through April 2020 to the monthly therm usage of an average residential heating
10 customer using 667 therms for the six winter period months.

11 **III. PRIOR WINTER PERIOD UNDER-COLLECTION**

12 **Q. Please explain the prior period under collection of \$1,863,956.**

13 A. The prior period under-collection is detailed in the 2019/2020 winter period
14 reconciliation that was filed with the Commission on July 31, 2020. The \$1,863,956
15 under-collection is the sum of the deferred gas cost, bad debt, and working capital over-
16 and under-collection balances as of April 30, 2020. The under-collection was driven
17 mainly by the lag in the timing of monthly cost of gas rate adjustments as compared to
18 changes in the underlying costs.

1 **IV. FIXED PRICE OPTION**

2 **Q. Has the Company established a winter period fixed price pursuant to its Fixed Price**
3 **Option Program?**

4 A. Yes. Pursuant to Order No. 24,515 in Docket No. DG 05-127, the Fixed Price Option
5 Program (“FPO”) rates are set at \$0.0200 per therm higher than the initial proposed COG
6 rate. Proposed Third Revised Page 91 (Bates 046) contains the FPO rate for the
7 2020/2021 winter period, which is \$0.5771 per therm for residential customers. This
8 compares to the FPO rate approved for the 2019/2020 winter period of \$0.6403 per therm
9 for residential customers. This represents a \$0.0632 per therm or 9.87% decrease in the
10 residential FPO rate. The total bill impact on the winter period bills for an average FPO
11 heating customer using 667 therms is a decrease of approximately \$34.21 or 3.67%
12 compared to last winter. The total bill impact reflects the overall rates in effect following
13 implementation of the increases approved in Docket No. DG 20-049, effective July 1,
14 2020, relating to the cast iron/bare steel main replacement program. The estimated
15 winter period bill for an average residential heating customer opting for the FPO would
16 be approximately \$13.32 (or 1.51%) higher than the bill under the proposed cost of gas
17 rates, assuming no monthly adjustments to the COG rate during the course of the winter.
18 Schedule 23 (Bates 195) contains the historical results of the FPO program.

19 **V. LOCAL DELIVERY ADJUSTMENT CLAUSE (“LDAC”)**

20 **Q. What are the surcharges that will be billed under the LDAC?**

21 A. As shown on Proposed Third Revised Page 97 (Bates 052), the Company is submitting
22 for approval an LDAC of \$0.0603 per therm for the residential non-heating class and

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1 residential heating class, and \$0.0549 per therm for the commercial/industrial bundled
2 sales classes, effective November 1, 2020. The surcharges proposed to be billed under
3 the LDAC are the Energy Efficiency Charge, the Revenue Decoupling Adjustment
4 Factor, the Environmental Surcharge for Manufactured Gas Plant (“MGP”) remediation,
5 the Residential Gas Assistance Program charge, and the rate case expense reconciliation
6 surcharge from Docket No. DG 17-048.

7 **Q. Which customers are billed an LDAC?**

8 A. All EnergyNorth customers including those in Keene are billed an LDAC charge. When
9 calculating the LDAC charge, the November 1, 2020, through October 31, 2021,
10 forecasted Keene therm sales of 1,442,013 are added to the EnergyNorth therm sales
11 forecast of 178,132,666 for a total therm sales forecast of 179,574,679.

12 **Q. Please explain the Energy Efficiency Charge.**

13 A. The Energy Efficiency Charge is designed to recover the projected expenses associated
14 with the Company’s energy efficiency programs for the November 2020–October 2021
15 period that will be filed with the Commission in the near future. In the calculation of the
16 Energy Efficiency Charge, the Company has also included the projected prior period
17 under-recovery of the Company’s residential and commercial energy efficiency programs
18 as of October 2020. As shown on Schedule 19 Energy Efficiency (Bates 124-126), the
19 proposed Energy Efficiency charge is \$0.0831 per therm for Residential customers and
20 \$0.0441 per therm for commercial and industrial customers.

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1 **Q. Please explain the Revenue Decoupling Adjustment Factor (“RDAF”).**

2 A. The purpose of the RDAF is to recover or refund, on an annual basis, the difference
3 between the Actual Base Revenue per Customer and the Benchmark Base Revenue per
4 Customer. Schedule 19 RDAF (Bates 109-123) shows the proposed Actual Base
5 Revenue per Customer and the Benchmark Base Revenue per Customer calculation of a
6 total over-collection of \$4,965,947 effective November 1, 2020, through October 31,
7 2021. Schedule 19 RDAF also includes a proposed September 2019 through August
8 2020 reconciliation. The reconciliation is new to this filing and calculates a remaining
9 refund of \$1,010,099 effective November 1, 2020, through October 31, 2021.

10 **Q. What is the proposed Residential Gas Assistance Program charge?**

11 A. As shown on Schedule 19 Gas Assistance (Bates 127-128), the proposed Residential Gas
12 Assistance charge is \$0.0121 per therm. It is designed to recover administrative costs,
13 revenue shortfall, and the prior period reconciliation adjustment relating to this program.
14 For the 2020/2021 winter period, the Company is providing a 45% base rate and cost of
15 gas discount, consistent with the settlement agreement approved by the Commission in
16 Order No. 26,397 (August 27, 2020) in Docket No. DG 20-013. The proposed
17 Residential Gas Assistance charge is designed to recover \$2,165,954, of which
18 \$1,689,200 is for the revenue shortfall resulting from 4,880 customers receiving a 45%
19 discount off their base and cost of gas rates, and \$476,754 for the prior year reconciling
20 adjustment.

21 **Q. In Order No. 24,824 (Feb. 29, 2008) in Docket No. DG 06-122 relating to short-term**
22 **debt issues, the Company agreed to adjust its short-term debt limits each year as**

1 **part of the Company's Winter Period Cost of Gas filing. Did the Company**
2 **calculate the short-term debt limit for fuel and non-fuel purposes in accordance**
3 **with this settlement?**

4 A. Yes, the Company included in Schedule 24 (Bates 196) the short-term debt limit for fuel
5 and non-fuel purposes for the 2020/2021 winter period. As shown, the short-term debt
6 limit for fuel inventory financing for the period November 1, 2020, through October 31,
7 2021, is calculated to be \$14,702,768 and the limit for non-fuel purposes is calculated to
8 be \$105,567,204.

9 **Q. Has the Company updated the Environmental Surcharge (Tariff Page 95)?**

10 A. Yes, it has. The costs submitted for recovery through the MGP remediation cost recovery
11 mechanism, as well as the third party recoveries, are included in the Environmental Cost
12 Summary in Schedule 20 (Bates 130) of this filing. The environmental investigation and
13 remediation costs that underlie these expenses are the result of efforts by the Company to
14 respond to its legal obligations with regard to these sites, as described by Ms. Casey in
15 her pre-filed direct testimony in this proceeding and as set forth in the MGP site
16 summaries included in this filing under Schedule 20. The Summary included in Schedule
17 20 shows the remediation cost pools for the Concord Pond, Concord MGP, Manchester,
18 Nashua, and Laconia sites, and a General Pool for costs that cannot be directly assigned
19 to a specific site.

20 A summary sheet and detailed backup spreadsheets that support the 2019/2020 costs are
21 provided in Schedule 20 of this filing. Ms. Casey's testimony describes the Company's
22 activities with regard to all five sites.

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1 **Q. Please describe how the Company calculated the Environmental Surcharge included**
2 **in this filing.**

3 A. The proposed Manufactured Gas Plant Remediation surcharge for the period beginning
4 November 1, 2020, and ending October 31, 2021, is \$0.0197 per therm. Consistent with
5 filings made over the past few years, this surcharge will recover a total of \$2,864,179 in
6 amortized remediation costs. New to this filing are amortized actual to forecast true-up
7 recovery costs through June 2019 of \$341,389 (total amount is \$1,024,167 which is
8 proposed to be amortized over three years). The \$1,024,167 is the recommended amount
9 provided by Audit Staff in the DG 19-145 Final Audit Report dated April 9, 2020. Also,
10 new to this filing are actual to forecast true-up recovery cost for the period July 2019
11 through June 2020 of \$338,564. The costs submitted for recovery are shown in the
12 Environmental Cost Summary included in Schedule 20 of this filing.

13 **Q. Did the Company include a Rate Case Expense (RCE) surcharge in this filing?**

14 A. Yes. As shown on Schedule 19 RCE (Bates 107-108), the Company is proposing to
15 collect \$44,619 in uncollected rate case expense consistent with Order No. 26,122 (April
16 27, 2018) in Docket No. DG 17-048. The RCE rate of \$0.0002 per therm is determined
17 by dividing the \$44,619 by the estimated November 2020 through October 2021 sales
18 volumes of 179,574,679 therms.

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1 **Q. Has the Company also updated its Company Allowance percentage for the period**
2 **November 2020 through October 2021 in accordance with Section 8 of the**
3 **Company’s Delivery Terms and Condition?**

4 A. Yes, in Schedule 25 (Bates 197) the Company has recalculated its Company Allowance
5 for the period November 2020 through October 2021. The Company calculated the
6 Company Allowance of 1.61% based on sendout and throughput data for the twelve-
7 month period ending June 2020. The Company proposes to apply this recalculated
8 Company Allowance to all supplier deliveries beginning in November 2020.

9 **VI. CUSTOMER BILL IMPACTS**

10 **Q. What are the estimated impacts of the proposed firm sales cost of gas rate and**
11 **proposed LDAC surcharges on an average heating customer’s winter bill as**
12 **compared to the winter rates in effect last year?**

13 A. The bill impact analysis is presented in Schedule 8 (Bates 085) of this filing. These bill
14 impacts reflect the implementation of the increases approved in Docket No. DG 20-049
15 effective July 1, 2020, relating to the cast iron/bare steel main replacement program. The
16 total bill impact over the winter period for an average residential heating customer is an
17 increase of approximately \$91.21 or 11.51%. The total bill impact over the winter period
18 for an average commercial/industrial G-41 customer is an increase of approximately
19 \$223.46, or 11.0% (Bates 086). Schedule 8 of this filing provides more detail of the
20 impact of the proposed rate adjustments on heating customers.

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1 **VII. OTHER TARIFF CHANGES**

2 **Q. Is the Company updating its Delivery Terms and Conditions in the filing?**

3 A. Yes. The Company is submitting Proposed Third Revised Page 147 (Bates 053) relating
4 to Supplier Balancing and Peaking Demand Charges and Proposed Third Revised Page
5 148 (Bates 054) relating to Capacity Allocation.

6 **Q. Please describe the changes to tariff Page 147.**

7 A. In Proposed Third Revised Page 147, the Company is updating the Peaking Demand
8 Charge from \$18.12 per MMBtu of Peak MDQ to \$17.32 per MMBtu of Peak MDQ.
9 This calculation is also presented in Schedule 21 (Bates 178-188).

10 **Q. Please describe the changes to tariff Page 148.**

11 A. Proposed Second Revised Page 148 updates the Capacity Allocator percentages used to
12 allocate pipeline, storage, and local peaking capacity to high and low load factor
13 customers under the mandatory capacity assignment requirement for firm transportation
14 service. Schedule 22 (Bates 189-194) contains the six-page worksheet that backs up the
15 calculations for the updated allocators.

16 **VIII. SUMMER 2020 COST OF GAS FACTOR**

17 **Q. What are the proposed 2020 summer firm sales cost of gas rates?**

18 A. The Company proposes a firm sales cost of gas rate of \$0.3148 per therm for residential
19 customers, \$0.3109 per therm for commercial/industrial high winter use customers, and
20 \$0.3199 per therm for commercial/industrial low winter use customers as shown on
21 Proposed Eighth Revised Page 89 (Bates 207).

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1 **Q. Please explain tariff pages Proposed Third Revised Page 88 and Proposed**
2 **Thirteenth Revised Page 89.**

3 A. Proposed Third Revised Page 88 (Bates 206) and Proposed Thirteenth Revised Page 89
4 (Bates 207) contain the calculation of the 2020 Summer Period Cost of Gas Rate and
5 summarize the Company's forecast of firm gas sales, firm gas sendout, and gas costs. On
6 Proposed Thirteenth Revised Page 89, the 2021 Average Cost of Gas of \$0.3148 per
7 therm is derived by adding the Direct Cost of Gas Rate of \$0.3257 per therm to the
8 Indirect Cost of Gas Rate of (\$0.0109) per therm. The estimated total Anticipated Direct
9 Cost of gas is \$7,386,965 and the estimated Indirect Cost of Gas is (\$246,190). The
10 Direct Cost of Gas Rate and the Indirect Cost of Gas Rates are determined by dividing
11 each of these total cost figures by the projected Summer firm sales volumes of
12 22,681,422 therms. Proposed Thirteenth Revised Page 89 further shows that the
13 Residential Cost of Gas Rate of \$0.3148 per therm is equal to the Average Cost of Gas
14 for all firm sales customers. It also shows the calculation of the Commercial/Industrial
15 High Winter Use Cost of Gas Rate of \$0.3109 per therm and the Commercial/Industrial
16 Low Winter Use Cost of Gas Rate of \$0.3199 per therm.

17 The calculation of the Anticipated Direct Cost of Gas is shown on Proposed Third
18 Revised Page 88. To derive the total Anticipated Direct Cost of Gas of \$7,386,965, the
19 Company starts with the Unadjusted Anticipated Cost of Gas of \$7,284,571 and adds the
20 Net Adjustment totaling \$102,394.

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1 **Q. What are the components of the Unadjusted Anticipated Cost of Gas?**

2 A. The Unadjusted Anticipated Cost of Gas consists of the following:

3	1. Purchased Gas Demand Costs	\$2,868,280
4	2. Purchased Gas Supply Costs	4,387,278
5	3. Produced Gas Costs	<u>29,014</u>
6	Total Unadjusted Anticipated Cost of Gas	** <u>\$7,284,572</u>

7 **Slightly off due to rounding

8 **Q. What are the components of the adjustments to the cost of gas?**

9 A. The adjustments to gas costs, listed on proposed Third Revised Page 88, are as follows:

10	1. Prior Period (Over)/Under Collection	\$105,886
11	2. Interest	<u>\$(3,492)</u>
12	Total Adjustments	<u>\$102,394</u>

13 **Q. How does the proposed average Residential Summer cost of gas rate in this filing**
14 **compare to the initial cost of gas rate approved by the Commission for the 2020**
15 **Summer Period?**

16 A. The cost of gas rate proposed in this filing is \$0.1372 per therm lower than the initial rate
17 approved by the Commission for the 2019 Summer Period (\$0.4520 vs. \$0.3148)
18 (Schedule 8, Bates 229). This decrease is primarily due to a \$1,779,560 lower estimated
19 under-collection compared to the under-collection from the prior summer period.

20 **Q. Does this conclude your testimony?**

21 A. Yes, it does.



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**DIRECT TESTIMONY
OF
DEBORAH M. GILBERTSON**

September 1, 2020

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1 **Q. Please state your name, business address, and position.**

2 A. My name is Deborah M. Gilbertson. I am Senior Manager, Energy Procurement for
3 Liberty Utilities Service Corp., which provides services to Liberty Utilities (EnergyNorth
4 Natural Gas) Corp. (“EnergyNorth” or “the Company”). My business address is 15
5 Buttrick Road, Londonderry, New Hampshire.

6 **Q. Please summarize your educational background and your business and professional**
7 **experience.**

8 A. I graduated from Bentley College in Waltham, Massachusetts, in 1996 with a Bachelor of
9 Science in Management. In 1997, I was hired by Texas Ohio Gas where I was employed
10 as a Transportation Analyst. In 1999, I joined Reliant Energy, located in Burlington,
11 Massachusetts, as an Operations Analyst. From 2000 to 2003, I was employed by Smart
12 Energy as a Sr. Energy Analyst. In 2004, I joined Keyspan Energy Trading as a Sr.
13 Resource Management Analyst and from 2008 to 2011, I was employed by National Grid
14 as a Lead Analyst in the Project Management Office. In 2011, I was hired by Liberty
15 Utilities as a Natural Gas Scheduler and was promoted to Manager of Retail Choice in
16 2012. In 2016, I was promoted to Sr. Manager of Energy Procurement. In this capacity,
17 I provide gas procurement services to EnergyNorth.

18 **Q. Have you previously testified in regulatory proceedings?**

19 A. Yes, I have testified before the New Hampshire Public Utilities Commission
20 (“Commission”) on prior occasions.

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1 **Q. What is the purpose of your testimony in this proceeding?**

2 A. The purpose of this testimony is to summarize the gas supply and firm transportation
3 portfolio and the forecasted sendout requirements for EnergyNorth for the 2020/21 peak
4 and off-peak seasons. This information is provided in significantly more detail in the
5 schedules that the Company is including with this filing.

6 **Q. Please describe the firm transportation contract portfolio that the Company now**
7 **holds.**

8 A. The Company currently holds firm transportation contracts on Tennessee Gas Pipeline
9 (106,833 MMBtu/day) and Portland Natural Gas Transmission System (“PNGTS”)
10 (1,000 MMBtu/day) to provide a daily deliverability of 107,833 MMBtu/day to its
11 citygate stations. In addition to these citygate delivery contracts, the Company also holds
12 other transportation contracts further upstream on other pipelines that feed into the
13 citygate delivery transportation contracts. Schedule 12, page 1 in the Company's filing is
14 a schematic diagram of the transportation contracts, and Schedule 12, page 2 is a table
15 listing these contracts. The transportation contracts provide delivery of natural gas from
16 three sources as described below.

17 First, the Company holds firm transportation contracts to allow for delivery of up to
18 8,122 MMBtu/day of Canadian supply. These consist of the following:

19 ➤ The Company can receive up to 4,000 MMBtu/day of firm Canadian supply from
20 Dawn, Ontario. This supply is delivered to the Company on Company-held firm
21 transportation contracts on Union Gas Limited, TransCanada Pipelines Limited,

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1 Iroquois Gas Transmission System (“Iroquois”), and Tennessee Gas Pipeline
2 (“Tennessee”).

- 3 ➤ The Company can receive up to 3,122 MMBtu/day of firm Canadian supply from
4 the Canadian/New York border at Niagara Falls, NY. This supply is delivered to
5 the Company on Company-held firm transportation contracts on Tennessee.
- 6 ➤ The Company can receive up to 1,000 MMBtu/day of firm Canadian supply from
7 a Company-held firm transportation contract PNGTS for delivery to its Berlin
8 service territory.

9 Second, the Company holds the following firm transportation contracts to allow for
10 delivery of up to 71,596 MMBtu/day of domestic supply from the producing and market
11 areas within the United States.

- 12 ➤ The Company can receive up to 21,596 MMBtu/day of firm domestic supplies
13 from Texas and Louisiana production areas. These supplies are delivered to the
14 Company on firm transportation contracts on Tennessee.
- 15 ➤ The Company can receive up to 50,000 MMBtu/day of firm supply from
16 Tennessee’s Dracut receipt point located in Dracut, Massachusetts. This supply is
17 delivered to the Company on two firm transportation contracts on Tennessee.

18 Third, the Company holds the following firm transportation contracts to allow for
19 delivery of up to 28,115 MMBtu/day of domestic supply from underground storage fields

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1 in the New York/Pennsylvania area or the purchase of flowing supply in or downstream
2 of Tennessee Zones 4 and 5.

3 ➤ The Company can receive up to 19,076 MMBtu/day of firm domestic supplies
4 from its Tennessee FS-MA storage contract. This contract allows for a storage
5 inventory capacity of 1,560,391 MMBtu. These supplies are delivered to the
6 Company on firm transportation contracts on Tennessee.

7 ➤ The Company can receive up to 9,039 MMBtu/day of firm domestic supplies
8 from its storage contracts with National Fuel Gas Supply Corporation, Honeoye
9 Storage Corporation, and Dominion Transmission, Inc. In aggregate, these
10 contracts allow for a storage inventory capacity of 1,019,740 MMBtu. These
11 supplies are delivered to the Company on a firm transportation contract on
12 Tennessee.

13 **Q. Have there been any changes in the portfolio of firm transportation contracts that**
14 **the Company now holds since the Company submitted its Winter 2019/2020 Cost of**
15 **Gas Filing?**

16 A. Yes, as noted in the 2019/2020 COG filing, the Company contracted for 5,000 Dth/day of
17 capacity utilizing PNGTS with primary delivery to Dracut. The new capacity was
18 obtained in the Portland Xpress Project (“PXP”) open season. The capacity is being
19 phased-in over three years. The commencement date was November 1, 2018. As
20 previously stated last year, the supply path begins at Dawn, Ontario, via Union Gas
21 Limited (“Union”), TransCanada Pipelines Limited (“TransCanada”), and PNGTS with

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1 firm delivery at Dracut, MA. The benefit of this contract is that the Company can source
2 gas at Dawn, which is a more liquid and much less expensive price point as compared to
3 purchasing gas at the very volatile pricing at Dracut. The path allows for more flexibility
4 in the Company's ability to source gas. For 2020/21, which is the third and final phase of
5 the expansion project, the volume is 5,000 Dth/day which is up from the 4,432 Dth/day
6 the Company was entitled to in 2019/20.

7 **Q. Would you describe the source of gas supplies used with these firm transportation**
8 **contracts?**

9 A. The firm transportation contracts that interconnect at the Canadian border may source
10 firm gas supplies from both Eastern and Western Canada. The Company's domestic
11 long-haul firm transportation contracts source firm gas supplies primarily from the U.S.
12 Gulf Coast during the winter period and also provide access to natural gas supplies in the
13 Marcellus Shale. Supplies purchased at the Dracut, Massachusetts, receipt point, on the
14 other hand, may originate from any of a number of locations including Western and
15 Eastern Canada, and liquefied natural gas ("LNG") from the import terminal in New
16 Brunswick, Canada.

17 **Q. Will there be any changes in the portfolio of supply contracts held by the Company**
18 **as compared to the portfolio of contracts that existed when the Company submitted**
19 **its Winter 2019/2020 Cost of Gas Filing?**

20 A. Yes. Typically, the Company negotiates a number of different supply contracts for
21 delivery during the peak period. Since its 2019/2020 COG filing, the Company has

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1 issued four requests for proposals (“RFP”) for supply for the upcoming winter period.
2 The first is for a baseload Tennessee Zone 6 citygate or Dracut supply; the second is for
3 its Canadian firm transportation capacity interconnecting with Iroquois Gas
4 Transmission, Inc. in Waddington, NY, (“ANE”); the third is for its Tennessee long-haul
5 capacity from the Gulf Coast and the Zone 4 market areas; and the last is for a Tennessee
6 Zone 6 citygate or Dracut swing supply with a call option. Each of these four RFPs for
7 the 2020/21 peak period supply are consistent with the RFPs conducted for the 2019/20
8 peak period.

9 **Q. Could you describe the RFP process in more detail?**

10 A. Yes. The Company issued an RFP for a baseload Tennessee Zone 6 citygate supply
11 priced at NYMEX plus a fixed basis as a hedge against basis price spikes. This RFP was
12 issued in accordance with the Company’s revised hedging plan, which was approved by
13 the Commission in Order No. 25,691 in Docket No. DG 14-133. The Company received
14 proposals for a delivered citygate supply and has selected a winning bidder.

15 The Company also issued an RFP for supply originating from Dawn, Ontario. The
16 Company entered into an Asset Management Agreement (“AMA”) transaction that will
17 provide a firm baseload supply during the peak period with index-based pricing. The
18 Company has selected a winning bidder.

19 For the Tennessee long-haul firm transportation from the U.S. Gulf Coast, the Company
20 issued an RFP for an AMA transaction coupled with a delivered service during the peak
21 period. The Company has selected a winning bidder.

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1 Lastly, the Company issued an RFP for a Tennessee Zone 6 citygate or Dracut supply
2 with an option for the Company to call on the supply as needed to meet day-to-day
3 increases in demand. The RFP requested a six-month Dracut or delivered citygate supply
4 with swing nomination provisions whereby it intends to release its Dracut capacity to the
5 winning bidder as needed. The price for this supply is market area index based. The
6 Company has selected a winning bidder.

7 **Q. Could you provide the status of the Company's storage refill plan?**

8 A. Yes. During the 2020 off-peak period, the Company has been injecting supplies into its
9 underground storage fields. The Company plans to have all storage fields, with the
10 exception of its Tennessee FS-MA storage, full by November 1, 2020; the Tennessee FS-
11 MA field is targeted to be approximately 95 percent full by November 1, 2020. The
12 approximate five percent unfilled portion of FS-MA storage provides a buffer which
13 allows the Company operational flexibility to inject some of its supply into storage if
14 needed due to weather fluctuations during the month of November. By December 1,
15 2020, it is the Company's plan to have all of its storage fields full.

16 **Q. Would you describe the additional sources of gas supply available to the Company
17 that do not require pipeline transportation capacity?**

18 A. The Company has three additional sources of gas supply available. First, as described in
19 the 2019/20 COG filing, the Company contracted with Constellation LNG, LLC for a
20 combination liquid/vapor service that can be used to either refill its LNG storage tanks
21 during the peak period and/or deliver incremental supply to its citygate for up to 7,000

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1 MMBtu per day in total. This flexibility will allow the Company to either call on
2 citygate delivered supply or use the liquid option to refill its LNG inventory. In addition,
3 the Company has contracted for dedicated LNG trucking in order to refill its LNG storage
4 inventory. Since the Company's LNG storage capability is limited, having dedicated
5 LNG trucks allows the Company to replenish inventory as it is used, provides supply
6 security for its customers, and enables the Company to adhere to its seven-day storage
7 inventory requirement (Puc 506.03).

8 Second, the Company refilled its propane inventory including approximately 390,000
9 gallons of storage inventory at its Amherst storage facility. Additionally, the Company
10 solicited bids for firm winter propane refill supply of 250,000 gallons with guaranteed
11 daily trucking capability of two trucks per day. The Company has selected a winner
12 bidder.

13 Third, the Company has solicited bids for an LNG supply contract to be used as winter
14 liquid refill only. This incremental liquid refill contract must also provide trucking of the
15 LNG for storage refill. By using the Constellation LNG vapor option along with a
16 separate refill supply contract, the Company will be positioned to meet the demands of
17 the seven-day storage inventory requirement. The Company has selected the winning
18 bidders.

19 **Q. Please describe the supplemental gas supply facilities available to the Company.**

20 A. The Company owns three LNG vaporization facilities in Concord, Manchester, and
21 Tilton that have a combined design vaporization rate of approximately 22,800

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1 MMBtu/day, but are limited operationally to a combined workable storage capacity of
2 approximately 12,600 MMBtu. As described previously, the Company solicited bids for
3 additional LNG refill and associated trucking in order to utilize more vaporization
4 capacity from its LNG facilities. The Company's LNG facilities will be refilled with
5 liquid natural gas from the previously mentioned Constellation combination liquid/vapor
6 service and/or the incremental LNG refill supply.

7 Additionally, the Company owns four propane facilities in Amherst, Manchester, Nashua,
8 and Tilton that have historically had a combined design vaporization capacity of
9 approximately 34,600 MMBtu/day and a combined workable storage capacity of
10 approximately 122,590 MMBtu. It should be noted that the Company is in the process of
11 determining the actual operational capacity of its propane facilities and initial analysis
12 indicated that the operation capacity may be closer to 25,000 MMBtu per day.

13 The Company has allocated approximately 12,000 MMBtu of the Amherst propane
14 storage capacity to its Keene Division leaving approximately 110,700 MMBtu of
15 combined workable storage capacity for EnergyNorth. The Company's propane facilities
16 were refilled during the summer of 2020 and they are ready for the 2020/21 peak period.
17 The Company will have arrangements in place for its propane trucking needs for the
18 upcoming peak period.

19 Together, these LNG and propane facilities provide the Company and its customers with
20 necessary system pressure support during peak days as well as a critical gas supply

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1 source to meet design day requirements. These facilities contribute to the Company's
2 reliable, flexible, and least-cost resource portfolio.

3 **Q. Ms. Gilbertson, what was the source of the projected sendout requirements and**
4 **costs used in this filing?**

5 A. As in prior cost of gas filings, the Company used projected sendout requirements and
6 costs from its internal budgets and forecasts.

7 **Q. Would you please describe the forecasted sendout requirements for the peak period**
8 **of 2020/21?**

9 A. Schedule 11A of the Company's filing shows the Company's forecasted sendout
10 requirements for sales customers at 90,922,460 therms over the period November 1,
11 2020, to April 30, 2021, under normal weather conditions, which is down from last year's
12 forecasted volume of 92,542,043 therms for the period November 1, 2019, to April 30,
13 2020. In comparison, the normalized actual sendout for firm sales customers for the
14 November 1, 2019, to April 30, 2020, period was 89,856,459 therms (Reconciliation
15 Filing, Summary Page 5, 'Total Volume Weather Variance,' Column B).

16 Schedule 11B shows the Company's forecasted sendout requirements for sales customers
17 of 101,061,871 therms over the period November 1, 2020, to April 30, 2021, under
18 design weather conditions, which is down from last year's forecasted volume of
19 101,870,197 therms for the period November 1, 2019, to April 30, 2020. For the current
20 peak period forecast, design weather requirements are approximately 10 percent greater
21 than normal sendout requirements for weather that is 10 percent colder than normal.

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1 In Schedule 11C, the Company summarizes the normal and design year sendout
2 requirements, the seasonally-available contract quantities (inclusive of assigned and
3 Company Managed capacity), and the utilization rates of its pipeline firm transportation
4 and storage contracts.

5 Schedule 11D shows the Company's forecasted design day sendout for sales customers
6 for the upcoming 2020/21 winter of 1,248,088 therms, which is up slightly from last
7 year's figure of 1,209,082 therms.

8 **Q. Would you please describe the forecasted sendout requirements for the off-peak**
9 **period of 2021?**

10 A. Schedule 11A of the Company's filing shows the Company's forecasted sendout
11 requirements of 22,065,798 therms over the period May 1 to October 31, 2021, under
12 normal weather conditions, which is higher than last year's forecasted volume of
13 17,827,358 therms over the period May 1 to October 31, 2020. The reason for the uptick
14 in volume is due primarily to a shifting of customers from transportation service to sales
15 service as a result of a specific marketer's exit from the Retail Choice program.

16 Schedule 11B shows the Company's forecasted sendout requirements of 22,175,995
17 therms over the period May 1 to October 31, 2021, under design weather conditions,
18 which is higher than last year's forecasted volume of 17,960,094 therms over the period
19 May 1 to October 31, 2020.

20 In Schedule 11C, the Company summarizes the normal and design off-peak sendout
21 requirements, the seasonally-available contract quantities (inclusive of assigned and

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1 Company Managed capacity), and the calculated utilization rates of its pipeline
2 transportation and storage contracts based on the normal and design off-peak forecasts
3 contained in Schedules 11A and 11B.

4 **Q. Can you please discuss the impacts, if any, of COVID-19 and the current economic**
5 **uncertainties on the Sales demand forecast for 2020/21?**

6 A. The demand forecast within this COG filing was created with due consideration of the
7 impact of COVID-19 and the current economic uncertainties. These uncertainties, and a
8 lack of definitive empirical information, make it challenging to predict the impact on
9 demand for 2020/21. The Company has relied upon the most recent information
10 available at the time the forecast was created. The Company used the forecast of
11 economic indicators from Moody's and the EIA. These publications assess economic
12 variables such as real personal income, housing stocks and employment levels and are
13 used to forecast energy demand as such. In addition, the Company relied upon its
14 internal Sales and Marketing team to provide a closer vision of growth expectations in its
15 service territory despite the current economic situation.

16 Additionally, the Company is monitoring and assessing the actual impact of COVID-19
17 on sales and demand as this information becomes available and the efforts to reopen the
18 economy continue to evolve. Although there is only limited information at this time, the
19 Company has compared expected sales to the actual sales. The estimate of the COVID-
20 19 impact in March demonstrated a 4.3% sales demand decline over expected sales for
21 the same period. For April, there was an 8.2% decline and the impact on May sales was a

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1 3 % decline. Expected sales are defined as sales that the company would expect given
2 the actual weather and the actual number of customers for that particular month.

3 It is worth noting that the total annual firm transport plus firm sales customer demand for
4 2020/21 is expected to be approximately 4% lower than what was predicted for 2019/20
5 in last year's COG filing due to factors mentioned above. However, the firm sales
6 portion of the demand forecast for 2020/21 has increased slightly from 2019/20. As
7 mentioned earlier on page 11, the slight increase in sales volume is due to reverse
8 migration of customers who were previously on Firm Transportation Service but
9 switched to Sales Service. It is not known at this time if those customers will eventually
10 choose to return to Firm Transportation Service.

11 **Q. Please provide the results of the Company's basis hedging program for the winter of**
12 **2019/20.**

13 A. For the winter of 2019/20 the Company hedged the Tennessee Zone 6 basis through the
14 purchase of physical supply for its baseload requirements from Dracut for the months of
15 December, January, and February as provided for in Docket No. DG 14-133 and
16 approved in Order *Nisi* No. 25691. The result of this basis hedging program showed a
17 cost of approximately \$2,400,000. This is an expected outcome consistent with a warmer
18 than normal winter. Although the Company cannot predict whether the hedge program
19 will result in a gain or loss each year, it does support the need for price stabilization
20 against fluctuations in the market prices during peak period.

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- 1 **Q. Has the Company hedged the Tennessee Zone 6 basis for the winter 2020/21?**
- 2 A. Yes, the company conducted an RFP to solicit physical supply basis bids for the months
- 3 of December, January, and February during the 2020/21 winter and has selected a
- 4 supplier.
- 5 **Q. Does this conclude your direct pre-filed testimony in this proceeding?**
- 6 A. Yes, it does.



**STATE OF NEW HAMPSHIRE
BEFORE THE
PUBLIC UTILITIES COMMISSION**

Docket No. DG 20-XXX

Liberty Utilities (EnergyNorth Natural Gas) Corp. d/b/a Liberty Utilities
Winter 2020/2021 Cost of Gas
Summer 2021 Cost of Gas

DIRECT TESTIMONY

OF

MARY E. CASEY

September 1, 2020

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1 **I. INTRODUCTION**

2 **Q. Please provide your name, job title, and job description.**

3 A. My name is Mary E. Casey. I am the Senior Manager, Environment, for Liberty Utilities
4 Service Corp. (“Liberty”). I am responsible for overseeing the management,
5 investigation, and remediation of manufactured gas plant (MGP) sites for Liberty Utilities
6 (EnergyNorth Natural Gas) Corp. d/b/a Liberty Utilities (“EnergyNorth” or “the
7 “ompany”), as well as operational environmental compliance, including air and waste
8 permitting, wetlands permitting and protection and spill response.

9 **Q. Please describe your educational and professional background.**

10 A. I hold a Bachelor of Science in Chemical Engineering from Polytechnic Institute of New
11 York, and a Master of Science in Civil/Environmental Engineering from Polytechnic
12 University. I have been employed by Liberty since July 3, 2012, managing the
13 investigation and remediation of MGP sites. Prior to my employment by Liberty, I held
14 the position of Principal Environmental Engineer for National Grid and KeySpan Energy,
15 with responsibility for operational environmental compliance.

16 **Q. What is the purpose of your testimony?**

17 A. The purpose of my testimony is to discuss the status of EnergyNorth’s site investigation
18 and remediation efforts at various MGP sites in New Hampshire, to briefly describe the
19 MGP-related activities performed by the various contractors and consultants, to discuss
20 the costs for which the Company is seeking rate recovery, and to describe the status of
21 the Company’s efforts to seek reimbursement for MGP-related liabilities from third

1 parties. My testimony is intended to update the information provided by the Company in
2 prior cost of gas proceedings. The costs associated with these investigations and
3 remediation efforts and certain of the amounts recovered from third parties are included
4 in the schedules and other data prepared by Mr. Simek and Ms. McNamara as part of the
5 Company's cost of gas filing.

6 **II. STATUS OF INVESTIGATION AND REMEDIATION ACTIVITIES**

7 **Q. Please briefly describe the status of each of the Company's MGP sites.**

8 A. Consistent with past practice, the description of the status of investigation and
9 remediation efforts at each site, as well as the various efforts to recover the site
10 investigation and remediation costs from third parties, are summarized in materials
11 included in the Company's filing at Schedule 20.

12 **Q. Please briefly describe the current status of the Company's remediation efforts at**
13 **the Lower Liberty Hill site in Gilford and any significant events over the course of**
14 **the past year at that site.**

15 A. The project has been completed since December 2015. The site is stable and the grass is
16 mowed twice a year. The Notice of Activity and Use Restriction (AUR) was approved
17 by New Hampshire Department of Environmental Services ("NHDES") and recorded at
18 the Belknap Registry of Deeds in February 2017. The groundwater wells are monitored
19 and sampled once a year per the new Groundwater Management Permit that was obtained
20 from NHDES in May 2017.

1 **Q. Please briefly describe the current status of the Company's remediation work at the**
2 **Manchester MGP.**

3 A. On-site activities in the past year included further investigation and remediation of areas
4 showing localized contamination, as described in the December 2014 Remedial Design
5 Report approved by NHDES. These remediation activities included further investigation
6 and removal of material from a subsurface tar liquor decanter tank located in the gas
7 plant in June 2019, involving substantial waste removal and disposal. These costs were
8 invoiced in July 2019, and are including in this filing. In addition, a substantial amount
9 of MGP-impacted soil was removed and sent off site for disposal in conjunction with a
10 water supply line reconstruction that occurred last summer at the entrance to the plant
11 property. Groundwater monitoring is ongoing twice a year pursuant to the Groundwater
12 Management Permit for this site.

13 **Q. Please briefly describe the current status of the Company's remediation work at the**
14 **Concord MGP.**

15 A. The Company and City are moving toward a remedy for the MGP-impacted "Concord
16 Pond" site on the parcel known as Healy Park. The design was altered so that no work
17 will be done in the Department of Transportation Limited Access I-93 Right-of-Way, and
18 it will also allow the City to access its storm water system for maintenance on the east
19 side of the highway where the wetland cap will be constructed. A design involving
20 wetland and subaqueous capping is being finalized. The City and the Company are
21 presently drafting a Memorandum of Understanding that gives legal access for the pre-
22 design investigation field work, the construction of the remedy and subsequent

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1 maintenance of the capped area after its completion. The construction of the remedy was
2 planned to take place in 2020, but the Company decided to delay this activity to 2021 due
3 to the COVID-19 pandemic.

4 In 2017, the Company received approval from NHDES on a near-bank sediment
5 sampling program in the Merrimack River, or Monitored Natural Recovery (MNR). This
6 program involves annual sediment sampling for contaminants and river bathymetry
7 studies to monitor both the chemical and physical behavior of sediments that may have
8 been impacted by coal tar wastes. There will be five annual samplings, the third of which
9 was conducted in October 2019.

10 The City and the Company jointly prepared a report that details various use options for
11 the Gas Holder site on the east side of the highway, including costs for various scenarios
12 ranging from cleaning and fortifying the holder structure for public entry to demolition of
13 the structure. City Council is presently reviewing the options in the report. At the
14 Concord MGP gas holder site on the west side of the highway, further deterioration of the
15 structure has been observed. As a result, new sections of security fence had to be
16 installed.

17 **Q. Please briefly describe the current status of the Company's remediation work at the**
18 **Nashua MGP.**

19 A. In May 2019, the NHDES accepted details of a cap design for the central portion of the
20 property, and construction was planned for 2020, in conjunction with a capital paving
21 project for this property. However, this cap and pave project has been moved to the 2021

1 construction season due to the COVID-19 pandemic. The Company is presently working
2 on obtaining State and Local permitting for this project.

3 **Q. What other MGP investigation and remediation activity has the Company**
4 **undertaken in the last year?**

5 A. No other MGP investigation and remediation activity has occurred in the last year.

6 **III. STATUS OF INSURANCE COVERAGE LITIGATION**

7 **Q. Have there been any recent significant developments in the Company's efforts to**
8 **seek contribution from its insurance carriers in the past year?**

9 A. No. Insurance recovery efforts are complete with respect to all of the Company's former
10 MGP sites.

11 **Q. What environmental remediation efforts do you anticipate for the remainder of**
12 **2019 and in 2020?**

13 A. At the Manchester MGP site, the Company will continue remediation of localized areas
14 of contamination on-site as well as working on the storm drain improvement for a
15 deteriorated drainage pipe along the western boundary of the property. At the Concord
16 MGP site, the Company will continue to seek out interested developers to re-purpose the
17 building and property, and continue environmental site monitoring. For the Concord
18 Pond site, the Company will continue to work with the City to design and construct the
19 wetland cap remedy per the approved design in the dry season of 2021. The monitoring
20 of near bank sediments will continue in October 2020 per the NHDES-approved
21 Monitored Natural Recovery plan. At the Nashua MGP site, the Company is targeting

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1 2021 for capping and paving to commence, now that approval of the cap design has been
2 received. All sites are also now in the monitoring phase, so groundwater monitoring will
3 occur at all of them under their respective Groundwater Management Permits.

4 **Q. Does this conclude your direct testimony?**

5 **A. Yes, it does.**

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Proposed Revised Tariff Pages

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LIBERTY UTILITIES

Revised Proposed Twenty-Fourth Revised Page 84
Superseding Twenty-Third Revised Page 84

II RATE SCHEDULES
FIRM RATE SCHEDULES

Rates effective November 1, 2019 - April 30, 2020
Rates effective November 1, 2020 - April 30, 2021
Winter Period

Rates Effective July 1, 2019 - October 31, 2019
Rates Effective July 1, 2020 - October 31, 2020
Summer Period

	Delivery Charge	Cost of Gas Rate Page 89	LDAC Page 97	Total Rate	Delivery Charge	Cost of Gas Rate Page 89	LDAC Page 97	Total Rate
Residential Non Heating - R-1	\$ 15.20			\$ 15.20	\$ 15.20			\$ 15.20
Customer Charge per Month per Meter	\$ 15.50			\$ 15.50	\$ 15.50			\$ 15.50
All Therms	\$ 0.3860	\$ 0.5571	\$ 0.0603	\$ 1.0034	\$ 0.3860	\$ 0.4914	\$ 0.0310	\$ 0.9084
	\$ 0.3786	\$ 0.6203	\$ 0.0635	\$ 1.0624	\$ 0.3786	\$ 0.5556	\$ 0.0660	\$ 1.0002
Residential Heating - R-3	\$ 15.20			\$ 15.20	\$ 15.20			\$ 15.20
Customer Charge per Month per Meter	\$ 15.50			\$ 15.50	\$ 15.50			\$ 15.50
Size of the first block								
all therms								
All Therms	\$ 0.5678	\$ 0.5571	\$ 0.0603	\$ 1.1852	\$ 0.5678	\$ 0.4914	\$ 0.0310	\$ 1.0902
	\$ 0.5569	\$ 0.6203	\$ 0.0635	\$ 1.2407	\$ 0.5569	\$ 0.5556	\$ 0.0660	\$ 1.1785
Residential Heating - R-4	\$ 6.08			\$ 6.08	\$ 6.08			\$ 6.08
Customer Charge per Month per Meter	\$ 8.52			\$ 8.52	\$ 15.50			\$ 15.50
Size of the first block								
all therms								
All Therms	\$ 0.3123	\$ 0.3064	\$ 0.0603	\$ 0.6790	\$ 0.5678	\$ 0.4914	\$ 0.0310	\$ 1.0902
	\$ 0.2228	\$ (0.6203)	\$ 0.0635	\$ (0.3340)	\$ 0.2228	\$ 0.5556	\$ 0.0660	\$ 0.8444
Commercial/Industrial - G-41	\$ 56.36			\$ 56.36	\$ 56.36			\$ 56.36
Customer Charge per Month per Meter	\$ 57.46			\$ 57.46	\$ 57.46			\$ 57.46
Size of the first block								
100 therms								
Therms in the first block per month at	\$ 0.4711	\$ 0.5552	\$ 0.0549	\$ 1.0812	\$ 0.4711	\$ 0.4868	\$ 0.0478	\$ 1.0057
	\$ 0.4624	\$ 0.6190	\$ 0.0494	\$ 1.1305	\$ 0.4624	\$ 0.5524	\$ 0.0757	\$ 1.0899
All therms over the first block per month at	\$ 0.3165	\$ 0.5552	\$ 0.0549	\$ 0.9266	\$ 0.3165	\$ 0.4868	\$ 0.0478	\$ 0.8511
	\$ 0.3104	\$ 0.6190	\$ 0.0494	\$ 0.9788	\$ 0.3104	\$ 0.5524	\$ 0.0757	\$ 0.9382
Commercial/Industrial - G-42	\$ 169.09			\$ 169.09	\$ 169.09			\$ 169.09
Customer Charge per Month per Meter	\$ 172.39			\$ 172.39	\$ 172.39			\$ 172.39
Size of the first block								
1000 therms								
Therms in the first block per month at	\$ 0.4284	\$ 0.5552	\$ 0.0549	\$ 1.0385	\$ 0.4284	\$ 0.4868	\$ 0.0478	\$ 0.9630
	\$ 0.4202	\$ 0.6190	\$ 0.0494	\$ 1.0886	\$ 0.4202	\$ 0.5524	\$ 0.0757	\$ 1.0480
All therms over the first block per month at	\$ 0.2855	\$ 0.5552	\$ 0.0549	\$ 0.8956	\$ 0.2855	\$ 0.4868	\$ 0.0478	\$ 0.8201
	\$ 0.2800	\$ 0.6190	\$ 0.0494	\$ 0.9484	\$ 0.2800	\$ 0.5524	\$ 0.0757	\$ 0.9078
Commercial/Industrial - G-43	\$ 725.66			\$ 725.66	\$ 725.66			\$ 725.66
Customer Charge per Month per Meter	\$ 739.83			\$ 739.83	\$ 739.83			\$ 739.83
All therms over the first block per month at	\$ 0.2633	\$ 0.5552	\$ 0.0549	\$ 0.8734	\$ 0.1204	\$ 0.4868	\$ 0.0478	\$ 0.6550
	\$ 0.2583	\$ 0.6190	\$ 0.0494	\$ 0.9267	\$ 0.1181	\$ 0.5524	\$ 0.0757	\$ 0.7459
Commercial/Industrial - G-51	\$ 56.36			\$ 56.36	\$ 56.36			\$ 56.36
Customer Charge per Month per Meter	\$ 57.46			\$ 57.46	\$ 57.46			\$ 57.46
Size of the first block								
100 therms								
Therms in the first block per month at	\$ 0.2839	\$ 0.5660	\$ 0.0549	\$ 0.9048	\$ 0.2839	\$ 0.4985	\$ 0.0478	\$ 0.8302
	\$ 0.2785	\$ 0.6258	\$ 0.0494	\$ 0.9537	\$ 0.2785	\$ 0.5633	\$ 0.0757	\$ 0.9175
All therms over the first block per month at	\$ 0.1846	\$ 0.5660	\$ 0.0549	\$ 0.8055	\$ 0.1846	\$ 0.4985	\$ 0.0478	\$ 0.7309
	\$ 0.1811	\$ 0.6258	\$ 0.0494	\$ 0.8563	\$ 0.1811	\$ 0.5633	\$ 0.0757	\$ 0.8204
Commercial/Industrial - G-52	\$ 169.09			\$ 169.09	\$ 169.09			\$ 169.09
Customer Charge per Month per Meter	\$ 172.39			\$ 172.39	\$ 172.39			\$ 172.39
Size of the first block								
1000 therms								
Therms in the first block per month at	\$ 0.2439	\$ 0.5660	\$ 0.0549	\$ 0.8648	\$ 0.1767	\$ 0.4985	\$ 0.0478	\$ 0.7230
	\$ 0.2392	\$ 0.6258	\$ 0.0494	\$ 0.9144	\$ 0.1733	\$ 0.5633	\$ 0.0757	\$ 0.8123
All therms over the first block per month at	\$ 0.1624	\$ 0.5660	\$ 0.0549	\$ 0.7833	\$ 0.1004	\$ 0.4985	\$ 0.0478	\$ 0.6467
	\$ 0.1593	\$ 0.6258	\$ 0.0494	\$ 0.8345	\$ 0.0985	\$ 0.5633	\$ 0.0757	\$ 0.7375
Commercial/Industrial - G-53	\$ 746.81			\$ 746.81	\$ 746.81			\$ 746.81
Customer Charge per Month per Meter	\$ 761.39			\$ 761.39	\$ 761.39			\$ 761.39
All therms over the first block per month at	\$ 0.1705	\$ 0.5660	\$ 0.0549	\$ 0.7914	\$ 0.0818	\$ 0.4985	\$ 0.0478	\$ 0.6281
	\$ 0.1672	\$ 0.6258	\$ 0.0494	\$ 0.8424	\$ 0.0802	\$ 0.5633	\$ 0.0757	\$ 0.7192
Commercial/Industrial - G-54	\$ 746.81			\$ 746.81	\$ 746.81			\$ 746.81
Customer Charge per Month per Meter	\$ 761.39			\$ 761.39	\$ 761.39			\$ 761.39
All therms over the first block per month at	\$ 0.0650	\$ 0.5660	\$ 0.0549	\$ 0.6859	\$ 0.0353	\$ 0.4985	\$ 0.0478	\$ 0.5816
	\$ 0.0638	\$ 0.6258	\$ 0.0494	\$ 0.7309	\$ 0.0347	\$ 0.5633	\$ 0.0757	\$ 0.6737

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NHPUC NO. 10 - GAS
LIBERTY UTILITIES

Revised Proposed Twenty-Fifth Revised Page 86
Superseding Twenty-Fourth Revised Page 86

**II RATE SCHEDULES
FIRM RATE SCHEDULES**

Rates effective November 1, 2019 – April 30, 2020
Rates effective November 1, 2020 - April 30, 2021
Winter Period

Rates Effective October 1, 2019 – October 31, 2019
Rates Effective July 1, 2020 - October 31, 2020
Summer Period

	Delivery Charge	Cost of Gas Rate Page 89	LDAC Page 97	Total Rate	Delivery Charge	Cost of Gas Rate Page 89	LDAC Page 97	Total Rate
Residential Non Heating - R-5	\$ 19.76			\$ 19.76	\$ 19.76			\$ 19.76
Customer Charge per Month per Meter	\$ 20.15			\$ 20.15	\$ 20.15			\$ 20.15
All Therms	\$ 0.5018	\$ 0.5571	\$ 0.0603	\$ 1.1192	\$ 0.5018	\$ 0.4914	\$ 0.0660	\$ 1.0592
	\$ 0.4922	\$ 0.5825	\$ 0.0660	\$ 1.1407	\$ 0.4922	\$ 0.5566	\$ 0.0660	\$ 1.1138
Residential Heating - R-6	\$ 19.76			\$ 19.76	\$ 19.76			\$ 19.76
Customer Charge per Month per Meter	\$ 20.15			\$ 20.15	\$ 20.15			\$ 20.15
Size of the first block								
All Therms								
Therms in the first block per month at	\$ 0.7381	\$ 0.5571	\$ 0.0603	\$ 1.3555	\$ 0.7381	\$ 0.4914	\$ 0.0660	\$ 1.2955
	\$ 0.7240	\$ 0.5825	\$ 0.0660	\$ 1.3726	\$ 0.7240	\$ 0.5566	\$ 0.0660	\$ 1.3456
Residential Heating - R-7	\$ 7.90			\$ 7.90	\$ 7.90			\$ 7.90
Customer Charge per Month per Meter	\$ 11.08			\$ 11.08	\$ 20.15			\$ 20.15
Size of the first block								
All Therms	\$ 0.4060	\$ 0.3064	\$ 0.0603	\$ 0.7727	\$ 0.7381	\$ 0.4914	\$ 0.0660	\$ 1.2955
Therms in the first block per month at	\$ 0.2896	\$ 0.5825	\$ 0.0660	\$ 0.9381	\$ 0.2896	\$ 0.5566	\$ 0.0660	\$ 0.9142
Commercial/Industrial - G-44	\$ 73.26			\$ 73.26	\$ 73.26			\$ 73.26
Customer Charge per Month per Meter	\$ 74.69			\$ 74.69	\$ 74.69			\$ 74.69
Size of the first block								
100 therms	\$ 0.6126	\$ 0.5552	\$ 0.0549	\$ 1.2227	\$ 0.6127	\$ 0.4868	\$ 0.0757	\$ 1.1752
20 therms	\$ 0.6008	\$ 0.5817	\$ 0.0757	\$ 1.2582	\$ 0.6008	\$ 0.5621	\$ 0.0757	\$ 1.2286
All therms over the first block per month at	\$ 0.4114	\$ 0.5552	\$ 0.0549	\$ 1.0214	\$ 0.4113	\$ 0.4868	\$ 0.0757	\$ 0.9738
	\$ 0.4036	\$ 0.5817	\$ 0.0757	\$ 1.0610	\$ 0.4036	\$ 0.5621	\$ 0.0757	\$ 1.0344
Commercial/Industrial - G-45	\$ 219.82			\$ 219.82	\$ 219.82			\$ 219.82
Customer Charge per Month per Meter	\$ 224.11			\$ 224.11	\$ 224.11			\$ 224.11
Size of the first block								
1000 therms	\$ 0.5569	\$ 0.5552	\$ 0.0549	\$ 1.1670	\$ 0.5569	\$ 0.4868	\$ 0.0757	\$ 1.1194
400 therms	\$ 0.5463	\$ 0.5817	\$ 0.0757	\$ 1.2037	\$ 0.5463	\$ 0.3856	\$ 0.0757	\$ 1.0076
All therms over the first block per month at	\$ 0.3711	\$ 0.5552	\$ 0.0549	\$ 0.9811	\$ 0.3710	\$ 0.4868	\$ 0.0757	\$ 0.9335
	\$ 0.3639	\$ 0.5817	\$ 0.0757	\$ 1.0213	\$ 0.3639	\$ 0.3856	\$ 0.0757	\$ 0.8264
Commercial/Industrial - G-46	\$ 943.36			\$ 943.36	\$ 943.36			\$ 943.36
Customer Charge per Month per Meter	\$ 961.78			\$ 961.78	\$ 961.78			\$ 961.78
All therms over the first block per month at	\$ 0.3423	\$ 0.5552	\$ 0.0549	\$ 0.9524	\$ 0.1565	\$ 0.4868	\$ 0.0757	\$ 0.7190
	\$ 0.3358	\$ 0.5817	\$ 0.0757	\$ 0.9932	\$ 0.1535	\$ 0.3856	\$ 0.0757	\$ 0.6447
Commercial/Industrial - G-55	\$ 73.26			\$ 73.26	\$ 73.26			\$ 73.26
Customer Charge per Month per Meter	\$ 74.69			\$ 74.69	\$ 74.69			\$ 74.69
Size of the first block								
100 therms	\$ 0.3691	\$ 0.5660	\$ 0.0549	\$ 0.9899	\$ 0.3691	\$ 0.4985	\$ 0.0757	\$ 0.9433
Therms in the first block per month at	\$ 0.3621	\$ 0.5870	\$ 0.0757	\$ 1.0248	\$ 0.3635	\$ 0.5633	\$ 0.0757	\$ 1.0025
All therms over the first block per month at	\$ 0.2400	\$ 0.5660	\$ 0.0549	\$ 0.8608	\$ 0.2400	\$ 0.4985	\$ 0.0757	\$ 0.8142
	\$ 0.2354	\$ 0.5870	\$ 0.0757	\$ 0.8984	\$ 0.2383	\$ 0.5633	\$ 0.0757	\$ 0.8773
Commercial/Industrial - G-56	\$ 219.82			\$ 219.82	\$ 219.82			\$ 219.82
Customer Charge per Month per Meter	\$ 224.11			\$ 224.11	\$ 224.11			\$ 224.11
Size of the first block								
1000 therms	\$ 0.3171	\$ 0.5660	\$ 0.0549	\$ 0.9379	\$ 0.2297	\$ 0.4985	\$ 0.0757	\$ 0.8039
Therms in the first block per month at	\$ 0.3109	\$ 0.5870	\$ 0.0757	\$ 0.9736	\$ 0.2253	\$ 0.5633	\$ 0.0757	\$ 0.8643
All therms over the first block per month at	\$ 0.2111	\$ 0.5660	\$ 0.0549	\$ 0.8320	\$ 0.1305	\$ 0.4985	\$ 0.0757	\$ 0.7047
	\$ 0.2074	\$ 0.5870	\$ 0.0757	\$ 0.8698	\$ 0.1280	\$ 0.5633	\$ 0.0757	\$ 0.7670
Commercial/Industrial - G-57	\$ 970.84			\$ 970.84	\$ 970.84			\$ 970.84
Customer Charge per Month per Meter	\$ 989.80			\$ 989.80	\$ 989.80			\$ 989.80
All therms over the first block per month at	\$ 0.2216	\$ 0.5660	\$ 0.0549	\$ 0.8424	\$ 0.1063	\$ 0.4985	\$ 0.0757	\$ 0.6805
	\$ 0.2174	\$ 0.5870	\$ 0.0757	\$ 0.8801	\$ 0.1043	\$ 0.5633	\$ 0.0757	\$ 0.7433
Commercial/Industrial - G-58	\$ 970.84			\$ 970.84	\$ 970.84			\$ 970.84
Customer Charge per Month per Meter	\$ 989.80			\$ 989.80	\$ 989.80			\$ 989.80
All therms over the first block per month at	\$ 0.0846	\$ 0.5660	\$ 0.0549	\$ 0.7055	\$ 0.0459	\$ 0.4985	\$ 0.0757	\$ 0.6201
	\$ 0.0829	\$ 0.5870	\$ 0.0757	\$ 0.7456	\$ 0.0450	\$ 0.5633	\$ 0.0757	\$ 0.6840

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NHPUC NO. 10 - GAS
LIBERTY UTILITIES

Proposed Third Revised Page 91
Superseding Second Revised Page 91

II. RATE SCHEDULES
CALCULATION OF FIXED WINTER PERIOD COST OF GAS RATE
PERIOD COVERED: WINTER PERIOD, NOVEMBER 1, 2020 THROUGH APRIL 30, 2021
PERIOD COVERED: ~~WINTER PERIOD, NOVEMBER 1, 2019 THROUGH APRIL 30, 2020~~
(Refer to Text in Section 17(A) Fixed Price Option Program)

(Col 1)	(Col 2)	(Col 3)	(Col 2)	(Col 3)
Total Anticipated Direct Cost of Gas	\$ 52,211,274		\$ 46,922,854	
Projected Prorated Sales (11/01/2018 - 4/30/2019) (11/01/2019 - 4/30/2020)	87,788,508		88,213,529	
Direct Cost of Gas Rate		\$ 0.5947		\$ 0.5319 per therm
Demand Cost of Gas Rate	\$ 11,060,200	\$ 0.1260	\$ 12,978,688	\$ 0.1471
Commodity Cost of Gas Rate	40,875,472	0.4656	\$ 32,931,719	\$ 0.3733
Adjustment Cost of Gas Rate	<u>275,604</u>	<u>0.0034</u>	<u>\$ 1,012,447</u>	<u>\$ 0.0115</u>
Total Direct Cost of Gas Rate	52,211,274	\$ 0.5947	\$ 46,922,854	\$ 0.5319
Total Anticipated Indirect Cost of Gas	\$ 2,254,330		\$ 2,220,114	
Projected Prorated Sales (11/01/2018 - 4/30/2019) (11/01/2019 - 4/30/2020)	87,788,508		88,213,529	
Indirect Cost of Gas		\$ 0.0256		\$ 0.0252 per therm
TOTAL PERIOD AVERAGE COST OF GAS EFFECTIVE NOVEMBER 1, 20192018		\$ 0.6203		\$ 0.5571
Calculation of FPO				
TOTAL PERIOD AVERAGE COST OF GAS EFFECTIVE		\$ 0.6203		\$ 0.5571
FPO Risk Premium		\$ 0.0200		\$ 0.0200
TOTAL PERIOD FIXED PRICE OPTION COST OF GAS RATE EFFECTIVE(11/01/2018) (11/01/2019)		\$ 0.6403		\$ 0.5771
RESIDENTIAL COST OF GAS RATE (11/01/2019) (11/01/2020)	/therm	\$ 0.6403	/therm	\$ 0.5771

Total Anticipated Direct Cost of Gas	\$ 52,211,274		\$ 46,922,854	
Projected Prorated Sales (11/01/2018 - 4/30/2019) (11/01/2019 - 4/30/2020)	87,788,508		88,213,529	
Direct Cost of Gas Rate		\$ 0.5947		\$ 0.5319 per therm
Demand Cost of Gas Rate	\$ 11,060,200	\$ 0.1260	\$ 12,978,688	\$ 0.1471
Commodity Cost of Gas Rate	40,875,472	0.4656	\$ 32,931,719	\$ 0.3733
Adjustment Cost of Gas Rate	<u>275,604</u>	<u>0.0034</u>	<u>\$ 1,012,447</u>	<u>\$ 0.0115</u>
Total Direct Cost of Gas Rate	52,211,274	\$ 0.5947	\$ 46,922,854	\$ 0.5319
Total Anticipated Indirect Cost of Gas	\$ 2,254,330		\$ 2,220,114	
Projected Prorated Sales (11/01/2018 - 4/30/2019) (11/01/2019 - 4/30/2020)	87,788,508		88,213,529	
Indirect Cost of Gas		\$ 0.0256		\$ 0.0252 per therm
TOTAL PERIOD AVERAGE COST OF GAS EFFECTIVE NOVEMBER 1, 20192018		\$ 0.6203		\$ 0.5571
Calculation of FPO				
TOTAL PERIOD AVERAGE COST OF GAS EFFECTIVE		\$ 0.6203		\$ 0.3064
FPO Risk Premium		\$ 0.0200		\$ 0.0110
TOTAL PERIOD FIXED PRICE OPTION COST OF GAS RATE EFFECTIVE(11/01/2018) (11/01/2019)		\$ 0.6403		\$ 0.3174
RESIDENTIAL COST OF GAS RATE (11/01/2019) (11/01/2020)	/therm	\$ 0.6403	/therm	\$ 0.3174

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NHPUC NO. 10 - GAS
LIBERTY UTILITIES

Proposed Eleventh Revised Page 92
Superseding Tenth Revised Page 92

CALCULATION OF FIRM SALES COST OF GAS RATE
PERIOD COVERED: WINTER PERIOD, NOVEMBER 1, 2020 THROUGH APRIL 30, 2021
~~PERIOD COVERED: WINTER PERIOD, NOVEMBER 1, 2019 THROUGH APRIL 30, 2020~~
(Refer to Text in Section 16 Cost of Gas Clause)

(Col 1)	(Col 2)	(Col 3)	(Col 2)	(Col 3)
Total Anticipated Direct Cost of Gas	\$ 52,211,274		\$ 46,922,854	
Projected Prorated Sales (11/01/20 - 04/30/21) (11/01/19 - 04/30/20)	87,788,508		88,213,529	
Direct Cost of Gas Rate		0.5947		\$ 0.5319 per therm
Demand Cost of Gas Rate	\$ 11,060,200	0.1260	\$ 12,978,688	\$ 0.1471
Commodity Cost of Gas Rate	40,875,472	0.4656	32,931,719	\$ 0.3733
Adjustment Cost of Gas Rate	275,604	0.0031	1,012,447	\$ 0.0115
Total Direct Cost of Gas Rate	\$ 52,211,274	0.5947	\$ 46,922,854	\$ 0.5319
Total Anticipated Indirect Cost of Gas	\$ 2,251,330		\$ 2,220,114	
Projected Prorated Sales (11/01/20 - 04/30/21) (11/01/19 - 04/30/20)	87,788,508		88,213,529	
Indirect Cost of Gas		0.0256		\$ 0.0252 per therm
TOTAL PERIOD AVERAGE COST OF GAS EFFECTIVE 11/01/20				\$ 0.5571 per Therm
TOTAL PERIOD AVERAGE COST OF GAS EFFECTIVE 11/01/19		0.6203		

RESIDENTIAL COST OF GAS RATE - 11/01/20	COGwr	\$ 0.5571 /therm
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Residential COST OF GAS RATE - 11/01/19	COGwr	\$ 0.6203 /therm
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Maximum (COG + 25%) \$ 0.7754 \$ 0.6964

GAS ASSISTANCE PLAN RESIDENTIAL COST OF GAS RATE R-4 & R-7 - 11/01/20	COGwr	\$ 0.3064 /therm
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Maximum (COG + 25%) \$ 0.3830

C&I LOW WINTER USE COST OF GAS RATE - 11/01/20	COGwl	\$ 0.5660 /therm
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C&I LOW WINTER USE COST OF GAS RATE - 11/01/19	COGwl	\$ 0.6258 /therm
---	------------------	-----------------------------

Average Demand Cost of Gas Rate Effective 11/01/19 11/01/2020	\$ 0.1260	\$ 0.1471	Maximum	(COG + 25%)	\$ 0.7823	\$ 0.7075
Times: Low Winter Use Ratio (Winter)	1.0465	1.0620				
Times: Correction Factor	0.9976	<u>0.9984</u>				
Adjusted Demand Cost of Gas Rate	\$ 0.1346	\$ 0.1560				
Commodity Cost of Gas Rate	\$ 0.4656	\$ 0.3733				
Adjustment Cost of Gas Rate	0.0031	0.0115				
Indirect Cost of Gas Rate	0.0256	0.0252				
Adjusted C&I Low Winter Use Cost of Gas Rate	\$ 0.6258	\$ 0.5660				

C&I HIGH WINTER USE COST OF GAS RATE - 11/01/20	COGwh	\$ 0.5552 /therm
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C&I HIGH WINTER USE COST OF GAS RATE - 11/01/19	COGwh	\$ 0.6190 /therm
--	------------------	-----------------------------

Average Demand Cost of Gas Rate Effective 11/01/19 11/01/2020	\$ 0.1260	\$ 0.1471	Maximum	(COG + 25%)	\$ 0.7737	\$ 0.6941
Times: High Winter Use Ratio (Winter)	0.9948	0.9890				
Times: Correction Factor	0.9976	<u>0.9984</u>				
Adjusted Demand Cost of Gas Rate	\$ 0.1247	\$ 0.1452				
Commodity Cost of Gas Rate	\$ 0.4656	\$ 0.3733	Minimum			
Adjustment Cost of Gas Rate	0.0031	0.0115	Maximum			
Indirect Cost of Gas Rate	0.0256	0.0252				
Adjusted C&I High Winter Use Cost of Gas Rate	\$ 0.6190	\$ 0.5552				

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President

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NHPUC NO. 10 - GAS
LIBERTY UTILITIES

Proposed First Revised Page 92.1
Superseding Original Revised Page 92.1

Anticipated Cost of Gas
PERIOD COVERED: WINTER PERIOD, NOVEMBER 1, 2020 THROUGH APRIL 30, 2021
(REFER TO TEXT ON IN SECTION 16 COST OF GAS CLAUSE)

(Col 1)	(Col 2)	(Col 3)
ANTICIPATED DIRECT COST OF GAS		
Purchased Gas:		
Demand Costs:	\$ 10,157,458	\$ 12,022,922
Supply Costs:	<u>34,260,417</u>	<u>28,276,980</u>
Storage Gas:		
Demand, Capacity:	\$ 902,742	\$ 955,766
Commodity Costs:	<u>4,281,375</u>	<u>3,064,149</u>
Produced Gas:	<u>2,333,680</u>	1,590,589
Hedged Contract (Saving)/Loss	<u> </u>	-
Hedge Underground Storage Contract (Saving)/Loss:	<u> </u>	-
Unadjusted Anticipated Cost of Gas:	<u>\$ 51,935,672</u>	\$ 45,910,407
Adjustments:		
Prior Period (Over)/Under Recovery (as of 05/01/20)	\$ 1,912,240	\$ 2,227,421
Interest	<u>(84,952)</u>	<u>72,812</u>
Fuel Inventory Revenue Requirement	<u>254,644</u>	<u>441,037</u>
Broker Revenues	<u>(30,924)</u>	<u>(32,725)</u>
Refunds from Suppliers	<u> </u>	-
Fuel Financing	<u> </u>	-
Transportation CGA Revenues	<u>(44,894)</u>	<u>(4,516)</u>
Interruptible Sales Margin	<u> </u>	-
Capacity Release and Off System Sales Margins	<u>(1,875,483)</u>	<u>(1,736,581)</u>
Hedging Costs	<u> </u>	-
Fixed Price Option Administrative Costs	<u>45,000</u>	<u>45,000</u>
Total Adjustments	<u>275,604</u>	<u>1,012,447</u>
Total Anticipated Direct Cost of Gas:	<u>\$ 52,211,274</u>	\$ 46,922,854
Anticipated Indirect Cost of Gas		
Working Capital:		
Total Unadjusted Anticipated Cost of Gas 11/01/20 - 04/30/21	\$ 51,935,672	\$ 45,910,407
Working Capital Rate: Lead Lag Days / 365	0.0994	0.0391
Prime Rate	5.25%	3.25%
Working Capital Percentage	0.205%	0.127%
Working Capital	<u>106,622</u>	<u>58,347</u>
Plus: Working Capital Reconciliation (Acct 142.20)	<u>(42,277)</u>	<u>(66,837)</u>
Total Working Capital Allowance	<u>64,345</u>	<u>(8,490)</u>
Bad Debt:		
Total Unadjusted Anticipated Cost of Gas 11/01/20 - 04/30/21	\$ 51,935,672	\$ 45,910,407
Less: Refunds	<u>64,345</u>	<u>(8,490)</u>
Plus: Total Working Capital	<u>64,345</u>	<u>(8,490)</u>
Plus: Prior Period (Over)/Under Recover	<u>1,912,240</u>	<u>2,227,421</u>
Subtotal	<u>53,942,228</u>	<u>48,129,338</u>
Bad Debt Percentage	<u>1.11%</u>	<u>1.11%</u>
Bad Debt Allowance	<u>598,426</u>	<u>534,236</u>
Plus: Bad Debt Reconciliation (Acct 175.52)	<u>(492,518)</u>	<u>(296,628)</u>
Total Bad Debt Allowance	<u>195,908</u>	<u>237,608</u>
Production and Storage Capacity	<u>1,980,428</u>	\$ 1,980,428
Miscellaneous Overhead 11/01/20 - 04/30/21	\$ 13,170	\$ 13,170
Times Winter Sales	<u>88,326</u>	<u>89,365</u>
Divided by Total Sales	<u>109,235</u>	<u>111,369</u>
Miscellaneous Overhead	<u>10,649</u>	<u>10,568</u>
Total Anticipated Indirect Cost of Gas:	<u>\$ 2,254,330</u>	\$ 2,220,114
Total Cost of Gas	<u>\$ 54,462,602</u>	\$ 49,142,968

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NHPUC NO. 10 - GAS
LIBERTY UTILITIES

Proposed Fourth Revised Page 94
Superseding Third Revised Page 94

II. RATE SCHEDULES

Calculation of Firm Transportation Cost of Gas Rate
PERIOD COVERED: WINTER PERIOD, NOVEMBER 1, 2020 THROUGH APRIL 30, 2021
~~PERIOD COVERED: WINTER PERIOD, NOVEMBER 1, 2019 THROUGH APRIL 30, 2020~~
(Refer to text in Section 16(Q) Firm Transportation Cost of Gas Clause)

(Col 1)	(Col 2)	(Col 3)	(Col 4)	(Col 2)	(Col 3)	(Col 4)
ANTICIPATED COST OF SUPPLEMENTAL GAS SUPPLIES:						
PROPANE	\$ 1,409,746			\$ 568,511		
LNG	<u>\$ 923,934</u>			<u>1,022,078</u>		
TOTAL ANTICIPATED COST OF SUPPLEMENTAL GAS SUPPLIES	<u>2,333,680</u>			1,590,589		
ESTIMATED PERCENTAGE USED FOR PRESSURE SUPPORT PURPOSES	8.7%			8.7%		
ESTIMATED COST OF LIQUIDS USED FOR PRESSURE SUPPORT PURPOSES	<u>\$ 203,030</u>			<u>\$ 138,381</u>		
PROJECTED FIRM THROUGHPUT (THERMS):						
FIRM SALES	88,325,512	63.5%		89,364,968	67.8%	
FIRM TRANSPORTATION SUBJECT TO FTCCG	50,711,358	<u>36.5%</u>		<u>42,456,275</u>	<u>32.2%</u>	
TOTAL FIRM THROUGHPUT SUBJECT TO COST OF GAS CHARGE	139,036,871	100.0%		131,821,243	100.0%	
TRANSPORTATION SHARE OF SUPPLEMENTAL GAS SUPPLIES	36.5%	203,030 =	\$ 74,052	32.2% x	\$ 138,381 =	\$ 44,569
PRIOR (OVER) OR UNDER COLLECTION			(29,161)			<u>(40,053)</u>
NET AMOUNT TO COLLECT FROM (RETURNED TO) TRANSPORTATION CUSTOMERS			\$ 44,891			\$ 4,516
PROJECTED FIRM TRANSPORTATION THROUGHPUT			50,711,358			42,456,275
FIRM TRANSPORTATION COST OF GAS			\$ 0.0000			\$ 0.0001

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**NHPUC NO. 10 - GAS
 LIBERTY UTILITIES**

**Proposed Fourth Revised Page 95
 Superseding Third Revised Page 95**

Environmental Surcharge - Manufactured Gas Plants

Manufactured Gas Plants

Required annual increase in rates	\$ 2,860,522	\$ 2,864,179
DG 10-017 Base Rate Revision Collections	\$ _____	\$ 341,389
Environmental Subtotal	\$ 2,860,522	\$ 338,564
Overall Annual Net Increase to Rates	\$ 2,860,522	\$ 3,544,132
Estimated weather normalized firm therms billed for the twelve months ended 10/31/20 - sales and transportation	187,178,686	179,574,679 therms
Surcharge per therm	\$ 0.0153	<u>\$0.0197</u> per therm
<u>Total Environmental Surcharge</u>	\$ 0.0153	<u><u>\$0.0197</u></u>

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**NHPUC NO. 10 - GAS
LIBERTY UTILITIES**

**Proposed Third Revised Page 96
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Liberty Utilities (Energy North Natural Gas) Corp. d/b/a Liberty Utilities
Local Distribution Adjustment Charge (LDAC) decrease due to Rate Case Expense and Recoupment
For LDAC effective November 1, 2020 - October 31, 2021
~~For LDAC effective November 1, 2019 - October 31, 2020~~

1	Rate Case Expense Remaining from Docket No. DG 17-048	\$257,626
2	Recoupment Remaining from Docket No. DG 17-048	<u>\$244,584</u>
3	July 1, 2019 Balance	\$502,207
4	Plus Estimated Interest from July 2019 through October 2019	\$7,674
5	Minus Estimated Recoveries from July 2019 through October 2019	<u>(\$206,666)</u>
6	Total Estimated Remaining Recovery As of November 1, 2019	\$303,212
7	Estimated November 2019 - October 2020 Interest	<u>\$6,013</u>
8	Total Remaining Recovery	\$309,225
9	Estimated November 2019 - October 2020 Sales (therms)	187,178,686
10	RCE & Recoupment rate per therm November 2019 - October 2020	\$0.0017
1	Rate Case Expense Remaining from Docket No. DG 17-048	\$87,069
2	Recoupment Remaining from Docket No. DG 17-048	<u>\$0</u>
3	July 1, 2020 Balance	\$87,069
4	Plus Estimated Interest from July 2020 through October 2020	\$745
5	Minus Estimated Recoveries from July 2020 through October 2020	<u>(\$43,733)</u>
6	Total Estimated Remaining Recovery As of November 1, 2020	\$44,081
7	Estimated November 2019 - October 2020 Interest	<u>\$538</u>
8	Total Remaining Recovery	\$44,619
9	Estimated November 2020 - October 2021 Sales (therms)	179,574,679
10	RCE & Recoupment rate per therm November 2020 - October 2021	\$0.0002

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**NHPUC NO. 10 - GAS
LIBERTY UTILITIES**

**Revised Proposed Third Revised Page 97
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Local Delivery Adjustment Clause Calculation

			Sales Customers	Transportation Customers	
<u>Residential Non Heating Rates - R-1</u>					
Energy Efficiency Charge	\$ -0.0640		\$ 0.0831		
Demand Side Management Charge	0.0000		0.0000		
Conservation Charge (CCx)	<u>\$ -0.0640</u>			\$ 0.0831	
Relief Holder and pond at Gas Street, Concord, NH	0.0000		0.0000		
Manufactured Gas Plants	<u>0.0153</u>		<u>0.0197</u>		
Environmental Surcharge (ES)	<u>\$ -0.0153</u>			\$ 0.0197	
Revenue Decoupling Adjustment Factor (RDAF)		<u>(0.0298)</u>		<u>(0.0549)</u>	
Energy Efficiency Resource Standard Lost Revenue Mechanism		0.0004		0.0000	
Rate Case Expense Factor (RCEF)		0.0017		0.0002	
Residential Gas Assistance Program (RGAP)		<u>0.0123</u>		<u>0.0121</u>	
LDAC		<u>\$ -0.0635</u>		<u>\$ 0.0603</u>	per therm

<u>Residential Heating Rates - R-3, R-4, R-6, R-7</u>					
Energy Efficiency Charge	\$ -0.0640		\$ 0.0831		
Demand Side Management Charge	0.0000		0.0000		
Conservation Charge (CCx)	<u>\$ -0.0640</u>			\$ 0.0831	
Relief Holder and pond at Gas Street, Concord, NH	0.0000		0.0000		
Manufactured Gas Plants	<u>0.0153</u>		<u>0.0197</u>		
Environmental Surcharge (ES)		0.0153		0.0197	
Revenue Decoupling Adjustment Factor (RDAF)		<u>(0.0298)</u>		<u>(0.0549)</u>	
Energy Efficiency Resource Standard Lost Revenue Mechanism		0.0004		0.0000	
Rate Case Expense Factor (RCEF)		0.0017		0.0002	
Residential Gas Assistance Program (RGAP)		<u>0.0123</u>		<u>0.0121</u>	
LDAC		<u>\$ -0.0635</u>		<u>\$ 0.0603</u>	per therm

<u>Commercial/Industrial Low Annual Use Rates - G-41, G-51, G-44, G-55</u>					
Energy Efficiency Charge	\$ -0.0426		\$ 0.0441		
Demand Side Management Charge	<u>—</u>		<u>-</u>		
Conservation Charge (CCx)	<u>\$ -0.0426</u>		\$ 0.0441	<u>\$ -0.0426</u>	\$ 0.0441
Relief Holder and pond at Gas Street, Concord, NH	<u>—</u>		<u>-</u>		
Manufactured Gas Plants	<u>-0.0153</u>		<u>0.0197</u>		
Environmental Surcharge (ES)		<u>\$ -0.0153</u>		\$ 0.0197	<u>\$ -0.0153</u>
Revenue Decoupling Adjustment Factor (RDAF)		<u>(0.0225)</u>		<u>(0.0213)</u>	<u>(0.0225)</u>
Energy Efficiency Resource Standard Lost Revenue Mechanism		<u>-0.0004</u>		<u>-</u>	<u>-0.0004</u>
Rate Case Expense Factor (RCEF)		<u>-0.0017</u>		<u>0.0002</u>	<u>-0.0017</u>
Residential Gas Assistance Program (RGAP)		<u>-0.0123</u>		<u>0.0121</u>	<u>-0.0123</u>
LDAC		<u>\$ -0.0494</u>		<u>\$ 0.0549</u>	<u>\$ 0.0494</u>
				<u>\$ 0.0549</u>	per therm

<u>Commercial/Industrial Medium Annual Use Rates - G-42, G-52, G-45, G-56</u>					
Energy Efficiency Charge	\$ -0.0426		\$ 0.0441		
Demand Side Management Charge	<u>—</u>		<u>-</u>		
Conservation Charge (CCx)	<u>\$ -0.0426</u>		\$ 0.0441	<u>\$ -0.0426</u>	\$ 0.0441
Relief Holder and pond at Gas Street, Concord, NH	<u>—</u>		<u>-</u>		
Manufactured Gas Plants	<u>-0.0153</u>		<u>0.0197</u>		
Environmental Surcharge (ES)		<u>\$ -0.0153</u>		\$ 0.0197	<u>\$ -0.0153</u>
Revenue Decoupling Adjustment Factor (RDAF)		<u>(0.0225)</u>		<u>(0.0213)</u>	<u>(0.0225)</u>
Energy Efficiency Resource Standard Lost Revenue Mechanism		<u>-0.0004</u>		<u>-</u>	<u>-0.0004</u>
Rate Case Expense Factor (RCEF)		<u>-0.0017</u>		<u>0.0002</u>	<u>-0.0017</u>
Residential Gas Assistance Program (RGAP)		<u>-0.0123</u>		<u>0.0121</u>	<u>-0.0123</u>
LDAC		<u>\$ -0.0494</u>		<u>\$ 0.0549</u>	<u>\$ 0.0494</u>
				<u>\$ 0.0549</u>	per therm

<u>Commercial/Industrial Large Annual Use Rates - G-43, G-53, G-54, G-46, G-56, G-57, G-58</u>					
Energy Efficiency Charge	\$ -0.0426		\$ 0.0441		
Demand Side Management Charge	<u>—</u>		<u>-</u>		
Conservation Charge (CCx)	<u>\$ -0.0426</u>		\$ 0.0441	<u>\$ -0.0426</u>	\$ 0.0441
Relief Holder and pond at Gas Street, Concord, NH	<u>—</u>		<u>-</u>		
Manufactured Gas Plants	<u>-0.0153</u>		<u>0.0197</u>		
Environmental Surcharge (ES)		<u>\$ -0.0153</u>		\$ 0.0197	<u>\$ -0.0153</u>
Revenue Decoupling Adjustment Factor (RDAF)		<u>(0.0225)</u>		<u>(0.0213)</u>	<u>(0.0225)</u>
Energy Efficiency Resource Standard Lost Revenue Mechanism		<u>-0.0004</u>		<u>-</u>	<u>-0.0004</u>
Rate Case Expense Factor (RCEF)		<u>-0.0017</u>		<u>0.0002</u>	<u>-0.0017</u>
Residential Gas Assistance Program (RGAP)		<u>-0.0123</u>		<u>0.0121</u>	<u>-0.0123</u>
LDAC		<u>\$ -0.0494</u>		<u>\$ 0.0549</u>	<u>\$ 0.0494</u>
				<u>\$ 0.0549</u>	per therm

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III DELIVERY TERMS AND CONDITIONS

NHPUC NO. 10 - GAS
LIBERTY UTILITIES

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ATTACHMENT B
Schedule of Administrative Fees and Charges

I.	Supplier Balancing Charge:	\$ 0.21	0.12	
II.	Capacity Mitigation Fee	15%	15% of the Proceeds from the Marketing of Capacity for Mitigation.	
III.	Peaking Demand Charge	\$ 18.12	\$ 17.32	
IV.	Company Allowance Calculation (per Schedule 25)			
		484,100,282	169,030,868	Total Sendout - Therms Jul-2019 - Jun-2020
				Total Sendout - Therms Jul-2018 - Jun-2019
		<u>477,649,709</u>	<u>166,311,578</u>	Total Throughput - Therms Jul-2019 - Jun-2020
				Total Throughput - Therms Jul-2018 - Jun-2020
		3,480,573	2,719,290	Variance (Sendout - Throughput)
Company Allowance Percentage	2020-21	2019-20	4.9%	1.6% Variance / Total Sendout

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III DELIVERY TERMS AND CONDITIONS

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ATTACHMENT C

CAPACITY ALLOCATORS

Rate Class		Pipeline	Storage	Peaking	Total
G-41	Low Annual /High Winter Use	46.5% 46.1%	17.2% 17.1%	36.3% 36.8%	100.0%
G-51	Low Annual /Low Winter Use	60.3% 59.3%	12.8% 12.9%	26.9% 27.9%	100.0%
G-42	Medium Annual / High Winter	46.5% 46.1%	17.2% 17.1%	36.3% 36.8%	100.0%
G-52	High Annual / Low Winter Use	60.3% 59.3%	12.8% 12.9%	26.9% 27.9%	100.0%
G-43	High Annual / High Winter	46.5% 46.1%	17.2% 17.1%	36.3% 36.8%	100.0%
G-53	High Annual / Load Factor < 90%	60.3% 59.3%	12.8% 12.9%	26.9% 27.9%	100.0%
G-54	High Annual / Load Factor > 90%	60.3% 59.3%	12.8% 12.9%	26.9% 27.9%	100.0%

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Liberty Utilities (EnergyNorth Natural Gas) Corp.
d/b/a Liberty Utilities
Peak 2020 - 2021 Winter Cost of Gas Filing

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1 **Liberty Utilities (EnergyNorth Natural Gas) Corp.**
2 **d/b/a Liberty Utilities**
3 **Peak 2020 - 2021 Winter Cost of Gas Filing**
4 **Summary**

	Reference	PK 20-21 Nov - Apr
(a)	(b)	(c)
9 Anticipated Direct Cost of Gas		
10 Purchased Gas:		
11 Demand Costs:	Sch. 5A, col (k), In 45	\$ 12,022,922
12 Supply Costs	Sch. 6, col (i), In 45	28,276,980
13		
14 Storage Gas:		
15 Demand, Capacity:	Sch. 5A, col (k), In 60	\$ 955,766
16 Commodity Costs:	Sch. 6, col (i), In 48	3,064,149
17		
18 Produced Gas:	Sch. 6, col (i), In 54	\$ 1,590,589
19		
20 Hedge Contract (Savings)/Loss	Sch. 7, col (i), In 34	\$ -
21 Hedge Underground Storage Contract (Savings)/Loss	Sch. 16, col (e), In 172	\$ -
22		
23 Total Unadjusted Cost of Gas		\$ 45,910,407
24		
25 Adjustments:		
26		
27 Prior Period (Over)/Under Recovery	Sch. 3, col (c) In 28	\$ 2,227,421
28 Interest 05/01/19 - 4/30/20	Sch. 3, col (q) In 193	72,812
29 Fuel Inventory Revenue Req	Sch. 26, col (b) In 8	441,037
30 Refunds from Suppliers	Sch. 4, In 26 col (c)	-
31 Broker Revenues	Sch. 4, In 26 col (d)	(32,725)
32 Fuel Financing	Sch. 4, In 26 col (e)	-
33 Transportation CGA Revenues	Sch. 4, In 26 col (f)	(4,516)
34 Interruptible Sales Margin	Sch. 4, In 26 col (g)	-
35 Capacity Release and Off System Sales Margins	Sch. 4, In 26 col (h) + col (i)	(1,736,581)
36 Hedging Costs	Sch. 4, In 26 col (j)	-
38 Fixed Price Option Administrative Costs	Sch. 4, In 26 col (k)	45,000
39		
40 Total Adjustments		\$ 1,012,447
41		
42 Total Anticipated Direct Costs	Ins 23 + 40	\$ 46,922,854
43		
44 Anticipated Indirect Cost of Gas		
45 Working Capital		
46 Total Unadjusted Anticipated Cost of Gas	Ln 23	\$ 45,910,407
47 Lead Lag Days / 365	DG 10-017, 14.27 / 365	0.0391
48 Prime Rate		3.25%
49 Working Capital Percentage	per GTC 17(f), In 47 * In 48	0.127%
50 Working Capital	In 46 * In 49	58,347
51 Plus: Working Capital Reconciliation	Sch. 3, col (c), In 94	(66,837)
52		
53 Total Working Capital Allowance	Ins 50 + 51	\$ (8,490)
54		
55 Bad Debt		
56 Total Unadjusted Anticipated Cost of Gas	In 23	\$ 45,910,407
57 Less Refunds	In 30	-
58 Plus Working Capital	In 53	(8,490)
59 Plus Prior Period (Over) Under Recovery	In 27	2,227,421
60 Subtotal		\$ 48,129,338
61 Bad Debt Percentage	per GTC 17(f)	1.11%
62		
63 Bad Debt Allowance	In 60 * In 61	\$ 534,236
64 Prior Period Bad Debt Allowance	Sch. 3, col (c), In 181	(296,628)
65		
66 Total Bad Debt Allowance	Ins 63 + 64	\$ 237,608
67		
68 Production and Storage Capacity	per GTC17(f)	\$ 1,980,428
69		
70 Miscellaneous Overhead	per GTC 17(f)	\$ 13,170
71 Sales Volume	Sch. 10B, In 23/1000	89,365
72 Divided by Total Sales	Sch. 10B, In 23/1000	111,369
73 Ratio		80.24%
74		
75 Miscellaneous Overhead	Ins 70 * 73	\$ 10,568
76		
77 Total Anticipated Indirect Cost of Gas	Ins 53 + 66 + 68 + 75	\$ 2,220,114
78		
79 Total Cost of Gas	Ins 42 + 77	\$ 49,142,968
80		
81 Projected Forecast Sales (Therms)	Sch. 3, col (q), In 52	88,213,529

1 Liberty Utilities (EnergyNorth Natural Gas) Corp.
2 d/b/a Liberty Utilities
3 Peak 2020 - 2021 Winter Cost of Gas Filing
4 Summary of Supply and Demand Forecast

	(a)	(b)	Peak Costs												Peak Period Nov - Apr (k)	
			May 20 - Oct 20 (c)	Nov-20 (d)	Dec-20 (e)	Jan-21 (f)	Feb-21 (g)	Mar-21 (h)	Apr-21 (i)	May-21 (j)	1,456,273	1.6%				
9. I. Gas Volumes (Therms)																
10 Firm Demand Volumes																
11 Firm Gas Sales		Sch. 10B, ln 23	-	6,632,575	17,520,726	20,197,255	16,296,676	14,827,692	8,721,431	4,017,174	88,213,529					
12 Lost Gas (Unaccounted for)			-	179,773	261,536	306,718	242,859	220,549	127,057	1,338,492						
13 Company Use			-	15,819	23,014	26,990	21,370	19,407	11,180	117,781						
14 Unbilled Therms			-	5,363,667	(39,361)	304,071	(63,718)	(85,984)	(228,822)	(4,017,174)	1,252,858					
15			-	12,211,835	17,765,894	20,835,033	16,497,187	14,981,664	8,630,846	90,922,460						
16			-													
17 Total Firm Volumes		Sch. 6, ln 94	-	12,211,835	17,765,894	20,835,033	16,497,187	14,981,664	8,630,846	90,922,460						
18			-													
19 B. Supply Volumes (Therms)																
20 Pipeline Gas:																
21 Dawn Supply		Sch. 6, ln 64	-	870,804	925,912	929,473	820,216	913,878	721,190	5,181,473						
22 Niagara Supply		Sch. 6, ln 65	-	686,821	729,872	732,679	646,410	720,386	659,273	4,175,441						
23 TGP Supply (Direct)		Sch. 6, ln 66	-	4,579,051	3,124,576	3,136,594	2,760,187	3,083,965	613,539	17,297,912						
24 Dracut Supply 1 - Baseload		Sch. 6, ln 67	-	-	2,798,848	4,682,940	3,099,664	-	-	10,581,462						
25 Dracut Supply 2 - Swing		Sch. 6, ln 68	-	3,470,755	1,885,500	392,074	1,020,648	2,429,813	1,319,250	7,800,392						
26 Constellation COMBO		Sch. 6, ln 69	-	-	1,523,060	1,162,278	1,020,648	611,732	-	4,337,736						
27 LNG Truck		Sch. 6, ln 70	-	20,524	689,156	646,393	785,455	105,676	-	2,247,204						
28 Propane Truck		Sch. 6, ln 71	-	-	-	181,656	-	-	-	181,656						
29 PNGTS		Sch. 6, ln 72	-	217,701	231,478	232,368	204,869	228,469	208,969	1,323,855						
30 Portland Natural Gas		Sch. 6, ln 73	-	1,063,563	1,130,246	1,134,593	1,001,418	1,115,556	787,328	6,232,725						
31 TGP Supply (Z4)		Sch. 6, ln 74	-	1,803,913	1,923,454	1,930,852	1,704,038	1,898,454	4,301,810	13,562,522						
32 Subtotal Pipeline Volumes			-	12,713,152	13,265,122	15,181,900	12,042,907	11,107,929	8,611,360	72,922,371						
33 Storage Gas:																
34 TGP Storage		Sch. 6, ln 79	-	993,817	4,501,466	5,242,978	4,443,415	3,956,513	-	19,138,168						
35 LNG Vapor		Sch. 6, ln 82	-	17,634	633,355	704,270	780,169	21,244	19,486	2,176,158						
36 Propane		Sch. 6, ln 83	-	-	-	504,301	-	-	-	504,301						
37 Subtotal Produced Gas			-	17,634	633,355	1,208,571	780,169	21,244	19,486	2,680,459						
38			-	-	-	-	-	-	-	-						
39			-	-	-	-	-	-	-	-						
40			-	-	-	-	-	-	-	-						
41			-	-	-	-	-	-	-	-						
42 Less - Gas Refill:																
43 LNG Truck		Sch. 6, ln 88	-	(17,634)	(634,048)	(623,260)	(769,303)	(104,022)	-	(2,148,269)						
44 Propane		Sch. 6, ln 89	-	-	-	(175,155)	-	-	-	(175,155)						
45 TGP Storage Refill		Sch. 6, ln 90	-	(1,495,134)	-	-	-	-	-	(1,495,134)						
46 Subtotal Refills			-	(1,512,768)	(634,048)	(798,416)	(769,303)	(104,022)	-	(3,818,558)						
47			-	-	-	-	-	-	-	-						
48 Total Firm Sendout Volumes		Ins 32 + 35 + 40 + 46	-	12,211,835	17,765,894	20,835,033	16,497,187	14,981,664	8,630,846	90,922,460						
49			-	-	-	-	-	-	-	-						

1 Liberty Utilities (Energy/North Natural Gas) Corp.

2 d/b/a Liberty Utilities

3 Peak 2020 - 2021 Winter Cost of Gas Filing

4 Summary of Supply and Demand Forecast

50 II. Gas Costs

51 A.

52 Demand Costs

53

54 For Month of:

55 Supply

56 (a)

57 Niagara Supply

58 Subtotal Supply Demand

59 Less Capacity Credit

60 Net Pipeline Demand Costs

61

62

63 Pipeline:

64 Iroquois Gas Trans Service RTS 470-0

65 Tenn Gas Pipeline 95346 Z5-Z6

66 Tenn Gas Pipeline 2302 Z5-Z6

67 Tenn Gas Pipeline 8687 Z0-Z6

68 Tenn Gas Pipeline 8687 Z1-Z6

69 Tenn Gas Pipeline 8587 Z4-Z6

70 Tenn Gas Pipeline (Dracut) 42076 Z6-Z6

71 Tenn Gas Pipeline (Concord Lateral) Z6-Z6

72 Portland Natural Gas

73 ANE (TransCanada via Union to Iroquois)

74 TransCanada via Union to Portland

75 Tenn Gas Pipeline Z4-Z6 stg 632

76 Tenn Gas Pipeline Z4-Z6 stg 11234

77 Tenn Gas Pipeline Z5-Z6 stg 11234

78 National Fuel FST 2358

79 Subtotal Pipeline Demand

80 Less Capacity Credit

81 Net Pipeline Demand Costs

82

83

84 Peaking Supply:

85 Tenn Gas Pipeline (Concord Lateral) Z6-Z6

86 Demand FLS

87 Constellation Demand

88 Subtotal Peaking Demand

89 Less Capacity Credit

90 Net Peaking Supply Demand Costs

91

92 Storage:

93 Dominion - Demand

94 Dominion - Storage

95 Homeov - Demand

96 National Fuel - Demand

97 National Fuel - Capacity

98 Tenn Gas Pipeline - Demand

99 Tenn Gas Pipeline - Capacity

100 Subtotal Storage Demand

101 Less Capacity Credit

102 Net Storage Demand Costs

103

104 Total Demand Charges

105 Total Capacity Credit

106 Net Demand Charges

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108

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Schedule 1
Page 2 of 4

	Peak Costs May 20 - Oct 20 (c)	Nov-20 (d)	Dec-20 (e)	Jan-21 (f)	Feb-21 (g)	Mar-21 (h)	Apr-21 (i)	May-21 (j)	Peak Period Nov - Apr (k)
	\$ 3,922,876	\$ 1,419,895	\$ 1,419,895	\$ 1,419,895	\$ 1,419,895	\$ 1,419,895	\$ 1,419,895	\$ 1,419,895	\$ 12,442,244
	(1,439,696)	(365,765)	(365,765)	(365,765)	(365,765)	(365,765)	(365,765)	(365,765)	(3,634,285)
	\$ 2,483,181	\$ 1,054,130	\$ 1,054,130	\$ 1,054,130	\$ 1,054,130	\$ 1,054,130	\$ 1,054,130	\$ 1,054,130	\$ 8,807,959
	\$ -	\$ 866,100	\$ 866,100	\$ 866,100	\$ 866,100	\$ 866,100	\$ 866,100	\$ 866,100	\$ 4,330,500
	\$ -	(223,107)	(223,107)	(223,107)	(223,107)	(223,107)	(223,107)	(223,107)	(1,115,537)
	\$ -	\$ 642,993	\$ 642,993	\$ 642,993	\$ 642,993	\$ 642,993	\$ 642,993	\$ 642,993	\$ 3,214,963
	\$ 694,900	\$ 115,817	\$ 115,817	\$ 115,817	\$ 115,817	\$ 115,817	\$ 115,817	\$ 115,817	\$ 1,388,801
	(255,028)	(29,834)	(29,834)	(29,834)	(29,834)	(29,834)	(29,834)	(29,834)	(434,035)
	\$ 439,872	\$ 85,982	\$ 85,982	\$ 85,982	\$ 85,982	\$ 85,982	\$ 85,982	\$ 85,982	\$ 955,766
	\$ 4,617,777	\$ 2,401,811	\$ 2,401,811	\$ 2,401,811	\$ 2,401,811	\$ 2,401,811	\$ 2,401,811	\$ 2,401,811	\$ 18,162,544
	(1,694,724)	(618,707)	(618,707)	(618,707)	(618,707)	(618,707)	(618,707)	(618,707)	(5,183,656)
	\$ 2,923,053	\$ 1,783,105	\$ 1,783,105	\$ 1,783,105	\$ 1,783,105	\$ 1,783,105	\$ 1,783,105	\$ 1,783,105	\$ 12,978,888

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1 Liberty Utilities (EnergyNorth Natural Gas) Corp.
2 d/b/a Liberty Utilities
3 Peak 2020 - 2021 Winter Cost of Gas Filing
4 Summary of Supply and Demand Forecast
Commodity Costs

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Schedule 1
Page 3 of 4

	Peak Costs							Peak Period Nov - Apr (k)	
	May-20 (c)	Nov-20 (d)	Dec-20 (e)	Jan-21 (f)	Feb-21 (g)	Mar-21 (h)	Apr-21 (i)		May-21 (l)
109 B.									
110									
111									
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116 Pipeline:									
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129									
130 Storage:									
131									
132									
133 Produced Gas Costs:									
134									
135									
136									
137									
138 Less Storage Refills:									
139									
140									
141									
142									
143									
144									
145 Total Supply Commodity Costs									
146									
147 C. Supply Volumetric Transportation Costs:									
148									
149									
150									
151									
152									
153									
154									
155									
156									
157									
158									
159 Total Commodity Gas & Trans. Costs									
160									
161									

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1 Liberty Utilities (EnergyNorth Natural Gas) Corp.
2 d/b/a Liberty Utilities
3 Peak 2020 - 2021 Winter Cost of Gas Filing
4 Summary of Supply and Demand Forecast
162 D. Supply and Demand Costs by Source
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	(a)	(b)	Peak Costs											Peak Period Nov - Apr (k)	
			(c)	Nov-20 (d)	Dec-20 (e)	Jan-21 (f)	Feb-21 (g)	Mar-21 (h)	Apr-21 (i)	May-21 (j)					
Ins 59 + 80			\$ 3,922,876	\$ 1,419,895	\$ 1,419,895	\$ 1,419,895	\$ 1,419,895	\$ 1,419,895	\$ 1,419,895	\$ 1,419,895	\$ 1,419,895	\$ 1,419,895	\$ 1,419,895	\$ 12,442,244	
In 88			-	866,100	866,100	866,100	866,100	866,100	866,100	866,100	866,100	866,100	866,100	866,100	4,530,500
Subtotal Purchased Gas Demand Costs			\$ 3,922,876	\$ 2,285,995	\$ 2,285,995	\$ 2,285,995	\$ 2,285,995	\$ 2,285,995	\$ 2,285,995	\$ 2,285,995	\$ 2,285,995	\$ 2,285,995	\$ 2,285,995	\$ 16,772,744	
Less Capacity Credit			(1,439,696)	(588,872)	(588,872)	(588,872)	(588,872)	(588,872)	(588,872)	(588,872)	(588,872)	(588,872)	(588,872)	(4,748,821)	
Net Purchased Gas Demand Costs		Ins 60 + 81 + 89	\$ 2,483,181	\$ 1,697,122	\$ 1,697,122	\$ 1,697,122	\$ 1,697,122	\$ 1,697,122	\$ 1,697,122	\$ 1,697,122	\$ 1,697,122	\$ 1,697,122	\$ 1,697,122	\$ 12,022,922	
176 Storage Gas Demand Costs															
Storage Demand		In 100	\$ 694,900	\$ 115,817	\$ 115,817	\$ 115,817	\$ 115,817	\$ 115,817	\$ 115,817	\$ 115,817	\$ 115,817	\$ 115,817	\$ 115,817	\$ 1,389,801	
Less Capacity Credit		In 101	(265,028)	(29,834)	(29,834)	(29,834)	(29,834)	(29,834)	(29,834)	(29,834)	(29,834)	(29,834)	(29,834)	(434,035)	
Net Storage Demand Costs			\$ 429,872	\$ 85,982	\$ 85,982	\$ 85,982	\$ 85,982	\$ 85,982	\$ 85,982	\$ 85,982	\$ 85,982	\$ 85,982	\$ 85,982	\$ 955,766	
180 Total Demand Costs		Ins 174 + 179	\$ 2,923,053	\$ 1,783,105	\$ 1,783,105	\$ 1,783,105	\$ 1,783,105	\$ 1,783,105	\$ 1,783,105	\$ 1,783,105	\$ 1,783,105	\$ 1,783,105	\$ 1,783,105	\$ 12,978,688	
182															
183 Purchased Gas Supply															
Commodity Costs		In 128	\$ -	\$ 3,567,106	\$ 5,511,412	\$ 7,763,875	\$ 5,518,062	\$ 4,317,360	\$ 2,239,092	\$ -	\$ -	\$ -	\$ -	\$ 28,916,907	
Less Storage Inj. (TGP Storage)		In 141													
Less Storage Transportation		In 142													
Less LNG Truck		In 139													
Less Propane Truck		In 140													
Plus Transportation Costs		In 153													
Subtotal Purchased Gas Supply			\$ -	\$ 3,285,895	\$ 5,364,724	\$ 7,413,011	\$ 5,288,286	\$ 4,411,246	\$ 2,277,962	\$ -	\$ -	\$ -	\$ -	\$ 28,041,134	
192 Storage Commodity Costs															
Commodity Costs		In 131	\$ -	\$ 159,117	\$ 720,714	\$ 839,435	\$ 711,420	\$ 633,464	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 3,064,149	
Transportation Costs		In 155		12,247	55,473	64,611	54,758	48,757						235,846	
Subtotal Storage Commodity Costs			\$ -	\$ 171,364	\$ 776,187	\$ 904,046	\$ 766,177	\$ 682,221	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 3,299,995	
197 Produced Gas Commodity Costs		In 136	\$ -	\$ 8,638	\$ 295,616	\$ 901,402	\$ 366,241	\$ 9,750	\$ 8,943	\$ -	\$ -	\$ -	\$ -	\$ 1,590,589	
198		Ins 190 + 195 + 197	\$ -	\$ 3,465,897	\$ 6,436,527	\$ 9,218,458	\$ 6,420,714	\$ 5,103,217	\$ 2,286,905	\$ -	\$ -	\$ -	\$ -	\$ 32,931,719	
199 Subtotal Commodity Costs			\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
200															
201 Hedge Contract (Savings)/Loss			\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
202															
203 Total Commodity Costs		Ins 199 + 201	\$ -	\$ 3,465,897	\$ 6,436,527	\$ 9,218,458	\$ 6,420,714	\$ 5,103,217	\$ 2,286,905	\$ -	\$ -	\$ -	\$ -	\$ 32,931,719	
204															
205 Total Demand Costs		In 106	\$ 2,923,053	\$ 1,783,105	\$ 1,783,105	\$ 1,783,105	\$ 1,783,105	\$ 1,783,105	\$ 1,783,105	\$ 1,783,105	\$ 1,783,105	\$ 1,783,105	\$ 1,783,105	\$ 12,978,688	
206 Total Supply Costs		In 203	\$ -	\$ 3,465,897	\$ 6,436,527	\$ 9,218,458	\$ 6,420,714	\$ 5,103,217	\$ 2,286,905	\$ -	\$ -	\$ -	\$ -	\$ 32,931,719	
207															
208 Total Direct Gas Costs		Ins 205 + 206	\$ 2,923,053	\$ 5,249,001	\$ 8,219,631	\$ 11,001,563	\$ 8,203,819	\$ 6,886,322	\$ 3,427,017	\$ -	\$ -	\$ -	\$ -	\$ 45,910,407	
209															
210															

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1 Liberty Utilities (Energy/North Natural Gas) Corp.
2 d/b/a Liberty Utilities
3 Peak 2020 - 2021 Winter Cost of Gas Filing
4 COG (Over)/Under Cumulative Recovery Balances and Interest Calculation

Schedule 3
Page 1 of 3

	Days in Month	Prior Period Bal												Peak Period Total				
		Apr-20 Ending Bal Plus May Billings	May-20 31 (d)	Jun-20 30 (e)	Jul-20 31 (f)	Aug-20 31 (g)	Sep-20 30 (h)	Oct-20 31 (i)	Nov-20 30 (j)	Dec-20 31 (k)	Jan-21 31 (l)	Feb-21 28 (m)	Mar-21 31 (n)		Apr-21 30 (o)	May-21 31 (p)	Peak Period Total (q)	
5	(a)																	
6	(b)																	
7	(c)																	
8	(d)																	
9	(e)																	
10	(f)																	
11	(g)																	
12	Account 1920-1740 1/ Schedule 5A	\$ 2,227,421	\$ 2,227,421	\$ 2,721,417	\$ 2,414,081	\$ 2,908,593	\$ 3,404,469	\$ 3,901,389	\$ 4,400,006	\$ 4,400,006	\$ 3,261,677	\$ 2,074,875	\$ 1,532,104	\$ 515,789	\$ (594,270)	\$ 2,227,421		
13	First Direct Gas Costs(Inc.UG Hedgies) Production & Storage & Misc Overhead		487,175	487,175	487,175	487,175	487,175	487,175	487,175	5,249,001	8,219,631	11,001,563	8,203,619	6,886,322	3,427,017	45,910,407		
14	Projected Revenues w/o Int.									331,833	331,833	331,833	331,833	331,833	331,833	1,990,986		
15	Projected Unbilled Revenue									(3,576,834)	(9,453,909)	(10,898,123)	(8,793,431)	(6,000,790)	(4,705,948)	(47,598,639)		
16	Reverse Prior Month Unbilled									(2,904,943)	(2,883,693)	(3,047,765)	(3,013,384)	(2,966,986)	(2,843,519)	(17,660,281)		
17	Add Net Adjustments			(801,361)						(245,606)	(300,297)	(288,620)	(304,049)	(302,925)	(286,325)	(1,726,823)		
18	Gas Cost Billed									\$ 3,825,732	\$ 2,070,930	\$ 1,547,827	\$ 512,939	\$ (594,166)	\$ (256,313)	\$ 0		
19	Monthly (Over)/Under Recovery									3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%		
20	Average Monthly Balance									3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%		
21	Prime Rate									3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%		
22	Interest Applied									\$ 10,219	\$ 7,372	\$ 4,677	\$ 2,850	\$ (105)	\$ -	\$ 81,644		
23	Interest Applied									\$ 10,219	\$ 7,372	\$ 4,677	\$ 2,850	\$ (105)	\$ -	\$ 81,644		
24	(Over)/Under Balance									\$ 3,261,677	\$ 2,087,556	\$ 2,074,875	\$ 1,532,104	\$ (594,270)	\$ (594,270)	\$ 81,645		
25	(Over)/Under Balance									\$ 3,261,677	\$ 2,087,556	\$ 2,074,875	\$ 1,532,104	\$ (594,270)	\$ (594,270)	\$ 81,645		
26	(Over)/Under Balance									\$ 3,261,677	\$ 2,087,556	\$ 2,074,875	\$ 1,532,104	\$ (594,270)	\$ (594,270)	\$ 81,645		
27	(Over)/Under Balance									\$ 3,261,677	\$ 2,087,556	\$ 2,074,875	\$ 1,532,104	\$ (594,270)	\$ (594,270)	\$ 81,645		
28	(Over)/Under Balance									\$ 3,261,677	\$ 2,087,556	\$ 2,074,875	\$ 1,532,104	\$ (594,270)	\$ (594,270)	\$ 81,645		
29	(Over)/Under Balance									\$ 3,261,677	\$ 2,087,556	\$ 2,074,875	\$ 1,532,104	\$ (594,270)	\$ (594,270)	\$ 81,645		
30	(Over)/Under Balance									\$ 3,261,677	\$ 2,087,556	\$ 2,074,875	\$ 1,532,104	\$ (594,270)	\$ (594,270)	\$ 81,645		
31	(Over)/Under Balance									\$ 3,261,677	\$ 2,087,556	\$ 2,074,875	\$ 1,532,104	\$ (594,270)	\$ (594,270)	\$ 81,645		
32	(Over)/Under Balance									\$ 3,261,677	\$ 2,087,556	\$ 2,074,875	\$ 1,532,104	\$ (594,270)	\$ (594,270)	\$ 81,645		
33	(Over)/Under Balance									\$ 3,261,677	\$ 2,087,556	\$ 2,074,875	\$ 1,532,104	\$ (594,270)	\$ (594,270)	\$ 81,645		
34	(Over)/Under Balance									\$ 3,261,677	\$ 2,087,556	\$ 2,074,875	\$ 1,532,104	\$ (594,270)	\$ (594,270)	\$ 81,645		
35	(Over)/Under Balance									\$ 3,261,677	\$ 2,087,556	\$ 2,074,875	\$ 1,532,104	\$ (594,270)	\$ (594,270)	\$ 81,645		
36	(Over)/Under Balance									\$ 3,261,677	\$ 2,087,556	\$ 2,074,875	\$ 1,532,104	\$ (594,270)	\$ (594,270)	\$ 81,645		
37	(Over)/Under Balance									\$ 3,261,677	\$ 2,087,556	\$ 2,074,875	\$ 1,532,104	\$ (594,270)	\$ (594,270)	\$ 81,645		
38	(Over)/Under Balance									\$ 3,261,677	\$ 2,087,556	\$ 2,074,875	\$ 1,532,104	\$ (594,270)	\$ (594,270)	\$ 81,645		
39	(Over)/Under Balance									\$ 3,261,677	\$ 2,087,556	\$ 2,074,875	\$ 1,532,104	\$ (594,270)	\$ (594,270)	\$ 81,645		
40	(Over)/Under Balance									\$ 3,261,677	\$ 2,087,556	\$ 2,074,875	\$ 1,532,104	\$ (594,270)	\$ (594,270)	\$ 81,645		
41	(Over)/Under Balance									\$ 3,261,677	\$ 2,087,556	\$ 2,074,875	\$ 1,532,104	\$ (594,270)	\$ (594,270)	\$ 81,645		
42	(Over)/Under Balance									\$ 3,261,677	\$ 2,087,556	\$ 2,074,875	\$ 1,532,104	\$ (594,270)	\$ (594,270)	\$ 81,645		
43	(Over)/Under Balance									\$ 3,261,677	\$ 2,087,556	\$ 2,074,875	\$ 1,532,104	\$ (594,270)	\$ (594,270)	\$ 81,645		
44	(Over)/Under Balance									\$ 3,261,677	\$ 2,087,556	\$ 2,074,875	\$ 1,532,104	\$ (594,270)	\$ (594,270)	\$ 81,645		
45	(Over)/Under Balance									\$ 3,261,677	\$ 2,087,556	\$ 2,074,875	\$ 1,532,104	\$ (594,270)	\$ (594,270)	\$ 81,645		
46	(Over)/Under Balance									\$ 3,261,677	\$ 2,087,556	\$ 2,074,875	\$ 1,532,104	\$ (594,270)	\$ (594,270)	\$ 81,645		
47	(Over)/Under Balance									\$ 3,261,677	\$ 2,087,556	\$ 2,074,875	\$ 1,532,104	\$ (594,270)	\$ (594,270)	\$ 81,645		
48	(Over)/Under Balance									\$ 3,261,677	\$ 2,087,556	\$ 2,074,875	\$ 1,532,104	\$ (594,270)	\$ (594,270)	\$ 81,645		
49	(Over)/Under Balance									\$ 3,261,677	\$ 2,087,556	\$ 2,074,875	\$ 1,532,104	\$ (594,270)	\$ (594,270)	\$ 81,645		
50	(Over)/Under Balance									\$ 3,261,677	\$ 2,087,556	\$ 2,074,875	\$ 1,532,104	\$ (594,270)	\$ (594,270)	\$ 81,645		
51	(Over)/Under Balance									\$ 3,261,677	\$ 2,087,556	\$ 2,074,875	\$ 1,532,104	\$ (594,270)	\$ (594,270)	\$ 81,645		
52	(Over)/Under Balance									\$ 3,261,677	\$ 2,087,556	\$ 2,074,875	\$ 1,532,104	\$ (594,270)	\$ (594,270)	\$ 81,645		
53	(Over)/Under Balance									\$ 3,261,677	\$ 2,087,556	\$ 2,074,875	\$ 1,532,104	\$ (594,270)	\$ (594,270)	\$ 81,645		
54	(Over)/Under Balance									\$ 3,261,677	\$ 2,087,556	\$ 2,074,875	\$ 1,532,104	\$ (594,270)	\$ (594,270)	\$ 81,645		
55	(Over)/Under Balance									\$ 3,261,677	\$ 2,087,556	\$ 2,074,875	\$ 1,532,104	\$ (594,270)	\$ (594,270)	\$ 81,645		
56	(Over)/Under Balance									\$ 3,261,677	\$ 2,087,556	\$ 2,074,875	\$ 1,532,104	\$ (594,270)	\$ (594,270)	\$ 81,645		
57	(Over)/Under Balance									\$ 3,261,677	\$ 2,087,556	\$ 2,074,875	\$ 1,532,104	\$ (594,270)	\$ (594,270)	\$ 81,645		
58	(Over)/Under Balance									\$ 3,261,677	\$ 2,087,556	\$ 2,074,875	\$ 1,532,104	\$ (594,270)	\$ (594,270)	\$ 81,645		
59	(Over)/Under Balance									\$ 3,261,677	\$ 2,087,556	\$ 2,074,875	\$ 1,532,104	\$ (594,270)	\$ (594,270)	\$ 81,645		
60	(Over)/Under Balance									\$ 3,261,677	\$ 2,087,556	\$ 2,074,875	\$ 1,532,104	\$ (594,270)	\$ (594,270)	\$ 81,645		
61	(Over)/Under Balance									\$ 3,261,677	\$ 2,087,556	\$ 2,074,875	\$ 1,532,104	\$ (594,270)	\$ (594,270)	\$ 81,645		
62	(Over)/Under Balance									\$ 3,261,677	\$ 2,087,556	\$ 2,074,875	\$ 1,532,104	\$ (594,270)	\$ (594,270)	\$ 81,645		

Schedule 3
Page 2 of 3

1 Liberty Utilities (Energy/North Natural Gas) Corp.
2 d/b/a Liberty Utilities
3 Peak 2020 - 2021 Winter Cost of Gas Filing
4 COG (Over)/Under Cumulative Recovery Balances and Interest Calculation

		Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Peak Period
	(a)	Ending Bal	31	30	31	31	30	31	30	31	31	29	31	30	31	Total
	(b)	+ May Collections	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)
64																
65																
66																
67																
68																
69																
70	Account 1163-1422 Working Capital (Over)/Under Balance - Interest Calculation															
71																
72	Beginning Balance	\$ (66,837)	\$ (66,837)	\$ (66,401)	\$ (65,958)	\$ (73,173)	\$ (72,755)	\$ (72,329)	\$ (71,909)	\$ (63,221)	\$ (48,734)	\$ (32,116)	\$ (18,787)	\$ (7,375)	\$ (1,479)	\$ (66,837)
73	Days Lag	0.0391	0.0391	0.0391	0.0391	0.0391	0.0391	0.0391	0.0391	0.0391	0.0391	0.0391	0.0391	0.0391	0.0391	0.0391
74	Prime Rate	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%
75	Forecast Working Capital	619	619	619	619	619	619	619	619	10,446	13,982	10,428	8,752	4,355	-	56,347
76	Projected Revenues w/o Int.	-	-	-	-	-	-	-	1,213	3,204	3,694	2,980	2,712	1,585	735	16,132
77	Projected Unbilled Revenue	-	-	-	-	-	-	-	985	977	1,033	1,021	1,006	964	964	5,985
78	Reverse Prior Month Unbilled	-	-	-	-	-	-	-	(985)	(985)	(977)	(1,033)	(1,021)	(1,006)	(964)	(5,985)
79	Add Net Adjustments	-	-	-	(7,642)	-	-	-	-	-	-	-	-	-	-	(7,642)
80	Working Capital Billed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
81	Monthly (Over)/Under Recovery	\$ (66,837)	\$ (66,217)	\$ (65,782)	\$ (72,981)	\$ (72,554)	\$ (72,136)	\$ (71,710)	\$ (63,041)	\$ (49,578)	\$ (32,003)	\$ (18,721)	\$ (7,339)	\$ (1,467)	\$ (1,708)	\$ -
82	Average Monthly Balance	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
83	Interest Rate															
84	Interest Applied															
85	(Over)/Under Balance	\$ (66,837)	\$ (66,401)	\$ (65,958)	\$ (73,173)	\$ (72,755)	\$ (72,329)	\$ (71,909)	\$ (63,221)	\$ (48,734)	\$ (32,116)	\$ (18,787)	\$ (7,375)	\$ (1,479)	\$ (1,708)	\$ (1,708)
86																
87																
88																
89																
90																
91																
92																
93																
94																
95																
96																
97	Calculation of Working Capital with Interest															
98																
99																
100	Beginning Balance	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
101	Forecast Working Capital	In 72	(66,837)	(66,401)	(65,958)	(73,173)	(72,755)	(72,329)	(71,909)	(62,980)	(49,142)	(31,111)	(17,454)	(5,743)	328	(66,837)
102	Projected Rev. with Interest	In 76	619	619	619	619	619	619	619	10,446	13,982	10,428	8,752	4,355	56,347	
103	Projected Unbilled Revenue	In 116 * In 122	-	-	-	-	-	-	1,346	3,555	4,098	3,307	3,009	1,770	17,889	
104	Reverse Prior Month Unbilled		-	-	-	-	-	-	1,092	1,094	1,146	1,133	1,116	1,069	6,641	
105	Add Net Adjustments	In 82	-	-	(7,642)	-	-	-	-	(1,092)	(1,084)	(1,146)	(1,133)	(1,116)	(1,069)	
106	Working Capital Billed	In 84	-	-	-	-	-	-	-	-	-	-	-	-	-	
107	Add Interest	In 92	-	-	-	-	-	-	(180)	(156)	(113)	(66)	(36)	(12)	(562)	
108	Monthly (Over)/Under Recovery		\$ (66,837)	\$ (65,782)	\$ (72,981)	\$ (72,554)	\$ (72,136)	\$ (71,710)	\$ (62,980)	\$ (49,143)	\$ (31,113)	\$ (17,457)	\$ (5,747)	\$ (324)	\$ (74)	\$ (1,205)
109	Average Monthly Balance		\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
110	Interest Applied		\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
111	(Over)/Under Balance	In 90 * In 110 / 365 * Days of Month	\$ (66,837)	\$ (66,091)	\$ (65,958)	\$ (73,173)	\$ (72,755)	\$ (72,329)	\$ (62,980)	\$ (49,142)	\$ (31,111)	\$ (17,454)	\$ (5,743)	\$ (328)	\$ (74)	\$ (1,693)
112																
113																
114																
115																
116	Forecast Term Sales	In 52	6,632,575	17,520,726	20,187,265	16,296,676	14,927,682	8,721,431	8,721,431	14,927,682	14,927,682	16,296,676	17,520,726	20,187,265	17,889	88,215,529
117	Unbilled Term Sales	In 55	5,383,667	5,383,667	5,383,667	5,383,667	5,383,667	5,383,667	5,383,667	5,383,667	5,383,667	5,383,667	5,383,667	5,383,667	5,383,667	5,383,667
118	Gross Unbilled		\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
119	Working Cap. Rate w/out Int.	Sch. 3, pg. 4, In 224 col. (c)	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
120	Working Capital Rate w/ Int.	Sch. 3, pg. 4, In 224 col. (d)	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
121																
122																

Schedule 3
Page 3 of 3

1 Liberty Utilities (Energy/North Natural Gas) Corp.
2 d/b/a Liberty Utilities
3 Peak 2020 - 2021 Winter Cost of Gas Filing
4 COG (Over)/Under Cumulative Recovery Balances and Interest Calculation

	(a)	Prior Period Bal						Days in Month (b)	Account 1920-1743 Bad Debt (Over)/Under Balance - Interest Calculation						Demand/Period Total (p)		
		Apr-20 Ending Bal	May-20 31 (c)	Jun-20 30 (d)	Jul-20 31 (e)	Aug-20 31 (f)	Sep-20 30 (g)		Oct-20 31 (h)	Nov-20 30 (i)	Dec-20 31 (j)	Jan-21 31 (k)	Feb-21 29 (l)	Mar-21 31 (m)		Apr-21 30 (n)	May-21 31 (o)
	\$	(286,628)	(286,628)	(286,610)	(314,792)	(310,209)	(310,209)	(306,658)	(301,067)	(272,555)	(224,935)	(154,451)	(103,401)	(62,786)	(43,682)	(40,451)	(286,628)
Forecast Direct Gas Costs	In 34		487,175	487,175	487,175	487,175	487,175	487,175	487,175	487,175	487,175	487,175	487,175	487,175	487,175	487,175	487,175
Forecast Working Capital	In 101		619	619	619	619	619	619	619	619	619	619	619	619	619	619	619
Prior Period Balance	In 42		487,795	487,795	487,795	487,795	487,795	487,795	487,795	487,795	487,795	487,795	487,795	487,795	487,795	487,795	487,795
Total Forecast Direct Gas Costs & Working Capital			974,970	974,970	974,970	974,970	974,970	974,970	974,970	974,970	974,970	974,970	974,970	974,970	974,970	974,970	974,970
Beginning Balance	Account 1920-1743 1/ In 135 * 0.0111		(286,628)	(286,628)	(286,610)	(314,792)	(310,209)	(306,658)	(301,067)	(272,555)	(224,935)	(154,451)	(103,401)	(62,786)	(43,682)	(40,451)	(286,628)
Forecast Bad Debt	In 178 * In 182																
Projected Revenues, w/o int	Account 1920-1743 2/ Add Net Adjustments																
Reverse Prior Month Unbilled	Monthly (Over)/Under Recovery																
Bad Debt Billed	Average Monthly Balance																
Add Net Adjustments	Interest Rate																
Monthly (Over)/Under Recovery	Interest Applied																
Average Monthly Balance	(In 137 + In 149)/2																
Interest Rate	Prime Rate																
Interest Applied	In 151 * In 153 / 365 * Days of Month																
(Over)/Under Balance	In 149 + In 155																
Calculation of Bad Debt with Interest																	
Beginning Balance	In 137		(286,628)	(286,628)	(286,610)	(314,792)	(310,209)	(306,658)	(301,067)	(272,555)	(224,935)	(154,451)	(103,401)	(62,786)	(43,682)	(40,451)	(286,628)
Forecast Bad Debt	In 139																
Projected Revenues, with int	In 178 * In 184																
Reverse Prior Month Unbilled	Monthly (Over)/Under Recovery																
Bad Debt Billed	Add Interest																
Add Net Adjustments	Monthly (Over)/Under Recovery																
Monthly (Over)/Under Recovery	Average Monthly Balance																
Average Monthly Balance	Interest Applied																
Interest Applied	In 153 * In 172 / 365 * Days of Month																
(Over)/Under Balance	In 168 + In 170 + In 174																
Forecast Term Sales	In 52																
Unbilled Term	In 55																
Gross Unbilled	Sch. 3, pg. 4, in 241 col. (c)																
COG Rate Without Interest	Sch. 3, pg. 4, in 241 col. (d)																
COG With Interest	Sch. 3, pg. 4, in 241 col. (d)																
Total Interest	In 46 + 112 + 174																

REDACTED
Schedule 4
Page 1 of 1

Liberty Utilities (EnergyNorth Natural Gas) Corp.
d/b/a Liberty Utilities
Peak 2020 - 2021 Winter Cost of Gas Filing
Adjustments to Gas Costs

Adjustments (a)	Prior Period Adjustments (b)	Refunds from Suppliers (c)	Broker Revenue (d)	Inventory Finance Charges (e)	Transportation CGA Revenues (Schedule 17) (f)	Interruptible Sales Margin (g)	Off System Sales Margin (h)	Capacity Release (i)	Net Option Premiums (j)	Fixed Price Option Administrative Costs (k)	Total Adjustments (m)
May-20	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Jun-20	-	-	-	-	-	-	-	-	-	-	-
Jul-20	-	-	-	-	-	-	-	-	-	-	-
Aug-20	-	-	-	-	-	-	-	-	-	-	-
Sep-20	-	-	-	-	-	-	-	-	-	-	-
Oct-20	-	-	-	-	-	-	-	-	-	-	-
Nov-20	-	-	(672)	-	(680)	-	-	-	-	45,000	(245,606)
Dec-20	-	-	(6,454)	-	(819)	-	-	-	-	-	(300,297)
Jan-21	-	-	(7,087)	-	(910)	-	-	-	-	-	(289,620)
Feb-21	-	-	(6,839)	-	(794)	-	-	-	-	-	(304,049)
Mar-21	-	-	(6,444)	-	(735)	-	-	-	-	-	(302,925)
Apr-21	-	-	(5,230)	-	(578)	-	-	-	-	-	(286,325)
Subtotal May 20 - Oct 20	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Subtotal Nov 20 - Apr 21	\$ -	\$ -	\$ (32,725)	\$ -	\$ (4,516)	\$ -	\$ -	\$ (1,736,581)	\$ -	\$ 45,000	\$ (1,728,823)
Total Peak Period	\$ -	\$ -	\$ (32,725)	\$ -	\$ (4,516)	\$ -	\$ -	\$ (1,736,581)	\$ -	\$ 45,000	\$ (1,728,823)

1/ Estimates are based on prior years actual, except transportation revenue is calculated on Schedule 17, and Inventory Finance Charges for Nov 19 - Apr 20 calculated on Schedule 16

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Liberty Utilities (EnergyNorth Natural Gas) Corp.

d/b/a Liberty Utilities

Peak 2020 - 2021 Winter Cost of Gas Filing

Demand Volumes

	(a)	Peak (b)	Reference (c)	Nov-20 (d)	Dec-20 (e)	Jan-21 (f)	Feb-21 (g)	Mar-21 (h)	Apr-21 (i)
Supply	Niagara Supply			-	-	-	-	-	-
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	peak	42076 FTA Z6-Z6	20,000	20,000	20,000	20,000	20,000	20,000
	Tenn Gas Pipeline (Concord Lateral)	peak	Firm Transportation	30,000	30,000	30,000	30,000	30,000	30,000
	Portland Natural Gas Trans Service		FT-208544	1,000	1,000	1,000	1,000	1,000	1,000
	Portland Natural Gas		FT 210347	5,000	5,000	5,000	5,000	5,000	5,000
	ANE (TransCanada via Union to Iroquois)		Dawn - Parkway to Iroquois	4,047	4,047	4,047	4,047	4,047	4,047
	TransCanada via Union to Portland		Dawn -Parkway to Portland	5,077	5,077	5,077	5,077	5,077	5,077
	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		-	-	-	-	-	-
	Demand FLS	peak		3,000	3,000	3,000	3,000	3,000	3,000
	Peaking Demand	peak	NSB041	7,000	7,000	7,000	7,000	7,000	7,000
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-O02357	6,098	6,098	6,098	6,098	6,098	6,098
	National Fuel - Capacity Reservation	peak	FSS-O02357	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

FEDERAL ENERGY REGULATORY COMMISSION
WASHINGTON, D.C. 20426

FY 2020 GAS ANNUAL CHARGES
CORRECTION FOR ANNUAL CHARGES UNIT CHARGE
June 15, 2020

The annual charges unit charge (ACA) to be applied to in fiscal year 2021 for recovery of FY 2020 Current year and 2019 True-Up is **\$0.0011** per Dekatherm (Dth). The new ACA surcharge will become effective October 1, 2020.

The following calculations were used to determine the FY 2020 unit charge:

2020 CURRENT:

Estimated Program Cost \$67,023,000 divided by 60,657,793,693 Dth = 0.0011049363

2019 TRUE-UP:

Debit/Credit Cost (\$2,266,032) divided by 56,276,625,816 Dth = (0.0000402660)

TOTAL UNIT CHARGE = 0.0010646704

If you have any questions, please contact Raven A. Rodriguez at (202)502-6276 or e-mail at Raven.Rodriguez@ferc.gov.

PUBLIC

Revision No. 1

SCHEDULE I

Receipt Point: 01-0100 Pittsburg, NH
 Delivery Point: 02-0260 Berlin, NH
 Maximum Daily Quantity: 1000 Dth/day
 Maximum Contract Demand: 5478000 Dth
 Effective Service Period: Beginning on the In-Service Date as defined in Article VII to this Contract and continuing in full force and effect until fifteen (15) years after such In-Service Date.

Rate Provisions(s) (check if applicable rate):
 Discounted Rate
 Negotiated Rate

Shipper's charges and fees shall be calculated as follows:
 \$18.2633/Dth/month (\$0.6000/Dth/day)

Additional Terms: Shipper shall have the right to deliver, on a secondary basis, to the following meters, at the Negotiated Rate of \$18.2633/Dth/month (\$0.6000/Dth/day). Delivery to all other secondary delivery points on this Negotiated Rate contract shall be priced at the Maximum Recourse Rate.

Meter #	Name	Operator
05-0525	Westbrook	M&NE
05-0680	Westbrook	Granite State
02-0680	Cochran	Maine Natural Gas
05-0725	Elliot	Granite State
05-0750	Elliot CNG	XPress Natural Gas
02-0775	Newington	Essential Power
02-0900	Newington	Eversource Energy
05-0850	Newington	Granite State
05-1000	Haverhill	Tennessee Gas Pipeline
05-1025	Haverhill	National Grid
05-1050	Methuen	M&NE
05-1150	Direct	Tennessee Gas Pipeline

SCHEDULE I

Primary Receipt Points
 Scheduling Point Name: 10100
 End Date: / /
 Primary Delivery Points
 Scheduling Point Name: 51120
 End Date: / /

Maximum Contract Demand plus Total Maximum Contract Demand Effective Service Period 1/ / to 1/ /

Maximum Daily Quantity: 1,855 (Phase I Quantity) plus 2,577 (Phase II Quantity)

Rate Provisions(s) (check if applicable rate):
 Discounted Rate
 Negotiated Rate

Shipper's charges and fees shall be calculated as follows:
 For volumes received at the primary receipt point and delivered to the primary delivery point, the reservation charge shall be \$0.7500/Dth/day, (the "Negotiated Daily Demand Rate").
 For volumes received at the primary receipt point and delivered to any of the following

Portland Natural Gas Transmission System
 Part 4-1: Schedule of Rates
 v.6.0.0 Superseding v.5.0.0

Statement of Transmission Rates
 (Rates per 1000 Dth)

Rate Schedule	Rate Component	MA Unit	Change 1/
FT	Recourse Reservation Rate	-----	-----
	-- Maximum	\$2,984.3	-----
	-- Minimum	\$06,000.0	-----
	Seasonal Recourse Reservation Rate	-----	-----
FT-FLEX	Recourse Usage Rate	-----	-----
	-- Maximum	\$06,000.0	2/
	-- Minimum	\$06,000.0	2/
	Recourse Reservation Rate	-----	-----
FT-FLEX	Recourse Usage Rate	-----	-----
	-- Maximum	\$06,289.9	2/
	-- Minimum	\$06,000.0	2/
	Recourse Reservation Rate	-----	-----

The following adjustment applies to all Rate Schedules above:
 MEASUREMENT VARIANCE FACTOR-LAUF:
 Minimum down to -1.00%
 Maximum up to +1.00%

MEASUREMENT VARIANCE FACTOR-FUEL 3/
 1/ ACA assessed where applicable under Section 154.02 of the Commission's regulations and will be charged pursuant to Section 6.18 of the General Terms and Conditions at such time and until such time as the ACA assessment rate is published on the Commission's website.
 2/ The monthly average of the ACA assessment rate as published on the Commission's website (www.isc.state.nh.us) incorporated herein by reference.

Issued: September 27, 2019
 Effective: November 1, 2019
 Docket No. RP19-0646/49
 Adopted: October 24, 2019

CURRENTLY EFFECTIVE RATES

FIRM STORAGE SERVICE (FSS)*

	RATE	UNITS
1. Reservation Rate	Market Based/ Negotiable	
Deliverability Reservation Rate	Market Based/ Negotiable	
Capacity Reservation Rate	Market Based/ Negotiable	
2. Injection/Withdrawal Rates		
Injection Rate	Market Based/ Negotiable	
Overrun Injection Rate	Market Based/ Negotiable	
Late Withdrawal Rate	\$1/Dth/Day	
Overrun Withdrawal Rate	Market Based/ Negotiable	

*All quantities of natural gas are measured in dekatherms (Dth)

View Contract

General Information

Customer: Energy North Natural Gas Inc.	Contract Category: Storage	Contract Number: EN-11224	Service Type: FT	Status: Active	Currency: USD
Contact Name: Richard Norman	Start Date: 01/17/1988	Day Time (h:mm): 08:00	Market Agreement: None	Units: Dth	
Contact Name: Sarah Fingran	Contact Number 1: 603-2183599	Contact Number 2: 603-2183599	Contact Email: sarah.fingran@libertyutilities.com		

Contract Dates

Effective Date (First Gas Day): 05/01/2010
Termination Date (Last Gas Day): 01/01/2050

Nomination Deadlines

Day Before Flow Deadline (h:mm 24-hr CCT):
Day of Flow Deadline (h:mm 24-hr CCT):

Transaction Types and Rates

Transaction Type	Allow Transaction	Yes	No	D/E/R Only	Use Hourly Profiles	Volumetric Charge (\$/Dth)	Other Rate (\$/Dth)	Fuel Percentage	Invoice City Type
Storage Injection	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	0	0	0	Set Qty
Storage Withdrawal	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	0	0	0	Set Qty
Authorized Injection Overrun	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	0	0	0	Set Qty
Authorized Withdrawal Overrun	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	0	0	0	Set Qty

Storage and Other Rates

Use Monthly Flat Storage Fee (\$/Month)

Monthly Flat Storage Fee	From	To	Rate
	05/01/10	01/01/50	8,356.88000

FERC Information

Capacity Release Contract: Yes No
 Shipper Affiliation: NONE
 Negotiated Rate Indicator: Yes No
 Maximum Tariff Rate: 0 OR Market Based Rates
 Rate Schedule: 187

Contract Quantity Limits

Monthly MSG Table

From	To	Max Qty	Min Qty
05/01/10	01/01/50	246,260	0

Iroquois Gas Transmission System, L.P.
FERC Gas Tariff
Second Revised Volume No. 1

Fourth Revised Sheet No. 4
Superseding
Third Revised Sheet No. 4

----- NON-EASTCHESTER RATES (All in \$ Per Dth) 1/ -----

	Minimum	RP16-301 Rates 2/ Maximum			RP19-445 Rates Maximum		
		Effective 9/1/2016	Effective 9/1/2017	Effective 9/1/2018	Effective 3/1/2019	Effective 4/1/2020	
RTS DEMAND (Monthly):							
Zone 1	\$0.0000	\$ 6.1928	\$ 5.9982	\$ 5.5997	\$5.4177	\$5.2357	
Zone 2	\$0.0000	\$ 5.3381	\$ 5.1678	\$ 4.7998	\$4.6438	\$4.4878	
Inter-Zone	\$0.0000	\$10.4755	\$ 9.8672	\$ 8.8026	\$8.5165	\$8.2304	
RTS COMMODITY (Daily):							
Zone 1	\$0.0034	\$ 0.0034	\$ 0.0034	\$ 0.0034	\$0.0034	\$0.0034	
Zone 2	\$0.0022	\$ 0.0022	\$ 0.0022	\$ 0.0022	\$0.0022	\$0.0022	
Inter-Zone	\$0.0056	\$ 0.0056	\$ 0.0056	\$ 0.0056	\$0.0056	\$0.0056	
ITS COMMODITY (Daily):							
Zone 1	\$0.0034	\$ 0.2070	\$ 0.2006	\$ 0.1875	\$0.1815	\$0.1755	
Zone 2	\$0.0022	\$ 0.1777	\$ 0.1721	\$ 0.1600	\$0.1549	\$0.1497	
Inter-Zone	\$0.0056	\$ 0.3500	\$ 0.3300	\$ 0.2950	\$0.2856	\$0.2762	
VOLUMETRIC CAPACITY RELEASE (Daily) 3/:							
Zone 1	\$0.0000	\$ 0.2036	\$ 0.1972	\$ 0.1841	\$0.1781	\$0.1721	
Zone 2	\$0.0000	\$ 0.1755	\$ 0.1699	\$ 0.1578	\$0.1527	\$0.1475	
Inter-Zone	\$0.0000	\$ 0.3444	\$ 0.3244	\$ 0.2894	\$0.2800	\$0.2706	

**SEE SHEET NOS. 4A, 4B, AND 4C FOR ADJUSTMENTS TO RATES WHICH MAY BE APPLICABLE

(Footnotes continued on Sheet 4.01)

Issued On: June 12, 2019

Effective On: July 1, 2019

National Fuel Gas Supply Corporation
FERC Gas Tariff
Fifth Revised Volume No. 1

Part 4 - Applicable Rates
§ 4.020 - Part 284 Storage Rates
Version 24.0.0
Page 1 of 1

RATES FOR PART 284 STORAGE SERVICES

Rate Sch. (1)	Rate Component (2)	Rate (3)
ESS	Demand	(Max) \$2.6433 (Min) \$0.0000
	Capacity	(Max) \$0.0000 (Min) \$0.0000
	Injection/Withdrawal	(Max) \$0.0458 plus ACA ^{3/} (Min) \$0.0000
	Storage Balance Transfer	(Max) \$3.8600 (Min) \$0.0000
ISS	Injection	(Max) \$1.1271 plus ACA ^{3/} (Min) \$0.0000
	Storage Balance Transfer	(Max) ^{4/} \$3.8600 (Min) ^{4/} \$0.0000
FSS	Demand	(Max) \$2.6276 (Min) \$0.0000
	Capacity	(Max) \$0.0462 (Min) \$0.0000
	Injection/Withdrawal	(Max) \$0.0000 plus ACA ^{3/} (Min) \$0.0000
	Storage Balance Transfer	(Max) ^{4/} \$3.8600 (Min) ^{4/} \$0.0000

1/ The unit of measure for each rate component is Dth unless otherwise indicated.
2/ The unit of measure for Storage, Operating and LAUF Retention, where applicable. The Storage Operating and LAUF Retention for all facilities is MWh/950.
3/ Pursuant to Section 19 of the General Terms and Conditions, the ACA unit charge, as revised annually and posted on the Commission's website, will be charged in addition to the specified rate.
4/ Rate per nomination.

Effective On: April 1, 2020

National Fuel Gas Supply Corporation
FERC Gas Tariff
Fifth Revised Volume No. 1

Part 4 - Applicable Rates
§ 4.010 - Transportation Rates
Version 29.0.0
Page 1 of 1

RATES FOR TRANSPORTATION SERVICES

Rate Sch. (1)	Rate Component (2)	Base Rate (3)	TSCA (4)	TSCA (5)	Current Rate (6)
FTFS	Reservation	(Max) \$4.5019 (Min) 0.0000	-	-	\$4.5019
	Commodity	(Max) \$0.0140 plus ACA ^{3/} (Min) 0.0000	-	-	\$0.0140 plus ACA ^{3/}
	Overrun	(Max) \$0.1620 plus ACA ^{3/} (Min) 0.0140	-	-	\$0.1620 plus ACA ^{3/}
	Overrun	(Max) \$0.0140 plus ACA ^{3/} (Min) 0.0140	-	-	\$0.0140 plus ACA ^{3/}
EFT	Reservation	(Max) \$4.6455 (Min) 0.0000	0.0000	0.0000	\$4.6455
	Commodity	(Max) \$0.0148 plus ACA ^{3/} (Min) 0.0000	0.0000	0.0000	\$0.0148 plus ACA ^{3/}
	Overrun	(Max) \$0.0148 plus ACA ^{3/} (Min) 0.0148	0.0000	0.0000	\$0.0148 plus ACA ^{3/}
	Overrun	(Max) \$0.0148 plus ACA ^{3/} (Min) 0.0148	-	-	\$0.0148 plus ACA ^{3/}
FST	Reservation	(Max) \$4.5019 (Min) 0.0000	-	-	\$4.5019
	Commodity	(Max) \$0.0000 plus ACA ^{3/} (Min) 0.0140	-	-	\$0.0000 plus ACA ^{3/}
	Overrun	(Max) \$0.1620 plus ACA ^{3/} (Min) 0.0140	-	-	\$0.1620 plus ACA ^{3/}
	Overrun	(Max) \$0.0140 plus ACA ^{3/} (Min) 0.0140	-	-	\$0.0140 plus ACA ^{3/}
IT	Commodity	(Max) \$0.1620 plus ACA ^{3/} (Min) 0.1620	-	-	\$0.1620 plus ACA ^{3/}
	Overrun	(Max) \$0.0000 plus ACA ^{3/} (Min) 0.0000	-	-	\$0.0000 plus ACA ^{3/}

The NA15 Retention is 1.05% applicable to use of the Northern Access 2015 Lease.^{2/3/}

1/ The unit of measure for each rate component is Dth unless otherwise indicated.
2/ All rates exclusive of Transportation Fuel and Company Use Retention and Transportation LAUF Retention. The Transportation Fuel and Company Use Retention for all applicable rate schedules is 0.80% and the Transportation LAUF Retention for all applicable rate schedules is 0.25%. The unit of measure for the Transportation Fuel and Company Use Retention is Dth/1000 and the unit of measure for the Transportation LAUF Retention is Dth/1000. The unit of measure for the Transportation Fuel and Company Use Retention is Dth/1000 and the unit of measure for the Transportation LAUF Retention is Dth/1000.
3/ Pursuant to Section 19 of the General Terms and Conditions, the ACA unit charge, as revised annually and posted on the Commission's website, will be charged in addition to the specified rate.

Effective On: April 1, 2020

Dominion Energy Transmission, Inc.
 FERC Gas Tariff
 Fifth Revised Volume No. 1

GSS, GSS-E & ISS Rates - Severed Parties
 Tariff Record No. 10.31.
 Version 6.0.0
 Superseding Version 5.0.0

APPLICABLE TO SEVERED PARTIES PURSUANT TO THE DECEMBER 6, 2013 STIPULATION
 IN DOCKET NO. RP14-262

RATES APPLICABLE TO RATE SCHEDULES IN
 FERC GAS TARIFF, VOLUME NO. 1
 (\$ per Dt)

Rate Schedule (1)	Rate Component (2)	Base Tariff Rate [1] (3)	Current Acct 858 Base (4)	Current EPCA Base (5)	TCRA [5] Surcharge (6)	EPCA [6] Surcharge (7)	Current Rate [7] (8)	FERC ACA (9)
GSS [2], [4]								
	Storage Demand	\$1.7984	\$0.0666	\$0.0072	(\$0.0046)	\$0.0022	\$1.8698	-
	Storage Capacity	\$0.0145	-	-	-	-	\$0.0145	-
	Injection Charge	\$0.0154	-	\$0.0128	\$0.0000	(\$0.0014)	\$0.0268	-
	Withdrawal Charge	\$0.0154	-	-	\$0.0000	(\$0.0014)	\$0.0140	[8]
	GSS-TE Surcharge [3]	-	\$0.0047	-	\$0.0001	-	\$0.0048	-
	From Customers Balance	\$0.6163	\$0.0144	\$0.0015	(\$0.0010)	(\$0.0009)	\$0.6303	[8]
GSS-E [2], [4]								
	Storage Demand	\$2.2113	\$0.0666	\$0.0072	(\$0.0046)	\$0.0022	\$2.2827	-
	Storage Capacity	\$0.0369	-	-	-	-	\$0.0369	-
	Injection Charge	\$0.0154	-	\$0.0128	\$0.0000	(\$0.0014)	\$0.0268	-
	Withdrawal Charge	\$0.0154	-	-	\$0.0000	(\$0.0014)	\$0.0140	[8]
	Authorized Overruns	\$1.0657	\$0.0144	\$0.0015	(\$0.0010)	(\$0.0009)	\$1.0797	[8]
ISS [2]								
	ISS Capacity	\$0.0736	\$0.0022	\$0.0002	(\$0.0002)	\$0.0001	\$0.0759	-
	Injection Charge	\$0.0154	-	\$0.0128	\$0.0000	(\$0.0014)	\$0.0268	-
	Withdrawal Charge	\$0.0154	-	-	\$0.0000	(\$0.0014)	\$0.0140	[8]
	Authorized Overrun/from Cust. Bal	\$0.6163	\$0.0144	\$0.0015	(\$0.0010)	(\$0.0009)	\$0.6303	[8]
	Excess Injection Charge	\$0.2245	-	\$0.0128	\$0.0000	(\$0.0014)	\$0.2359	-

- [1] The base tariff rate is the effective rate on file with the FERC, excluding adjustments approved by the Commission.
 [2] Storage Service Fuel Retention Percentage is 2.28% plus Adders of 0.28% (RP00-632 S&A approved 9/13/01) totaling 2.56%.
 [3] Applies to withdrawals made under Rate Schedule GSS, Section 5.1.G.
 [4] Daily Capacity Release Rate for GSS per Dt is \$0.6163. Daily Capacity Release Rate for GSS-E per Dt is \$1.0657.
 [5] 858 over/under from previous TCRA period.
 [6] Electric over/under from previous EPCA period.
 [7] The Current Rate shall be increased for the Annual Charge Adjustment (ACA) as applicable.
 [8] The applicable ACA rate is set forth on the FERC website (<http://www.ferc.gov/industries/gas/annual-charges.asp>).

Issued On: September 30, 2019

Page 1 of 1

Effective On: November 1, 2019

Effective
 2020-04-01
Rate M12
 Page 1 of 4

ENBRIDGE GAS INC.
UNION SOUTH
TRANSPORTATION RATES

(A) Applicability

The charges under this schedule shall be applicable to a Shipper who enters into a Transportation Service Contract with Union.

Applicable Points

Dawn as a receipt point: Dawn (TCPL), Dawn (Facilities), Dawn (Tecumseh), Dawn (Vector) and Dawn (TSLE).
 Dawn as a delivery point: Dawn (Facilities).

(B) Services

Transportation Service under this rate schedule shall be for transportation on Union's Dawn - Parkway facilities.

(C) Rates

The identified rates represent maximum prices for service. These rates may change periodically. Multi-year prices may also be negotiated, which may be higher than the identified rates.

	Monthly Demand Charges (applied to daily contract demand) Rate/GJ	Fuel and Commodity Charges			
		Union Supplied Fuel Fuel and Commodity Charge Rate/GJ	Shipper Supplied Fuel		Commodity Charge Rate/GJ
			Fuel Ratio %	AND	
<u>Firm Transportation (1), (5)</u>					
Dawn to Parkway	\$3.632	Monthly fuel and commodity rates shall be in accordance with schedule "C".	Monthly fuel ratios shall be in accordance with schedule "C".		
Dawn to Kirkwall	\$3.083				
Kirkwall to Parkway	\$0.550				
<u>M12-X Firm Transportation</u>					
Between Dawn, Kirkwall and Parkway	\$4.488	Monthly fuel and commodity rates shall be in accordance with schedule "C".	Monthly fuel ratios shall be in accordance with schedule "C".		
<u>Limited Firm/Interruptible Transportation (1)</u>					
Dawn to Parkway – Maximum	\$8.717	Monthly fuel and commodity rates shall be in accordance with schedule "C".	Monthly fuel ratios shall be in accordance with schedule "C".		
Dawn to Kirkwall – Maximum	\$8.717				
Parkway (TCPL / EGT) to Parkway (Cons) / Lisgar (2)	n/a	n/a	0.162%		
<u>Carbon Charge (applied to all quantities transported)</u>					
Facility Carbon Charge		\$0.002	\$0.002		

North Bay Junction Long Term Fixed Price (NBLLTP) Service

Line No.	Particulars	Monthly Toll (\$/CUm/yr)	Daily Equivalent Abandonment Surcharge (\$/CU/Day)
1	NBLLTP	28.28750	0.9300
2	NBLLTP Differential Surcharge	0.0000	0.0000

Note: The toll for NBLLTP is inclusive of the applicable Abandonment Surcharge for FT service from Empress to North Bay Junction. The NBLLTP toll is also provided the Abandonment Surcharge for FT service from Empress to North Bay Junction in a separate table (see page 10 of this schedule).

Enhanced Market Balancing Service

Line No.	Particulars	Monthly Toll (\$/CU/yr)	Daily Equivalent Abandonment Surcharge (\$/CU/Day)
3	Union Parkway Bal to Union EDA	8.00058	0.2632
4	Union Parkway Bal to Union SMDA	0.50431	0.0166

Note: Delivery Pressure Toll applies to the following locations: Emerson 1, Emerson 2, Union SWDA, Enbridge SWDA, Dawn Export, Niagara Falls, Ingoton, Chippawa and East Headford. The Daily Equivalent Toll is only applicable to 210 Applications, FT, Overhaul, DTT and SSS.

Union Dawn Receipt Point Surcharge

Line No.	Particulars	Monthly Toll (\$/CU/yr)	Daily Equivalent Abandonment Surcharge (\$/CU/Day)
5	Union Dawn Receipt Point Surcharge	0.1657	0.0048

Short Notice Balancing (SNB) Service

Line No.	Particulars	Monthly Toll (\$/CU/yr)	Daily Equivalent Abandonment Surcharge (\$/CU/Day)
6	SNB Toll	3.43648	0.1130

Note: The SNB Toll is a representative toll for the Eastern Region.

Empress Deficient Gas Allowance (EDGA) Service

Line No.	Particulars	Capacity Charge (\$/CU/yr)
7	Western Section	1.2323
8	Eastern Section	0.2373

Note: The EDGA Service capacity charge for the Western Section is the effective Empress to North Bay Junction FT Toll and the capacity charge for the Eastern Section is the effective Parkway to North Bay Junction FT Toll. The EDGA Service fuel charge for the Western Section includes the effective Empress to North Bay Junction monthly fuel rate and the fuel charge for the Eastern Section includes the effective Parkway to North Bay Junction monthly fuel rate.

North Bay Junction Long Term Fixed Price (NBLLTP) Service

Line No.	Particulars	Monthly Toll (\$/CU/yr)	Daily Equivalent Abandonment Surcharge (\$/CU/Day)
1	Union NDA	38.24166	1.2573
2	Union NDA	31.65335	1.0301
3	Union NDA	31.29480	1.0289
4	Union NDA	21.56275	0.7196
5	Union NDA	10.40311	0.3420
6	Union NDA	12.79573	0.4208
7	Union NDA	14.86779	0.4882
8	Union NDA	5.21500	0.1716
9	Union NDA	3.72780	0.1233
10	Union NDA	2.40413	0.0787
11	Union NDA	7.00009	0.2301
12	Union NDA	1.96950	0.0655
13	Union NDA	5.90905	0.1943
14	Union NDA	9.45115	0.3168
15	Union NDA	8.82783	0.2902
16	Union NDA	11.74223	0.3860
17	Union NDA	4.45604	0.1485
18	Union NDA	11.99988	0.3940
19	Union NDA	0.22040	0.0072
20	Union NDA	38.60058	1.2704
21	Union NDA	5.81051	0.1931
22	Union NDA	0.8457	0.0287
23	Union NDA	0.6467	0.0216
24	Union NDA	0.6467	0.0216
25	Union NDA	0.8373	0.0287
26	Union NDA	0.8373	0.0287
27	Union NDA	0.8373	0.0287
28	Union NDA	0.8373	0.0287
29	Union NDA	0.8373	0.0287
30	Union NDA	0.8373	0.0287
31	Union NDA	0.8373	0.0287
32	Union NDA	0.8373	0.0287
33	Union NDA	0.8373	0.0287
34	Union NDA	0.8373	0.0287
35	Union NDA	0.8373	0.0287
36	Union NDA	0.8373	0.0287
37	Union NDA	0.8373	0.0287
38	Union NDA	0.8373	0.0287
39	Union NDA	0.8373	0.0287
40	Union NDA	0.8373	0.0287
41	Union NDA	0.8373	0.0287
42	Union NDA	0.8373	0.0287
43	Union NDA	0.8373	0.0287
44	Union NDA	0.8373	0.0287
45	Union NDA	0.8373	0.0287
46	Union NDA	0.8373	0.0287
47	Union NDA	0.8373	0.0287
48	Union NDA	0.8373	0.0287
49	Union NDA	0.8373	0.0287
50	Union NDA	0.8373	0.0287
51	Union NDA	0.8373	0.0287
52	Union NDA	0.8373	0.0287
53	Union NDA	0.8373	0.0287
54	Union NDA	0.8373	0.0287
55	Union NDA	0.8373	0.0287
56	Union NDA	0.8373	0.0287
57	Union NDA	0.8373	0.0287
58	Union NDA	0.8373	0.0287
59	Union NDA	0.8373	0.0287
60	Union NDA	0.8373	0.0287
61	Union NDA	0.8373	0.0287
62	Union NDA	0.8373	0.0287
63	Union NDA	0.8373	0.0287
64	Union NDA	0.8373	0.0287
65	Union NDA	0.8373	0.0287
66	Union NDA	0.8373	0.0287
67	Union NDA	0.8373	0.0287
68	Union NDA	0.8373	0.0287
69	Union NDA	0.8373	0.0287
70	Union NDA	0.8373	0.0287

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1 Liberty Utilities (EnergyNorth Natural Gas) Corp.		Reference	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	Peak
2 db/a Liberty Utilities		(b)	(c)	(d)	(e)	(f)	(g)	(h)	Nov-Apr
3 Peak 2020 - 2021 Winter Cost of Gas Filing									(i)
4 Supply and Commodity Costs, Volumes and Rates									
5	6 For Month of:								
7	(a)								
8									
9 Supply and Commodity Costs									
10	11 Pipeline Gas:								
12	Dawn Supply	In 64 * In 104							
13	Niagara Supply	In 65 * In 109							
14	TGP Supply (Direct)	In 66 * In 125							
15	Dracut Supply 1 - BaseLoad	In 67 * In 114							
16	Dracut Supply 2 - Swing	In 68 * In 119							
17	Constellation COMBO	In 69 * In 131							
18	LNG Truck	In 70 * In 133							
19	Propane Truck	In 71 * In 135							
20	PNGTS	In 72 * In 140							
21	Portland Natural Gas	In 73 * In 145							
22	TGP Supply (Z4)	In 74 * In 150							
23									
24	Subtotal Pipeline Gas Costs		\$ 3,567,106	\$ 5,511,412	\$ 7,763,875	\$ 5,518,062	\$ 4,317,360	\$ 2,239,092	\$ 28,916,907
25									
26 Volumetric Transportation Costs									
27	Dawn Supply	In 64 * In 197							
28	Niagara Supply	In 65 * In 208							
29	TGP Supply (Direct)	In 66 * In 235							
30	Dracut Supply 1 - BaseLoad	In 67 * In 256							
31	Dracut Supply 2 - Swing	In 68 * In 256							
32	Constellation COMBO	In 69 * In 256							
33	TGP Storage - Withdrawals	In 79 * In 172							
34									
35	Total Volumetric Transportation Costs		\$ 206,946	\$ 201,290	\$ 219,417	\$ 185,911	\$ 189,783	\$ 38,870	\$ 1,042,217
36									
37 Less - Gas Refill:									
38	LNG Truck	In 88 * In 157							
39	Propane	In 89 * In 158							
40	TGP Storage Refill	In 90 * In 123							
41	Storage Refill (Trans.)	In 90 * In 235							
42									
43	Subtotal Refills		\$ (475,910)	\$ (292,506)	\$ (505,671)	\$ (360,919)	\$ (47,139)	\$ -	\$ (1,682,144)
44									
45	Total Supply & Pipeline Commodity Costs	In 24 + In 35 + In 43	\$ 3,298,142	\$ 5,420,197	\$ 7,477,621	\$ 5,343,054	\$ 4,460,004	\$ 2,277,962	\$ 28,276,980
46									
47 Storage Gas:									
48	TGP Storage - Withdrawals	In 79 * In 164	\$ 159,117	\$ 720,714	\$ 839,435	\$ 711,420	\$ 633,464	\$ -	\$ 3,064,149
49									
50 Produced Gas:									
51	LNG Vapor	In 82 * In 152							
52	Propane	In 83 * In 154							
53									
54	Total Produced Gas	In 51 + In 52	\$ 8,638	\$ 295,616	\$ 901,402	\$ 366,241	\$ 9,750	\$ 8,943	\$ 1,590,589
55									
56									
57	Total Commodity Gas & Trans. Costs	In 45 + In 48 + In 54	\$ 3,465,897	\$ 6,436,527	\$ 9,218,458	\$ 6,420,714	\$ 5,103,217	\$ 2,286,905	\$ 32,931,719
58									
59									\$ 90,922,460

THIS DOCUMENT HAS BEEN REDACTED

6	For Month of:	Reference	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	Peak
7	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	Nov-Apr
8									(i)
1	Liberty Utilities (EnergyNorth Natural Gas) Corp.								
2	db/a Liberty Utilities								
3	Peak 2020 - 2021 Winter Cost of Gas Filing								
4	Supply and Commodity Costs, Volumes and Rates								
5									
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	Reference (b)	Nov-20 (c)	Dec-20 (d)	Jan-21 (e)	Feb-21 (f)	Mar-21 (g)	Apr-21 (h)	Peak Nov-Apr (i)	REDACTED Schedule 6 Page 3 of 5
1 Liberty Utilities (EnergyNorth Natural Gas) Corp.									
2 db/a Liberty Utilities									
3 Peak 2020 - 2021 Winter Cost of Gas Filing									
4 Supply and Commodity Costs, Volumes and Rates									
5									
6 For Month of:									
7									
98 Gas Costs and Volumetric Transportation Rates									
99									
100 Pipeline Gas:									
101 Dawn Supply	Sch 7, In 10/10								
102 NYMEX Price									
103 Basis Differential									
104 Net Commodity Costs									
105									
106 Niagara Supply	Sch 7, In 10/10								
107 NYMEX Price									
108 Basis Differential									
109 Net Commodity Costs									
110									
111 Dracut Supply 1 - Baseload	Sch 7, In 10 / 10								
112 Commodity Costs - NYMEX Price									
113 Basis Differential									
114 Net Commodity Costs									
115									
116 Dracut Supply 2 - Swing	Sch 7, In 10 / 10								
117 Commodity Costs - NYMEX Price									
118 Basis Differential									
119 Net Commodity Costs									
120									
121									
122 TGP Supply (Direct)	Sch 7, In 10/10								
123 NYMEX Price									
124 Basis Differential									
125 Net Commodity Costs									
126									
127									
128 Constellation COMBO	Sch 7, In 10/10								
129 NYMEX Price									
130 Basis Differential									
131 Net Commodity Costs									
132									
133 LNG Truck	Sch 7, In 10/10								
134									
135 Propane Truck	Propane WACOG								
136									
137 PNGTS	Sch 7, In 10/10								
138 NYMEX Price									
139 Basis Differential									
140 Net Commodity Cost									
141									
142 PNGTS EXP	Sch 7, In 10/10								
143 NYMEX Price									
144 Basis Differential									
145 Net Commodity Cost									
146									
147 TGP Supply (Z4)	Sch 7, In 10/10								
148 NYMEX Price									
149 Basis Differential									
150 Net Commodity Cost									
151									
152 LNG Vapor (Storage)	Sch 16, In 95 /10								
153									
154 Propane	Sch 16, In 66 /10								
155									
156 Storage Refill:									
157 LNG Truck	In 133								
158 Propane	In 135								
159									
160									

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Schedule 6
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Line	Description	Reference (b)	Nov-20 (c)	Dec-20 (d)	Jan-21 (e)	Feb-21 (f)	Mar-21 (g)	Apr-21 (h)	Peak Nov-Apr (i)
1	Liberty Utilities (EnergyNorth Natural Gas) Corp.								
2	db/la Liberty Utilities								
3	Peak 2020 - 2021 Winter Cost of Gas Filing								
4	Supply and Commodity Costs, Volumes and Rates								
5	6 For Month of:								
6	7								
161									
162									
163	TGP Storage								
164	Commodity Costs - Storage withdrawal	Sch 16, ln 34 /10	\$0.1601	\$0.1601	\$0.1601	\$0.1601	\$0.1601	\$0.1601	\$0.1601
165	TGP - Max Commodity - Z 4-6	17th Rev Sheet No. 15	\$0.00939	\$0.00939	\$0.00939	\$0.00939	\$0.00939	\$0.00939	\$0.00939
166	TGP - Max Comm. ACA Rate - Z 4-6	17th Rev Sheet No. 15	\$0.00011	\$0.00011	\$0.00011	\$0.00011	\$0.00011	\$0.00011	\$0.00011
167	Subtotal TGP - Trans Charge - Max Commodity Rate - Z 4-6		\$0.00950	\$0.00950	\$0.00950	\$0.00950	\$0.00950	\$0.00950	\$0.00950
168	TGP - Fuel Charge % - Z 4-6	16th Rev Sheet No. 32	1.22%	1.22%	1.22%	1.22%	1.22%	1.22%	1.22%
169	TGP - Fuel Charge % - Z 4-6 - (NYMEX * Percentage)		\$0.00195	\$0.00195	\$0.00195	\$0.00195	\$0.00195	\$0.00195	\$0.00195
170	TGP - Withdrawal Charge	18th Rev Sheet No.61	\$0.00087	\$0.00087	\$0.00087	\$0.00087	\$0.00087	\$0.00087	\$0.00087
171	Total Volumetric Transportation Rate - TGP (Storage)		\$0.01232	\$0.01232	\$0.01232	\$0.01232	\$0.01232	\$0.01232	\$0.01232
172	Total TGP - Comm. & Vol. Trans. Rate	In 164 + ln 172	\$0.17243	\$0.17243	\$0.17243	\$0.17243	\$0.17243	\$0.17243	\$0.17243
173									
174									
175									
176									
177	Per Unit Volumetric Transportation Rates								
178	Dawn Supply Volumetric Transportation Charge	In 104	\$0.2707	\$0.3068	\$0.3168	\$0.3153	\$0.3113	\$0.2677	\$0.2981
179	Commodity Costs		\$0.00020	\$0.00020	\$0.00020	\$0.00020	\$0.00020	\$0.00020	\$0.00020
180	TransCanada - Commodity Rate/GJ	Dawn - Parkway to Iroquois	1.0551	1.0551	1.0551	1.0551	1.0551	1.0551	1.0551
181	Conversion Rate GL to MMBTU		1.3539	1.3539	1.3539	1.3539	1.3539	1.3539	1.3539
182	Conversion Rate to US\$	1/0/1900	\$0.00029	\$0.00029	\$0.00029	\$0.00029	\$0.00029	\$0.00029	\$0.00029
183	Commodity Rate/US\$	In 181 x ln 182 x ln 183	0.94%	1.10%	1.19%	1.08%	0.94%	0.89%	1.02%
184	TransCanada Fuel %	Dawn - Parkway to Iroquois	\$0.00255	\$0.00338	\$0.00376	\$0.00339	\$0.00292	\$0.00239	\$0.00307
185	Subtotal TransCanada Fuel %	In 179 x ln 185	\$0.00283	\$0.00367	\$0.00404	\$0.00368	\$0.00321	\$0.00268	\$0.00335
186	IGTS - Z1 RTS Commodity	Forth Revised Sheet No. 4	\$0.00034	\$0.00034	\$0.00034	\$0.00034	\$0.00034	\$0.00034	\$0.00034
187	IGTS - Z1 RTS ACA Rate Commodity	Forth Revised Sheet No. 4	\$0.00011	\$0.00011	\$0.00011	\$0.00011	\$0.00011	\$0.00011	\$0.00011
188	IGTS - Z1 RTS Deferred Asset Surcharge	Forth Revised Sheet No. 4	\$0.00000	\$0.00000	\$0.00000	\$0.00000	\$0.00000	\$0.00000	\$0.00000
189	Subtotal IGTS - Trans Charge - Z1 RTS Commodity		\$0.00045	\$0.00045	\$0.00045	\$0.00045	\$0.00045	\$0.00045	\$0.00045
190	IGTS - Fuel Use Factor - Percentage	17th Rev Sheet No. 15	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
191	IGTS - Fuel Use Factor - Percentage	Forth Revised Sheet No. 4	\$0.00271	\$0.00307	\$0.00317	\$0.00315	\$0.00311	\$0.00268	\$0.00298
192	TGP NET-NE - Comm. Segments 3 & 4	In 179 x ln 193	0.84%	0.84%	0.84%	0.84%	0.84%	0.84%	0.84%
193	IGTS - Fuel Use Factor - Percentage	16th Rev Sheet No. 32	\$0.00227	\$0.00258	\$0.00266	\$0.00265	\$0.00261	\$0.00225	\$0.00250
194	TGP FTA Fuel % - Percentage	In 179 x ln 195	\$0.00837	\$0.00987	\$0.01043	\$0.01004	\$0.00950	\$0.00816	\$0.00940
195	Total Volumetric Transportation Charge - Dawn Supply								
196									
197									
198									
199									
200	Niagara Supply Volumetric Transportation Charge								
201	Commodity Costs	Ln 109	\$0.00712	\$0.00712	\$0.00712	\$0.00712	\$0.00712	\$0.00712	\$0.00712
202	TGP FTA - FTA Z 5-6 Comm. Rate	17th Rev Sheet No. 15	\$0.00011	\$0.00011	\$0.00011	\$0.00011	\$0.00011	\$0.00011	\$0.00011
203	TGP FTA - FTA Z 5-6 - ACA Rate	17th Rev Sheet No. 15	\$0.00723	\$0.00723	\$0.00723	\$0.00723	\$0.00723	\$0.00723	\$0.00723
204	Subtotal TGP FTA - FTA Z 5-6 Commodity Rate		0.84%	0.84%	0.84%	0.84%	0.84%	0.84%	0.84%
205	TGP FTA Fuel Charge % Z 5-6	16th Rev Sheet No. 32	\$0.00723	\$0.00723	\$0.00723	\$0.00723	\$0.00723	\$0.00723	\$0.00723
206	TGP FTA Fuel % - Percentage	In 201 x ln 206	0.84%	0.84%	0.84%	0.84%	0.84%	0.84%	0.84%
207	Total Volumetric Transportation Rate - Niagara Supply								
208									
209									
210									

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Schedule 6
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1 Liberty Utilities (EnergyNorth Natural Gas) Corp.

2 db/a Liberty Utilities

3 Peak 2020 - 2021 Winter Cost of Gas Filing

4 Supply and Commodity Costs, Volumes and Rates

5

6 For Month of:

7 (a)

Reference

(b)

Jan-21

(e)

Feb-21

(f)

Mar-21

(g)

Apr-21

(h)

Peak

Nov-Apr

(i)

	Nov-20 (c)	Dec-20 (d)	Jan-21 (e)	Feb-21 (f)	Mar-21 (g)	Apr-21 (h)	Peak Nov-Apr (i)	Average Rate
214. TGP Direct Volumetric Transportation Charge								
Commodity Costs								
Ln 123								
217 TGP - Max Comm. Base Rate - Z 0-6	\$0.02723	\$0.02723	\$0.02723	\$0.02723	\$0.02723	\$0.02723	\$0.02723	\$0.02723
218 TGP - Max Commodity ACA Rate - Z 0-6	\$0.00011	\$0.00011	\$0.00011	\$0.00011	\$0.00011	\$0.00011	\$0.00011	\$0.00011
219 Subtotal TGP - Max Comm. Rate Z 0-6	\$0.02734	\$0.02734	\$0.02734	\$0.02734	\$0.02734	\$0.02734	\$0.02734	\$0.02734
220 Prorated Percentage	32.60%	32.60%	32.60%	32.60%	32.60%	32.60%	32.60%	32.60%
221 Prorated TGP - Max Commodity Rate - Z 0-6	\$0.00891	\$0.00891	\$0.00891	\$0.00891	\$0.00891	\$0.00891	\$0.00891	\$0.00891
222 TGP - Max Comm. Base Rate - Z 1-6	\$0.02374	\$0.02374	\$0.02374	\$0.02374	\$0.02374	\$0.02374	\$0.02374	\$0.02374
223 TGP - Max Commodity ACA Rate - Z 1-6	\$0.00011	\$0.00011	\$0.00011	\$0.00011	\$0.00011	\$0.00011	\$0.00011	\$0.00011
224 Subtotal TGP - Max Commodity Rate - Z 1-6	\$0.02385	\$0.02385	\$0.02385	\$0.02385	\$0.02385	\$0.02385	\$0.02385	\$0.02385
225 Prorated Percentage	67.40%	67.40%	67.40%	67.40%	67.40%	67.40%	67.40%	67.40%
226 Prorated TGP - Trans Charge - Max Commodity Rate - Z 1-6	\$0.01607	\$0.01607	\$0.01607	\$0.01607	\$0.01607	\$0.01607	\$0.01607	\$0.01607
227 TGP - Fuel Charge % - Z 0-6	4.84%	4.84%	4.84%	4.84%	4.84%	4.84%	4.84%	4.84%
228 Prorated Percentage	32.6%	32.6%	32.6%	32.6%	32.6%	32.6%	32.6%	32.6%
229 Prorated TGP Fuel Charge % - Z 0-6	1.58%	1.58%	1.58%	1.58%	1.58%	1.58%	1.58%	1.58%
230 TGP - Fuel Charge % - Z 1-6	4.21%	4.21%	4.21%	4.21%	4.21%	4.21%	4.21%	4.21%
231 Prorated Percentage	67.40%	67.40%	67.40%	67.40%	67.40%	67.40%	67.40%	67.40%
232 Prorated TGP Fuel Charge - Fuel Charge % - Z 1-6	2.84%	2.84%	2.84%	2.84%	2.84%	2.84%	2.84%	2.84%
233 TGP - Fuel Charge % - Z 0-6	\$0.00437	\$0.00437	\$0.00437	\$0.00437	\$0.00437	\$0.00437	\$0.00437	\$0.00437
234 TGP - Fuel Charge % - Z 1-6	\$0.00785	\$0.00785	\$0.00785	\$0.00785	\$0.00785	\$0.00785	\$0.00785	\$0.00785
235 Total Volumetric Transportation Rate - TGP (Direct)	\$0.03720	\$0.03857	\$0.03903	\$0.03882	\$0.03825	\$0.03700	\$0.03814	\$0.03814
236								
237 TGP (Zone 6 Purchase) Volumetric Transportation Charge								
Commodity Costs								
Ln 123								
240 TGP - Max Comm. Base Rate - Z 6-6	\$0.00297	\$0.00297	\$0.00297	\$0.00297	\$0.00297	\$0.00297	\$0.00297	\$0.00297
241 TGP - Max Commodity ACA Rate - Z 6-6	\$0.00011	\$0.00011	\$0.00011	\$0.00011	\$0.00011	\$0.00011	\$0.00011	\$0.00011
242 Subtotal TGP - Max Commodity Rate - Z 6-6	\$0.00308	\$0.00308	\$0.00308	\$0.00308	\$0.00308	\$0.00308	\$0.00308	\$0.00308
243 TGP - Fuel Charge % - Z 6-6	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
244 TGP - Fuel Charge	\$0.00000	\$0.00000	\$0.00000	\$0.00000	\$0.00000	\$0.00000	\$0.00000	\$0.00000
245 Total Vol. Trans. Rate - TGP (Zone 6)	\$0.00308	\$0.00308	\$0.00308	\$0.00308	\$0.00308	\$0.00308	\$0.00308	\$0.00308
246								
247								
248 TGP Dracut								
Commodity Costs - NYMEX Price								
Ln 114								
251 TGP - Trans Charge - Comm. - Z 6-6	\$0.00297	\$0.00297	\$0.00297	\$0.00297	\$0.00297	\$0.00297	\$0.00297	\$0.00297
252 TGP - Trans Charge - ACA Rate - Z 6-6	\$0.00011	\$0.00011	\$0.00011	\$0.00011	\$0.00011	\$0.00011	\$0.00011	\$0.00011
253 Subtotal TGP - Trans Charge - Max Commodity Rate - Z 6-6	\$0.00308	\$0.00308	\$0.00308	\$0.00308	\$0.00308	\$0.00308	\$0.00308	\$0.00308
254 TGP - Fuel Charge % - Z 6-6	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
255 TGP - Fuel Charge	\$0.00000	\$0.00000	\$0.00000	\$0.00000	\$0.00000	\$0.00000	\$0.00000	\$0.00000
256 Total Volumetric Transportation Rate - TGP Dracut	\$0.00308	\$0.00308	\$0.00308	\$0.00308	\$0.00308	\$0.00308	\$0.00308	\$0.00308
257								
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1 Liberty Utilities (EnergyNorth Natural Gas) Corp.
 2 dl/b/a Liberty Utilities
 3 Peak 2020 - 2021 Winter Cost of Gas Filing
 4 NYMEX Futures @ Henry Hub
 5
 6 For Month of:
 7 (a)
 8 I. NYMEX Opening Prices as of:
 9 Opening Prices (15 day average)
 10 NYMEX
 11
 12 NYMEX Settlement - 15 Day Average
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Reference	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	Strip Average
(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
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15							
15 Day Average	\$2.7669	\$3.0753	\$3.1799	\$3.1326	\$3.0031	\$2.7212	\$2.9798
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Liberty Utilities (EnergyNorth Natural Gas) Corp.
d/b/a Liberty Utilities
Peak 2020 - 2021 Winter Cost of Gas Filing
Annual Bill Comparisons, Nov 19 - Apr 20 vs Nov 20 - Apr 21 - Residential Heating Rate R-3

6 November 1, 2020 - April 30, 2021
 7 Residential Heating (R3)
 8 PROPOSED

	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	Winter Nov-Apr
	62	110	123	148	132	92	667
10 average Usage (Therms)							
	<u>7/1/2020 - Current</u>						
12 Winter:							
13 Cust. Chg	\$ 15.50	\$ 15.50	\$ 15.50	\$ 15.50	\$ 15.50	\$ 15.50	\$ 93.00
14 Headblock	\$ 0.5678						
15 Tailblock	\$ 35.20	\$ 62.46	\$ 69.84	\$ 84.03	\$ 74.95	\$ 52.24	\$ 378.72
16 HB Threshold							
24 Total Base Rate Amount	\$ 50.70	\$ 77.96	\$ 85.34	\$ 99.53	\$ 90.45	\$ 67.74	\$ 471.72
25							
26 COG Rate - (Seasonal)	\$ 0.5571	\$ 0.5571	\$ 0.5571	\$ 0.5571	\$ 0.5571	\$ 0.5571	\$ 0.5571
27 COG amount	\$ 34.54	\$ 61.28	\$ 68.52	\$ 82.45	\$ 73.54	\$ 51.25	\$ 371.59
28							
29 LDAC	\$ 0.0603	\$ 0.0603	\$ 0.0603	\$ 0.0603	\$ 0.0603	\$ 0.0603	\$ 0.0603
30 LDAC amount	\$ 3.74	\$ 6.63	\$ 7.41	\$ 8.92	\$ 7.96	\$ 5.55	\$ 40.21
31							
32 Total Bill	\$ 88.98	\$ 145.87	\$ 161.28	\$ 190.91	\$ 171.94	\$ 124.54	\$ 883.52

34 November 1, 2019 - April 30, 2020
 35 Residential Heating (R3)
 36 CURRENT

	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20	Apr-20	Winter Nov-Apr
	62	110	123	148	132	92	667
38 average Usage (Therms)							
	<u>7/1/19 - 6/30/20</u>						
40 Winter:							
41 Cust. Chg	\$ 15.20	\$ 15.20	\$ 15.20	\$ 15.20	\$ 15.20	\$ 15.20	\$ 91.20
42 Headblock	\$ 0.5569						
43 Tailblock	\$ 34.53	\$ 61.26	\$ 68.50	\$ 82.42	\$ 73.51	\$ 51.23	\$ 371.45
44 HB Threshold							
52 Total Base Rate Amount	\$ 49.73	\$ 76.46	\$ 83.70	\$ 97.62	\$ 88.71	\$ 66.43	\$ 462.65
53							
54 COG Rate - (Seasonal)	\$ 0.6203	\$ 0.6203	\$ 0.5653	\$ 0.4184	\$ 0.3499	\$ 0.2679	\$ 0.4632
55 COG amount	\$ 38.46	\$ 68.23	\$ 69.53	\$ 61.92	\$ 46.19	\$ 24.65	\$ 308.98
56							
57 LDAC	\$ 0.0310	\$ 0.0310	\$ 0.0310	\$ 0.0310	\$ 0.0310	\$ 0.0310	\$ 0.0310
58 LDAC amount	\$ 1.92	\$ 3.41	\$ 3.81	\$ 4.59	\$ 4.09	\$ 2.85	\$ 20.68
59							
60 Total Bill	\$ 90.11	\$ 148.10	\$ 157.04	\$ 164.13	\$ 138.99	\$ 93.93	\$ 792.31

62 DIFFERENCE:

63 Total Bill	(\$1.13)	(\$2.23)	\$4.23	\$26.77	\$32.95	\$30.60	\$91.21
64 % Change	-1.25%	-1.51%	2.70%	16.31%	23.71%	32.58%	11.51%
65							
66 Base Rate	\$ 0.98	\$ 1.50	\$ 1.64	\$ 1.91	\$ 1.74	\$ 1.30	\$ 9.07
67 % Change	1.96%	1.96%	1.96%	1.96%	1.96%	1.96%	1.96%
68							
69 COG & LDAC	\$ (2.10)	\$ (3.73)	\$ 2.59	\$ 24.86	\$ 31.22	\$ 29.30	\$ 82.14
70 % Change	-5.47%	-5.47%	3.73%	40.15%	67.59%	118.85%	26.58%

Liberty Utilities (EnergyNorth Natural Gas) Corp.

1 d/b/a Liberty Utilities

2 Peak 2020 - 2021 Winter Cost of Gas Filing

3 Annual Bill Comparisons, Nov 19 - Apr 20 vs Nov 20 - Apr 21 - Commercial Rate G-41

4

5
6 November 1, 2020 - April 30, 2021

7 Commercial Rate (G-41)

8 PROPOSED

	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	Winter Nov-Apr
9 average Usage (Therms)	89	277	504	457	331	297	1,955
10							
11							
12 Winter:							
13 Cust. Chg	\$ 57.46	\$ 57.46	\$ 57.46	\$ 57.46	\$ 57.46	\$ 57.46	\$ 344.76
14 Headblock	\$ 41.93	\$ 47.11	\$ 47.11	\$ 47.11	\$ 47.11	\$ 47.11	\$ 277.48
15 Tailblock	\$ -	\$ 56.02	\$ 127.87	\$ 112.99	\$ 73.11	\$ 62.35	\$ 432.34
16 HB Threshold							
17							
24 Total Base Rate Amount	\$ 99.39	\$ 160.59	\$ 232.44	\$ 217.56	\$ 177.68	\$ 166.92	\$ 1,054.58
25							
26 COG Rate - (Seasonal)	\$ 0.5552	\$ 0.5552	\$ 0.5552	\$ 0.5552	\$ 0.5552	\$ 0.5552	\$ 0.5552
27 COG amount	\$ 49.41	\$ 153.79	\$ 279.82	\$ 253.73	\$ 183.77	\$ 164.89	\$ 1,085.42
28							
29 LDAC	\$ 0.0549	\$ 0.0549	\$ 0.0549	\$ 0.0549	\$ 0.0549	\$ 0.0549	\$ 0.0549
30 LDAC amount	\$ 4.88	\$ 15.20	\$ 27.65	\$ 25.07	\$ 18.16	\$ 16.29	\$ 107.26
31							
32 Total Bill	\$153.68	\$329.58	\$539.91	\$496.36	\$379.61	\$348.11	\$2,247.25

33
34 November 1, 2019 - April 30, 2020

35 Commercial Rate (G-41)

36 CURRENT

	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20	Apr-20	Winter Nov-Apr
37 average Usage (Therms)	89	277	504	457	331	297	1,955
38							
39							
40 Winter:							
41 Cust. Chg	\$ 56.36	\$ 56.36	\$ 56.36	\$ 56.36	\$ 56.36	\$ 56.36	\$ 338.16
42 Headblock	\$ 41.13	\$ 46.21	\$ 46.21	\$ 46.21	\$ 46.21	\$ 46.21	\$ 272.18
43 Tailblock	\$ -	\$ 54.94	\$ 125.40	\$ 110.81	\$ 71.70	\$ 61.15	\$ 424.01
44 HB Threshold							
45							
52 Total Base Rate Amount	\$ 97.49	\$ 157.51	\$ 227.97	\$ 213.38	\$ 174.27	\$ 163.72	\$ 1,034.34
53							
54 COG Rate - (Seasonal)	\$ 0.6190	\$ 0.6190	\$ 0.5640	\$ 0.4171	\$ 0.3486	\$ 0.2666	\$ 0.4583
55 COG amount	\$ 55.09	\$ 171.46	\$ 284.26	\$ 190.61	\$ 115.39	\$ 79.18	\$ 895.99
56							
57 LDAC	\$ 0.0478	\$ 0.0478	\$ 0.0478	\$ 0.0478	\$ 0.0478	\$ 0.0478	\$ 0.0478
58 LDAC amount	\$ 4.25	\$ 13.24	\$ 24.09	\$ 21.84	\$ 15.82	\$ 14.20	\$ 93.45
59							
60 Total Bill	\$156.83	\$342.21	\$536.32	\$425.84	\$305.48	\$257.10	\$2,023.78

61
62 DIFFERENCE:

63 Total Bill	\$ (3.15)	\$ (12.64)	\$ 3.59	\$ 70.52	\$ 74.13	\$ 91.01	\$ 223.46
64 % Change	-2.01%	-3.69%	0.67%	16.56%	24.27%	35.40%	11.04%
65							
66 Base Rate	\$ 1.90	\$ 3.08	\$ 4.46	\$ 4.18	\$ 3.41	\$ 3.20	\$ 20.23
67 % Change	1.95%	1.96%	1.96%	1.96%	1.96%	1.96%	1.96%
68							
69 COG & LDAC	\$ (5.05)	\$ (15.72)	\$ (0.88)	\$ 66.34	\$ 70.72	\$ 87.81	\$ 203.23
70 % Change	-9.17%	-9.17%	-0.31%	34.80%	61.29%	110.90%	22.68%

Liberty Utilities (EnergyNorth Natural Gas) Corp.

1 c/b/a Liberty Utilities

2 Peak 2020 - 2021 Winter Cost of Gas Filing

71 Annual Bill Comparisons, Nov 19 - Apr 20 vs Nov 20 - Apr 21 - Commercial Rate G-42

72

73

74 November 1, 2020 - April 30, 2021

75 C&I High Winter Use Medium G-42

76 PROPOSED

	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	Winter Nov-Apr
77 average Usage (Therms)	830	2,189	3,708	3,406	2,603	2,395	15,131
78 <i>Z/1/2020 - Current</i>							
79 Winter:							
80 Cust. Chg	\$ 172.39	\$ 172.39	\$ 172.39	\$ 172.39	\$ 172.39	\$ 172.39	\$ 1,034.34
81 Headblock	\$ 355.57	\$ 428.40	\$ 428.40	\$ 428.40	\$ 428.40	\$ 428.40	\$ 2,497.57
82 Tailblock	\$ -	\$ 339.46	\$ 773.13	\$ 686.91	\$ 457.66	\$ 398.27	\$ 2,655.44
83 HB Threshold							
84							
85							
86 Total Base Rate Amount	\$ 527.96	\$ 940.25	\$ 1,373.92	\$ 1,287.70	\$ 1,058.45	\$ 999.06	\$ 6,187.35
87							
88 COG Rate - (Seasonal)	\$ 0.5552	\$ 0.5552	\$ 0.5552	\$ 0.5552	\$ 0.5552	\$ 0.5552	\$ 0.5552
89 COG amount	\$ 460.82	\$ 1,215.33	\$ 2,058.68	\$ 1,891.01	\$ 1,445.19	\$ 1,329.70	\$ 8,400.73
90							
91 LDAC	\$ 0.0549	\$ 0.0549	\$ 0.0549	\$ 0.0549	\$ 0.0549	\$ 0.0549	\$ 0.0549
92 LDAC amount	\$ 45.54	\$ 120.09	\$ 203.43	\$ 186.86	\$ 142.81	\$ 131.39	\$ 830.12
93							
94 Total Bill	\$ 1,034.31	\$ 2,275.68	\$ 3,636.03	\$ 3,365.57	\$ 2,646.44	\$ 2,460.16	\$ 15,418.20

100

101

102 November 1, 2019 - April 30, 2020

103 C&I High Winter Use Medium G-42

104 CURRENT

	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20	Apr-20	Winter Nov-Apr
105 average Usage (Therms)	830	2,189	3,708	3,406	2,603	2,395	15,131
106 <i>Z/1/19 - 6/30/20</i>							
107 Winter:							
108 Cust. Chg	\$ 169.09	\$ 169.09	\$ 169.09	\$ 169.09	\$ 169.09	\$ 169.09	\$ 1,014.54
109 Headblock	\$ 348.77	\$ 420.20	\$ 420.20	\$ 420.20	\$ 420.20	\$ 420.20	\$ 2,449.77
110 Tailblock	\$ -	\$ 332.92	\$ 758.24	\$ 673.68	\$ 448.84	\$ 390.60	\$ 2,604.28
111 HB Threshold							
112							
113							
114 Total Base Rate Amount	\$ 517.86	\$ 922.21	\$ 1,347.53	\$ 1,262.97	\$ 1,038.13	\$ 979.89	\$ 6,068.59
115							
116 COG Rate - (Seasonal)	\$ 0.6190	\$ 0.6190	\$ 0.5640	\$ 0.4171	\$ 0.3486	\$ 0.2666	\$0.4578
117 COG amount	\$ 513.77	\$ 1,354.99	\$ 2,091.31	\$ 1,420.64	\$ 907.41	\$ 638.51	\$ 6,926.63
118							
119 LDAC	\$ 0.0478	\$ 0.0478	\$ 0.0478	\$ 0.0478	\$ 0.0478	\$ 0.0478	\$ 0.0478
120 LDAC amount	\$ 39.67	\$ 104.63	\$ 177.24	\$ 162.81	\$ 124.42	\$ 114.48	\$ 723.26
121							
122 Total Bill	\$ 1,071.30	\$ 2,381.84	\$ 3,616.08	\$ 2,846.42	\$ 2,069.96	\$ 1,732.88	\$ 13,718.48

129

130 DIFFERENCE:

131 Total Bill	\$ (36.99)	\$ (106.16)	\$ 19.95	\$ 519.16	\$ 576.48	\$ 727.28	\$ 1,699.72
132 % Change	-3.45%	-4.46%	0.55%	18.24%	27.85%	41.97%	12.39%
133							
134 Base Rate	\$ 10.11	\$ 18.04	\$ 26.39	\$ 24.73	\$ 20.32	\$ 19.17	\$ 118.76
135 % Change	1.95%	1.96%	1.96%	1.96%	1.96%	1.96%	1.96%
136							
137 COG & LDAC	\$ (47.09)	\$ (124.20)	\$ (6.44)	\$ 494.42	\$ 556.16	\$ 708.11	\$ 1,580.96
138 % Change	-9.17%	-9.17%	-0.31%	34.80%	61.29%	110.90%	22.82%

Liberty Utilities (EnergyNorth Natural Gas) Corp.

1 d/b/a Liberty Utilities

2 Peak 2020 - 2021 Winter Cost of Gas Filing

139 Annual Bill Comparisons, Nov 19 - Apr 20 vs Nov 20 - Apr 21 - Commercial Rate G-52

140

141

142 November 1, 2020 - April 30, 2021

143 Commercial Rate (G-52)

144 PROPOSED

	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	Winter Nov-Apr
145 average Usage (Therms)	1,352	1,866	2,284	2,160	1,886	1,760	11,308
146							
147							
148							
149							
150							
151							
152							
153							
160	\$ 473.45	\$ 556.93	\$ 624.81	\$ 604.67	\$ 560.18	\$ 539.71	\$ 3,359.76
161							
162	\$0.5660	\$0.5660	\$0.5660	\$0.5660	\$0.5660	\$0.5660	\$ 0.5660
163	\$ 765.23	\$ 1,056.16	\$ 1,292.74	\$ 1,222.56	\$ 1,067.48	\$ 996.16	\$ 6,400.33
164							
165	\$0.0549	\$0.0549	\$0.0549	\$0.0549	\$0.0549	\$0.0549	\$ 0.0549
166	\$ 74.17	\$ 102.37	\$ 125.31	\$ 118.50	\$ 103.47	\$ 96.56	\$ 620.38
167							
168	\$1,312.86	\$1,715.46	\$2,042.86	\$1,945.74	\$1,731.12	\$1,632.43	\$10,380.47

169

170 November 1, 2019 - April 30, 2020

171 Commercial Rate (G-52)

172 CURRENT

	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20	Apr-20	Winter Nov-Apr
173	1,352	1,866	2,284	2,160	1,886	1,760	11,308
174							
175							
176							
177							
178							
179							
180							
181							
188	\$ 464.36	\$ 546.24	\$ 612.83	\$ 593.08	\$ 549.43	\$ 529.36	\$ 3,295.30
189							
190	\$ 0.6258	\$ 0.6258	\$ 0.5708	\$ 0.4239	\$ 0.3554	\$ 0.2734	\$ 0.4762
191	\$ 846.08	\$ 1,167.74	\$ 1,303.71	\$ 915.62	\$ 670.28	\$ 481.18	\$ 5,384.62
192							
193	\$ 0.0478	\$ 0.0478	\$ 0.0478	\$ 0.0478	\$ 0.0478	\$ 0.0478	\$ 0.0478
194	\$ 64.63	\$ 89.19	\$ 109.18	\$ 103.25	\$ 90.15	\$ 84.13	\$ 540.52
195							
196	\$1,375.07	\$1,803.18	\$2,025.71	\$1,611.95	\$1,309.87	\$1,094.67	\$9,220.45

197

198 DIFFERENCE:

199	\$ (62.21)	\$ (87.72)	\$ 17.15	\$ 333.79	\$ 421.26	\$ 537.76	\$ 1,160.02
200	% Change	-4.52%	-4.86%	0.85%	20.71%	32.16%	12.58%
201							
202	Base Rate	9.09	10.68	11.98	11.60	10.75	64.45
203	% Change	1.96%	1.96%	1.95%	1.96%	1.96%	1.96%
204							
205	COG & LDAC	(71.30)	(98.41)	5.17	322.19	410.51	1,095.56
206	% Change	-8.43%	-8.43%	0.40%	35.19%	61.24%	20.35%

Liberty Utilities (EnergyNorth Natural Gas) Corp.

1 d/b/a Liberty Utilities

2 Peak 2020 - 2021 Winter Cost of Gas Filing

207 Residential Heating

	Winter 2018-19	Winter 2019-20
208	\$ 15.50	\$ 15.50
209	Customer Charge	
210	First 100 Therms	\$ 0.5678
211	Excess 100 Therms	\$ 0.5678
212	LDAC	\$ 0.0603
213	COG	\$ 0.5571
214	Total Adjust	\$ 0.6174
215		
216		
217		
218		
219		

	Winter 2017-18 COG @	Winter 2018-19 COG	Total	Base Rate	COG	LDAC
	\$ Impact	% Impact	\$ Impact	% Impact	\$ Impact	% Impact
220	\$0.4942	25%	\$0.12			
221						
222	\$20.81	-85%	(\$17.72)	-\$18.34	\$0.47	\$0.15
223						
224	\$26.12	-76%	(\$19.95)	-\$21.18	\$0.94	\$0.29
225						
226	\$36.74	-66%	(\$24.39)	-\$26.86	\$1.88	\$0.59
227						
228	\$47.36	-61%	(\$28.84)	-\$32.53	\$2.82	\$0.88
229						
230	\$63.29	-56%	(\$35.51)	-\$41.05	\$4.22	\$1.32
231						
232	\$68.60	-55%	(\$37.73)	-\$43.89	\$4.69	\$1.46
233						
234	\$95.15	-51%	(\$48.85)	-\$58.09	\$7.04	\$2.20
235						
236	\$156.75	-48%	(\$74.64)	-\$91.02	\$12.48	\$3.89
237						
238	\$174.81	-47%	(\$82.20)	-\$100.67	\$14.08	\$4.39
239						
240	\$227.91	-46%	(\$104.43)	-\$129.06	\$18.77	\$5.86
241						

1 Liberty Utilities (EnergyNorth Natural Gas) Corp.

2 d/b/a Liberty Utilities

3 Peak 2020 - 2021 Winter Cost of Gas Filing

4 Variance Analysis of the Components of the Winter 2019-2020 Actual Results vs Proposed Winter 2020-2021 Cost of Gas Rate

	WINTER 2019-2020 ACTUAL RESULTS (6 months actual)		WINTER 2020-2021 (6 months Proposed)		
	81,783,767	88,213,529			
	THERM SENDOUT	THERM SENDOUT	COSTS	COSTS	EFFECT ON COST OF GAS
11 Therm Sales (COG)					
12					
13					
14					
15					
16 Demand Charges	\$ 10,699,998	\$ 12,978,688	\$ 0.1308	\$ 0.1471	
17					
18 Purchased Gas	26,476,031	69,103,812	0.3237	28,276,980	0.3206
19					
20 Storage/Produced Gas	-	21,818,647	-	4,654,739	0.0528
21					
22 Hedging (Gain)/Loss	-	-	-	-	-
23					
24					
25 Total Volumes and Cost	\$ 37,176,029	\$ 45,910,407	\$ 0.4546	\$ 0.5204	
26					
27 Direct Costs					
28 Prior Period Balance	\$ 1,458,705	\$ 2,227,421	\$ 0.0178	\$ 0.0253	
29 Interest	(24,813)	72,812	(0.0003)	0.0008	
30 Prior Period Adjustment	-	441,037	-	0.0050	
31 Broker Revenues	(1,472,720)	(32,725)	(0.0180)	(0.0004)	
32 Refunds from Suppliers	-	-	-	-	
33 Fuel Financing	-	-	-	-	
34 Transportation CGA Revenues	(40,053)	(4,516)	(0.0005)	(0.0001)	
35 280 Day Margin	-	-	-	-	
36 Interruptible Sales Margin	-	-	-	-	
37 Capacity Release and Off System Sales Margins	(1,736,581)	(1,736,581)	(0.0212)	(0.0197)	
38 Hedging Costs	-	-	-	-	
39 FPO Admin Costs	-	45,000	-	0.0005	
40 Indirect Costs	-	-	-	-	
41 Misc Overhead	10,649	10,568	0.0001	0.0001	
42 Occupant Disallowance/Credits	-	-	-	-	
43 Production & Storage	1,980,428	1,980,428	0.0242	0.0225	
44 Bad Debt Adjustment %	-	229,118	-	0.0026	
45 Cashout, Broker penalty, Canadian Managed,...	-	-	-	-	
46 Total Adjusted Cost	\$ 37,351,643	\$ 49,142,968	\$ 0.4567	\$ 0.5571	

Liberty Utilities (EnergyNorth Natural Gas) Corp.

d/b/a Liberty Utilities

Peak 2020 - 2021 Winter Cost of Gas Filing

Capacity Assignment Calculations 2019-2020

Derivation of Class Assignments and Weightings

Schedule 10A
Page 1 of 3

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, Dktherm	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	532	558	0.3%	102	457
2	RATE R-3-Resi Htg	69,256	73,356	43.5%	3,545	69,812
3	RATE G-41 (T)	29,783	31,593	18.7%	770	30,823
4	RATE G-51 (S)	2,445	2,551	1.5%	739	1,812
5	RATE G-42 (V)	37,176	39,404	23.4%	1,473	37,931
6	RATE G-52	5,376	5,601	3.3%	1,781	3,820
7	RATE G-43	8,418	8,901	5.3%	663	8,239
8	RATE G-53	3,238	3,368	2.0%	1,146	2,222
9	RATE G-54	3,078	3,241	1.9%	461	2,780
10						
11	Total	159,300	168,574	100.0%	10,678	157,896
12						
13	Residential Total	69,788	73,915	43.847%	3,647	70,268
14	LLF Total	75,376	79,898	47.397%	2,905	76,993
15	HLF Total	<u>14,136</u>	<u>14,761</u>	8.756%	<u>4,126</u>	<u>10,635</u>
16	Total	159,300	168,574	100.0%	10,678	157,896
17						
18	C&I Breakdown					
19	LLF Total				2,905	76,993
20	HLF Total				4,126	10,635
21	Total				7,031	87,628
22						
23	C&I Breakdown Percentage					
24	LLF Total				41.322%	87.863%
25	HLF Total				58.678%	12.137%
26	Total				100.0%	100.0%
27						
28		Capacity Cost	MDQ, Dt	\$/Dt-Mo.		
29	Pipeline	\$14,027,173	79,718	\$14.6633		
30	Storage	\$4,161,416	28,115	\$12.3345		
31						
32	Peaking	\$4,330,500				
33	Peaking Additional Costs					
34	Subtotal Peaking Costs	<u>\$4,330,500</u>	<u>60,741</u>	<u>\$5.9412</u>		
35	Total	\$22,519,089	168,574	\$11.1321		
36						
37		Capacity Cost	MDQ, Dt	\$/Dt-Mo.		
38	Pipeline - Baseload	1,878,867	10,678	\$14.6633		
39	Pipeline - Remaining	12,148,306	69,040	\$14.6633		
40	Storage	4,161,416	28,115	\$12.3345		
41	Peaking	<u>4,330,500</u>	<u>60,741</u>	<u>\$5.9412</u>		
42	Total	22,519,089	168,574	\$11.1321		
43						
44						
45	Residential Allocation	Capacity Cost	MDQ, Dt	\$/Dt-Mo.		
46	Pipeline - Base	Line 38 * Line 13 Col C	43.847% 823,827	4,682	\$14.6633	
47	Pipeline - Remaining	Line 39 * Line 13 Col C	43.847% 5,326,656	30,272	\$14.6633	
48	Storage	Line 40 * Line 13 Col C	43.847% 1,824,654	12,328	\$12.3345	
49	Peaking	Line 41 * Line 13 Col C	43.847% <u>1,898,784</u>	<u>26,633</u>	<u>\$5.9412</u>	
50	Total		43.847% 9,873,887	73,915	\$11.1321	

Liberty Utilities (EnergyNorth Natural Gas) Corp.

d/b/a Liberty Utilities

Peak 2020 - 2021 Winter Cost of Gas Filing

Capacity Assignment Calculations 2019-2020

Derivation of Class Assignments and Weightings

Schedule 10A
Page 2 of 3

51							
52							
53	C&I Allocation		Capacity Cost	MDQ, Dt	\$/Dt-Mo.	Ratios for COG	
54	Pipeline - Base	Line 38 - Line 46	1,055,040	5,996	\$14.6633		
55	Pipeline - Remaining	Line 39 - Line 47	6,821,650	38,768	\$14.6634		
56	Storage	Line 40 - Line 48	2,336,762	15,787	\$12.3345		
57	Peaking	Line 41 - Line 49	2,431,716	34,108	\$5.9412		
58	Total		56.153% 12,645,167	94,659	\$11.1322	1.0000	
59							
60							
61	LLF - C&I Allocation		Capacity Cost	MDQ, Dt	\$/Dt-Mo.		
62	Pipeline - Base	Line 54 * Line 24 Col E	435,965	2,478	\$14.6612		
63	Pipeline - Remaining	Line 55 * Line 24 Col F	5,993,729	34,063	\$14.6633		
64	Storage	Line 56 * Line 24 Col F	2,053,157	13,871	\$12.3348		
65	Peaking	Line 57 * Line 24 Col F	2,136,587	29,968	\$5.9413		
66	Total		47.1575% 10,619,438	80,380	\$11.0096	0.9890	
67			41.322%	84%		(Line 66 / Line 58)	
68							
69	HLF - C&I Allocation		Capacity Cost	MDQ, Dt	\$/Dt-Mo.		
70	Pipeline - Base	Line 54 - Line 62	619,075	3,518	\$14.6645		
71	Pipeline - Remaining	Line 55 - Line 63	827,921	4,705	\$14.6639		
72	Storage	Line 56 - Line 64	283,605	1,916	\$12.3349		
73	Peaking	Line 57 - Line 65	295,129	4,140	\$5.9406		
74	Total		8.9956% 2,025,730	14,279	\$11.8223	1.0620	
75						(Line 74 / Line 58)	
76							
77	Unit Cost		Residential	LLF C&I	HLF C&I		
78							
79	Pipeline		\$ 14.6633	\$ 14.6633	\$ 14.6633		
80	Storage		\$ 12.3345	\$ 12.3345	\$ 12.3345		
81	Peaking		\$ -	\$ -	\$ -		
82	Total		\$ 11.1321	\$ 11.0096	\$ 11.8223		
83							
84							
85	Load Makeup		Residential	LLF C&I	HLF C&I		
86							
87	Pipeline		47.29%	45.46%	57.59%		
88	Storage		16.68%	17.26%	13.42%		
89	Peaking		36.03%	37.28%	28.99%		
90	Total		100.00%	100.00%	100.00%		
91							
92							
93	Supply Makeup		Residential	LLF C&I	HLF C&I	Total	
94							
95	Pipeline		43.85%	45.84%	10.32%	100.00%	
96	Storage		43.85%	49.34%	6.81%	100.00%	
97	Peaking		43.85%	49.34%	6.82%	100.00%	

1 Liberty Utilities (EnergyNorth Natural Gas) Corp.
2 d/b/a Liberty Utilities
3 2020 - 2021 Winter Cost of Gas Filing
4 Correction Factor Calculation

5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
		Data Source: Schedule 10B				Nov	Dec	Jan	Feb	Mar	Apr																								
																																			Total Sales
11	G-41	1,996,836	3,238,958	3,888,117	3,240,314	2,556,592	1,395,068	16,315,885																											
12	G-42	1,557,098	2,487,506	2,941,387	2,478,940	2,060,861	1,064,653	12,590,447																											
13	G-43	317,392	493,665	615,564	503,796	442,358	254,648	2,627,422																											
14	High Winter Use	3,871,325	6,220,129	7,445,068	6,223,051	5,059,811	2,714,370	31,533,753																											
16	G-51	249,978	328,663	350,912	304,738	289,652	218,268	1,742,211																											
17	G-52	298,155	382,781	421,838	359,163	334,397	234,919	2,031,253																											
18	G-53	472,951	566,045	453,188	409,819	412,496	320,835	2,635,333																											
19	G-54	41,998	19,758	22,302	22,258	20,386	52,090	178,792																											
21	Low Winter Use	1,063,081	1,297,247	1,248,241	1,095,978	1,056,931	826,112	6,587,590																											
23	Gross Total	4,934,406	7,517,376	8,693,308	7,319,029	6,116,742	3,540,482	38,121,343																											
26	Total Sales				38,121,343																														
27	Low Winter Use				6,587,590																														
28	Winter Ratio for Low Winter Use				1.0620			Schedule 10A p 2, In 74																											
29	High Winter Use				31,533,753																														
30	Winter Ratio for High Winter Use				0.9890			Schedule 10A p 2, In 66																											

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 = **99.8388%**

36 Allocation Calculation for Miscellaneous Overhead

38	Projected Winter Sales Volume	11/1/20 - 4/30/21	89,364,968	Sch. 10B, In 23
39	Projected Annual Sales Volume	11/1/20 - 10/31/21	111,368,575	Sch. 10B, In 23
40	Percentage of Winter Sales to Annual Sales		80.24%	

1 Liberty Utilities (Energy/North Natural Gas) Corp.
2 d/b/a Liberty Utilities
3 Peak 2020 - 2021 Winter Cost of Gas Filing
4 2020 - 2021 Winter Cost of Gas Filing

Dry Therms

	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	Subtotal PK 20-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Subtotal OP 21	Total
7 Firm Sales															
8															
9 R-1	67,242	85,779	94,221	76,896	78,103	57,121	459,362	45,014	35,092	34,025	34,190	37,878	53,991	240,190	699,552
10 R-3	6,301,872	9,195,999	10,579,175	10,579,175	7,996,062	4,741,223	47,065,308	2,633,722	1,181,251	864,297	889,954	1,634,426	4,079,782	11,283,432	56,348,740
11 R-4	497,668	721,571	830,551	649,773	636,785	382,606	3,718,955	208,283	92,289	64,377	64,891	114,766	300,646	845,252	4,564,206
12 Total Residential.	6,866,783	10,003,350	11,503,946	8,977,647	8,710,950	5,180,950	51,243,625	2,887,019	1,308,632	982,699	989,034	1,787,070	4,434,419	12,368,874	63,612,499
13															
14 G-41	1,996,836	3,238,958	3,888,117	3,240,314	2,556,592	1,395,068	16,315,885	657,255	254,946	178,791	176,029	328,891	897,944	2,493,855	18,809,740
15 G-42	1,557,098	2,487,506	2,941,387	2,478,940	2,060,861	1,064,653	12,590,447	595,774	269,780	194,334	194,029	351,558	782,996	2,388,472	14,978,919
16 G-43	317,392	493,665	615,564	503,796	442,358	254,648	2,627,422	157,182	67,587	50,187	49,057	85,306	173,873	583,192	3,210,614
17 G-51	249,978	328,663	350,912	304,738	289,652	218,268	1,742,211	195,387	169,912	164,465	179,005	184,791	208,334	1,101,895	2,844,106
18 G-52	298,155	382,781	421,838	359,163	334,387	234,919	2,031,253	202,045	182,364	185,459	191,337	204,592	248,386	1,214,192	3,245,446
19 G-53	472,951	566,045	453,188	409,819	412,496	320,835	2,695,333	288,665	243,500	253,364	256,944	248,944	302,915	1,593,852	4,229,186
20 G-54	41,998	19,758	22,302	22,258	20,386	52,090	178,792	45,899	40,322	44,580	41,065	42,484	44,925	259,275	438,067
21 Total C/I	4,934,406	7,517,376	8,693,308	7,319,029	6,116,742	3,540,482	38,121,343	2,142,206	1,228,411	1,071,181	1,086,986	1,446,566	2,659,384	9,634,734	47,756,077
22															
23 Sales Volume	11,801,189	17,520,726	20,197,255	16,296,676	14,827,692	8,721,431	89,364,968	5,029,226	2,537,042	2,033,880	2,076,020	3,233,636	7,093,803	22,003,607	111,368,575
24															
25 Transportation Sales															
26															
27 G-41	564,370	804,050	947,199	829,377	707,117	472,512	4,324,627	269,638	128,170	94,542	87,932	152,293	314,747	1,047,322	5,371,949
28 G-42	1,970,141	2,735,523	3,169,949	2,762,428	2,368,941	1,632,317	14,639,298	964,155	473,043	370,329	386,901	671,164	1,228,176	4,093,769	18,733,067
29 G-43	784,362	1,036,834	1,197,355	1,071,284	979,562	649,351	5,718,747	449,617	289,492	255,281	278,213	366,350	557,917	2,196,870	7,915,616
30 G-51	98,848	105,296	110,026	98,612	101,851	95,501	610,133	86,996	77,987	71,427	68,055	73,165	83,209	460,839	1,070,972
31 G-52	574,366	686,400	697,367	617,228	576,744	509,638	3,641,739	434,086	380,619	381,003	377,876	408,943	485,204	2,467,732	6,109,470
32 G-53	791,280	948,364	1,078,987	937,963	941,239	750,834	5,448,666	698,893	631,500	608,885	619,782	607,168	777,777	3,944,006	9,392,672
33 G-54	1,614,023	1,405,905	1,350,282	1,151,611	1,231,396	1,319,849	8,073,065	1,589,916	1,585,398	1,656,869	1,776,411	1,717,743	1,770,941	10,097,278	18,170,344
34															
35 Total Trans. Sales	6,397,384	7,702,372	8,551,166	7,468,503	6,906,850	5,430,001	42,456,275	4,493,302	3,566,209	3,438,337	3,595,170	3,996,826	5,217,971	24,307,815	66,764,090
36															
37 Total All Sales	18,198,573	25,223,097	28,748,421	23,765,178	21,734,542	14,151,433	131,821,243	9,522,527	6,103,252	5,472,217	5,671,191	7,230,462	12,311,774	46,311,422	178,132,666

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1 Liberty Utilities (EnergyNorth Natural Gas) Corp.
2 d/b/a Liberty Utilities
3 Peak 2020 - 2021 Winter Cost of Gas Filing
5
6

7 Volumes (Therms) Normal Year

9 For the Months of May 20 - October 20

	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	Peak Nov - Apr
12 Pipeline Gas:							
14 Dawn Supply	870,804	925,912	929,473	820,216	913,878	721,190	5,181,473
15 Niagara Supply	686,821	729,872	732,679	646,410	720,386	659,273	4,175,441
16 TGP Supply (Gulf)	4,579,051	3,124,576	3,136,594	2,760,187	3,083,965	613,539	17,297,912
17 Dracut Supply 1 - Baseload	-	2,798,848	4,682,940	3,099,664	-	-	10,581,452
18 Dracut Supply 2 - Swing	3,470,755	188,500	392,074	-	2,429,813	1,319,250	7,800,392
19 Constellation Combo	-	1,523,080	1,182,278	1,020,648	611,732	-	4,337,738
20 LNG Truck	20,524	689,156	646,393	785,455	105,676	-	2,247,204
21 Propane Truck	-	-	181,656	-	-	-	181,656
22 PNGTS	217,701	231,478	232,368	204,869	228,469	208,969	1,323,855
23 Portland Natural Gas	1,063,583	1,130,246	1,134,593	1,001,418	1,115,556	787,328	6,232,725
24 TGP Supply (Z4)	1,803,913	1,923,454	1,930,852	1,704,038	1,898,454	4,301,810	13,562,522
25 Subtotal Pipeline Volumes	12,713,152	13,265,122	15,181,900	12,042,907	11,107,929	8,611,360	72,922,371
26							
27 Storage Gas:							
28 TGP Storage	993,817	4,501,466	5,242,978	4,443,415	3,956,513	-	19,138,188
29							
30 Produced Gas:							
31 LNG Vapor	17,634	633,355	704,270	780,169	21,244	19,486	2,176,158
32 Propane	-	-	504,301	-	-	-	504,301
33 Subtotal Produced Gas	17,634	633,355	1,208,571	780,169	21,244	19,486	2,680,459
34							
35 Less - Gas Refills:							
36 LNG Truck	(17,634)	(634,048)	(623,260)	(769,303)	(104,022)	-	(2,148,269)
37 Propane	-	-	(175,155)	-	-	-	(175,155)
38 TGP Storage Refill	(1,495,134)	-	-	-	-	-	(1,495,134)
39 Subtotal Refills	(1,512,768)	(634,048)	(798,416)	(769,303)	(104,022)	-	(3,818,558)
40							
41 Total Sendout Volumes	12,211,835	17,765,894	20,835,033	16,497,187	14,981,664	8,630,846	90,922,460
42							

1 Liberty Utilities (EnergyNorth Natural Gas) Corp.

2 d/b/a Liberty Utilities

3 Peak 2020 - 2021 Winter Cost of Gas Filing

43 Normal and Design Year Volumes

44

45

46 Volumes (Therms) Design Year

47

48 For the Months of May 20 - October 20

49

50

51

52 Pipeline Gas:

	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	Peak Nov - Apr
53 Dawn Supply	870,804	925,912	929,473	820,216	913,878	752,148	5,212,432
54 Niagara Supply	686,821	729,872	732,679	646,410	720,386	659,273	4,175,441
55 TGP Supply (Gulf)	4,616,434	3,124,576	3,136,594	2,768,323	3,083,965	744,409	17,474,300
56 Dracut Supply 1 - Baseload	-	2,798,848	4,682,940	3,099,664	-	-	10,581,452
57 Dracut Supply 2 - Swing	4,751,306	1,771,900	1,099,019	1,616,766	5,692,386	1,959,526	16,890,902
58 Constellation Combo	-	1,606,774	1,351,067	1,190,016	192,748	-	4,340,605
59 LNG Truck	21,257	21,866	1,221,637	800,247	183,073	-	2,248,080
60 Propane Truck	-	-	181,656	-	-	-	181,656
61 PNGTS	217,701	231,478	232,368	204,869	228,469	208,969	1,323,855
62 Portland Natural Gas	1,063,583	1,130,246	1,134,593	1,001,418	1,115,556	912,569	6,357,966
63 TGP Supply (Z4)	1,803,913	1,923,454	1,930,852	1,704,038	1,898,454	4,302,514	13,563,226
64 Subtotal Pipeline Volumes	14,031,819	14,264,926	16,632,878	13,851,968	14,028,914	9,539,409	82,349,914
65							
66 Storage Gas:							
67 TGP Storage	1,088,505	5,444,634	6,208,851	4,634,334	2,635,956	-	20,012,280
68							0
69 Produced Gas:							0
70 LNG Vapor	20,524	21,866	1,316,249	800,247	99,723	19,701	2,278,310
71 Propane	-	-	493,499	28,844	-	-	522,343
72 Subtotal Produced Gas	20,524	21,866	1,809,748	829,092	99,723	19,701	2,800,653
73							
74 Less - Gas Refills:							
75 LNG Truck	(21,257)	(21,866)	(1,221,637)	(800,247)	(183,073)	-	-2,248,080
76 Propane	-	-	(181,656)	-	-	-	-181,656
77 TGP Storage Refill	(1,671,240)	-	-	-	-	-	-1,671,240
78 Subtotal Refills	(1,692,497)	(21,866)	(1,403,293)	(800,247)	(183,073)	-	(4,100,976)
79							
80 Total Sendout Volumes	13,448,351	19,709,560	23,248,184	18,515,146	16,581,520	9,559,110	101,061,871

Schedule 11C
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1 Liberty Utilities (EnergyNorth Natural Gas) Corp.

2 d/b/a Liberty Utilities

3 Peak 2020 - 2021 Winter Cost of Gas Filing

4 Capacity Utilization

5 Volumes (Therms)

6

7

8

9

10

11 **Pipeline Gas:**

12 Dawn Supply

13 Niagara Supply

14 TGP Supply (Gulf + Z4)

15 Dracut Supply 1 & 2

16 LNG Truck

17 Propane Truck

18 PNGTS

19 Portland Natural Gas

20 Constellation Vapor

21

22

23 Subtotal Pipeline Volumes

24

25 **Storage Gas:**

26 TGP Storage

27

28 **Produced Gas:**

29 LNG Vapor

30 Propane

31

32 Subtotal Produced Gas

33

34 **Less - Gas Refills:**

35 LNG Truck

36 Propane

37 TGP Storage Refill

38

39 Subtotal Refills

40

41 Total Sendout Volumes

	Peak Period Normal Year Use (Therms)	MDQ (MMBtu/day)	Seasonal Quantity (Therms)	Utilization Rate	Peak Period Design Year Use (Therms)	MDQ (MMBtu/day)	Seasonal Quantity (Therms)	Utilization Rate
Dawn Supply	5,181,473	4,000	7,240,000	72%	5,212,432	4,000	7,240,000	72%
Niagara Supply	4,175,441	3,122	5,650,820	74%	4,175,441	3,122	5,650,820	74%
TGP Supply (Gulf + Z4)	30,860,434	21,596	39,088,760	79%	31,037,526	21,596	39,088,760	79%
Dracut Supply 1 & 2	18,381,844	50,000	90,500,000	20%	27,472,354	50,000	90,500,000	30%
LNG Truck	2,247,204	-	-	-	2,248,080	-	-	-
Propane Truck	181,656	-	-	-	181,656	-	-	-
PNGTS	1,323,855	1,000	1,810,000	73%	1,323,855	1,000	1,810,000	73%
Portland Natural Gas	6,232,725	5,000	9,050,000	69%	6,357,966	5,000	9,050,000	70%
Constellation Vapor	4,337,738	7,000	6,300,000	69%	4,340,605	7,000	6,300,000	69%
Subtotal Pipeline Volumes	72,922,371				82,349,914			
Storage Gas:								
TGP Storage	19,138,188		25,791,710	74%	20,012,280		25,791,710	78%
Produced Gas:								
LNG Vapor	2,176,158				2,278,310			
Propane	504,300.9				522,343			
Subtotal Produced Gas	2,680,459				2,800,653			
Less - Gas Refills:								
LNG Truck	(2,148,269)				(2,248,080)			
Propane	(175,155)				(181,656)			
TGP Storage Refill	(1,495,134)				(1,671,240)			
Subtotal Refills	(3,818,558)				(4,100,976)			
Total Sendout Volumes	90,922,460				101,061,871			

1 **Liberty Utilities (EnergyNorth Natural Gas) Corp.**
2 **d/b/a Liberty Utilities**
3 **Peak 2020 - 2021 Winter Cost of Gas Filing**

Schedule 11D
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4
5 Forecast of Upcoming Winter Period
6 Design Day Report
7 2019 / 20 Heating Season
8 (Therms)
9

10 Liberty Utilities (EnergyNorth Natural Gas) Corp.
11 d/b/a Liberty Utilities
12
13
14
15

16
17 Requirements

18 Firm Sales	1,248,088
19 Interruptible Sales	0
20 Firm Transportation	437,653
21 Interruptible Transportation	<u>0</u>
22 Total Requirements	1,685,741

23
24
25
26 Resources

27 Purchased Pipeline Gas	797,180
28 Underground Storage Gas	281,150
29 Propane Air Production	309,411
30 LNG Produced Gas	228,000
31 Third-Party Supply	<u>70,000</u>
32 Total Resources	1,685,741

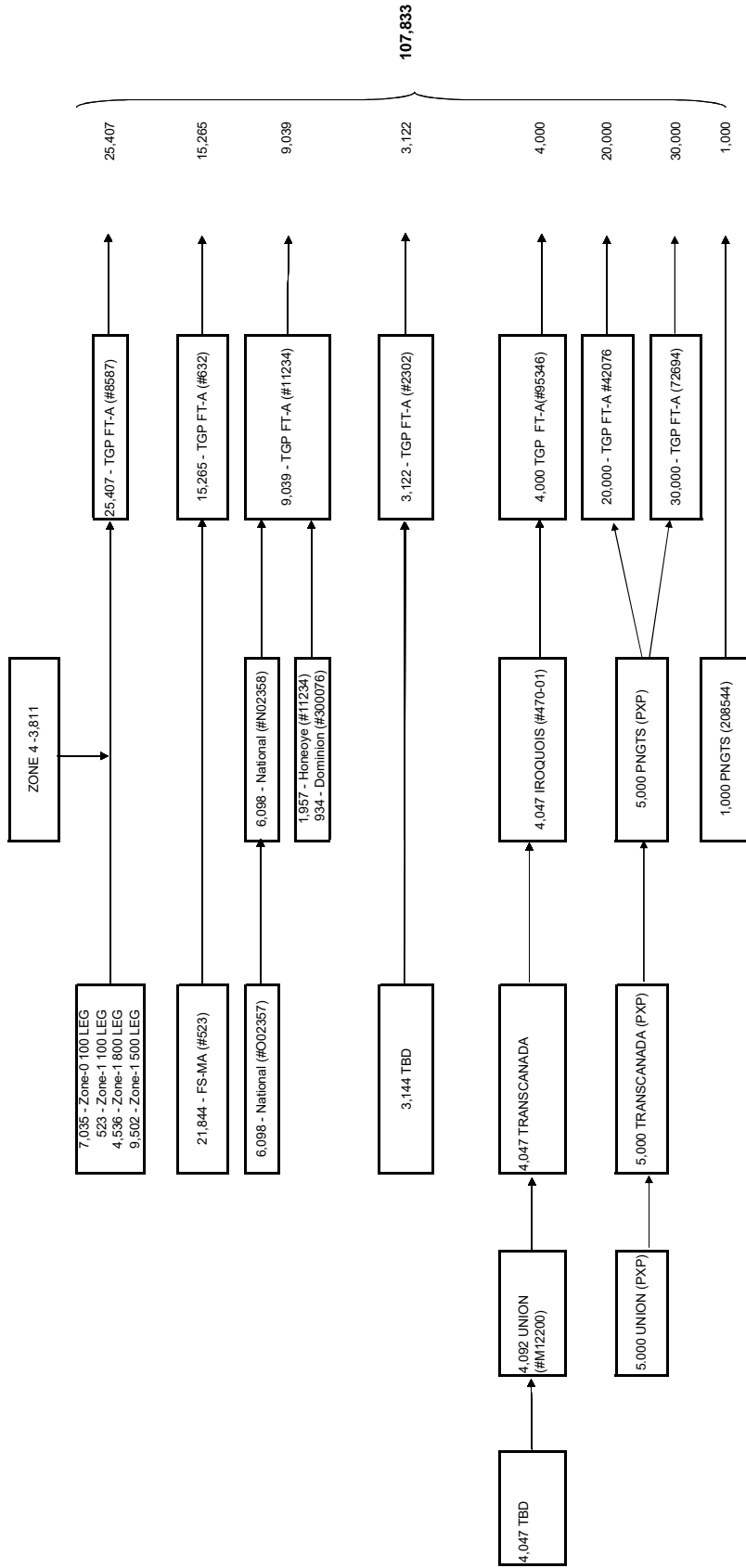
33
34
35 Please refer to the ENNG 2013 IRP filing (DG 13-313)
36 for a complete description of the methodology and
37 assumptions used in the derivation of this data.
38

39
40
41 Preparation of this report was supervised by:
42
43

44
45
46
47
48
49 _____
50 Deborah Gilbertson
51 Sr. Manager, Energy Procurement

52 Note: Forecasted Firm Transportation volumes are for customers
53 using utility capacity only.

LIBERTY UTILITIES (ENERGYNORTH NATURAL GAS) CORP.
Peak 2020 - 2021 Winter Cost of Gas Filing
Transportation Available for Pipeline Supply and Storage
(MMBtu)



LIBERTY UTILITIES (ENERGYNORTH NATURAL GAS) CORP.
Peak 2020 - 2021 Winter Cost of Gas Filing
Transportation Available for Pipeline Supply and Storage
Agreements for Gas Supply and Transportation

SOURCE	RATE SCHEDULE	CONTRACT NUMBER	TYPE	MDQ MMBTU	MAQ * MMBTU	EXPIRATION DATE	NOTIFICATION DATE	RENEWAL OPTIONS
ANE	NA	NA	Supply	4,047	611,097	Peak Only	N/A	Terminates
Constellation	FCS		Firm Combination Liquid and Vapor Svc	Up to 10 trucks	730,000	3/31/2021	N/A	Terminates
Dracut or Z6	NA	NA	Supply	Up to 20,000/ day	1,412,000	2/28/2021	N/A	Terminates
TGP Long-Haul	NA	NA	Supply	21,596	3,908,876	4/30/2021	N/A	Terminates
Northern Transport	NA	NA	Trucking	28,500 Gallons	900,000 Gallons		N/A	Terminates
Dominion Transmission Incorporated	GSS	300076	Storage	834	102,700	3/31/2023	3/31/2021	Mutually agreed upon
Honeye Storage Corporation	SS-NY	11234	Storage	1,957	245,380	3/31/2022	12 months notice	Evergreen Provision
National Fuel Gas Supply Corporation	FSS	002358	Storage	6,098	670,800	3/31/2022	3/31/2021	Evergreen Provision
National Fuel Gas Supply Corporation	FSST	N02358	Transportation	6,098	670,800	3/31/2022	3/31/2021	Evergreen Provision
Iraqulis Gas Transmission System	RTS	47001	Transportation	4,047	1,477,155	11/1/2022	11/1/2021	Evergreen Provision
Portland Natural Gas Transmission System	FT	208544	Transportation	1,000	365,000	11/30/2032	11/31/2031	Evergreen Provision
Portland Natural Gas Transmission System	FT	PXP	Transportation	5,000	1,825,000	10/31/2040	10/31/2039	Precedent Agreement
Tennessee Gas Pipeline Company	FS-MA	523	Storage	21,844	1,560,391	10/31/2025	10/31/2024	Evergreen Provision
Tennessee Gas Pipeline Company	FTA	8887	Transportation	25,407	9,273,555	10/31/2025	10/31/2024	Evergreen Provision
Tennessee Gas Pipeline Company	FTA	2302	Transportation	3,122	1,139,530	10/31/2025	10/31/2024	Evergreen Provision
Tennessee Gas Pipeline Company	FTA	632	Transportation	15,265	5,571,725	10/31/2025	10/31/2024	Evergreen Provision
Tennessee Gas Pipeline Company	FTA	11234	Transportation	9,039	3,299,235	10/31/2025	10/31/2024	Evergreen Provision
Tennessee Gas Pipeline Company	FTA	72694	Transportation	30,000	10,950,000	10/31/2029	10/31/2028	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	10/31/2025	10/31/2024	Evergreen Provision
TransCanada Pipeline	FT	41232	Transportation	4,047	1,477,155	10/31/2026	10/31/2024	Evergreen Provision
TransCanada Pipeline	FT	PXP	Transportation	5,000	1,825,000	10/31/2040		Precedent Agreement
Union Gas Limited	M12	M12200	Transportation	4,092	1,493,580	10/31/2022	10/31/2020	Evergreen Provision
Union Gas Limited	M12	PXP	Transportation	5,000	1,825,000	10/31/2040		Precedent Agreement

* MAQ is calculated on a 365 day calendar year.

1 **Liberty Utilities (EnergyNorth Natural Gas) Corp.**
2 **Peak 2020 - 2021 Winter Cost of Gas Filing**

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3
4 **Load Migration From Sales to Transportation in the C&I High and Low Winter Use Classes**

5
6 **July 2019 - June 2020 Normalized Sales and Transportation Volumes (Therms)**

<u>C&I Rate Classes</u>	<u>Annual Sales</u>	<u>% of Total by Class</u>	<u>% of Sales to Total Volume by Class</u>
G-41	18,256,182	41.19%	78.18%
G-42	15,823,815	35.70%	47.17%
G-43	3,165,357	7.14%	27.59%
G-51	2,760,443	6.23%	73.20%
G-52	3,183,012	7.18%	35.48%
G-53	971,900	2.19%	9.37%
G-54	161,162	0.36%	0.89%
Total C/I	44,321,871	100.00%	

	<u>Annual Transportation</u>	<u>% of Total by Class</u>	<u>% of Transportation to Total Volume by Class</u>
G-41	5,095,393	7.82%	21.82%
G-42	17,721,760	27.18%	52.83%
G-43	8,308,195	12.74%	72.41%
G-51	1,010,758	1.55%	26.80%
G-52	5,789,516	8.88%	64.52%
G-53	9,397,326	14.41%	90.63%
G-54	17,876,309	27.42%	99.11%
Total C/I	65,199,257	100.00%	

<u>Sales & Transportation</u>	<u>Total</u>	<u>% of Total by Class</u>	
G-41	23,351,575	21.32%	100.00%
G-42	33,545,575	30.63%	100.00%
G-43	11,473,552	10.48%	100.00%
G-51	3,771,201	3.44%	100.00%
G-52	8,972,528	8.19%	100.00%
G-53	10,369,226	9.47%	100.00%
G-54	18,037,471	16.47%	100.00%
Total C/I	109,521,128	100.00%	

1 **Liberty Utilities (EnergyNorth Natural Gas) Corp.**
2 **Peak 2020 - 2021 Winter Cost of Gas Filing**

3
4 **Delivered Costs of Winter Supplies to Pipeline Delivered Supplies from the Prior Year**

	Off-Peak	Peak	Total
	May 19 - Oct 19	Nov 19-Apr 20	May 19 - Apr 20
	(Therms)	(Therms)	(Therms)
10 Pipeline Deliveries	17,901,626	85,042,850	102,944,476
11 All Others	115,210	1,678,890	1,794,100
12	<u>18,016,836</u>	<u>86,721,740</u>	<u>104,738,576</u>
13			
14			Ratio
15			86,721,740
16			102,944,476
17			0.842

1 **Liberty Utilities (EnergyNorth Natural Gas) Corp.**
2 **Peak 2020 - 2021 Winter Cost of Gas Filing**

3
4 **July and August Consumption of C&I High and Low Winter Classes as a Percentage of Their Annual Consumption**

5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21		
		C&I Sales																
		Normalized (Therms)	Jul-19	Aug-19	Jul - Aug Total	Total Annual	% of Jul-Aug to Total											
		(a)	(b)	(c)	(e)=(c)+(d)	(f)	(g)=(e)/(f)											
10	G-41		200,972	149,290	350,262	18,256,182	1.92%											
11	G-42		222,729	240,733	463,461	15,823,815	2.93%											
12	G-43		63,135	45,595	108,730	3,165,357	3.43%											
13	G-51		165,226	162,486	327,712	2,760,443	11.87%											
14	G-52		182,095	187,516	369,611	3,183,012	11.61%											
15	G-53		67,324	64,458	131,782	971,900	13.56%											
16	G-54		55,977	60,287	116,265	161,162	72.14%											
19	Total C/I		957,458	910,366	1,867,824	44,321,871	4.21%											

	May-20 (Actual)	Jun-20 (Actual)	Jul-20 (Actual)	Aug-20 (Estimate)	Sep-20 (Estimate)	Oct-20 (Estimate)	Nov-20 (Estimate)	Dec-20 (Estimate)	Jan-21 (Estimate)	Feb-21 (Estimate)	Mar-21 (Estimate)	Apr-21 (Estimate)	Total
1 Liberty Utilities (EnergyNorth Natural Gas) Corp.													
2 Peak 2020 - 2021 Winter Cost of Gas Filing													
3 Storage Inventory, Underground, LPG and LNG including Calculation of Money Pool Interest Costs Associated with Natural Gas													
4 Underground Storage Gas													
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	May-20 (Actual)	Jun-20 (Actual)	Jul-20 (Actual)	Aug-20 (Estimate)	Sep-20 (Estimate)	Oct-20 (Estimate)	Nov-20 (Estimate)	Dec-20 (Estimate)	Jan-21 (Estimate)	Feb-21 (Estimate)	Mar-21 (Estimate)	Apr-21 (Estimate)	Total
Liquid Propane Gas (LPG)													
Beginning Balance	99,144	102,669	102,305	101,704	101,704	101,704	101,704	101,704	101,704	69,440	69,440	69,440	99,144
Injections	-	-	-	-	-	-	-	-	18,166	-	-	-	18,166
Subtotal	99,144	102,669	102,305	101,704	101,704	101,704	101,704	101,704	119,870	69,440	69,440	69,440	118,310
Withdrawals	-	(364)	(601)	-	-	-	-	-	(50,430)	-	-	-	(51,395)
Adjustment for change in temperature	3,525	-	-	-	-	-	-	-	-	-	-	-	3,525
Adjustment for Transfer	-	-	-	-	-	-	-	-	-	-	-	-	-
Ending Balance	102,669	102,305	101,704	101,704	101,704	101,704	101,704	101,704	69,440	69,440	69,440	69,440	69,440
Beginning Balance	\$ 1,104,806	\$ 1,144,087	\$ 1,140,031	\$ 1,133,333	\$ 1,133,333	\$ 1,133,333	\$ 1,133,333	\$ 1,133,333	\$ 1,133,333	\$ 782,809	\$ 782,809	\$ 782,809	\$ 1,104,806
Injections	-	-	-	-	-	-	-	-	217,987	-	-	-	217,987
Subtotal	\$ 1,104,806	\$ 1,144,087	\$ 1,140,031	\$ 1,133,333	\$ 1,133,333	\$ 1,133,333	\$ 1,133,333	\$ 1,133,333	\$ 1,351,321	\$ 782,809	\$ 782,809	\$ 782,809	\$ 1,319,794
Withdrawals/ Adjust	39,281	(4,066)	(6,697)	-	-	-	-	-	(566,511)	-	-	-	(539,984)
Ending Balance	\$ 1,144,087	\$ 1,140,031	\$ 1,133,333	\$ 1,133,333	\$ 1,133,333	\$ 1,133,333	\$ 1,133,333	\$ 1,133,333	\$ 782,809	\$ 782,809	\$ 782,809	\$ 782,809	\$ 782,809
Average Rate For Withdrawals	\$ 11.4434	\$ 11.4434	\$ 11.4434	\$ 11.4434	\$ 11.4434	\$ 11.4434	\$ 11.4434	\$ 11.4434	\$ 11.2733	\$ 11.2733	\$ 11.2733	\$ 11.2733	\$ 11.2733
Propane Rate for Injections	\$ 11.4434	\$ 11.4434	\$ 11.4434	\$ 0.0000	\$ 0.0000	\$ 0.0000	\$ 0.0000	\$ 0.0000	\$ 12.0000	\$ 12.0000	\$ 12.0000	\$ 12.0000	\$ 12.0000
Month Dollar Average	In (57 + In 65)/2			\$ 1,133,333	\$ 1,133,333	\$ 1,133,333	\$ 1,133,333	\$ 1,133,333	\$ 958,071	\$ 782,809	\$ 782,809	\$ 782,809	\$ 782,809
Money Pool Finance Rate (per Nov 10 - Apr 11 Actuals)				0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Inventory Finance Charge	In 72 * In 74			\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
				\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Liquid Natural Gas (LNG)													
Beginning Balance	11,673	10,585	11,730	11,425	12,570	13,715	14,860	14,929	14,929	6,828	5,742	14,020	11,673
Injections	-	3,529	1,746	3,529	3,529	1,763	63,405	62,326	76,930	10,402	-	-	230,689
Subtotal	11,673	14,114	13,476	14,954	16,099	17,244	16,623	78,265	77,255	83,759	16,144	14,020	230,689
Withdrawals	(1,088)	(2,384)	(2,051)	(2,384)	(2,384)	(1,763)	(63,335)	(70,427)	(70,427)	(2,124)	(1,949)	(1,949)	(230,291)
Ending Balance	10,585	11,730	11,425	12,570	13,715	14,860	14,860	14,929	6,828	5,742	14,020	12,071	12,071
Beginning Balance	\$ 40,652	\$ 42,082	\$ 46,351	\$ 50,103	\$ 56,795	\$ 66,993	\$ 74,831	\$ 72,792	\$ 69,692	\$ 32,276	\$ 26,954	\$ 64,344	\$ 40,652
Injections	5,714	15,954	9,817	19,843	19,843	6,600	292,506	295,485	360,919	47,139	-	-	1,093,622
Subtotal	\$ 46,366	\$ 58,036	\$ 56,168	\$ 69,946	\$ 76,638	\$ 86,836	\$ 81,431	\$ 365,298	\$ 365,167	\$ 383,195	\$ 74,094	\$ 64,344	\$ 1,107,274
Withdrawals	(4,285)	(9,686)	(8,065)	(11,151)	(11,645)	(12,005)	(8,638)	(295,616)	(332,891)	(386,241)	(9,750)	(8,943)	(1,078,914)
Ending Balance	\$ 42,082	\$ 48,351	\$ 50,103	\$ 58,795	\$ 66,993	\$ 74,831	\$ 72,792	\$ 69,692	\$ 32,276	\$ 26,954	\$ 64,344	\$ 55,401	\$ 55,401
Average Rate For Withdrawals	\$ 39,921	\$ 44,120	\$ 43,164	\$ 48,846	\$ 55,057	\$ 64,675	\$ 84,667	\$ 84,667	\$ 47,267	\$ 46,944	\$ 46,944	\$ 46,944	\$ 46,944
LNG Rate for Injections	\$ 39,921	\$ 44,120	\$ 43,164	\$ 48,846	\$ 55,057	\$ 64,675	\$ 84,667	\$ 84,667	\$ 47,267	\$ 46,944	\$ 46,944	\$ 46,944	\$ 46,944
Month Dollar Average	In (92 + In 100)/2			\$ 54,449	\$ 62,894	\$ 70,912	\$ 73,811	\$ 71,237	\$ 50,979	\$ 29,615	\$ 45,649	\$ 59,872	\$ 59,872
Money Pool Finance Rate (per Nov 10 - Apr 11 Actuals)				0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Inventory Finance Charge	In 107 * In 109			\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Fuel Financing	Ins 53 + 76 + 111			\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

1 **Liberty Utilities (EnergyNorth Natural Gas) Corp.**
2 **Peak 2020 - 2021 Winter Cost of Gas Filing**

3
4 **Forecast of Firm Transportation Volumes and Cost of Gas Revenues**

5
6
7 **Firm Transportation**

	Therms 1/	Cost of Gas Rate 2/	Cost of Gas Revenue
Nov-20	6,397,384	\$ 0.0001	\$ 680
Dec-20	7,702,372	0.0001	819
Jan-21	8,551,166	0.0001	910
Feb-21	7,468,503	0.0001	794
Mar-21	6,906,850	0.0001	735
Apr-21	<u>5,430,001</u>	0.0001	<u>578</u>
Total	<u>42,456,275</u>		<u>\$ 4,516</u>

1/ Per Schedule 10B, line 35. Excludes special contract volumes subject to transportation cost of gas.
2/ Refer to Proposed Fourth Revised Page 94 for calculation of rate.

Liberty Utilities (Energy North Natural Gas) Corp. d/b/a Liberty Utilities
 Local Delivery Adjustment Charge (LDAC) increase due to Rate Case Expense and Recoupment
 For LDAC effective November 1, 2020 - October 31, 2021

1	Rate Case Expense Remaining from Docket No. DG 17-048	\$87,069
2	Recoupment Remaining from Docket No. DG 17-048	\$0
3	July 1, 2020 Balance	\$87,069
4	Plus Estimated Interest from July 2020 through October 2020	\$745
5	Minus Estimated Recoveries from July 2020 through October 2020	<u>(\$43,733)</u>
6	Total Estimated Remaining Recovery As of November 1, 2020	\$44,081
7	Estimated November 2019 - October 2020 Interest	<u>\$538</u>
8	Total Remaining Recovery	\$44,619
9	Estimated November 2020 - October 2021 Sales (therms)	179,574,679
10	RCE & Recoupment rate per therm November 2020 - October 2021	\$0.0002

Liberty Utilities (Energy/North Natural Gas) Corp.
JULY 2020 THROUGH OCTOBER 2021
RATE CASE EXPENSE AND RECOUPMENT PROJECTION

1	FOR THE MONTH OF:	(Estimate)	(Estimate)	(Estimate)	(Estimate)	(Estimate)	(Estimate)	(Estimate)	(Estimate)	(Estimate)	(Estimate)	(Estimate)	(Estimate)	(Estimate)	(Estimate)	(Estimate)	(Estimate)	(Estimate)	(Estimate)	Total
2	DAYS IN MONTH	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21			
		31	31	30	31	30	31	31	28	31	30	31	31	31	30	31	30	30		
3	Beginning Balance	\$ 87,069	\$ 78,156	\$ 69,455	\$ 59,083	\$ 44,081	\$ 39,633	\$ 33,414	\$ 26,294	\$ 20,395	\$ 15,000	\$ 11,493	\$ 9,138	\$ 7,633	\$ 6,283	\$ 4,878	\$ 3,080	\$	\$	\$ 221,322
4																				
5	Add: Actual Costs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6																				
7	Less: Collected Revenue	(9,140)	(8,905)	(10,543)	(15,145)	(4,559)	(6,320)	(7,203)	(5,957)	(5,443)	(3,544)	(2,382)	(1,528)	(1,370)	(1,420)	(1,809)	(3,080)	(3,080)	(3,080)	(44,615)
8																				
9	Add: Administrative and Start Up Costs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10																				
11	Ending Balance Pre-Interest	\$ 77,929	\$ 69,251	\$ 58,912	\$ 43,938	\$ 39,522	\$ 33,313	\$ 26,212	\$ 20,337	\$ 14,952	\$ 11,457	\$ 9,111	\$ 7,610	\$ 6,263	\$ 4,863	\$ 3,069	\$ (1)	\$	\$	\$ 176,707
12																				
13	Month's Average Balance	\$ 82,499	\$ 73,704	\$ 64,183	\$ 51,511	\$ 41,801	\$ 36,473	\$ 29,813	\$ 23,315	\$ 17,673	\$ 13,229	\$ 10,302	\$ 8,374	\$ 6,948	\$ 5,573	\$ 3,973	\$ 1,540	\$	\$	\$
14																				
15	Interest Rate	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%
16																				
17	Interest Applied	\$ 228	\$ 203	\$ 171	\$ 142	\$ 112	\$ 101	\$ 82	\$ 58	\$ 49	\$ 37	\$ 28	\$ 23	\$ 19	\$ 15	\$ 11	\$ 4	\$	\$	\$ 538
18																				
19	Ending Balance	\$ 78,156	\$ 69,455	\$ 59,083	\$ 44,081	\$ 39,633	\$ 33,414	\$ 26,294	\$ 20,395	\$ 15,000	\$ 11,493	\$ 9,138	\$ 7,633	\$ 6,283	\$ 4,878	\$ 3,080	\$ 4	\$	\$	\$

Schedule 19
RDAF
Page 1 of 15

Liberty Utilities (Energy North Natural Gas) Corp. d/b/a Liberty Utilities
Revenue Decoupling Adjustment Factor (RDAF)
For LDAC effective November 1, 2020 - October 31, 2021

	<u>Reconciliation</u>		
1	Projected November 1, 2020 Reconciliation Balance - RDAF Page 2		(\$1,010,099)
2	Estimated November 2020 - October 2021 Sales (therms)		179,574,679
3	Revenue Decoupling Reconciliation rate per therm November 2020 - October 2021		(\$0.0056)
	<u>Residential</u>		
4	Residential Revenue Decoupling Deficiency / (Excess) - RDAF Page 3		(\$3,150,744)
5	Estimated Residential November 2020 - October 2021 Sales (therms)		63,939,354
6	Residential Revenue Decoupling rate per therm November 2020 - October 2021		(\$0.0493)
7	Revenue Decoupling Reconciliation rate per therm November 2020 - October 2021		<u>(\$0.0056)</u>
8	Residential Revenue Decoupling rate per therm November 2020 - October 2021		(\$0.0549)
	<u>Commercial</u>		
9	Commercial Revenue Decoupling Deficiency / (Excess) - RDAF Page 3		(\$1,815,203)
10	Estimated Commercial November 2020 - October 2021 Sales (therms)		115,635,325
11	Commercial Decoupling rate per therm November 2020 - October 2021		(\$0.0157)
12	Revenue Decoupling Reconciliation rate per therm November 2020 - October 2021		<u>(\$0.0056)</u>
13	Commercial Revenue Decoupling rate per therm November 2020 - October 2021		(\$0.0213)

Liberty Utilities (EnergyNorth Natural Gas) Corp.
NOVEMBER 2019 THROUGH OCTOBER 2020
REVENUE DECOUPLING RECONCILIATION

1	FOR THE MONTH OF:	(Actual)	(Actual)	(Actual)	(Actual)	(Actual)	(Actual)	(Actual)	(Actual)	(Actual)	(Estimate)	(Estimate)	(Estimate)	(Estimate)
2	DAYS IN MONTH	Nov-19 30	Dec-19 31	Jan-20 31	Feb-20 29	Mar-20 31	Apr-20 30	May-20 31	Jun-20 30	Jul-20 31	Aug-20 31	Sep-20 30	Oct-20 31	
3	Beginning Balance	\$ (7,016,791)	\$ (6,930,003)	\$ (6,102,934)	\$ (5,081,061)	\$ (4,149,505)	\$ (3,286,382)	\$ (2,626,089)	\$ (2,133,973)	\$ (1,880,633)	\$ (1,714,967)	\$ (1,547,954)	\$ (1,336,480)	
4														
5	Less: Reconcile RDAF estimate to actual	\$ (26,121)												
6														
7	Add: Collected Revenue	140,081	853,305	1,044,387	948,942	877,892	668,380	498,676	258,695	170,621	171,510	215,321	329,616	
8														
9	Ending Balance Pre-Interest	\$ (6,902,831)	\$ (6,076,698)	\$ (5,058,547)	\$ (4,132,119)	\$ (3,271,613)	\$ (2,618,202)	\$ (2,127,412)	\$ (1,875,278)	\$ (1,710,012)	\$ (1,543,457)	\$ (1,332,633)	\$ (1,006,865)	
10														
11	Month's Average Balance	\$ (6,959,811)	\$ (6,503,351)	\$ (5,580,741)	\$ (4,606,590)	\$ (3,710,559)	\$ (2,952,392)	\$ (2,376,751)	\$ (2,004,625)	\$ (1,795,322)	\$ (1,629,212)	\$ (1,440,294)	\$ (1,171,672)	
12														
13	Interest Rate	4.75%	4.75%	4.75%	4.75%	4.75%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	
14														
15	Interest Applied	\$ (27,172)	\$ (26,236)	\$ (22,514)	\$ (17,385)	\$ (14,969)	\$ (7,887)	\$ (6,560)	\$ (5,355)	\$ (4,956)	\$ (4,497)	\$ (3,847)	\$ (3,234)	
16														
17	Ending Balance	\$ (6,930,003)	\$ (6,102,934)	\$ (5,081,061)	\$ (4,149,505)	\$ (3,286,582)	\$ (2,626,089)	\$ (2,133,973)	\$ (1,880,633)	\$ (1,714,967)	\$ (1,547,954)	\$ (1,336,480)	\$ (1,010,099)	

(1) (2) (3)

Residential Revenue Decoupling Deficiency / (Excess)

1. Allowed Base Revenue	\$	47,055,148	
2. less: Actual and Estimated Base Revenue		<u>50,205,891</u>	
3. Revenue Deficiency / (Excess)			<u><u>\$ (3,150,744)</u></u>

Commercial Revenue Decoupling Deficiency / (Excess)

4. Allowed Base Revenue	\$	36,558,043	
5. less: Actual and Estimated Base Revenue		<u>38,373,247</u>	
6. Revenue Deficiency / (Excess)			<u><u>\$ (1,815,203)</u></u>

Liberty Utilities (Energy North Natural Gas) Corp. d/b/a Liberty Utilities
Revenue Decoupling Adjustment Factor (RDAF)
Actual and Estimated Base Revenue

SALES AND TRANSPORT DATA

CUSTOMER COMPONENT

Energy/North Natural Gas Inc

2019-20 Customers (Equivalent Bills)

	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-19	Aug-19	S&T Total
R-1	3,497	3,611	3,503	3,627	3,630	3,403	3,645	3,520	3,633	3,514	3,605	3,613	42,801
R-2	72,511	75,302	73,218	76,274	76,471	71,695	76,753	74,366	76,831	73,989	74,635	74,652	896,299
R-3	5,314	5,687	5,939	5,921	5,821	5,522	5,814	5,486	5,610	5,356	5,713	5,574	67,879
Total Resid.	81,322	84,600	82,660	85,844	86,022	80,620	86,212	83,372	86,074	82,459	83,953	83,840	1,006,979
G-41	8,868	9,414	9,424	9,851	9,899	9,280	9,918	9,534	9,722	9,135	9,210	9,149	113,403
G-42	1,409	1,467	1,434	1,483	1,487	1,394	1,492	1,442	1,486	1,419	1,441	1,457	17,411
G-43	56	59	58	64	63	59	63	61	63	60	59	56	721
G-51	1,306	1,353	1,311	1,350	1,347	1,260	1,346	1,298	1,340	1,272	1,345	1,357	15,886
G-52	392	409	401	417	419	393	421	406	419	402	401	406	4,886
G-53	33	34	33	34	34	32	34	33	34	33	34	33	402
G-54	26	27	26	28	29	26	29	28	28	27	28	27	329
Total CI	12,091	12,763	12,687	13,229	13,279	12,443	13,302	12,802	13,092	12,348	12,519	12,485	153,037
Total All	93,413	97,363	95,347	99,070	99,300	93,063	99,514	96,174	99,166	94,807	96,472	96,325	1,160,016

2019-20 Customer Charge

	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-19	Aug-19	S&T Total
R-1	\$ 15.20	\$ 15.20	\$ 15.20	\$ 15.20	\$ 15.20	\$ 15.20	\$ 15.20	\$ 15.20	\$ 15.20	\$ 15.20	\$ 15.20	\$ 15.50	\$ 15.50
R-3	\$ 15.20	\$ 15.20	\$ 15.20	\$ 15.20	\$ 15.20	\$ 15.20	\$ 15.20	\$ 15.20	\$ 15.20	\$ 15.20	\$ 15.20	\$ 15.50	\$ 15.50
R-4	\$ 15.20	\$ 15.20	\$ 15.20	\$ 15.20	\$ 15.20	\$ 15.20	\$ 15.20	\$ 15.20	\$ 15.20	\$ 15.20	\$ 15.20	\$ 15.50	\$ 15.50
G-41	\$ 56.36	\$ 56.36	\$ 56.36	\$ 56.36	\$ 56.36	\$ 56.36	\$ 56.36	\$ 56.36	\$ 56.36	\$ 56.36	\$ 56.36	\$ 57.46	\$ 57.46
G-42	\$ 169.09	\$ 169.09	\$ 169.09	\$ 169.09	\$ 169.09	\$ 169.09	\$ 169.09	\$ 169.09	\$ 169.09	\$ 169.09	\$ 169.09	\$ 172.39	\$ 172.39
G-43	\$ 725.66	\$ 725.66	\$ 725.66	\$ 725.66	\$ 725.66	\$ 725.66	\$ 725.66	\$ 725.66	\$ 725.66	\$ 725.66	\$ 725.66	\$ 739.83	\$ 739.83
G-51	\$ 56.36	\$ 56.36	\$ 56.36	\$ 56.36	\$ 56.36	\$ 56.36	\$ 56.36	\$ 56.36	\$ 56.36	\$ 56.36	\$ 56.36	\$ 57.46	\$ 57.46
G-52	\$ 169.09	\$ 169.09	\$ 169.09	\$ 169.09	\$ 169.09	\$ 169.09	\$ 169.09	\$ 169.09	\$ 169.09	\$ 169.09	\$ 169.09	\$ 172.39	\$ 172.39
G-53	\$ 746.81	\$ 746.81	\$ 746.81	\$ 746.81	\$ 746.81	\$ 746.81	\$ 746.81	\$ 746.81	\$ 746.81	\$ 746.81	\$ 746.81	\$ 761.39	\$ 761.39
G-54	\$ 746.81	\$ 746.81	\$ 746.81	\$ 746.81	\$ 746.81	\$ 746.81	\$ 746.81	\$ 746.81	\$ 746.81	\$ 746.81	\$ 746.81	\$ 761.39	\$ 761.39

2019-20 Customer Revenue

	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-19	Aug-19	S&T Total
R-1	\$ 53,168	\$ 54,899	\$ 53,249	\$ 55,134	\$ 55,184	\$ 51,727	\$ 55,415	\$ 53,514	\$ 55,232	\$ 53,427	\$ 55,861	\$ 55,991	\$ 652,802
R-3	\$ 1,102,354	\$ 1,144,765	\$ 1,113,099	\$ 1,159,557	\$ 1,162,558	\$ 1,089,947	\$ 1,166,839	\$ 1,130,552	\$ 1,168,020	\$ 1,118,738	\$ 1,156,610	\$ 1,156,878	\$ 13,669,938
R-4	\$ 80,780	\$ 86,454	\$ 90,291	\$ 90,354	\$ 90,008	\$ 83,954	\$ 88,381	\$ 83,403	\$ 85,290	\$ 81,428	\$ 88,531	\$ 86,386	\$ 1,035,261
Total Resid.	\$ 1,236,302	\$ 1,286,137	\$ 1,256,640	\$ 1,305,045	\$ 1,307,750	\$ 1,225,629	\$ 1,310,636	\$ 1,267,470	\$ 1,308,543	\$ 1,253,592	\$ 1,301,003	\$ 1,299,256	\$ 15,359,001
G-41	\$ 499,798	\$ 530,542	\$ 531,092	\$ 555,163	\$ 557,883	\$ 522,986	\$ 558,932	\$ 537,287	\$ 547,879	\$ 514,803	\$ 529,200	\$ 525,705	\$ 6,411,269
G-42	\$ 238,226	\$ 248,068	\$ 242,429	\$ 250,770	\$ 251,394	\$ 235,635	\$ 252,217	\$ 243,814	\$ 251,303	\$ 239,957	\$ 248,486	\$ 251,256	\$ 2,953,556
G-43	\$ 40,952	\$ 42,838	\$ 42,379	\$ 46,080	\$ 46,007	\$ 43,056	\$ 45,886	\$ 44,265	\$ 45,475	\$ 43,250	\$ 43,576	\$ 41,332	\$ 525,095
G-51	\$ 73,596	\$ 76,253	\$ 73,908	\$ 76,074	\$ 75,829	\$ 70,989	\$ 75,860	\$ 73,179	\$ 75,468	\$ 71,702	\$ 77,302	\$ 77,987	\$ 898,278
G-52	\$ 66,327	\$ 69,151	\$ 67,798	\$ 70,476	\$ 70,938	\$ 66,526	\$ 71,114	\$ 68,657	\$ 70,848	\$ 67,974	\$ 69,139	\$ 69,982	\$ 828,190
G-53	\$ 24,620	\$ 25,466	\$ 24,645	\$ 25,466	\$ 25,491	\$ 23,823	\$ 25,491	\$ 24,669	\$ 25,491	\$ 24,645	\$ 26,141	\$ 25,151	\$ 301,074
G-54	\$ 19,417	\$ 20,064	\$ 19,417	\$ 20,811	\$ 21,607	\$ 19,600	\$ 21,566	\$ 20,911	\$ 21,110	\$ 20,164	\$ 21,649	\$ 20,456	\$ 246,232
Total CI	\$ 962,935	\$ 1,012,382	\$ 1,001,628	\$ 1,044,840	\$ 1,049,125	\$ 982,075	\$ 1,051,066	\$ 1,012,782	\$ 1,037,604	\$ 982,494	\$ 1,015,492	\$ 1,011,869	\$ 12,164,293
Total All	\$ 2,199,237	\$ 2,298,519	\$ 2,258,268	\$ 2,349,885	\$ 2,356,875	\$ 2,207,704	\$ 2,361,701	\$ 2,280,252	\$ 2,346,147	\$ 2,236,086	\$ 2,316,495	\$ 2,311,125	\$ 27,522,294

Liberty Utilities (Energy North Natural Gas) Corp. d/b/a Liberty Utilities
Revenue Decoupling Adjustment Factor (RDAF)
Actual and Estimated Base Revenue

Schedule 19
RDAF
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TAILBLOCK

2019-20 Decoupling Year Weather Normalized Volume Tailblock												
	S&T	S&T	S&T	S&T	S&T	S&T	S&T	S&T	S&T	S&T	S&T	S&T
	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-19	Aug-19
Total Resid.	-	-	-	-	-	-	-	-	-	-	-	-
G-41	277,772	809,829	1,851,896	3,226,174	4,035,398	3,265,464	2,506,133	1,109,761	638,769	232,279	178,925	182,811
G-42	443,620	1,147,212	2,345,406	4,047,790	4,989,598	4,016,550	3,161,515	1,355,483	784,627	274,034	252,166	266,614
G-43	-	-	-	-	-	-	-	-	-	-	-	-
G-51	175,101	203,971	275,989	357,064	393,882	355,701	276,025	183,551	149,408	131,432	152,609	176,304
G-52	262,870	354,834	507,742	669,104	768,970	678,576	470,278	289,301	199,161	179,551	217,018	240,158
G-53	-	-	-	-	-	-	-	-	-	-	-	-
G-54	-	-	-	-	-	-	-	-	-	-	-	-
Total C/I	1,159,363	2,515,846	4,981,033	8,300,132	10,187,848	8,316,290	6,413,950	2,938,096	1,771,966	817,297	800,719	865,888
Total All	1,159,363	2,515,846	4,981,033	8,300,132	10,187,848	8,316,290	6,413,950	2,938,096	1,771,966	817,297	800,719	865,888
2019-20 Tailblock Charge												
	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-19	Aug-19
R-1	\$ 0.3786	\$ 0.3786	\$ 0.3786	\$ 0.3786	\$ 0.3786	\$ 0.3786	\$ 0.3786	\$ 0.3786	\$ 0.3786	\$ 0.3786	\$ 0.3860	\$ 0.3860
R-3	\$ 0.5569	\$ 0.5569	\$ 0.5569	\$ 0.5569	\$ 0.5569	\$ 0.5569	\$ 0.5569	\$ 0.5569	\$ 0.5569	\$ 0.5569	\$ 0.5678	\$ 0.5678
R-4	\$ 0.5569	\$ 0.5569	\$ 0.5569	\$ 0.5569	\$ 0.5569	\$ 0.5569	\$ 0.5569	\$ 0.5569	\$ 0.5569	\$ 0.5569	\$ 0.5678	\$ 0.5678
G-41	\$ 0.3104	\$ 0.3104	\$ 0.3104	\$ 0.3104	\$ 0.3104	\$ 0.3104	\$ 0.3104	\$ 0.3104	\$ 0.3104	\$ 0.3104	\$ 0.3165	\$ 0.3165
G-42	\$ 0.2800	\$ 0.2800	\$ 0.2800	\$ 0.2800	\$ 0.2800	\$ 0.2800	\$ 0.2800	\$ 0.2800	\$ 0.2800	\$ 0.2800	\$ 0.2855	\$ 0.2855
G-43	\$ 0.1181	\$ 0.1181	\$ 0.1181	\$ 0.1181	\$ 0.1181	\$ 0.1181	\$ 0.1181	\$ 0.1181	\$ 0.1181	\$ 0.1181	\$ 0.1204	\$ 0.1204
G-51	\$ 0.1811	\$ 0.1811	\$ 0.1811	\$ 0.1811	\$ 0.1811	\$ 0.1811	\$ 0.1811	\$ 0.1811	\$ 0.1811	\$ 0.1811	\$ 0.1846	\$ 0.1846
G-52	\$ 0.0985	\$ 0.0985	\$ 0.0985	\$ 0.0985	\$ 0.0985	\$ 0.0985	\$ 0.0985	\$ 0.0985	\$ 0.0985	\$ 0.0985	\$ 0.1004	\$ 0.1004
G-53	\$ 0.0802	\$ 0.0802	\$ 0.0802	\$ 0.0802	\$ 0.0802	\$ 0.0802	\$ 0.0802	\$ 0.0802	\$ 0.0802	\$ 0.0802	\$ 0.0818	\$ 0.0818
G-54	\$ 0.0346	\$ 0.0346	\$ 0.0346	\$ 0.0346	\$ 0.0346	\$ 0.0346	\$ 0.0346	\$ 0.0346	\$ 0.0346	\$ 0.0346	\$ 0.0353	\$ 0.0353
2019-20 Decoupling Year Weather Normalized Volume Tailblock Revenue												
	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-19	Aug-19
R-1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
R-3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
R-4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Resid.	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
G-41	\$ 86,228	\$ 251,393	\$ 574,879	\$ 1,001,492	\$ 1,252,697	\$ 1,013,688	\$ 777,972	\$ 344,500	\$ 198,291	\$ 72,106	\$ 56,623	\$ 57,853
G-42	\$ 124,197	\$ 321,175	\$ 656,623	\$ 1,133,224	\$ 1,396,894	\$ 1,124,478	\$ 865,102	\$ 379,483	\$ 219,665	\$ 76,719	\$ 71,985	\$ 76,110
G-43	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
G-51	\$ 31,706	\$ 36,934	\$ 49,974	\$ 64,655	\$ 71,322	\$ 64,408	\$ 49,981	\$ 33,236	\$ 27,054	\$ 23,799	\$ 28,177	\$ 32,552
G-52	\$ 25,888	\$ 34,945	\$ 80,890	\$ 106,597	\$ 122,507	\$ 108,106	\$ 74,921	\$ 46,089	\$ 19,614	\$ 17,683	\$ 21,794	\$ 24,118
G-53	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
G-54	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total C/I	\$ 268,019	\$ 644,446	\$ 1,362,366	\$ 2,305,968	\$ 2,843,419	\$ 2,310,681	\$ 1,787,975	\$ 803,308	\$ 464,624	\$ 190,306	\$ 178,579	\$ 190,632
Total All	\$ 268,019	\$ 644,446	\$ 1,362,366	\$ 2,305,968	\$ 2,843,419	\$ 2,310,681	\$ 1,787,975	\$ 803,308	\$ 464,624	\$ 190,306	\$ 178,579	\$ 190,632
Total All	\$ 268,019	\$ 644,446	\$ 1,362,366	\$ 2,305,968	\$ 2,843,419	\$ 2,310,681	\$ 1,787,975	\$ 803,308	\$ 464,624	\$ 190,306	\$ 178,579	\$ 190,632

Liberty Utilities (Energy North Natural Gas) Corp. db/a Liberty Utilities
Revenue Decoupling Adjustment Factor (RDAF)
Benchmark Base Revenue Per Bill

	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16
R-1	\$ 26,836	\$ 26,569	\$ 24,831	\$ 22,085	\$ 21,337	\$ 19,929	\$ 18,941	\$ 18,879	\$ 19,225	\$ 21,145	\$ 24,088	\$ 26,084
R-3	\$ 91,637	\$ 86,534	\$ 74,135	\$ 46,826	\$ 34,276	\$ 26,386	\$ 23,299	\$ 23,420	\$ 25,967	\$ 37,071	\$ 59,623	\$ 79,942
R-4	\$ 34,483	\$ 32,060	\$ 29,281	\$ 20,168	\$ 13,388	\$ 10,719	\$ 9,417	\$ 9,531	\$ 10,107	\$ 14,329	\$ 22,756	\$ 30,514
Total Resid.	\$ 85,066	\$ 80,388	\$ 69,084	\$ 43,914	\$ 32,387	\$ 25,074	\$ 22,196	\$ 22,309	\$ 24,624	\$ 34,804	\$ 55,787	\$ 74,302
G-41	\$ 217,988	\$ 208,299	\$ 177,678	\$ 122,516	\$ 91,502	\$ 74,533	\$ 68,903	\$ 68,518	\$ 73,569	\$ 93,789	\$ 143,811	\$ 190,985
G-42	\$ 1,300,031	\$ 1,204,713	\$ 1,014,988	\$ 706,475	\$ 487,498	\$ 360,757	\$ 302,305	\$ 295,617	\$ 356,975	\$ 546,685	\$ 847,694	\$ 1,161,514
G-43	\$ 8,941,080	\$ 7,869,680	\$ 6,762,553	\$ 4,422,963	\$ 2,161,934	\$ 1,506,672	\$ 1,300,970	\$ 1,336,424	\$ 1,601,915	\$ 1,557,472	\$ 6,759,666	\$ 7,741,533
G-51	\$ 135,041	\$ 130,015	\$ 119,578	\$ 102,987	\$ 97,842	\$ 88,558	\$ 87,995	\$ 88,807	\$ 91,459	\$ 103,432	\$ 119,402	\$ 131,365
G-52	\$ 683,793	\$ 670,448	\$ 612,975	\$ 531,186	\$ 384,169	\$ 348,848	\$ 352,146	\$ 363,849	\$ 372,067	\$ 445,907	\$ 647,457	\$ 685,579
G-53	\$ 5,549,435	\$ 5,616,804	\$ 5,487,188	\$ 4,794,118	\$ 2,604,037	\$ 2,206,485	\$ 2,187,837	\$ 2,390,070	\$ 2,391,193	\$ 2,938,322	\$ 5,391,104	\$ 6,608,512
G-54	\$ 4,463,989	\$ 3,849,630	\$ 2,966,031	\$ 3,353,478	\$ 2,067,260	\$ 2,437,013	\$ 2,406,224	\$ 2,727,255	\$ 2,924,536	\$ 3,427,331	\$ 4,607,744	\$ 5,142,091
G-63	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total C/I	\$ 425,330	\$ 400,240	\$ 343,318	\$ 243,051	\$ 174,729	\$ 138,106	\$ 125,504	\$ 125,814	\$ 139,632	\$ 183,779	\$ 303,762	\$ 386,269
Total All	\$ 131,179	\$ 123,654	\$ 106,155	\$ 71,438	\$ 51,259	\$ 40,386	\$ 36,182	\$ 36,329	\$ 40,234	\$ 55,407	\$ 88,642	\$ 116,519

Liberty Utilities (Energy North Natural Gas) Corp. db/a Liberty Utilities
Revenue Decoupling Adjustment Factor (RDAF)
Calculation Of Benchmark Base Revenue Per Bill

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RDAF
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SALES AND TRANSPORT DATA
CUSTOMER COMPONENT

Energy/North Natural Gas Inc																		
2016 Customers (Equivalent Bills)		S&T	S&T	S&T	S&T	S&T	S&T	S&T	S&T	S&T	S&T	S&T	S&T	S&T	S&T	S&T	S&T	S&T
Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Total	Winter	Summer				
R-1	3,744	3,378	3,449	4,027	3,010	3,634	3,658	3,457	4,017	2,993	3,746	42,693	21,338	21,354				
R-3	76,501	70,269	71,991	75,178	68,613	73,366	74,096	70,010	71,998	68,057	74,878	865,706	456,874	428,832				
R-4	5,629	5,175	5,301	5,515	5,072	5,405	5,462	5,214	5,293	5,032	5,319	63,776	32,171	31,607				
Total Resid.	85,874	78,822	80,741	84,721	76,695	82,405	83,216	78,628	81,308	76,081	84,144	972,177	490,383	481,794				
G-41	9,712	8,893	9,107	9,817	8,436	9,306	9,383	8,871	9,400	8,360	9,482	109,763	55,371	54,392				
G-42	1,856	1,708	1,749	1,830	1,665	1,783	1,802	1,723	1,758	1,653	1,820	21,055	10,618	10,437				
G-43	51	47	48	49	47	49	50	47	47	47	50	579	293	286				
G-51	1,435	1,309	1,335	1,484	1,218	1,385	1,399	1,324	1,350	1,267	1,419	16,319	8,189	8,129				
G-52	345	316	323	346	302	331	335	316	320	299	338	3,903	1,967	1,936				
G-53	34	31	32	33	30	32	33	31	31	30	33	382	192	190				
G-54	28	25	26	27	25	26	27	25	26	25	27	314	159	155				
G-63	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
Total CI/	13,462	12,330	12,621	13,567	11,723	12,912	13,030	12,318	13,050	11,620	13,169	152,314	76,789	75,525				
Total All	99,336	91,153	93,361	98,308	88,418	95,317	96,246	90,947	94,358	87,701	97,312	1,124,491	567,172	557,319				

7/1/2018 CIBS Rate Customer Charge														
Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Total	Winter	Summer
R-1	15.50	15.50	15.50	15.50	15.50	15.50	15.50	15.50	15.50	15.50	15.50	185.50	92.75	92.75
R-3	15.50	15.50	15.50	15.50	15.50	15.50	15.50	15.50	15.50	15.50	15.50	185.50	92.75	92.75
R-4	6.20	6.20	6.20	6.20	6.20	6.20	6.20	6.20	6.20	6.20	6.20	74.40	37.20	37.20
G-41	57.46	57.46	57.46	57.46	57.46	57.46	57.46	57.46	57.46	57.46	57.46	689.52	344.76	344.76
G-42	172.39	172.39	172.39	172.39	172.39	172.39	172.39	172.39	172.39	172.39	172.39	2068.68	1034.34	1034.34
G-43	739.83	739.83	739.83	739.83	739.83	739.83	739.83	739.83	739.83	739.83	739.83	8877.96	4438.98	4438.98
G-51	57.46	57.46	57.46	57.46	57.46	57.46	57.46	57.46	57.46	57.46	57.46	689.52	344.76	344.76
G-52	172.39	172.39	172.39	172.39	172.39	172.39	172.39	172.39	172.39	172.39	172.39	2068.68	1034.34	1034.34
G-53	761.39	761.39	761.39	761.39	761.39	761.39	761.39	761.39	761.39	761.39	761.39	9136.68	4568.34	4568.34
G-54	761.39	761.39	761.39	761.39	761.39	761.39	761.39	761.39	761.39	761.39	761.39	9136.68	4568.34	4568.34
G-63	-	-	-	-	-	-	-	-	-	-	-	-	-	-

2016 Customer Revenue Adjusted														
Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Total	Winter	Summer
R-1	58,023	52,352	53,455	62,413	46,651	56,314	56,694	53,565	62,244	46,379	58,055	661,605	330,678	330,927
R-3	1,185,525	1,088,949	1,115,629	1,165,018	1,063,290	1,136,944	1,148,252	1,084,938	1,115,738	1,054,668	1,160,369	13,415,707	6,770,160	6,645,547
R-4	34,890	32,079	32,858	34,189	31,438	33,502	33,856	31,968	32,812	31,190	34,214	395,345	199,419	195,926
Total Resid.	1,278,439	1,173,381	1,201,941	1,261,620	1,141,380	1,226,760	1,238,802	1,170,496	1,270,794	1,132,237	1,252,636	14,472,657	7,300,257	7,172,400
G-41	598,084	511,024	523,292	564,100	484,764	534,745	539,177	509,731	540,154	480,360	544,814	6,307,054	3,181,675	3,125,379
G-42	320,042	294,523	301,501	315,518	287,101	307,382	310,715	293,912	303,082	285,006	313,822	3,629,719	1,830,413	1,799,307
G-43	37,460	35,019	35,709	36,572	34,451	35,956	36,671	34,772	34,846	34,525	37,164	428,238	216,450	211,789
G-51	82,484	75,209	76,695	85,269	69,963	79,603	80,409	76,063	83,497	69,341	81,560	937,672	470,558	467,114
G-52	59,533	54,515	55,688	59,642	52,108	56,982	57,677	54,441	57,383	51,523	58,188	672,858	339,030	333,768
G-53	25,664	23,476	24,644	25,303	22,537	24,644	25,405	23,933	23,476	22,461	24,771	290,700	146,340	144,360
G-54	21,370	19,085	20,025	20,913	18,959	19,923	20,710	18,883	19,746	18,806	20,685	238,773	120,884	117,889
G-63	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total CI/	1,104,658	1,012,851	1,037,554	1,107,316	969,884	1,069,234	1,070,764	1,011,725	1,063,319	962,023	1,081,004	12,505,014	6,305,408	6,199,606
Total All	2,383,097	2,186,232	2,239,495	2,368,938	2,111,264	2,295,993	2,309,566	2,182,224	2,274,113	2,094,260	2,333,642	26,977,671	13,605,664	13,372,006

Liberty Utilities (Energy North Natural Gas) Corp. db/a Liberty Utilities
Revenue Decoupling Adjustment Factor (RDAF)
Calculation Of Benchmark Base Revenue Per Bill

Schedule 19
RDAF
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ENERGY COMPONENT
HEADBLOCK

2016 Calendar BF Volume Headblock Normal														
	S&T	S&T	S&T	S&T	S&T	S&T	S&T	S&T	S&T	S&T	S&T	S&T		
	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Summer	
R-1	7,139,879	5,316,981	5,557,488	3,485,317	1,725,221	982,760	818,531	822,089	1,120,449	1,867,511	3,141,159	6,797,961	38,775,346	7,336,561
R-3	519,381	386,713	422,029	288,155	125,345	74,063	63,185	65,653	79,560	139,131	222,013	501,754	2,886,982	2,340,045
R-4	7,659,260	5,703,694	5,979,517	3,773,473	1,850,565	1,056,823	881,717	887,742	1,200,010	2,006,642	3,363,172	7,299,715	41,662,328	7,883,498
Total Resid.	981,988	691,730	563,845	535,331	228,043	71,114	58,460	55,919	74,205	174,439	405,526	937,790	4,778,399	662,180
G-41	2,031,588	1,457,980	1,213,922	1,228,476	645,358	356,057	294,320	284,129	428,326	761,143	1,135,899	2,037,256	11,874,454	9,105,122
G-43	121,119	90,722	78,448	85,504	64,381	61,338	63,616	62,434	67,667	98,377	100,631	126,242	1,020,478	602,664
G-52	375,949	300,295	244,259	264,311	213,712	219,643	236,988	231,776	252,046	345,471	320,210	362,737	3,367,398	1,867,762
G-53	-	-	-	-	-	-	-	-	-	-	-	-	-	-
G-54	-	-	-	-	-	-	-	-	-	-	-	-	-	-
G-63	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total C/I	3,510,663	2,540,727	2,100,474	2,113,622	1,151,494	708,152	653,385	634,259	822,244	1,379,429	1,962,266	3,464,025	21,040,730	15,691,767
Total All	11,169,913	8,244,421	8,079,991	5,887,095	3,002,059	1,764,975	1,535,101	1,522,001	2,022,254	3,386,071	5,325,438	10,763,739	62,703,058	49,470,597

7/1/2018 CIBS Rate Headblock Charge													
	S&T	S&T	S&T	S&T	S&T	S&T	S&T	S&T	S&T	S&T	S&T	S&T	S&T
	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Summer
R-1	0.3860	0.3860	0.3860	0.3860	0.3860	0.3860	0.3860	0.3860	0.3860	0.3860	0.3860	0.3860	0.3860
R-3	0.5678	0.5678	0.5678	0.5678	0.5678	0.5678	0.5678	0.5678	0.5678	0.5678	0.5678	0.5678	0.5678
R-4	0.2272	0.2272	0.2272	0.2272	0.2272	0.2272	0.2272	0.2272	0.2272	0.2272	0.2272	0.2272	0.2272
G-41	0.4711	0.4711	0.4711	0.4711	0.4711	0.4711	0.4711	0.4711	0.4711	0.4711	0.4711	0.4711	0.4711
G-42	0.4284	0.4284	0.4284	0.4284	0.4284	0.4284	0.4284	0.4284	0.4284	0.4284	0.4284	0.4284	0.4284
G-43	0.2633	0.2633	0.2633	0.2633	0.2633	0.2633	0.2633	0.2633	0.2633	0.2633	0.2633	0.2633	0.2633
G-51	0.2839	0.2839	0.2839	0.2839	0.2839	0.2839	0.2839	0.2839	0.2839	0.2839	0.2839	0.2839	0.2839
G-52	0.2439	0.2439	0.2439	0.2439	0.2439	0.2439	0.2439	0.2439	0.2439	0.2439	0.2439	0.2439	0.2439
G-53	0.1705	0.1705	0.1705	0.1705	0.1705	0.1705	0.1705	0.1705	0.1705	0.1705	0.1705	0.1705	0.1705
G-54	0.0650	0.0650	0.0650	0.0650	0.0650	0.0650	0.0650	0.0650	0.0650	0.0650	0.0650	0.0650	0.0650
G-63	-	-	-	-	-	-	-	-	-	-	-	-	-

2016 Calendar BF Volume Headblock Normal Revenue Adjusted														
	S&T	S&T	S&T	S&T	S&T	S&T	S&T	S&T	S&T	S&T	S&T	S&T	S&T	
	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Summer	
R-1	4,053,849	3,018,852	3,155,406	1,978,878	979,538	557,987	464,742	466,762	636,164	1,060,327	1,783,473	3,859,716	22,015,696	4,165,520
R-3	117,978	87,842	95,864	65,455	28,472	16,823	14,353	14,913	18,072	31,604	50,430	113,974	655,781	531,544
R-4	4,171,827	3,106,695	3,251,271	2,044,333	1,008,010	574,810	479,095	481,675	654,236	1,091,931	1,833,904	3,973,690	22,671,476	4,289,758
Total Resid.	462,643	325,891	265,641	252,208	107,437	33,504	27,542	26,345	34,980	82,182	191,053	441,816	2,251,220	311,969
G-41	870,344	624,608	520,052	526,287	276,475	152,537	126,089	121,723	183,497	326,078	486,626	872,773	5,087,088	3,900,689
G-43	34,390	25,759	22,274	24,278	18,280	17,416	18,063	17,727	19,213	27,933	28,573	35,845	289,753	171,120
G-52	91,663	73,233	59,568	64,458	37,760	38,807	41,872	40,951	44,533	61,039	78,090	88,461	720,456	455,494
G-53	-	-	-	-	-	-	-	-	-	-	-	-	-	-
G-54	-	-	-	-	-	-	-	-	-	-	-	-	-	-
G-63	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total C/I	1,459,061	1,049,491	867,535	867,230	439,952	242,264	213,566	206,746	282,203	497,233	784,342	1,438,894	8,348,517	6,466,553
Total All	5,630,888	4,156,185	4,118,805	2,911,563	1,447,962	817,075	692,660	686,421	936,439	1,589,164	2,618,246	5,412,585	31,019,993	24,848,272

Liberty Utilities (Energy North Natural Gas) Corp. db/a Liberty Utilities
Revenue Decoupling Adjustment Factor (RDAF)
Calculation Of Benchmark Base Revenue Per Bill

Schedule 19
RDAF
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HEADBLOCK + TAILBLOCK

2016 Calendar BF Volume Headblock + Tailblock Normal															
	S&T Jan-16	S&T Feb-16	S&T Mar-16	S&T Apr-16	S&T May-16	S&T Jun-16	S&T Jul-16	S&T Aug-16	S&T Sep-16	S&T Oct-16	S&T Nov-16	S&T Dec-16	S&T Total	S&T Winter	S&T Summer
R-1	\$ 109,996	\$ 96,907	\$ 83,413	\$ 68,737	\$ 45,550	\$ 41,731	\$ 32,647	\$ 30,286	\$ 34,562	\$ 58,775	\$ 66,613	\$ 102,753	\$ 771,970	\$ 528,420	\$ 243,550
R-3	\$ 10,259,040	\$ 8,791,735	\$ 7,435,047	\$ 4,148,202	\$ 2,269,420	\$ 1,407,057	\$ 1,018,133	\$ 977,035	\$ 1,304,618	\$ 2,735,736	\$ 5,289,285	\$ 8,498,956	\$ 54,134,262	\$ 44,422,264	\$ 9,711,988
R-4	\$ 700,855	\$ 589,190	\$ 538,635	\$ 339,195	\$ 160,517	\$ 107,540	\$ 77,373	\$ 75,728	\$ 89,724	\$ 189,461	\$ 366,755	\$ 500,824	\$ 3,825,267	\$ 3,125,454	\$ 700,343
Total Resid.	\$ 11,069,891	\$ 9,477,832	\$ 8,057,096	\$ 4,556,134	\$ 2,475,486	\$ 1,556,327	\$ 1,128,153	\$ 1,083,049	\$ 1,428,904	\$ 2,983,972	\$ 5,722,655	\$ 9,192,534	\$ 58,732,029	\$ 48,076,138	\$ 10,655,891
G-41	\$ 4,446,791	\$ 3,900,924	\$ 3,183,977	\$ 1,756,487	\$ 796,053	\$ 467,309	\$ 310,715	\$ 282,629	\$ 421,557	\$ 983,858	\$ 2,082,884	\$ 3,542,213	\$ 22,185,397	\$ 18,913,276	\$ 3,272,121
G-42	\$ 6,316,104	\$ 5,448,128	\$ 4,554,353	\$ 2,809,075	\$ 1,515,158	\$ 998,247	\$ 672,864	\$ 593,672	\$ 899,932	\$ 1,924,020	\$ 3,342,146	\$ 5,287,439	\$ 34,361,139	\$ 27,757,246	\$ 6,603,893
G-43	\$ 1,576,862	\$ 1,281,510	\$ 1,103,870	\$ 691,371	\$ 459,993	\$ 309,521	\$ 230,999	\$ 232,876	\$ 337,225	\$ 622,104	\$ 1,066,759	\$ 1,335,584	\$ 9,038,666	\$ 7,055,947	\$ 1,982,719
G-51	\$ 538,022	\$ 465,540	\$ 406,853	\$ 319,917	\$ 231,667	\$ 200,336	\$ 197,205	\$ 191,126	\$ 212,251	\$ 308,889	\$ 350,721	\$ 392,774	\$ 2,581,299	\$ 2,581,299	\$ 1,341,474
G-52	\$ 898,832	\$ 819,141	\$ 753,797	\$ 475,136	\$ 315,366	\$ 200,336	\$ 148,898	\$ 142,061	\$ 144,990	\$ 212,251	\$ 308,889	\$ 392,774	\$ 2,581,299	\$ 2,581,299	\$ 1,341,474
G-53	\$ 947,496	\$ 878,227	\$ 787,306	\$ 487,306	\$ 309,051	\$ 200,336	\$ 148,898	\$ 142,061	\$ 144,990	\$ 212,251	\$ 308,889	\$ 392,774	\$ 2,581,299	\$ 2,581,299	\$ 1,341,474
G-54	\$ 1,597,617	\$ 1,190,101	\$ 891,409	\$ 1,094,537	\$ 921,768	\$ 1,242,923	\$ 1,268,276	\$ 1,382,070	\$ 1,584,131	\$ 1,959,894	\$ 2,115,952	\$ 2,426,355	\$ 9,340,183	\$ 5,426,355	\$ 3,913,829
G-63	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total C/I	\$ 16,321,713	\$ 13,983,571	\$ 11,791,566	\$ 8,089,318	\$ 5,156,826	\$ 4,204,356	\$ 3,681,050	\$ 3,734,547	\$ 4,514,671	\$ 7,004,976	\$ 9,817,901	\$ 14,495,625	\$ 102,796,119	\$ 74,499,694	\$ 28,296,426
Total All	\$ 27,391,604	\$ 23,461,403	\$ 19,848,661	\$ 12,645,452	\$ 7,632,312	\$ 5,760,683	\$ 4,809,203	\$ 4,817,595	\$ 5,943,575	\$ 9,988,948	\$ 15,540,554	\$ 23,688,158	\$ 161,528,148	\$ 122,575,832	\$ 38,952,316

2016 Calendar BF Volume Headblock + Tailblock Normal Revenue Adjusted															
	S&T Jan-16	S&T Feb-16	S&T Mar-16	S&T Apr-16	S&T May-16	S&T Jun-16	S&T Jul-16	S&T Aug-16	S&T Sep-16	S&T Oct-16	S&T Nov-16	S&T Dec-16	S&T Total	S&T Winter	S&T Summer
R-1	\$ 42,458	\$ 37,406	\$ 32,197	\$ 26,532	\$ 17,582	\$ 16,108	\$ 12,602	\$ 11,690	\$ 13,341	\$ 22,687	\$ 25,712	\$ 39,662	\$ 297,975	\$ 203,967	\$ 94,009
R-3	\$ 5,824,832	\$ 4,991,733	\$ 4,221,438	\$ 2,355,248	\$ 1,298,521	\$ 798,893	\$ 578,071	\$ 554,736	\$ 740,730	\$ 1,553,284	\$ 3,003,127	\$ 4,825,500	\$ 30,736,114	\$ 25,221,878	\$ 5,514,236
R-4	\$ 159,200	\$ 133,835	\$ 122,352	\$ 77,048	\$ 36,462	\$ 24,428	\$ 17,575	\$ 17,202	\$ 20,381	\$ 43,036	\$ 83,309	\$ 134,206	\$ 869,034	\$ 709,950	\$ 159,084
Total Resid.	\$ 6,026,490	\$ 5,162,973	\$ 4,375,967	\$ 2,456,828	\$ 1,342,564	\$ 839,428	\$ 608,246	\$ 583,628	\$ 774,452	\$ 1,619,007	\$ 3,112,148	\$ 4,993,366	\$ 31,903,123	\$ 26,135,795	\$ 5,767,328
G-41	\$ 1,559,117	\$ 1,341,478	\$ 1,094,812	\$ 638,657	\$ 287,190	\$ 158,884	\$ 107,371	\$ 98,090	\$ 144,883	\$ 341,497	\$ 721,873	\$ 1,266,016	\$ 7,759,869	\$ 6,621,953	\$ 1,137,914
G-42	\$ 2,093,437	\$ 1,763,667	\$ 1,473,638	\$ 977,497	\$ 524,775	\$ 335,862	\$ 234,151	\$ 210,087	\$ 318,126	\$ 658,042	\$ 1,116,439	\$ 1,800,596	\$ 11,506,318	\$ 9,225,275	\$ 2,281,046
G-43	\$ 415,255	\$ 337,478	\$ 290,698	\$ 182,605	\$ 96,223	\$ 62,223	\$ 47,814	\$ 44,400	\$ 40,604	\$ 38,783	\$ 280,925	\$ 351,719	\$ 2,096,875	\$ 1,858,143	\$ 238,732
G-51	\$ 111,366	\$ 94,965	\$ 82,910	\$ 67,559	\$ 49,167	\$ 43,080	\$ 42,728	\$ 41,489	\$ 45,909	\$ 66,801	\$ 74,749	\$ 104,900	\$ 632,623	\$ 536,448	\$ 289,175
G-52	\$ 176,605	\$ 157,500	\$ 142,322	\$ 124,131	\$ 83,323	\$ 60,140	\$ 60,462	\$ 60,462	\$ 63,909	\$ 93,572	\$ 104,900	\$ 131,350	\$ 731,650	\$ 615,758	\$ 307,819
G-53	\$ 161,515	\$ 149,707	\$ 152,959	\$ 124,020	\$ 54,542	\$ 46,772	\$ 47,596	\$ 51,195	\$ 50,252	\$ 69,662	\$ 136,572	\$ 170,226	\$ 1,245,024	\$ 925,005	\$ 392,092
G-54	\$ 103,918	\$ 77,411	\$ 57,983	\$ 71,195	\$ 32,516	\$ 43,845	\$ 44,739	\$ 48,753	\$ 55,881	\$ 69,137	\$ 95,005	\$ 119,009	\$ 819,383	\$ 524,521	\$ 294,872
G-63	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total C/I	\$ 4,621,214	\$ 3,922,206	\$ 3,295,323	\$ 2,195,127	\$ 1,078,426	\$ 724,037	\$ 564,539	\$ 538,116	\$ 719,564	\$ 1,394,966	\$ 2,567,549	\$ 4,005,684	\$ 25,566,752	\$ 20,607,104	\$ 4,959,649
Total All	\$ 10,647,704	\$ 9,085,179	\$ 7,671,310	\$ 4,653,956	\$ 2,420,991	\$ 1,563,465	\$ 1,172,787	\$ 1,121,744	\$ 1,494,016	\$ 2,953,973	\$ 5,679,697	\$ 9,005,052	\$ 57,469,875	\$ 46,742,898	\$ 10,726,977

TOTAL REVENUE

2016 Calendar BF Base Normal Revenue Adjusted															
	S&T Jan-16	S&T Feb-16	S&T Mar-16	S&T Apr-16	S&T May-16	S&T Jun-16	S&T Jul-16	S&T Aug-16	S&T Sep-16	S&T Oct-16	S&T Nov-16	S&T Dec-16	S&T Total	S&T Winter	S&T Summer
R-1	\$ 100,481	\$ 89,758	\$ 85,652	\$ 88,945	\$ 64,233	\$ 72,421	\$ 69,296	\$ 65,255	\$ 68,800	\$ 84,930	\$ 72,082	\$ 97,717	\$ 959,580	\$ 534,645	\$ 424,936
R-3	\$ 7,010,358	\$ 6,080,682	\$ 5,337,067	\$ 3,520,286	\$ 2,351,811	\$ 1,935,837	\$ 1,726,323	\$ 1,639,675	\$ 1,837,115	\$ 2,669,022	\$ 4,057,795	\$ 5,885,869	\$ 44,151,821	\$ 31,992,038	\$ 12,158,783
R-4	\$ 194,090	\$ 165,914	\$ 155,209	\$ 111,237	\$ 67,900	\$ 57,930	\$ 51,432	\$ 52,703	\$ 52,703	\$ 75,849	\$ 114,499	\$ 168,420	\$ 1,264,378	\$ 999,369	\$ 355,010
Total Resid.	\$ 7,304,929	\$ 6,336,354	\$ 5,577,928	\$ 3,720,449	\$ 2,483,945	\$ 2,066,188	\$ 1,847,050	\$ 1,754,126	\$ 1,958,618	\$ 2,829,802	\$ 4,244,385	\$ 6,252,006	\$ 46,375,779	\$ 33,436,051	\$ 12,939,728
G-41	\$ 2,117,202	\$ 1,852,502	\$ 1,618,104	\$ 1,202,757	\$ 771,954	\$ 693,630	\$ 646,548	\$ 607,821	\$ 661,691	\$ 881,651	\$ 1,202,233	\$ 1,810,830	\$ 14,066,923	\$ 9,803,628	\$ 4,263,295
G-42	\$ 2,413,479	\$ 2,058,190	\$ 1,775,139	\$ 1,293,015	\$ 811,876	\$ 643,244	\$ 544,866	\$ 503,989	\$ 615,241	\$ 1,401,445	\$ 2,114,419	\$ 3,136,038	\$ 15,136,038	\$ 11,065,688	\$ 4,080,350
G-43	\$ 452,715	\$ 372,497	\$ 326,407	\$ 218,641	\$ 100,674	\$ 73,224	\$ 64,485	\$ 62,812	\$ 73,876	\$ 73,876	\$ 315,560	\$ 388,883	\$ 2,525,114	\$ 2,074,593	\$ 450,521
G-51	\$ 193,850	\$ 170,173	\$ 159,605	\$ 152,829	\$ 119,131	\$ 122,683	\$ 123,137	\$ 117,542	\$ 123,499	\$ 150,298	\$ 144,060	\$ 176,329	\$ 1,763,295	\$ 1,007,006	\$ 756,289
G-52	\$ 236,138	\$ 212,015	\$ 198,011	\$ 183,773	\$ 116,121	\$ 115,306	\$ 117,817	\$ 114,903	\$ 119,085	\$ 148,427	\$ 193,504	\$ 231,406	\$ 1,986,507	\$ 1,254,847	\$ 731,660
G-53	\$ 187,199	\$ 173,183	\$ 177,603	\$ 159,323	\$ 77,079	\$ 71,416	\$ 73,001	\$ 75,128	\$ 73,229	\$ 94,026	\$ 159,038	\$ 214,999	\$ 1,535,724	\$ 1,071,344	\$ 464,379
G-54	\$ 125,288	\$ 96,497	\$ 78,007	\$ 92,108	\$ 51,475	\$ 63,768	\$ 65,449	\$ 67,636	\$ 75,551	\$ 86,862	\$ 113,612	\$ 139,694	\$ 1,058,166	\$ 645,405	\$ 412,761
G-63	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total C/I	\$ 5,725,872	\$ 4,935,057	\$ 4,332,877	\$ 3,302,445	\$ 2,048,310	\$ 1,783,271	\$ 1,635,303	\$ 1,549,841	\$ 1,744,245	\$ 2,398,285	\$ 3,529,573	\$ 5,086,688	\$ 38,071,767	\$ 26,912,512	\$ 11,159,255
Total All	\$ 13,030,801	\$ 11,271,411	\$ 9,910,805	\$ 7,022,894	\$ 4,532,255	\$ 3,849,458	\$ 3,482,353	\$ 3,300,968	\$ 3,702,863	\$ 5,228,086	\$ 7,773,958	\$ 11,338,694	\$ 84,447,546	\$ 60,348,563	\$ 24,099,983
Total Vol	\$ 27,391,604	\$ 23,461,403	\$ 19,848,661	\$ 12,645,452	\$ 7,632,312	\$ 5,760,683	\$ 4,809,203	\$ 4,817,595	\$ 5,943,575	\$ 9,988,948	\$ 15,540,554	\$ 23,688,158	\$ 161,528,148	\$ 122,575,832	\$ 38,952,316
Unit Rate	\$ 0.0113	\$ 0.0113	\$ 0.0113	\$ 0.0113	\$ 0.0113	\$ 0.0113	\$ 0.0113	\$ 0.0113	\$ 0.0113	\$ 0.0113	\$ 0.0113	\$ 0.0113	\$ 0.0113	\$ 0.0113	\$ 0.0113
R-4 @ R-3	\$ 308,703	\$ 264,409	\$ 223,684	\$ 142,514	\$ 86,016	\$ 64,923	\$ 54,200	\$ 54,294	\$ 66,984	\$ 112,575	\$ 175,142	\$ 266,965	\$ 1,820,418	\$ 1,381,426	\$ 438,981
Grand TTL	\$ 13,339,503	\$ 11,535,821	\$ 10,134,499	\$ 7,165,408	\$ 4,618,271	\$ 3,914,381	\$ 3,536,552	\$ 3,356,262	\$ 3,769,847	\$ 5,340,662	\$ 7,949,099	\$ 11,805,659	\$ 86,		

Liberty Utilities (Energy North Natural Gas) Corp. db/a Liberty Utilities
Revenue Decoupling Adjustment Factor (RDAF)
Calculation Of Benchmark Base Revenue Per Bill

Base Revenue Per Customer		S&T	S&T	S&T	S&T	S&T	S&T	S&T	S&T	S&T	S&T	S&T	S&T	S&T	S&T	S&T	S&T	S&T		
		Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	
R-1	\$	26,836	\$	24,831	\$	22,085	\$	19,929	\$	18,879	\$	19,225	\$	21,145	\$	24,088	\$	26,084	\$	26,084
R-3	\$	91,637	\$	86,534	\$	74,135	\$	34,276	\$	23,299	\$	25,967	\$	37,071	\$	59,623	\$	79,942	\$	79,942
R-4	\$	34,483	\$	32,060	\$	20,168	\$	13,388	\$	9,417	\$	10,107	\$	14,329	\$	22,756	\$	30,514	\$	30,514
Total Resid.	\$	85,066	\$	80,388	\$	43,914	\$	32,387	\$	25,074	\$	22,196	\$	34,804	\$	55,787	\$	74,302	\$	74,302
G-41	\$	217,988	\$	208,299	\$	177,678	\$	122,516	\$	74,533	\$	68,903	\$	73,569	\$	93,789	\$	143,811	\$	190,985
G-42	\$	1,300,031	\$	1,204,713	\$	1,014,988	\$	706,475	\$	487,498	\$	302,305	\$	295,617	\$	546,685	\$	847,694	\$	1,161,514
G-43	\$	8,941,080	\$	7,869,660	\$	6,762,553	\$	4,422,963	\$	2,161,934	\$	1,300,970	\$	1,336,424	\$	1,557,472	\$	6,759,666	\$	7,741,533
G-51	\$	135,041	\$	130,015	\$	119,578	\$	102,987	\$	88,568	\$	87,995	\$	91,459	\$	103,432	\$	119,402	\$	131,365
G-52	\$	683,793	\$	640,448	\$	531,186	\$	348,848	\$	352,146	\$	363,849	\$	372,067	\$	445,907	\$	647,457	\$	885,579
G-53	\$	5,549,435	\$	5,616,804	\$	4,794,118	\$	2,604,037	\$	2,206,485	\$	2,187,837	\$	2,390,070	\$	2,938,322	\$	5,391,104	\$	6,608,512
G-54	\$	4,463,969	\$	3,849,630	\$	2,966,031	\$	2,067,260	\$	2,437,013	\$	2,406,224	\$	2,924,536	\$	3,427,331	\$	4,607,744	\$	5,142,091
G-63	\$	425,330	\$	400,240	\$	343,318	\$	243,051	\$	174,729	\$	125,504	\$	139,632	\$	183,779	\$	303,762	\$	366,289
Total All	\$	131,179	\$	123,654	\$	106,155	\$	71,438	\$	40,386	\$	36,182	\$	40,234	\$	88,642	\$	116,519	\$	116,519

Base Fixed Revenue Per Customer		S&T	S&T	S&T	S&T	S&T	S&T	S&T	S&T	S&T	S&T	S&T	S&T	S&T	S&T	S&T	S&T	S&T	S&T	
		Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16
R-1	\$	15,497	\$	15,497	\$	15,497	\$	15,497	\$	15,497	\$	15,497	\$	15,497	\$	15,497	\$	15,497	\$	15,497
R-3	\$	15,497	\$	15,497	\$	15,497	\$	15,497	\$	15,497	\$	15,497	\$	15,497	\$	15,497	\$	15,497	\$	15,497
R-4	\$	6,199	\$	6,199	\$	6,199	\$	6,199	\$	6,199	\$	6,199	\$	6,199	\$	6,199	\$	6,199	\$	6,199
Total Resid.	\$	14,867	\$	14,866	\$	14,862	\$	14,867	\$	14,866	\$	14,862	\$	14,862	\$	14,862	\$	14,862	\$	14,867
G-41	\$	57,461	\$	57,461	\$	57,461	\$	57,461	\$	57,461	\$	57,461	\$	57,461	\$	57,461	\$	57,461	\$	57,461
G-42	\$	172,392	\$	172,392	\$	172,392	\$	172,392	\$	172,392	\$	172,392	\$	172,392	\$	172,392	\$	172,392	\$	172,392
G-43	\$	739,831	\$	739,831	\$	739,831	\$	739,831	\$	739,831	\$	739,831	\$	739,831	\$	739,831	\$	739,831	\$	739,831
G-51	\$	57,461	\$	57,461	\$	57,461	\$	57,461	\$	57,461	\$	57,461	\$	57,461	\$	57,461	\$	57,461	\$	57,461
G-52	\$	172,392	\$	172,392	\$	172,392	\$	172,392	\$	172,392	\$	172,392	\$	172,392	\$	172,392	\$	172,392	\$	172,392
G-53	\$	761,394	\$	761,394	\$	761,394	\$	761,394	\$	761,394	\$	761,394	\$	761,394	\$	761,394	\$	761,394	\$	761,394
G-54	\$	761,394	\$	761,394	\$	761,394	\$	761,394	\$	761,394	\$	761,394	\$	761,394	\$	761,394	\$	761,394	\$	761,394
G-63	\$	82,056	\$	82,144	\$	81,496	\$	82,735	\$	82,178	\$	82,131	\$	82,029	\$	81,481	\$	82,794	\$	82,088
Total All	\$	23,990	\$	23,984	\$	24,097	\$	23,878	\$	23,996	\$	23,996	\$	24,000	\$	23,880	\$	23,880	\$	23,981

Base Variable Revenue Per Customer		S&T	S&T	S&T	S&T	S&T	S&T	S&T	S&T	S&T	S&T	S&T	S&T	S&T	S&T	S&T	S&T	S&T	S&T	
		Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16
R-1	\$	11,340	\$	11,072	\$	9,334	\$	6,588	\$	5,840	\$	4,433	\$	3,728	\$	5,648	\$	8,591	\$	10,587
R-3	\$	76,140	\$	71,037	\$	58,639	\$	31,329	\$	18,779	\$	7,802	\$	7,924	\$	21,574	\$	44,127	\$	64,445
R-4	\$	28,284	\$	25,861	\$	23,062	\$	13,970	\$	7,189	\$	3,218	\$	3,309	\$	8,130	\$	16,557	\$	24,315
Total Resid.	\$	70,178	\$	65,501	\$	54,198	\$	29,023	\$	17,505	\$	7,309	\$	9,736	\$	19,912	\$	40,905	\$	59,415
G-41	\$	160,528	\$	150,839	\$	120,217	\$	65,055	\$	34,042	\$	11,443	\$	16,109	\$	36,328	\$	86,350	\$	133,525
G-42	\$	1,127,639	\$	1,032,321	\$	842,595	\$	534,083	\$	315,106	\$	129,913	\$	123,225	\$	184,563	\$	675,302	\$	988,122
G-43	\$	8,201,249	\$	7,129,848	\$	6,022,722	\$	3,683,132	\$	1,422,103	\$	766,841	\$	596,593	\$	862,083	\$	6,019,834	\$	7,001,702
G-51	\$	77,560	\$	72,554	\$	62,117	\$	45,526	\$	40,381	\$	30,534	\$	31,346	\$	45,971	\$	61,942	\$	73,904
G-52	\$	511,401	\$	498,055	\$	440,583	\$	358,794	\$	211,776	\$	179,754	\$	199,675	\$	273,515	\$	475,064	\$	513,187
G-53	\$	4,788,041	\$	4,855,409	\$	4,725,794	\$	1,842,643	\$	1,445,091	\$	1,426,442	\$	1,628,676	\$	2,176,928	\$	4,629,709	\$	5,847,118
G-54	\$	3,702,594	\$	3,088,236	\$	2,204,637	\$	2,592,083	\$	1,305,866	\$	1,675,619	\$	1,965,861	\$	2,163,142	\$	3,846,349	\$	4,380,696
G-63	\$	343,273	\$	318,096	\$	261,107	\$	161,555	\$	91,994	\$	43,327	\$	43,684	\$	57,603	\$	220,968	\$	304,180
Total All	\$	107,189	\$	99,670	\$	82,168	\$	47,340	\$	27,381	\$	16,403	\$	16,233	\$	31,306	\$	64,762	\$	92,538

Liberty Utilities (Energy North Natural Gas) Corp. db/a Liberty Utilities
Revenue Decoupling Adjustment Factor (RDAF)
Calculation Of Benchmark Base Revenue Per Bill

Base Variable Revenue Per Therm		S&T	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16
	S&T													
R-1	\$	0.38599	\$	0.38599	\$	0.38599	\$	0.38599	\$	0.38599	\$	0.38599	\$	0.38599
R-3	\$	0.56778	\$	0.56778	\$	0.56778	\$	0.56778	\$	0.56778	\$	0.56778	\$	0.56778
R-4	\$	0.22715	\$	0.22715	\$	0.22715	\$	0.22715	\$	0.22715	\$	0.22715	\$	0.22715
Total Resid.	\$	0.54440	\$	0.54474	\$	0.53967	\$	0.53936	\$	0.53915	\$	0.54257	\$	0.54385
G-41	\$	0.35062	\$	0.34389	\$	0.36360	\$	0.34000	\$	0.34556	\$	0.34706	\$	0.34657
G-42	\$	0.33144	\$	0.32372	\$	0.34798	\$	0.33645	\$	0.34799	\$	0.35386	\$	0.34054
G-43	\$	0.26334	\$	0.26334	\$	0.26334	\$	0.12041	\$	0.12041	\$	0.12041	\$	0.26334
G-51	\$	0.20699	\$	0.20327	\$	0.21118	\$	0.21223	\$	0.21667	\$	0.21708	\$	0.20970
G-52	\$	0.19648	\$	0.19227	\$	0.18881	\$	0.14088	\$	0.14357	\$	0.14362	\$	0.19896
G-53	\$	0.17047	\$	0.17047	\$	0.17047	\$	0.08177	\$	0.08177	\$	0.08177	\$	0.17047
G-54	\$	0.06505	\$	0.06505	\$	0.06505	\$	0.03528	\$	0.03528	\$	0.03528	\$	0.06505
G-63	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-
Total C/I	\$	0.28313	\$	0.28049	\$	0.27946	\$	0.20913	\$	0.15336	\$	0.14409	\$	0.26152
Total All	\$	0.38872	\$	0.38724	\$	0.38680	\$	0.31720	\$	0.24386	\$	0.23284	\$	0.38015
Use Per Customer														
R-1		29.4		28.7		24.2		15.1		8.9		8.8		22.3
R-3		134.1		125.1		103.3		33.1		13.7		14.0		77.7
R-4		124.5		113.9		101.6		19.9		14.2		14.7		72.9
Total Resid.		128.9		120.2		99.8		32.3		13.6		13.8		75.2
G-41		457.8		438.6		349.6		50.2		33.1		31.9		249.2
G-42		3,402.2		3,188.9		2,604.1		559.9		373.3		346.2		2,021.6
G-43		31,142.7		27,074.2		13,986.0		11,810.9		4,660.4		4,954.8		22,859.2
G-51		374.8		355.7		304.8		144.6		140.9		144.4		290.6
G-52		2,602.8		2,590.3		2,333.5		1,252.1		1,252.1		1,390.3		2,387.7
G-53		28,088.1		28,483.3		23,657.2		17,673.4		17,445.4		19,918.7		26,623.8
G-54		56,922.8		47,477.8		33,893.5		47,500.7		46,627.8		55,728.5		59,132.8
Total C/I		1,212.4		1,134.1		934.3		325.6		282.5		303.2		844.9
Total All		275.7		257.4		212.6		60.4		50.0		55.0		177.2

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Energy Efficiency
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Liberty Utilities (Energy/North Natural Gas) Corp.
Energy Efficiency Programs
For Residential Non-Heating and Heating Classes
November 1, 2020 - October 31, 2021
Energy Efficiency Charge

Month	Actual or Forecast	Beginning Balance (Over/Under)	Residential DSM Rate Per Therm	DSM Collections	Forecasted DSM Expenditures	Actual DSM Expenditures		Incentive	Ending Balance (Over/Under)	Average Balance (Over/Under)	Interest Monthly Federal Prime Rate	Interest @ Fed Reserve Bank Loan Rate	Ending Bal. Plus Interest (Over/Under)	Forecasted Residential Therm Sales	Residential Therm Sales	# of Days
						Residential	Low-Income									
May 20	Actual	(110,032)	(\$0.0640)	(308,762)	316,259	109,664	57,347	15,562	(236,231)	(173,126)	3.25%	(1,204)	(237,425)	4,066,455	4,824,165	31
June 20	Actual	(237,425)	(\$0.0640)	(140,008)	316,259	229,611	9,424	15,562	(122,836)	(180,131)	3.25%	(1,207)	(124,043)	1,969,131	2,187,747	30
July 20	Forecast	(120,410)	(\$0.0640)	(71,801)	316,259	0	0	0	120,415	(1,814)	3.25%	(5)	120,410	1,121,890	0	31
August 20	Forecast	367,912	(\$0.0640)	(69,431)	316,259	0	0	0	367,239	243,825	3.25%	1,268	367,912	1,084,856	0	30
September 20	Forecast	582,679	(\$0.0640)	(102,761)	316,259	0	0	0	581,411	474,661	3.25%	1,794	582,679	1,605,635	0	30
October 20	Forecast	719,110	(\$0.0640)	(181,622)	316,259	0	0	0	717,316	649,997	3.25%	1,577	719,110	2,837,843	0	31
November 20	Forecast	463,405	(\$0.0831)	(673,401)	316,259	0	0	0	461,828	590,469	3.25%	563	463,405	6,901,820	0	30
December 20	Forecast	(618,627)	(\$0.0831)	(960,762)	398,237	0	0	0	(617,698)	(336,436)	3.25%	(929)	(618,627)	10,052,958	0	31
January 21	Forecast	(972,611)	(\$0.0831)	(750,240)	398,237	0	0	0	(970,630)	(794,628)	3.25%	(1,381)	(972,611)	9,028,156	0	28
February 21	Forecast	(1,304,958)	(\$0.0831)	(727,444)	398,237	0	0	0	(1,301,819)	(1,137,215)	3.25%	(3,139)	(1,304,958)	8,753,844	0	31
March 21	Forecast	(1,343,051)	(\$0.0831)	(432,798)	398,237	0	0	0	(1,339,519)	(1,322,238)	3.25%	(3,490)	(1,343,051)	5,208,158	0	30
April 21	Forecast	(1,189,423)	(\$0.0831)	(241,116)	398,237	0	0	0	(1,185,932)	(1,264,492)	3.25%	(2,792)	(1,189,423)	2,901,545	0	31
May 21	Forecast	(903,475)	(\$0.0831)	(109,487)	398,237	0	0	0	(900,683)	(1,045,053)	3.25%	(2,055)	(903,475)	1,317,656	0	30
June 21	Forecast	(587,867)	(\$0.0831)	(82,771)	398,237	0	0	0	(585,812)	(744,643)	3.25%	(1,187)	(587,867)	969,602	0	31
July 21	Forecast	(273,588)	(\$0.0831)	(148,205)	398,237	0	0	0	(272,401)	(430,134)	3.25%	(398)	(273,588)	996,041	0	31
August 21	Forecast	(172,287)	(\$0.0831)	(673,541)	398,237	0	0	0	(172,061)	(84,409)	3.25%	(225)	(172,287)	6,901,820	0	30
September 21	Forecast	(172,287)	(\$0.0831)	(835,401)	398,237	0	0	0	(609,451)	(390,869)	3.25%	(1,079)	(172,287)	10,052,958	0	31
October 21	Forecast															

Estimated Residential Conservation Charge Effective November 1, 2020 - October 31, 2021	
Beginning Balance	\$ 719,110
Program Budget Nov 2020-Oct 2021	4,614,887
Projected Interest	(17,532)
Projected Budget with Interest	5,316,465
Total Charges	\$ 5,316,465
Projected Therm Sales	63,939,354
Residential Rate	\$0.0831
Total Charges with Interest	\$ 5,316,465
Projected Therm Sales	63,939,354
Residential Rate	\$0.0831

Residential Non Heating Therm Sales	0%	711,615	690,327	0%
Residential Heating Therm Sales	34%	63,227,739	63,382,533	36%
C&I Therm Sales	66%	121,652,799	112,542,801	64%
Total Therms	100%	185,592,152	176,624,661	100%
Low-Income Program Budget		\$ 1,676,441	\$ 1,523,570	
Other Refund				
Total Shared Budget		\$ 1,676,441	\$ 1,523,570	
Residential Program Budget		\$ 2,962,415	\$ 3,826,326	
Residential Program Incentive		\$ 255,137	\$ 299,744	
Total Residential Program Budget		\$ 3,217,552	\$ 4,226,070	
Commercial/Industrial Program Budget		\$ 4,083,759	\$ 3,612,260	
Commercial/Industrial Program Incentive		\$ 224,607	\$ 193,174	
Total Commercial/Industrial Program Budget		\$ 4,308,366	\$ 3,705,434	
Total Program Budget		\$ 9,202,359	\$ 9,455,074	
Shared Expenses Allocation to Residential		\$ 577,560	\$ 552,772	
Shared Expenses Allocation to C&I		1,098,881	970,798	
Total Allocated Shared Expenses		\$ 1,676,441	\$ 1,523,570	
Total Residential (including allocation of Shared Budget)		\$ 3,795,112	\$ 4,778,842	
Total C&I (including allocation of Shared Budget)		5,407,247	4,676,232	
Total Budget		\$ 9,202,359	\$ 9,455,074	

Liberty Utilities (Energy/North Natural Gas) Corp.
Energy Efficiency Programs
For Commercial/Industrial Classes
November 1, 2020 - October 31, 2021
Energy Efficiency Charge

Month	Actual or Forecast	Beginning Balance (Over)/Under	DSM Rate Per Therm	DSM Collections	Forecasted DSM Expenditures	Actual DSM Expenditures		Incentive	Ending Balance (Over)/Under	Average Balance (Over)/Under	Interest Fed Reserve Prime Rate	Interest @ Fed Reserve Bank Loan Rate	Ending Bal. Plus Interest (Over)/Under	Forecasted Commercial/Industrial Therm Sales	Actual Commercial/Industrial Therm Sales	# of Days
						C&I	Low-Income									
May 20	Actual	(628,844)	(\$0.0426)	(349,588)	455,607	177,066	76,019	14,422	(710,935)	(689,889)	3.25%	(1,116)	(712,051)	8,443,740	8,205,951	31
June 20	Actual	(712,051)	(\$0.0426)	(216,372)	455,607	227,776	12,483	14,422	(673,733)	(692,892)	3.25%	(1,119)	(674,851)	5,816,016	5,079,339	30
July 20	Forecast	(674,851)	(\$0.0426)	(188,185)	455,607	0	0	0	(407,429)	(541,140)	3.25%	(1,494)	(408,923)	4,417,480	0	31
August 20	Forecast	(408,923)	(\$0.0426)	(183,699)	455,607	0	0	0	(137,015)	(272,969)	3.25%	(753)	(137,768)	4,312,181	0	31
September 20	Forecast	(137,768)	(\$0.0426)	(203,791)	455,607	0	0	0	114,047	(11,861)	3.25%	(32)	114,015	4,783,833	0	30
October 20	Forecast	114,015	(\$0.0426)	(270,127)	455,607	0	0	0	299,495	206,755	3.25%	571	300,066	6,340,998	0	31
November 20	Forecast	300,066	(\$0.0441)	(504,827)	455,607	0	0	0	250,846	275,456	3.25%	736	251,582	11,447,324	0	30
December 20	Forecast	251,582	(\$0.0441)	(678,482)	455,607	0	0	0	28,707	140,144	3.25%	387	29,094	15,385,075	0	31
January 21	Forecast	29,094	(\$0.0441)	(768,610)	389,686	0	0	0	(349,831)	(160,369)	3.25%	(443)	(350,273)	17,428,801	0	31
February 21	Forecast	(350,273)	(\$0.0441)	(659,265)	389,686	0	0	0	(619,852)	(485,063)	3.25%	(1,209)	(621,062)	14,949,322	0	28
March 21	Forecast	(621,062)	(\$0.0441)	(580,130)	389,686	0	0	0	(811,506)	(716,284)	3.25%	(1,977)	(813,483)	13,154,881	0	31
April 21	Forecast	(813,483)	(\$0.0441)	(399,341)	389,686	0	0	0	(823,138)	(818,311)	3.25%	(2,186)	(825,324)	9,065,363	0	31
May 21	Forecast	(825,324)	(\$0.0441)	(294,904)	389,686	0	0	0	(730,542)	(777,933)	3.25%	(2,147)	(732,689)	6,687,163	0	31
June 21	Forecast	(732,689)	(\$0.0441)	(213,144)	389,686	0	0	0	(596,148)	(644,419)	3.25%	(1,721)	(597,869)	4,833,207	0	30
July 21	Forecast	(597,869)	(\$0.0441)	(200,426)	389,686	0	0	0	(368,609)	(463,239)	3.25%	(1,279)	(369,887)	4,544,800	0	31
August 21	Forecast	(369,887)	(\$0.0441)	(208,090)	389,686	0	0	0	(188,291)	(279,089)	3.25%	(770)	(189,062)	4,718,593	0	31
September 21	Forecast	(189,062)	(\$0.0441)	(241,904)	389,686	0	0	0	(41,279)	(115,171)	3.25%	(308)	(41,587)	5,485,342	0	30
October 21	Forecast	(41,587)	(\$0.0441)	(350,395)	389,686	0	0	0	(2,296)	(21,942)	3.25%	(61)	(2,357)	7,945,466	0	31
November 21	Forecast	(2,357)	(\$0.0441)	(504,827)	389,686	0	0	0	(117,498)	(59,927)	3.25%	(160)	(117,658)	11,447,324	0	30
December 21	Forecast	(117,658)	(\$0.0441)	(678,482)	389,686	0	0	0	(406,454)	(262,056)	3.25%	(723)	(407,177)	15,385,075	0	31

Estimated C&I Conservation Charge	
November 1, 2020 - October 31, 2021	
Beginning Balance	300,066
Program Budget Nov 2020-Oct 2021	4,808,073
Projected Interest	(10,978)
Program Budget with Interest	5,097,161
Total Charges	\$5,097,161
Projected Therm Sales	115,635,325
C&I Rate	\$0.0441
Total Charges with Interest	\$5,099,518
Projected Therm Sales	115,635,325
C&I Rate	\$0.0441

Liberty Utilities (Energy/North Natural Gas) Corp.
Energy Efficiency Programs
For Residential and Commercial/Industrial Classes
November 1, 2020 - October 31, 2021
Energy Efficiency Charge

Month	Actual or Forecast	Beginning Balance (Over)/Under	DSM Rate Per Therm	DSM Collections	Forecasted DSM Expenditures	Actual DSM Expenditures			Incentive	Ending Balance (Over)/Under	Average Balance (Over)/Under	Interest Plus Interest Prime Rate	Interest @ Fed Reserve Bank Loan Rate	Ending Bal. Plus Interest (Over)/Under	Forecasted Therm Sales	Actual Therm Sales	# of Days
						Residential	C&I	Total									
May 20	Actual	(738,875)	n/a	(658,351)	771,866	109,664	177,056	133,366	29,984	(947,156)	(843,016)	3.25%	(2,327)	(949,483)	12,333,808	12,290,578	31
June 20	Actual	(949,477)	n/a	(356,380)	771,866	229,611	227,776	21,917	29,984	(796,568)	(873,023)	3.25%	(2,332)	(788,901)	7,703,669	7,740,734	30
July 20	Forecast	(798,894)	n/a	(259,986)	771,866	0	0	0	0	(287,014)	(542,954)	3.25%	(1,499)	(288,512)	5,471,615	2,303,736	31
August 20	Forecast	(288,512)	n/a	(253,130)	771,866	0	0	0	0	230,224	(29,144)	3.25%	(80)	230,143	5,317,216	0	31
September 20	Forecast	230,143	n/a	(306,552)	771,866	0	0	0	0	695,458	462,801	3.25%	1,256	696,694	6,269,177	0	30
October 20	Forecast	696,694	n/a	(451,748)	771,866	0	0	0	0	1,016,811	856,753	3.25%	2,365	1,019,176	9,068,225	0	31
November 20	Forecast	1,019,176	n/a	(1,078,568)	771,866	0	0	0	0	712,674	865,925	3.25%	2,313	714,987	13,857,797	0	30
December 20	Forecast	714,987	n/a	(1,513,883)	771,866	0	0	0	0	(27,029)	343,979	3.25%	949	(26,080)	21,185,695	0	31
January 21	Forecast	(26,080)	n/a	(1,729,372)	787,923	0	0	0	0	(967,529)	(496,804)	3.25%	(1,371)	(968,900)	28,674,991	0	31
February 21	Forecast	(968,900)	n/a	(1,409,505)	787,923	0	0	0	0	(1,590,482)	(1,279,691)	3.25%	(3,190)	(1,593,673)	30,438,317	0	28
March 21	Forecast	(1,593,673)	n/a	(1,307,575)	787,923	0	0	0	0	(2,113,325)	(1,853,499)	3.25%	(5,116)	(2,118,441)	26,349,344	0	31
April 21	Forecast	(2,118,441)	n/a	(832,139)	787,923	0	0	0	0	(2,162,657)	(2,140,549)	3.25%	(5,718)	(2,168,375)	19,706,228	0	30
May 21	Forecast	(2,168,375)	n/a	(636,022)	787,923	0	0	0	0	(1,916,474)	(2,042,425)	3.25%	(6,638)	(1,922,112)	12,611,378	0	31
June 21	Forecast	(1,922,112)	n/a	(322,642)	787,923	0	0	0	0	(1,456,831)	(1,689,471)	3.25%	(4,513)	(1,461,344)	7,880,220	0	30
July 21	Forecast	(1,461,344)	n/a	(281,000)	787,923	0	0	0	0	(954,420)	(1,207,882)	3.25%	(3,334)	(957,755)	5,539,570	0	31
August 21	Forecast	(957,755)	n/a	(290,861)	787,923	0	0	0	0	(460,693)	(709,224)	3.25%	(1,958)	(462,650)	5,397,037	0	31
September 21	Forecast	(462,650)	n/a	(391,108)	787,923	0	0	0	0	(65,836)	(264,243)	3.25%	(706)	(66,542)	6,389,467	0	30
October 21	Forecast	(66,542)	n/a	(720,404)	787,923	0	0	0	0	977	(32,782)	3.25%	(90)	887	9,178,841	0	31
November 21	Forecast	887	n/a	(1,078,568)	787,923	0	0	0	0	(289,559)	(144,336)	3.25%	(386)	(289,944)	13,857,797	0	30
December 21	Forecast	(289,944)	n/a	(1,513,883)	787,923	0	0	0	0	(1,015,904)	(652,924)	3.25%	(1,802)	(1,017,707)	21,185,695	0	31

Residential (R-1 & R-3) and C & I Conservation Charge	
November 1, 2020 - October 31, 2021	
Beginning Balance	\$ 1,019,176
Program Budget Nov 2020-Oct 2021	\$ 9,422,960
Projected Interest	\$ (28,510)
Program Budget with Interest	\$ 10,413,627
Total Charges	\$10,413,627

Liberty Utilities (Energy/North Natural Gas) Corp.

Residential Gas Assistance Program

	Customer Charge	Block	Total
1 Distribution			
2 R-3 Base Rates	\$ 15.50	\$ 0.5678	
3 R-4 Base Rates at 55% of R-3	\$ 8.53	\$ 0.3123	
4 Program Distribution Subsidy	\$ 6.9750	\$ 0.2555	601
5 Average Winter Therms			
6			
7 Estimated Winter 2020/2021 Distribution Subsidy	\$ 41.85	\$ 153.52	\$ 195.37
8			
9 Number of Estimated 2020/2021 Participants	4,841	39	4,880 (a)
10			
11 COG			
12 R-3 COG Rates	\$ 0.5571	\$ 0.8114	
13 R-4 COG Rates at 55% of R-3	\$ 0.3064	\$ 0.4463	
14 Program COG Subsidy	\$ 0.2507	\$ 0.3651	
15			
16 Estimated Winter 2020/2021 COG Subsidy (Ln 5 * Ln 14)	\$ 150.63	\$ 219.39	\$ 370.01
17			
18 Winter Distribution Subsidy times Number of Participants (Ln 7 * Ln 9)		\$ 953,414	
19 Winter COG Subsidy times Number of Participants (Ln 7 * Ln 16)		\$ 737,749	
20 Prior Year Ending Balance - Gas Assistance Page 2		\$ 476,754	
21 Estimated Annual Administrative Costs		-	
22 Total Program Costs		\$ 2,167,917	
23			
24 Estimated weather normalized firm therms billed for the			
25 twelve months ended 10/31/21 sales and transportation			179,574,679
26			
27 Total Gas Assistance Program Charge			\$ 0.0121

(a) Estimated number of participants for 2020/21 is based on the actual number participants as of June 2020.

Liberty Utilities (Energy/North Natural Gas) Corp.

NOVEMBER 2019 THROUGH OCTOBER 2020
RESIDENTIAL GAS ASSISTANCE PROGRAM RECONCILIATION
ACCOUNT 175.6

1 2	(Actual)												(Estimate)												Total		
	FOR THE MONTH OF:	Nov-19 30	Dec-19 31	Jan-20 31	Feb-20 29	Mar-20 31	Apr-20 30	May-20 31	Jun-20 30	Jul-20 31	Aug-20 31	Sep-20 30	Oct-20 31	Nov-19 30	Dec-19 31	Jan-20 31	Feb-20 29	Mar-20 31	Apr-20 30	May-20 31	Jun-20 30	Jul-20 31	Aug-20 31	Sep-20 30		Oct-20 31	Total
3	Beginning Balance	\$ 442,273	\$ 418,530	\$ 370,228	\$ 339,742	\$ 350,731	\$ 381,114	\$ 408,869	\$ 410,790	\$ 432,187	\$ 451,707	\$ 469,038	\$ 480,607	\$ 442,273	\$ 418,530	\$ 370,228	\$ 339,742	\$ 350,731	\$ 381,114	\$ 408,869	\$ 410,790	\$ 432,187	\$ 451,707	\$ 469,038	\$ 480,607	\$ 442,273	
4	Add: Actual Costs	120,273.8	222,087.6	296,346.4	308,540.0	304,033.7	237,868.1	161,038.0	109,660.2	86,436.0	82,446.0	88,892.9	107,726.7	2,125,349	222,087.6	296,346.4	308,540.0	304,033.7	237,868.1	161,038.0	109,660.2	86,436.0	82,446.0	88,892.9	107,726.7	2,125,349	
6	Less: Collected Revenue	(145,694.4)	(272,070.7)	(328,258.7)	(297,544.0)	(276,426.3)	(211,163.4)	(160,243.5)	(89,385.0)	(68,134.2)	(66,383.6)	(78,590.4)	(112,899.7)	(2,106,794)	(272,070.7)	(328,258.7)	(297,544.0)	(276,426.3)	(211,163.4)	(160,243.5)	(89,385.0)	(68,134.2)	(66,383.6)	(78,590.4)	(112,899.7)	(2,106,794)	
8	Add: Administrative and Start Up Costs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
10																											
11	Ending Balance Pre-Interest	\$ 416,853	\$ 368,547	\$ 338,316	\$ 350,738	\$ 378,338	\$ 407,818	\$ 409,664	\$ 431,065	\$ 450,488	\$ 467,769	\$ 479,341	\$ 475,434	\$ 460,829	\$ 416,853	\$ 368,547	\$ 338,316	\$ 350,738	\$ 407,818	\$ 409,664	\$ 431,065	\$ 450,488	\$ 467,769	\$ 479,341	\$ 475,434	\$ 460,829	
12																											
13	Month's Average Balance	\$ 429,563	\$ 393,538	\$ 354,272	\$ 345,240	\$ 364,534	\$ 394,466	\$ 409,266	\$ 420,928	\$ 441,338	\$ 459,738	\$ 474,189	\$ 478,021		\$ 429,563	\$ 393,538	\$ 354,272	\$ 345,240	\$ 394,466	\$ 409,266	\$ 420,928	\$ 441,338	\$ 459,738	\$ 474,189	\$ 478,021		
14																											
15	Interest Rate	4.75%	4.75%	4.75%	4.75%	4.75%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%		4.75%	4.75%	4.75%	4.75%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%		
16																											
17	Interest Applied	\$ 1,677	\$ 1,682	\$ 1,425	\$ 1,425	\$ 2,775	\$ 1,051	\$ 1,127	\$ 1,121	\$ 1,218	\$ 1,269	\$ 1,267	\$ 1,319	\$ 15,925	\$ 1,677	\$ 1,682	\$ 1,425	\$ 1,425	\$ 1,051	\$ 1,127	\$ 1,121	\$ 1,218	\$ 1,269	\$ 1,267	\$ 1,319	\$ 15,925	
18																											
19	Ending Balance	\$ 418,530	\$ 370,228	\$ 339,742	\$ 350,731	\$ 381,114	\$ 408,869	\$ 410,790	\$ 432,187	\$ 451,707	\$ 469,038	\$ 480,607	\$ 476,754	\$ 476,754	\$ 418,530	\$ 370,228	\$ 339,742	\$ 350,731	\$ 381,114	\$ 408,869	\$ 410,790	\$ 432,187	\$ 451,707	\$ 469,038	\$ 480,607	\$ 476,754	

Liberty Utilities (EnergyNorth Natural Gas) Corp db/a Liberty Utilities
Quarterly Report
Residential Low Income Assistance Program (RLIAP)
2019-20 Discounted 60%

	Summary														
	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Actual/Projected Total To Date (1)	Original Projection (2)	Variance
Customer Count															
Actual / Projected No. of Customers													Average		
LIHEAP	3,968	3,881	3,951	4,060	4,115	4,112	4,107	4,098	3,881	3,881	3,881	3,881	3,985	5,013	1028
Non-LIHEAP	812	798	810	825	770	752	740	743	743	743	743	743	769	919	151
Total	4,780	4,679	4,761	4,885	4,885	4,864	4,847	4,841	4,624	4,624	4,624	4,624	4,753	5,932	1,179
(a)															
RLIAP Recoveries															
Actual / Projected															
Therm Sales	11,403,881	21,806,137	26,581,445	24,189,824	22,580,488	17,168,895	13,030,115	7,269,346	5,489,313	5,362,316	6,343,759	9,098,408	170,334,037	187,178,686	16,844,649
RLIAP Rate Per Therm	\$ 0.0123	\$ 0.0123	\$ 0.0123	\$ 0.0123	\$ 0.0123	\$ 0.0123	\$ 0.0123	\$ 0.0123	\$ 0.0123	\$ 0.0123	\$ 0.0123	\$ 0.0123	\$ 0.0123	\$ 0.0123	\$ 0.0123
Total	\$ 140,268	\$ 268,215	\$ 326,952	\$ 297,536	\$ 277,740	\$ 211,177	\$ 160,270	\$ 89,413	\$ 67,642	\$ 65,956	\$ 78,028	\$ 111,910	\$ 2,095,109	\$ 2,302,298	\$ 207,189
Adjustment	3,749	2,174	(119)	15	(4,089)	(14)	(27)	(28)					1,862	0	
Total Adjusted Recoveries (B)	\$ 144,017	\$ 270,390	\$ 326,833	\$ 297,551	\$ 273,651	\$ 211,164	\$ 160,244	\$ 89,385	\$ 67,642	\$ 65,956	\$ 78,028	\$ 111,910	\$ 2,096,771	\$ 2,302,298	\$ 205,527
Program Costs															
Actual & Projected Costs															
IT	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Admin.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Education	442,273	442,273	442,273	442,273	442,273	442,273	442,273	442,273	442,273	442,273	442,273	442,273	442,273	442,273	445,596
Prior Period Ending Balance	1,677	1,677	1,677	1,677	1,677	1,677	1,677	1,677	1,677	1,677	1,677	1,677	1,677	1,677	1,677
Other (incl. Reporting Costs)	99,842	184,211	245,928	256,432	256,110	201,981	137,407	93,779	78,523	76,973	77,364	77,096	1,785,646	1,573,233	(212,413)
Discounts LIHEAP	20,431	37,877	50,418	52,108	47,923	36,938	24,758	17,003	15,033	14,736	14,811	14,760	346,796	288,410	(58,386)
Discounts Non-LIHEAP	564,224	222,087	296,347	308,540	304,033	238,919	162,166	110,782	93,556	91,710	92,174	91,856	2,576,392	2,307,239	(269,153)
Total Costs (C)	\$ 71,29	\$ 131,75	\$ 148,12	\$ 148,72	\$ 140,74	\$ 124,47	\$ 75,33	\$ 455,83	\$ 36,44	\$ 34,93	\$ 35,18	\$ 40,62	\$ 1,443,43	\$ 1,317,75	\$ (125,68)
Avg Monthly Residential Customer Bill	\$ 47.03	\$ 91.08	\$ 101.17	\$ 101.60	\$ 95.90	\$ 84.27	\$ 47.28	\$ 26.15	\$ 20.67	\$ 19.47	\$ 19.64	\$ 25.14	\$ 679.40	\$ 892.26	\$ 212.86
Avg Monthly Residential Low Income Customer Bill	\$ 24.26	\$ 40.68	\$ 46.95	\$ 47.12	\$ 44.84	\$ 40.19	\$ 28.05	\$ 429.68	\$ 15.77	\$ 15.46	\$ 15.54	\$ 15.48	\$ 764.03	\$ 425.49	\$ (338.54)
Avg Monthly RLIAP Customer Discount as a % to Avg Monthly Residential Customer Bill	34%	31%	32%	32%	32%	32%	37%	94%	43%	44%	44%	38%	53%	32%	
Gross Monthly Revenues	\$ 17,595,696	\$ 21,121,298	\$ 28,990,263	\$ 20,353,998	\$ 18,671,873	\$ 10,364,428	\$ 6,521,640	\$ 4,901,552	\$ 4,997,762	\$ 6,467,910	\$ 5,113,368	\$ 8,930,712	\$ 154,030,500	\$ 161,677,049	\$ 7,646,549
Total Costs as a percent of Gross Monthly Revenues	3.21%	1.05%	1.02%	1.52%	1.63%	2.31%	2.49%	2.26%	1.87%	1.42%	1.80%	1.03%	1.67%	1.43%	

(1) This column represents actual data for the months in which such data is available plus projected data for the remaining months in the 12-month program year.

(2) See RLIAP Projection on Bases Page 130 of the 2019-20 Cost of Gas Filing, DG 19-145

(3) This is the Company's RLIAP deferral account 8840-50000-10-1 169-1756

(a) The actual number of customers provided for this report are the number of registered customers that were billed during the month.

(b) Actual administrative costs consist of bill inserts and advertising.

(c) The Prior Year 2018-19 under/(over) ending balance.

(d) The total discount is calculated from the actual Residential Low Income R-4 bills for the month. The discount by LIHEAP and Non-LIHEAP are prorated by the number of customers listed above.

Environmental Surcharge - Manufactured Gas Plants

Manufactured Gas Plants

Required Annual Environmental Increase	\$2,864,179
First one-third of prior period under recoveries (through June 2019)	\$341,389
July 2019 - June 2020 recovery difference between actual and estimate	<u>\$338,564</u>
Environmental Subtotal	\$3,544,132
Overall Annual Net Increase to Rates	\$3,544,132
Estimated weather normalized firm therms billed for the twelve months ended 10/31/20 - sales and transportation	179,574,679 therms
Surcharge per therm	<u>\$0.0197</u> per therm

LIBERTY UTILITIES (ENERGYNORTH NATURAL GAS) CORP.

d/b/a LIBERTY UTILITIES

NASHUA FORMER MGP

**LINE
NO.**

1. SITE LOCATION: 38 Bridge Street, Nashua, New Hampshire.
2. DATE SITE WAS FIRST INVESTIGATED: At the end of 1998, the New Hampshire Department of Environmental Services (NHDES) sent a "Notification of Site Listing and Request for Site Investigation" for the former Nashua Manufactured Gas Plant (MGP) to the former plant owners/operators: EnergyNorth Natural Gas, Inc. d/b/a National Grid (ENGI)¹, and Public Service Company of New Hampshire (PSNH) and its parent company, Northeast Utilities Services Company (NU). NHDES designated the site DES #199810022.
3. NATURE AND SCOPE OF SITE CONTAMINATION: Residual materials from the former MGP have been identified at the site and in the adjacent Nashua River. These residuals, which include tars and oils, have been found mainly in subsurface soil at discrete locations, in groundwater, and in localized river sediments.
4. SUMMARY OF MATERIAL DEVELOPMENTS AND INTERACTIONS WITH ENVIRONMENTAL AUTHORITIES:
 - Prior to the time NHDES issued its notice letter to ENGI, the US Environmental Protection Agency (EPA) was remediating contamination (asbestos) at the former Johns Manville plant located adjacent to, and downstream from the 38 Bridge Street property. In the course of that work, EPA detected what it determined to be MGP related residuals in Nashua River sediments containing asbestos. EPA sought reimbursement from ENGI and PSNH of only those incremental additional costs it incurred to dispose of sediments containing MGP related wastes in addition to asbestos. ENGI and PSNH entered into a settlement agreement with the EPA at the end of September 2000. Under the terms of the agreement, each company received a release from liability associated with the so-called Nashua River Superfund Site and contribution protection against future claims associated with that site. The settlement agreement made it clear that EPA does not contend that ENGI or PSNH contributed any asbestos to the Nashua River.
 - In response to the 1998 notice from NHDES, QST Environmental, Inc. (QST, subsequently Environmental Science and Engineering, Inc. (ESE), and later Harding ESE, Inc. (Harding ESE)), submitted a Scoping Phase Field Investigation Scope of Work to NHDES on behalf of ENGI in February 1999.

¹ In July 2012, EnergyNorth was acquired by Liberty Utilities and its legal name changed to Liberty Utilities (EnergyNorth Natural Gas) Corp. d/b/a Liberty Utilities. For consistency purposes, the acronym ENGI will be used throughout this document.

LIBERTY UTILITIES (ENERGYNORTH NATURAL GAS) CORP.

d/b/a LIBERTY UTILITIES

NASHUA FORMER MGP

**LINE
NO.**

- In response to comments from NHDES, QST and ENGI refined the Scope of Work for the Scoping Phase Field Investigation and resubmitted to NHDES in April 1999.
- NHDES approved the refined Scoping Phase Field Investigation Scope of Work in May 1999.
- During the summer of 1999, ENGI and QST conducted the Scoping Phase Field Investigation, collecting site background information and soil, groundwater, surface water and sediment samples from the former Nashua MGP and the adjacent Nashua River.
- ENGI and ESE submitted the Scoping Phase Field Investigation Report to NHDES in December 1999.
- NHDES provided comments to ENGI and ESE in February 2000 on the Scoping Phase Field Investigation Report and requested a Phase II Investigation Scope of Work.
- On behalf of ENGI, ESE submitted a Draft Phase II Investigation Work Plan to NHDES in April 2000.
- ENGI and ESE met with the NHDES site manager in April 2000 to discuss the Draft Phase II Investigation Work Plan.
- NHDES provided written comments on the Draft Phase II Investigation Work Plan in June 2000.
- ENGI and ESE met with NHDES in August 2000 to discuss NHDES' comments on the Phase II Work Plan.
- ENGI submitted a letter to NHDES in August 2000 discussing revisions to the Draft Phase II Investigation Work Plan in response to comments from NHDES and PSNH/NU, along with a proposed schedule for implementation of the work.
- NHDES approved the Revised Phase II Work Plan for the site at the end of August 2000.
- NHDES provided comments to ENGI and Harding ESE on the proposed schedule for Phase II Work Plan implementation in September 2000.

LIBERTY UTILITIES (ENERGYNORTH NATURAL GAS) CORP.

d/b/a LIBERTY UTILITIES

NASHUA FORMER MGP

**LINE
NO.**

- ENGI submitted an addendum to the Phase II Work Plan, including a proposed approach for risk evaluation, to NHDES in November 2000.
- Subsequent to meetings and discussions throughout 2000, ENGI and PSNH reached agreement in late 2000 regarding sharing of costs for the remediation work and transfer of management of the remediation work to ENGI.
- Harding ESE implemented the Phase II Work Plan during the fall and winter of 2000/2001. Work entailed a comprehensive field program that included the advancement of river borings and collection of sediment samples as well as the installation of borings and monitoring wells on and off the property.
- NHDES provided comments on the Phase II Work Plan addendum in February 2001.
- Harding ESE responded to NHDES comments on the Phase II Work Plan addendum in March 2001.
- In May 2001, ENGI submitted to NHDES a Draft Site Conceptual Model to assist with finalization of the Phase II Work Plan Addendum and met with NHDES to discuss.
- ENGI and Harding ESE revised the Draft Site Conceptual Model and outlined supplemental field activities to be included in the Phase II Work Plan Addendum and submitted to NHDES in June 2001.
- In July 2001, ENGI and Harding ESE met with NHDES to review the Site Conceptual Model and proposed Phase II supplemental investigation activities.
- ENGI and NHDES met in August 2001 to discuss the overall site objectives.
- In September 2001, Harding ESE, on behalf of ENGI, submitted a Phase IIB Supplemental Site Investigation (SI) Scope of Work to NHDES.
- NHDES provided verbal approval for the Phase IIB Supplemental SI, and Harding ESE initiated the field program on behalf of ENGI in October 2001.
- NHDES provided written approval of the Phase IIB Supplemental SI in October 2001. A modification to the proposed scope of work relating to investigations adjacent to

LIBERTY UTILITIES (ENERGYNORTH NATURAL GAS) CORP.

d/b/a LIBERTY UTILITIES

NASHUA FORMER MGP

LINE
NO.

- the gas lines was proposed and verbal approval was obtained from NHDES on November 19, 2001.
- Property owners north of the Nashua River did not provide access to install monitoring wells proposed in the Phase IIB SOW. Harding ESE completed all on-site work outlined in the Phase IIB SOW in February 2002.
 - ENGI received access from PSNH to install Phase IIB monitoring wells west of the site in March 2002.
 - Harding ESE installed additional groundwater monitoring wells west of the site in March and sampled all newly installed monitoring wells in April 2002. All work outlined in the Phase IIB SOW was completed except for the proposed monitoring wells north of the Nashua River where access was denied.
 - The Phase II Report was submitted to NHDES in February 2003. The report was approved by NHDES in August 2003. At the time of approval, NHDES required ENGI to begin work on the Remedial Action Plan for the site, due in 2004.
 - ENGI met with NHDES on November 3, 2003, to review the proposed remedial schedule, which called for the Remedial Action Plan to be submitted in July 2004, and remediation to occur in 2005. NHDES approved the schedule by letter dated December 1, 2003. In that letter they concurred with ENGI's request to divide the site into terrestrial and aquatic portions, to facilitate remediation of sediments concurrent with re-armoring of ENGI's gas mains crossing the river.
 - By way of a May 5, 2004 letter, ENGI requested that NHDES waive the Remedial Action Plan (RAP) requirement for the aquatic portion of the site and allow ENGI to proceed with capping sediments in conjunction with gas main rearmoring, which was scheduled for completion in 2004. NHDES approved the request by letter dated May 14, 2004.
 - ENGI held pre-application meetings with state and federal agencies (NHDES Wetlands Bureau, United States Army Corps of Engineers, United States Department of Fish and Wildlife, United States Environmental Protection Agency and National Oceanic and Atmospheric Administration) in June 2004. These meetings were held in advance of permit application submission for the capping/rearmoring project, to review the project and expedite the approval process. The application was submitted to these agencies as well as the City of Nashua on July 1, 2004. On July 6, 2004, NHDES deemed the permit application administratively complete. The hearing was closed on July 26, 2004 and the permit was issued in September 2004.

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

NASHUA FORMER MGP

LINE
NO.

The capping and re-armoring was completed in October 2004 and the Remedial Completion Report, submitted to NHDES in January 2005, was subsequently approved.

- In October 2005, ENGI submitted the Terrestrial Remedial Action Plan to NHDES, and the document was deemed complete by NHDES in March 2006. NHDES requested supplemental information to be submitted before ENGI proceeded with remediation, and in 2007 ENGI gathered the requested data.
- In November 2007, ENGI submitted a Workplan for DNAPL Recovery Pilot Test to NHDES and the document was approved by NHDES on November 14, 2007.
- ENGI applied for three permits required for the implementation of the NHDES-approved DNAPL pilot testing activities: Nashua Conservation Commission Permit, Nashua Zoning Board of Appeals Permit and NHDES Dredge and Fill Permit. ENGI attended numerous hearings related to obtaining the permits and obtained the three permits on April 21, 2008, April 23, 2008, and May 31, 2008, respectively.
- In June 2008, ENGI installed six extraction wells for DNAPL recovery pilot testing at the site. ENGI completed the construction of the coal tar recovery system trailer (i.e., the equipment that will be used to pump, collect and temporarily store the coal tar) in December 2008. Trenching for the subsurface piping and final system installation was delayed in late 2008 due to weather. ENGI performed manual DNAPL recovery throughout 2008 and the first three quarters of 2009.
- In Spring 2009, ENGI began trenching and final system installation activities for the DNAPL recovery pilot testing. The trenching, pump installations and system electrical work were completed in July 2009. Electrical service was installed in late August 2009. The system was started up in November 2009 and has been operational since that time.
- In September 2010, ENGI submitted an Installation Summary and DNAPL Recovery Pilot test summary report to NHDES. This report recommended that DNAPL extraction activities continue. In October 2010, a work plan for an off-site groundwater investigation program to support the delineation of a Groundwater Management Zone was submitted to NHDES. This work plan was approved by NHDES in a letter dated November 5, 2010. Access negotiations and environmental permitting for the NHDES-approved investigation were completed in June 2011.

LIBERTY UTILITIES (ENERGYNORTH NATURAL GAS) CORP.

d/b/a LIBERTY UTILITIES

NASHUA FORMER MGP

**LINE
NO.**

- The NHDES-approved subsurface soil and groundwater investigation program was initiated on September 26, 2011. The goal of this program was to delineate a Groundwater Management Zone for the site, and allow for the filing of a Groundwater Management Permit (GMP). Due to known asbestos in the off-site area to be investigated, ENGI submitted an “In-active Asbestos Disposal Site (ADS) Work Plan”; NHDES approved the asbestos work plan in October 2011. Soil boring and well installation work was performed between October and December 2011. An In-active ADS Site Completion Report was submitted to and accepted by NHDES on May 4, 2012. Groundwater sampling events were conducted in February and May 2012. A meeting to discuss the preliminary results of the Groundwater Management Zone (GMZ) investigation program with NHDES took place on August 16, 2012. It was agreed that two more rounds of groundwater sampling should occur before a delineation of the GMZ is considered.
- On November 27, 2012 and December 6, 2012, 8.25 feet and 10.83 feet of DNAPL appeared in MW-106, situated in the foot print of historical Holder #2. A weekly monitoring and removal plan was initiated at this time and is ongoing as of July 2013. To date, 109 gallons of DNAPL has been removed manually, in addition to the system removal discussed above.
- In January 2013, a Supplemental Investigation Report (SIR) and DNAPL Recovery System Pilot Test Progress report was submitted to NHDES reporting on additional investigation activities, including the installation of sixteen additional wells in 2011, and the May and September 2012 (second and third of three) rounds of sampling to define groundwater quality and hydrogeologic conditions at the site, so that the GMZ can be delineated. Additionally, the report includes information regarding DNAPL recovery system O&M activities and DNAPL recovery rates demonstrating that the system still effectively recovers DNAPL. A meeting with NHDES took place on March 22, 2013, to discuss these results and next steps.
- NHDES responded to the January 2013 submittal via letter dated May 21, 2013, accepting the SI Report and authorizing ENGI to proceed with the delineation of the GMZ in order to submit a Groundwater Management Permit (GMP) application, and the preparation of a revised Remedial Action Plan (RAP) for the terrestrial portion of the site. NHDES allows ENGI to utilize manual removal of DNAPL as these methods are more effective than the automated recovery system.
- ENGI responded to the NHDES letter on June 19 with a schedule targeting December 31, 2013, for submittal of the GMP application and revised RAP.

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NASHUA FORMER MGP

**LINE
NO.**

- In December 2013, ENGI submitted a request to revise the RAP. The purpose of the request was to summarize activities conducted since submittal of the 2013 Supplemental Investigation Report and to propose a revision to the approved RAP for the area on site known as “Holder # 2.”
- The RAP submitted in 2005 selected asphalt capping in the area of Holder #2. The entire area of the Holder was not designated to be capped with asphalt. At the time of the preparation of the RAP, separate phase NAPL was not considered to be present in recoverable quantities in Holder #2. In order to address what appears to be a limited area and quantity of NAPL in a monitoring well in Holder #2, continued manual NAPL recovery from two additional wells in the Holder #2 area was proposed as part of the GMP monitoring program.
- In addition to the NAPL recovery activity, the area of asphalt capping was proposed to be expanded to include all of former Holder #2. This expansion of paving will also address the asbestos contaminated material (ACM) present in this area of the site. The asphalt cap detail presented in the proposed RAP revision will be modified (as necessary) to address the relevant solid waste regulations for ACM in soil.
- On June 4, 2014, the NHDES approved of the requested RAP revision and required that a RAP Summary Report, with the necessary engineering details for the selected remedies, be provided. ENGI plans to submit this RAP Summary Report by December 31, 2014.
- The GMP Application was submitted in March 2014. The GMP proposed a list of monitoring wells and analytical methods in order to monitor the Groundwater Management Zone.
- On June 5, 2014, the NHDES approved the GMP application. This Permit was issued for a period of five years requiring the monitoring of groundwater quality, assessing and recovering any free product found, and visually inspecting the Nashua River sediment cap area. During the first year of the Permit, monitoring events will be conducted in October 2014 and April 2015, and each successive April and October. Annual summary reports are submitted to the NHDES in January of each year.
- The first groundwater monitoring annual summary report was submitted to NHDES in February 2015, and included the groundwater data from the first GMP round of sampling on October 27, 2014.

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- ENGI submitted the draft Activity and Use Restriction (AUR) and RAP Engineering Design details for the cap on September 14, 2015. ENGI received comments from NHDES on December 15, 2016. NHDES altered the design to include an impermeable capping layer, and incorporation of standards in the Waste Management Bureau's Asbestos Disposal Site rules. As ENGI is planning to pave the Nashua property in 2018, the cap will be installed in conjunction with this capital project.
- In May 2017, the NHDES requested by letter that all active hazardous waste sites managed by the Hazardous Waste Remediation Bureau include sampling for Per- and Polyfluoroalkyl Substances (PFAS) in one of their groundwater sampling rounds, as part of a statewide study of these compounds. ENGI fulfilled this request during regularly scheduled sampling in 2018.
- The capping remedy was planned for 2018 in conjunction with an overall paving of the property, however a portion of the City's sewer pipe that transects the property collapsed in early February 2018 prompting the City to plan a lining upgrade to it during summer 2018. This event has caused the remedy construction to be pushed out to 2019.
- **In a letter dated May 2, 2019, NHDES approved ENGI's 5-year Groundwater Management Permit (GMP) renewal application decreasing the frequency of sampling for all but two wells in the perimeter groundwater management zone. Additionally, NHDES required that a second confirmatory round of PFAS samples be taken in the 2019 GMP monitoring round.**
- **In the same May 2, 2019 letter, NHDES approved GZA Geoenvironmental's (GZA) proposed cap design transmitted to them on January 30, 2019. The cap design was altered to require an impermeable barrier only under "non-paved" surfaces.**
- **The cap installation and subsequent paving of the entire property has been pushed out to 2021, due to delays in permitting and the COVID-19 pandemic.**

5. NEW HAMPSHIRE SITE REMEDIATION PROGRAM PHASE: All Supplemental Phase II Site Investigation Work that could be performed (based on property access) has been

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completed. Phase II Report was submitted to NHDES in February 2003, and approved by NHDES on August 28, 2003. Remediation of the Nashua River sediments was completed in the fall of 2004. A Remedial Action Plan (RAP) for the upland and groundwater was submitted in October 2005, and approved by NHDES in March 2006. DNAPL recovery is on-going. A Groundwater Management Permit was granted on June 5, 2014. A RAP Summary, involving the asphalt capping of the area over Holder #2 and continued groundwater monitoring, was submitted on April 2, 2015. A Monitoring Summary and Progress Report was submitted by ENGI on February 7, 2015. NHDES accepted the RAP Summary on April 10, 2015, with the provisions that ENGI submit the draft Activity and Use Restriction (AUR) and final engineering design plan for the cap by September 15, 2015. ENGI submitted the draft Activity and Use Restriction (AUR) and RAP Engineering Design details for the cap on September 14, 2015. NHDES responded to ENGI with their comments on December 15, 2016. **Design for the engineered cap remedy is complete and approved by NHDES. ENGI is in the process of obtain State and City permitting for this construction, now planned for the 2021 construction season.**

6. HISTORY AND CURRENT STATUS OF USE AND OWNERSHIP: The Nashua Gas Light Company built the original coal gas facility in 1852 or 1853. In 1889, the Nashua Gas Light Company merged with the Nashua Electric Company to form the Nashua Light, Heat and Power Company (NHLPC). In 1914, the NHLPC merged with the Manchester Traction Light & Power Company, and PSNH acquired the facility in 1926. The MGP facility was upgraded and expanded. In 1945, PSNH divested the gas operations to Gas Service, Inc. Gas production was eliminated in 1952 when natural gas was supplied to the city via pipeline. In 1981, Gas Service, Inc. merged with Manchester Gas Company to form ENGI. ENGI currently owns the majority of the former gas plant property.
7. LISTING AND STATUS OF INSURANCE AND 3RD PARTY LAWSUITS AND SETTLEMENTS: The EPA made a claim against ENGI and PSNH related to the so-called Nashua River Asbestos Site located adjacent to the former MGP. EPA was removing asbestos from the Nashua River, when some was found to be mixed with wastes allegedly from the MGP. Without admitting any facts or liability, by agreement effective December 21, 2000, ENGI resolved EPA's claim in exchange for a payment of \$387,371.46, plus interest accrued between settlement and final approval of an administrative consent order by EPA.

ENGI and PSNH have entered into a confidential Site Responsibility and Indemnity Agreement effective as of September 15, 2000, which governs the financial and decision-making responsibilities of the two companies through the remainder of site study and remediation. Under this agreement, ENGI will take the lead on site investigation and remediation.

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Numerous, confidential insurance settlements have been entered into. A jury trial commenced against the London Market Insurers and Century Indemnity on November 1, 2005. On November 14, 2005, the jury returned a verdict in favor of EnergyNorth finding that the defendants were obligated to indemnify EnergyNorth for response costs incurred at the site. The Court then awarded ENGI its reasonable costs and attorneys fees to be paid by the defendants. Subsequent to the verdict, the London Market and ENGI entered into a confidential settlement. Century appealed to the First Circuit Court of Appeals in the summer of 2006. However, on the day its brief was due at the First Circuit, Century withdrew its appeal. Because the site has not yet been remediated, the jury was not asked to make a damage determination. Future proceedings will take place after the remedy has been approved by the NHDES to determine the indemnification amounts to be paid by Century. The New Hampshire Supreme Court's ruling and guidance on the proper manner in which costs are to be allocated among insurers (discussed in more detail in the Manchester MGP summary) will be used in the calculation of that figure.

Note: This summary is an overview only and is not intended to be a comprehensive recitation of all relevant information relating to the site and the associated liability.

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1. SITE LOCATION: 130 Elm Street, Manchester, New Hampshire.
2. DATE SITE WAS FIRST INVESTIGATED: The New Hampshire Department of Environmental Services (NHDES) compiled a list of all former Manufactured Gas Plants (MGPs) in New Hampshire that were not already subject to a site investigation or remediation. In March of 2000, NHDES sent out notice letters to all parties it deemed responsible for the sites. EnergyNorth Natural Gas, Inc. (ENGI)¹ received a “Notification of Site Listing and Request for Site Investigation” for the former Manchester MGP from NHDES, which designated the site DES #200003011.
3. NATURE AND SCOPE OF SITE CONTAMINATION: Residual materials from the former MGP have been identified at the site. These residuals, which include tars and oils, have been found mainly in subsurface soil at discrete locations and in groundwater at the former MGP, as well as in the downgradient Singer Park and river sediment.
4. SUMMARY OF MATERIAL DEVELOPMENTS AND INTERACTIONS WITH ENVIRONMENTAL AUTHORITIES:
 - On behalf of ENGI, Harding ESE, Inc. (Harding ESE), submitted a Scoping Phase Field Investigation Scope of Work to NHDES in March 2000.
 - NHDES approved the Scoping Phase Field Investigation Scope of Work in June 2000.
 - During the summer and fall of 2000, ENGI and Harding ESE conducted the Scoping Phase Field Investigation, collecting site background information and soil, groundwater, surface water and sediment samples from the former Manchester MGP and the nearby Merrimack River.
 - On August 31, 2000, an underground tank containing MGP residuals was discovered at the site. As required by NHDES regulations, the tank contents were removed and disposed of subject to a permit from NHDES. Harding ESE, on behalf of ENGI, submitted a summary report to NHDES in January 2001 documenting the response action.
 - ENGI and Harding ESE submitted the Scoping Phase Field Investigation Report to NHDES in February 2001.

¹ In July 2012, EnergyNorth was acquired by Liberty Utilities and its legal name changed to Liberty Utilities (EnergyNorth Natural Gas) Corp. d/b/a Liberty Utilities. For consistency purposes, the acronym ENGI will be used throughout this document.

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- NHDES provided comments to ENGI and Harding ESE in April 2001 on the Scoping Phase Field Investigation Report and requested a Phase II Investigation Scope of Work.
- ENGI responded to NHDES' comments on the Scoping Phase Investigation Report and indicated that ENGI planned to solicit bids for the Phase II Scope of Work.
- In July 2001, on behalf of ENGI, Harding ESE submitted a Scope of Work to NHDES to fence the ravine near the former Manchester MGP to prevent access to impacted sediments. In October 2001, NHDES accepted ENGI's fence installation plan, but requested clarification on the fence location and signage. In correspondence dated April 3, 2002, ENGI provided proposed language to NHDES for the signs to be attached to the ravine fence. NHDES approved the ravine sign language in April 2002.
- On May 1, 2002, ENGI issued a Request for Proposals to eight environmental consultants for the Phase II Site Investigation and Risk Characterization. ENGI received six proposals for the Phase II work in June 2002.
- In June 2002, the City of Manchester approved the ravine fence location and granted access to City property to install. The work was completed in August 2002.
- URS Consultants were awarded the contract to undertake the next phase of work. A Phase II Site Investigation Scope of Work was submitted in September 2002.
- Phase II field investigations began in the fall of 2002.
- In June 2003, the City of Manchester approved a proposal to construct a minor league ballpark, retail shops, parking garage, hotel and high-rise condominium complex on the Singer Park site, in the same general areas that MGP impacts were detected in ongoing Phase II investigations. Following supplemental ravine investigations during the spring and summer of 2003, the Drainage Ravine Engineering Evaluation was submitted to NHDES in January 2004, and presented four potential remedial alternatives for the ravine, which is located on a portion of Singer Park.
- ENGI had been a regular participant in monthly Singer Park redevelopment meetings with NHDES, the City of Manchester and the various developers from April 2003 until the regular meetings ended on November 15, 2004. ENGI had attended these coordination meetings to ensure that the environmental and construction aspects of

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the redevelopment were being addressed concurrently and that ENGI avoided incurring costs associated with another entity's contamination.

- ENGI entered into confidential agreements with Manchester Parkside Place (the owner of the ravine property) for access and cleanup of MGP byproducts in the ravine in January 2005.
- In January 2005, ENGI submitted a Remedial Design Report to NHDES selecting excavation and off-site disposal of source material and impacted soils as the remedial alternative for the ravine. NHDES approved of this alternative via a letter dated February 7, 2005. Eleven contractors were invited to bid on the ravine remediation in January 2005. The contract was awarded to the low bidder (ENTACT) in February 2005. Remediation of the ravine began in March and was completed in July 2005. A remedial completion report was submitted to NHDES on September 2, 2005.
- ENGI submitted a Phase II Site Investigation Report to NHDES in March 2004. The report concluded that MGP impacts (including impacted soil and groundwater and separate phase coal tar) were present in the subsurface beneath the 130 Elm Street property, portions of Singer Park at depth and the Merrimack River sediment. Further investigations were recommended by ENGI to further assess the nature and extent of this contamination and a work plan proposing those investigations was submitted to NHDES in May 2004 and approved in July 2004. These supplemental investigations were completed and documented in the Supplemental Phase II Investigation Report and the Stage I Ecological Screening Report for the Merrimack River, submitted to NHDES in February and March 2005, respectively. The reports concluded that Remedial Action Plans for the upland and Merrimack River portions of the site were required. On September 15, 2005, NHDES issued a letter accepting the reports and requested ENGI prepare a Remedial Action Plan (RAP) to address impacted sediments in the Merrimack River, as well as MGP-related impacts on the upland portion of the site. Preparation of the RAPs began in August 2006.
- Additional Merrimack River investigations were completed in 2007 and the Remedial Design Report for dredging approximately 9,000 cubic yards of coal tar-impacted sediments from the river was submitted to NHDES on May 11, 2007. ENGI applied for, and was granted, a Dredge and Fill Permit for the remedial dredging from NHDES and the United States Army Corps of Engineers on May 18, 2007. Dredging of the river commenced in June 2007 and was substantially completed by the end of the year. Final site restoration activities associated with the sediment remediation were complete in May 2008. A Remedial Action Implementation Report

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documenting the sediment remediation activities was submitted to NHDES in May 2008.

- Certain pre-design investigations were completed on the upland portion of the site in 2008/2009. ENGI also completed interim Phase I Corrective Actions at the site, including pilot scale light non-aqueous phase liquid (LNAPL) recovery, pilot scale dense non-aqueous phase (DNAPL) recovery, and design for repair/replacement of a deteriorated portion of the site drainage system located within a known LNAPL area of the site. Limited surface soil removal activities were conducted during the summer/fall of 2008 in an area with detected Upper Concentration Limit exceedances in shallow soils.
- ENGI was issued a Groundwater Management Zone (GMZ) permit No. GWP-200003011-M-001 for the former MGP site on June 15, 2009. The permit establishes a groundwater management zone in the vicinity of the former MGP site with associated notification/groundwater monitoring requirements. Groundwater monitoring events to support this GMZ permit have been ongoing, every April and October.
- ENGI submitted an RAP for the upland portion of the site to NHDES on June 30, 2010. The remedial objectives for the site include control of mobile DNAPL, reduction in contaminant mass (where practicable), and management of residual contamination through the use of administrative controls. The recommended remedial alternative includes removal of the contents of certain subsurface structures where removal is anticipated to provide a reduction in the potential for the further release of DNAPL to the subsurface; NAPL recovery from the subsurface; construction of a barrier wall proximate to the Merrimack River to mitigate potential DNAPL migration; and use of administrative controls to address potential human exposure to residual soil and groundwater contamination. Additional investigation activities were recommended to support the preparation of Design Plans and Construction Specifications following NHDES approval of the RAP and to confirm the appropriateness of certain remedial alternatives recommended in the RAP.
- In Fall 2010, ENGI performed storm drain rehabilitation activities on a deteriorated portion of the site drainage system that is located within a known LNAPL area. This work was performed to mitigate the migration of LNAPL to the Merrimack River via the storm drain system. These activities were mainly completed in late 2010.
- In April 2011, NHDES approved of the upland RAP and requested that ENGI proceed with the additional investigation activities recommended in the June 2010 RAP. In addition, ENGI was contacted by both the developer and condominium association

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- associated with the property directly downgradient of the site regarding potential impacts to the property, as well as the proposed remedy; ENGI met with both parties in early and mid-2011.
- After meeting with the developer of the property directly downgradient of the site at the potential location of the barrier wall regarding potential impacts to the property in September/October 2011, access was obtained to conduct certain approved pre-design off-site investigation activities as recommended in the June 2010 RAP. The off-property investigations were substantially completed in December 2011. A meeting was held with NHDES in December 2011 to discuss the results. A Remedial Design Report for the off-site property is currently being finalized.
 - On-site pre-design investigation activities were conducted during the spring and summer of 2012 including: additional groundwater quality monitoring, former gas holder foundation test pit excavations, supplemental LNAPL delineation, cyanide source investigation test pit excavations, cyanide delineation and source investigation monitoring well installation, and storm drain inspection.
 - Further storm drain inspections occurred during July and August 2013. The remedial design and construction specifications report was drafted including a summary of the design investigation activities and findings. The remedial design includes the monitoring and practicable recovery of NAPL at strategic on-site and off-site locations, as well as excavation of subsurface structures with concurrent source removal if encountered. The Remedial Design Report drafted, also summarizes the results of cyanide source investigation and delineation work, with further source delineation work anticipated.
 - In addition to routine Groundwater Management Permit (GMP) sampling and reporting, an application for GMP renewal was also submitted to NHDES in July 2014, with the Annual Summary Report for the 2013/2014 groundwater Monitoring year. The Remedial Design Report was submitted to NHDES on December 19, 2014. On July 15, 2015, NHDES accepted the proposed remedial design with exceptions involving further remediation of historical Holder 3, and further investigation of the storm drain system beneath and downstream of the site. **ENGI responded to NHDES' comments and requests on May 12, 2017.**
 - ENGI removed material from a tar-separator and other subsurface structures, installed three new monitoring wells and an extraction well on-site, prior to property paving in Fall 2017. Further removals from subsurface structures were planned for 2018.

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- During 2017, NHDES required active hazardous waste sites managed by the NHDES Hazardous Waste Remediation Bureau to include Per- and Polyfluoroalkyl Substances (PFAS) in one of their sampling rounds.
 - In 2019, ENGI continued to address potential site impacts per the 2014 Remedial Design Report by removing approximately 9,000 gallons of contaminated liquids and sludge from a subsurface tar liquor decanter structure in the gas plant area. After removal, ENGI cleaned the structure and filled it with inert fill. **The details of these activities were reported to NHDES in the 2018/2019 Annual Summary Report dated July 24, 2019.**
 - In June 2019, three extraction wells were also installed at the western boundary of the site where an existing well in that area was detecting recoverable product. These wells will be used to remove free product on an ongoing basis. Three additional groundwater monitoring wells were installed in the Holder #3 area to monitor potential impacts detected during previous test pit excavation.
 - A pump-down of an existing well on the east side of the property, installed in 2017 to recover oil from a known historical oil tank impact in that area, took place in June 2019. The test succeeded to return recoverable product to the well and it will be used to remove free product on an ongoing basis.
5. NEW HAMPSHIRE SITE REMEDIATION PHASE: Phase I Site Investigation complete. Phase II Site Investigation complete and supplemental report submitted to NHDES in February 2005. Remedial Action Plan (RAP) for the ravine submitted and approved by NHDES in 2005; remediation of ravine completed in July 2005. Remediation of the river sediment was completed in 2007. A RAP for the upland portion of the site was submitted to NHDES for review on June 30, 2010. NHDES issued its approval of the RAP for the upland portion of the site in a letter dated April 11, 2011. The Remedial Design Report summarizing the activities for addressing on-site and off-site impacts was submitted on December 19, 2014. On July 15, 2015, NHDES accepted the proposed remedial design with exceptions. ENGI addressed these concerns and implemented the remedial activities on-site and off-site in 2017.

In 2019, ENGI continued to address potential site impacts per the Remedial Design Report by removing approximately 9,000 gallons of contaminated liquids and sludge from a subsurface structure in the gas plant area, installing three extraction wells at the western boundary of the site, and installing three groundwater monitoring wells in one of the gas holder footprints. Also in 2019, needed repairs

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to a major water supply line near the entrance to the property resulted in the removal of a substantial amount of MGP-impacted soil.

6. HISTORY AND CURRENT STATUS OF USE AND OWNERSHIP: The former Manchester MGP is believed to have started producing coal gas in 1852. Gas was produced at the site by the Manchester Gas Company and its predecessors until the MGP was shut down in 1952 when natural gas was supplied to the city via pipeline. ENGI is the successor by merger to the Manchester Gas Company. ENGI continues to own and operate the 130 Elm Street property as an operations center.
7. LISTING AND STATUS OF INSURANCE AND 3RD PARTY LAWSUITS AND SETTLEMENTS: In late 2000, ENGI filed suit against UGI Utilities, Inc. in the United States District Court for the District of New Hampshire, alleging that during much of the early part of the 20th century, a predecessor to that entity "operated" the Manchester Gas Plant, as defined by the Comprehensive Environmental Response, Compensation and Liability Act (commonly referred to as "CERCLA" or "Superfund"). This claim was similar to a claim litigated and ultimately settled by the parties in the late 1990s, related to the former gas plant in Concord, NH. The case went to trial in June 2003 and was settled after 8 days of trial.

Insurance recovery efforts are complete, and confidential settlements have been entered into with all insurance company defendants. An agreement with the last remaining insurance carrier was negotiated in August 2008, under which that carrier paid ENGI's legal fees incurred in the litigation. That settlement came about after a ruling from the New Hampshire Supreme Court, in response to a question certified by the United States District Court, on allocation of coverage, and the scope and meaning of NH RSA 491:22-a, as it relates to awards of attorneys' fees. *EnergyNorth Natural Gas, Inc. v. Certain Underwriters at Lloyds*, 156 N.H. 333 (2007). As to allocation, the Court ruled as proposed by the carrier that insurance coverage should be allocated on a *pro rata* basis when multiple policies are triggered by an ongoing event. ENGI had argued for an "all sums" allocation approach in which the insured could choose the policy years from which to obtain indemnity. With respect to legal fees, the Court held that "[i]f the insured has obtained rulings that require the excess insurer to indemnify it, the insured has prevailed within the meaning of RSA 491:22-b, and is immediately entitled to recover its reasonable attorneys' fees and costs. Recovery of these fees and costs does not depend on whether, after all is said and done; the excess insurer actually has to pay any indemnification. The insured becomes entitled to the fees and costs once it obtains rulings that demonstrate there is coverage under the excess insurance policy." Under that finding, the insurance carrier was obligated to reimburse legal fees even if the *pro rata* allocation analysis resulted in the carrier owing no indemnity.

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LINE
NO.

Note: This summary is an overview and is not intended to be a comprehensive recitation of all relevant information relating to the site and the associated liability.

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LACONIA FORMER MGP AND LIBERTY HILL DISPOSAL AREA

LINE
NO.

1. **SITE LOCATION:** The former MGP was located on Messer Street in Laconia. Sometime in the early 1950s, during decommissioning of the MGP, wastes from the MGP were disposed of at a location on Liberty Hill Road in Gilford. At the time of the disposal, the property was utilized as a gravel pit, and the disposal reportedly occurred with the permission of the gravel pit owner. The property currently comprises part of a residential neighborhood.
2. **DATE SITE WAS FIRST INVESTIGATED:** In 1994 and 1995, Public Service Company of New Hampshire (PSNH), one of the former owners and operators of the Laconia Manufactured Gas Plant (MGP), conducted limited site investigations at the plant. In 1996, the New Hampshire Department of Environmental Services (NHDES) sent a "Notification of Site Listing and Request for Site Investigation" for the former Laconia MGP to PSNH and its parent company, Northeast Utilities Services Company (NU), and to EnergyNorth Natural Gas, Inc. (ENGI)¹, another former owner. NHDES designated the site DES #199312038. ENGI and PSNH reached a settlement, reported previously to the New Hampshire Public Utilities Commission (NHPUC), in September 1999. As a result of that settlement, PSNH has had responsibility for the MGP site remediation and interactions with NHDES.

Per the aforementioned settlement, ENGI retained responsibility for any decommissioning-related liabilities, including off-site disposal. Therefore, in October 2004, ENGI notified NHDES of the possibility that wastes from the MGP were disposed of at a location on Liberty Hill Road sometime in the early 1950s during decommissioning of the plant. Drinking water samples were collected from two residential properties in the vicinity in December 2004, and from three additional properties in June and July 2005 by the NHDES; no MGP-related contaminants were detected. At the request of NHDES, ENGI began preliminary site investigations in July 2005 that culminated in the submission of a Site Investigation Report to NHDES in June 2006. As detailed in the report, MGP-related constituents have been detected in soil and shallow groundwater on four residential properties, and in the abutting brook. The report concluded that further investigations were necessary to determine the extent of the contamination. Additional investigation activities were completed between 2006 and 2009.

3. **NATURE AND SCOPE OF SITE CONTAMINATION:** Residual materials from the former MGP have been identified at the Laconia MGP site and in the adjacent Winnepesaukee River. Please contact PSNH and refer to PSNH filings with NHDES for complete information on the nature and extent of site contamination at the MGP. Residual materials

¹ In July 2012, EnergyNorth was acquired by Liberty Utilities and its legal name changed to Liberty Utilities (EnergyNorth Natural Gas) Corp. d/b/a Liberty Utilities. For consistency purposes, the acronym ENGI will be used throughout this document.

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LACONIA FORMER MGP AND LIBERTY HILL DISPOSAL AREA

LINE
NO.

from the former MGP were disposed of at the Liberty Hill disposal area, and MGP-related constituents have been detected in soil and ground water.

4. **SUMMARY OF MATERIAL DEVELOPMENTS AND INTERACTIONS WITH ENVIRONMENTAL AUTHORITIES:** Based on the settlement with PSNH that has previously been reported to the Commission, ENGI has had no further involvement with the MGP site since the summer of 1999, except with regard to the Liberty Hill disposal area. Please contact PSNH and refer to PSNH filings with NHDES for complete information on material developments and interactions with environmental authorities.

With respect to the Liberty Hill disposal area, in October 2004, ENGI notified NHDES of the possible existence of this disposal site; the site was assigned disposal site number 200411113 by NHDES. NHDES collected drinking water samples from two residential wells in the vicinity in December 2004 and from three additional residential wells in June and July 2005; no MGP-related contaminants were detected. In January 2005, NHDES requested that ENGI conduct a preliminary site investigation on the two residential properties. ENGI submitted a scope of work for the investigation to NHDES on March 2, 2005. The investigation began in July 2005 and was completed in June 2006 with the submission of the Site Investigation Report.

Additional site investigations were conducted in 2006 and summarized in the December 20, 2006, Interim Data Report #2 submitted to NHDES. Based upon the results of the investigations, remediation is required at the site. In response, a Remedial Action Plan (RAP) was submitted to NHDES on February 28, 2007. The RAP presented NHDES with several remedial alternatives to address soil and groundwater contamination at the site. The February 2007 RAP identified soil excavation (to a depth of 3 feet), construction of a containment wall and impermeable cap on the four residential properties purchased by ENGI as the recommended alternative. In September 2007, NHDES responded to the February 2007 RAP and required that ENGI evaluate additional remedial alternatives that included further soil removal. In November 2007, a RAP Addendum was submitted to NHDES. The revised RAP recommended a remedial alternative that included removal of tar-saturated soils to a depth of approximately 45 feet, construction of a containment wall and impermeable cap on the four residential properties owned by ENGI. On February 29, 2008, NHDES issued a letter to ENGI indicating that NHDES had reached a preliminary determination that the remedy recommended in the November 2007 RAP met the NHDES requirements and that a final decision would be reached following a public meeting and comment period.

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LACONIA FORMER MGP AND LIBERTY HILL DISPOSAL AREA

LINE
NO.

On March 24, 2008, NHDES held a public comment meeting to discuss the recommended alternative and began 30-day public comment period. In April 2008, NHDES received a request to extend the public comment period closing date to May 8, 2008, to allow the Town time to provide technical comment. On June 26, 2008, NHDES issued a letter deferring its final decision on the recommended remedial alternative for the Liberty Hill site pending further data analysis following the development of a scope prepared collaboratively between the Town of Gilford and ENGI. In July and August 2008, technical representatives from ENGI, the Town of Gilford, the Liberty Hill neighborhood and NHDES met twice to discuss the comments provided to NHDES during the public comment period and discuss the scope for additional groundwater modeling activities and limited additional site data collection. The Company submitted Scopes of Work for additional data collection and groundwater modeling to NHDES in September and October 2008, respectively. The field activities were completed between November 2008 and January 2009. Modeling efforts began in late 2008 and were completed in May 2009. In March and May 2009, technical representatives from ENGI, the Town of Gilford, the Liberty Hill neighborhood and NHDES met to discuss the results of the field investigations and the modeling activities. One topic discussed with the technical team was that the modelling results indicate that low-flow pumping would need to be added to the selected remedy meet the remedial goals for the site. On June 30, 2009, NHDES issued a letter to ENGI requesting that a second RAP Addendum be prepared for the site to evaluate the technical changes (mainly the addition of low-flow pumping) to the proposed remedy that resulted from the modeling effort. ENGI submitted the second RAP Addendum to NHDES on August 17, 2009 and presented the findings at a public meeting held in Gilford on September 10, 2009. In October 2009, NHDES hired a third party consultant to review the RAP cost estimates and the results were presented in a report to NHDES in April 2010. In October 2010, NHDES issued a Preliminary Decision on RAP Addendum No. 2, in which NHDES indicated that it did not concur with ENGI's recommended remedial alternative and further recommended the complete removal of coal tar-impacted soils at the site. On January 28, 2011, ENGI submitted a comment letter to NHDES further explaining its rationale for the remedial alternative recommended in RAP Addendum No. 2. On November 2, 2011, NHDES announced a Final Decision indicating that it did not concur with ENGI's recommended remedial approach and selecting the full removal option as the remedy for the site. On December 2, 2011, ENGI filed an appeal of the NHDES Final Decision with the New Hampshire Waste Management Council. In March 2012, ENGI attended the Pre-Conference Hearing with the Council related to the appeal. Hearings on the matter were scheduled for October 18 and November 15, 2012. On July 26, 2012, the Hearing Officer granted an Assented to Motion to Continue the hearing until a date after January 3, 2013.

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LACONIA FORMER MGP AND LIBERTY HILL DISPOSAL AREA

LINE
NO.

During the period of time the appeal was subject to the continuance, the company, the New Hampshire Department of Justice and NHDES engaged in settlement discussions on a confidential basis. At the conclusion of those negotiations, NHDES and the company agreed on a final remedy for the site, which was approved by NHDES. That approval allowed ENGI to withdraw its appeal as of December 19, 2012, and proceed with implementation of the remedy. The town of Gilford was briefed on the agreed-upon remedy concurrently with NHDES approval and ENGI's withdrawal of the appeal.

ENGI has also performed numerous other activities requested by NHDES between 2008 and 2011, including remediation of the groundwater seep area near Jewett Brook in accordance with NHDES-approved September 2008 Initial Response Action Plan; evaluation of options for providing financial assurances to NHDES for the site remediation activities; coal tar recovery; semi-annual groundwater and surface water sampling activities; and drinking water well sampling. Groundwater sampling is reported to the NHDES in semi-annual reports. In addition, ENGI developed a Liberty Hill Road site website to assist in updating interested parties.

In conjunction with the Site Investigation work, ENGI has acquired 4 properties on Liberty Hill Road to facilitate remediation activities, and eliminate any potential risk to residents associated with a significant remediation and construction project. The properties were obtained based upon arms-length negotiations, and in one instance to settle potential litigation.

The site was remediated in 2014-2015 construction seasons, and was restored to a grass field by December 2015. NHDES approved the Notice of Activity and Use Restriction (AUR) in February 2017. In May 2017, ENGI received the post-construction groundwater monitoring permit, requiring annual groundwater sampling.

5. NEW HAMPSHIRE SITE REMEDIATION PROGRAM PHASE: On December 10, 2012, ENGI submitted a Conceptual Remedial Design Report to NHDES describing the approach for full removal. NHDES approved this Conceptual RAP Addendum design on December 18, 2012, and ENGI withdrew their appeal before the New Hampshire Waste Management Council on December 19, 2012. A public meeting was held in the Town of Gilford to present the approved Conceptual Remedial Design on January 23, 2013. The pre-design investigation to confirm extent and depth of contamination commenced on February 20, 2013 and was completed first week in April 2013. A public meeting was held on September 25, 2013 to present the design to the Town. The Remedial Design Report was finalized and approved by NHDES in December 2013. Plans and Specifications were developed concurrently, and the bidding process commenced in September 2013 with a Request for

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LACONIA FORMER MGP AND LIBERTY HILL DISPOSAL AREA

LINE
NO.

Information to ten (10) prospective contractors. On October 28, six (6) contractors were selected to participate in the bidding for the construction, with bids due back on December 6, 2013. On January 9, 2014, three (3) of the bidders were interviewed and Charter Environmental of Boston, MA (the Contractor) was selected for the project. A public meeting took place on February 12, 2014 to further explain details of the anticipated construction and to introduce the project team to the community.

The Contractor mobilized to the site and began set-up in May 2014, with the first load of soil being hauled from the site on June 6, 2014. Construction began to remove tar-impacted soil on the south side of the site in the first season, with little to no impact to the surrounding community. In 2014, approximately 65% of the impacted soil was removed for treatment. On April 8, 2015, ENGI presented the results of the first season of construction at a Gilford Town Select Board meeting, and presented expectations for the second season to the community. Starting on April 13, 2015, the north side of the site was remediated, with the removal of all tar-impacted soil completed on August 3, 2015. The entire project was completed on September 24, 2015 with 2,662 truckloads hauling 93,502 tons of tar-impacted soil removed for thermal treatment. Some additional site restoration work was needed in October 2015 and another seeding in April 2016 to repair damage to the original restoration caused by a heavy rainstorm that occurred on September 30, 2015. Throughout the course of the project there was no disruption to the neighboring community and no safety incidents, logging 26,975 safe working hours. The project was completed within budget parameters.

The only activities on this site during the past year and ongoing are mowing and groundwater and surface sampling, per the new post-remedial Groundwater Management Permit received on May 10, 2017. In May 2017, the NHDES requested by letter that all active hazardous waste sites managed by the Hazardous Waste Remediation Bureau include sampling for Per- and Polyfluoroalkyl Substances (PFAS) in one of their groundwater sampling rounds, as part of a statewide study of these compounds. ENGI fulfilled this request during regularly scheduled sampling in 2018. **ENGI continues to mow the site twice a year and sample the groundwater per the Groundwater Management Permit each September.**

6. HISTORY AND CURRENT STATUS OF USE AND OWNERSHIP: ENGI is the successor by merger to Gas Service, Inc. (GSI). In 1945, GSI acquired the gas manufacturing assets of PSNH. The Laconia MGP, which began operating in 1894, was included in that transaction. Gas manufacturing took place at the property until 1952, when the MGP was converted to propane. Half of the property is now owned by Robert Irwin and maintained

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LACONIA FORMER MGP AND LIBERTY HILL DISPOSAL AREA

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as an open field, and the other half is owned by PSNH, which operates an electric substation on the parcel.

The Liberty Hill Road parcel on which disposal was believed to have occurred was utilized as a gravel pit at the time of the disposal. It was subdivided in May 1970, and currently constitutes part of a residential subdivision.

7. LISTING AND STATUS OF INSURANCE AND 3RD PARTY LAWSUITS AND SETTLEMENTS: ENGI and PSNH entered into a confidential settlement in 1999. Under this agreement, PSNH took the lead on the MGP site investigation and remediation and all communications with NHDES. ENGI retained responsibility for any decommissioning-related liabilities, including off-site disposal.

Insurance recovery efforts are complete with respect to the MGP, and numerous confidential settlements have been entered into. In 2003, the United States District Court certified a question to the New Hampshire Supreme Court asking what “trigger of coverage” should be applied to the insurance policies issued by Lloyds of London to ENGI’s predecessor, Gas Service, Inc. In May 2004, the Supreme Court responded that a “continuous injury-in-fact” trigger should be applied. The federal court conducted a jury trial against Lloyds of London - the only remaining defendant – in October 5, 2004. At the end of that trial the jury returned a verdict in favor of ENGI. Subsequent to the verdict, ENGI and Lloyds of London entered into a confidential settlement.

With respect to Liberty Hill, insurance carriers have been placed on notice of a potential claim, but no litigation has been initiated. The Company does not expect to pursue any insurance litigation.

Note: This summary is an overview only and is not intended to be a comprehensive recitation of all relevant information relating to the site and the associated liability.

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CONCORD FORMER MGP

LINE
NO.

1. SITE LOCATION: One Gas Street, Concord, New Hampshire.
2. DATE SITE WAS FIRST INVESTIGATED: EnergyNorth Natural Gas, Inc. (ENGI)¹ received a Notice Letter from the New Hampshire Department of Environmental Services (NHDES) in September 1992. The Notice related primarily to contamination identified in the pond adjacent to Exit 13 off Interstate 93, although it was broad enough to also include the former manufactured gas plant (MGP) site itself.
3. NATURE AND SCOPE OF SITE CONTAMINATION: Residual materials from the historic operation of the MGP were discovered in the area of the Exit 13 pond, as the NHDOT began site preparation work for the reconfiguration of that interchange. Subsequent investigations by ENGI and others indicate that contaminants originating from the MGP on Gas Street are present in soil and groundwater between the MGP and the Merrimack River, including within the Exit 13 pond.
4. SUMMARY OF MATERIAL DEVELOPMENTS AND INTERACTIONS WITH ENVIRONMENTAL AUTHORITIES:

Concord MGP: The New Hampshire Department of Transportation (NHDOT) contacted ENGI in August 2001 and February 2002 regarding possible coal tar-related impacts in a sewer line on a parcel adjacent to the former gas plant. NHDOT is currently conducting groundwater monitoring as part of a Groundwater Management Zone Permit on this parcel. ENGI met with NHDOT and NHDES in January 2003 to review the results of its 2002 site investigation. Limited coal tar impacts were observed in groundwater and subsurface soils at select locations.

On July 15, 2003, NHDES issued a letter to ENGI requesting submission of a schedule and scope of work for a site investigation of the MGP site by mid-September 2003. ENGI proposed a May 2005 date for submission of a Site Investigation Report for the MGP site on Gas Street to NHDES by way of a letter dated October 6, 2003. NHDES agreed to the proposed schedule in their response letter dated October 31, 2003.

ENGI submitted the work plan for the MGP site investigation to NHDES on May 20, 2004. NHDES accepted the work plan on June 16, 2004. The investigation took place between September 2004 and March 2005, and the Site Investigation Report was submitted to NHDES on June 6, 2005. The report indicated that subsurface impacts are present at the MGP, and additional investigation as well as limited remediation will be required. NHDES accepted the report on August 12, 2005, and requested ENGI

¹ In July 2012, EnergyNorth was acquired by Liberty Utilities and its legal name changed to Liberty Utilities (EnergyNorth Natural Gas) Corp. d/b/a Liberty Utilities. For consistency purposes, the acronym ENGI will be used throughout this document.

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submit a supplemental scope of work to complete the delineation of MGP-related impacts on and off Site. The document was submitted in November 2005. Site investigation activities at and downgradient of the MGP were conducted in 2006. ENGI submitted an additional supplemental scope of work to further delineate MGP impacts on May 31, 2007 and NHDES subsequently approved the scope on June 5, 2007. ENGI bid the NHDES-approved scope of work in June 2008 and awarded the contract in late July 2008. ENGI met with NHDES at the site in August 2008 to discuss the additional supplemental site investigation activities. The field work took place during October through December 2008, during which time 8 groundwater monitoring wells were installed at 4 off-site locations. The Additional Supplemental Site Investigation Report was submitted to NHDES in September 2009. ENGI met with NHDES to discuss the report findings and strategy for moving forward in October 2009. NHDES issued an approval letter for the Supplemental Site Investigation Report on February 9, 2010. The correspondence approved the report and requested that certain additional activities be completed by ENGI. These requested activities include the following: a) preparation and submission of an Initial Response Action Work Plan to remove approximately 3,500 gallons of liquid and sludge from historic subsurface drip pots and tar wells at the MGP property on Gas Street; b) evaluation of the groundwater conditions in the vicinity of the "Tar Pond" which is depicted on a referenced NHDOT site plan; and c) evaluation of potential indoor air impacts at select locations identified during the additional SSI work.

ENGI submitted the Initial Response Work Plan to NHDES in July 2010 to remove approximately 3,500 gallons of liquid and sludge from historic subsurface drip pots. NHDES issued an approval letter for this Work Plan on August 3, 2010 and the work was completed in June 2011. In addition, ENGI submitted a Supplemental Data Collection Work Plan for the additional off-ENGI-owned property investigation activities (items b and c above) to NHDES in August 2010. NHDES approved of the Work Plan on September 16, 2010. ENGI obtained access to 4 properties in the vicinity of the site in order to conduct the supplemental investigation activities, which included soil, ground water and soil vapor sampling, along with further investigation of the brick tar sewer. ENGI submitted a revised Work Plan with revised sampling locations to NHDES in November 2011; the revision was necessary because site access was not granted by the property owners for some of the originally proposed locations. The investigation work was completed in July 2012, and summarized in a Supplement Data Collection Report that was submitted in August 2013, in preparation for submittal of the Remedial Action Plan. This Supplement Data Collection Report was accepted by NHDES on October 24, 2013, and ENGI was authorized to prepare a RAP and Groundwater Management Permit (GMP) application. The GMP application was submitted on September 4, 2014, and the permit was received on December 1, 2014.

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On June 16, 2013, wind during a thunderstorm caused a tree to fall on the northern side of the roof of the Holder House located on the former Concord MGP property. Damage to the slate roof and brick was sustained. In a letter dated February 24, 2014 NHDES stated that the holder structure "...serves as a physical barrier to prevent infiltration of precipitation into the foundation and thereby limits the amount of MGP byproducts that may be released to the environment."

On March 31, 2015, ENGI submitted a proposed Remedial Action Plan involving removal of shallow soils displaying MGP-related residual impacts, investigation and remediation of remaining known subsurface structures, capping of components of the local storm water drainage system, site capping design, and continued monitoring of groundwater on the site. NHDES approved the RAP on May 29, 2015, with the condition that roof of the brick gas holder either be restored, or the holder be razed and the soils beneath it remediated. Soil vapor monitoring; soil vapor probe installation; and remedial design investigations including subsurface structure location and inspection, shallow tar-saturated soil delineation, and site storm drain system inspections, as approved by the RAP, were performed in December 2015. A Remedial Design Report (RDR) was submitted to NHDES on March 16, 2016 summarizing the above remedial design investigations. The remediation activities, required to be completed prior to site capping, include tar-impacted material removals and plugging of the on-site drain system, took place in 2017.

In early 2016 ENGI was approached by a commercial developer who was interested in purchasing the property and repurposing the holder house structure. Several site meetings took place with the developer, and ENGI was negotiating the terms of the property's sale. If the property is transferred, the purchaser's future use design will be taken into account when the final design of the engineered cap is being developed. This site developer has not contacted ENGI since May 2017, and appears to have lost interest in the redevelopment project.

There has been no movement or activity on a transfer of the holder site. In 2020, further deterioration of the holder structure has been observed. In addition, fencing was repaired and added to the areas around the deteriorated areas near the vestibule and the outside scaffolding where the tree fell in 2013.

Concord Pond: ENGI has continued to monitor groundwater semi-annually at the Exit 13 pond, in May and November, as required by the Groundwater Management Zone Permit that was issued in 1999 as part of the overall remedy following the remediation of the southern end of the Exit 13 pond. The permit was renewed in 2003, 2007 and 2012, and NHDES specified semiannual collection of surface water samples from the pond as an additional condition of the permit.

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When the Exit 13 pond was remediated in 1999, NHDES required that the northern portion remained untouched, allowing for storm water input to the pond, with the knowledge that some contamination remained and may require remediation in the future. In 2006, NHDES requested ENGI address the residual contamination in the pond, and in response, ENGI submitted an Interim Data Collection Report and Scope of Work in May 2006, which was approved in July 2006. This Scope of Work was implemented in 2006 and the results were to be used to prepare the Remedial Action Plan (RAP) which NHDES requested be submitted by August 31, 2006. In July 2006, NHDES extended the deadline for submittal of the RAP to June 30, 2007, to allow ENGI additional time for data collection and design. ENGI submitted an Interim Data Collection Report to NHDES in September 2006, and a Conceptual Remedial Design in March 2007. On March 25, 2009, ENGI submitted a Presumptive Remedy Approval Request to NHDES, in order to allow for the design and implementation of an engineered cap without the need to prepare a RAP. On May 4, 2009, NHDES granted the Presumptive Remedy Approval, and the project moved into the remedial design phase.

The proposed remedial work is to be performed on city-owned land and within a NHDOT right-of-way; therefore ENGI is working with these parties to come to agreement on the design features, negotiate access and clarify the responsibilities of the three parties. In April 2010, ENGI met with representatives from NHDES, the City of Concord, and NHDOT to present the proposed remedy, and ENGI submitted the draft design plans to the parties in June 2010. ENGI met with the regulatory permitting agencies in October 2010. The agencies requested that ENGI modify the remedial design to include an upland cap versus a wetland cap to minimize the impacts of the project. The cap was redesigned and ENGI met with the stakeholders in December 2010. At a subsequent meeting in January 2011, the City of Concord requested that the design be further modified to relocate the City's storm water outfall location.

ENGI met with the City in March 2011 to present the feasibility evaluation that was conducted for several alternatives, and concluded that the original design was the appropriate design. Contact was reconvened with the City in 2013, and adjustments to the original design were made to address outfall maintenance and access concerns of the City and NHDOT, respectively. The design was presented to the City on January 26, 2016. A rigorous schedule toward construction in late summer 2017 was agreed to by ENGI and the City in February 2016. The City did not meet an early deadline to determine and communicate details regarding access to their storm water system. Communication was again resumed in July 2016 by the City, however the City remained unresponsive to ENGI on implementation of the joint remedial design.

In March 2018, discussions with the new City Engineer took place and the City's engagement level has increased to come to a design solution on outfall maintenance. These discussions are frequent and ongoing.

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CONCORD FORMER MGP

LINE
NO.

Semiannual groundwater monitoring at the pond is ongoing, as is recovery of separate phase coal tar from a monitoring well in the vicinity of the pond. In May 2017, the NHDES requested by letter that all active hazardous waste sites managed by the Hazardous Waste Remediation Bureau include sampling for Per- and Polyfluoroalkyl Substances (PFAS) in one of their groundwater sampling rounds, as part of a statewide study of these compounds. ENGI fulfilled this request during regularly scheduled sampling in 2018.

During May 19, 2009 through May 22, 2009, ENGI implemented a NHDES-approved sediment sampling program in the Merrimack River to evaluate potential MGP-related impacts. ENGI met with NHDES in October 2009 to present the results of the sediment investigation, and submitted the sediment sampling data report to NHDES in October 2009. The investigation indicated limited site-related impacts to the shallow near-shore sediments of the Merrimack River. Based upon the results of the sediment investigation, it is unlikely that remedial actions will be necessary in the river. ENGI met with NHDES on February 20, 2013 to discuss all sampling activities to date, summarized in an SIR Addendum Report, submitted in June 2013.

In May 2016, ENGI submitted a proposed plan for monitoring the near-bank sediments to the pond area in the Merrimack River. After discussions regarding frequency, duration of the Monitored Natural Recovery (MNR) program, and methodologies to be used in determining the contaminant trending in the river sediment, NHDES approved a revised MNR Plan in a letter dated July 2017. The 5-year sampling plan began in 2017 with the first of 5 annual samplings. The second round of sediment sampling took place in October 2018, **and the third round of sediment sampling took place in October 2019. NHDES has accepted the MNR reports submitted by ENGI summarizing the sediment sampling results.**

5. NEW HAMPSHIRE SITE REMEDIATION PROGRAM PHASE:

Concord MGP: In July 2003, NHDES requested that ENGI submit a schedule and scope of work for completion of a site investigation of the MGP site. ENGI submitted the scope to NHDES in May 2004 and implemented the work between September 2004 and March 2005. The results of the investigation were documented in the Site Investigation Report, dated June 6, 2005, which was subsequently approved by NHDES. Supplemental investigation activities were performed in 2006. Additional investigation activities were performed in 2008. The additional SSI report was submitted to NHDES in September 2009. In addition, ENGI submitted the Initial Response Work Plan to NHDES in July 2010 to remove approximately 3,500 gallons of liquid and sludge from historic subsurface drip pots. NHDES issued an approval letter for this Work Plan on August 3, 2010 and the work was completed in June 2011. The Supplemental Data Collection report summarizing the investigation activities was accepted in October 2013, authorizing ENGI to prepare a RAP and GMP Application. The GMP application was submitted on

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September 4, 2014, and the permit was received on December 1, 2014. On March 31, 2015, ENGI submitted a proposed RAP, and NHDES approved the RAP with conditions. A Remedial Design Report, summarizing pre-design investigations, was provided to NHDES in March 2016.

Outstanding remedial activities including the decommissioning of the deep well (historic water supply well), closure of the “old tar separator” and a small drip pot, closure of the on-site storm drain, and removal of an area of soil containing hardened tar, planned for 2020, have been delayed due to the COVID-19 pandemic.

Concord Pond: ENGI submitted an application for a five-year Groundwater Management Zone Permit to the NHDES in April 2002 for the Exit 13 pond. The permit was renewed in October 2007, with the collection of pond surface water samples as an additional condition. Under that permit, groundwater monitoring is expected to be required for the foreseeable future. In addition, as requested by NHDES, ENGI undertook a review of remedial technologies to address the residual contamination remaining in the pond. A conceptual remedial design was submitted to NHDES in March 2007, a Presumptive Remedy Approval was granted by NHDES in May 2009, and the engineered cap design has been drafted. The work will be undertaken pending agreement between the City, NHDOT, and ENGI. ENGI met with these parties on several occasions in 2010 and 2011. The Company reinitiated discussion with the City in July 2014 regarding access to the site to implement the approved design of the wetland cap. The design was adjusted to accommodate the City’s desire to simplify maintenance of the storm water system. **ENGI has altered the design of the construction to provide temporary access through the wetland area and a permanent access road that does not encroach on the NHDOT right-of-way. ENGI will undergo a pre-design investigation once the City agrees to formal access of the area, with a target date for construction of late summer 2021. ENGI is designing the wetland cap remedy pre-design investigation, and plans to construct the remedy in late summer 2021. ENGI has delivered a draft access agreement to the property to allow access by the City for the wetland cap remedy construction.**

A renewal application for the Groundwater Management Permit was submitted on August 24, 2017, and the renewed permit was granted by NHDES on November 22, 2017. Groundwater and surface water monitoring continues under this permit every May and November. **The 5-year sediment sampling plan to monitor natural attenuation of MGP residuals in the river began in autumn 2017 and are ongoing each October.**

6. HISTORY AND CURRENT STATUS OF USE AND OWNERSHIP: The Concord MGP operated from approximately 1850 to 1952, when the natural gas pipeline was extended

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LINE
NO.

to Concord. The plant was constructed and operated by predecessors of the Concord Gas Company, which later became known as the Concord Natural Gas Company. By virtue of a merger, ENGI acquired Concord Natural Gas. As has been reported previously by ENGI, it filed a contribution claim in the United States District Court for the District of New Hampshire against the successor to the United Gas Improvement Company. In that claim, ENGI alleged that under the federal Superfund statute, the United Gas Improvement Company exercised control over the operations of the Concord Gas Plant to the extent that the United Gas Improvement Company should be considered an "operator" under the statute. That matter was settled in 1997.

7. LISTING AND STATUS OF INSURANCE AND 3RD PARTY LAWSUITS AND SETTLEMENTS: Numerous confidential settlements with insurance carriers and with one private party have been entered into. *Insurance recovery efforts at the Concord Site are complete.*

Note: This summary is an overview only and is not intended to be a comprehensive recitation of all relevant information relating to the site and the associated liability.

ENERGYNORTH NATURAL GAS, INC.
 MANUFACTURED GAS PLANT ENVIRONMENTAL COSTS

REDACTED
 Schedule 20.2
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2020 SUMMARY BY SITE

LINE NO.	SITE	REF NO.	1101 LEGAL EXPENSES	1102 CONSULTING EXPENSES	1105 REMEDIATION EXPENSES	1106 SETTLEMENT EXPENSES	1107 OTHER EXPENSES	100 % RECOVERABLE EXPENSES	1108 INSURANCE & THIRD PARTY EXPENSES	1109 INSURANCE & THIRD PARTY RECOVERIES	TOTAL
1	Concord Pond	DEF056	0.00	152,790.27	0.00	0.00	34,567.39	187,357.66			172,763.62
2	Concord MGP	DEF077	0.00	66,817.40	0.00	0.00	12,373.89	79,191.29			66,587.71
3	Laconia/Liberty Hill	DEF086	0.00	23,947.82	0.00	0.00	3,977.78	27,925.60			27,925.60
4	Manchester MGP	DEF057	0.00	104,451.19	126,195.25	0.00	81,786.55	312,432.99			155,032.39
5	Nashua MGP	DEF054	0.00	37,489.06	0.00	0.00	2,044.41	39,533.47			11,471.80
6	General Expenses	DEF064	0.00	0.00	0.00	0.00	7,110.73	7,110.73			7,110.73
Total Pool Activity			0.00	385,495.74	126,195.25	0.00	141,860.75	653,551.74	0.00	(212,659.89)	440,891.85

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LIBERTY UTILITIES (ENERGYNORTH NATURAL GAS) CORP.
MANUFACTURED GAS PLANT ENVIRONMENTAL COSTS
NASHUA - REMEDIATION
PROJECT DEF054

LINE NO.	VENDOR	REF NO.	1101	1102	1105	1106	1107	1108	1109	TOTAL SUBMITTED
			LEGAL EXPENSES	CONSULTING EXPENSES	REMEDIATION EXPENSES	SETTLEMENT EXPENSES	OTHER EXPENSES	SUBTOTAL EXPENSES	INSURANCE & THIRD PARTY RECOVERIES	INSURANCE & THIRD PARTY EXPENSE
1	INNOVATIVE ENGINEERING SOLUTIONS, INC.	13255		4,590.58				4,590.58		4,590.58
2	NH DEPT OF ENVIRONMENTAL SERVICES	199810022 072619					954.62	954.62		954.62
3										
4	INNOVATIVE ENGINEERING SOLUTIONS, INC.	13285		2,200.58				2,200.58		2,200.58
5	INNOVATIVE ENGINEERING SOLUTIONS, INC.	13312		2,570.75				2,570.75		2,570.75
6	INNOVATIVE ENGINEERING SOLUTIONS, INC.	13336		5,281.13				5,281.13		5,281.13
7	CLEAN HARBORS	1003064660					640.71	640.71		640.71
8	INNOVATIVE ENGINEERING SOLUTIONS, INC.	13361		1,957.55				1,957.55		1,957.55
9	INNOVATIVE ENGINEERING SOLUTIONS, INC.	13386		2,444.46				2,444.46		2,444.46
10										
11	INNOVATIVE ENGINEERING SOLUTIONS, INC.	13408		4,473.30				4,473.30		4,473.30
12	NH DEPT OF ENVIRONMENTAL SERVICES	199810022 012920					134.64	134.64		134.64
13	INNOVATIVE ENGINEERING SOLUTIONS, INC.	13457		3,578.89				3,578.89		3,578.89
14										
15	INNOVATIVE ENGINEERING SOLUTIONS, INC.	13432		9,353.78				9,353.78		9,353.78
16	INNOVATIVE ENGINEERING SOLUTIONS, INC.	13509		754.35				754.35		754.35
17	INNOVATIVE ENGINEERING SOLUTIONS, INC.	13526		283.69				283.69		283.69
18								0.00		0.00
19								0.00		0.00
20								0.00		0.00
21	Environmental Staff Time						314.44	314.44		314.44

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LINE NO.	VENDOR	REF NO.	LEGAL EXPENSES	1101	1102.00	1105	1106	1107	1108	1109	TOTAL SUBMITTED
					CONSULTING EXPENSES	REMEDIAION EXPENSES	SETTLEMENT EXPENSES	OTHER EXPENSES	SUBTOTAL EXPENSES	INSURANCE & THIRD PARTY RECOVERIES	
1	GEI CONSULTANTS, INC.	3056476			7,344.92				7,344.92		7,344.92
2	CLEAN HARBORS	1002924499						908.85	908.85		908.85
3	PARKER FENCE	19-602						27,700.00	27,700.00		27,700.00
4	GEI CONSULTANTS, INC.	3058507			1,320.32				1,320.32		1,320.32
5	ANCHOR QEA LLC	64375			7,718.00				7,718.00		7,718.00
6	GEI CONSULTANTS, INC.	3060104			984.98				984.98		984.98
7	GEI CONSULTANTS, INC.	3057174			4,157.38				4,157.38		4,157.38
8	GEI CONSULTANTS, INC.	3063405			3,105.76				3,105.76		3,105.76
9	CASEY MARY	EXP0902-121919						35.23	35.23		35.23
10	GEI CONSULTANTS, INC.	3064852			1,254.54				1,254.54		1,254.54
11											
12											
13											
14											
15											
16	NH DEPT OF ENVIRONMENTAL SERVICES	199212014.012920						1,882.83	1,882.83		1,882.83
17	GEI CONSULTANTS, INC.	3066463			1,076.06				1,076.06		1,076.06
18	GEI CONSULTANTS, INC.	3061743			1,023.38				1,023.38		1,023.38
19	GEI CONSULTANTS, INC.	3067839			1,630.10				1,630.10		1,630.10
20	ANCHOR QEA LLC	64839			1,608.50				1,608.50		1,608.50
21	ANCHOR QEA LLC	66175			12,981.50				12,981.50		12,981.50
22	ANCHOR QEA LLC	66706			12,454.00				12,454.00		12,454.00
23	ANCHOR QEA LLC	67077			11,929.84				11,929.84		11,929.84
24	ANCHOR QEA LLC	65292			6,327.17				6,327.17		6,327.17
25	ANCHOR QEA LLC	65770			29,358.01				29,358.01		29,358.01
26	GEI CONSULTANTS, INC.	3069861			2,004.26				2,004.26		2,004.26
27	ANCHOR QEA LLC	67640			19,750.42				19,750.42		19,750.42
28	NH DEPT OF ENVIRONMENTAL SERVICES	199212014.042920						753.13	753.13		753.13
29	GEI CONSULTANTS, INC.	3070960			997.00				997.00		997.00
30	CITY OF CONCORD	20003858						1,020.00	1,020.00		1,020.00
31	CLEAN HARBORS	1003310444						1,292.62	1,292.62		1,292.62
32	GEI CONSULTANTS, INC.	3072478			2,523.09				2,523.09		2,523.09
33	ANCHOR QEA LLC	68133			14,300.79				14,300.79		14,300.79
34	ANCHOR QEA LLC	68541			8,940.25				8,940.25		8,940.25
35											
36											
37	Environmental Staff Time							974.73	974.73		974.73

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LIBERTY UTILITIES (ENERGYNORTH NATURAL GAS) CORP.
MANUFACTURED GAS PLANT ENVIRONMENTAL COSTS
MANCHESTER - REMEDIATION
PROJECT DEF057

LINE NO.	VENDOR	REF NO.	1101	1102	1105	1106	1107	SUBTOTAL EXPENSES	INSURANCE & THIRD PARTY EXPENSE	1108	1109	TOTAL SUBMITTED
			LEGAL EXPENSES	CONSULTING EXPENSES	REMEDATION EXPENSES	SETTLEMENT EXPENSES	OTHER EXPENSES		THIRD PARTY EXPENSE			
1	CLEAN HARBORS	1002904126			125,771.12			125,771.12				125,771.12
2	CLEAN HARBORS	1002899474					11,707.93	11,707.93				11,707.93
3	CLEAN HARBORS	1002892956					11,752.52	11,752.52				11,752.52
4	CLEAN HARBORS	1002901011					7,216.18	7,216.18				7,216.18
5	GZA GEOENVIRONMENTAL INC	0778032		21,141.77				21,141.77				21,141.77
6	CLEAN HARBORS	1002943503			424.13			424.13				424.13
8	NH DEPT OF ENVIRONMENTAL SERVICES	NHD500012257 Q2-2019					864.00	864.00				864.00
9	GZA GEOENVIRONMENTAL INC	0779445		14,241.05				14,241.05				14,241.05
10	CASEY MARY	EXP0301-053119					17.16	17.16				17.16
11	ENVIRONMENTAL SOIL MANAGEMENT	1017849					20,532.96	20,532.96				20,532.96
12	GZA GEOENVIRONMENTAL INC	0782065		21,124.15				21,124.15				21,124.15
13	GZA GEOENVIRONMENTAL INC	0782957		4,872.44				4,872.44				4,872.44
14	ENVIRONMENTAL SOIL MANAGEMENT	1017910					11,355.68	11,355.68				11,355.68
16	ENVIRONMENTAL SOIL MANAGEMENT	1017958					12,906.88	12,906.88				12,906.88
17												
18												
19	GZA GEOENVIRONMENTAL INC	0785486		22,862.27				22,862.27				22,862.27
20												
21	GZA GEOENVIRONMENTAL INC	0787257		15,376.32				15,376.32				15,376.32
22	NH DEPT OF ENVIRONMENTAL SERVICES	200003011 012920					47.07	47.07				47.07
23	NH DEPT OF ENVIRONMENTAL SERVICES	NHD500012257 Q2-2019 corr					4,786.67	4,786.67				4,786.67
24												
25	GZA GEOENVIRONMENTAL INC	0790380		1,817.85				1,817.85				1,817.85
26	GZA GEOENVIRONMENTAL INC	0788821		3,015.34				3,015.34				3,015.34
27												
28								0.00				0.00
33								0.00				0.00
34								0.00				0.00
35	Environmental Staff Time						599.50	599.50				599.50

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LIBERTY UTILITIES (ENERGYNORTH NATURAL GAS) CORP.
MANUFACTURED GAS PLANT ENVIRONMENTAL COSTS
GENERAL EXPENSES
PROJECT DEF064

LINE NO.	VENDOR	REF NO.	1101 LEGAL EXPENSES	1102 CONSULTING EXPENSES	1105 REMEDIATION EXPENSES	1106 SETTLEMENT EXPENSES	1107 OTHER EXPENSES	SUBTOTAL EXPENSES	1108 INSURANCE & THIRD PARTY EXPENSE	1109 INSURANCE & THIRD PARTY RECOVERIES	TOTAL SUBMITTED
1	ALLEGRA MARKETING PRINT MAIL	32928					205.00	205.00			205.00
2	CASEY MARY	EXP0902-121919					69.62	69.62			69.62
3							0.00	0.00			0.00
4							0.00	0.00			0.00
5	Environmental Staff Time						6,836.11	6,836.11			6,836.11
Total Pool Activity			0.00	0.00	0.00	0.00	7,110.73	7,110.73	0.00	0.00	7,110.73

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Schedule 20.2
Page 6 of 7

LIBERTY UTILITIES (ENERGYNORTH NATURAL GAS) CORP.
MANUFACTURED GAS PLANT ENVIRONMENTAL COSTS
CONCORD MGP - REMEDIATION
PROJECT DEF077

LINE NO.	VENDOR	REF NO.	1101 LEGAL EXPENSES	1102 CONSULTING EXPENSES	1105 REMEDIATION EXPENSES	1106 SETTLEMENT EXPENSES	1107 OTHER EXPENSES	SUBTOTAL EXPENSES	1108 INSURANCE & THIRD PARTY EXPENSE	1109 INSURANCE & THIRD PARTY RECOVERIES	TOTAL SUBMITTED
1	GZA GEOENVIRONMENTAL INC	0777097		1,538.50				1,538.50			1,538.50
3	GZA GEOENVIRONMENTAL INC	0777098		1,909.66				1,909.66			1,909.66
4	JOE GAUCI LANDSCAPING LLC	2019-6-3576					591.00	591.00			591.00
5	CLEAN HARBORS	1002892966					126.56	126.56			126.56
6	CLEAN HARBORS	1002924499					859.09	859.09			859.09
7	CITY OF CONCORD	410184-001.0719					9.93	9.93			9.93
8	CITY OF CONCORD GSD	410184-001.0719					9.93	9.93			9.93
9	CITY OF CONCORD	410184-001.0819					10.21	10.21			10.21
10	JOE GAUCI LANDSCAPING LLC	2019-8-3576					2,538.00	2,538.00			2,538.00
11	CITY OF CONCORD	410184-001.0919 Bal after O/P					0.28	0.28			0.28
12	CLEAN HARBORS	1003033863					192.10	192.10			192.10
13	JOE GAUCI LANDSCAPING LLC	2019-9-3576					470.00	470.00			470.00
14	GZA GEOENVIRONMENTAL INC	0783743		9,245.97				9,245.97			9,245.97
15	GZA GEOENVIRONMENTAL INC	0783744		1,813.50				1,813.50			1,813.50
16	JOE GAUCI LANDSCAPING LLC	2019-10-3576					150.00	150.00			150.00
17	CITY OF CONCORD GSD	410184-001.1119					10.21	10.21			10.21
18	CITY OF CONCORD GSD	410184-001.1019					10.64	10.64			10.64
19	CLEAN HARBORS	1003091848					524.32	524.32			524.32
20	GZA GEOENVIRONMENTAL INC	0785487		10,061.68				10,061.68			10,061.68
21	GZA GEOENVIRONMENTAL INC	0785541		2,273.10				2,273.10			2,273.10
22	CASEY MARY	EXP0902-121919					95.82	95.82			95.82
23	CITY OF CONCORD GSD	410184-001.113019					10.21	10.21			10.21
24	CITY OF CONCORD GSD	410184-001.123019					10.21	10.21			10.21
25											
26											
27											
28											
29	GZA GEOENVIRONMENTAL INC	0787258		18,103.71				18,103.71			18,103.71
30	GZA GEOENVIRONMENTAL INC	0787259		1,560.00				1,560.00			1,560.00
31	NH DEPT OF ENVIRONMENTAL SERVICES	198904063 012920					98.01	98.01			98.01
32	JOE GAUCI LANDSCAPING LLC	2019-7-3576					570.00	570.00			570.00
33	JOE GAUCI LANDSCAPING LLC	2019-11-3576					520.00	520.00			520.00
34	GZA GEOENVIRONMENTAL INC	0788822		10,113.33				10,113.33			10,113.33
35	GZA GEOENVIRONMENTAL INC	0788805		308.50				308.50			308.50
36	GZA GEOENVIRONMENTAL INC	0790381		9,526.95				9,526.95			9,526.95
37	GZA GEOENVIRONMENTAL INC	0790202		362.50				362.50			362.50
38	NH DEPT OF ENVIRONMENTAL SERVICES	198904063 042920					1,560.06	1,560.06			1,560.06
39	CITY OF CONCORD GSD	410184-001.043020					10.21	10.21			10.21
40	CITY OF CONCORD	20003858					1,020.00	1,020.00			1,020.00
41	CLEAN HARBORS	1003310444					1,735.13	1,735.13			1,735.13
42	CITY OF CONCORD GSD	410184-001.053020					10.21	10.21			10.21
43	JOE GAUCI LANDSCAPING LLC	2020-5-3576					504.00	504.00			504.00
44	CITY OF CONCORD GSD	410184-001.043020					31.11	31.11			31.11
45											
46											
47	Environmental Staff Time						696.65	696.65			696.65
48											

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LIBERTY UTILITIES (ENERGY NORTH NATURAL GAS) CORP.
MANUFACTURED GAS PLANT ENVIRONMENTAL COSTS
LIBERTY HILL - REMEDIATION
PROJECT DEF086

LINE NO.	VENDOR	REF NO.	1101	1102	1105	1106	1107	1108	1109	TOTAL SUBMITTED
			LEGAL EXPENSES	CONSULTING EXPENSES	REMEDIATION EXPENSES	SETTLEMENT EXPENSES	OTHER EXPENSES	SUB-TOTAL EXPENSES	INSURANCE & THIRD PARTY RECOVERIES	INSURANCE & THIRD PARTY EXPENSES
1	MULLER'S LAWN & LANDSCAPING, LLC	5129					800.00	800.00		800.00
2	GEI CONSULTANTS, INC.	3060103		1,255.61				1,255.61		1,255.61
3	CLEAN HARBORS	1003053357					515.28	515.28		515.28
4	MULLER'S LAWN & LANDSCAPING, LLC	5277					800.00	800.00		800.00
5	BLUE CHIP FILMS LLC	01619					900.00	900.00		900.00
6	GEI CONSULTANTS, INC.	3063404		540.44				540.44		540.44
7	GEI CONSULTANTS, INC.	3061635		22,151.77				22,151.77		22,151.77
8	BLUE CHIP FILMS LLC	01627					162.50	162.50		162.50
9	MULLER'S LAWN & LANDSCAPING, LLC	5448					800.00	800.00		800.00
10							0.00	0.00		0.00
11	Environmental Staff Time						0.00	0.00		0.00
Total Pool Activity			0.00	23,947.82	0.00	0.00	3,977.78	27,925.60		27,925.60

Filed under the following protective orders:
Order No. 22,853 dated February 18, 1998 in Docket No. DR 97-130
Order No. 23,316 dated October 11, 1999 in Docket No. DG 99-132

Liberty Utilities (Energy/North Natural Gas) Corp.
Environmental Remediation - MGPs
Tariff page 95

		Concord Pond																				DEF056	
		(9/99 - 9/99)	(9/99 - 9/00)	(9/03 - 9/04)	(9/04 - 9/05)	(9/05 - 9/06)	(9/06 - 9/07)	(9/07 - 9/08)	(9/08 - 9/09)	(9/09 - 9/10)	(9/10 - 9/11)	(9/11 - 9/12)	(9/12 - 9/13)	(7/13 - 6/14)	(7/14 - 6/15)	(7/15 - 6/16)	(7/16 - 6/17)	(7/17 - 6/18)	(7/18 - 6/19)	(7/19 - 6/20)	Subtotal		
1	Remediation costs (i.o. 5000651)	5,420,852	129,002	60,293	21,613	96,293	155,796	95,374	128,187	143,000	249,160	86,412	79,387	40,314	89,626	43,204	102,196	138,701	87,282	187,358	7,353,048		
2	Remediation costs (i.o. 5000005)	5,420,852	129,002	60,293	21,613	96,293	155,796	95,374	128,187	143,000	249,160	86,412	79,387	40,314	89,626	43,204	102,196	138,701	87,282	187,358	7,353,048		
3	A. Subtotal - remediation costs	5,420,852	129,002	60,293	21,613	96,293	155,796	95,374	128,187	143,000	249,160	86,412	79,387	40,314	89,626	43,204	102,196	138,701	87,282	187,358	7,353,048		
4	Cash recoveries (i.o. 5000651)	(2,114,740)	(33,204)	-	-	(14,314)	(13,446)	-	(12,608)	(6,064)	(32,417)	(5,173)	(19,318)	(7,990)	(11,392)	(8,614)	(14,047)	(11,345)	(14,998)	(14,594)	(2,234,263)		
5	Cash recoveries (i.o. 5000004)	(445,989)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(445,989)		
6	Transfer Credit from Gas Restructuring	623,764	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	623,764		
7	B. Subtotal - net recoveries	(1,836,964)	(33,204)	-	-	(14,314)	(13,446)	-	(12,608)	(6,064)	(32,417)	(5,173)	(19,318)	(7,990)	(11,392)	(8,614)	(14,047)	(11,345)	(14,998)	(14,594)	(2,056,464)		
8	A-B Total net expenses to recover	3,583,812	95,798	60,293	21,613	81,979	142,350	95,374	115,579	136,936	216,743	81,238	59,069	32,324	78,235	34,590	88,148	127,356	72,283	172,764	5,296,584		
9	Surcharge revenue:																						
10	Act. June 1998 - October 1998	(54,889)	-	-	-	-	-	-	(12,608)	(6,064)	(32,417)	(5,173)	(19,318)	(7,990)	(11,392)	(8,614)	(14,047)	(11,345)	(14,998)	(14,594)	(2,056,464)		
11	Act. November 1998 - October 1999	(538,143)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(538,143)		
12	Act. November 1999 - October 2000	(760,871)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(760,871)		
13	Act. November 2000 - October 2001	(626,614)	(13,925)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(640,539)		
14	Act. November 2001 - October 2002	(600,600)	(24,514)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(625,114)		
15	Act. November 2002 - October 2003	(592,678)	(15,197)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(607,874)		
16	Act. November 2003 - October 2004	(291,340)	(14,567)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(305,907)		
17	Act. November 2004 - October 2005	(56,719)	(14,180)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(85,078)		
18	Act. November 2005 - October 2006	(6,875)	(6,875)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(13,750)		
19	Act. November 2006 - October 2007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(14,091)		
20	Act. November 2007 - October 2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
21	Act. November 2008 - October 2009	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
22	Act. November 2009 - October 2010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
23	Act. November 2010 - October 2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
24	Act. November 2011 - October 2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
25	Act. November 2012 - October 2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
26	Act. Nov 2009-Oct 2010 Base Rate Rev	(5,002)	-	-	-	-	-	-	-	-	(5,002)	-	-	-	-	-	-	-	-	-	(10,003)		
27	Act. Nov 2010-Oct 2011 Base Rate Rev	(12,749)	-	-	-	-	-	-	-	-	(12,749)	-	-	-	-	-	-	-	-	-	(25,497)		
28	Act. Nov 2011-Oct 2012 Base Rate Rev	(94,423)	-	-	-	-	-	-	-	-	(94,423)	-	-	-	-	-	-	-	-	-	(188,846)		
29	Act. Nov 2012-Oct 2013 Base Rate Rev	(32,310)	-	-	-	-	-	-	-	-	(32,310)	-	-	-	-	-	-	-	-	-	(64,620)		
30	Act. Nov 2013-Oct 2014 Base Rate Rev	(28,446)	-	-	-	-	-	-	-	-	(28,446)	-	-	-	-	-	-	-	-	-	(56,892)		
31	Act. Nov 2014-Oct 2015 Base Rate Rev	(2,143)	-	-	-	-	-	-	-	-	(2,143)	-	-	-	-	-	-	-	-	-	(4,286)		
32	Act. Nov 2014-Oct 2015 Base Rate Rev	(2,143)	-	-	-	-	-	-	-	-	(2,143)	-	-	-	-	-	-	-	-	-	(4,286)		
33	AES collections	(33,593)	-	-	(11,626)	(11,901)	(12,271)	(12,620)	(12,904)	(13,145)	(13,221)	(13,738)	(13,725)	(13,948)	(14,173)	(14,405)	(14,664)	(14,858)	(14,999)	(15,312)	(251,103)		
34	Gas Street overcollection	(23,511)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(23,511)		
35	Prior Period Pool under/overcollection	21,038	38,548	45,088	50,734	60,721	116,708	246,787	-	-	-	-	-	-	-	-	-	-	-	-	0		
36	C. Surcharge Subtotal	(3,524,326)	(50,710)	(9,559)	39,108	34,729	104,437	234,166	(12,904)	(13,145)	(98,295)	(33,631)	(13,725)	(13,948)	(14,173)	(14,405)	(14,664)	(14,858)	(14,999)	(15,312)	(4,025,837)		
37	D Net balance to be recovered (A-B+C)	59,586	45,088	50,734	60,721	116,708	246,787	329,940	102,675	123,791	47,629	47,608	45,345	18,376	64,062	20,185	73,484	112,498	57,284	157,451	1,270,747		
38	E Allocation of Litigated Recovery	-	-	-	-	-	(329,940)	(102,675)	(102,675)	(123,791)	(48,589)	-	-	-	-	-	-	-	-	-	-	(604,575)	
39	Surcharge calculation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
40	Unrecovered costs (D+E)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
41	remaining life	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
42	one year	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
43	F amortization	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
44	Required annual increase in rates:	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
45	smaller of D or F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
46	forecasted them sales	533,441,400	184,654,874	179,574,679	175,574,679	179,574,679	175,574,679	179,574,679	179,574,679	179,574,679	179,574,679	179,574,679	179,574,679	179,574,679	179,574,679	179,574,679	179,574,679	179,574,679	179,574,679	179,574,679	179,574,679		
47	surcharge per them	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0001	\$0.0000	\$0.0000	\$0.0001	\$0.0004		

1. While the recoveries are displayed on the Summary, Cash Recoveries by site, are not exclusive to a particular site.

Filed under the following protective orders:
Order No. 22,853 dated February 18, 1998 in Docket No. DR 97-130
Order No. 23,316 dated October 11, 1999 in Docket No. DG 99-132

Liberty Utilities (Energy/North Natural Gas) Corp.
Environmental Remediation - MGPs
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Lacoste & Liberty Hill														DEF086			
	(0/05 - 9/05)	(9/05 - 9/06)	(9/06 - 9/07)	(9/07 - 9/08)	(9/08 - 9/09)	(9/09 - 9/10)	(9/10 - 9/11)	(9/11 - 9/12)	(9/12 - 9/13)	(7/13 - 9/14)	(7/14 - 9/15)	(7/15 - 9/16)	(7/16 - 9/17)	(7/17 - 9/18)	(7/18 - 9/19)	(7/19 - 9/20)	Subtotal
	BOOK #15	BOOK #16	BOOK #17	BOOK #18	Incl. Audit Corr	BOOK #19	BOOK #20	BOOK #21	BOOK #22	BOOK #23	BOOK #24	BOOK #25	BOOK #26	BOOK #27	BOOK #28	BOOK #29	
1 Remediation costs (i.o. 500061)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2 Remediation costs (i.o. 500005)	5,250,734	2,330,555	2,089,199	428,225	607,876	262,678	210,532	269,281	642,986	-	-	-	-	-	-	-	-
3 A Subtotal - remediation costs	5,250,734	2,330,555	2,089,199	428,225	607,876	262,678	210,532	269,281	642,986	-	-	-	-	-	-	-	-
4 Cash recoveries (i.o. 500061)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5 Cash recoveries (i.o. 500004)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6 Recoveries (i.o. 500004)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7 Transfer Credit from Gas Restructuring	-	-	11,643	21,729	-	-	-	-	-	-	-	-	-	-	-	-	-
8 Subtotal - net recoveries	-	-	11,643	21,729	-	-	-	-	-	-	-	-	-	-	-	-	-
9 B Total net expenses to recover	5,250,734	2,330,555	2,100,842	449,954	607,876	262,678	210,532	269,281	642,986	-	-	-	-	-	-	-	-
10 A-B Total net expenses to recover	5,250,734	2,330,555	2,100,842	449,954	607,876	262,678	210,532	269,281	642,986	-	-	-	-	-	-	-	-
11																	
12																	
13																	
14																	
15 Act. June 1998 - October 1998	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16 Act. November 1998 - October 1999	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17 Act. November 1999 - October 2000	(151,833)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(151,833)
18 Act. November 2000 - October 2001	(696,237)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(696,237)
19 Act. November 2001 - October 2002	(796,714)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(796,714)
20 Act. November 2002 - October 2003	(805,434)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(805,434)
21 Act. November 2003 - October 2004	(699,215)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(699,215)
22 Act. November 2004 - October 2005	(652,264)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(652,264)
23 Act. November 2005 - October 2006	(691,159)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(691,159)
24 Act. November 2006 - October 2007	(648,174)	(309,996)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(958,171)
25 Act. November 2007 - October 2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26 Act. November 2008 - October 2009	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27 Act. November 2009 - October 2010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28 Act. Nov 2010 - Oct 2011 Base Rate Rev	-	-	-	-	-	-	-	(20,085)	(76,491)	-	-	-	-	-	-	-	(20,086)
29 Act. Nov 2011 - Oct 2012 Base Rate Rev	-	-	-	-	-	-	(\$4,296)	(25,497)	-	-	-	-	-	-	-	-	(101,988)
30 Act. Nov 2012 - Oct 2013 Base Rate Rev	-	-	-	-	-	-	(\$31,354)	-	-	-	-	-	-	-	-	-	(4,296)
31 Act. Nov 2013 - Oct 2014 Base Rate Rev	-	-	-	-	-	-	(\$27,652)	-	-	-	-	-	-	-	-	-	(31,354)
32 Act. Nov 2014 - Oct 2015 Base Rate Rev	-	-	-	-	-	-	\$0	(\$14,209)	(28,433)	(28,433)	(21,639)	(21,639)	(21,639)	(21,639)	(21,639)	(21,639)	(77,331)
33 Act. Nov 2015 - Oct 2016 Base Rate Rev	-	-	-	-	-	-	-	(28,433)	(21,639)	(21,639)	(21,639)	(21,639)	(21,639)	(21,639)	(21,639)	(21,639)	(14,209)
34 AES collections	-	-	-	-	-	-	-	(21,639)	(21,639)	(21,639)	(21,639)	(21,639)	(21,639)	(21,639)	(21,639)	(21,639)	(85,298)
35 Gas Street overcollection	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(66,554)
36 Prior Period Pool under/overcollection	132,727	121,038	2,141,596	4,242,438	-	-	-	(87,311)	-	-	-	-	-	-	-	-	-
37																	
38																	
39																	
40																	
41																	
42 C Surcharge Subtotal	(5,008,403)	(188,958)	2,141,596	4,242,438	-	-	(63,313)	(197,093)	(126,563)	(50,071)	(21,639)	-	-	-	-	-	(5,822,494)
43																	
44 D Net balance to be recovered (A-B+C)	242,331	2,141,596	4,242,438	4,692,393	607,876	262,678	147,219	72,188	516,424	-	-	-	-	-	-	-	-
45 E Allocation of Litigated Recovery	-	-	-	(4,692,393)	(607,876)	(262,678)	(234,530)	-	-	-	-	-	-	-	-	-	-
46 Surcharge calculation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
47 Unrecovered costs (D+E)	36	48	60	72	84	84	48	12	12	12	12	12	12	12	12	12	12
48 remaining life	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
49 one year	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
50 F amortization	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
51 Required annual increase in rates:																	
52 smaller of D or F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
53 forecasted them sales	738,066,274	197,178,686	179,574,679	179,574,679	179,574,679	179,574,679	179,574,679	179,574,679	179,574,679	179,574,679	179,574,679	179,574,679	179,574,679	179,574,679	179,574,679	179,574,679	179,574,679
54 surcharge per them	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000
55																	
56																	
57																	

SUBJECT TO REDACTED TREATMENT

1. While the recoveries are displayed on the Summary, Cash Recoveries by site, are not exclusive to a particular site.

Filed under the following protective orders:
Order No. 22,853 dated February 18, 1998 in Docket No. DR 97-130
Order No. 23,316 dated October 11, 1999 in Docket No. DG 98-132

Liberty Utilities (Energy/North Natural Gas) Corp.
Environmental Remediation - MGPs
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Manchester														DEF057				
	(9/09 - 9/04)	(9/04 - 9/05)	(9/05 - 9/06)	(9/06 - 9/07)	(9/07 - 9/08)	(9/08 - 9/09)	(9/09 - 9/10)	(9/10 - 9/11)	(9/11 - 9/12)	(9/12 - 9/13)	(9/13 - 9/14)	(9/14 - 9/15)	(9/15 - 9/16)	(9/16 - 9/17)	(9/17 - 9/18)	(9/18 - 9/19)	(9/19 - 9/20)	Subtotal
	ESSELE.FE	ESSELE.FE	ESSELE.FE	ESSELE.FE	ESSELE.FE	ESSELE.FE	ESSELE.FE	ESSELE.FE	ESSELE.FE	ESSELE.FE	ESSELE.FE	ESSELE.FE	ESSELE.FE	ESSELE.FE	ESSELE.FE	ESSELE.FE	ESSELE.FE	
1	336,338	1,993,848	875,702	561,210	4,387,645	312,185	369,037	372,237	507,622	82,113	92,900	116,486	71,011	54,353	470,725	182,083	312,433	11,093,028
2	826,026																	826,026
3	1,160,330	1,993,848	875,702	561,210	4,387,645	312,185	369,037	372,237	507,622	82,113	92,900	116,486	71,011	54,353	470,725	182,083	312,433	11,919,020
4	-	-	(545,540)	(220,355)	(1,127,536)	-	(40,359)	(234,648)	(85,324)	(270,732)	(31,690)	(41,057)	(48,322)	(3,810)	(124,681)	(144,074)	(157,401)	(3,055,426)
5	-	-	-	2,546	-	-	-	-	-	-	-	-	-	-	-	-	-	2,546
6	1,242,326																	1,242,326
7	-	-	(545,540)	(217,807)	(1,127,536)	-	(40,359)	(234,648)	(85,324)	(270,732)	(31,690)	(41,057)	(48,322)	(3,810)	(124,681)	(144,074)	(157,401)	(1,810,555)
8	1,242,326																	1,242,326
9	1,242,326																	(1,810,555)
10	2,402,756	1,993,848	330,162	343,402	3,260,209	312,185	328,678	137,589	442,298	(188,619)	61,210	75,440	22,690	50,523	346,043	38,019	155,032	10,107,465
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	(73,543)																	(73,543)
20	(75,984)																	(75,984)
21	(138,576)																	(138,576)
22	(326,132)																	(326,132)
23	(302,490)																	(302,490)
24	(338,178)																	(338,178)
25	-	-	(42,272)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(42,272)
26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
32	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
34	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
36	671,481	1,224,246	2,671,037	2,659,927	3,302,330													
37	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
38	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
39	(563,422)	681,189	2,628,765	2,659,927	3,302,330			(114,343)										(1,954,576)
40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
41	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
42	1,819,334	2,671,037	2,958,827	3,302,330	6,562,539	312,185	328,678	137,589	327,655	(188,619)	61,210	75,440	22,690	50,523	346,043	38,019	155,032	8,152,889
43	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
44	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
46	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
47	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
48	24	36	48	60	70	84	84	12	12	12	12	12	12	12	12	12	12	155,032
49	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	64
50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
51	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
52	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
53	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
54	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
55	758,096,274	187,176,686	179,574,679	179,574,679	179,574,679	179,574,679	179,574,679	179,574,679	179,574,679	179,574,679	179,574,679	179,574,679	179,574,679	179,574,679	179,574,679	179,574,679	179,574,679	179,574,679
56	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
57	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000

Required annual increase in rates:
smaller of D or F
forecasted them sales
surcharge per them

1. While the recoveries are displayed on the Summary, Cash Recoveries by site, are not exclusive to a particular site.

Filed under the following protective orders:
Order No. 22,853 dated February 18, 1998 in Docket No. DR 97-130
Order No. 23,316 dated October 11, 1999 in Docket No. DG 99-132

Liberty Utilities (Energy/North Natural Gas) Corp.
Environmental Remediation - MGPs
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		Nashua													DEF04			
		Corrected																
		per 2009 Audit																
		(900 - 904)	(905 - 906)	(907 - 908)	(908 - 909)	(909 - 910)	(910 - 911)	(911 - 912)	(912 - 913)	(713 - 914)	(714 - 915)	(715 - 916)	(716 - 917)	(716 - 918)	(716 - 919)	(719 - 920)	Subtotal	
		ASSETS	LIABILITIES	ASSETS	LIABILITIES	ASSETS	LIABILITIES	ASSETS	LIABILITIES	ASSETS	LIABILITIES	ASSETS	LIABILITIES	ASSETS	LIABILITIES	ASSETS	LIABILITIES	
1	Remediation costs (i.o. 500061)	10,841	206,397	23,354	76,535	162,729	65,118	399,400	119,095	63,397	105,917	106,129	100,342	61,478	128,071	38,533	1,787,649	
2	Remediation costs (i.o. 500005)	1,771,587	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,771,587	
3	A Subtotal - remediation costs	1,782,428	206,397	23,354	76,535	162,729	65,118	399,400	119,095	63,397	105,917	106,129	100,342	61,478	128,071	38,533	3,559,216	
4	Cash recoveries (i.o. 500061)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
5	Cash recoveries (i.o. 500004)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
6	Recover costs (i.o. 500004)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
7	Transfer Credit from Gas Restructuring	-	5,449	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
8	B Subtotal - net recoveries	-	(13,131)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
9	A-B Total net expenses to recover	1,782,428	206,397	23,354	76,535	162,729	65,118	399,400	119,095	63,397	105,917	106,129	100,342	61,478	128,071	38,533	(621,839)	
10	Surcharge revenue:	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
11	Act. June 1998 - October 1998	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
12	Act. November 1998 - October 1999	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
13	Act. November 1999 - October 2000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
14	Act. November 2000 - October 2001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
15	Act. November 2001 - October 2002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
16	Act. November 2002 - October 2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
17	Act. November 2003 - October 2004	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
18	Act. November 2004 - October 2005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
19	Act. November 2005 - October 2006	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	Act. November 2006 - October 2007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
21	Act. November 2007 - October 2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
22	Act. November 2008 - October 2009	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
23	Act. November 2009 - October 2010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
24	Act. November 2010 - October 2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
25	Act. November 2011 - October 2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
26	Act. November 2012 - October 2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
27	Act. Nov 2009-Oct 2010 Base Rate Rev	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
28	Act. Nov 2010-Oct 2011 Base Rate Rev	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
29	Act. Nov 2011-Oct 2012 Base Rate Rev	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
30	Act. Nov 2012-Oct 2013 Base Rate Rev	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
31	Act. Nov 2013-Oct 2014 Base Rate Rev	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
32	Act. Nov 2014-Oct 2015 Base Rate Rev	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
33	Act. Nov 2015-Oct 2016 Base Rate Rev	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
34	AES collections	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
35	Gas Street overcollection	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
36	Prior Period Pool under/overcollection	1,212,889	554,046	704,732	733,479	733,479	714,955	733,479	714,955	733,479	733,479	733,479	733,479	733,479	733,479	733,479	733,479	
37	C Surcharge Subtotal	(203,957)	499,395	704,732	733,479	733,479	714,955	733,479	714,955	733,479	733,479	733,479	733,479	733,479	733,479	733,479	733,479	
38	D Net balance to be recovered (A-B+C)	1,578,451	704,732	714,955	16,289	98,975	33,351	302,853	(80,241)	35,950	65,217	62,435	85,314	15,523	81,969	11,472	1,365,697	
39	E Allocation of Litigated Recovery	-	-	-	(16,289)	(98,975)	(27,735)	-	-	-	-	-	-	-	-	-	-	(973,668)
40	Surcharge calculation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
41	Unrecovered costs (D+E)	-	36	48	84	84	72	12	12	12	12	12	12	12	12	12	12	
42	remaining life	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	
43	one year	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	
44	F amortization	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
45	Required annual increase in rates:	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
46	smaller of D or F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
47	forecasted them sales	738,066,274	197,176,686	179,574,679	179,574,679	179,574,679	179,574,679	179,574,679	179,574,679	179,574,679	179,574,679	179,574,679	179,574,679	179,574,679	179,574,679	179,574,679	179,574,679	
48	surcharge per them	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	
49																		
50																		
51																		
52																		
53																		
54																		
55																		
56																		
57																		

1. While the recoveries are displayed on the Summary, Cash Recoveries by site, are not exclusive to a particular site.

Schedule 20.3
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Filed under the following protective orders:
Order No. 22,853 dated February 18, 1998 in Docket No. DR 97-130
Order No. 22,316 dated October 11, 1999 in Docket No. DG 98-132

Liberty Utilities (Energy/Natural Gas) Corp.
Environmental Remediation - MGPs
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Dover												DEF089		
	(9/02 - 9/03)	(9/04 - 9/05)	(9/05 - 9/06)	(9/06 - 9/07)	(9/07 - 9/08)	(9/08 - 9/09)	(9/09 - 9/10)	(9/10 - 9/11)	(9/11 - 9/12)	(9/12 - 9/13)	(7/13 - 9/14)	(7/14 - 9/15)	Subtotal	
	181,066	18,854	2,288	-	-	-	-	-	-	-	-	-	21,142	
	181,066	18,854	2,288	-	-	-	-	-	-	-	-	-	181,066	
1 Remediation costs (i.o. 500061)														
2 Remediation costs (i.o. 500005)														
3 A Subtotal - remediation costs													202,208	
4 Cash recoveries (i.o. 500061)														
5 Cash recoveries (i.o. 500004)														
6 Recoveries (i.o. 500004)														
7 Transfer Credit from Gas Restructuring														
8														
9 B Subtotal - net recoveries														
10 A-B Total net expenses to recover	181,066	18,854	2,288	-	-	-	-	-	-	-	-	-	202,208	
11														
12														
13														
14 Surcharge revenue:														
15 Act June 1998 - October 1998														
16 Act November 1998 - October 1999														
17 Act November 1999 - October 2000														
18 Act November 2000 - October 2001														
19 Act November 2001 - October 2002														
20 Act November 2002 - October 2003														
21 Act November 2003 - October 2004	(29,134)												(29,134)	
22 Act November 2004 - October 2005	(28,359)												(28,359)	
23 Act November 2005 - October 2006	(27,499)												(27,499)	
24 Act November 2006 - October 2007	(28,181)												(28,181)	
25 Act November 2007 - October 2008														
26 Act November 2008 - October 2009														
27 Act November 2009 - October 2010														
28 Act Nov 2010 - Oct 2011 Base Rate Rev														
29 Act Nov 2011 - Oct 2012 Base Rate Rev														
30 Act Nov 2012 - Oct 2013 Base Rate Rev														
31 Act Nov 2013 - Oct 2014 Base Rate Rev														
32 Act Nov 2014 - Oct 2015 Base Rate Rev														
33 AES collections														
34 Gas Street overcollection														
35 Prior Period Pool under/overcollection	67,892	86,746	89,034	89,034	89,034									
36														
37														
38 C Surcharge Subtotal	(113,174)	67,892	86,746	89,034	89,034								(113,174)	
39														
40														
41 D Net balance to be recovered (A-B+C)	67,892	86,746	89,034	89,034	89,034								89,034	
42														
43 E Allocation of Litigated Recovery													(89,034)	
44														
45 Surcharge calculation														
46 Unrecovered costs (D+E)	24	36	48	60	72	84	84	84	84	84	84	84		
47 remaining life	12	12	12	12	12	12	12	12	12	12	12	12		
48 one year														
49 F amortization														
50 Required annual increase in rates:														
51 smaller of D or F														
52 forecasted them sales	179,574,679	179,574,679	179,574,679	179,574,679	179,574,679	179,574,679	179,574,679	179,574,679	179,574,679	179,574,679	179,574,679	179,574,679	179,574,679	
53 surcharge per them	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	
54														
55														
56														
57														

1. While the recoveries are displayed on the Summary, Cash Recoveries by site, are not exclusive to a particular site.

REDACTED
Schedule 20.3
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Filed under the following protective orders:
Order No. 22,853 dated February 18, 1998 in Docket No. DR 97-130
Order No. 23,316 dated October 11, 1999 in Docket No. DG 98-132

Liberty Utilities (EnergyNorth Natural Gas) Corp.
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		Keene												DEF065	
	(9/03 - 9/04) POOL#L	(9/04 - 9/05) POOL#Z	(9/05 - 9/06) POOL#S	(9/06 - 9/07) POOL#H	(9/07 - 9/08) POOL#S	(9/08 - 9/09) POOL#E	(9/09 - 9/10) POOL#Z	(9/10 - 9/11) POOL#S	(9/11 - 9/12) POOL#E	(9/12 - 9/13) POOL#L	(7/13 - 9/14) POOL#L	(7/14 - 9/15) POOL#L	Subtotal		
1	Remediation costs (i.o. 500061)														
2	Remediation costs (i.o. 500005)	10,165	6,606	35,111	8,766	32	269	-	488	1,400					
3	A. Subtotal - remediation costs	10,165	6,606	35,111	8,766	32	269	-	488	1,400					
4	Cash recoveries (i.o. 500061)	-	-	-	-	-	-	-	-	-					
5	Cash recoveries (i.o. 500004)	-	-	-	-	-	-	-	-	-					
6	Recover credits (i.o. 500004)	-	18,831	823	-	-	-	-	-	-					
7	Transfer Credit from Gas Restructuring	-	-	-	-	-	-	-	-	-					
8	B. Subtotal - net recoveries	-	18,831	823	-	-	-	-	-	-					
9	A-B Total net expenses to recover	10,165	6,606	53,942	9,589	32	269	-	488	1,400					
10															
11															
12															
13															
14	Surcharge revenue:														
15	Act. June 1998 - October 1998	-	-	-	-	-	-	-	-	-					
16	Act. November 1998 - October 1999	-	-	-	-	-	-	-	-	-					
17	Act. November 1999 - October 2000	-	-	-	-	-	-	-	-	-					
18	Act. November 2000 - October 2001	-	-	-	-	-	-	-	-	-					
19	Act. November 2001 - October 2002	-	-	-	-	-	-	-	-	-					
20	Act. November 2002 - October 2003	-	-	-	-	-	-	-	-	-					
21	Act. November 2003 - October 2004	-	-	-	-	-	-	-	-	-					
22	Act. November 2004 - October 2005	-	-	-	-	-	-	-	-	-					
23	Act. November 2005 - October 2006	-	-	-	-	-	-	-	-	-					
24	Act. November 2006 - October 2007	-	-	-	-	-	-	-	-	-					
25	Act. November 2007 - October 2008	-	-	-	-	-	-	-	-	-					
26	Act. November 2008 - October 2009	-	-	-	-	-	-	-	-	-					
27	Act. November 2009 - October 2010	-	-	-	-	-	-	-	-	-					
28	Act. Nov 2010 - Oct 2011 Base Rate Rev	-	-	-	-	-	-	-	-	-					
29	Act. Nov 2011 - Oct 2012 Base Rate Rev	-	-	-	-	-	-	-	-	-					
30	Act. Nov 2012 - Oct 2013 Base Rate Rev	-	-	-	-	-	-	-	-	-					
31	Act. Nov 2013 - Oct 2014 Base Rate Rev	-	-	-	-	-	-	-	-	-					
32	Act. Nov 2014 - Oct 2015 Base Rate Rev	-	-	-	-	-	-	-	-	-					
33	Act. Nov 2015 - Oct 2016 Base Rate Rev	-	-	-	-	-	-	-	-	-					
34	AES collections														
35	Gas Street overcollection														
36	Prior Period Pool under/overcollection	10,165	16,771	56,622	66,211										
37															
38															
39															
40															
41															
42	C Surcharge Subtotal	-	10,165	2,680	56,622	66,211	-	-	-	-			(14,091)		
43															
44	D Net balance to be recovered (A-B+C)	10,165	16,771	56,622	66,211	66,244	269	-	488	1,400					
45	E Allocation of Litigated Recovery	-	-	-	-	(66,244)	(269)	-	-	-					
46	Surcharge calculation														
47	Unrecovered costs (D+E)	-	-	-	-	-	-	-	-	-					
48	remaining life	24	36	48	60	72	84	84	12	12					
49	one year	12	12	12	12	12	12	12	12	12					
50	F amortization	-	-	-	-	-	-	-	-	-					
51															
52	Required annual increase in rates:														
53	smaller of D or F	-	-	-	-	-	-	-	-	-					
54															
55	forecasted them sales	179,574,679	179,574,679	179,574,679	179,574,679	179,574,679	179,574,679	179,574,679	179,574,679	179,574,679			179,574,679		
56	surcharge per them	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000			\$0.0000		
57															

SUBJECT TO REDACTED TREATMENT

1. While the recoveries are displayed on the Summary, Cash Recoveries by site, are not exclusive to a particular site.

Filed under the following protective orders:
Order No. 22,853 dated February 18, 1998 in Docket No. DR 97-130
Order No. 23,316 dated October 11, 1999 in Docket No. DG 98-132

Liberty Utilities (Energy/North Natural Gas) Corp.
Environmental Remediation - MGPs
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	Concord													Subtotal	
	(9/03 - 9/06) POST-EST	Corrected per 2/08 Audit (9/06 - 9/07) POST-AL	(9/07 - 9/08) POST-SE	(9/08 - 9/09) POST-SE	(9/09 - 9/10) POST-FL	(9/10 - 9/11) POST-SE	(9/11 - 9/12) POST-SE	(9/12 - 6/13) POST-FL	(7/13 - 6/14) POST-FL	(7/14 - 6/15) POST-FL	(7/15 - 6/16) POST-FL	(7/16 - 6/17) POST-FL	(7/16 - 6/18) POST-FL		(7/16 - 6/19) POST-FL
1 Remediation costs (i.o. 500061)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2 Remediation costs (i.o. 500005)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3 A Subtotal - remediation costs	287,468	109,642	8,006	77,063	49,403	179,732	289,103	84,256	135,673	192,525	114,749	-	-	-	-
4 Cash recoveries (i.o. 500061)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5 Cash recoveries (i.o. 500004)	(22,239)	(47,977)	(12,601)	16,623	(3,213)	(11,394)	(31,575)	(38,871)	(12,319)	(28,742)	(19,197)	-	-	-	-
6 Cash recoveries (i.o. 500004)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7 Transfer Credit from Gas Restructuring	-	-	1,432	(1,007)	-	-	-	-	-	-	-	-	-	-	-
8 B Subtotal - net recoveries	(22,239)	(47,977)	(11,169)	15,616	(3,213)	(11,394)	(31,575)	(38,871)	(12,319)	(28,742)	(19,197)	-	-	-	-
9 A-B Total net expenses to recover	265,229	61,665	(3,163)	92,679	46,190	168,338	257,528	45,384	123,355	163,783	95,553	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15 Act. June 1998 - October 1998	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16 Act. November 1998 - October 1999	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17 Act. November 1999 - October 2000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18 Act. November 2000 - October 2001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19 Act. November 2001 - October 2002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20 Act. November 2002 - October 2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21 Act. November 2003 - October 2004	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22 Act. November 2004 - October 2005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23 Act. November 2005 - October 2006	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24 Act. November 2006 - October 2007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25 Act. November 2007 - October 2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26 Act. November 2008 - October 2009	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27 Act. November 2009 - October 2010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28 Act. Nov 2009-Oct 2010 Base Rate Rev	-	-	-	-	-	(20,006)	(20,006)	-	-	-	-	-	-	-	(27,499)
29 Act. Nov 2010-Oct 2011 Base Rate Rev	-	-	-	-	-	(12,749)	(12,749)	-	-	-	-	-	-	-	(28,181)
30 Act. Nov 2011-Oct 2012 Base Rate Rev	-	-	-	-	-	(\$13,816)	(\$13,816)	-	-	-	-	-	-	-	(40,012)
31 Act. Nov 2012-Oct 2013 Base Rate Rev	-	-	-	-	-	(\$1,164)	(\$1,164)	-	-	-	-	-	-	-	(36,246)
32 Act. Nov 2013-Oct 2014 Base Rate Rev	-	-	-	-	-	(\$6,794)	(\$6,794)	-	-	-	-	-	-	-	(1,891)
33 Act. Nov 2014-Oct 2015 Base Rate Rev	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(13,816)
34 AES collections	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(2,679)
35 Gas Street overcollection	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(13,586)
36 Prior Period Pool under/overcollection	209,633	209,549	271,214	-	-	-	-	-	-	-	-	-	-	-	-
37	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
38	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
39 C Surcharge Subtotal	153,953	209,549	271,214	-	-	(67,420)	(52,297)	-	-	-	-	-	-	-	(175,398)
40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
41 D Net balance to be recovered (A-B+C)	419,182	271,214	268,051	92,679	46,190	100,919	205,231	45,384	123,355	163,783	95,553	-	-	-	-
42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
43 E Allocation of Litigated Recovery	-	-	(268,051)	(92,679)	(46,190)	(14,702)	-	-	-	-	-	-	-	-	-
44	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
45 Surcharge calculation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
46 Unrecovered costs (D+E)	144	-	72	84	84	12	12	12	17,622	46,795	40,951	-	-	-	-
47 remaining life	36	-	12	12	12	12	12	12	12	12	12	-	-	-	-
48 one year	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
49 F amortization	-	-	-	-	-	-	-	-	17,622	23,398	13,650	-	-	-	-
50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
51 Required annual increase in rates: smaller of D or F	-	-	-	-	-	-	-	-	17,622	23,398	13,650	-	-	-	-
52	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
53 forecasted them sales	553,964,622	187,178,686	179,574,679	179,574,679	179,574,679	179,574,679	179,574,679	179,574,679	179,574,679	179,574,679	179,574,679	179,574,679	179,574,679	179,574,679	179,574,679
54	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
55 surcharge per them	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0001	\$0.0001	\$0.0001	\$0.0001	\$0.0001	\$0.0001	\$0.0001
56	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
57	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

SUBJECT TO REDACTED TREATMENT

1. While the recoveries are displayed on the Summary, Cash Recoveries by site, are not exclusive to a particular site.

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Schedule 20.3
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Filed under the following protective orders:
Order No. 22,853 dated February 18, 1998 in Docket No. DR 97-130
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Liberty Utilities (Energy/North Natural Gas) Corp.
Environmental Remediation - MGPs
Tariff page 95

	General												2020 MGP Remediation Subtotal		
	(902-907) FOURTEEN	(907-908) FOURTEEN	(908-909) FOURTEEN	(909-910) FOURTEEN	(910-911) FOURTEEN	(911-912) FOURTEEN	(912-913) FOURTEEN	(713-614) FOURTEEN	(714-615) FOURTEEN	(715-616) FOURTEEN	(716-617) FOURTEEN	(717-618) FOURTEEN		(718-619) FOURTEEN	(719-620) FOURTEEN
1 Remediation costs (i.o. 500061)	806,611	(181,000)	(26,884)	4,199	69,286	93,034	75,204	13,139	16,612	11,879	6,547	10,799	6,868	7,111	913,406
2 Remediation costs (i.o. 500005)	806,611	(181,000)	(26,884)	4,199	69,286	93,034	75,204	13,139	16,612	11,879	6,547	10,799	6,868	7,111	913,406
3 A Subtotal - remediation costs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4 Cash recoveries (i.o. 500061)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5 Cash recoveries (i.o. 500004)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6 Cash recoveries (i.o. 500004)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7 Recoveries (i.o. 500004)	16,012	(3,331)	23,953	-	-	(14,068)	(1,358)	-	(24,250)	-	-	-	-	-	288
8 Transfer Credit from Gas Restructuring	12,681	(3,331)	23,953	-	-	(14,068)	(1,358)	-	(24,250)	-	-	-	-	-	(6,331)
9 B Subtotal - net recoveries	28,693	(6,662)	47,906	-	-	(28,136)	(2,716)	-	(48,500)	-	-	-	-	-	(6,043)
10 A-B Total net expenses to recover	806,611	(168,319)	(2,931)	4,199	69,286	78,967	73,846	13,139	(7,638)	11,879	6,547	10,799	6,868	7,111	910,363
11 Surcharge revenue:															
12 Act June 1998 - October 1998	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(54,889)
13 Act November 1998 - October 1999	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(538,143)
14 Act November 1999 - October 2000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(912,804)
15 Act November 2000 - October 2001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(1,336,776)
16 Act November 2001 - October 2002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(1,679,228)
17 Act November 2002 - October 2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(1,732,442)
18 Act November 2003 - October 2004	(8,265)	-	-	-	-	-	-	-	-	-	-	-	-	-	(1,428,735)
19 Act November 2004 - October 2005	(70,898)	-	-	-	-	-	-	-	-	-	-	-	-	-	(1,403,787)
20 Act November 2005 - October 2006	(96,247)	-	-	-	-	-	-	-	-	-	-	-	-	-	(1,694,877)
21 Act November 2006 - October 2007	(49,318)	-	-	-	-	-	-	-	-	-	-	-	-	-	(2,036,113)
22 Act November 2007 - October 2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(180,048)
23 Act November 2008 - October 2009	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(293,217)
24 Act November 2009 - October 2010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(10,611)
25 Act Nov 2010-Oct 2011 Base Rate Rev	-	-	-	-	(5,002)	(12,749)	(12,749)	-	-	-	-	-	-	-	(7,293)
26 Act Nov 2011-Oct 2012 Base Rate Rev	-	-	-	-	(12,749)	(12,749)	(12,749)	-	-	-	-	-	-	-	(76,535)
27 Act Nov 2012-Oct 2013 Base Rate Rev	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(85,288)
28 Act Nov 2013-Oct 2014 Base Rate Rev	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(86,554)
29 Act Nov 2014-Oct 2015 Base Rate Rev	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(251,103)
30 AES collections	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(23,511)
31 Gas Street overcollection	1,486,644	2,068,527	-	-	-	-	-	-	-	-	-	-	-	-	-
32 Prior Period Pool under/collection	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
33 C Surcharge Subtotal	1,261,916	2,068,527	-	-	(17,750)	(17,750)	(12,749)	-	-	-	-	-	-	-	(13,950,225)
34 D Net balance to be recovered (A-B+C)	2,068,527	1,900,208	(2,931)	4,199	51,536	61,217	61,098	13,139	(7,638)	11,879	6,547	10,799	6,868	7,111	637,386
35 E Allocation of Litigated Recovery	-	(1,900,208)	2,931	(4,199)	(8,562)	-	-	-	-	-	-	-	-	-	(1,910,037)
36 Surcharge calculation															
37 Unrecovered costs (D+E)	72	84	84	84	12	12	12	1,877	(2,182)	5,091	3,741	7,714	5,887	7,111	29,238
38 remaining life	12	12	12	12	12	12	12	12	24	36	48	60	72	84	-
39 one year	12	12	12	12	12	12	12	12	12	12	12	12	12	12	-
40 F amortization	-	-	-	-	-	-	-	1,877	(1,091)	1,697	935	1,543	981	1,016	-
41 Required annual increase in rates:															
42 smaller of D or F	-	-	-	-	-	-	-	1,877	(1,091)	1,697	935	1,543	981	1,016	6,958
43 forecasted them sales	179,574,679	179,574,679	179,574,679	179,574,679	179,574,679	179,574,679	179,574,679	179,574,679	179,574,679	179,574,679	179,574,679	179,574,679	179,574,679	179,574,679	179,574,679
44 surcharge per them	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0159

SUBJECT TO REDACTED TREATMENT

1. While the recoveries are displayed on the Summary, Cash Recoveries by site, are not exclusive to a particular site.

REDACTED
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Filed under the following protective orders:
Order No. 22,853 dated February 18, 1998 in Docket No. DR 97-130
Order No. 23,316 dated October 11, 1999 in Docket No. DG 99-132

Liberty Utilities (Energy/North Natural Gas) Corp.
Environmental Remediation - MGPs
Tariff page 95

	(1997-9/07)	(9/07-9/08)	(9/08-9/09)	(9/09-9/10)	(9/10-9/11)	(9/11-9/12)	(7/13-6/14)	(7/14-6/15)	(7/15-6/16)	(7/16-6/17)	(7/17-6/18)	(7/18-6/19)	Total
1 Remediation costs (i.o. 5000061)	9,917,388	4,580,624	616,907	674,786	666,515	893,424	1,963,111	3,122,039	220,344	256,871	256,871	670,804	539,324
2 Remediation costs (i.o. 5000005)	13,712,581	253,263	656,324	310,280	430,300	651,396	1,801,404	7,975,914	3,207,910	260,386	260,386	119,841	114,228
3 A Subtotal - remediation costs	23,629,969	4,843,887	1,177,231	985,066	1,146,065	1,545,340	3,980,015	8,287,953	3,528,254	517,257	517,257	790,645	653,552
4 Cash recoveries (i.o. 5000061)	(2,834,544)	(1,150,422)	(68,231)	(113,390)	(910,226)	(105,062)	(79,446)	(121,889)	(110,826)	(53,116)	(53,116)	(195,423)	(212,600)
5 Cash recoveries (i.o. 5000004)	(449,965)	97,800	-	-	-	-	-	-	-	-	-	-	-
6 Recoveries (i.o. 5000004)	1,916,240	(3,331)	22,946	-	(14,068)	2,500,000	2,475,750	-	-	-	-	-	-
7 Transfer Credit from Gas Restructuring	(1,462,189)	(1,114,041)	(55,285)	(113,390)	(910,226)	(119,129)	2,420,554	2,353,861	(119,826)	(53,116)	(53,116)	(195,423)	(212,600)
8 A-B Total net expenses to recover	22,167,780	3,731,845	1,141,946	877,656	835,839	1,526,211	4,418,569,29	10,641,813,86	3,408,427,63	464,499,00	464,499,00	591,686,20	440,891,85
9 Surcharge revenue:													
10 Act June 1998 - October 1998	(54,889)	-	-	-	-	-	-	-	-	-	-	-	(54,889)
11 Act November 1998 - October 1999	(638,143)	-	-	-	-	-	-	-	-	-	-	-	(638,143)
12 Act November 1999 - October 2000	(812,804)	-	-	-	-	-	-	-	-	-	-	-	(812,804)
13 Act November 2000 - October 2001	(1,336,776)	-	-	-	-	-	-	-	-	-	-	-	(1,336,776)
14 Act November 2001 - October 2002	(1,679,228)	-	-	-	-	-	-	-	-	-	-	-	(1,679,228)
15 Act November 2002 - October 2003	(1,732,442)	-	-	-	-	-	-	-	-	-	-	-	(1,732,442)
16 Act November 2003 - October 2004	(1,428,735)	-	-	-	-	-	-	-	-	-	-	-	(1,428,735)
17 Act November 2004 - October 2005	(1,403,787)	-	-	-	-	-	-	-	-	-	-	-	(1,403,787)
18 Act November 2005 - October 2006	(1,694,877)	-	-	-	-	-	-	-	-	-	-	-	(1,694,877)
19 Act November 2006 - October 2007	(2,036,113)	-	-	-	-	-	-	-	-	-	-	-	(2,036,113)
20 Act November 2007 - October 2008	-	-	-	-	-	-	-	-	-	-	-	-	-
21 Act November 2008 - October 2009	-	-	-	-	-	-	-	-	-	-	-	-	-
22 Act November 2009 - October 2010	-	-	-	-	-	-	-	-	-	-	-	-	-
23 Act Nov 2010-Oct 2011 Base Rate Rev	(30,009)	(130,039)	-	-	-	-	-	-	-	-	-	-	(160,048)
24 Act Nov 2011-Oct 2012 Base Rate Rev	(82,246)	(165,731)	-	-	-	-	-	-	-	-	-	-	(203,977)
25 Act Nov 2012-Oct 2013 Base Rate Rev	(10,611)	-	-	-	-	-	-	-	-	-	-	-	(10,611)
26 Act Nov 2013-Oct 2014 Base Rate Rev	(77,309)	-	-	-	-	-	-	-	-	-	-	-	(77,309)
27 Act Nov 2014-Oct 2015 Base Rate Rev	(62,244)	-	-	-	-	-	-	-	-	-	-	-	(62,244)
28 Act Nov 2015-Oct 2016 Base Rate Rev	(6,307)	-	-	-	-	-	-	-	-	-	-	-	(6,307)
29 Act Nov 2016-Oct 2017 Base Rate Rev	(91,208)	-	-	-	-	-	-	-	-	-	-	-	(91,208)
30 Act Nov 2017-Oct 2018 Base Rate Rev	(21,639)	-	-	-	-	-	-	-	-	-	-	-	(21,639)
31 Act Nov 2018-Oct 2019 Base Rate Rev	(21,639)	-	-	-	-	-	-	-	-	-	-	-	(21,639)
32 Act Nov 2019-Oct 2020 Base Rate Rev	(21,639)	-	-	-	-	-	-	-	-	-	-	-	(21,639)
33 A-E Subtotal	(23,511)	(12,620)	(12,904)	(13,145)	(13,221)	(13,738)	(13,948)	(14,173)	(14,405)	(14,664)	(14,664)	(14,858)	(15,312)
34 Gas Street overcollection	-	-	-	-	-	-	-	-	-	-	-	-	-
35 Prior Period Pool under/overcollection	-	-	-	-	-	-	-	-	-	-	-	-	-
36 C Surcharge Subtotal	2,832,243	(12,620)	(12,904)	(13,145)	(13,221)	(13,738)	(13,948)	(14,173)	(14,405)	(14,664)	(14,664)	(14,858)	(15,312)
37 D Net balance to be recovered (A-B+C)	25,000,023	3,719,225	1,129,042	884,510	589,062	1,099,233	4,354,550	10,606,003	3,394,023	448,835	448,835	576,828	425,579
38 E Allocation of Litigated Recovery													
39 Surcharge calculation													
40 Unrecovered costs (D+E)													
41 remaining life													
42 one year													
43 F amortization													
44 Required annual increase in rates:													
45 smaller of D or F													
46 forecasted them sales													
47 surcharge per them													

SUBJECT TO REDACTED TREATMENT

1. While the recoveries are displayed on the Summary, Cash Recoveries by site, are not exclusive to a particular site.

Schedule 21

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Liberty Utilities (EnergyNorth Natural Gas) Corp.

**Calculation of Supplier Balancing Charge
2020-2021**

Rate: \$ 0.1207 /MMBtu

	Rate	Volume	Total
Injection Cost	\$ 0.0087	533,242	\$ 4,639
Fuel 1.75%	\$ 0.0306	533,242	\$ 16,331
Withdrawal Cost	\$ 0.0087	146,104	\$ 1,271
Delivery Rate	\$ 0.0440	146,104	\$ 6,433
FTA Demand Charge	\$ 0.2401	146,104	\$ 35,087
FTA Commodity Charge	\$ 0.1011	146,104	\$ 14,771
Fuel 1.35%	\$ 0.0236	146,104	\$ 3,452
		Total Cost	\$ 81,984
	Absolute Value of the	Sendout Error	679,346 MMBtu
		Rate	\$ 0.1207 /MMBTU

NOTES: See Tennessee Gas Pipeline Tariff Pages in PK Schedule 6

TGP FSMA Injection Charge	\$	0.0087	/ MMBtu
TGP FSMA Withdrawal Charge	\$	0.0087	/ MMBtu
TGP FSMA Deliverability Charge	\$	1.3386	/ MMBtu per month
	\$	0.0440	/ MMBtu per day
TGP Z4-6 Demand Charge	\$	7.3005	/ MMBtu per month
	\$	0.2401	/ MMBtu per day
TGP Z4-6 Commodity Charge	\$	0.1011	/ MMBtu

Liberty Utilities (EnergyNorth Natural Gas) Corp.

Calculation of Supplier Balancing Charge
2020-2021
Estimated Monthly Imbalances

<u>Date</u>	<u>Forecasted</u> <u>DD</u>	<u>Actual</u> <u>DD</u>	<u>Forecaster</u> <u>Error</u> <u>DD</u>	<u>Forecasted</u> <u>Sendout</u> <u>(MMBtu)</u>	<u>Actual</u> <u>Sendout</u> <u>(MMBtu)</u>	<u>Sendout</u> <u>Error</u> <u>(MMBtu)</u>	<u>Abs. Value</u> <u>Sendout</u> <u>Error</u> <u>(MMBtu)</u>	<u>Injections</u> <u>(MMBtu)</u>	<u>Withdrawals</u> <u>(MMBtu)</u>
Nov	864	846	18	1,595,375	1,569,559	25,817	68,844	47,331	21,514
Dec	1,068	1,054	14	2,534,640	2,508,748	25,892	114,665	70,279	44,387
Jan	1,066	1,025	41	2,530,941	2,455,114	75,827	123,913	99,870	24,043
Feb	1,013	963	50	2,396,828	2,304,356	92,472	103,569	98,020	5,548
Mar	734	697	37	1,897,371	1,835,691	61,680	91,686	76,683	15,003
Apr	515	491	24	1,201,753	1,164,984	36,768	82,729	59,749	22,980
May	298	257	41	673,100	637,803	35,297	47,349	41,323	6,026
Jun	34	31	3	272,948	271,441	1,507	3,516	2,511	1,005
Jul	3	-	3	482,117	482,117	-	-	-	-
Aug	12	4	8	345,193	344,993	199	199	199	-
Sep	92	79	13	396,293	390,241	6,052	10,070	8,061	2,009
Oct	385	349	36	897,248	871,622	25,626	32,804	29,215	3,589
Total	6,084	5,796	288	15,223,807	14,836,669	387,137	679,346	533,242	146,104

Liberty Utilities (EnergyNorth Natural Gas) Corp.
Calculation of Supplier Balancing Charge
2020-2021

Estimated Daily Imbalances

Date	Predicted MAN HDD	Actual MAN HDD	Forecaster Error MAN HDD	Calculated on Predicted MAN HDD	Calculated on Actual MAN HDD	Sendout Error (MMBtu)	Abs.Value Sendout Error (MMBtu)	Injections (MMBtu)	Withdrawals (MMBtu)
Apr 1, 2019	31	31	0	61,251	61,251	0	0	0	0
Apr 2, 2019	23	21	2	48,995	45,931	3,064	3,064	3,064	0
Apr 3, 2019	22	19	3	47,463	42,867	4,596	4,596	4,596	0
Apr 4, 2019	29	26	3	58,187	53,591	4,596	4,596	4,596	0
Apr 5, 2019	24	24	0	50,527	50,527	0	0	0	0
Apr 6, 2019	15	16	-1	36,739	38,271	-1,532	1,532	0	1,532
Apr 7, 2019	12	11	1	32,143	30,611	1,532	1,532	1,532	0
Apr 8, 2019	27	30	-3	55,123	59,719	-4,596	4,596	0	4,596
Apr 9, 2019	27	29	-2	55,123	58,187	-3,064	3,064	0	3,064
Apr 10, 2019	28	28	0	56,655	56,655	0	0	0	0
Apr 11, 2019	23	22	1	48,995	47,463	1,532	1,532	1,532	0
Apr 12, 2019	15	12	3	36,739	32,143	4,596	4,596	4,596	0
Apr 13, 2019	6	3	3	22,951	18,355	4,596	4,596	4,596	0
Apr 14, 2019	9	10	-1	27,547	29,079	-1,532	1,532	0	1,532
Apr 15, 2019	16	17	-1	38,271	39,803	-1,532	1,532	0	1,532
Apr 16, 2019	19	18	1	42,867	41,335	1,532	1,532	1,532	0
Apr 17, 2019	17	14	3	39,803	35,207	4,596	4,596	4,596	0
Apr 18, 2019	14	16	-2	35,207	38,271	-3,064	3,064	0	3,064
Apr 19, 2019	0	0	0	13,759	13,759	0	0	0	0
Apr 20, 2019	3	1	2	18,355	15,291	3,064	3,064	3,064	0
Apr 21, 2019	8	5	3	26,015	21,419	4,596	4,596	4,596	0
Apr 22, 2019	10	8	2	29,079	26,015	3,064	3,064	3,064	0
Apr 23, 2019	14	14	0	35,207	35,207	0	0	0	0
Apr 24, 2019	15	12	3	36,739	32,143	4,596	4,596	4,596	0
Apr 25, 2019	12	13	-1	32,143	33,675	-1,532	1,532	0	1,532
Apr 26, 2019	17	21	-4	39,803	45,931	-6,128	6,128	0	6,128
Apr 27, 2019	21	19	2	45,931	42,867	3,064	3,064	3,064	0
Apr 28, 2019	19	17	2	42,867	39,803	3,064	3,064	3,064	0
Apr 29, 2019	18	15	3	41,335	36,739	4,596	4,596	4,596	0
Apr 30, 2019	21	19	2	45,931	42,867	3,064	3,064	3,064	0
May 1, 2019	18	14	4	28,933	25,490	3,444	3,444	3,444	0
May 2, 2019	21	20	1	31,516	30,655	861	861	861	0
May 3, 2019	15	16	-1	26,351	27,212	-861	861	0	861
May 4, 2019	10	9	1	22,046	21,185	861	861	861	0
May 5, 2019	16	12	4	27,212	23,768	3,444	3,444	3,444	0
May 6, 2019	12	9	3	23,768	21,185	2,583	2,583	2,583	0
May 7, 2019	8	7	1	20,324	19,463	861	861	861	0
May 8, 2019	14	11	3	25,490	22,907	2,583	2,583	2,583	0
May 9, 2019	14	10	4	25,490	22,046	3,444	3,444	3,444	0
May 10, 2019	10	9	1	22,046	21,185	861	861	861	0
May 11, 2019	12	9	3	23,768	21,185	2,583	2,583	2,583	0
May 12, 2019	19	16	3	29,794	27,212	2,583	2,583	2,583	0
May 13, 2019	20	20	0	30,655	30,655	0	0	0	0
May 14, 2019	22	20	2	32,377	30,655	1,722	1,722	1,722	0
May 15, 2019	13	11	2	24,629	22,907	1,722	1,722	1,722	0
May 16, 2019	7	8	-1	19,463	20,324	-861	861	0	861
May 17, 2019	8	5	3	20,324	17,742	2,583	2,583	2,583	0
May 18, 2019	6	4	2	18,603	16,881	1,722	1,722	1,722	0
May 19, 2019	0	0	0	13,437	13,437	0	0	0	0
May 20, 2019	0	0	0	13,437	13,437	0	0	0	0
May 21, 2019	9	6	3	21,185	18,603	2,583	2,583	2,583	0
May 22, 2019	5	4	1	17,742	16,881	861	861	861	0
May 23, 2019	0	1	-1	13,437	14,298	-861	861	0	861
May 24, 2019	7	5	2	19,463	17,742	1,722	1,722	1,722	0
May 25, 2019	0	0	0	13,437	13,437	0	0	0	0
May 26, 2019	0	0	0	13,437	13,437	0	0	0	0
May 27, 2019	3	0	3	16,020	13,437	2,583	2,583	2,583	0
May 28, 2019	15	17	-2	26,351	28,072	-1,722	1,722	0	1,722
May 29, 2019	10	12	-2	22,046	23,768	-1,722	1,722	0	1,722
May 30, 2019	2	1	1	15,159	14,298	861	861	861	0
May 31, 2019	2	1	1	15,159	14,298	861	861	861	0
Jun 1, 2019	2	4	-2	15,220	16,224	-1,005	1,005	0	1,005
Jun 2, 2019	4	4	0	16,224	16,224	0	0	0	0
Jun 3, 2019	8	7	1	18,233	17,731	502	502	502	0
Jun 4, 2019	5	3	2	16,726	15,722	1,005	1,005	1,005	0
Jun 5, 2019	0	0	0	14,215	14,215	0	0	0	0

Liberty Utilities (EnergyNorth Natural Gas) Corp.
Calculation of Supplier Balancing Charge
2019-2020
Estimated Daily Imbalances

Date	Predicted MAN HDD	Actual MAN HDD	Forecaster Error MAN HDD	Calculated on Predicted MAN HDD	Calculated on Actual MAN HDD	Sendout Error (MMBtu)	Abs.Value	Injections (MMBtu)	Withdrawals (MMBtu)
							Sendout Error (MMBtu)		
Jun 6, 2019	0	0	0	14,215	14,215	0	0	0	0
Jun 7, 2019	0	0	0	14,215	14,215	0	0	0	0
Jun 8, 2019	0	0	0	14,215	14,215	0	0	0	0
Jun 9, 2019	0	0	0	14,215	14,215	0	0	0	0
Jun 10, 2019	0	0	0	14,215	14,215	0	0	0	0
Jun 11, 2019	1	0	1	14,717	14,215	502	502	502	0
Jun 12, 2019	0	0	0	14,215	14,215	0	0	0	0
Jun 13, 2019	11	11	0	19,740	19,740	0	0	0	0
Jun 14, 2019	2	2	0	15,220	15,220	0	0	0	0
Jun 15, 2019	0	0	0	14,215	14,215	0	0	0	0
Jun 16, 2019	1	0	1	14,717	14,215	502	502	502	0
Jun 17, 2019	0	0	0	14,215	14,215	0	0	0	0
Jun 18, 2019	0	0	0	14,215	14,215	0	0	0	0
Jun 19, 2019	0	0	0	14,215	14,215	0	0	0	0
Jun 20, 2019	0	0	0	14,215	14,215	0	0	0	0
Jun 21, 2019	0	0	0	14,215	14,215	0	0	0	0
Jun 22, 2019	0	0	0	14,215	14,215	0	0	0	0
Jun 23, 2019	0	0	0	14,215	14,215	0	0	0	0
Jun 24, 2019	0	0	0	14,215	14,215	0	0	0	0
Jun 25, 2019	0	0	0	14,215	14,215	0	0	0	0
Jun 26, 2019	0	0	0	14,215	14,215	0	0	0	0
Jun 27, 2019	0	0	0	14,215	14,215	0	0	0	0
Jun 28, 2019	0	0	0	14,215	14,215	0	0	0	0
Jun 29, 2019	0	0	0	14,215	14,215	0	0	0	0
Jun 30, 2019	0	0	0	14,215	14,215	0	0	0	0
Jul 1, 2019	0	0	0	10,385	10,385	0	0	0	0
Jul 2, 2019	0	0	0	10,385	10,385	0	0	0	0
Jul 3, 2019	0	0	0	10,385	10,385	0	0	0	0
Jul 4, 2019	0	0	0	10,385	10,385	0	0	0	0
Jul 5, 2019	0	0	0	10,385	10,385	0	0	0	0
Jul 6, 2019	0	0	0	10,385	10,385	0	0	0	0
Jul 7, 2019	0	0	0	10,385	10,385	0	0	0	0
Jul 8, 2019	0	0	0	10,385	10,385	0	0	0	0
Jul 9, 2019	0	0	0	10,385	10,385	0	0	0	0
Jul 10, 2019	0	0	0	10,385	10,385	0	0	0	0
Jul 11, 2019	0	0	0	10,385	10,385	0	0	0	0
Jul 12, 2019	0	0	0	10,385	10,385	0	0	0	0
Jul 13, 2019	0	0	0	10,385	10,385	0	0	0	0
Jul 14, 2019	0	0	0	10,385	10,385	0	0	0	0
Jul 15, 2019	0	0	0	10,385	10,385	0	0	0	0
Jul 16, 2019	0	0	0	10,385	10,385	0	0	0	0
Jul 17, 2019	0	0	0	10,385	10,385	0	0	0	0
Jul 18, 2019	0	0	0	10,385	10,385	0	0	0	0
Jul 19, 2019	0	0	0	10,385	10,385	0	0	0	0
Jul 20, 2019	0	0	0	10,385	10,385	0	0	0	0
Jul 21, 2019	0	0	0	10,385	10,385	0	0	0	0
Jul 22, 2019	0	0	0	10,385	10,385	0	0	0	0
Jul 23, 2019	3	0	3	10,385	10,385	0	0	0	0
Jul 24, 2019	0	0	0	10,385	10,385	0	0	0	0
Jul 25, 2019	0	0	0	10,385	10,385	0	0	0	0
Jul 26, 2019	0	0	0	10,385	10,385	0	0	0	0
Jul 27, 2019	0	0	0	10,385	10,385	0	0	0	0
Jul 28, 2019	0	0	0	10,385	10,385	0	0	0	0
Jul 29, 2019	0	0	0	10,385	10,385	0	0	0	0
Jul 30, 2019	0	0	0	10,385	10,385	0	0	0	0
Jul 31, 2019	0	0	0	10,385	10,385	0	0	0	0
Aug 1, 2019	0	0	0	11,150	11,150	0	0	0	0
Aug 2, 2019	0	0	0	11,150	11,150	0	0	0	0
Aug 3, 2019	0	0	0	11,150	11,150	0	0	0	0
Aug 4, 2019	0	0	0	11,150	11,150	0	0	0	0
Aug 5, 2019	0	0	0	11,150	11,150	0	0	0	0
Aug 6, 2019	0	0	0	11,150	11,150	0	0	0	0
Aug 7, 2019	0	0	0	11,150	11,150	0	0	0	0
Aug 8, 2019	0	0	0	11,150	11,150	0	0	0	0
Aug 9, 2019	0	0	0	11,150	11,150	0	0	0	0
Aug 10, 2019	1	0	1	11,175	11,150	25	25	25	0
Aug 11, 2019	0	0	0	11,150	11,150	0	0	0	0

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							Sendout Error (MMBtu)		
Aug 12, 2019	0	0	0	11,150	11,150	0	0	0	0
Aug 13, 2019	0	0	0	11,150	11,150	0	0	0	0
Aug 14, 2019	0	0	0	11,150	11,150	0	0	0	0
Aug 15, 2019	0	0	0	11,150	11,150	0	0	0	0
Aug 16, 2019	0	0	0	11,150	11,150	0	0	0	0
Aug 17, 2019	0	0	0	11,150	11,150	0	0	0	0
Aug 18, 2019	0	0	0	11,150	11,150	0	0	0	0
Aug 19, 2019	0	0	0	11,150	11,150	0	0	0	0
Aug 20, 2019	0	0	0	11,150	11,150	0	0	0	0
Aug 21, 2019	0	0	0	11,150	11,150	0	0	0	0
Aug 22, 2019	0	0	0	11,150	11,150	0	0	0	0
Aug 23, 2019	0	0	0	11,150	11,150	0	0	0	0
Aug 24, 2019	1	0	1	11,175	11,150	25	25	25	0
Aug 25, 2019	5	3	2	11,275	11,225	50	50	50	0
Aug 26, 2019	5	1	4	11,275	11,175	100	100	100	0
Aug 27, 2019	0	0	0	11,150	11,150	0	0	0	0
Aug 28, 2019	0	0	0	11,150	11,150	0	0	0	0
Aug 29, 2019	0	0	0	11,150	11,150	0	0	0	0
Aug 30, 2019	0	0	0	11,150	11,150	0	0	0	0
Aug 31, 2019	1	0	1	11,175	11,150	25	25	25	0
Sep 1, 2019	1	0	1	12,206	11,704	502	502	502	0
Sep 2, 2019	0	0	0	11,704	11,704	0	0	0	0
Sep 3, 2019	0	0	0	11,704	11,704	0	0	0	0
Sep 4, 2019	0	0	0	11,704	11,704	0	0	0	0
Sep 5, 2019	1	2	-1	12,206	12,708	-502	502	0	502
Sep 6, 2019	5	4	1	14,215	13,713	502	502	502	0
Sep 7, 2019	5	1	4	14,215	12,206	2,009	2,009	2,009	0
Sep 8, 2019	3	2	1	13,211	12,708	502	502	502	0
Sep 9, 2019	3	2	1	13,211	12,708	502	502	502	0
Sep 10, 2019	0	0	0	11,704	11,704	0	0	0	0
Sep 11, 2019	0	0	0	11,704	11,704	0	0	0	0
Sep 12, 2019	10	9	1	16,727	16,224	502	502	502	0
Sep 13, 2019	10	9	1	16,727	16,224	502	502	502	0
Sep 14, 2019	2	2	0	12,708	12,708	0	0	0	0
Sep 15, 2019	1	0	1	12,206	11,704	502	502	502	0
Sep 16, 2019	6	5	1	14,717	14,215	502	502	502	0
Sep 17, 2019	5	4	1	14,215	13,713	502	502	502	0
Sep 18, 2019	12	12	0	17,731	17,731	0	0	0	0
Sep 19, 2019	8	8	0	15,722	15,722	0	0	0	0
Sep 20, 2019	0	0	0	11,704	11,704	0	0	0	0
Sep 21, 2019	0	0	0	11,704	11,704	0	0	0	0
Sep 22, 2019	0	0	0	11,704	11,704	0	0	0	0
Sep 23, 2019	0	0	0	11,704	11,704	0	0	0	0
Sep 24, 2019	1	3	-2	12,206	13,211	-1,005	1,005	0	1,005
Sep 25, 2019	3	4	-1	13,211	13,713	-502	502	0	502
Sep 26, 2019	3	3	0	13,211	13,211	0	0	0	0
Sep 27, 2019	4	2	2	13,713	12,708	1,005	1,005	1,005	0
Sep 28, 2019	0	0	0	11,704	11,704	0	0	0	0
Sep 29, 2019	8	7	1	15,722	15,220	502	502	502	0
Sep 30, 2019	9	8	1	16,224	15,722	502	502	502	0
Oct 1, 2019	0	0	0	19,714	19,714	0	0	0	0
Oct 2, 2019	11	9	2	27,610	26,174	1,436	1,436	1,436	0
Oct 3, 2019	16	15	1	31,199	30,481	718	718	718	0
Oct 4, 2019	16	17	-1	31,199	31,917	-718	718	0	718
Oct 5, 2019	17	18	-1	31,917	32,634	-718	718	0	718
Oct 6, 2019	4	0	4	22,585	19,714	2,871	2,871	2,871	0
Oct 7, 2019	5	2	3	23,303	21,149	2,153	2,153	2,153	0
Oct 8, 2019	10	9	1	26,892	26,174	718	718	718	0
Oct 9, 2019	12	11	1	28,328	27,610	718	718	718	0
Oct 10, 2019	14	10	4	29,763	26,892	2,871	2,871	2,871	0
Oct 11, 2019	14	9	5	29,763	26,174	3,589	3,589	3,589	0
Oct 12, 2019	12	12	0	28,328	28,328	0	0	0	0
Oct 13, 2019	11	11	0	27,610	27,610	0	0	0	0
Oct 14, 2019	10	8	2	26,892	25,456	1,436	1,436	1,436	0
Oct 15, 2019	16	17	-1	31,199	31,917	-718	718	0	718
Oct 16, 2019	10	9	1	26,892	26,174	718	718	718	0
Oct 17, 2019	17	16	1	31,917	31,199	718	718	718	0

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							Sendout Error (MMBtu)		
Oct 18, 2019	17	16	1	31,917	31,199	718	718	718	0
Oct 19, 2019	19	19	0	33,352	33,352	0	0	0	0
Oct 20, 2019	14	12	2	29,763	28,328	1,436	1,436	1,436	0
Oct 21, 2019	15	13	2	30,481	29,045	1,436	1,436	1,436	0
Oct 22, 2019	10	10	0	26,892	26,892	0	0	0	0
Oct 23, 2019	13	12	1	29,045	28,328	718	718	718	0
Oct 24, 2019	12	8	4	28,328	25,456	2,871	2,871	2,871	0
Oct 25, 2019	12	12	0	28,328	28,328	0	0	0	0
Oct 26, 2019	18	16	2	32,634	31,199	1,436	1,436	1,436	0
Oct 27, 2019	16	17	-1	31,199	31,917	-718	718	0	718
Oct 28, 2019	16	15	1	31,199	30,481	718	718	718	0
Oct 29, 2019	13	12	1	29,045	28,328	718	718	718	0
Oct 30, 2019	5	6	-1	23,303	24,021	-718	718	0	718
Oct 31, 2019	1	0	1	20,431	19,714	718	718	718	0
Nov 1, 2019	22	22	0	43,426	43,426	0	0	0	0
Nov 2, 2019	24	26	-2	46,295	49,163	-2,869	2,869	0	2,869
Nov 3, 2019	23	22	1	44,860	43,426	1,434	1,434	1,434	0
Nov 4, 2019	19	18	1	39,123	37,689	1,434	1,434	1,434	0
Nov 5, 2019	19	17	2	39,123	36,255	2,869	2,869	2,869	0
Nov 6, 2019	24	24	0	46,295	46,295	0	0	0	0
Nov 7, 2019	25	26	-1	47,729	49,163	-1,434	1,434	0	1,434
Nov 8, 2019	34	37	-3	60,637	64,940	-4,303	4,303	0	4,303
Nov 9, 2019	31	31	0	56,335	56,335	0	0	0	0
Nov 10, 2019	24	21	3	46,295	41,992	4,303	4,303	4,303	0
Nov 11, 2019	25	27	-2	47,729	50,598	-2,869	2,869	0	2,869
Nov 12, 2019	39	41	-2	67,809	70,677	-2,869	2,869	0	2,869
Nov 13, 2019	42	44	-2	72,111	74,980	-2,869	2,869	0	2,869
Nov 14, 2019	33	35	-2	59,203	62,072	-2,869	2,869	0	2,869
Nov 15, 2019	31	28	3	56,335	52,032	4,303	4,303	4,303	0
Nov 16, 2019	39	40	-1	67,809	69,243	-1,434	1,434	0	1,434
Nov 17, 2019	31	30	1	56,335	54,900	1,434	1,434	1,434	0
Nov 18, 2019	29	26	3	53,466	49,163	4,303	4,303	4,303	0
Nov 19, 2019	28	25	3	52,032	47,729	4,303	4,303	4,303	0
Nov 20, 2019	30	28	2	54,900	52,032	2,869	2,869	2,869	0
Nov 21, 2019	25	25	0	47,729	47,729	0	0	0	0
Nov 22, 2019	30	26	4	54,900	49,163	5,737	5,737	5,737	0
Nov 23, 2019	30	28	2	54,900	52,032	2,869	2,869	2,869	0
Nov 24, 2019	28	26	2	52,032	49,163	2,869	2,869	2,869	0
Nov 25, 2019	27	26	1	50,598	49,163	1,434	1,434	1,434	0
Nov 26, 2019	23	21	2	44,860	41,992	2,869	2,869	2,869	0
Nov 27, 2019	21	19	2	41,992	39,123	2,869	2,869	2,869	0
Nov 28, 2019	30	30	0	54,900	54,900	0	0	0	0
Nov 29, 2019	37	36	1	64,940	63,506	1,434	1,434	1,434	0
Nov 30, 2019	41	41	0	70,677	70,677	0	0	0	0
Dec 1, 2019	35	36	-1	82,777	84,626	-1,849	1,849	0	1,849
Dec 2, 2019	36	36	0	84,626	84,626	0	0	0	0
Dec 3, 2019	38	35	3	88,325	82,777	5,548	5,548	5,548	0
Dec 4, 2019	35	36	-1	82,777	84,626	-1,849	1,849	0	1,849
Dec 5, 2019	36	34	2	84,626	80,927	3,699	3,699	3,699	0
Dec 6, 2019	38	39	-1	88,325	90,175	-1,849	1,849	0	1,849
Dec 7, 2019	45	50	-5	101,271	110,518	-9,247	9,247	0	9,247
Dec 8, 2019	32	32	0	77,228	77,228	0	0	0	0
Dec 9, 2019	17	17	0	49,487	49,487	0	0	0	0
Dec 10, 2019	26	23	3	66,132	60,583	5,548	5,548	5,548	0
Dec 11, 2019	39	37	2	90,175	86,476	3,699	3,699	3,699	0
Dec 12, 2019	39	38	1	90,175	88,325	1,849	1,849	1,849	0
Dec 13, 2019	26	28	-2	66,132	69,831	-3,699	3,699	0	3,699
Dec 14, 2019	19	20	-1	53,186	55,035	-1,849	1,849	0	1,849
Dec 15, 2019	34	31	3	80,927	75,379	5,548	5,548	5,548	0
Dec 16, 2019	38	37	1	88,325	86,476	1,849	1,849	1,849	0
Dec 17, 2019	38	37	1	88,325	86,476	1,849	1,849	1,849	0
Dec 18, 2019	44	43	1	99,422	97,572	1,849	1,849	1,849	0
Dec 19, 2019	49	50	-1	108,669	110,518	-1,849	1,849	0	1,849
Dec 20, 2019	47	46	1	104,970	103,121	1,849	1,849	1,849	0
Dec 21, 2019	40	41	-1	92,024	93,873	-1,849	1,849	0	1,849
Dec 22, 2019	32	39	-7	77,228	90,175	-12,946	12,946	0	12,946
Dec 23, 2019	28	21	7	69,831	56,885	12,946	12,946	12,946	0

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							Sendout Error (MMBtu)		
Dec 24, 2019	36	32	4	84,626	77,228	7,398	7,398	7,398	0
Dec 25, 2019	35	34	1	82,777	80,927	1,849	1,849	1,849	0
Dec 26, 2019	34	33	1	80,927	79,078	1,849	1,849	1,849	0
Dec 27, 2019	26	25	1	66,132	64,282	1,849	1,849	1,849	0
Dec 28, 2019	30	28	2	73,530	69,831	3,699	3,699	3,699	0
Dec 29, 2019	31	30	1	75,379	73,530	1,849	1,849	1,849	0
Dec 30, 2019	32	36	-4	77,228	84,626	-7,398	7,398	0	7,398
Dec 31, 2019	33	30	3	79,078	73,530	5,548	5,548	5,548	0
Jan 1, 2020	35	32	3	82,777	77,228	5,548	5,548	5,548	0
Jan 2, 2020	29	28	1	71,680	69,831	1,849	1,849	1,849	0
Jan 3, 2020	26	26	0	66,132	66,132	0	0	0	0
Jan 4, 2020	31	29	2	75,379	71,680	3,699	3,699	3,699	0
Jan 5, 2020	40	37	3	92,024	86,476	5,548	5,548	5,548	0
Jan 6, 2020	35	34	1	82,777	80,927	1,849	1,849	1,849	0
Jan 7, 2020	34	32	2	80,927	77,228	3,699	3,699	3,699	0
Jan 8, 2020	40	37	3	92,024	86,476	5,548	5,548	5,548	0
Jan 9, 2020	40	40	0	92,024	92,024	0	0	0	0
Jan 10, 2020	22	21	1	58,734	56,885	1,849	1,849	1,849	0
Jan 11, 2020	7	2	5	30,992	21,745	9,247	9,247	9,247	0
Jan 12, 2020	29	23	6	71,680	60,583	11,097	11,097	11,097	0
Jan 13, 2020	33	33	0	79,078	79,078	0	0	0	0
Jan 14, 2020	29	28	1	71,680	69,831	1,849	1,849	1,849	0
Jan 15, 2020	29	27	2	71,680	67,981	3,699	3,699	3,699	0
Jan 16, 2020	39	40	-1	90,175	92,024	-1,849	1,849	0	1,849
Jan 17, 2020	53	53	0	116,067	116,067	0	0	0	0
Jan 18, 2020	40	48	-8	92,024	106,820	-14,796	14,796	0	14,796
Jan 19, 2020	44	41	3	99,422	93,873	5,548	5,548	5,548	0
Jan 20, 2020	49	47	2	108,669	104,970	3,699	3,699	3,699	0
Jan 21, 2020	48	49	-1	106,820	108,669	-1,849	1,849	0	1,849
Jan 22, 2020	40	42	-2	92,024	95,723	-3,699	3,699	0	3,699
Jan 23, 2020	34	35	-1	80,927	82,777	-1,849	1,849	0	1,849
Jan 24, 2020	30	26	4	73,530	66,132	7,398	7,398	7,398	0
Jan 25, 2020	25	25	0	64,282	64,282	0	0	0	0
Jan 26, 2020	28	25	3	69,831	64,282	5,548	5,548	5,548	0
Jan 27, 2020	30	26	4	73,530	66,132	7,398	7,398	7,398	0
Jan 28, 2020	35	32	3	82,777	77,228	5,548	5,548	5,548	0
Jan 29, 2020	41	39	2	93,873	90,175	3,699	3,699	3,699	0
Jan 30, 2020	39	39	0	90,175	90,175	0	0	0	0
Jan 31, 2020	32	29	3	77,228	71,680	5,548	5,548	5,548	0
Feb 1, 2020	31	31	0	75,379	75,379	0	0	0	0
Feb 2, 2020	32	32	0	77,228	77,228	0	0	0	0
Feb 3, 2020	30	27	3	73,530	67,981	5,548	5,548	5,548	0
Feb 4, 2020	28	25	3	69,831	64,282	5,548	5,548	5,548	0
Feb 5, 2020	35	33	2	82,777	79,078	3,699	3,699	3,699	0
Feb 6, 2020	31	33	-2	75,379	79,078	-3,699	3,699	0	3,699
Feb 7, 2020	37	38	-1	86,476	88,325	-1,849	1,849	0	1,849
Feb 8, 2020	48	47	1	106,820	104,970	1,849	1,849	1,849	0
Feb 9, 2020	35	35	0	82,777	82,777	0	0	0	0
Feb 10, 2020	31	30	1	75,379	73,530	1,849	1,849	1,849	0
Feb 11, 2020	32	30	2	77,228	73,530	3,699	3,699	3,699	0
Feb 12, 2020	30	28	2	73,530	69,831	3,699	3,699	3,699	0
Feb 13, 2020	37	34	3	86,476	80,927	5,548	5,548	5,548	0
Feb 14, 2020	56	54	2	121,615	117,916	3,699	3,699	3,699	0
Feb 15, 2020	41	40	1	93,873	92,024	1,849	1,849	1,849	0
Feb 16, 2020	33	31	2	79,078	75,379	3,699	3,699	3,699	0
Feb 17, 2020	39	34	5	90,175	80,927	9,247	9,247	9,247	0
Feb 18, 2020	31	31	0	75,379	75,379	0	0	0	0
Feb 19, 2020	40	37	3	92,024	86,476	5,548	5,548	5,548	0
Feb 20, 2020	47	44	3	104,970	99,422	5,548	5,548	5,548	0
Feb 21, 2020	41	39	2	93,873	90,175	3,699	3,699	3,699	0
Feb 22, 2020	34	31	3	80,927	75,379	5,548	5,548	5,548	0
Feb 23, 2020	29	28	1	71,680	69,831	1,849	1,849	1,849	0
Feb 24, 2020	24	21	3	62,433	56,885	5,548	5,548	5,548	0
Feb 25, 2020	26	21	5	66,132	56,885	9,247	9,247	9,247	0
Feb 26, 2020	25	21	4	64,282	56,885	7,398	7,398	7,398	0
Feb 27, 2020	33	32	1	79,078	77,228	1,849	1,849	1,849	0
Feb 28, 2020	37	36	1	86,476	84,626	1,849	1,849	1,849	0

Liberty Utilities (EnergyNorth Natural Gas) Corp.
Calculation of Supplier Balancing Charge
2019-2020
Estimated Daily Imbalances

Date	Predicted MAN HDD	Actual MAN HDD	Forecaster Error MAN HDD	Calculated on Predicted MAN HDD	Calculated on Actual MAN HDD	Sendout Error (MMBtu)	Abs.Value	Injections (MMBtu)	Withdrawals (MMBtu)
							Sendout Error (MMBtu)		
Feb 29, 2020	40	40	0	92,024	92,024	0	0	0	0
Mar 1, 2020	38	38	0	85,806	85,806	0	0	0	0
Mar 2, 2020	22	17	5	59,134	50,799	8,335	8,335	8,335	0
Mar 3, 2020	17	13	4	50,799	44,130	6,668	6,668	6,668	0
Mar 4, 2020	26	22	4	65,802	59,134	6,668	6,668	6,668	0
Mar 5, 2020	28	27	1	69,136	67,469	1,667	1,667	1,667	0
Mar 6, 2020	30	28	2	72,470	69,136	3,334	3,334	3,334	0
Mar 7, 2020	33	29	4	77,471	70,803	6,668	6,668	6,668	0
Mar 8, 2020	21	20	1	57,467	55,800	1,667	1,667	1,667	0
Mar 9, 2020	11	7	4	40,796	34,128	6,668	6,668	6,668	0
Mar 10, 2020	13	11	2	44,130	40,796	3,334	3,334	3,334	0
Mar 11, 2020	26	25	1	65,802	64,135	1,667	1,667	1,667	0
Mar 12, 2020	23	23	0	60,801	60,801	0	0	0	0
Mar 13, 2020	19	19	0	54,133	54,133	0	0	0	0
Mar 14, 2020	25	21	4	64,135	57,467	6,668	6,668	6,668	0
Mar 15, 2020	33	32	1	77,471	75,804	1,667	1,667	1,667	0
Mar 16, 2020	31	32	-1	74,137	75,804	-1,667	1,667	0	1,667
Mar 17, 2020	25	26	-1	64,135	65,802	-1,667	1,667	0	1,667
Mar 18, 2020	22	20	2	59,134	55,800	3,334	3,334	3,334	0
Mar 19, 2020	22	24	-2	59,134	62,468	-3,334	3,334	0	3,334
Mar 20, 2020	11	12	-1	40,796	42,463	-1,667	1,667	0	1,667
Mar 21, 2020	33	31	2	77,471	74,137	3,334	3,334	3,334	0
Mar 22, 2020	33	33	0	77,471	77,471	0	0	0	0
Mar 23, 2020	28	30	-2	69,136	72,470	-3,334	3,334	0	3,334
Mar 24, 2020	26	26	0	65,802	65,802	0	0	0	0
Mar 25, 2020	29	26	3	70,803	65,802	5,001	5,001	5,001	0
Mar 26, 2020	21	17	4	57,467	50,799	6,668	6,668	6,668	0
Mar 27, 2020	19	18	1	54,133	52,466	1,667	1,667	1,667	0
Mar 28, 2020	16	17	-1	49,132	50,799	-1,667	1,667	0	1,667
Mar 29, 2020	25	26	-1	64,135	65,802	-1,667	1,667	0	1,667
Mar 30, 2020	28	27	1	69,136	67,469	1,667	1,667	1,667	0
Apr	515	491	24	1,201,753	1,164,984	36,768	82,729	59,749	22,980
May	298	257	41	673,100	637,803	35,297	47,349	41,323	6,026
Jun	34	31	3	443,528	442,021	1,507	3,516	2,511	1,005
Jul	3	0	3	321,922	321,922	0	0	0	0
Aug	13	4	9	345,983	345,759	224	224	224	0
Sep	100	87	13	401,342	394,813	6,530	10,548	8,539	2,009
Oct	376	341	35	881,024	855,900	25,124	32,302	28,713	3,589
Nov	864	846	18	1,595,375	1,569,559	25,817	68,844	47,331	21,514
Dec	1,068	1,054	14	2,534,640	2,508,748	25,892	114,665	70,279	44,387
Jan	1,066	1,025	41	2,530,941	2,455,114	75,827	123,913	99,870	24,043
Feb	1,013	963	50	2,396,828	2,304,356	92,472	103,569	98,020	5,548
Mar	734	697	37	1,897,371	1,835,691	61,680	91,686	76,683	15,003
Total	6,084	5,796	288	15,223,807	14,836,669	387,137	679,346	533,242	146,104

Liberty Utilities (EnergyNorth Natural Gas) Corp.

**Docket DE 98-124 Gas Restructuring
Peaking Demand Rate**

Line	Description	Value	Unit	Source
1	Peak Day	168,574	Dekatherm	
2				
3	Pipeline MDQ			Attachment B Page 2 of 3: EnergyNorth Capacity Resources
4				
5		1,000	Dekatherm	
6		4,000		
7		3,122		
8		7,035		
9		14,561		
10		20,000		
11		30,000		
12		79,718	Dekatherm	
13	Underground Storage MDQ			Attachment B Page 3 of 3: EnergyNorth Capacity Resources
14		15,265	Dekatherm	
15		3,811		
16		7,082		
17		1,957		
18		28,115		
19				
20	Peaking MDQ	60,741	Dekatherm	Line 1 - Line 10 - Line 18
21				
22				
23	Peaking Costs			
24				
25	Gas Supply	\$4,330,500		Attachment B Page 3 Line 11
26	Indirect Production & Storage Capacity	\$1,980,428		Summary Page Line 68
27	Granite Ridge	\$ -		Attachment B Page 3 Line 1
28	Total	\$6,310,928		Sum Line 24 - 26
29	Annual Peaking Rate per MDQ	\$ 103.90		Line 27 divided by Line 20
30				
31	Monthly Peaking MDQ	\$ 17.32	/Dekatherm	Line 29 divided by 6 month

Liberty Utilities (EnergyNorth Natural Gas) Corp.

Tennessee Allocations:

Resource Type	High Load Factor	Low Load Factor
Pipeline	59.3%	46.1%
Storage	12.9%	17.1%
Peaking	27.9%	36.8%
TOTAL:	100.00%	100.00%

Capacity Resources effective November 1, 2020:

Resource	Pipeline Company	Rate Schedule	Contract #	Peak MDQ/MDWQ	Storage MSQ	Rate \$/Dth/Month Demand	Storage Capacity	Termination Date	LDC Managed
Pipeline	TCPL + Union	FT to Parkway & IGTS	M12200 & 41232	4,000		\$10.7451		10/31/2022	
	Iroquois	RTS to Wright	470-01	4,047		\$5.2357		11/1/2022	
	TGP	NET-NE (Z5-Z6)	95346	4,000		\$6.4123		11/30/2021	
	TGP	FT-A (Z5-Z6)	2302	3,122		\$6.4123		10/31/2025	
	TGP	FT-A (Z0-Z6)	8587	7,035		\$20.8047		10/31/2025	
	TGP	FT-A (Z1-Z6)	8587	14,561		\$18.4675		10/31/2025	
	TCPL + Union	FT to Parkway & PNGTS	M12284 & TC	5,000		\$15.8195		10/31/2040	
	PNGTS	FT	225800	5,000		\$22.8125		10/31/2040	
	TGP	FT-A (Z6-Z6)	42076	20,000		\$4.2512		10/31/2025	
	TGP	FT-A (Z6-Z6)	72894	30,000		\$12.1881		10/31/2029	
Storage	TGP	FS-MA (Storage)	523*	21,844	1,560,391	\$1.3386	\$0.0183	10/31/2025	
	TGP	FT-A (Z4-Z6)	632	15,265		\$7.3005		10/31/2025	
	TGP	FT-A (Z4-Z6)	8587	3,811		\$7.3005		10/31/2025	
	National Fuel	FS-1 (Storage)	O02357*	6,098	670,800	\$2.5326	\$0.0462	3/31/2022	
	National Fuel	FST (Transport)	N02358	6,098		\$4.5019		3/31/2022	
	TGP	FT-A (Z4-Z6)	11234	6,150		\$7.3005		10/31/2025	
	Honeye	SS-NY (Storage)	SS-NY**	1,957	245,380	\$4.2672	\$0.0000	3/31/2022	X
	TGP	FT-A (Z5-Z6)	11234	1,957		\$6.4123		10/31/2025	
	Dominion	GSS (Storage)	300076*	934	102,700	\$1.8698	\$0.0145	3/31/2023	
	TGP	FT-A (Z4-Z6)	11234	932		\$7.3005		10/31/2025	
Peaking	Energy North	LNG/Propane***		60,741	-	\$17.3200	\$0.0000		X

* All gas transferred for storage contracts will be based on LDC's monthly WACOG

**All commodity volumes nominated will be invoiced at LDC's WACOG + fuel retention. Demand charge applicable for 6 months

Note: All capacity will be released at maximum tariff rates. Above rates are maximum tariff rates effective 11/01/20. Because rates can change, please refer to the applicable pipeline tariff for current rates.

Above capacity is for all customers in the EnergyNorth Service territory with the exception of Berlin, NH. Any customers behind the Berlin citygate will be allocated 100% PNGTS capacity at a demand rate of \$18.2633 /dth.

ENERGYNORTH NATURAL GAS, INC.

**Docket 98-124 Gas Restructuring
 Peaking Demand Rate
 Peaking Costs**

	Volume	Rate	Monthly Cost	Months/Year	Annual Cost
1					
2					
3					
4	Subtotal				\$ 4,330,500.00 *
5					
6	Total				\$ 4,330,500.00

* Contract currently being negotiated for an effective date of November 1, 2020

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Liberty Utilities (EnergyNorth Natural Gas) Corp

**Calculation of Capacity Allocators
Docket No DE 98-124**

Capacity Assignment Table

			Pipeline	% of Peak Day Requirement		Total
				Storage	Peaking	
G-41	LAHW	Low Annual C&I - High Winter Use	46.1%	17.1%	36.8%	100.0%
G-51	LALW	Low Annual C&I - Low Winter Use	59.3%	12.9%	27.9%	100.0%
G-42	MAHW	Medium C&I - High Winter Use	46.1%	17.1%	36.8%	100.0%
G-52	MALW	Medium C&I - Low Winter Use	59.3%	12.9%	27.9%	100.0%
G-43	HAHW	High Annual C&I - High Winter Use	46.1%	17.1%	36.8%	100.0%
G-53	HALW90	High Annual C&I - LF < 90%	59.3%	12.9%	27.9%	100.0%
G-54	HALWG90	High Annual C&I - LF > 90%	59.3%	12.9%	27.9%	100.0%

HLF	High Load Factor	59.25%	12.89%	27.85%	100%
LLF	Low Load Factor	46.09%	17.06%	36.85%	100%
	Total	47.29%	16.68%	36.03%	100%

Liberty Utilities (Energy/North Natural Gas) Corp
Calculation of Capacity Allocators
Docket No DE 98-124

Allocation of Peak Day

Design Day Throughput Allocated to Rate Classes

Design DD

	Base load	Heat load	71,544	Total
HLF	102	457	558	558
LLF	3,545	69,811	73,356	73,356
LLF	770	30,823	31,593	31,593
HLF	739	1,812	2,551	2,551
LLF	1,473	37,931	39,404	39,404
HLF	1,781	3,820	5,601	5,601
LLF	663	8,239	8,901	8,901
HLF	1,146	2,222	3,368	3,368
HLF	461	2,780	3,241	3,241
TOTAL	10,678	157,896	168,574	168,574
HLF	4,227	11,092	15,319	15,319
LLF	6,450	146,804	153,255	153,255
Total	10,678	157,896	168,574	168,574

Allocate Class Design Day Throughput to Supply Sources

	Base Pipeline	Remaining Pipeline	Sub-total Pipeline	Storage	Peaking	Total
R-1 RNSH	102	200	301	81	175.73	558
R-3 RSH	3,545	30,525	34,070	12,431	26,856	73,356
G-41 SL	770	13,477	14,247	5,488	11,857	31,593
G-51 SH	739	792	1,531	323	697	2,551
G-42 ML	1,473	16,585	18,058	6,754	14,592	39,404
G-52 MH	1,781	1,670	3,451	680	1,470	5,601
G-43 LL	663	3,602	4,265	1,467	3,169	8,901
G-53 LLL90	1,146	972	2,117	396	855	3,368
G-54 LLLG90	461	1,216	1,676	495	1,070	3,241
TOTAL	10,678	69,040	79,718	28,115	60,741	168,574
HLF	4,227	4,850	9,077	1,975	4,267	15,319
LLF	6,450	64,190	70,641	26,140	56,474	153,255
Total	10,678	69,040	79,718	28,115	60,741	168,574

% of Peak Day Requirement

	Pipeline	Storage	Peaking	Total
R-1 RNSH	54.0%	14.6%	31.5%	100.0%
R-3 RSH	46.4%	16.9%	36.6%	100.0%
G-41 SL	45.1%	17.4%	37.5%	100.0%
G-51 SH	60.0%	12.6%	27.3%	100.0%
G-42 ML	45.8%	17.1%	37.0%	100.0%
G-52 MH	61.6%	12.1%	26.2%	100.0%
G-43 LL	47.9%	16.5%	35.6%	100.0%
G-53 LLL90	62.9%	11.7%	25.4%	100.0%
G-54 LLLG90	51.7%	15.3%	33.0%	100.0%
TOTAL	47.3%	16.7%	36.0%	100.0%
High Load Factor	59.25%	12.89%	27.85%	100%
Low Load Factor	46.09%	17.06%	36.85%	100%
Total	47.29%	16.68%	36.03%	100%

Liberty Utilities (EnergyNorth Natural Gas) Corp
Calculation of Capacity Allocators
Docket No DE 98-124

Allocate Design Day Sendout

Calculate Design Day Throughput (BBTU)

71.544

Design DD

	Daily Baseload * 1000	Heating Factor * 1000	Heat load (Heating Factor * Design DD)	Total
R-1 RNSH	102	6.01	430	532
R-3 RSH	3,545	918.47	65,711	69,256
G-41 SL	770	405.52	29,013	29,783
G-51 SH	739	23.84	1,706	2,445
G-42 ML	1,473	499.04	35,703	37,176
G-52 MH	1,781	50.26	3,596	5,376
G-43 LL	663	108.39	7,755	8,418
G-53 LLL90	1,146	29.24	2,092	3,238
G-54 LLG90	461	36.58	2,617	3,078
TOTAL	10,678	1,939.15	148,622	159,300

HLF	4,227	146	10,440	14,668
LLF	6,450	1,793	138,182	144,632
Total	10,678	1,939	148,622	159,300

Design Day from 2020-2021 COG				168,574
Design Day from Gas Load Calculation				159,300
Variance				9,274

Allocate Design Day Sendout to
Rate Classes

Baseload as % of Total Class Load	Heat Load as % of Total	Base Load	Heat Load	Total
19%	0.289%	102	457	558
5%	44.214%	3,545	69,811	73,356
3%	19.521%	770	30,823	31,593
30%	1.148%	739	1,812	2,551
4%	24.023%	1,473	37,931	39,404
33%	2.419%	1,781	3,820	5,601
8%	5.218%	663	8,239	8,901
35%	1.408%	1,146	2,222	3,368
15%	1.761%	461	2,780	3,241
		10,678	157,896	168,574

Liberty Utilities (EnergyNorth Natural Gas) Corp

Calculation of Capacity Allocators
Docket No DE 98-124

Schedule 22
Page 4 of 6

CALCULATION OF NORMAL SALES VOLUMES

Actual Volumes

Total Core Sales Volumes(000's) MMBTU

	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20	Apr-20	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Total	Monthly	Daily
														Baseload	Baseload
														(Jul+Aug/2)	
HLF R-1 RNSH	7	9	9	8	8	8	6	5	3	3	4	5	70	3,149	0.102
LLF R-3 RSH	731	957	994	889	717	509	274	143	111	110	142	327	5,904	109,892	3,545
LLF G-41 SL	285	394	409	364	274	188	88	36	24	24	36	106	2,228	23,872	0.770
HLF G-51 SH	36	43	43	40	34	30	30	25	23	25	25	29	383	22,908	0.739
LLF G-42 ML	394	516	531	474	375	262	142	64	46	48	71	175	3,100	45,648	1,473
HLF G-52 MH	91	103	106	98	79	71	67	56	55	58	60	73	917	55,198	1,781
LLF G-43 LL	98	127	130	121	102	70	45	25	21	22	27	49	836	20,550	0.663
HLF G-53 LLL90	50	56	61	59	53	44	46	39	38	40	36	48	571	35,515	1,146
HLF G-54 LLL10	20	26	27	25	20	18	18	14	16	16	15	18	233	14,280	0.461
HLF G-99 LGG10															
TOTAL	1,713	2,229	2,311	2,080	1,662	1,198	714	406	337	346	416	829	14,242	341,449	11,014
HLF	204	235	246	231	194	168	166	138	136	142	140	173	2,174	131,050	4,480
LLF	1,509	1,994	2,064	1,849	1,468	1,030	549	268	201	204	276	656	12,067	199,962	6,534

Baseload (= the lesser of actual volumes or the average of July and August volumes)

	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20	Apr-20	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Total	Monthly		Daily
														Baseload	Baseload	Baseload
HLF R-1 RNSH	3	3	3	3	3	3	3	3	3	3	3	3	37	3	3	3
LLF R-3 RSH	106	110	110	103	110	106	110	106	111	110	106	110	1,297	31	31	366
LLF G-41 SL	23	24	24	22	24	23	24	23	24	24	23	24	282	23	24	282
HLF G-51 SH	22	23	23	21	23	22	23	22	23	25	22	23	270	22	22	270
LLF G-42 ML	44	46	46	43	46	44	46	44	46	48	44	46	539	44	44	539
HLF G-52 MH	53	55	55	52	55	53	55	53	55	58	53	55	652	53	53	652
LLF G-43 LL	20	21	21	19	21	20	21	20	21	22	20	21	243	20	20	243
HLF G-53 LLL90	34	36	36	33	36	34	36	34	38	40	34	36	419	34	34	419
HLF G-54 LLL10	14	14	14	13	14	14	14	14	16	16	14	14	169	14	14	169
HLF G-63 LGG10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	320	331	331	310	331	320	331	320	337	346	320	331	3,908	320	320	3,908
HLF	127	131	131	123	131	127	131	127	136	142	127	131	1,547	131	131	1,547
LLF	194	200	200	187	200	194	200	194	201	204	194	200	2,361	200	200	2,361

Liberty Utilities (EnergyNorth Natural Gas) Corp
Calculation of Capacity Allocators
Docket No DE 98-124

Heating Volumes (= Actual Volumes - Baseload)

	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20	Apr-20	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Total
HLF R-1 RNSH	4	5	6	5	5	3	2	1	0	0	0	2	32
LLF R-3 RSH	625	848	884	786	607	403	164	37	0	0	35	217	4,607
LLF G-41 SL	262	370	386	342	250	165	64	13	0	0	13	82	1,946
HLF G-51 SH	14	20	20	19	11	8	7	2	0	0	3	6	112
LLF G-42 ML	350	470	485	432	329	218	97	20	0	0	27	129	2,561
HLF G-52 MH	38	48	50	46	24	17	12	3	0	0	7	18	265
LLF G-43 LL	78	106	110	102	81	50	24	5	0	0	7	29	593
HLF G-53 LLL90	15	20	26	26	18	10	11	5	0	0	1	13	152
HLF G-54 LLL110	6	11	13	12	6	4	4	0	0	0	2	3	65
HLF G-63 LLG110	0	0	0	0	0	0	0	0	0	0	0	0	0
HLF TOTAL	1,393	1,898	1,980	1,771	1,331	878	383	86	0	0	95	498	10,333
HLF	78	104	115	109	63	42	35	11	0	0	13	42	627
LLF	1,315	1,794	1,864	1,662	1,268	836	349	74	0	0	82	456	9,707
Actual BDD	846.0	1054.0	1025.0	963.0	724.0	491.0	257.0	31.0	0.0	4.0	87.0	341.0	5823.0

Heat Factors

	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20	Apr-20	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Total	AVG	AVG Peak
HLF R-1 RNSH	0.0046	0.0051	0.0056	0.0054	0.0063	0.0061	0.0072	0.0237	0.0000	0.0000	0.0052	0.0047	0.0063	0.0062	0.0055
LLF R-3 RSH	0.7389	0.8042	0.8621	0.8165	0.8388	0.8206	0.6374	1.1853	0.0000	0.0000	0.4063	0.6357	0.8621	0.6455	0.8135
LLF G-41 SL	0.3101	0.3511	0.3762	0.3553	0.3448	0.3361	0.2481	0.4058	0.0000	0.0000	0.1467	0.2396	0.3762	0.2595	0.3456
HLF G-51 SH	0.0168	0.0186	0.0200	0.0197	0.0154	0.0154	0.0258	0.0799	0.0000	0.0000	0.0350	0.0178	0.0200	0.0220	0.0177
LLF G-42 ML	0.4137	0.4462	0.4733	0.4481	0.4350	0.4445	0.3764	0.6498	0.0000	0.0000	0.3128	0.3797	0.4733	0.3666	0.4468
HLF G-52 MH	0.0448	0.0453	0.0492	0.0481	0.0335	0.0353	0.0449	0.0868	0.0000	0.0000	0.0776	0.0526	0.0492	0.0432	0.0427
LLF G-43 LL	0.0921	0.1006	0.1073	0.1059	0.1123	0.1019	0.0951	0.1524	0.0000	0.0000	0.0805	0.0837	0.1123	0.0860	0.1034
HLF G-53 LLL90	0.0180	0.0191	0.0253	0.0271	0.0242	0.0201	0.0427	0.1650	0.0000	0.0000	0.0132	0.0372	0.0271	0.0326	0.0223
LLF G-54 LLL110	0.0074	0.0107	0.0122	0.0126	0.0082	0.0079	0.0139	0.0149	0.0000	0.0000	0.0183	0.0098	0.0126	0.0097	0.0098
HLF G-63 LLG110	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
HLF TOTAL	1.6465	1.8008	1.9312	1.8387	1.8386	1.7879	1.4914	2.7635	0.0000	0.0000	1.0957	1.4609	1.9391	1.4713	1.8073

Liberty Utilities (Energy/North Natural Gas) Corp

Calculation of Capacity Allocators
Docket No DE 98-124

Actual HDD	846.0	1,054.0	1,025.0	963.0	724.0	491.0	257.0	31.0	0.0	4.0	87.0	341.0	5823.0
Norm HDD	715.2	1,044.9	1,216.8	1,071.2	893.6	508.8	226.5	49.9	5.0	8.2	108.0	407.2	6255.0

Normal Volumes (= Heating Volumes * Normal HDD/Actual HDD + BaseLoad)

	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20	Apr-20	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Total
	6	8	10	9	9	6	5	4	3	3	4	5	72
HLF													
LLF	635	950	1,159	977	859	524	254	165	111	110	150	369	6,264
LLF	245	391	482	403	332	194	80	43	24	24	39	121	2,378
HLF	34	42	47	43	37	30	29	26	23	25	26	30	392
LLF	340	512	622	523	452	270	131	77	46	48	78	200	3,298
HLF	85	103	115	103	85	71	65	58	55	58	62	77	937
LLF	86	126	151	133	121	72	42	27	21	22	29	55	883
HLF	47	55	66	62	57	45	45	43	38	40	36	51	585
HLF	19	25	29	27	22	18	17	15	16	16	16	18	238
HLF	-	-	-	-	-	-	-	-	-	-	-	-	-
HLF	1,498	2,213	2,681	2,279	1,974	1,230	669	458	337	346	439	926	15,049
HLF	192	234	268	244	209	170	161	145	136	142	143	181	2,225
LLF	1,306	1,978	2,413	2,036	1,765	1,060	507	313	201	204	296	745	12,823

Liberty Utilities (EnergyNorth Natural Gas) Corp.
Peak 2020 - 2021 Winter Cost of Gas Filing
Fixed Price Option

	Participation	Premium	FPO Volumes	Premium Revenue	FPO Rate	Residential Average COG Rate	Residential FPO Rate	Residential Total Bill	Residential COG Rate	Residential Total Bill	Residential COG Rate	Difference	% Difference	FPO Rate	C&I Average COG Rate	C&I FPO Rate	C&I Total Bill	C&I COG Rate	C&I Total Bill	Difference	% Difference
1	Nov 98 - Mar 99	6.0%			0.3927	0.3722	943.3700	926.9333	\$ 16.44	1.77%	0.3927	0.3736	\$ 1,570.86	0.3736	\$ 1,570.86	\$ 1,546.08	\$ 24.79	1.60%			
2	Nov 99 - Mar 00	9.0%			0.4724	0.4628	679.8500	672.2235	\$ 7.63	1.13%	0.4724	0.4636	\$ 1,161.81	0.4636	\$ 1,161.81	\$ 1,149.15	\$ 12.67	1.10%			
3	Nov 00 - Mar 01	20.0%			0.6408	0.7656	816.2500	916.0900	\$ (99.84)	-10.90%	0.6408	0.7189	\$ 1,376.64	0.7189	\$ 1,376.64	\$ 1,533.43	\$ (156.79)	-10.22%			
4	Nov 01 - Apr 02	24.0%			0.5141	0.4818	790.6522	760.5504	\$ 30.10	3.96%	0.5238	0.4928	\$ 1,301.07	0.4928	\$ 1,301.07	\$ 1,256.88	\$ 44.19	3.52%			
5	Nov 02 - Apr 03	24.0%	25,107,016	\$ 123,045.78	0.5553	0.5758	821.3224	840.4371	\$ (19.11)	-2.27%	0.5658	0.5860	\$ 1,344.02	0.5860	\$ 1,344.02	\$ 1,372.86	\$ (28.84)	-2.10%			
6	Nov 03 - Apr 04	23.0%	25,220,575	\$ 552,330.59	0.8597	0.8220	1,115.5548	1,080.4628	\$ 35.09	3.25%	0.8759	0.8352	\$ 1,798.38	0.8352	\$ 1,798.38	\$ 1,740.30	\$ 58.08	3.34%			
7	Nov 04 - Apr 05	29.6%	27,378,128	\$ 273,781.28	0.8925	0.9425	1,142.9556	1,189.5541	\$ (46.60)	-3.92%	0.9092	0.9562	\$ 1,844.75	0.9562	\$ 1,844.75	\$ 1,911.86	\$ (67.10)	-3.51%			
8	Nov 05 - Apr 06	29.8%	25,944,091	\$ 518,881.82	1.2951	1.1342	1,526.0076	1,376.0122	\$ 150.00	10.90%	1.3192	1.1686	\$ 2,450.66	1.1686	\$ 2,450.66	\$ 2,235.77	\$ 214.89	9.61%			
9	Nov 06 - Apr 07	15.1%	13,135,684	\$ 262,713.68	1.2664	1.1656	1,509.7908	1,415.9032	\$ 93.99	6.64%	1.2666	1.1647	\$ 2,321.15	1.1647	\$ 2,321.15	\$ 2,175.70	\$ 145.45	6.68%			
10	Nov 07 - Apr 08	15.8%	14,078,553	\$ 281,571.06	1.2043	1.1746	1,433.0900	1,405.4000	\$ 27.69	1.97%	1.2044	1.1725	\$ 2,232.39	1.1725	\$ 2,232.39	\$ 2,186.92	\$ 45.47	2.08%			
11	Nov 08 - Apr 09	15.2%	13,041,335	\$ 260,826.70	1.2835	1.0888	1,555.3140	1,373.8536	\$ 181.46	13.21%	1.2836	1.0958	\$ 2,467.49	1.0958	\$ 2,467.49	\$ 2,199.54	\$ 267.95	12.18%			
12	Nov 09 - Apr 10	11.4%	8,405,413	\$ 168,108.26	0.9863	0.9416	1,250.8032	1,209.1161	\$ 41.69	3.45%	0.9865	0.9408	\$ 1,984.29	0.9408	\$ 1,984.29	\$ 1,919.03	\$ 65.26	3.40%			
13	Nov 10 - Apr 11	12.6%	10,379,804	\$ 207,596.08	0.8420	0.8029	1,175.0264	1,138.5767	\$ 36.45	3.20%	0.8434	0.8030	\$ 1,880.96	0.8030	\$ 1,880.96	\$ 1,823.34	\$ 57.63	3.16%			
14	Nov 11 - Apr 12	11.9%	7,835,197	\$ 156,703.94	0.8126	0.7309	1,165.6100	1,089.4400	\$ 76.17	6.99%	0.8129	0.7327	\$ 1,845.28	0.7327	\$ 1,845.28	\$ 1,730.88	\$ 114.40	6.61%			
15	Nov 12 - Apr 13	10.9%	8,179,524	\$ 163,590.48	0.6919	0.7680	743.0298	792.4756	\$ (49.45)	-6.24%	0.6936	0.7724	\$ 1,989.86	0.7724	\$ 1,989.86	\$ 2,132.90	\$ (143.03)	-6.71%			
16	Nov 13 - Apr 14	10.5%	8,930,779	\$ 176,615.58	0.9095	1.0980	857.7200	981.2100	\$ (123.49)	-12.59%	0.9108	1.1058	\$ 2,904.98	1.1058	\$ 2,904.98	\$ 3,286.12	\$ (381.14)	-11.60%			
17	Nov 14 - Apr 15	15.1%	8,779,742	\$ 697,989.49	1.2425	0.4632	1,127.6600	948.0700	\$ 179.59	18.94%	0.5143	0.5552	\$ 2,135.42	0.5552	\$ 2,135.42	\$ 2,340.00	\$ (204.58)	-8.74%			
18	Nov 15 - Apr 16	15.3%	4,941,157	\$ 98,823.14	0.7716	0.7516	869.1500	712.7315	\$ 156.42	21.95%											
19	Nov 16 - Apr 17	11.5%	5,419,967	\$ 57,451.65	0.7268	0.7162	827.1400	812.3754	\$ 14.76	1.82%											
20	Nov 17 - Apr 18	10.6%	5,298,900	\$ 105,978.00	0.6645	0.6445	878.7000	865.9400	\$ 12.76	1.47%											
21	Nov 18 - Apr 19	10.8%	5,708,925	\$ 114,178.50	0.7611	0.7411	984.8300	972.1200	\$ 12.71	1.31%											
22	Nov 19 - Apr 20	7.2%	3,447,167	\$ 68,943.34	0.6403	0.6203	930.4600	917.7400	\$ 12.72	1.39%											
23	Nov 20 - Apr 21				0.5771	0.5571	896.8569	883.5169	\$ 13.34	0.00%											
24	Total								\$ 734.45											\$ 273.86	

**Liberty Utilities (EnergyNorth Natural Gas) Corp.
Peak 2020 - 2021 Winter Cost of Gas Filing
Short-Term Debt Limitations**

Schedule 24
Page 1 of 1

	<u>For Purposes of Fuel Financing</u>	
Total Direct Gas Costs	\$	46,922,854
Total Indirect Gas Costs		<u>2,220,114</u>
Total Gas Costs	\$	49,142,968
% of Debt to Total Gas Costs		30%
Short Term Debt	\$	14,742,890
	<u>For Purposes Other Than Fuel Financing</u>	
12/31/2021 Projected Net Plant	\$	527,836,019
% of Debt to Net Plant		20%
Short Term Debt	\$	105,567,204

Liberty Utilities (Energy/North Natural Gas) Corp.
d/b/a Liberty Utilities
2020 - 2021 Winter Cost of Gas Filing

Schedule 25
Page 1 of 1

Company Allowance Calculation

	Jul-2019	Aug-2019	Sep-2019	Oct-2019	Nov-2019	Dec-2019	Jan-2020	Feb-2020	Mar-2020	Apr-2020	May-2020	Jun-2020	Total
Total Sendout- Therms	5,403,368	5,577,535	6,066,690	10,131,029	20,386,985	25,704,126	25,691,669	23,813,297	18,213,106	14,394,826	8,393,520	5,254,716	169,030,868
Total Throughput- Therms	5,812,036	5,538,687	5,418,133	6,753,397	11,333,251	21,604,197	26,367,378	23,989,312	22,261,307	17,025,287	13,009,585	7,199,010	166,311,578
Variance	(408,668)	38,848	648,557	3,377,633	9,053,734	4,099,929	(675,709)	(176,015)	(4,048,201)	(2,630,461)	(4,616,064)	(1,944,293)	2,719,290
Company Allowance													1.61%

Lost and Unaccounted For Gas ("LAUF") Calculation

	Jul-2019	Aug-2019	Sep-2019	Oct-2019	Nov-2019	Dec-2019	Jan-2020	Feb-2020	Mar-2020	Apr-2020	May-2020	Jun-2020	Total
Total Sendout- Therms	5,403,368	5,577,535	6,066,690	10,131,029	20,386,985	25,704,126	25,691,669	23,813,297	18,213,106	14,394,826	8,393,520	5,254,716	169,030,868
Total Throughput- Therms	5,812,036	5,538,687	5,418,133	6,753,397	11,333,251	21,604,197	26,367,378	23,989,312	22,261,307	17,025,287	13,009,585	7,199,010	166,311,578
Company Use	4,240	4,056	4,375	7,900	21,049	39,295	39,623	39,614	28,825	21,347	15,005	5,616	230,945
Variance	(412,908)	34,792	644,182	3,369,732	9,032,685	4,060,634	(715,332)	(215,629)	(4,077,026)	(2,651,807)	(4,631,069)	(1,949,909)	2,488,345
LAUF													1.47%

Liberty Utilities (EnergyNorth Natural Gas) Corp. d/b/a Liberty Utilities
d/b/a Liberty Utilities

Fuel Inventory Revenue Requirement

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	
1								
2	Gas Stored Underground		5 Quarter Avg	Q2 2019	Q3 2019	Q4 2019	Q1 2020	Q2 2020
3	Fuel Stock - Propane	\$ 2,767,234	\$ 2,340,667	\$ 4,438,120	\$ 4,000,251	\$ 667,033	\$ 2,390,098	
4	UG Storage - LNG	\$ 1,247,332	\$ 1,295,942	\$ 1,293,416	\$ 1,327,800	\$ 1,138,459	\$ 1,181,045	
5		\$ 68,332	\$ 65,051	\$ 72,528	\$ 67,506	\$ 66,132	\$ 70,444	
		\$ 4,082,898						
6	ROR		8.5%	Pre-Tax Rate of 6.28% and Statutory Tax Rate of 27.08%				
		\$ 347,046						
7	Income Tax Gross-up	1.2708						
8	Revenue Requirement	\$ 441,037						

Summer 2021 Cost of Gas
Proposed Revised Tariff Pages

**NHPUC NO. 10 - GAS
LIBERTY UTILITIES**

**Revised Proposed Twenty-Fifth Revised Page 84
Superseding Twenty-Fourth Revised Page 84**

II. RATE SCHEDULES

FIRM RATE SCHEDULES EXCLUDING KEENE CUSTOMERS

Rates effective November 1, 2019 - April 30, 2020
Winter Period

Rates Effective May 1, 2020 - October 31, 2020
Summer Period

	Delivery Charge	Cost of Gas Rate Page 92	LDAC Page 97	Total Rate	Delivery Charge	Cost of Gas Rate Page 92	LDAC Page 97	Total Rate
Residential Non-Heating - R-1 Customer Charge per Month per Meter All therms	\$ 15.50 \$ 0.3860	\$ 0.5571	\$ 0.0603	\$ 15.50 \$ 1.0034	\$ 15.50 \$ 0.3860	\$ 0.3148	\$ 0.0603	\$ 15.50 \$ 0.7611
Residential Heating - R-3 Customer Charge per Month per Meter All therms	\$ 15.50	\$ 0.5571	\$ 0.0603	\$ 15.50	\$ 15.50	\$ 0.3148	\$ 0.0603	\$ 15.50
Therms in the first block per month at	\$ 0.5678	\$ 0.5571	\$ 0.0603	\$ 1.1852	\$ 0.5678	\$ 0.3148	\$ 0.0603	\$ 0.9429
Residential Heating - R-4 Customer Charge per Month per Meter All therms	\$ 8.52	\$ 0.3064	\$ 0.0603	\$ 8.52	\$ 15.50	\$ 0.3148	\$ 0.0603	\$ 15.50
Therms in the first block per month at	\$ 0.3123	\$ 0.3064	\$ 0.0603	\$ 0.6790	\$ 0.5678	\$ 0.3148	\$ 0.0603	\$ 0.9429
Commercial/Industrial - G-41 Customer Charge per Month per Meter Size of the first block	\$ 57.46 100 therms	\$ 0.5552	\$ 0.0549	\$ 57.46 \$ 1.0812	\$ 57.46 20 therms	\$ 0.4284	\$ 0.0549	\$ 57.46 \$ 0.8369
Therms in the first block per month at	\$ 0.4711	\$ 0.5552	\$ 0.0549	\$ 0.9266	\$ 0.4711	\$ 0.3109	\$ 0.0549	\$ 0.8369
All therms over the first block per month at	\$ 0.3165	\$ 0.5552	\$ 0.0549	\$ 0.9266	\$ 0.3165	\$ 0.3109	\$ 0.0549	\$ 0.6822
Commercial/Industrial - G-42 Customer Charge per Month per Meter Size of the first block	\$ 172.39 1000 therms	\$ 0.5552	\$ 0.0549	\$ 172.39 \$ 1.0385	\$ 172.39 400 therms	\$ 0.4284	\$ 0.0549	\$ 172.39 \$ 0.7942
Therms in the first block per month at	\$ 0.4284	\$ 0.5552	\$ 0.0549	\$ 0.8956	\$ 0.4284	\$ 0.3109	\$ 0.0549	\$ 0.7942
All therms over the first block per month at	\$ 0.2855	\$ 0.5552	\$ 0.0549	\$ 0.8956	\$ 0.2855	\$ 0.3109	\$ 0.0549	\$ 0.6512
Commercial/Industrial - G-43 Customer Charge per Month per Meter All therms over the first block per month at	\$ 739.83 \$ 0.2633	\$ 0.5552	\$ 0.0549	\$ 739.83 \$ 0.8734	\$ 739.83 \$ 0.1204	\$ 0.3109	\$ 0.0549	\$ 739.83 \$ 0.4862
Commercial/Industrial - G-51 Customer Charge per Month per Meter Size of the first block	\$ 57.46 100 therms	\$ 0.5660	\$ 0.0549	\$ 57.46 \$ 0.9048	\$ 57.46 100 therms	\$ 0.2839	\$ 0.0549	\$ 57.46 \$ 0.6587
Therms in the first block per month at	\$ 0.2839	\$ 0.5660	\$ 0.0549	\$ 0.8055	\$ 0.2839	\$ 0.3199	\$ 0.0549	\$ 0.6587
All therms over the first block per month at	\$ 0.1846	\$ 0.5660	\$ 0.0549	\$ 0.8055	\$ 0.1846	\$ 0.3199	\$ 0.0549	\$ 0.5594
Commercial/Industrial - G-52 Customer Charge per Month per Meter Size of the first block	\$ 172.39 1000 therms	\$ 0.5660	\$ 0.0549	\$ 172.39 \$ 0.8648	\$ 172.39 1000 therms	\$ 0.1767	\$ 0.0549	\$ 172.39 \$ 0.5514
Therms in the first block per month at	\$ 0.2439	\$ 0.5660	\$ 0.0549	\$ 0.7833	\$ 0.2439	\$ 0.3199	\$ 0.0549	\$ 0.5514
All therms over the first block per month at	\$ 0.1624	\$ 0.5660	\$ 0.0549	\$ 0.7833	\$ 0.1624	\$ 0.3199	\$ 0.0549	\$ 0.4752
Commercial/Industrial - G-53 Customer Charge per Month per Meter All therms over the first block per month at	\$ 761.39 \$ 0.1705	\$ 0.5660	\$ 0.0549	\$ 761.39 \$ 0.7914	\$ 761.39 \$ 0.0818	\$ 0.3199	\$ 0.0549	\$ 761.39 \$ 0.4565
Commercial/Industrial - G-54 Customer Charge per Month per Meter All therms over the first block per month at	\$ 761.39 \$ 0.0650	\$ 0.5660	\$ 0.0549	\$ 761.39 \$ 0.6859	\$ 761.39 \$ 0.0353	\$ 0.3199	\$ 0.0549	\$ 761.39 \$ 0.4100

Issued: October-xx-2019 October xx, 2020 Issued by: Susan L. Fleck
Effective: November-1-2019 November 1, 2020 Title: President

Issued in compliance with NHPUC Order No. xxx-xxx dated xxxx xx, 2020 in Docket DG 20-xxx.

**NHPUC NO. 10 - GAS
LIBERTY UTILITIES**

**Revised Proposed Twenty-Sixth Revised Page 86
Superseding Twenty-Fifth Revised Page 86**

**II. RATE SCHEDULES
FIRM RATE SCHEDULES**

	Rates effective November 1, 2019 - April 30, 2020 Winter Period			Rates Effective May 1, 2020 - October 31, 2020 Summer Period				
	Delivery Charge	Cost of Gas Rate Page 92	LDAC Page 97	Total Rate	Delivery Charge	Cost of Gas Rate Page 89	LDAC Page 97	Total Rate
Residential Non Heating - R-5								
Customer Charge per Month per Meter	\$ 20.15	\$ 0.5571	\$ 0.0603	\$ 20.15	\$ 20.15	\$ 0.3148	\$ 0.0603	\$ 20.15
All therms	\$ 0.5018	\$ 1.1192		\$ 1.1192	\$ 0.5018	\$ 0.8769		\$ 0.8769
Residential Heating - R-6								
Customer Charge per Month per Meter	\$ 20.15	\$ 0.5571	\$ 0.0603	\$ 20.15	\$ 20.15	\$ 0.3148	\$ 0.0603	\$ 20.15
All therms	\$ 0.7381	\$ 1.3555		\$ 1.3555	\$ 0.7381	\$ 1.1132		\$ 1.1132
Residential Heating - R-7								
Customer Charge per Month per Meter	\$ 11.08	\$ 0.5571	\$ 0.0603	\$ 11.08	\$ 11.08	\$ 0.3148	\$ 0.0603	\$ 11.08
All therms	\$ 0.4059	\$ 1.0233		\$ 1.0233	\$ 0.4059	\$ 0.7810		\$ 0.7810
Commercial/Industrial - G-44								
Customer Charge per Month per Meter	\$ 74.69	\$ 0.5571	\$ 0.0603	\$ 74.69	\$ 74.69	\$ 0.3148	\$ 0.0603	\$ 74.69
Size of the first block	100 therms	\$ 1.2227		\$ 1.2227	\$ 0.6126	\$ 0.9783		\$ 0.9783
Therms in the first block per month at	\$ 0.6126	\$ 1.0215		\$ 1.0215	\$ 0.6126	\$ 0.7369		\$ 0.7369
All therms over the first block per month at	\$ 0.4114	\$ 1.0215		\$ 1.0215	\$ 0.3711	\$ 0.7369		\$ 0.7369
Commercial/Industrial - G-45								
Customer Charge per Month per Meter	\$ 224.11	\$ 0.5571	\$ 0.0603	\$ 224.11	\$ 224.11	\$ 0.3109	\$ 0.0549	\$ 224.11
Size of the first block	1000 therms	\$ 1.1670		\$ 1.1670	\$ 0.5569	\$ 0.9227		\$ 0.9227
Therms in the first block per month at	\$ 0.5569	\$ 0.9812		\$ 0.9812	\$ 0.3711	\$ 0.7369		\$ 0.7369
All therms over the first block per month at	\$ 0.3711	\$ 0.9812		\$ 0.9812	\$ 0.3711	\$ 0.7369		\$ 0.7369
Commercial/Industrial - G-46								
Customer Charge per Month per Meter	\$ 961.78	\$ 0.5571	\$ 0.0603	\$ 961.78	\$ 961.78	\$ 0.3109	\$ 0.0549	\$ 961.78
Size of the first block	400 therms	\$ 0.9524		\$ 0.9524	\$ 0.1565	\$ 0.5223		\$ 0.5223
Therms in the first block per month at	\$ 0.3423	\$ 0.9524		\$ 0.9524	\$ 0.1565	\$ 0.5223		\$ 0.5223
All therms over the first block per month at	\$ 0.3423	\$ 0.9524		\$ 0.9524	\$ 0.1565	\$ 0.5223		\$ 0.5223
Commercial/Industrial - G-55								
Customer Charge per Month per Meter	\$ 74.69	\$ 0.5571	\$ 0.0603	\$ 74.69	\$ 74.69	\$ 0.3199	\$ 0.0549	\$ 74.69
Size of the first block	100 therms	\$ 0.9900		\$ 0.9900	\$ 0.3691	\$ 0.7439		\$ 0.7439
Therms in the first block per month at	\$ 0.3691	\$ 0.8609		\$ 0.8609	\$ 0.2400	\$ 0.6148		\$ 0.6148
All therms over the first block per month at	\$ 0.2400	\$ 0.8609		\$ 0.8609	\$ 0.2400	\$ 0.6148		\$ 0.6148
Commercial/Industrial - G-56								
Customer Charge per Month per Meter	\$ 224.11	\$ 0.5571	\$ 0.0603	\$ 224.11	\$ 224.11	\$ 0.3199	\$ 0.0549	\$ 224.11
Size of the first block	1000 therms	\$ 0.9380		\$ 0.9380	\$ 0.2207	\$ 0.6045		\$ 0.6045
Therms in the first block per month at	\$ 0.3171	\$ 0.8320		\$ 0.8320	\$ 0.1304	\$ 0.5062		\$ 0.5062
All therms over the first block per month at	\$ 0.2111	\$ 0.8320		\$ 0.8320	\$ 0.1304	\$ 0.5062		\$ 0.5062
Commercial/Industrial - G-57								
Customer Charge per Month per Meter	\$ 989.80	\$ 0.5571	\$ 0.0603	\$ 989.80	\$ 989.80	\$ 0.3199	\$ 0.0549	\$ 989.80
Size of the first block	1000 therms	\$ 0.8425		\$ 0.8425	\$ 0.1063	\$ 0.4811		\$ 0.4811
Therms in the first block per month at	\$ 0.2216	\$ 0.8425		\$ 0.8425	\$ 0.1063	\$ 0.4811		\$ 0.4811
All therms over the first block per month at	\$ 0.2216	\$ 0.8425		\$ 0.8425	\$ 0.1063	\$ 0.4811		\$ 0.4811
Commercial/Industrial - G-58								
Customer Charge per Month per Meter	\$ 989.80	\$ 0.5571	\$ 0.0603	\$ 989.80	\$ 989.80	\$ 0.3199	\$ 0.0549	\$ 989.80
Size of the first block	1000 therms	\$ 0.7055		\$ 0.7055	\$ 0.0459	\$ 0.4206		\$ 0.4206
Therms in the first block per month at	\$ 0.0846	\$ 0.7055		\$ 0.7055	\$ 0.0459	\$ 0.4206		\$ 0.4206
All therms over the first block per month at	\$ 0.0846	\$ 0.7055		\$ 0.7055	\$ 0.0459	\$ 0.4206		\$ 0.4206

Issued: October xx, 2020
Effective: November 4, 2019
Issued by: Susan L. Fleck
Title: President

Issued in compliance with NHPUC Order No. xx xxx dated xxx xx, 2020 in Docket DG 20-xxx
Issued in compliance with NHPUC Order No. 26-306 dated October 31, 2019 in Docket DG-19-145

Anticipated Cost of Gas

PERIOD COVERED: SUMMER PERIOD, MAY 1, 2020 THROUGH OCTOBER 31, 2020
(REFER TO TEXT IN SECTION 16 COST OF GAS CLAUSE)

(Col 1) (Col 2) (Col 3)

ANTICIPATED DIRECT COST OF GAS

Demand Costs:	\$ 2,868,280	
Supply Costs:	4,387,278	
Storage Gas:	\$ -	
Demand, Capacity:	-	
Commodity Costs:	\$ 28,014	
Produced Gas:	\$ -	

Hedged Contract (Savings)/Loss

Unadjusted Anticipated Cost of Gas	\$ 7,284,571	
---	--------------	--

Adjustments:

Prior Period (Over)/Under Recovery (as of April 30, 2019)	\$ 105,886	
Interest	(3,492)	
Prior Period Adjustments	-	
Power Revenues	-	
Road and Street	-	
Fuel Financing	-	
Transportation CGA Revenues	-	
Interruptible Sales Margin	-	
Capacity Release Margin	-	
Hedging Costs	-	
Fixed Price Option Administrative Costs	-	
Total Adjustments	<u>102,384</u>	

Total Anticipated Direct Cost of Gas	\$ 7,386,965	
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Anticipated Indirect Cost of Gas

Working Capital:	\$ 7,284,571	
Total Unadjusted Anticipated Cost of Gas 05/01/19 - 10/31/19)	0,0391	
Working Capital Rate - Lead Lag Days / 365	3.25%	
Prime Rate	0.127%	
Working Capital Percentage	9.258	
Working Capital	<u>(13,709)</u>	
Plus: Working Capital Reconciliation (Acct 1163-1424)	\$ (4,451)	
Total Working Capital Allowance	\$ (4,451)	

Bad Debt:

Total Unadjusted Anticipated Cost of Gas 05/01/19 - 10/31/19)	\$ 7,284,571	
Less: Refunds	-	
Plus: Total Working Capital	(4,451)	
Plus: Prior Period (Over)/Under Recovery	105,886	
Subtotal	<u>\$ 7,386,006</u>	
Bad Debt Percentage	1.11%	
Bad Debt Allowance	81,985	
Plus: Bad Debt Reconciliation (Acct 1163-1754)	(626,326)	
Total Bad Debt Allowance	<u>(244,341)</u>	

Production and Storage Capacity

Miscellaneous Overhead (05/01/19 - 10/31/19)	\$ 13,170	
Times Summer Sales	22,004	
Divided by Total Sales	111,369	
Miscellaneous Overhead	<u>2,602</u>	
Total Anticipated Indirect Cost of Gas	<u>(246,190)</u>	
Total Cost of Gas	<u>\$ 7,140,775</u>	

October xx, 2020 Issued by: Susan L. Fleck
November 1, 2020 Title: President

Issued in compliance with NHPUC Order No. xx,xxx dated xxxx.xx.2020 in Docket DG 20-xxx.

NHPUC NO. 10 - GAS
LIBERTY UTILITIES

Proposed Thirteenth Revised Page 89
Superseding Twelfth Revised Page 89

CALCULATION OF FIRM SALES COST OF GAS RATE
PERIOD COVERED: SUMMER PERIOD, MAY 1, 2020 THROUGH OCTOBER 31, 2020
(Refer to Text in Section 16 Cost of Gas Clause)

(Col 1)	(Col 2)	(Col 3)
Total Anticipated Direct Cost of Gas	\$ 7,386,965	
Projected Prorated Sales (05/01/20 - 10/31/20)	22,681,422	
Direct Cost of Gas Rate		\$ 0.3257 per therm
Demand Cost of Gas Rate	\$ 2,868,280	\$ 0.1265 per therm
Commodity Cost of Gas Rate	4,416,292	\$ 0.1947 per therm
Adjustment Cost of Gas Rate	<u>102,394</u>	<u>\$ 0.0045 per therm</u>
Total Direct Cost of Gas Rate	\$ 7,386,965	\$ 0.3257 per therm
Total Anticipated Indirect Cost of Gas	\$ (246,190)	
Projected Prorated Sales (05/01/20 - 10/31/20)	22,681,422	
Indirect Cost of Gas		\$ (0.0109) per therm
TOTAL PERIOD AVERAGE COST OF GAS EFFECTIVE 05/01/21		\$ 0.3148 per therm

RESIDENTIAL COST OF GAS RATE - 05/01/2021	COGsr	\$ 0.3148 /therm
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Maximum (COG + 25%) \$ 0.3935

COM/IND LOW WINTER USE COST OF GAS RATE - 05/01/2021	COGsl	\$ 0.3199 /therm
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Average Demand Cost of Gas Rate Effective 05/01/20	\$ 0.1265		
*Times: Low Winter Use Ratio (Summer)	1.0620	Maximum (COG + 25%)	\$ 0.3999
Times: Correction Factor	<u>0.9798</u>		
Adjusted Demand Cost of Gas Rate	\$ 0.1316		
Commodity Cost of Gas Rate	\$ 0.1947		
Adjustment Cost of Gas Rate	0.0045		
Indirect Cost of Gas Rate	<u>(0.0109)</u>		
Adjusted Com/Ind Low Winter Use Cost of Gas Rate	\$ 0.3199		

COM/IND HIGH WINTER USE COST OF GAS RATE - 05/01/2021	COGsh	\$ 0.3109 /therm
--	--------------	-------------------------

Average Demand Cost of Gas Rate Effective 05/01/20	\$ 0.1265		
*Times: High Winter Use Ratio (Summer)	0.9890	Maximum (COG + 25%)	\$ 0.3886
Times: Correction Factor	<u>0.9798</u>		
Adjusted Demand Cost of Gas Rate	\$ 0.1226		
Commodity Cost of Gas Rate	\$ 0.1947		
Adjustment Cost of Gas Rate	0.0045		
Indirect Cost of Gas Rate	<u>(0.0109)</u>		
Adjusted Com/Ind High Winter Use Cost of Gas Rate	\$ 0.3109		

Issued: ~~October xx, 2019~~ October xx, 2020

Issued by: _____

Effective: ~~November 1, 2019~~ November 1, 2020

Susan L. Fleck
Title: President

Issued in compliance with NHPUC Order No. xx,xxx dated xxxx xx, 2020 in Docket DG 20-xxx.

NHPUC NO. 10 - GAS
LIBERTY UTILITIES

Revised Proposed Twenty-Fifth Revised Page 84
Superseding Twenty-Fourth Revised Page 84

II RATE SCHEDULES
FIRM RATE SCHEDULES

Rates effective November 1, 2020 - April 30, 2021
Rates effective April 1, 2020 - April 30, 2020 -
Winter Period

Rates Effective May 1, 2021 - October 31, 2021
Rates Effective September 1, 2020 - October 31, 2020 -
Summer Period

	Delivery Charge	Cost of Gas Rate Page 89	LDAC Page 97	Total Rate	Delivery Charge	Cost of Gas Rate Page 89	LDAC Page 97	Total Rate
Residential Non Heating - R-1	\$ 15.20			\$ 15.20	\$ 15.50			\$ 15.50
Customer Charge per Month per Meter	\$ 15.50			\$ 15.50	\$ 15.50			\$ 15.50
All Therms	\$ 0.3860	\$ 0.5571	\$ 0.0603	\$ 1.0034	\$ 0.3860	\$ 0.3148	\$ 0.0603	\$ 0.7611
	\$ 0.3786	\$ 0.5825	\$ 0.0660	\$ 1.0271	\$ 0.3860	\$ 0.4914	\$ 0.0310	\$ 0.9084
Residential Heating - R-3	\$ 15.20			\$ 15.20	\$ 15.50			\$ 15.50
Customer Charge per Month per Meter	\$ 15.50			\$ 15.50	\$ 15.50			\$ 15.50
Size of the first block all therms								
Therms in the first block per month at	\$ 0.5678	\$ 0.5571	\$ 0.0603	\$ 1.1852	\$ 0.5678	\$ 0.3148	\$ 0.0603	\$ 0.9429
	\$ 0.5569	\$ 0.5825	\$ 0.0660	\$ 1.2054	\$ 0.5678	\$ 0.4914	\$ 0.0310	\$ 1.0902
Residential Heating - R-4	\$ 6.08			\$ 6.08	\$ 6.20			\$ 6.20
Customer Charge per Month per Meter	\$ 8.52			\$ 8.52	\$ 15.50			\$ 15.50
Size of the first block all therms								
Therms in the first block per month at	\$ 0.3123	\$ 0.3064	\$ 0.0603	\$ 0.6790	\$ 0.5678	\$ 0.3148	\$ 0.0603	\$ 0.9429
	\$ 0.2228	\$ 0.5825	\$ 0.0660	\$ 0.8713	\$ 0.2272	\$ 0.4914	\$ 0.0310	\$ 0.7496
Commercial/Industrial - G-41	\$ 56.36			\$ 56.36	\$ 57.46			\$ 57.46
Customer Charge per Month per Meter	\$ 57.46			\$ 57.46	\$ 57.46			\$ 57.46
Size of the first block 100 therms								
Therms in the first block per month at	\$ 0.4711	\$ 0.5552	\$ 0.0549	\$ 1.0812	\$ 0.4711	\$ 0.3109	\$ 0.0549	\$ 0.8369
	\$ 0.4624	\$ 0.5817	\$ 0.0757	\$ 1.1195	\$ 0.4711	\$ 0.4868	\$ 0.0478	\$ 1.0057
All therms over the first block per month at	\$ 0.3165	\$ 0.5552	\$ 0.0549	\$ 0.9266	\$ 0.3165	\$ 0.3109	\$ 0.0549	\$ 0.6822
	\$ 0.3104	\$ 0.5817	\$ 0.0757	\$ 0.9678	\$ 0.3165	\$ 0.4868	\$ 0.0478	\$ 0.8511
Commercial/Industrial - G-42	\$ 169.09			\$ 169.09	\$ 172.39			\$ 172.39
Customer Charge per Month per Meter	\$ 172.39			\$ 172.39	\$ 172.39			\$ 172.39
Size of the first block 1000 therms								
Therms in the first block per month at	\$ 0.4284	\$ 0.5552	\$ 0.0549	\$ 1.0385	\$ 0.4284	\$ 0.3109	\$ 0.0549	\$ 0.7942
	\$ 0.4202	\$ 0.5817	\$ 0.0757	\$ 1.0776	\$ 0.4284	\$ 0.4868	\$ 0.0478	\$ 0.9630
All therms over the first block per month at	\$ 0.2855	\$ 0.5552	\$ 0.0549	\$ 0.8956	\$ 0.2855	\$ 0.3109	\$ 0.0549	\$ 0.6512
	\$ 0.2800	\$ 0.5817	\$ 0.0757	\$ 0.9374	\$ 0.2855	\$ 0.4868	\$ 0.0478	\$ 0.8204
Commercial/Industrial - G-43	\$ 725.66			\$ 725.66	\$ 739.83			\$ 739.83
Customer Charge per Month per Meter	\$ 739.83			\$ 739.83	\$ 739.83			\$ 739.83
All therms over the first block per month at	\$ 0.2633	\$ 0.5552	\$ 0.0549	\$ 0.8734	\$ 0.1204	\$ 0.3109	\$ 0.0549	\$ 0.4862
	\$ 0.2583	\$ 0.5817	\$ 0.0757	\$ 0.9157	\$ 0.1204	\$ 0.4868	\$ 0.0478	\$ 0.6550
Commercial/Industrial - G-51	\$ 56.36			\$ 56.36	\$ 57.46			\$ 57.46
Customer Charge per Month per Meter	\$ 57.46			\$ 57.46	\$ 57.46			\$ 57.46
Size of the first block 100 therms								
Therms in the first block per month at	\$ 0.2839	\$ 0.5660	\$ 0.0549	\$ 0.9048	\$ 0.2839	\$ 0.3199	\$ 0.0549	\$ 0.6587
	\$ 0.2786	\$ 0.5870	\$ 0.0757	\$ 0.9412	\$ 0.2839	\$ 0.4985	\$ 0.0478	\$ 0.8302
All therms over the first block per month at	\$ 0.1846	\$ 0.5660	\$ 0.0549	\$ 0.8055	\$ 0.1846	\$ 0.3199	\$ 0.0549	\$ 0.5594
	\$ 0.1811	\$ 0.5870	\$ 0.0757	\$ 0.8438	\$ 0.1846	\$ 0.4985	\$ 0.0478	\$ 0.7309
Commercial/Industrial - G-52	\$ 169.09			\$ 169.09	\$ 172.39			\$ 172.39
Customer Charge per Month per Meter	\$ 172.39			\$ 172.39	\$ 172.39			\$ 172.39
Size of the first block 1000 therms								
Therms in the first block per month at	\$ 0.2439	\$ 0.5660	\$ 0.0549	\$ 0.8648	\$ 0.1767	\$ 0.3199	\$ 0.0549	\$ 0.5514
	\$ 0.2392	\$ 0.5870	\$ 0.0757	\$ 0.9019	\$ 0.1767	\$ 0.4985	\$ 0.0478	\$ 0.7230
All therms over the first block per month at	\$ 0.1624	\$ 0.5660	\$ 0.0549	\$ 0.7833	\$ 0.1004	\$ 0.3199	\$ 0.0549	\$ 0.4752
	\$ 0.1593	\$ 0.5870	\$ 0.0757	\$ 0.8220	\$ 0.1004	\$ 0.4985	\$ 0.0478	\$ 0.6467
Commercial/Industrial - G-53	\$ 746.81			\$ 746.81	\$ 761.39			\$ 761.39
Customer Charge per Month per Meter	\$ 761.39			\$ 761.39	\$ 761.39			\$ 761.39
All therms over the first block per month at	\$ 0.1705	\$ 0.5660	\$ 0.0549	\$ 0.7914	\$ 0.0818	\$ 0.3199	\$ 0.0549	\$ 0.4565
	\$ 0.1672	\$ 0.5870	\$ 0.0757	\$ 0.8299	\$ 0.0818	\$ 0.4985	\$ 0.0478	\$ 0.6284
Commercial/Industrial - G-54	\$ 746.81			\$ 746.81	\$ 761.39			\$ 761.39
Customer Charge per Month per Meter	\$ 761.39			\$ 761.39	\$ 761.39			\$ 761.39
All therms over the first block per month at	\$ 0.0650	\$ 0.5660	\$ 0.0549	\$ 0.6859	\$ 0.0353	\$ 0.3199	\$ 0.0549	\$ 0.4100
	\$ 0.0638	\$ 0.5870	\$ 0.0757	\$ 0.7265	\$ 0.0353	\$ 0.4985	\$ 0.0478	\$ 0.5816

Issued: ~~October xx, 2019~~ October xx, 2020
Effective: ~~November 1, 2019~~ November 1, 2020

Issued by: _____
Title: Susan L. Fleck
President

Issued in compliance with NHPUC Order No. xx,xxx dated xxxx xx, 2020 in Docket DG 20-xxx.
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NHPUC NO. 10 - GAS
LIBERTY UTILITIES

Revised Proposed Twenty-Sixth Revised Page 86
Superseding Twenty-Fifth Revised Page 86

Rates effective November 1, 2019 - April 30, 2020
Rates effective April 1, 2019 - April 30, 2019

Rates Effective May 1, 2021 - October 31, 2021
Rates Effective September 1, 2020 - October 31, 2020

	Winter Period				Summer Period			
	Delivery Charge	Cost of Gas Rate Page 92	LDAC Charge	Total Rate	Delivery Charge	Cost of Gas Rate Page 89	LDAC Page 97	Total Rate
Residential Non Heating - R-5	\$ 19.76			\$ 19.76	\$ 20.15			\$ 20.15
Customer Charge per Month per Meter	\$ 20.15			\$ 20.15	\$ 20.15			\$ 20.15
All therms	\$ 0.5018	\$ 0.5571	\$ 0.0603	\$ 1.1192	\$ 0.5018	\$ 0.3148	\$ 0.0603	\$ 0.8769
	\$ -0.4922	\$ -0.2679	\$ -0.0310	\$ -0.7914	\$ -0.5018	\$ -0.4914	\$ -0.0310	\$ -1.0242
Residential Heating - R-6	\$ 19.76			\$ 19.76	\$ 20.15			\$ 20.15
Customer Charge per Month per Meter	\$ 20.15			\$ 20.15	\$ 20.15			\$ 20.15
All therms	\$ 0.7381	\$ 0.5571	\$ 0.0603	\$ 1.3555	\$ 0.7381	\$ 0.3148	\$ 0.0603	\$ 1.1132
	\$ -0.7240	\$ -0.2679	\$ -0.0310	\$ -1.0229	\$ -0.7381	\$ -0.4914	\$ -0.0310	\$ -1.2605
Residential Heating - R-7	\$ 7.90			\$ 7.90	\$ 8.06			\$ 8.06
Customer Charge per Month per Meter	\$ 11.08			\$ 11.08	\$ 11.08			\$ 11.08
All therms	\$ 0.4059	\$ 0.5571	\$ 0.0603	\$ 1.0233	\$ 0.4059	\$ 0.3148	\$ 0.0603	\$ 0.7810
	\$ -0.2896	\$ -0.2679	\$ -0.0310	\$ -0.5885	\$ -0.2953	\$ -0.4914	\$ -0.0310	\$ -0.8177
Commercial/Industrial - G-44	\$ 73.26			\$ 73.26	\$ 74.69			\$ 74.69
Customer Charge per Month per Meter	\$ 74.69			\$ 74.69	\$ 74.69			\$ 74.69
Size of the first block	100 therms				20 therms			
Therms in the first block per month at	\$ 0.6126	\$ 0.5552	\$ 0.0549	\$ 1.2227	\$ 0.5569	\$ 0.3109	\$ 0.0549	\$ 0.9227
	\$ -0.6008	\$ -0.2666	\$ -0.0478	\$ -0.9152	\$ -0.5569	\$ -0.4868	\$ -0.0478	\$ -1.0915
All therms over the first block per month a	\$ 0.4114	\$ 0.5552	\$ 0.0549	\$ 1.0215	\$ 0.3711	\$ 0.3109	\$ 0.0549	\$ 0.7369
	\$ -0.4035	\$ -0.2666	\$ -0.0478	\$ -0.7179	\$ -0.3711	\$ -0.4868	\$ -0.0478	\$ -0.9057
Commercial/Industrial - G-45	\$ 219.82			\$ 219.82	\$ 224.11			\$ 224.11
Customer Charge per Month per Meter	\$ 224.11			\$ 224.11	\$ 224.11			\$ 224.11
Size of the first block	1000 therms				400 therms			
Therms in the first block per month at	\$ 0.5569	\$ 0.5552	\$ 0.0549	\$ 1.1670	\$ 0.5569	\$ 0.3109	\$ 0.0549	\$ 0.9227
	\$ -0.5463	\$ -0.2666	\$ -0.0478	\$ -0.8607	\$ -0.5569	\$ -0.4868	\$ -0.0478	\$ -1.0915
All therms over the first block per month a	\$ 0.3711	\$ 0.5552	\$ 0.0549	\$ 0.9812	\$ 0.3711	\$ 0.3109	\$ 0.0549	\$ 0.7369
	\$ -0.3640	\$ -0.2666	\$ -0.0478	\$ -0.6784	\$ -0.3711	\$ -0.4868	\$ -0.0478	\$ -0.9057
Commercial/Industrial - G-46	\$ 943.36			\$ 943.36	\$ 961.78			\$ 961.78
Customer Charge per Month per Meter	\$ 961.78			\$ 961.78	\$ 961.78			\$ 961.78
All therms over the first block per month a	\$ 0.3423	\$ 0.5552	\$ 0.0549	\$ 0.9524	\$ 0.1565	\$ 0.3109	\$ 0.0549	\$ 0.5223
	\$ -0.3358	\$ -0.2666	\$ -0.0478	\$ -0.6502	\$ -0.1565	\$ -0.4868	\$ -0.0478	\$ -0.6914
Commercial/Industrial - G-55	\$ 73.26			\$ 73.26	\$ 74.69			\$ 74.69
Customer Charge per Month per Meter	\$ 74.69			\$ 74.69	\$ 74.69			\$ 74.69
Size of the first block	100 therms				100 therms			
Therms in the first block per month at	\$ 0.3691	\$ 0.5660	\$ 0.0549	\$ 0.9900	\$ 0.3691	\$ 0.3199	\$ -0.0478	\$ 0.7368
	\$ -0.3621	\$ -0.2734	\$ -0.0478	\$ -0.6833	\$ -0.3691	\$ -0.4985	\$ -0.0478	\$ -0.9154
All therms over the first block per month a	\$ 0.2400	\$ 0.5660	\$ 0.0549	\$ 0.8609	\$ 0.2400	\$ 0.3199	\$ 0.0549	\$ 0.6148
	\$ -0.2354	\$ -0.2734	\$ -0.0478	\$ -0.5566	\$ -0.2400	\$ -0.4985	\$ -0.0478	\$ -0.7863
Commercial/Industrial - G-56	\$ 219.82			\$ 219.82	\$ 224.11			\$ 224.11
Customer Charge per Month per Meter	\$ 224.11			\$ 224.11	\$ 224.11			\$ 224.11
Size of the first block	1000 therms				1000 therms			
Therms in the first block per month at	\$ 0.3171	\$ 0.5660	\$ 0.0549	\$ 0.9380	\$ 0.2297	\$ 0.3199	\$ 0.0549	\$ 0.6045
	\$ -0.3140	\$ -0.2734	\$ -0.0478	\$ -0.6322	\$ -0.2297	\$ -0.4985	\$ -0.0478	\$ -0.7760
All therms over the first block per month a	\$ 0.2111	\$ 0.5660	\$ 0.0549	\$ 0.8320	\$ 0.1304	\$ 0.3199	\$ 0.0549	\$ 0.5052
	\$ -0.2074	\$ -0.2734	\$ -0.0478	\$ -0.5283	\$ -0.1304			
Commercial/Industrial - G-57	\$ 970.84			\$ 970.84	\$ 989.80			\$ 989.80
Customer Charge per Month per Meter	\$ 989.80			\$ 989.80	\$ 989.80			\$ 989.80
All therms over the first block per month a	\$ 0.2216	\$ 0.5660	\$ 0.0549	\$ 0.8425	\$ 0.1063	\$ 0.3199	\$ 0.0549	\$ 0.4811
	\$ -0.2174	\$ -0.2734	\$ -0.0478	\$ -0.5386	\$ -0.1063	\$ -0.4985	\$ -0.0478	\$ -0.6526
Commercial/Industrial - G-58	\$ 970.84			\$ 970.84	\$ 970.84			\$ 970.84
Customer Charge per Month per Meter	\$ 989.80			\$ 989.80	\$ 970.84			\$ 970.84
All therms over the first block per month a	\$ 0.0846	\$ 0.5660	\$ 0.0549	\$ 0.7055	\$ 0.0459	\$ 0.3199	\$ 0.0549	\$ 0.4206
	\$ -0.9829	\$ -0.2734	\$ -0.0478	\$ -0.4044	\$ -0.0459	\$ -0.4985	\$ -0.0478	\$ -0.5922

Issued: ~~October xx, 2019~~

October xx, 2020

Issued by:

Susan L. Fleck
President

Effective: ~~November 1, 2019~~

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Title:

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NHPUC NO. 10 - GAS
LIBERTY UTILITIES

Proposed Third Revised Page 88
Superseding Second Revised Page 88

Anticipated Cost of Gas
PERIOD COVERED: SUMMER PERIOD, MAY 1, 2020 THROUGH OCTOBER 31, 2020
~~PERIOD COVERED: SUMMER PERIOD, MAY 1, 2019 THROUGH OCTOBER 31, 2019~~
(REFER TO TEXT ON IN SECTION 16 COST OF GAS CLAUSE)

(Col 1)	(Col 2)	(Col 3)	(Col 2)	(Col 3)
ANTICIPATED DIRECT COST OF GAS				
Purchased Gas:				
Demand Costs:	\$ 2,919,324		\$ 2,868,280	
Supply Costs:	<u>2,202,634</u>		<u>4,387,278</u>	
Storage Gas:				
Demand, Capacity:	_____		-	
Commodity Costs:	_____		-	
Produced Gas:	<u>22,682</u>		<u>29,014</u>	
Hedged Contract Savings	_____		-	
	_____		_____	
Unadjusted Anticipated Cost of Gas		\$ 5,144,637		\$ 7,284,571
Adjustments:				
Prior Period (Over)/Under Recovery as of April 30, 2018 September 01, 2019 (monthly adjustment filing)	\$ 1,885,446		\$ 105,886	
Interest	<u>54,144</u>		<u>(3,492)</u>	
Prior Period Adjustments	_____		-	
Broker Revenues	_____		-	
Refunds from Suppliers	_____		-	
Fuel Financing	-		-	
Transportation CGA Revenues	_____		-	
Interruptible Sales Margin	_____		-	
Capacity Release and Off System Sales Margin	_____		-	
Hedging Costs	_____		-	
Fixed Price Option Administrative Costs	_____		-	
Total Adjustments	<u>1,936,590</u>		<u>102,394</u>	
Total Anticipated Direct Cost of Gas		\$ 7,081,227		\$ 7,386,965
Anticipated Indirect Cost of Gas				
Working Capital:				
Total anticipated Direct Cost of Gas (05/01/2018 - 10/31/2018) (05/01/19 - 10/31/19)	\$ 5,144,637		\$ 7,284,571	
Working Capital Rate	0.0391		0.0391	
Prime Rate	3.25%		3.25%	
Working Capital Percentage	<u>0.127%</u>		<u>0.13%</u>	
Working Capital	<u>6,538</u>		<u>9,258</u>	
Plus: Working Capital Reconciliation (Acct 142-20) (Acct 1163-1424)	<u>(18,982)</u>		<u>(13,709)</u>	
Total Working Capital Allowance	<u>\$ (12,443)</u>		<u>\$ (4,451)</u>	
Bad Debt:				
Total anticipated Direct Cost of Gas (05/01/2018 - 10/31/2018) (05/01/19 - 10/31/19)	\$ 5,144,637		\$ 7,284,571	
Less: Refunds	-		-	
Plus: Total Working Capital	<u>(12,443)</u>		<u>(4,451)</u>	
Plus: Prior Period (Over)/Under Recovery	<u>1,885,446</u>		<u>105,886</u>	
Subtotal	<u>\$ 7,017,640</u>		<u>\$ 7,386,006</u>	
Bad Debt Percentage	4.41%		1.11%	
Bad Debt Allowance	<u>77,896</u>		<u>81,985</u>	
Plus: Bad Debt Reconciliation (Acct 175-52) (Acct 1163-1754)	<u>(280,167)</u>		<u>(326,326)</u>	
Total Bad Debt Allowance	<u>(202,272)</u>		<u>(244,341)</u>	
Production and Storage Capacity	_____		-	
Miscellaneous Overhead (05/01/2018 - 10/31/2018) (05/01/19 - 10/31/19)	\$ 13,170		\$ 13,170	
Times Summer Water Sales	<u>20,973</u>		<u>22,004</u>	
Divided by Total Sales	<u>109,299</u>		<u>111,369</u>	
Miscellaneous Overhead	<u>2,527</u>		<u>2,602</u>	
Total Anticipated Indirect Cost of Gas	<u>\$ (212,188)</u>		<u>\$ (246,190)</u>	
Total Cost of Gas		<u>\$ 6,869,039</u>		<u>\$ 7,140,775</u>

Issued: ~~October xx, 2019~~ October xx, 2020
Effective: ~~November 1, 2019~~ November 1, 2020

Issued by: _____
Title: Susan L. Fleck
President

Issued in compliance with NHPUC Order No. xx,xxx dated xxxx xx, 2020 in Docket DG 20-xxx.
~~Issued in compliance with NHPUC Order No. 26,306 dated October 31, 2019 in Docket DG 19-145~~

NHPUC NO. 10 - GAS
LIBERTY UTILITIES

Proposed Thirteenth Revised Page 89
Superseding Twelfth Revised Page 89

CALCULATION OF FIRM SALES COST OF GAS RATE
PERIOD COVERED: SUMMER PERIOD, MAY 1, 2020 THROUGH OCTOBER 31, 2020
~~PERIOD COVERED: SUMMER PERIOD, MAY 1, 2019 THROUGH OCTOBER 31, 2019~~
(Refer to Text in Section 16 Cost of Gas Clause)

(Col 1)	(Col 2)	(Col 3)	(Col 2)	(Col 3)	
Total Anticipated Direct Cost of Gas	\$ 9,653,380		\$ 7,386,965		
Projected Prorated Sales (05/01/21 - 10/31/21) (05/01/20 - 10/31/20)	20,973,034		22,681,422		
Direct Cost of Gas Rate		\$ -0.4603		\$ 0.3257	per therm
Demand Cost of Gas Rate	\$ 4,548,346	\$ -0.2169	\$ 2,868,280	\$ 0.1265	
Commodity Cost of Gas Rate	3,136,847	\$ -0.1496	4,416,292	\$ 0.1947	
Adjustment Cost of Gas Rate	1,968,188	\$ -0.0938	102,394	\$ 0.0045	(1,865,794)
Total Direct Cost of Gas Rate	\$ 9,653,380	\$ -0.4603	\$ 7,386,965	\$ 0.3257	\$ (2,266,415)
Total Anticipated Indirect Cost of Gas	\$ (174,652)		(246,190)		
Projected Prorated Sales (05/01/21 - 10/31/21) (05/01/20 - 10/31/20)	20,973,034		22,681,422		
Indirect Cost of Gas		\$ (0.0083)		\$ (0.0109)	per therm
TOTAL PERIOD AVERAGE COST OF GAS EFFECTIVE 05/01/21				\$ 0.3148	per Therm
TOTAL PERIOD AVERAGE COST OF GAS EFFECTIVE 05/01/20		\$ -0.4520			

RESIDENTIAL COST OF GAS RATE - 05/01/2021	COGsr	\$ 0.3148 /therm
RESIDENTIAL COST OF GAS RATE - 5/01/20	COGsr	\$ -0.4520 /therm

Maximum (COG + 25%) \$ -0.5650 \$ 0.3935

COM/IND LOW WINTER USE COST OF GAS RATE - 05/01/2021	COGel	\$ 0.3199 /therm
COM/IND LOW WINTER USE COST OF GAS RATE - 05/01/2020	COGel	\$ -0.4504 /therm

(0.1372)

Average Demand Cost of Gas Rate Effective 05/01/20 05/01/2021	\$ -0.2169	\$ 0.1265	Maximum	(COG + 25%)	\$ -0.5739	\$ 0.3999
Times: Low Winter Use Ratio (Summer)	1.0465	1.0620				
Times: Correction Factor	0.9867	0.9798				
Adjusted Demand Cost of Gas Rate	\$ -0.2240	\$ 0.1316				
Commodity Cost of Gas Rate	\$ -0.1496	\$ 0.1947				
Adjustment Cost of Gas Rate	0.0938	0.0045				
Indirect Cost of Gas Rate	(0.0083)	(0.0109)				
Adjusted Com/Ind Low Winter Use Cost of Gas Rate	\$ -0.4584	\$ 0.3199				

COM/IND HIGH WINTER USE COST OF GAS RATE - 05/01/2021	COGsh	\$ 0.3109 /therm
COM/IND HIGH WINTER USE COST OF GAS RATE - 05/01/2020	COGsh	\$ -0.4474 /therm

Average Demand Cost of Gas Rate Effective 05/01/20 05/01/2021	\$ -0.2169	\$ 0.1265	Maximum	(COG + 25%)	\$ -0.5593	\$ 0.3886
Times: High Winter Use Ratio (Summer)	0.9948	0.9890				
Times: Correction Factor	0.9867	0.9798				
Adjusted Demand Cost of Gas Rate	\$ -0.2123	\$ 0.1226				
Commodity Cost of Gas Rate	\$ -0.1496	\$ 0.1947	Minimum			
Adjustment Cost of Gas Rate	0.0938	0.0045	Maximum			
Indirect Cost of Gas Rate	(0.0083)	(0.0109)				
Adjusted Com/Ind High Winter Use Cost of Gas Rate	\$ -0.4474	\$ 0.3109				

Issued: ~~October xx, 2019~~ October xx, 2020

Issued by: _____

Effective: ~~November 1, 2019~~ November 1, 2020

Title: Susan L. Fleck
President

Issued in compliance with NHPUC Order No. xx,xxx dated xxxx xx, 2020 in Docket DG 20-xxx.
Issued in compliance with NHPUC Order No. 26,306 dated October 31, 2019 in Docket DG 19-145

Liberty Utilities (EnergyNorth Natural Gas) Corp.
Off Peak 2020 Summer Cost of Gas Filing

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4	Schedule 4	Adjustments to Gas Costs
5	Schedule 5A Schedule 5B Schedule 5C	Demand Costs Demand Volumes Demand Rates
6	Schedule 6 Attachment	Supply and Commodity Costs, Volumes and Rates Pipeline Tariff Sheets
7	Schedule 7	NYMEX Futures @ Henry Hub and Hedged Contracts
8	Schedule 8, Page 1 Schedule 8, Page 2 Schedule 8, Page 3 Schedule 8, Page 4 Schedule 8, Page 5	Annual Bill Comparisons, May 19 - Oct 19 vs May 20 - Oct 20 - Residential Heating Rate R-3 Annual Bill Comparisons, May 19 - Oct 19 vs May 20 - Oct 20 - Commercial Rate G-41 Annual Bill Comparisons, May 19 - Oct 19 vs May 20 - Oct 20 - Commercial Rate G-42 Annual Bill Comparisons, May 19 - Oct 19 vs May 20 - Oct 20 - Commercial Rate G-52 Residential Heating
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13	Schedule 13	Storage Inventory

1 Liberty Utilities (EnergyNorth Natural Gas) Corp.		Summary
2		Page 1 of 1
3	Off Peak 2020 Summer Cost of Gas Filing	
4	Summary	
5		OP 21
6		May - Oct
7	(a)	(c)
8		
9	Anticipated Direct Cost of Gas	
10	Purchased Gas:	
11	Demand Costs:	Sch. 5A, col (j), In 45
12	Supply Costs	Sch. 6, col (i), In 45
13		
14	Storage Gas:	
15	Demand, Capacity:	Sch. 5A, col (j), In 60
16	Commodity Costs:	Sch. 6, col (i), In 48
17		
18	Produced Gas:	Sch. 6, col (i), In 54
19		
20	Hedge Contract (Savings)/Loss	
21		
22		
23	Total Unadjusted Cost of Gas	\$ 7,284,571
24		
25	Adjustments:	
26		
27	Prior Period (Over)/Under Recovery	Sch. 3, col (c) In 28
28	Interest 11/01/19 - 10/31/20	Sch. 3, col (q) In 193
29	Prior Period Adjustments	Sch. 4, In 24 col (b)
30	Refunds from Suppliers	Sch. 4, In 24 col (c)
31	Broker Revenue	Sch. 4, In 24 col (d)
32	Fuel Financing	Sch. 4, In 24 col (e)
33	Transportation CGA Revenues	Sch. 4, In 24 col (f)
34	Interruptible Sales Margin	Sch. 4, In 24 col (g)
35	Capacity Release and Off System Sales Margins	Sch. 4, In 24 col (h) + col (i)
36	Hedging Costs	Sch. 4, In 24 col (j)
37	FPO Premium - Collection	
38	Fixed Price Option Administrative Costs	Sch. 4, In 24 col (k)
39		
40	Total Adjustments	\$ 102,394
41		
42	Total Anticipated Direct Costs	Ins 23 + 40
43		\$ 7,386,965
44	Anticipated Indirect Cost of Gas	
45	Working Capital	
46	Total Unadjusted Anticipated Cost of Gas	Ln 23
47	Lead Lag Days / 365	DG 10-017, 14.27 / 365
48	Prime Rate	
49	Working Capital Percentage	In 47 * In 48
50	Working Capital	In 46 * In 49
51	Plus: Working Capital Reconciliation	Sch. 3, col (c), In 98
52		
53	Total Working Capital Allowance	Ins 50 + 51
54		\$ (4,451)
55	Bad Debt	
56	Total Unadjusted Anticipated Cost of Gas	In 23
57	Less Refunds	In 30
58	Plus Working Capital	In 53
59	Plus Prior Period (Over) Under Recovery	In 27
60	Subtotal	
61	Bad Debt Percentage	per GTC 17(f)
62		
63	Bad Debt Allowance	In 60 * In 61
64	Prior Period Bad Debt Allowance	Sch. 3, col (c), In 163
65		
66	Total Bad Debt Allowance	Ins 63 + 64
67		\$ (244,341)
68	Production and Storage Capacity	per GTC17(f)
69		\$ -
70	Miscellaneous Overhead	per GTC 17(f)
71	Sales Volume	Sch. 10B, In 23/1000
72	Divided by Total Sales	Sch. 10B, In 23/1000
73	Ratio	
74		
75	Miscellaneous Overhead	Ins 70 * 73
76		\$ 13,170
77	Total Anticipated Indirect Cost of Gas	Ins 53 + 66 + 68 + 75
78		\$ (246,190)
79	Total Cost of Gas	Ins 42 + 77
80		\$ 7,140,775
81	Projected Forecast Sales (Therms)	Sch. 3, col (q), In 52
		22,681,422

1 Liberty Utilities (EnergyNorth Natural Gas) Corp.

2
3 Off Peak 2020 Summer Cost of Gas Filing
4 Summary of Supply and Demand Forecast

Schedule 1
Page 1 of 4

7	For Month of:	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Off Peak Period May - Oct
8	(a)	(c)	(d)	(e)	(d)	(e)	(f)	(g)	(h)
9	I. Gas Volumes (Therms)								
10									
11	A. Firm Demand Volumes								
12	Firm Gas Sales	93,311	245,810	195,494	199,708	315,470	701,487	516,861	
13	Lost Gas (Unaccounted for)	933,114	2,458,105	1,954,943	1,997,083	3,154,699	7,014,865	5,168,614	22,661,422
14	Company Use	70,818	33,976	29,401	30,115	53,654	106,872		324,836
15	Unbilled Therms	2,966	1,423	1,232	1,261	2,247	4,477		13,606
16		3,803,683	(185,535)	11,613	17,239	434,050	133,498	(5,168,614)	(954,066)
17	Total Firm Volumes	4,810,581	2,307,969	1,997,188	2,045,699	3,644,650	7,259,712		22,065,798
18									
19	B. Supply Volumes (Therms)								
20	Pipeline Gas:								
21	Dawn Supply	-	-	-	-	-	858,740		858,740
22	Niagara Supply	637,331	-	532,884	535,788	-	676,922		2,382,926
23	TGP Supply (Gulf)	-	-	-	-	-	-		-
24	Dracut Supply 1 - Baseload	-	-	-	-	-	-		-
25	Dracut Supply 2 - Swing	3,933,940	2,438,570	-	-	3,103,570	1,319,579		10,795,659
26	City Gate Delivered Supply	-	-	-	-	-	-		-
27	LNG Truck	48,746	17,020	15,965	-	35,455	16,084		131,270
28	Propane Truck	75,716	67,494	63,308	63,653	70,300	80,420		420,889
29	PNGTS	202,129	-	169,004	169,925	-	214,685		755,742
30	Portland Natural Gas	-	-	-	-	-	-		-
31	TGP Supply (Zone 4)	3,508,614	2,994,951	4,054,983	2,293,151	3,119,464	5,460,834		21,431,995
32	Subtotal Pipeline Volumes	8,404,476	5,518,034	4,836,143	3,062,516	6,328,789	8,627,264		36,777,221
33									
34	Storage Gas:								
35	TGP Storage	-	-	-	-	-	-		-
36									
37	Produced Gas:								
38	LNG Vapor	19,197.45	17,222.04	15,625.30	15,495.37	14,320.87	16,991.87		98,852.88
39	Propane	-	-	-	-	-	-		-
40	Subtotal Produced Gas	19,197.45	17,222.04	15,625.30	15,495.37	14,320.87	16,991.87		98,852.88
41									
42	Less - Gas Refill:								
43	LNG Truck	(47,000.65)	(17,837.11)	(15,625.30)	-	(29,664.65)	(13,476.31)		(123,604.02)
44	Propane	(76,127.82)	(70,733.37)	(61,962.38)	(61,447.14)	(58,817.84)	(67,381.55)		(396,470.10)
45	TGP Storage Refill	(3,489,964.08)	(3,138,716.56)	(2,776,992.28)	(970,864.79)	(2,609,977.65)	(1,303,686.48)		(14,290,201.84)
46	Subtotal Refills	(3,613,092.56)	(3,227,287.04)	(2,854,579.96)	(1,032,311.93)	(2,698,460.14)	(1,384,544.33)		(14,810,275.96)
47									
48	Total Firm Sendout Volumes	4,810,580.89	2,307,968.79	1,997,187.84	2,045,698.94	3,644,649.63	7,259,711.64		22,065,797.73

1 Liberty Utilities (EnergyNorth Natural Gas) Corp.

3 Off Peak 2020 Summer Cost of Gas Filing
4 Summary of Supply and Demand Forecast

154	D. Supply and Demand Costs by Source												
155													
156	157 Purchased Gas Demand Costs												
158	Pipeline Gas Demand Costs												
159	Peaking Gas Demand Costs												
160	Subtotal Purchased Gas Demand Costs												
161	Less Capacity Credit												
162	Net Purchased Gas Demand Costs												
163													
164	164 Storage Gas Demand Costs												
165	Storage Demand												
166	Less Capacity Credit												
167	Net Storage Demand Costs												
168													
169	Total Demand Costs												
170													
171	171 Purchased Gas Supply												
172	Commodity Costs												
173	Less Storage Inj.(TGP Storage)												
174	Less Storage Transportation												
175	Less LNG Truck												
176	Less Propane Truck												
177	Plus Transportation Costs												
178	Subtotal Purchased Gas Supply												
179													
180	180 Storage Commodity Costs												
181	Commodity Costs												
182	Transportation Costs												
183	Subtotal Storage Commodity Costs												
184													
185	185 Produced Gas Commodity Costs												
186													
187	Subtotal Commodity Costs												
188													
189	189 Hedge Contract (Savings)/Loss												
190													
191	Total Commodity Costs												
192													
193	Total Demand Costs												
194	Total Supply Costs												
195													
196	Total Direct Gas Costs												
197													
198													

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Schedule 1
Page 4 of 4

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

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Schedule 2

3 **Off Peak 2021 Summer Cost of Gas Filing**

Page 1 of 1

4 **Contracts Ranked on a per Unit Cost Basis**

Off Peak

5

Cost per

6 **Supplier**
7 (a)

Contract
(b)

Contract Type
(c)

Contract Unit
(d)

Unit Dth (MDQ/ACQ)
(e)

Unit Dth
(f)

9 **Demand Costs**

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ANE (TransCanada via Union to Iroquois)	Dawn - Parkway to Iroquois	Transportation	MDQ	-	
Dominion - Capacity Reservation	GSS 300076	Storage	ACQ	102,700	
Tenn Gas Pipeline - Cap. Reservations	FS-MA 523	Storage	ACQ	1,560,391	
National Fuel - Capacity Reservation	FSS-1 2357	Storage	ACQ	670,800	
Tenn Gas Pipeline - Demand	FS-MA 523	Storage	MDQ	21,844	
Dominion - Demand	GSS 300076	Storage	MDQ	934	
National Fuel - Demand	FSS-1 2357	Storage	MDQ	6,098	
Tenn Gas Pipeline	42076 FTA Z6-Z6	Transportation	MDQ	20,000	
National Fuel	FST N02358	Transportation	MDQ	6,098	
Iroquois Gas Trans Service	RTS 470-01	Transportation	MDQ	4,047	
Honeoye - Demand	SS-NY	Storage	MDQ	1,362	
Tenn Gas Pipeline	2302 Z5-Z6	Transportation	MDQ	3,122	
Tenn Gas Pipeline (short haul)	11234 Z5-Z6(stg)	Transportation	MDQ	1,957	
Tenn Gas Pipeline (short haul)	8587 Z4-Z6	Transportation	MDQ	3,811	
Tenn Gas Pipeline (short haul)	632 Z4-Z6 (stg)	Transportation	MDQ	15,265	
Tenn Gas Pipeline (short haul)	11234 Z4-Z6(stg)	Transportation	MDQ	7,082	
Tenn Gas Pipeline (Concord Lateral) Z6-Z6	Firm Transportation	Transportation	MDQ	30,000	
Tenn Gas Pipeline	95346 Z5-Z6	Transportation	MDQ	4,000	
TransCanada via Union to Portland	Union Parkway to Portland	Transportation	MDQ	5,077	
Portland Natural Gas Trans Service	FT-1999-001	Transportation	MDQ	1,000	
Tenn Gas Pipeline (long haul)	8587 Z1-Z6	Transportation	MDQ	14,561	
Tenn Gas Pipeline (long haul)	8587 Z0-Z6	Transportation	MDQ	7,035	
Portland Natural Gas	FTN	Transportation	MDQ	5,000	

36 **Supply Costs - Commodity**

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LNG Truck		Pipeline	Dkt	13,127	
TGP Supply (Zone 4)		Pipeline	Dkt	2,143,200	
Niagara Supply		Pipeline	Dkt	238,293	
Dracut Supply 2 - Swing		Pipeline	Dkt	1,079,566	
Dawn Supply		Pipeline	Dkt	85,874	
TGP Citygate Supply		Pipeline	Dkt	-	
PNGTS		Pipeline	Dkt	75,574	
Dracut Supply 1 - Baseload		Pipeline	Dkt	-	
TGP Supply (Gulf)		Pipeline	Dkt	-	
LNG Vapor (Storage)		Produced	Dkt	9,885	
Propane		Pipeline	Dkt	-	

49 **Supply Costs - Volumetric Transportation**

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Dracut Supply 1 - Baseload		Pipeline	Dkt	-	
TGP Supply (Zone 4)		Pipeline	Dkt	-	
Dracut Supply 2 - Swing		Pipeline	Dkt	1,079,566	
Dawn Supply		Storage	Dkt	85,874	
Niagara Supply		Pipeline	Dkt	238,293	

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1 Liberty Utilities (Energy/North Natural Gas) Corp.
 2 Off Peak 2021 Summer Cost of Gas Filing
 3 COG (Over)/Under Cumulative Recovery Balances and Interest Calculation
 4 Account 0840.2-0000-10-1920-1741 (formerly, 175.40) COG (Over)/Under Balance - Interest Calculation
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	Prior Period Balance		Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Off Peak Period Total
	Plus Nov Collectors October 31, 2020 (c)	(g)														
Beginning Balance		\$ 105,886	\$ 105,886	\$ 106,343	\$ 106,817	\$ 107,293	\$ 107,725	\$ 108,206	\$ 108,673	\$ 11,952	\$ 132,196	\$ 299,653	\$ 575,743	\$ 541,205	\$ 321,577	\$ 105,886
Production & Storage & Misc Overhead		-	-	-	-	-	-	-	-	434	807,066	930,282	1,132,385	2,106,044	-	7,284,571
Projected Revenues w/o Int.		-	-	-	-	-	-	-	-	(303,150)	(631,216)	(650,354)	(1,028,281)	(2,286,511)	(1,684,721)	2,602
Projected Unbilled Revenues		-	-	-	-	-	-	-	-	(1,178,343)	(1,156,329)	(1,183,856)	(1,375,227)	(1,375,747)	(7,383,058)	(7,383,058)
Unbilled Volumes		-	-	-	-	-	-	-	-	1,239,619	1,179,343	1,163,128	1,188,746	1,350,227	1,373,741	7,465,006
Add Net Adjustments (with TSP Refund)		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gas Cost Billed		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Monthly (Over)/Under Recovery		\$ 105,886	\$ 105,886	\$ 106,343	\$ 106,817	\$ 107,293	\$ 107,725	\$ 108,206	\$ 108,673	\$ 11,952	\$ 132,196	\$ 299,653	\$ 575,743	\$ 541,205	\$ 321,577	\$ 105,886
Average Monthly Balance		-	\$ 105,886	\$ 106,343	\$ 106,817	\$ 107,293	\$ 107,725	\$ 108,206	\$ 108,673	\$ 60,718	\$ 215,444	\$ 436,724	\$ 557,272	\$ 430,432	\$ 166,087	\$ 0
Interest Rate			5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%
Interest Applied			\$ 457	\$ 474	\$ 476	\$ 432	\$ 480	\$ 467	\$ 268	\$ 310	\$ 961	\$ 1,947	\$ 2,405	\$ 1,919	\$ -	\$ 10,597
(Over)/Under Balance			\$ 105,886	\$ 106,343	\$ 106,817	\$ 107,293	\$ 107,725	\$ 108,206	\$ 11,952	\$ 132,196	\$ 299,653	\$ 575,743	\$ 541,205	\$ 321,577	\$ 10,597	\$ 10,597
Calculation of COG with Interest																
Beginning Balance		\$ 105,886	\$ 105,886	\$ 106,343	\$ 106,817	\$ 107,293	\$ 107,725	\$ 108,206	\$ 108,673	\$ 14,730	\$ 136,320	\$ 304,950	\$ 582,250	\$ 549,850	\$ 334,457	\$ 105,886
Forecast Direct Gas Costs	In 13	-	-	-	-	-	-	-	-	1,446,946	860,249	807,066	930,282	1,132,385	2,106,044	7,284,571
Prod Storage & Misc Overhead	In 14	-	-	-	-	-	-	-	-	(303,604)	(789,726)	(636,074)	(1,028,435)	(2,285,406)	(1,681,897)	2,602
Projected Revenues w/o Int.	In 54 - 66	-	-	-	-	-	-	-	-	(1,237,983)	(1,177,226)	(1,181,004)	(1,186,614)	(1,327,839)	(1,371,275)	(7,481,551)
Projected Unbilled Revenues	In 58 - 66	-	-	-	-	-	-	-	-	1,237,983	1,177,226	1,181,004	1,186,614	1,327,839	1,371,275	7,481,551
Unbilled Volumes	In 19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Add Net Adjustments	In 20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gas Cost Billed	In 26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Monthly (Over)/Under Recovery		\$ 105,886	\$ 105,886	\$ 106,343	\$ 106,817	\$ 107,293	\$ 107,725	\$ 108,206	\$ 14,730	\$ 136,320	\$ 304,950	\$ 582,250	\$ 549,850	\$ 334,457	\$ 10,597	\$ 10,597
Average Monthly Balance		-	\$ 105,886	\$ 106,343	\$ 106,817	\$ 107,293	\$ 107,725	\$ 108,206	\$ 14,730	\$ 136,320	\$ 304,950	\$ 582,250	\$ 549,850	\$ 334,457	\$ 10,597	\$ 10,597
Interest Rate			5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%
Interest Applied			\$ 457	\$ 474	\$ 476	\$ 432	\$ 480	\$ 467	\$ 275	\$ 326	\$ 984	\$ 1,978	\$ 2,442	\$ 1,971	\$ -	\$ 10,763
(Over)/Under Balance			\$ 105,886	\$ 106,343	\$ 106,817	\$ 107,293	\$ 107,725	\$ 108,206	\$ 14,730	\$ 136,320	\$ 304,950	\$ 582,250	\$ 549,850	\$ 334,457	\$ 24,035	\$ 24,035
Forecast Sendout Through																
Less: Forecast Billing Therm Sales	Sch. 106, In 23 May - Oct	4,810,581	2,307,969	1,997,188	1,954,943	1,997,083	3,154,689	7,014,865	5,188,614	2,045,699	3,654,650	7,259,712	5,188,614	22,065,798	22,065,798	22,065,798
Less: Forecast Unaccounted For	Sch. 106, In 23 May - Oct	933,114	2,468,105	1,954,943	1,954,943	1,954,943	1,954,943	1,954,943	1,954,943	1,954,943	1,954,943	1,954,943	1,954,943	1,954,943	1,954,943	1,954,943
Less: Forecast Company Use	Sch. 1	70,818	33,976	29,401	30,115	53,654	106,872	13,606	13,606	30,115	53,654	106,872	13,606	13,606	13,606	13,606
Unbilled Volumes	Sch. 1	2,966	1,423	1,232	1,261	2,247	4,477	954,066	954,066	1,423	2,247	4,477	954,066	954,066	954,066	954,066
Gross Unbilled		3,803,683	1,855,535	1,161,313	1,723,976	3,629,760	4,081,050	4,214,548	4,214,548	3,629,760	3,629,760	3,629,760	3,629,760	3,629,760	3,629,760	3,629,760
Bag Balance		-	3,803,683	3,618,148	3,618,148	3,629,760	3,647,000	4,081,050	4,214,548	3,618,148	3,629,760	3,629,760	3,629,760	3,629,760	3,629,760	3,629,760
Incremental		3,803,683	1,855,535	1,161,313	1,723,976	3,629,760	4,081,050	4,214,548	4,214,548	3,618,148	3,629,760	3,629,760	3,629,760	3,629,760	3,629,760	3,629,760
Ending Balance		3,803,683	3,618,148	3,629,760	3,647,000	4,081,050	4,214,548	4,214,548	4,214,548	3,618,148	3,629,760	3,629,760	3,629,760	3,629,760	3,629,760	3,629,760
COG w/o Interest	Sch. 3, pg. 4, In 211 col. (c)	\$ 0.3260	\$ 0.3260	\$ 0.3260	\$ 0.3260	\$ 0.3260	\$ 0.3260	\$ 0.3260	\$ 0.3260	\$ 0.3260	\$ 0.3260	\$ 0.3260	\$ 0.3260	\$ 0.3260	\$ 0.3260	\$ 0.3260
COG With Interest	Sch. 3, pg. 4, In 211 col. (d)	\$ 0.3254	\$ 0.3254	\$ 0.3254	\$ 0.3254	\$ 0.3254	\$ 0.3254	\$ 0.3254	\$ 0.3254	\$ 0.3254	\$ 0.3254	\$ 0.3254	\$ 0.3254	\$ 0.3254	\$ 0.3254	\$ 0.3254

1 Liberty Utilities (Energy/North Natural Gas) Corp.
2 Off Peak 2021 Summer Cost of Gas Filing
3 COG (Over)/Under Cumulative Recovery Balances and Interest Calculation

		Prior Period Balance Plus Nov. Collections October 31, 2020 (c)	Nov-20 30 (d)	Dec-20 31 (e)	Jan-21 31 (f)	Feb-21 28 (g)	Mar-21 31 (h)	Apr-21 30 (i)	May-21 31 (j)	Jun-21 30 (k)	Jul-21 31 (l)	Aug-21 31 (m)	Sep-21 30 (n)	Oct-21 31 (o)	Nov-21 30 (p)	Off Peak Period Total (q)
66	76	Account 1163-1424 - Interest Calculation														
67	77	Beginning Balance	Account 1163-1424 - 1/	(13,709) \$	(13,768) \$	(13,892) \$	(13,947) \$	(14,010) \$	(14,070) \$	(11,359) \$	(9,865) \$	(8,494) \$	(6,951) \$	(4,833) \$	(763) \$	(13,709) \$
68	78	Days Lag								0.0391	0.0391	0.0391	0.0391	0.0391	0.0391	0.0391
69	79	Prime Rate								3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%
70	80	Forecast Working Capital	In 34 * In 80 / 365 * In 81	-	-	-	-	-	-	1,838	1,026	1,182	1,439	2,679	-	9,258
71	81	Projected Revenues w/o Int.	In 123 * In 126	-	-	-	-	-	-	482	384	392	619	1,377	1,014	4,451
72	82	Projected Unbilled Revenue	In 124 * In 126	-	-	-	-	-	-	747	710	716	801	827	801	4,513
73	83	Reverse Prior Month Unbilled		-	-	-	-	-	-	(747)	(710)	(712)	(716)	(801)	(827)	(4,513)
74	84	Add Net Adjustments		-	-	-	-	-	-	-	-	-	-	-	-	-
75	85	Working Capital Billed	Account 1163-1424 - 2/	-	-	-	-	-	-	-	-	-	-	-	-	-
76	86	Monthly (Over)/Under Recovery		(13,709) \$	(13,768) \$	(13,892) \$	(13,947) \$	(14,010) \$	(14,070) \$	(9,819) \$	(8,453) \$	(6,916) \$	(4,807) \$	(750) \$	(576) \$	(0) \$
77	87	Average Monthly Balance	(In 78 + 92) / 2	(13,800) \$	(13,892) \$	(13,892) \$	(13,947) \$	(14,010) \$	(14,070) \$	(10,589) \$	(9,159) \$	(7,705) \$	(5,879) \$	(2,791) \$	(2,791) \$	(2,791) \$
78	88	Interest Rate	Prime Rate	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%
79	89	Interest Applied	In 94 * In 96 / 365 * Days of Month	(59) \$	(61) \$	(62) \$	(62) \$	(62) \$	(60) \$	(46) \$	(41) \$	(34) \$	(25) \$	(12) \$	(12) \$	(576) \$
80	90	(Over)/Under Balance	In 92 + In 98	(13,709) \$	(13,830) \$	(13,892) \$	(13,947) \$	(14,010) \$	(14,070) \$	(9,865) \$	(8,494) \$	(6,951) \$	(4,833) \$	(763) \$	(576) \$	(576) \$
81	91	Calculation of Working Capital with Interest														
82	92	Beginning Balance		(13,709) \$	(13,768) \$	(13,892) \$	(13,947) \$	(14,010) \$	(14,070) \$	(11,238) \$	(9,686) \$	(8,265) \$	(6,669) \$	(4,469) \$	(206) \$	(13,709) \$
83	93	Forecast Working Capital	In 82	-	-	-	-	-	-	1,093	1,028	1,182	1,439	2,679	-	9,258
84	94	Projected Rev. with Interest	In 123 * In 128	-	-	-	-	-	-	545	433	443	689	1,555	1,146	5,027
85	95	Projected Unbilled Revenue	In 124 * In 128	-	-	-	-	-	-	207	207	207	305	305	305	3,097
86	96	Reverse Prior Month Unbilled		-	-	-	-	-	-	843	802	805	805	805	805	5,097
87	97	Add Net Adjustments		-	-	-	-	-	-	(843)	(802)	(805)	(805)	(805)	(805)	(5,097)
88	98	Working Capital Billed		-	-	-	-	-	-	-	-	-	-	-	-	-
89	99	Reverse WC Unbilled		-	-	-	-	-	-	-	-	-	-	-	-	-
90	100	Add Interest	In 98	(57) \$	(46) \$	(41) \$	(34) \$	(25) \$	(12) \$	(46) \$	(41) \$	(34) \$	(25) \$	(12) \$	(12) \$	(215) \$
91	101	Monthly (Over)/Under Recovery		(13,709) \$	(13,768) \$	(13,892) \$	(13,947) \$	(14,010) \$	(14,070) \$	(9,687) \$	(8,266) \$	(6,670) \$	(4,460) \$	(208) \$	(6) \$	(361) \$
92	102	Average Monthly Balance		(13,854) \$	(13,947) \$	(13,947) \$	(13,947) \$	(14,010) \$	(14,070) \$	(10,463) \$	(8,976) \$	(7,469) \$	(5,565) \$	(2,333) \$	(208) \$	(208) \$
93	103	Interest Applied	In 96 * In 117 / 365 * Days of Month	(45) \$	(61) \$	(62) \$	(62) \$	(62) \$	(60) \$	(45) \$	(40) \$	(33) \$	(24) \$	(10) \$	(10) \$	(570) \$
94	104	(Over)/Under Balance	-In 114 -In 115 + In 119	(13,709) \$	(13,830) \$	(13,892) \$	(13,947) \$	(14,010) \$	(14,070) \$	(9,686) \$	(8,265) \$	(6,669) \$	(4,459) \$	(206) \$	(6) \$	(6) \$
95	105	Forecast Therm Sales	In 53	933,114	2,458,105	1,954,943	1,987,083	3,154,689	7,014,865	1,954,943	1,987,083	3,154,689	7,014,865	5,188,614	5,188,614	22,881,422
96	106	Unbilled Therm	In 55	3,803,683	3,616,146	3,625,760	3,647,000	4,081,050	4,214,548	3,616,146	3,647,000	4,081,050	4,214,548	(964,066)	(964,066)	(964,066)
97	107	Working Cap. Rate w/out Int.	Sch. 3, pg. 4, in 228 col. (c)	-\$0.0002	-\$0.0002	-\$0.0002	-\$0.0002	-\$0.0002	-\$0.0002	-\$0.0002	-\$0.0002	-\$0.0002	-\$0.0002	-\$0.0002	-\$0.0002	-\$0.0002
98	108	Working Capital Rate w/Int.	Sch. 3, pg. 4, in 228 col. (d)	-\$0.0002	-\$0.0002	-\$0.0002	-\$0.0002	-\$0.0002	-\$0.0002	-\$0.0002	-\$0.0002	-\$0.0002	-\$0.0002	-\$0.0002	-\$0.0002	-\$0.0002

Schedule 3
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1 Liberty Utilities (Energy/North Natural Gas) Corp.
2 Off Peak 2021 Summer Cost of Gas Filing
3 COG (Over)/Under Cumulative Recovery Balances and Interest Calculation

		Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Off Peak Period Total
		30	31	31	28	31	30	31	30	31	31	30	31	30	(q)
		(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	
131															
132															
133															
134															
135															
136															
137															
138															
139	Forecast Direct Gas Costs	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
140	Forecast Working Capital	In 106 + (May includes prior period)	-	-	-	-	-	-	-	-	-	-	-	-	-
141	Prior Period Balance (with Refund)	In 21 / 6	-	-	-	-	-	-	-	-	-	-	-	-	-
142	Total Forecast Direct Gas Costs & Working Capital														
143	Beginning Balance														
144	Account 1163-1754 / 1														
145	Account 1163-1754 / 2														
146	Forecast Bad Debt														
147	Projected Revenues w/o Int														
148	Projected Unbilled Revenue														
149	Reverse Prior Month Unbilled														
150	Bad Debt Billied														
151	Add Net Adjustments														
152															
153															
154															
155	Monthly (Over)/Under Recovery														
156	Average Monthly Balance														
157	Interest Rate														
158	Interest Applied														
159	(Over)/Under Balance														
160															
161															
162															
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1 Liberty Utilities (EnergyNorth Natural Gas) Corp.

2
3 Off Peak 2021 Summer Cost of Gas Filing

4 Adjustments to Gas Costs

5

	Prior Period Adjustments (b)	Refunds from Suppliers / Pipelines (c)	Broker Revenue (d)	Fuel Financing (e)	Transportation CGA Revenues (f)	Interruptible Sales Margin (g)	Off System Sales Margin (h)	Capacity Release Margin (i)	Net Option Premiums (j)	Fixed Price Option Administrative Costs (k)	Total Adjustments (m)
6 <u>Adjustments</u>											
7 (a)											
8											
9	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											
21											
22 Total Off Peak Period	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$

1 Liberty Utilities (Energy/North Natural Gas) Corp.

2
3 Off Peak 2021 Summer Cost of Gas Filing
4 Demand Costs

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	Off Peak May - Oct Total (j)	Peak May - Oct Total (k)
5				\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
6				\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
7				\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
8				\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
9				\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
10				\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
11	Supply										
12	Niagara Supply										
13	Subtotal Supply Demand & Reservation Charges										
14											
15	Pipeline										
16	Iroquois Gas Trans Service RTS 470-0		Sch 5B, In 12 * Sch 5C In 12 x days								
17	Tenn Gas Pipeline 95346 Z5-Z6		Sch 5B, In 13 * Sch 5C In 14 x days								
18	Tenn Gas Pipeline 2302 Z5-Z6		Sch 5B, In 14 * Sch 5C In 16 x days								
19	Tenn Gas Pipeline 8587 Z0-Z6		Sch 5B, In 15 * Sch 5C In 18 x days								
20	Tenn Gas Pipeline 8587 Z1-Z6		Sch 5B, In 16 * Sch 5C In 20 x days								
21	Tenn Gas Pipeline 8587 Z4-Z6		Sch 5B, In 17 * Sch 5C In 22 x days								
22	Tenn Gas Pipeline (Dracut) 42076 Z6-Z6		Sch 5B, In 18 * Sch 5C In 24 x days								
23	Tenn Gas Pipeline (Concord Lateral) Z6-Z6		Sch 5B, In 19 * Sch 5C In 26 x days								
24	Portland Natural Gas Trans Service		Sch 5B, In 20 * Sch 5C In 28 x days								
25	Portland Natural Gas		Sch 5B, In 21 * Sch 5C In 29 x days								
26	ANE (TransCanada via Union to Iroquois)		Sch 5B, In 22 * Sch 5C In 46 x days								
27	TransCanada via Union to Portland		Sch 5B, In 23 * Sch 5C In 47 x days								
28	Tenn Gas Pipeline Z4-Z6 stg 632	peak	Sch 5B, In 24 * Sch 5C In 32 x days								
29	Tenn Gas Pipeline Z4-Z6 stg 11234	peak	Sch 5B, In 25 * Sch 5C In 34 x days								
30	Tenn Gas Pipeline Z5-Z6 stg 11234	peak	Sch 5B, In 26 * Sch 5C In 36 x days								
31	National Fuel FST 2358	peak	Sch 5B, In 27 * Sch 5C In 38 x days								
32											
33	Subtotal Pipeline Demand Charges			\$ 1,406,094	\$ 1,409,606	\$ 1,409,606	\$ 1,409,606	\$ 1,409,606	\$ 1,409,606	\$ 4,531,247	\$ 3,922,876
34											
35	Peaking Supply										
36	Tenn Gas Pipeline (Concord Lateral) Z6-Z6	peak	Sch 5B, In 30 * Sch 5C In 26 x days								
37	Granite Ridge Demand	peak	Sch 5B, In 31 * Sch 5C In 57 x days								
38	DOMAC Demand NSB041	peak	Per Contract								
39	Subtotal Peaking Demand Charges										
40											
41	Subtotal Supply, Pipeline & Peaking										
42				\$ 1,406,094	\$ 1,409,606	\$ 1,409,606	\$ 1,409,606	\$ 1,409,606	\$ 1,409,606	\$ 4,531,247	\$ 3,922,876
43	Less Transportation Capacity Credit			\$ (516,036)	\$ (517,325)	\$ (517,325)	\$ (517,325)	\$ (517,325)	\$ (517,325)	\$ (1,662,968)	\$ (1,439,696)
44											
45	Total Supply, Pipeline & Peaking Demand			\$ 890,057	\$ 892,281	\$ 892,281	\$ 892,281	\$ 892,281	\$ 892,281	\$ 2,868,280	\$ 2,483,181

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Liberty Utilities (EnergyNorth Natural Gas) Corp.

**Off Peak 2021 Summer Cost of Gas Filing
Demand Volumes**

	(a)	Peak (b)	Reference (c)	May-21 (d)	Jun-21 (e)	Jul-21 (f)	Aug-21 (g)	Sep-21 (h)	Oct-21 (i)
Supply	Niagara Supply			-	-	-	-	-	-
Pipeline									
	Iroquois Gas Trans Service		RTS 470-01	4,047	4,047	4,047	4,047	4,047	4,047
	Tenn Gas Pipeline	peak	95346 Z5-Z6	4,000	4,000	4,000	4,000	4,000	4,000
	Tenn Gas Pipeline	peak	2302 Z5-Z6	3,122	3,122	3,122	3,122	3,122	3,122
	Tenn Gas Pipeline (long haul)	peak	8587 Z0-Z6	7,035	7,035	7,035	7,035	7,035	7,035
	Tenn Gas Pipeline (long haul)	peak	8587 Z1-Z6	14,561	14,561	14,561	14,561	14,561	14,561
	Tenn Gas Pipeline (short haul)	peak	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
	Portland Natural Gas		FTN	5,000	5,000	5,000	5,000	5,000	5,000
	ANE (TransCanada via Union to Iroquois)		Dawn - Parkway to Iroquois	-	-	-	-	-	-
	TransCanada via Union to Portland		Union Parkway to Portland	5,077	5,077	5,077	5,077	5,077	5,077
	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		-	-	-	-	-	-
	Granite Ridge Demand	peak		-	-	-	-	-	-
	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

1 Liberty Utilities (EnergyNorth Natural Gas) Corp.
2
3 Off Peak 2021 Summer Cost of Gas Filing
4 Supply and Commodity Costs, Volumes and Rates

REDACTED
Schedule 6
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6	For Month of:	Reference	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Off-Peak
7	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	May - Oct
8									(i)
9	Supply and Commodity Costs								
10									
11	Pipeline Gas:								
12	Dawn Supply	In 63 * In 104							
13	Niagara Supply	In 64 * In 109							
14	TGP Supply (Gulf)	In 65 * In 125							
15	Dracut Supply 1 - Baseload	In 66 * In 114							
16	Dracut Supply 2 - Swing	In 67 * In 119							
17	City Gate Delivered Supply	In 68 * In 131							
18	LNG Truck	In 69 * In 133							
19	Propane Truck	In 70 * In 135							
20	PNGTS	In 71 * In 140							
21	Portland Natural Gas								
22	TGP Supply (Zone 4)	In 73 * In 150							
23									
24	Subtotal Pipeline Gas Costs		\$ 1,963,457	\$ 1,297,121	\$ 1,132,900	\$ 717,406	\$ 1,413,156	\$ 1,952,103	\$ 8,495,817
25									
26	Volumetric Transportation Costs								
27	Dawn Supply	In 63 * In 197							
28	Niagara Supply	In 64 * In 208							
29	TGP Supply (Zone 4)	In 73 * In 246							
30	Dracut Supply 1 - Baseload	In 66 * In 257							
31	Dracut Supply 2 - Swing	In 67 * In 257							
32	City Gate Delivered Supply	In 68 * In 257							
33	TGP Storage - Withdrawals	In 78 * In 172							
34									
35	Total Volumetric Transportation Costs		\$ 61,389	\$ 44,480	\$ 55,136	\$ 33,342	\$ 47,461	\$ 81,489	\$ 323,297
36									
37	Less - Gas Refill:								
38	LNG Truck	In 87 * In 157							
39	Propane	In 88 * In 158							
40	TGP Storage Refill	In 89 * In 123							
41	Storage Refill (Trans.)	In 89 * In 236							
42									
43	Subtotal Refills								
44									
45	Total Supply & Pipeline Commodity Costs	In 24 + In 35 + In 43	\$ (1,063,304)	\$ (965,141)	\$ (863,665)	\$ (302,663)	\$ (810,143)	\$ (407,246)	\$ (4,412,162)
46									
47	Storage Gas:								
48	TGP Storage - Withdrawals	In 78 * In 164	\$ 961,542	\$ 376,460	\$ 324,372	\$ 448,085	\$ 650,474	\$ 1,626,345	\$ 4,387,278
49									
50	Produced Gas:								
51	LNG Vapor	In 81 * In 152							
52	Propane	In 82 * In 154							
53									
54	Total Produced Gas	In 51 + In 52	\$ 8,811	\$ 5,372	\$ 4,276	\$ 3,780	\$ 3,493	\$ 3,281	\$ 29,014
55									
56									
57	Total Commodity Gas & Trans. Costs	In 45 + In 48 + In 54	\$ 970,352	\$ 381,832	\$ 328,648	\$ 451,865	\$ 653,968	\$ 1,629,626	\$ 4,416,292
58									

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1 Liberty Utilities (EnergyNorth Natural Gas) Corp.

2

3 Off Peak 2021 Summer Cost of Gas Filing

4 Supply and Commodity Costs, Volumes and Rates

Schedule 6
Page 2 of 5

59
60 Volumes (Therms)

61 See Schedule 11A

62 Pipeline Gas:

63 Dawn Supply	-	-	-	-	-	-	-	-	-	858,740	858,740
64 Niagara Supply	637,331	-	532,884	535,788	-	-	-	-	-	676,922	2,382,926
65 TGP Supply (Gulf)	-	-	-	-	-	-	-	-	-	-	-
66 Dracut Supply 1 - Base/Load	-	-	-	-	-	-	-	-	-	-	-
67 Dracut Supply 2 - Swing	3,933,940	2,438,570	-	-	-	3,103,570	-	-	-	1,319,579	10,795,659
68 City Gate Delivered Supply	-	-	-	-	-	-	-	-	-	-	-
69 LNG Truck	46,746	17,020	15,965	-	-	35,455	-	-	16,084	-	131,270
70 Propane Truck	75,716	67,494	63,308	63,653	-	70,300	-	-	80,420	-	420,889
71 PNGTS	202,129	-	169,004	169,925	-	-	-	-	214,685	-	755,742
72 Portland Natural Gas	-	-	-	-	-	-	-	-	-	-	-
73 TGP Supply (Zone 4)	3,508,614	2,994,951	4,054,983	2,293,151	-	3,119,464	-	-	5,460,834	-	21,431,995
74	8,404,476	5,518,034	4,836,143	3,062,516	-	6,328,789	-	-	8,627,264	-	36,777,221

75

76 Storage Gas:

77 TGP Storage	-	-	-	-	-	-	-	-	-	-	-
----------------	---	---	---	---	---	---	---	---	---	---	---

78

79 Produced Gas:

80 LNG Vapor	19,197	17,222	15,625	15,495	-	14,321	-	-	16,992	-	98,853
81 Propane	-	-	-	-	-	-	-	-	-	-	-

82

83

84 Subtotal Produced Gas

	19,197	17,222	15,625	15,495	-	14,321	-	-	16,992	-	98,853
--	--------	--------	--------	--------	---	--------	---	---	--------	---	--------

85

86 Less - Gas Refill:

87 LNG Truck	(47,001)	(17,837)	(15,625)	-	-	(29,665)	-	-	(13,476)	-	(123,604)
88 Propane	(76,128)	(70,733)	(61,962)	(61,447)	-	(58,818)	-	-	(67,382)	-	(396,470)
89 TGP Storage Refill	(3,489,964)	(3,138,717)	(2,776,992)	(970,865)	-	(2,609,978)	-	-	(1,303,686)	-	(14,290,202)

90

91 Subtotal Refills

	(3,613,093)	(3,227,287)	(2,854,580)	(1,032,312)	-	(2,698,460)	-	-	(1,384,544)	-	(14,810,276)
--	-------------	-------------	-------------	-------------	---	-------------	---	---	-------------	---	--------------

92

93 Total Sendout Volumes

	4,810,581	2,307,969	1,997,188	2,045,699	-	3,644,650	-	-	7,259,712	-	22,065,798
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1 Liberty Utilities (EnergyNorth Natural Gas) Corp.		REDACTED
2		Schedule 6
3 Off Peak 2021 Summer Cost of Gas Filing		Page 3 of 5
4 Supply and Commodity Costs, Volumes and Rates		Average Rate
97	Gas Costs and Volumetric Transportation Rates	
98	Pipeline Gas:	
100	Dawn Supply	
101	NYMEX Price	
102	Basis Differential	
103	Net Commodity Costs	
104	Niagara Supply	
105	NYMEX Price	
106	Basis Differential	
107	Net Commodity Costs	
108	Dracut Supply 1 - Baseload	
109	Commodity Costs - NYMEX Price	
110	Basis Differential	
111	Net Commodity Costs	
112	Dracut Supply 2 - Swing	
113	Commodity Costs - NYMEX Price	
114	Basis Differential	
115	Net Commodity Costs	
116	TGP Supply (Gulf)	
117	NYMEX Price	
118	Basis Differential	
119	Net Commodity Costs	
120	TGP Citygate Supply	
121	NYMEX Price	
122	Basis Differential	
123	Net Commodity Costs	
124	LNG Truck	
125	Propane Truck	
126	Propane Truck	
127	Propane Truck	
128	Propane Truck	
129	Propane Truck	
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159	Propane Truck	

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1 Liberty Utilities (EnergyNorth Natural Gas) Corp.

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3 Off Peak 2021 Summer Cost of Gas Filing

4 Supply and Commodity Costs, Volumes and Rates

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Schedule 6

Page 5 of 5

Average Rate

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

2
3 **Off Peak 2021 Summer Cost of Gas Filing**

4 **NYMEX Futures @ Henry Hub**

5

6 For Month of:

7 (a)

8 **I. NYMEX Opening Prices as of:**

9 Reference (b)

10 Opening Prices (15 day average)

11 Line 206

12

13

14 **NYMEX Settlement - 15 Day Average**

15 Days

16 Date

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May-21 (c)	Jun-21 (d)	Jul-21 (e)	Aug-21 (f)	Sep-21 (g)	Oct-21 (h)	May - Oct Off Peak Strip Average (i)
\$2.6817	\$2.7087	\$2.7427	\$2.7499	\$2.7376	\$2.7577	\$ 2.7297
\$2.6817	\$2.7087	\$2.7427	\$2.7499	\$2.7376	\$2.7577	\$ 2.7297

Date	May-21 (c)	Jun-21 (d)	Jul-21 (e)	Aug-21 (f)	Sep-21 (g)	Oct-21 (h)	May - Oct Off Peak Strip Average (i)
8/5/2020	\$2.6130	\$2.6450	\$2.6840	\$2.6910	\$2.6780	\$2.6960	\$ 2.6678
8/6/2020	\$2.6250	\$2.6540	\$2.6900	\$2.6970	\$2.6840	\$2.7040	\$ 2.6757
8/7/2020	\$2.6470	\$2.6740	\$2.7070	\$2.7120	\$2.6990	\$2.7170	\$ 2.6927
8/10/2020	\$2.6230	\$2.6530	\$2.6880	\$2.6960	\$2.6830	\$2.7010	\$ 2.6740
8/11/2020	\$2.6460	\$2.6740	\$2.7090	\$2.7160	\$2.7030	\$2.7220	\$ 2.6950
8/12/2020	\$2.6410	\$2.6690	\$2.7040	\$2.7100	\$2.6970	\$2.7170	\$ 2.6897
8/13/2020	\$2.6500	\$2.6780	\$2.7130	\$2.7190	\$2.7050	\$2.7250	\$ 2.6983
8/14/2020	\$2.6890	\$2.7140	\$2.7460	\$2.7520	\$2.7400	\$2.7630	\$ 2.7340
8/17/2020	\$2.6920	\$2.7170	\$2.7500	\$2.7570	\$2.7460	\$2.7680	\$ 2.7383
8/18/2020	\$2.7180	\$2.7430	\$2.7760	\$2.7840	\$2.7730	\$2.7940	\$ 2.7647
8/19/2020	\$2.7330	\$2.7590	\$2.7910	\$2.7990	\$2.7880	\$2.8090	\$ 2.7798
8/20/2020	\$2.7330	\$2.7590	\$2.7910	\$2.7990	\$2.7880	\$2.8090	\$ 2.7798
8/21/2020	\$2.7450	\$2.7690	\$2.8020	\$2.8100	\$2.7970	\$2.8170	\$ 2.7900
8/24/2020	\$2.7330	\$2.7600	\$2.7940	\$2.8030	\$2.7920	\$2.8120	\$ 2.7823
8/25/2020	\$2.7370	\$2.7620	\$2.7950	\$2.8030	\$2.7910	\$2.8120	\$ 2.7833

15 Day Average

\$2.6817

\$2.7087

\$2.7427

\$2.7499

\$2.7376

\$2.7577

Liberty Utilities (Energy/North Natural Gas) Corp.

1
2 Off Peak 2021 Summer Cost of Gas Filing
3 Annual Bill Comparisons, May 19 - Oct 19 vs May 20 - Oct 20 - Residential Heating Rate R-3
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6 November 1, 2020 - April 30, 2021
7 Residential Heating (R3)
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	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Summer May-Oct	Total Nov-Oct
10 Typical Usage (Therms)	62	110	123	148	132	92	667						144	811
11 Winter:														
12 Cust. Chg	\$ 15.50	\$ 15.50	\$ 15.50	\$ 15.50	\$ 15.50	\$ 15.50	\$ 93.00						\$ 93.00	\$ 186.00
13 Cust. Chg	\$ 0.5678	\$ 0.5678	\$ 0.5678	\$ 0.5678	\$ 0.5678	\$ 0.5678	\$ 3.7672						\$ 3.7672	\$ 7.5344
14 Heatblock	\$ 35.20	\$ 62.46	\$ 69.84	\$ 84.03	\$ 74.95	\$ 52.24							\$ 81.76	\$ 460.49
15 HB Threshold														
16														
17 Summer:														
18 Cust. Chg	\$ 15.50	\$ 15.50	\$ 15.50	\$ 15.50	\$ 15.50	\$ 15.50	\$ 93.00						\$ 93.00	\$ 186.00
19 Cust. Chg	\$ 0.5678	\$ 0.5678	\$ 0.5678	\$ 0.5678	\$ 0.5678	\$ 0.5678	\$ 3.7672						\$ 3.7672	\$ 7.5344
20 Heatblock	\$ 35.20	\$ 62.46	\$ 69.84	\$ 84.03	\$ 74.95	\$ 52.24							\$ 81.76	\$ 460.49
21 Tailblock														
22 HB Threshold														
23														
24 Total Base Rate Amount	\$ 50.70	\$ 77.96	\$ 85.34	\$ 98.53	\$ 90.45	\$ 67.74	\$ 471.72						\$ 174.76	\$ 646.49
25														
26 COG Rate - (Seasonal)	\$ 0.5571	\$ 0.5571	\$ 0.5571	\$ 0.5571	\$ 0.5571	\$ 0.5571	\$ 3.7159						\$ 3.7159	\$ 7.4318
27 COG amount	\$ 34.54	\$ 61.28	\$ 68.52	\$ 82.45	\$ 73.54	\$ 51.25	\$ 371.59						\$ 45.33	\$ 416.92
28														
29 LDAC	\$ 0.0603	\$ 0.0603	\$ 0.0603	\$ 0.0603	\$ 0.0603	\$ 0.0603	\$ 0.0603						\$ 0.0603	\$ 0.0603
30 LDAC amount	\$ 3.74	\$ 6.63	\$ 7.41	\$ 8.92	\$ 7.96	\$ 5.55	\$ 40.21						\$ 8.68	\$ 48.89
31														
32 Total Bill	\$ 88.98	\$ 145.87	\$ 161.28	\$ 190.91	\$ 171.94	\$ 124.54	\$ 883.52						\$ 228.78	\$ 1,112.29
33														

May 1, 2019 - October 31, 2019

	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Summer May-Oct	Total Nov-Oct
34 November 1, 2019 - April 30, 2020	51	28	16	14	14	21	144	811
35 Residential Heating (R3)								
36								
37								
38 Typical Usage (Therms)	67	110	123	148	132	92	667	
39 Winter:								
40 Cust. Chg	\$ 15.20	\$ 15.20	\$ 15.20	\$ 15.20	\$ 15.20	\$ 15.20	\$ 91.20	\$ 182.40
41 Cust. Chg	\$ 0.5569	\$ 0.5569	\$ 0.5569	\$ 0.5569	\$ 0.5569	\$ 0.5569	\$ 3.7145	\$ 7.4290
42 Heatblock	\$ 34.53	\$ 61.26	\$ 68.50	\$ 82.42	\$ 73.51	\$ 51.23		\$ 416.92
43 Tailblock								
44 HB Threshold								
45								
46 Summer:								
47 Cust. Chg	\$ 15.20	\$ 15.20	\$ 15.20	\$ 15.20	\$ 15.20	\$ 15.20	\$ 91.20	\$ 182.40
48 Cust. Chg	\$ 0.5569	\$ 0.5569	\$ 0.5569	\$ 0.5569	\$ 0.5569	\$ 0.5569	\$ 3.7145	\$ 7.4290
49 Heatblock	\$ 34.53	\$ 61.26	\$ 68.50	\$ 82.42	\$ 73.51	\$ 51.23		\$ 416.92
50 HB Threshold								
51								
52 Total Base Rate Amount	\$ 49.73	\$ 76.46	\$ 83.70	\$ 97.62	\$ 88.71	\$ 66.43	\$ 462.65	\$ 925.30
53								
54 COG Rate - (Seasonal)	\$ 0.6203	\$ 0.6203	\$ 0.6203	\$ 0.6203	\$ 0.6203	\$ 0.6203	\$ 4.1322	\$ 8.2644
55 COG amount	\$ 38.46	\$ 68.23	\$ 69.53	\$ 61.92	\$ 46.19	\$ 24.65	\$ 306.98	\$ 613.96
56								
57 LDAC	\$ 0.0310	\$ 0.0310	\$ 0.0310	\$ 0.0310	\$ 0.0310	\$ 0.0310	\$ 0.0310	\$ 0.0310
58 LDAC amount	\$ 1.92	\$ 3.41	\$ 3.81	\$ 4.59	\$ 4.09	\$ 2.85	\$ 20.68	\$ 41.36
59								
60 Total Bill	\$ 90.11	\$ 148.10	\$ 157.04	\$ 164.13	\$ 138.99	\$ 93.83	\$ 792.31	\$ 1,584.62
61								

May 1, 2020 - October 31, 2020

	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Summer May-Oct	Total Nov-Oct
62	51	28	16	14	14	21	144	811
63 Total Bill	\$ 92.85	\$ 7.99%	\$ (0.44)	\$ (1.84)	\$ (1.84)	\$ (2.76)	\$ 1.81	\$ 92.82
64 % Change	\$ 0.86	\$ 0.61	\$ 0.00%	\$ -	\$ -	\$ -	\$ 0.71%	\$ 9.10%
65 Base Rate	\$ 1.96%	\$ 1.97%	\$ 0.00%	\$ 0.00%	\$ 0.00%	\$ 0.00%	\$ 0.84%	\$ 1.66%
66 % Change	\$ 4.54	\$ 2.49	\$ (0.44)	\$ (1.84)	\$ (1.84)	\$ (2.76)	\$ 0.15	\$ 82.29
67 COG & LDAC	\$ 31.15%	\$ 31.15%	\$ (6.81%)	\$ (25.98%)	\$ (25.98%)	\$ (25.98%)	\$ 0.28%	\$ 21.46%
68 % Change	\$ 0.00	\$ -	\$ (0.00)	\$ 0.00	\$ 0.00	\$ 0.00	\$ (0.00)	\$ (0.00)
69 check								

Liberty Utilities (EnergyNorth Natural Gas) Corp.

1
2 Off Peak 2021 Summer Cost of Gas Filing
3 Annual Bill Comparisons, May 19 - Oct 19 vs May 20 - Oct 20 - Commercial Rate G-41
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6 November 1, 2020 - April 30, 2021
7 Commercial Rate (G-41)

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Typical Usage (Therms)	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	Winter Nov-Apr
10 Typical Usage (Therms)	89	277	504	457	331	297	1,955
11 Winter:							
12 Cust. Chg	\$ 57.46	\$ 57.46	\$ 57.46	\$ 57.46	\$ 57.46	\$ 57.46	\$ 944.76
13 Headblock	\$ 4.88	\$ 4.88	\$ 4.88	\$ 4.88	\$ 4.88	\$ 4.88	\$ 37.44
14 Tailback	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
15 HB Threshold	\$ 41.93	\$ 47.11	\$ 47.11	\$ 47.11	\$ 47.11	\$ 47.11	\$ 377.48
16 HB Threshold	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
17							
18 Summer:							
19 Cust. Chg	\$ 57.46	\$ 57.46	\$ 57.46	\$ 57.46	\$ 57.46	\$ 57.46	\$ 344.76
20 Headblock	\$ 4.88	\$ 4.88	\$ 4.88	\$ 4.88	\$ 4.88	\$ 4.88	\$ 37.44
21 Tailback	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
22 HB Threshold	\$ 41.93	\$ 47.11	\$ 47.11	\$ 47.11	\$ 47.11	\$ 47.11	\$ 377.48
23 HB Threshold	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
24							
25 Total Base Rate Amount	\$ 99.39	\$ 160.59	\$ 232.44	\$ 217.56	\$ 177.68	\$ 166.92	\$ 1,054.58
26 COG Rate - (Seasonal)	\$ 0.5552	\$ 0.5552	\$ 0.5552	\$ 0.5552	\$ 0.5552	\$ 0.5552	\$ 4,363.99
27 COG amount	\$ 49.41	\$ 153.79	\$ 279.82	\$ 253.73	\$ 183.77	\$ 164.89	\$ 1,085.42
28							
29 LDAC	\$ 0.0549	\$ 0.0549	\$ 0.0549	\$ 0.0549	\$ 0.0549	\$ 0.0549	\$ 424.01
30 LDAC amount	\$ 4.88	\$ 15.20	\$ 27.65	\$ 25.07	\$ 18.16	\$ 16.23	\$ 124.04
31							
32 Total Bill	\$ 153.68	\$ 329.58	\$ 539.91	\$ 496.38	\$ 378.61	\$ 348.11	\$ 2,247.25
33							

34 November 1, 2019 - April 30, 2020
35 Commercial Rate (G-41)

Typical Usage (Therms)	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20	Apr-20	Winter Nov-Apr
10 Typical Usage (Therms)	89	277	504	457	331	297	1,955
11 Winter:							
12 Cust. Chg	\$ 56.36	\$ 56.36	\$ 56.36	\$ 56.36	\$ 56.36	\$ 56.36	\$ 938.16
13 Headblock	\$ 4.13	\$ 4.13	\$ 4.13	\$ 4.13	\$ 4.13	\$ 4.13	\$ 32.85
14 Tailback	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
15 HB Threshold	\$ 31.04	\$ 31.04	\$ 31.04	\$ 31.04	\$ 31.04	\$ 31.04	\$ 242.01
16 HB Threshold	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
17							
18 Summer:							
19 Cust. Chg	\$ 56.36	\$ 56.36	\$ 56.36	\$ 56.36	\$ 56.36	\$ 56.36	\$ 342.56
20 Headblock	\$ 4.82	\$ 4.82	\$ 4.82	\$ 4.82	\$ 4.82	\$ 4.82	\$ 37.35
21 Tailback	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
22 HB Threshold	\$ 31.04	\$ 31.04	\$ 31.04	\$ 31.04	\$ 31.04	\$ 31.04	\$ 242.01
23 HB Threshold	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
24							
25 Total Base Rate Amount	\$ 97.49	\$ 157.51	\$ 227.97	\$ 215.38	\$ 174.27	\$ 163.72	\$ 1,034.34
26 COG Rate - (Seasonal)	\$ 0.6190	\$ 0.6190	\$ 0.6190	\$ 0.6190	\$ 0.6190	\$ 0.6190	\$ 4,863.99
27 COG amount	\$ 55.09	\$ 171.46	\$ 284.26	\$ 180.61	\$ 115.39	\$ 78.18	\$ 886.99
28							
29 LDAC	\$ 0.0478	\$ 0.0478	\$ 0.0478	\$ 0.0478	\$ 0.0478	\$ 0.0478	\$ 363.99
30 LDAC amount	\$ 4.25	\$ 13.24	\$ 24.09	\$ 21.84	\$ 15.82	\$ 14.20	\$ 93.45
31							
32 Total Bill	\$ 156.83	\$ 342.21	\$ 536.32	\$ 425.84	\$ 305.48	\$ 257.10	\$ 2,023.78
33							

34 November 1, 2019 - October 31, 2019

May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Summer May-Oct	Total Nov-Oct
153	39	26	34	25	29	306	2,261
\$ 856.36	\$ 56.36	\$ 57.46	\$ 57.46	\$ 57.46	\$ 57.46	\$ 342.56	\$ 680.72
\$ 9.24	\$ 9.24	\$ 9.42	\$ 9.42	\$ 9.42	\$ 9.42	\$ 56.17	\$ 328.35
\$ 41.28	\$ 5.90	\$ 1.90	\$ 4.43	\$ 1.58	\$ 2.85	\$ 57.94	\$ 481.95
\$ 106.89	\$ 71.50	\$ 68.78	\$ 71.31	\$ 68.46	\$ 69.73	\$ 456.67	\$ 1,491.02
\$ 0.2504	\$ 0.2504	\$ 0.3689	\$ 0.4711	\$ 0.4711	\$ 0.4711	\$ 0.3238	\$ 4,401
\$ 38.31	\$ 9.77	\$ 9.34	\$ 16.02	\$ 11.78	\$ 13.66	\$ 89.07	\$ 955.06
\$ 0.0478	\$ 0.0478	\$ 0.0478	\$ 0.0478	\$ 0.0478	\$ 0.0478	\$ 0.0478	\$ 363.99
\$ 7.31	\$ 1.86	\$ 1.24	\$ 1.63	\$ 1.20	\$ 1.39	\$ 14.63	\$ 108.08
\$ 152.51	\$ 85.13	\$ 79.56	\$ 88.96	\$ 81.44	\$ 84.78	\$ 570.37	\$ 2,594.16
\$ 12.40	\$ 4.05	\$ (1.27)	\$ (5.21)	\$ (3.63)	\$ (4.44)	\$ 1.71	\$ 295.18
8.18%	4.85%	-1.60%	-8.85%	-4.70%	-5.24%	0.30%	6.88%
\$ 2.09	\$ 1.40	\$ -	\$ -	\$ -	\$ -	\$ 3.49	\$ 23.72
1.96%	1.95%	0.00%	0.00%	0.00%	0.00%	0.78%	1.59%
\$ 10.34	\$ 2.63	\$ (1.27)	\$ (5.21)	\$ (3.83)	\$ (4.44)	\$ (1.79)	\$ 201.45
22.66%	22.65%	-11.80%	-28.51%	-29.51%	-29.51%	-1.59%	15.26%
\$ -	\$ -	\$ 0.00	\$ -	\$ -	\$ 0.00	\$ 0.00	\$ -

62 DIFFERENCE:
63 Total Bill
64 % Change
65
66 Base Rate
67 % Change
68
69 COG & LDAC
70 % Change
check

Liberty Utilities (EnergyNorth Natural Gas) Corp.

Schedule B
Page 4 of 5

- 1
- 2 Off Peak 2021 Summer Cost of Gas Filing
- 3 Annual Bill Comparisons, May 19 - Oct 19 vs May 20 - Oct 20 - Commercial Rate G-52
- 4
- 5
- 6
- 7 November 1, 2020 - April 30, 2021
- 8 Commercial Rate (G-52)

	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Summer May-Oct	Total Nov-Oct
10 11 Typical Usage (Therms)	1,352	1,866	2,284	2,160	1,886	1,760	1,760	1,128	1,032	1,025	1,050	897	6,629	17,337
12 Z1/2020 - Current														
13 Winter:														
14 Cust. Chg	\$ 172.39	\$ 172.39	\$ 172.39	\$ 172.39	\$ 172.39	\$ 172.39	\$ 172.39	\$ 172.39	\$ 172.39	\$ 172.39	\$ 172.39	\$ 172.39	\$ 1,034.34	\$ 2,068.68
15 Headblock	\$ 243.90	\$ 243.90	\$ 243.90	\$ 243.90	\$ 243.90	\$ 243.90	\$ 243.90	\$ 243.90	\$ 243.90	\$ 243.90	\$ 243.90	\$ 243.90	\$ 1,663.40	\$ 2,956.40
16 Tailback	\$ 57.16	\$ 57.16	\$ 57.16	\$ 57.16	\$ 57.16	\$ 57.16	\$ 57.16	\$ 57.16	\$ 57.16	\$ 57.16	\$ 57.16	\$ 57.16	\$ 394.32	\$ 788.64
17 HB Threshold														
18 Z1/2020 - Current														
19 Summer:														
20 Cust. Chg	\$ 473.45	\$ 473.45	\$ 473.45	\$ 473.45	\$ 473.45	\$ 473.45	\$ 473.45	\$ 473.45	\$ 473.45	\$ 473.45	\$ 473.45	\$ 473.45	\$ 3,359.76	\$ 6,719.52
21 Headblock	\$ 566.60	\$ 566.60	\$ 566.60	\$ 566.60	\$ 566.60	\$ 566.60	\$ 566.60	\$ 566.60	\$ 566.60	\$ 566.60	\$ 566.60	\$ 566.60	\$ 4,000.33	\$ 8,000.66
22 Tailback	\$ 785.23	\$ 785.23	\$ 785.23	\$ 785.23	\$ 785.23	\$ 785.23	\$ 785.23	\$ 785.23	\$ 785.23	\$ 785.23	\$ 785.23	\$ 785.23	\$ 5,514.21	\$ 11,028.42
23 HB Threshold														
24 Total Base Rate Amount	\$ 1,312.86	\$ 1,715.46	\$ 2,042.86	\$ 1,945.74	\$ 1,731.12	\$ 1,632.43	\$ 1,632.43	\$ 1,128.34	\$ 1,032.34	\$ 1,025.34	\$ 1,050.34	\$ 897.34	\$ 7,529.83	\$ 15,059.66
25														
26														
27 COG Rate - (Seasonal)	\$ 0.5660	\$ 0.5660	\$ 0.5660	\$ 0.5660	\$ 0.5660	\$ 0.5660	\$ 0.5660	\$ 0.5660	\$ 0.5660	\$ 0.5660	\$ 0.5660	\$ 0.5660	\$ 4.0003	\$ 8.0006
28 COG amount	\$ 785.23	\$ 1,056.16	\$ 1,292.74	\$ 1,222.56	\$ 1,067.48	\$ 986.16	\$ 986.16	\$ 650.16	\$ 584.16	\$ 584.16	\$ 584.16	\$ 584.16	\$ 4,000.33	\$ 8,000.66
29														
30 LDAC	\$ 0.0549	\$ 0.0549	\$ 0.0549	\$ 0.0549	\$ 0.0549	\$ 0.0549	\$ 0.0549	\$ 0.0549	\$ 0.0549	\$ 0.0549	\$ 0.0549	\$ 0.0549	\$ 0.3943	\$ 0.7886
31 LDAC amount	\$ 74.17	\$ 102.37	\$ 123.31	\$ 116.30	\$ 103.47	\$ 96.36	\$ 96.36	\$ 64.17	\$ 58.41	\$ 58.41	\$ 58.41	\$ 58.41	\$ 431.17	\$ 862.34
32														
33 Total Bill	\$ 1,312.86	\$ 1,715.46	\$ 2,042.86	\$ 1,945.74	\$ 1,731.12	\$ 1,632.43	\$ 1,632.43	\$ 1,128.34	\$ 1,032.34	\$ 1,025.34	\$ 1,050.34	\$ 897.34	\$ 7,529.83	\$ 15,059.66
34														

May 1, 2020 - October 31, 2020

November 1, 2019 - April 30, 2020

	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Summer May-Oct	Total Nov-Oct
35 Commercial Rate (G-52)	1,352	1,866	2,284	2,160	1,886	1,760	1,760	1,128	1,032	1,025	1,050	897	6,629	17,337
36														
37 Typical Usage (Therms)	1,352	1,866	2,284	2,160	1,886	1,760	1,760	1,128	1,032	1,025	1,050	897	6,629	17,337
38 Z1/19 - 6/30/20														
39 Winter:														
40 Cust. Chg	\$ 169.09	\$ 169.09	\$ 169.09	\$ 169.09	\$ 169.09	\$ 169.09	\$ 169.09	\$ 169.09	\$ 169.09	\$ 169.09	\$ 169.09	\$ 169.09	\$ 1,267.71	\$ 2,535.42
41 Headblock	\$ 239.20	\$ 239.20	\$ 239.20	\$ 239.20	\$ 239.20	\$ 239.20	\$ 239.20	\$ 239.20	\$ 239.20	\$ 239.20	\$ 239.20	\$ 239.20	\$ 1,719.60	\$ 3,439.20
42 Tailback	\$ 56.07	\$ 56.07	\$ 56.07	\$ 56.07	\$ 56.07	\$ 56.07	\$ 56.07	\$ 56.07	\$ 56.07	\$ 56.07	\$ 56.07	\$ 56.07	\$ 420.54	\$ 841.08
43 HB Threshold														
44 Z1/19 - 6/30/20														
45 Summer:														
46 Cust. Chg	\$ 464.36	\$ 464.36	\$ 464.36	\$ 464.36	\$ 464.36	\$ 464.36	\$ 464.36	\$ 464.36	\$ 464.36	\$ 464.36	\$ 464.36	\$ 464.36	\$ 3,308.88	\$ 6,617.76
47 Headblock	\$ 625.88	\$ 625.88	\$ 625.88	\$ 625.88	\$ 625.88	\$ 625.88	\$ 625.88	\$ 625.88	\$ 625.88	\$ 625.88	\$ 625.88	\$ 625.88	\$ 4,694.16	\$ 9,388.32
48 Tailback	\$ 846.08	\$ 846.08	\$ 846.08	\$ 846.08	\$ 846.08	\$ 846.08	\$ 846.08	\$ 846.08	\$ 846.08	\$ 846.08	\$ 846.08	\$ 846.08	\$ 6,345.60	\$ 12,691.20
49 HB Threshold														
50 Total Base Rate Amount	\$ 1,375.07	\$ 1,803.18	\$ 2,025.71	\$ 1,611.95	\$ 1,308.87	\$ 1,094.87	\$ 1,094.87	\$ 744.81	\$ 657.32	\$ 657.32	\$ 657.32	\$ 657.32	\$ 5,506.87	\$ 11,013.74
51														
52														
53 COG Rate - (Seasonal)	\$ 0.6258	\$ 0.6258	\$ 0.6258	\$ 0.6258	\$ 0.6258	\$ 0.6258	\$ 0.6258	\$ 0.6258	\$ 0.6258	\$ 0.6258	\$ 0.6258	\$ 0.6258	\$ 4.5941	\$ 9.1882
54 COG amount	\$ 846.08	\$ 1,169.74	\$ 1,430.71	\$ 915.62	\$ 670.26	\$ 481.16	\$ 481.16	\$ 326.16	\$ 284.16	\$ 284.16	\$ 284.16	\$ 284.16	\$ 2,130.71	\$ 4,261.42
55														
56 LDAC	\$ 0.0478	\$ 0.0478	\$ 0.0478	\$ 0.0478	\$ 0.0478	\$ 0.0478	\$ 0.0478	\$ 0.0478	\$ 0.0478	\$ 0.0478	\$ 0.0478	\$ 0.0478	\$ 0.3582	\$ 0.7164
57 LDAC amount	\$ 64.63	\$ 89.19	\$ 109.18	\$ 103.25	\$ 90.15	\$ 84.13	\$ 84.13	\$ 56.07	\$ 49.60	\$ 49.60	\$ 49.60	\$ 49.60	\$ 369.17	\$ 738.34
58														
59 Total Bill	\$ 1,375.07	\$ 1,803.18	\$ 2,025.71	\$ 1,611.95	\$ 1,308.87	\$ 1,094.87	\$ 1,094.87	\$ 744.81	\$ 657.32	\$ 657.32	\$ 657.32	\$ 657.32	\$ 5,506.87	\$ 11,013.74
60														
61														
62 DIFFERENCE:														
63 Total Bill	\$ (62.21)	\$ (67.72)	\$ (17.15)	\$ (335.79)	\$ (41.26)	\$ (57.76)	\$ (57.76)	\$ (1,651.92)	\$ (1,529.32)	\$ (1,529.32)	\$ (1,529.32)	\$ (1,529.32)	\$ (11,482.87)	\$ (22,965.74)
64 % Change	-4.52%	-3.66%	-0.85%	-20.71%	-32.16%	-48.19%	-48.19%	-12.56%	-12.56%	-12.56%	-12.56%	-12.56%	-173.57%	-130.31%
65														
66 Base Rate	\$ 9.09	\$ 10.68	\$ 11.98	\$ 11.60	\$ 10.75	\$ 10.36	\$ 10.36	\$ 64.45	\$ 56.07	\$ 56.07	\$ 56.07	\$ 56.07	\$ 416.56	\$ 833.12
67 % Change	1.96%	1.96%	1.96%	1.96%	1.96%	1.96%	1.96%	86.24%	86.24%	86.24%	86.24%	86.24%	4,165.6%	8,331.2%
68														
69 COG & LDAC	\$ (71.30)	\$ (96.41)	\$ (5.17)	\$ (322.19)	\$ (410.51)	\$ (527.41)	\$ (1,095.56)	\$ (1,803.18)	\$ (1,529.32)	\$ (1,529.32)	\$ (1,529.32)	\$ (1,529.32)	\$ (11,482.87)	\$ (22,965.74)
70 % Change	-7.83%	-7.85%	-0.37%	-31.62%	-53.98%	-92.29%	-18.49%	-12.56%	-12.56%	-12.56%	-12.56%	-12.56%	-173.57%	-130.31%
71 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 (Energy/North Natural Gas) Corp.

	Summer 2019	Summer 2020
2 Off Peak 2021 Summer Cost of Gas Filing		
3 Residential Heating		
4 Customer Charge	\$ 15.50	\$ 15.50
5 First 20 Therms	\$ 0.5678	\$ 0.5678
6 Excess 20 Therms	\$ 0.0310	\$ 0.0603
7 LDAC	\$ 0.3430	\$ 0.3148
8 COG	\$ 0.3740	\$ 0.3751
9 Total Adjust		
10		
11		
12		
13		
14		
15 Summer 2019 COG @	\$ 0.3740	\$ 0.3751
16		
17		
18 Cooking alone	5 \$ 19.85	\$ 20.21
19		
20	10 \$ 24.51	\$ 24.83
21		
22	20 \$ 33.82	\$ 34.36
23		
24 Water Heating alone	30 \$ 43.13	\$ 43.79
25		
26	45 \$ 57.09	\$ 57.83
27		
28	50 \$ 61.75	\$ 62.64
29		
30 Heating Alone	80 \$ 85.02	\$ 86.22
31		
32	125 \$ 139.02	\$ 140.90
33		
34	150 \$ 154.84	\$ 156.83
35		
36	200 \$ 201.39	\$ 204.08
37		

	Total \$ Impact	% Impact	Rates Rate \$ Impact	% Impact	COG \$ Impact	% Impact	DAC \$ Impact	% Impact
	\$ 0.00	0%						
	\$ 0.36	2%	\$ 0.35	2%	\$ (0.14)	-1%	\$ 0.15	1%
	\$ 0.42	2%	\$ 0.41	2%	\$ (0.28)	-1%	\$ 0.29	1%
	\$ 0.54	2%	\$ 0.52	2%	\$ (0.56)	-2%	\$ 0.59	2%
	\$ 0.66	2%	\$ 0.63	1%	\$ (0.65)	-2%	\$ 0.88	2%
	\$ 0.84	1%	\$ 0.79	1%	\$ (1.27)	-2%	\$ 1.32	2%
	\$ 0.90	1%	\$ 0.84	1%	\$ (1.41)	-2%	\$ 1.46	2%
	\$ 1.20	1%	\$ 1.12	1%	\$ (2.12)	-2%	\$ 2.20	3%
	\$ 1.89	1%	\$ 1.75	1%	\$ (3.76)	-3%	\$ 3.89	3%
	\$ 2.09	1%	\$ 1.94	1%	\$ (4.24)	-3%	\$ 4.39	3%
	\$ 2.69	1%	\$ 2.48	1%	\$ (5.65)	-3%	\$ 5.86	3%

Liberty Utilities (EnergyNorth Natural Gas) Corp.

Schedule 10A
Page 1 of 3

2021 Summer Cost of Gas Filing
Capacity Assignment Calculations 2019-2020
Derivation of Class Assignments and Weightings

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	532	558	0.3%	102	457
2	RATE R-3-Resi Htg	69,256	73,356	43.5%	3,545	69,812
3	RATE G-41 (T)	29,783	31,593	18.7%	770	30,823
4	RATE G-51 (S)	2,445	2,551	1.5%	739	1,812
5	RATE G-42 (V)	37,176	39,404	23.4%	1,473	37,931
6	RATE G-52	5,376	5,601	3.3%	1,781	3,820
7	RATE G-43	8,418	8,901	5.3%	663	8,239
8	RATE G-53	3,238	3,368	2.0%	1,146	2,222
9	RATE G-54	3,078	3,241	1.9%	461	2,780
10						
11	Total	159,300	168,574	100.0%	10,678	157,896
12						-
13	Residential Total	69,788	73,915	43.847%	3,647	70,268
14	LLF Total	75,376	79,898	47.397%	2,905	76,993
15	HLF Total	14,136	14,761	8.756%	4,126	10,635
16	Total	159,300	168,574	100.0%	10,678	157,896
17						
18	C&I Breakdown					
19	LLF Total				2,905	76,993
20	HLF Total				4,126	10,635
21	Total				7,031	87,628
22						
23	C&I Breakdown Percentage					
24	LLF Total				41.322%	87.863%
25	HLF Total				58.678%	12.137%
26	Total				100.0%	100.0%
27						
28		Capacity Cost	MDQ, Dt	\$/Dt-Mo.		
29	Pipeline	\$14,027,173	79,718	\$14.6633		
30	Storage	\$4,161,416	28,115	\$12.3345		
31						
32	Peaking	\$4,330,500				
33	Peaking Additional Costs (Concord Lateral Peaking x Differential)	\$0				
34	Subtotal Peaking Costs	\$4,330,500	60,741	\$5.9412		
35	Total	\$22,519,089	168,574	\$11.1321		
36						
37		Capacity Cost	MDQ, Dt	\$/Dt-Mo.		
38	Pipeline - Baseload	1,878,867	10,678	\$14.6633		
39	Pipeline - Remaining	12,148,306	69,040	\$14.6633		
40	Storage	4,161,416	28,115	\$12.3345		
41	Peaking	4,330,500	60,741	\$5.9412		
42	Total	22,519,089	168,574	\$11.1321		
43						
44						
45	Residential Allocation	Capacity Cost	MDQ, Dt	\$/Dt-Mo.		
46	Pipeline - Base	Line 38 * Line 13 Col C	823,827	4,682	\$14.6633	
47	Pipeline - Remaining	Line 39 * Line 13 Col C	5,326,656	30,272	\$14.6633	
48	Storage	Line 40 * Line 13 Col C	1,824,654	12,328	\$12.3345	
49	Peaking	Line 41 * Line 13 Col C	1,898,784	26,633	\$5.9412	
50	Total		9,873,887	73,915	\$11.1321	
51						

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

53
54 **2020 Summer Cost of Gas Filing**
55 **Capacity Assignment Calculations 2019-2020**
56 **Derivation of Class Assignments and Weightings**

				Ratios for COG		
59	C&I Allocation		Capacity Cost	MDQ, Dt	\$/Dt-Mo.	
60	Pipeline - Base	Line 38 - Line 46	1,055,040	5,996	\$14.6633	
61	Pipeline - Remaining	Line 39 - Line 47	6,821,650	38,768	\$14.6634	
62	Storage	Line 40 - Line 48	2,336,762	15,787	\$12.3345	
63	Peaking	Line 41 - Line 49	2,431,716	34,108	\$5.9412	
64	Total		56.153% 12,645,167	94,659	\$11.1322	1.0000
65						
66						
67	LLF - C&I Allocation		Capacity Cost	MDQ, Dt	\$/Dt-Mo.	
68	Pipeline - Base	Line 60 * Line 24 Col E	435,965	2,478	\$14.6612	
69	Pipeline - Remaining	Line 61 * Line 24 Col F	5,993,729	34,063	\$14.6633	
70	Storage	Line 62 * Line 24 Col F	2,053,157	13,871	\$12.3348	
71	Peaking	Line 63 * Line 24 Col F	2,136,587	29,968	\$5.9413	
72	Total		47.1575% 10,619,438	80,380	\$11.0096	0.9890
73			41.322%	84%		(Line 72 / Line 64)
74						
75	HLF - C&I Allocation		Capacity Cost	MDQ, Dt	\$/Dt-Mo.	
76	Pipeline - Base	Line 60 - Line 68	619,075	3,518	\$14.6645	
77	Pipeline - Remaining	Line 61 - Line 69	827,921	4,705	\$14.6639	
78	Storage	Line 62 - Line 70	283,605	1,916	\$12.3349	
79	Peaking	Line 63 - Line 71	295,129	4,140	\$5.9406	
80	Total		8.9956% 2,025,730	14,279	\$11.8223	1.0620
81						(Line 80 / Line 64)
82						
83	Unit Cost		Residential	LLF C&I	HLF C&I	
84						
85	Pipeline		\$ 14.6633	\$ 14.6633	\$ 14.6633	
86	Storage		\$ 12.3345	\$ 12.3345	\$ 12.3345	
87	Peaking		\$ -	\$ -	\$ -	
88	Total		\$ 11.1321	\$ 11.0096	\$ 11.8223	
89						
90						
91	Load Makeup		Residential	LLF C&I	HLF C&I	
92						
93	Pipeline		47.29%	45.46%	57.59%	
94	Storage		16.68%	17.26%	13.42%	
95	Peaking		<u>36.03%</u>	37.28%	28.99%	
96	Total		100.00%	100.00%	100.00%	
97						
98						
99	Supply Makeup		Residential	LLF C&I	HLF C&I	Total
100						
101	Pipeline		43.85%	45.84%	10.32%	100.00%
102	Storage		43.85%	49.34%	6.81%	100.00%
103	Peaking		43.85%	49.34%	6.82%	100.00%

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

2
3 **2021 Summer Cost of Gas Filing**
4 **Correction Factor Calculation**

5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	Total													
		Data Source: Schedule 10B		May	June	July	Aug	Sep	Oct	Sales																																							
11	G-41		657,255	254,946	178,791	176,029	328,891	897,944	2,493,855																																								
12	G-42		595,774	269,780	194,334	194,029	351,558	782,996	2,388,472																																								
13	G-43		157,182	67,587	50,187	49,057	85,306	173,873	583,192																																								
14	High Winter Use		1,410,210	592,313	423,313	419,114	765,755	1,854,813	5,465,519																																								
16	G-51		195,387	169,912	164,465	179,005	184,791	208,334	1,101,895																																								
17	G-52		202,045	182,364	185,459	191,337	204,592	248,396	1,214,192																																								
18	G-53		288,665	243,500	253,364	256,465	248,944	302,915	1,593,852																																								
19	G-54		45,899	40,322	44,580	41,065	42,484	44,925	259,275																																								
21	Low Winter Use		731,996	636,098	647,868	667,872	680,810	804,571	4,169,214																																								
23	Gross Total		2,142,206	1,228,411	1,071,181	1,086,986	1,446,566	2,659,384	9,634,734																																								
26	Total Sales						9,634,734																																										
27	Low Winter Use						4,169,214																																										
28	Summer Ratio for Low Winter Use						1.0620																																										
29	High Winter Use						5,465,519																																										
30	Summer Ratio for High Winter Use						0.9890																																										
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 =						97.9826%																																										
36	Allocation Calculation for Miscellaneous Overhead																																																
38	Projected Winter Sales Volume																																																
39	Projected Annual Sales Volume																																																
40	Percentage of Winter Sales to Annual Sales																																																

1 Liberty Utilities (Energy/North Natural Gas) Corp.
2 d/b/a Liberty Utilities
3 Off Peak 2021 Summer Cost of Gas Filing
4 2020 Summer Cost of Gas Filing

Dry Therms

	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	PK 20-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Subtotal OP 21	Total
7 Firm Sales															
8															
9 R-1	67,242	85,779	94,221	76,896	78,103	57,121	459,362	45,014	35,092	34,025	34,190	37,878	53,991	240,190	699,552
10 R-3	6,301,872	9,195,999	10,579,175	8,250,978	7,996,062	4,741,223	47,065,308	2,633,722	1,181,251	864,297	889,954	1,694,426	4,079,782	11,283,432	56,348,740
11 R-4	497,668	721,571	830,551	649,773	636,785	382,606	3,718,955	208,283	92,289	64,377	64,891	114,766	300,646	845,252	4,564,206
12 Total Residential	6,866,783	10,003,350	11,503,946	8,977,647	8,710,950	5,180,950	51,243,625	2,887,019	1,308,632	962,699	989,034	1,787,070	4,434,419	12,368,874	63,612,499
13															
14 G-41	1,996,836	3,238,958	3,888,117	3,240,314	2,556,592	1,395,068	16,315,885	657,255	254,946	178,791	176,029	328,891	897,944	2,493,855	18,809,740
15 G-42	1,557,098	2,487,506	2,941,387	2,478,940	2,060,861	1,064,653	12,590,447	595,774	269,780	194,334	194,029	351,558	782,996	2,388,472	14,978,919
16 G-43	317,392	493,665	615,564	503,796	442,358	254,648	2,627,422	157,182	67,587	50,187	49,057	85,306	173,873	583,192	3,210,614
17 G-51	249,978	328,663	350,912	304,738	289,652	219,268	1,742,211	195,387	169,912	164,465	179,005	184,791	208,334	1,101,995	2,844,106
18 G-52	298,155	382,781	421,838	359,163	334,397	234,919	2,031,253	202,045	182,364	185,459	191,337	204,592	248,396	1,214,192	3,245,446
19 G-53	472,951	566,045	453,188	409,819	412,496	320,835	2,635,333	288,665	243,500	253,364	256,465	248,944	302,915	1,593,852	4,229,186
20 G-54	41,998	19,758	22,302	22,258	20,386	52,090	178,792	45,899	40,322	44,580	41,065	42,484	44,925	259,275	438,067
21 Total C/I	4,934,406	7,517,376	8,693,308	7,319,029	6,116,742	3,540,482	38,121,343	2,142,206	1,228,411	1,071,181	1,086,986	1,446,566	2,659,384	9,634,734	47,756,077
22															
23 Sales Volume	11,801,189	17,520,726	20,197,255	16,296,676	14,827,692	8,721,431	89,364,968	5,029,226	2,537,042	2,033,880	2,076,020	3,233,636	7,093,803	22,003,607	111,368,575
24															
25 Transportation Sales															
26															
27 G-41	564,370	804,050	947,199	829,377	707,117	472,512	4,324,627	269,638	128,170	94,542	87,932	152,293	314,747	1,047,322	5,371,949
28 G-42	1,970,141	2,735,523	3,169,949	2,762,428	2,368,941	1,632,317	14,639,298	964,155	473,043	370,329	386,901	671,164	1,228,176	4,093,769	18,733,067
29 G-43	784,362	1,036,834	1,197,355	1,071,284	979,562	649,351	5,718,747	449,617	289,492	255,281	278,213	366,350	557,917	2,196,870	7,915,616
30 G-51	98,848	105,296	110,026	98,612	101,851	95,501	610,133	86,996	77,987	71,427	68,055	73,165	83,209	460,839	1,070,972
31 G-52	574,360	666,400	697,367	617,228	576,744	509,638	3,641,739	434,086	380,619	381,003	377,876	408,943	485,204	2,467,732	6,109,470
32 G-53	791,280	948,364	1,078,987	937,963	941,239	750,834	5,448,666	698,893	631,500	608,885	619,782	607,168	777,777	3,944,006	9,392,672
33 G-54	1,614,023	1,405,905	1,350,282	1,151,611	1,231,396	1,319,849	8,073,065	1,589,916	1,585,398	1,656,869	1,776,411	1,717,743	1,770,941	10,097,278	18,170,344
34															
35 Total Trans. Sales	6,397,384	7,702,372	8,551,166	7,468,503	6,906,850	5,430,001	42,456,275	4,493,302	3,586,209	3,438,337	3,595,170	3,996,826	5,217,971	24,307,815	66,764,090
36															
37 Total All Sales	18,198,573	25,223,097	28,748,421	23,765,178	21,734,542	14,151,433	131,821,243	9,522,527	6,103,252	5,472,217	5,671,191	7,230,462	12,311,774	46,311,422	178,132,666

Schedule 11A
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1 Liberty Utilities (EnergyNorth Natural Gas) Corp.

2
3 Off Peak 2021 Summer Cost of Gas Filing

4 Normal and Design Year Volumes

5

6

7 Volumes (Therms) Normal Year

8

9 For the Months of May 20 -October 20

10

11

	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Off Peak May - Oct
12 Pipeline Gas:							
13 Dawn Supply	-	-	-	-	-	858,740	858,740
14 Niagara Supply	637,331	-	532,884	535,788	-	676,922	2,382,926
15 TGP Supply (Gulf)	-	-	-	-	-	-	0
16 Dracut Supply 1 - Baseload	-	-	-	-	-	-	0
17 Dracut Supply 2 - Swing	3,933,940	2,438,570	-	-	3,103,570	1,319,579	10,795,659
18 Constellation Combo	-	-	-	-	-	-	0
19 LNG Truck	46,746	17,020	15,965	-	35,455	16,084	131,270
20 Propane Truck	75,716	67,494	63,308	63,653	70,300	80,420	420,889
21 PNGTS	202,129	-	169,004	169,925	-	214,685	755,742
22 Portland Natural Gas	-	-	-	-	-	-	0
23 TGP Supply (Z4)	3,508,614	2,994,951	4,054,983	2,293,151	3,119,464	5,460,834	21,431,995
24 Storage Gas:	8,404,476	5,518,034	4,836,143	3,062,516	6,328,789	8,627,264	36,777,221
25							
26							
27 Produced Gas:							
28 LNG Vapor	19,197	17,222	15,625	15,495	14,321	16,992	98,853
29 Propane	-	-	-	-	-	-	0
30 Less - Gas Refills:							
31 LNG Truck	(47,001)	(17,837)	(15,625)	-	(29,665)	(13,476)	(123,604)
32 Propane	(76,128)	(70,733)	(61,962)	(61,447)	(58,818)	(67,382)	(396,470)
33 TGP Storage Refill	(3,489,964)	(3,138,717)	(2,776,992)	(970,865)	(2,609,978)	(1,303,686)	(14,290,202)
34	(3,613,093)	(3,227,287)	(2,854,580)	(1,032,312)	(2,698,460)	(1,384,544)	(14,810,276)
35 Total Sendout Volumes	4,810,581	2,307,969	1,997,188	2,045,699	3,644,650	7,259,712	22,065,798
36							
37							
38							
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41							
42							

Schedule 11B
Page 1 of 1

1 Liberty Utilities (EnergyNorth Natural Gas) Corp.

2
3 Off Peak 2021 Summer Cost of Gas Filing

43 Normal and Design Year Volumes

44	45	Design Year
46 Volumes (Therms)		

47 For the Months of May 20 -October 20

48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	Off Peak May - Oct		
				May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21																										
52 Pipeline Gas:																																			
53 Dawn Supply				-	-	-	-	-	858,740																										858,740
54 Niagara Supply				637,331	-	532,884	535,788	-	676,922																										2,382,926
55 TGP Supply (Gulf)				-	-	-	-	-	-																									0	
56 Dracut Supply 1 - Baseload				-	-	-	-	-	-																									0	
57 Dracut Supply 2 - Swing				4,045,210	2,581,773	-	-	3,257,618	1,392,306																									11,276,907	
58 Constellation Combo				-	-	-	-	-	-																									0	
59 LNG Truck				46,746	17,020	15,965	-	35,455	16,084																									131,270	
60 Propane Truck				75,716	67,494	63,308	63,653	70,300	80,420																									420,889	
61 PNGTS				202,129	-	169,004	169,925	-	214,685																									755,742	
62 Portland Natural Gas				-	-	-	-	-	-																									0	
63 TGP Supply (Z4)				3,521,782	2,994,951	4,172,790	2,500,160	3,126,800	5,456,638																									21,773,119	
64 Subtotal Pipeline Volumes				8,528,914	5,661,237	4,953,950	3,269,525	6,490,172	8,695,796																									37,599,593	
66 Storage Gas:																																		0	
67 TGP Storage				-	-	-	-	-	-																									0	
69 Produced Gas:																																			
70 LNG Vapor				19,094	16,433	15,965	16,052	17,116	20,280																										104,939
71 Propane				-	-	-	-	-	-																										-
72 Subtotal Produced Gas				19,094	16,433	15,965	16,052	17,116	20,280																										104,939
74 Less - Gas Refills:																																			
75 LNG Truck				(46,746)	(17,020)	(15,965)	-	(35,455)	(16,084)																										(131,270)
76 Propane				(75,716)	(67,494)	(63,308)	(63,653)	(70,300)	(80,420)																										(420,889)
77 TGP Storage Refill				(3,471,085)	(2,994,951)	(2,841,131)	(1,085,414)	(3,119,464)	(1,464,334)																										(14,976,378)
78 Subtotal Refills				(3,593,547)	(3,079,464)	(2,920,403)	(1,149,066)	(3,225,219)	(1,560,838)																										(15,528,536)
80 Total Sendout Volumes				4,954,460	2,598,206	2,049,512	2,136,510	3,282,070	7,155,238																									22,175,995	

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

2
3 **Off Peak 2021 Summer Cost of Gas Filing**

4 **Capacity Utilization**

5 **Volumes (Therms)**

6

	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
7								
8								
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40								

11 **Pipeline Gas:**

12	858,740	4,000	7,360,000	12%	858,740	4,000	7,360,000	12%
13	2,382,926	3,122	5,744,480	41%	2,382,926	3,122	5,744,480	41%
14	-	21,596	39,736,640	0%	-	21,596	39,736,640	0%
15	10,795,659	50,000	92,000,000	12%	11,276,907	50,000	92,000,000	12%
16	131,270	-	-	-	131,270	-	-	-
17	420,889	-	-	-	420,889	-	-	-
18	755,742	1,000	1,840,000	41%	755,742	1,000	1,840,000	41%
19	-	1,784	3,282,560	0%	-	1,784	3,282,560	0%
20	21,431,995	21,596	39,736,640	54%	21,773,119	21,596	39,736,640	55%
21	-	-	-	-	-	-	-	-
22	36,777,221				37,599,593			
23								
24								
25	0		25,792,710	0%	-		25,792,710	0%
26								
27								
28	98,853				104,939			
29	-				-			
30								
31	98,853				104,939			
32								
33								
34	(123,604)				(131,270)			
35	(396,470)				(420,889)			
36	(14,290,202)				(14,976,378)			
37								
38	(14,810,276)				(15,528,536)			
39								
40	22,065,798				22,175,995			

24 **Storage Gas:**

25	0							
26								

27 **Produced Gas:**

28	98,853				104,939			
29	-				-			
30								

31 **Subtotal Produced Gas**

32	98,853				104,939			
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33 **Less - Gas Refills:**

34	(123,604)				(131,270)			
35	(396,470)				(420,889)			
36	(14,290,202)				(14,976,378)			
37								

38 **Subtotal Refills**

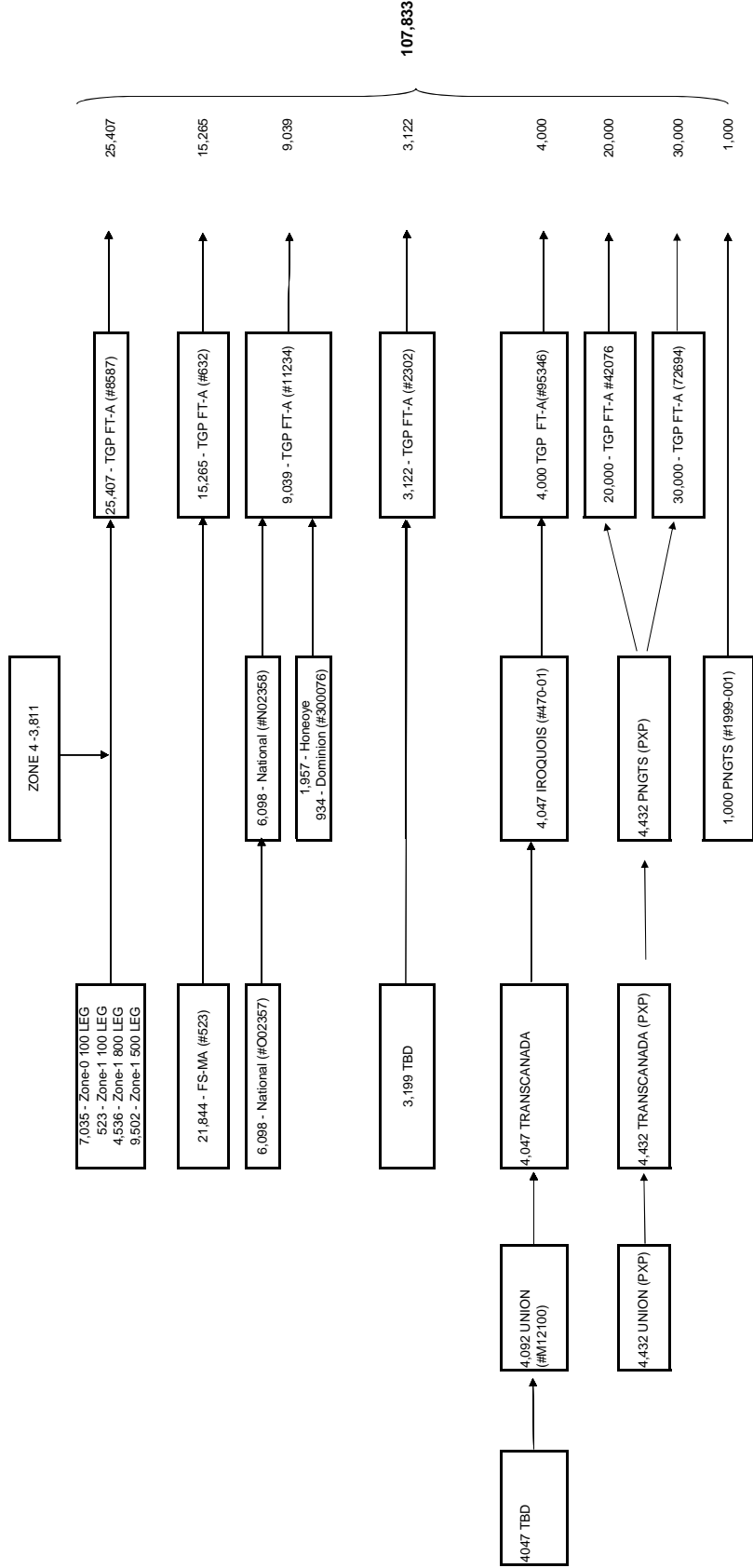
39	(14,810,276)				(15,528,536)			
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40 **Total Sendout Volumes**

40	22,065,798				22,175,995			
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Liberty Utilities (Energy/North Natural Gas) Corp.
Off Peak 2021 Summer Cost of Gas Filing
Transportation Available for Pipeline Supply and Storage
(MMBtu)

Schedule 12
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Liberty Utilities (Energy/North Natural Gas) Corp.
Off Peak 2021 Summer Cost of Gas Filing
Agreements for Gas Supply and Transportation

Schedule 12
Page 2 of 2

SOURCE	RATE SCHEDULE	CONTRACT NUMBER	TYPE	MDQ MMBTU	MAQ * MMBTU	EXPIRATION DATE	NOTIFICATION DATE	RENEWAL OPTIONS
Niagara	NA	NA	Supply	3,147	1,148,655	1/0/1900	0	Terminates
ANE	NA	NA	Supply	4,047	611,097	Peak Only	N/A	Terminates
Constellation	FCS		Firm Combination Liquid and Vapor Svc	Up to 7 trucks	630,000	3/31/2021	N/A	Terminates
Dracut or Z6	NA	NA	Supply	Up to 20,000 / day	1,412,000	2/28/2021	N/A	Terminates
TGP Long-Haul	NA	NA	Supply	21,596	3,908,876	4/30/2021	N/A	Terminates
Northern Transport	NA	NA	Trucking	28,500 Gallons	900,000 Gallons		N/A	Terminates
Dominion Transmission Incorporated	GSS	300076	Storage	934	102,700	3/31/2023	3/31/2021	Mutually agreed upon
Honeye Storage Corporation	SS-NY	11234	Storage	1,957	245,380	3/31/2022	12 months notice	Evergreen Provision
National Fuel Gas Supply Corporation	FSS	002358	Storage	6,098	670,800	3/31/2022	3/31/2021	Evergreen Provision
National Fuel Gas Supply Corporation	FSST	N02358	Transportation	6,098	670,800	3/31/2022	3/31/2021	Evergreen Provision
Iroquois Gas Transmission System	RTS	47001	Transportation	4,047	1,477,195	11/7/2022	11/7/2021	Evergreen Provision
Portland Natural Gas Transmission System	FT-1999-01	1999-001	Transportation	1,000	365,000	11/30/2032	11/31/2031	Evergreen Provision
Portland Natural Gas Transmission System	FT	PXP	Transportation	4,432	1,617,660	10/31/2040	10/31/2039	Precedent Agreement
Tennessee Gas Pipeline Company	FS-MA	523	Storage	21,844	1,560,391	10/31/2025	10/31/2024	Evergreen Provision
Tennessee Gas Pipeline Company	FTA	8587	Transportation	25,407	9,273,555	10/31/2025	10/31/2024	Evergreen Provision
Tennessee Gas Pipeline Company	FTA	2302	Transportation	3,122	1,139,530	10/31/2025	10/31/2024	Evergreen Provision
Tennessee Gas Pipeline Company	FTA	632	Transportation	15,265	5,571,725	10/31/2025	10/31/2024	Evergreen Provision
Tennessee Gas Pipeline Company	FTA	11234	Transportation	9,039	3,299,235	10/31/2025	10/31/2024	Evergreen Provision
Tennessee Gas Pipeline Company	FTA	72694	Transportation	30,000	10,950,000	10/31/2023	10/31/2028	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	10/31/2025	10/31/2024	Evergreen Provision
TransCanada Pipeline	FT	41232	Transportation	4,047	1,477,195	10/31/2026	10/31/2024	Evergreen Provision
TransCanada Pipeline	FT	PXP	Transportation	4,432	1,617,660	10/31/2040	0	Precedent Agreement
Union Gas Limited	M12	M12200	Transportation	4,092	1,488,580	10/31/2022	10/31/2020	Evergreen Provision
Union Gas Limited	M12	PXP	Transportation	4,432	1,617,660	10/31/2040		Precedent Agreement

* MAQ is calculated on a 365 day calendar year.

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

	May-20 (Actual)	Jun-20 (Actual)	Jul-20 (Estimate)	Aug-20 (Estimate)	Sep-20 (Estimate)	Oct-20 (Estimate)	Total
2 Off Peak 2021 Summer Cost of Gas Filing							
3 Storage Inventory							
4 Underground Storage Gas							
5							
6							
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36							

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

38
39 **Off Peak 2021 Summer Cost of Gas Filing**

40
41 **Liquid Propane Gas (LPG)**

	May-20 (Actual)	Jun-20 (Actual)	Jul-20 (Estimate)	Aug-20 (Estimate)	Sep-20 (Estimate)	Oct-20 (Estimate)	Total
42 Beginning Balance	93,824	93,828	94,844	94,844	94,844	94,844	96,655
43 Injections	72	1,016	-	-	-	-	47,127
44 Subtotal	93,896	94,844	94,844	94,844	94,844	94,844	
45 Withdrawals	(68)	-	-	-	-	-	(61,632)
46 Adjustment for change in temperature	-	-	-	-	-	-	-
47 Adjustment for Transfer	-	-	-	-	-	-	-
48 Ending Balance	93,828	94,844	94,844	94,844	94,844	94,844	82,150
49							
50							
51							
52							
53							
54							
55							
56							
57 Beginning Balance	\$ 1,382,938	\$ 1,382,997	\$ 1,396,098	\$ 1,406,774	\$ 1,406,774	\$ 1,406,774	\$ 1,193,497
58 Injections	1,061	13,101	-	-	-	-	168,840
59 Subtotal	\$ 1,384,000	\$ 1,396,098	\$ 1,396,098	\$ 1,406,774	\$ 1,406,774	\$ 1,406,774	
60 Withdrawals	(1,002)	-	10,676	-	-	-	(763,126)
61 Ending Balance	\$ 1,382,997	\$ 1,396,098	\$ 1,406,774	\$ 1,406,774	\$ 1,406,774	\$ 1,406,774	\$ 599,211
62 Average Rate For Withdrawals	\$ 14.7397	\$ 14.7199	\$ 14.7199	\$ 14.8325	\$ 14.8325	\$ 14.8325	
63 Propane Rate for Injections	-	-	-	-	-	-	
64 Actual or Sch. 6, In 158 * 10	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
65							
66							
67							
68							
69							

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

71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99			
		Off Peak 2021 Summer Cost of Gas Filing																													
		Liquid Natural Gas (LNG)																													
		Beginning Balance		May-20 (Actual)	Jun-20 (Actual)	Jul-20 (Estimate)	Aug-20 (Estimate)	Sep-20 (Estimate)	Oct-20 (Estimate)	Total																					
				7,885	5,928	10,583	10,583	10,583	10,583	12,057																					
		Injections	Sch 11A In 36 /10	797	6,395	-	-	-	-	135,961																					
		Subtotal		8,682	12,323	10,583	10,583	10,583	10,583	10,583																					
		Withdrawals	Sch 11A In 31 /10	(2,754)	(1,740)	-	-	-	-	(131,667)																					
		Ending Balance		5,928	10,583	10,583	10,583	10,583	10,583	16,351																					
		Beginning Balance		\$ 34,430	\$ 25,885	\$ 42,850	\$ 42,850	\$ 42,850	\$ 42,850	\$ 135,659																					
		Injections	In 78 * In 99	3,480	24,011	-	-	-	-	653,097																					
		Subtotal		\$ 37,910	\$ 49,896	\$ 42,850	\$ 42,850	\$ 42,850	\$ 42,850	\$ 653,097																					
		Withdrawals	In 82 * In 97	(12,025)	(7,045)	-	-	-	-	(773,245)																					
		Ending Balance		\$ 25,885	\$ 42,850	\$ 42,850	\$ 42,850	\$ 42,850	\$ 42,850	\$ 15,511																					
		Average Rate For Withdrawals		\$ 4.3665	\$ 4.0490	\$ 4.0490	\$ 4.0490	\$ 4.0490	\$ 4.0490	\$ 4.0490																					
		LNG Rate for Injections	Actual or Sch. 6, In 157 * 10	\$ 4.3665	\$ 3.7546	\$ 3.8000	\$ 3.8000	\$ 3.8000	\$ 3.8000	\$ 3.8000																					