



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

Docket No. DG 17-152

Liberty Utilities (EnergyNorth Natural Gas) Corp. d/b/a Liberty Utilities
Least Cost Integrated Resource Plan

DIRECT TESTIMONY

OF

WILLIAM KILLEEN

April 30, 2019

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1 **I. INTRODUCTION**

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

3 A. My name is William R. (Bill) Killeen. I am Director, Energy Procurement, of Liberty
4 Utilities (Canada) Corp., the parent of Liberty Utilities Co. (“Liberty Utilities”), which is
5 the parent company of Liberty Energy Utilities (New Hampshire) Corp. (“Liberty Energy
6 (NH”). My business address is 345 Davis Road, Oakville, Ontario, Canada.

7 **Q. On whose behalf are you submitting this testimony?**

8 A. I am submitting this testimony before the New Hampshire Public Utilities Commission
9 (the “Commission” or “NHPUC”) on behalf of Liberty Utilities (EnergyNorth Natural
10 Gas) Corp. d/b/a Liberty Utilities (“EnergyNorth” or the “Company”), a subsidiary of
11 Liberty Energy (NH). I am ultimately responsible for EnergyNorth’s energy
12 procurement.

13 **Q. Please describe your educational background and qualifications.**

14 A. I earned a Bachelor of Engineering Science (Chemical) degree from the University of
15 Western Ontario (now Western University) in 1985. I also earned a Master’s degree in
16 Business Administration from the Ivey School of Business at Western University in 1989.

17 I have 30 years of professional experience in the energy and utilities industries in the
18 areas of regulation, supply, operations, and customer service. I have worked at natural
19 gas and electric utilities, as well as in consulting, marketing, and government positions.
20 Early in my career, I was employed by Union Gas Limited, a major natural gas utility
21 serving over 1.4 million customers in Ontario, Canada, for twelve years in varying

1 capacities, including regulatory and supply. Prior to joining Liberty Utilities in February
2 2014, I was employed by Enersource Hydro Mississauga Inc., a major electric utility
3 serving the City of Mississauga, Ontario, for three years as Manager, Regulatory Affairs.
4 In between my employment at these two large utilities, I was employed at various other
5 companies, always retaining responsibility for oversight of regulatory affairs and supply,
6 typically in Ontario or eastern Canada. These companies included Engage Energy
7 Canada Inc., Direct Energy as Manager, Regulatory Affairs, and a consulting company,
8 ECNG Energy LP, as Director, Supply and Regulatory Affairs for eight years. Following
9 ECNG, I spent a brief tenure within the Ministry of Energy of the Ontario Government.
10 Please refer to Attachment WRK-1 for a summary of my professional background.

11 **Q. Have you previously testified before any regulatory bodies?**

12 A. Yes, I have. In the United States, I have provided testimony in a number of proceedings
13 in Arizona, California, Arkansas, Montana, New Hampshire, Massachusetts, Georgia,
14 and Texas. In Canada, I have testified in approximately 18 natural gas and electric utility
15 pricing cases and facility approval cases before the Ontario Energy Board. Please refer to
16 Attachment WRK-1 for a summary of my past testimony appearances.

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

18 A. The purpose of my testimony is to respond to Order No. 26,225 (Mar. 13, 2019) (the
19 “Order”), which directed the Company “to submit a supplemental filing, including
20 supporting testimony, to address each of the specific elements required under RSA
21 378:38 and RSA 378:39 that are not already addressed in its LCIRP, with adequate

1 sufficiency to permit the Commission’s assessment of potential environmental,
2 economic, and health-related impacts of each option proposed in the LCIRP, as required
3 by RSA 378:39.” Order at 7.

4 **Q. How have you organized your testimony?**

5 A. The Order identified two subsections of RSA 378:38 that were not sufficiently addressed
6 in the LCIRP. Subsection V directs the Company to assess the LCIRP’s “integration and
7 impact on state compliance with the Clean Air Act of 1990, as amended, and other
8 environmental laws that may impact a utility’s assets or customers.” Subsection VI
9 requires an assessment of the LCIRP’s “long- and short-term environmental, economic,
10 and energy price and supply impact[s] on the state.”

11 The Order directed the Company to address these two subsections, to the extent they
12 were “not already addressed,” with “adequate sufficiency to permit the Commission’s
13 assessment of potential environmental, economic, and health-related impacts of each
14 option proposed in the LCIRP.” Order at 7.

15 To respond to the Order, my testimony will first describe the two planning issues
16 identified in the LCIRP -- a lack of sufficient capacity to *deliver* natural gas to
17 EnergyNorth’s city gates along the Concord Lateral, and the need to obtain a new source
18 of *supply* to use that incremental capacity. Second, I will describe the options that were
19 identified. Third, I will provide the Company’s interpretation of the two subsections of
20 RSA 378:38 and describe the Company’s analysis of the relative environmental and

1 health related impacts of each option in a manner that will allow the Commission to make
2 its assessment of each option proposed in the LCIRP.

3 **Q. What was the first step in the LCIRP planning process?**

4 A. The LCIRP first presented the Company's demand forecast, which is described in the
5 LCIRP. Bates 012–031.¹ The Company's forecast showed continued growth throughout
6 the five-year forecast period covered by the LCIRP. Bates 031, 036. The balance of the
7 LCIRP discussed the Company's resource portfolio and options available to meet that
8 forecasted demand.

9 **Q. Please provide an overview of EnergyNorth's existing delivery capacity.**

10 A. The EnergyNorth system is fed by a single transmission pipeline, the Concord Lateral,
11 owned by Tennessee Gas Pipeline Company, LLC ("Tennessee" or "TGP"), which
12 travels from Dracut, Massachusetts, to Concord, New Hampshire. The Company also
13 supplements the existing pipeline capacity on the Concord Lateral through the use of on-
14 system propane-air and liquefied natural gas ("LNG") facilities, which are located in
15 Nashua, Manchester, Concord, and Tilton. These facilities are filled via truck and are
16 necessary for the Company to meet its design day requirements. In fact, in 2017 the
17 Company requested and received a waiver of Puc 506.03, On-Site Storage Requirements,
18 due to a historic cold snap in 2017 and 2018.² Over the past three calendar years,
19 EnergyNorth has received 704 deliveries of propane and LNG. The Company projects

¹ References to the LCIRP will be by page number only, e.g., "Bates 007."

² Docket No. DG 17-200, Liberty Utilities (EnergyNorth Natural Gas) Corp. d/b/a Liberty Utilities Petition for Temporary Waiver of Puc 506.03, On-Site Storage Requirements

1 this number to increase over the next several years, until additional natural gas capacity is
2 available in its service territory. Other than these on-system peaking facilities, the
3 Concord Lateral is the only way to bring natural gas to the Company's distribution
4 system.

5 **Q. Is the Company's existing delivery capacity sufficient to meet the forecasted**
6 **demand requirements of its customers?**

7 A. No. The Company's design day demand during the planning period will exceed its capacity
8 on the Concord Lateral, and there is no more capacity available on the Concord Lateral for
9 the Company to purchase, absent an incremental project to expand the Concord Lateral.
10 Stated differently, the Concord Lateral, which was last expanded in 2009 when the
11 Company contracted for 30,000 Dth per day of capacity, is fully subscribed.³ Therefore,
12 any additional requests to increase capacity and deliverability will, at a minimum, require
13 incremental facilities on the Tennessee system.

14 **Q. What options did the Company identify to solve this delivery capacity shortage?**

15 A. The LCIRP identified two pipeline delivery options that could provide incremental gas
16 supplies to the Company's service territory to solve the delivery constraint issue: (1) the

³ The Commission issued an order approving the Settlement Agreement relating to the Company's transportation agreement on the TGP Concord Lateral expansion in Order No. 24,825 (Feb. 29, 2008). The TGP Concord Lateral expansion was approved for construction by the Federal Energy Regulatory Commission ("FERC") in Docket No. CP 08-65-000.

1 Granite Bridge Pipeline (which was referred to as an “extension of its system” in the
2 LCIRP⁴), and (2) an expansion of the Concord Lateral. Bates 054.

3 **Q. Which delivery option did the Company choose?**

4 A. The Company’s analysis, as detailed in the LCIRP, demonstrated that the inclusion of the
5 Granite Bridge Pipeline results in the least-cost portfolio. In addition, the Granite Bridge
6 Pipeline enhances the reliability, diversity, and flexibility of the Company’s portfolio,
7 and provides overall support for the operating pressure on the Concord Lateral, which is a
8 significant enhancement over the current situation. Bates 052, 054.

9 Lastly, as discussed below, the Granite Bridge Pipeline would have the same or better
10 environmental and health-related impacts as the Concord Lateral upgrade.

11 **Q. Please provide an overview of EnergyNorth’s existing gas supply portfolio.**

12 A. The Company’s existing gas supply portfolio consists of various legacy contracts for
13 pipeline capacity and storage that can move gas to the Company’s city gates along the
14 Concord Lateral. Bates 038–041. These existing contracts have favorable terms that
15 could not be obtained in today’s market. Therefore, the Company, consistent with past
16 practices documented in prior LCIRP filings and Commission orders approving those
17 filings, intends to renew those existing contracts that will expire during the five-year
18 period covered by the LCIRP. Bates 050–052.

⁴ The Company did not initially disclose the Granite Bridge Pipeline in the LCIRP because the LCIRP was filed prior to the public announcement of the Granite Bridge Pipeline.

1 **Q. Is the Company’s existing gas supply sufficient to meet the forecasted demand?**

2 A. No. Although the Company currently has sufficient supplies to use all the available
3 capacity on the Concord Lateral, the Company does not have the incremental supply to
4 meet the forecasted increase in demand. Specifically, the Company requires incremental
5 supply during the development of the Granite Bridge Pipeline, and to utilize the capacity
6 of the Granite Bridge Pipeline once it is placed into service.

7 **Q. What options did the Company identify to solve this resource deficiency?**

8 A. The Company identified three supply options: (1) ENGIE delivered supply to the
9 EnergyNorth city-gates and/or its existing on-system LNG facilities; (2) Repsol delivered
10 supply to Dracut (i.e., the receipt point on the Concord Lateral) and/or directly to Granite
11 Bridge Pipeline; and (3) pipeline transportation capacity as part of the PNGTS’s Portland
12 XPress (“PXP”) project, which is deliverable to Dracut and/or to the Granite Bridge
13 Pipeline . Bates 053–054, 056.

14 **Q. How does the Company interpret the requirement to assess the LCIRP’s**
15 **“integration and impact on state compliance with the Clean Air Act of 1990, as**
16 **amended, and other environmental laws that may impact a utility’s assets or**
17 **customers,” as required by RSA 378:38, V?**

18 A. The goal of the Clean Air Act of 1990, as amended (the “Act”), is primarily to “curb
19 three major threats to the nation's environment and to the health of millions of
20 Americans: acid rain, urban air pollution, and toxic air emissions.” *See* 1990 Clean Air

1 Act Overview, [https://www.epa.gov/clean-air-act-overview/1990-clean-air-act-
3 amendment-summary](https://www.epa.gov/clean-air-act-overview/1990-clean-air-act-
2 amendment-summary).

3 To achieve these goals, and relevant here, the Act “requires states to make constant
4 formidable progress in reducing emissions,” through programs and policies that
5 “promote[] the use of clean low sulfur coal and natural gas, as well as innovative
6 technologies to clean high sulfur coal through the acid rain program [and] and create[]
7 enough of a market for clean fuels derived from grain and natural gas to cut dependency
8 on oil imports by one million barrels/day.” *Id.*

9 Although the status of New Hampshire’s compliance with the Act is not within the scope
10 of the LCIRP, the increased use of natural gas will have a positive contribution toward
11 achieving New Hampshire’s required emissions levels under the Act. Since the LCIRP
12 describes how the Company can meet its growing customer demand over the planning
13 period, and increased natural gas usage is specifically and favorably referenced in the Act
14 (likely because natural gas most often displaces other more polluting fuels such as oil and
15 propane for heating, as will likely be the case with most of EnergyNorth’s new
16 customers), the LCIRP would likely have a positive impact on New Hampshire’s
17 compliance with the Act.

18 Stated differently, since the displacement of higher polluting fuels (e.g., oil) by a
19 customer choosing natural gas reduces emissions, delivery options that enable that
20 decision to use natural gas facilitate the State of New Hampshire’s achievement of the
21 objectives outlined in the Act. Both the Granite Bridge Pipeline and Concord Lateral

1 would enable customers to convert to natural gas; however, only the Granite Bridge
2 Pipeline provides currently unserved towns the ability to choose natural gas. As such, all
3 else being equal, the Granite Bridge Pipeline would provide more opportunity for the
4 State of New Hampshire to meet its objectives under the Act. To the extent the
5 Commission must consider how (i) the increased availability of natural gas and (ii) the
6 increased displacement of other higher polluting fuels are impacted by the Company's
7 choices from the options described above, it is the Company's position that any choices
8 that increase the likelihood of expanded natural gas usage would have a positive impact
9 on New Hampshire's achievement of its requirements under the Act.

10 **Q. How did the Company interpret the requirement to assess the LCIRP's "long- and**
11 **short-term environmental, economic, and energy price and supply impact[s] on the**
12 **state," as required by RSA 378:38, VI?**

13 A. The Company interpreted the "environmental ... impact" portion of this statute the same
14 as subsection V above. As for this subsection's reference to "economic and energy price
15 and supply impact[s]" on the state, the Company addressed these factors in the LCIRP
16 itself.

17 **Q. Please describe the Company's approach to assessing the "potential...health-related**
18 **impacts of each option proposed in the LCIRP."**

19 A. Since the potential health-related impacts are directly related to air emissions, which are
20 based upon the results of the assessment of environmental impacts, the Company's

1 assessment of the health-related impacts of each option is subsumed in the environmental
2 analysis discussed below.

3 **Q. Please assess the environmental impact of the two delivery options available to**
4 **EnergyNorth.**

5 A. As discussed above, the Granite Bridge Pipeline provides certain benefits to the
6 customers of EnergyNorth including a second feed for enhanced reliability and overall
7 pressure support for the Concord Lateral. The interconnection location between the
8 Granite Bridge Pipeline and the Concord Lateral coupled with the higher pressure from
9 the Joint Facilities results in the Granite Bridge Pipeline providing higher operating
10 pressure on the Concord Lateral. Specifically, construction of the Granite Bridge
11 Pipeline would allow additional natural gas supply to be delivered at 750 pounds per
12 square inch (“psi”) into the Concord Lateral in Manchester. During high demand winter
13 months, the Company has experienced reduced pressures along the Concord Lateral,
14 sometimes as low as 300 psi. The Granite Bridge Pipeline is uniquely situated to
15 provide additional pressure support without the need for additional, on-system
16 compression, because it is providing a direct connection from the existing Joint Facilities
17 to the Concord Lateral. The maximum allowable operating pressure (“MAOP”) of the
18 Joint Facilities pipeline in Exeter, New Hampshire, where the Granite Bridge Pipeline
19 connects, is 1,440 psi, while the MAOP of the Granite Bridge Pipeline is expected to be
20 950 psi. This pressure differential is sufficient to push natural gas the entire length of the
21 Granite Bridge Pipeline from Exeter to Manchester without the need for on-system
22 compression.

1 To achieve similar pressure support as the Granite Bridge Pipeline, the Concord Lateral
2 upgrade would require incremental compression or higher utilization of existing
3 compressor stations resulting in additional fuel combustion, which would have
4 incremental emissions as compared to the Granite Bridge Pipeline.

5 Therefore, the inclusion of environmental and health-related impacts with respect to the
6 Company's assessment of delivery options continues to support the decision to develop
7 the Granite Bridge Pipeline.

8 **Q. Please assess the environmental impact of the three supply options available to**
9 **EnergyNorth.**

10 A. As discussed above, the Company identified three supply options (i.e., ENGIE, Repsol,
11 and PXP) as potential resources to meet the increase in forecasted demand. The ENGIE
12 option utilizes its existing transportation capacity on Tennessee and, specifically, the
13 Concord Lateral to deliver gas supplies to the Company. As such, ENGIE is the only
14 option to provide incremental supply to the Company using existing pipeline facilities
15 resulting in no incremental emissions. The other two options (i.e., Repsol and PXP) are
16 accessible to the Company by either of the delivery options (i.e., Granite Bridge Pipeline
17 or a Concord Lateral expansion). As such, the choice of the supply option does not result
18 in any incremental emissions associated with the deliveries of those supplies to the
19 Company. Stated differently, since both supply options have access to both delivery
20 options (i.e., they are delivered in the same fashion using the Granite Bridge Pipeline or
21 Concord Lateral expansion), there are no unique differences that would result in one

1 supply option having more environmental and health-related impacts than the other as
2 result of the delivery of that supply option.

3 **Q. Has the Company provided sufficient information for the Commission to assess the**
4 **“potential environmental, economic, and health-related impacts of each option**
5 **proposed in the LCIRP”?**

6 A. Yes, the Company has provided sufficient information for the Commission to assess the
7 environmental and health-related impacts of each option in the testimony above, and the
8 Company provided substantial economic information to address the economic impacts of
9 the supply and delivery options in the LCIRP.

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

11 A. Yes.