



**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

**DEMAND FORECAST  
REBUTTAL TESTIMONY**

**OF**

**WILLIAM R. KILLEEN, WILLIAM J. CLARK, ERIC M. STANLEY,  
JAMES M. STEPHENS, AND ADAM J. PERRY**

October 25, 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  
5 owns Liberty Utilities (EnergyNorth Natural Gas) Corp. d/b/a Liberty Utilities (hereinafter  
6 referred to as “EnergyNorth” or the “Company”). My business address is 354 Davis Road,  
7 Oakville, Ontario, Canada.

8 My name is William J. Clark. I am the Senior Director of Business Development for  
9 Liberty Utilities. My business address is 15 Buttrick Road, Londonderry, New Hampshire.

10 My name is Eric M. Stanley. I am the Manager of Energy Efficiency and Customer  
11 Programs at Liberty Utilities for New Hampshire. My business address is 15 Buttrick  
12 Road, Londonderry, New Hampshire.

13 My name is James M. Stephens. I am a Partner at ScottMadden, Inc. (“ScottMadden”).  
14 My business address is 1900 West Park Drive, Suite 250, Westborough, Massachusetts.

15 My name is Adam J. Perry. I am a Director at ScottMadden. My business address is 1900  
16 West Park Drive, Suite 250, Westborough, Massachusetts.

17 **Q. On whose behalf are you submitting this Rebuttal Testimony?**

18 A. We are submitting this joint testimony before the New Hampshire Public Utilities  
19 Commission (the “Commission” or “NHPUC”) on behalf of EnergyNorth.

1 **Q. Mr. Killeen, are you the same William R. (Bill) Killeen who filed direct testimony in**  
2 **this proceeding?**

3 A. Yes. I submitted direct testimony on April 30, 2019.

4 **Q. Mr. Clark, please summarize your educational background and your professional**  
5 **experience in the energy and utility industries.**

6 A. I graduated from St. Anselm College in Goffstown, New Hampshire, with a Bachelor of  
7 Science degree in Financial Economics in 1991. I have twenty-five years of experience in  
8 the natural gas and electric utility industries with roles in Operations, Sales, Marketing,  
9 and Business Development. I joined Liberty Utilities in 2012 and progressed into my  
10 current position as Senior Director, Business Development for the East Region. In this  
11 role, I am responsible for strategic growth and expansion opportunities, new technologies  
12 and innovations, along with acquisitions for gas, electric and water utilities.

13 **Q. Mr. Clark, have you previously provided testimony before the Commission?**

14 A. Yes, I have submitted testimony before the Commission in eight proceedings on behalf of  
15 the Company. Most recently, I provided testimony in Docket No. DG 18-140 in support  
16 of EnergyNorth's renewable natural gas supply and transportation agreement with  
17 RUDARPA, Inc.

18 **Q. Mr. Stanley, are you the same Eric M. Stanley who filed direct testimony in this**  
19 **proceeding?**

20 A. Yes. I submitted direct testimony on June 28, 2019.

1 **Q. Mr. Stephens, please summarize your educational background and your professional**  
2 **experience in the energy and utility industries.**

3 A. I hold a Bachelor of Science degree in Management and a Master of Business  
4 Administration with a concentration in Operations Management from Bentley College. I  
5 have 30 years of experience in the energy industry and have held senior management  
6 positions at consulting firms, a retail energy marketing company, and natural gas local  
7 distribution companies (“LDCs”). In my role as a consultant, I have assisted numerous  
8 clients with various natural gas related engagements, including: the analysis of regional  
9 energy market dynamics and the associated drivers for new natural gas infrastructure; the  
10 evaluation of capacity opportunities associated with open seasons on various pipelines; the  
11 evaluation of new markets/opportunities; integrated resource plans; and natural gas supply  
12 portfolio evaluation and optimization. In addition, in my role as the President of a retail  
13 energy marketing firm, I was responsible for all aspects of business unit management  
14 including front, mid, and back-office functions. I was also responsible for gas supply  
15 procurement and portfolio optimization for Colonial Gas Company, which is now a  
16 subsidiary of National Grid. A summary of my professional and educational background  
17 is provided as Attachment DF-1.

18 **Q. Mr. Stephens, have you previously provided testimony before the Commission?**

19 A. Yes, I have submitted expert testimony to the Commission on behalf of Public Service  
20 Company of New Hampshire d/b/a Eversource Energy regarding its natural gas capacity  
21 contract filing in Docket No. DE 16-241, as well as expert testimony to the Commission

1 on behalf of EnergyNorth regarding its natural gas supply strategy in Docket No. DG 17-  
2 198.

3 **Q. Mr. Stephens, have you submitted expert testimony in other regulatory jurisdictions?**

4 A. Yes, I have submitted expert testimony in several other regulatory jurisdictions, including  
5 the Federal Energy Regulatory Commission (“FERC”), the states of Texas, Alaska,  
6 Massachusetts, and Maine, and the Canadian provinces of Ontario, Québec, New  
7 Brunswick, Nova Scotia, and Alberta. A list of my past expert witness appearances is  
8 provided in Attachment DF-1.

9 **Q. Mr. Perry, please summarize your educational background and your professional**  
10 **experience in the energy and utility industries.**

11 A. I hold a Bachelor of Science degree in Economics from Northeastern University. I have  
12 twelve years of experience in the energy industry as a consultant. I have assisted numerous  
13 utility clients on a wide range of issues, including: the development of integrated resource  
14 plans; developing and evaluating demand forecasts; benchmarking analyses related to  
15 planning standards and weather normalization methodologies; and the development of cost  
16 of capital testimony for electric and natural gas utilities and natural gas pipelines. A  
17 summary of my professional and educational background is provided as Attachment DF-  
18 2.

1 **Q. Mr. Perry, have you previously testified before any regulatory bodies?**

2 A. Yes, I have testified before the Massachusetts Department of Public Utilities in support of  
3 the demand forecast for Liberty Utilities (New England Natural Gas Company) d/b/a  
4 Liberty Utilities in its three most recent Forecast and Supply Plan proceedings.

5 **Q. Please state the purpose of your joint Rebuttal Testimony.**

6 A. The purpose of our joint Rebuttal Testimony is to respond to the direct testimonies of  
7 Messrs. John Antonuk and John Adger of The Liberty Consulting Group (“Liberty  
8 Consulting”) on behalf of Commission Staff (“Staff”) and Mr. Paul Chernick on behalf of  
9 the Conservation Law Foundation (“CLF”) as their testimonies relate to EnergyNorth’s  
10 demand forecast that is part of the Company’s 2017 Least Cost Integrated Resource Plan  
11 (“LCIRP”).

12 **II. SUMMARY OF REBUTTAL TESTIMONY**

13 **Q. Please provide a summary of your Rebuttal Testimony in response to the direct**  
14 **testimony of Liberty Consulting.**

15 A. As discussed herein, the Company’s demand forecasting methodology is reasonable; and  
16 the associated results compare well to the Company’s normalized actual demand in recent  
17 years and are consistent with the growth projections of other regional LDCs. The Liberty  
18 Consulting testimony, while supporting the Company’s overall approach to demand  
19 forecasting, including the use of out-of-model adjustments, expresses a concern with the  
20 level of the customer additions in the out-of-model adjustment used for the existing service  
21 territory. While the Company agrees that the range of customer additions proposed by

1 Liberty Consulting is in-line with the recent actual level of customer additions, the actual  
2 volumes of natural gas consumed are consistent with the Company's projections.

3 **Q. Please provide a summary of your joint Rebuttal Testimony in response to the direct**  
4 **testimony of Mr. Chernick on behalf of CLF.**

5 A. The direct testimony of Mr. Chernick identified three areas where he disagrees with the  
6 Company's demand forecasting methodology. First, as a matter of policy, Mr. Chernick  
7 proposes that the Company not engage in any promotional activity regarding customer  
8 additions as Mr. Chernick opines that providing customers with the option to choose  
9 natural gas is not in the public interest.<sup>1</sup> Second, Mr. Chernick states that the Company  
10 mis-applied the forecasted reductions associated with energy efficiency.<sup>2</sup> Lastly, Mr.  
11 Chernick argues that the Company failed to consider additional "cost-effective" demand-  
12 side programs.<sup>3</sup>

13 With respect to Mr. Chernick's first point (i.e., customers' option to choose natural gas),  
14 the Company vehemently opposes the draconian measures outlined by Mr. Chernick that  
15 would eliminate natural gas as a fuel choice for customers. The customer choice  
16 moratorium proposed by Mr. Chernick removes the customer from a uniquely individual  
17 decision (i.e., what fuel to heat their home, use in their restaurant, or install in their  
18 development/business). Mr. Chernick's proposal also would prevent the Company from  
19 expanding its sales base over which it can spread its fixed costs and thus lower rates to all

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<sup>1</sup> Direct Testimony of Paul Chernick on behalf of Conservation Law Foundation, at 9.

<sup>2</sup> *Ibid.*, at 24-26.

<sup>3</sup> *Ibid.*, at 27.

1 customers. The Company has proposed, and the Commission has approved, innovative  
2 programs to provide customers with choice and those programs have been found to be in  
3 the public interest. It is important to note that the Company's approved growth programs  
4 provide a choice for customers and do not force natural gas use on any customer. The  
5 Company recommends the Commission oppose any policy that allows an entity to control  
6 choices for individual customers by eliminating options and choices as a matter of "public  
7 policy."

8 With respect to the Company's level of energy efficiency assumed in this LCIRP, the  
9 Company used the level of energy efficiency outlined and approved by the Commission in  
10 Docket No. DE 17-136. This approach, which uses the energy efficiency associated with  
11 Commission-approved programs, is consistent with past Company practices and is  
12 reasonable. Lastly, the Company's application of energy efficiency volumes in the demand  
13 forecast is reasonable and consistent with the approach used in prior demand forecasts  
14 approved by the Commission.

15 **III. OVERVIEW OF DEMAND FORECAST APPROACH**

16 **Q. Please provide a brief summary of EnergyNorth's demand forecast.**

17 A. The Company's LCIRP, filed on October 2, 2017 ("Initial Filing"), discussed the demand  
18 forecast for planning years 2017/18 through 2021/22 ("Forecast Period") under Normal  
19 Year, Design Year, and Design Day weather conditions, and under Base, High, and Low

1 growth scenarios.<sup>4</sup> Econometric analysis was used to develop models to forecast the  
2 number of customers and the use per customer by customer segment.<sup>5</sup> The resulting  
3 demand based on the econometric models was adjusted to account for energy efficiency  
4 savings, unaccounted for gas, unbilled sales, and other out-of-model adjustments.<sup>6</sup> The  
5 forecast was then translated from monthly to daily data to arrive at the Company's forecast  
6 of daily sendout requirements.<sup>7</sup> The process for developing the demand forecast is  
7 summarized in Figure 2 on page 8 of the Initial Filing. The demand forecast in the Initial  
8 Filing was subsequently updated in Attachment Staff Tech 1-7.1 (filed in response to Staff  
9 Tech 1-7 on June 27, 2018)<sup>8</sup> to reflect certain modifications, and was further updated to  
10 incorporate more recent information with minor additional changes in the Supplemental  
11 Direct Testimony of Francisco C. DaFonte and William R. Killeen in Docket No. DG 17-  
12 198, filed March 15, 2019 (the "Updated Demand Forecast").<sup>9</sup>

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4 2017 LCIRP, Bates 032-036.

5 *Ibid.*, Bates 012.

6 *Ibid.*, Bates 025-030.

7 *Ibid.*, Bates 030.

8 All responses to discovery referenced throughout our Rebuttal Testimony (excluding spreadsheets and voluminous attachments, such as detailed SENDOUT® reports) are provided collectively as Attachment DF-3, unless otherwise noted. For ease of reference, the discovery responses included in that attachment are provided in numerical sequence by requesting party.

9 *See*, Supplemental Direct Testimony of Francisco C. DaFonte and William R. Killeen, Docket No. DG 17-198, Bates 051-053. The changes to the demand forecast presented in the Supplemental Direct Testimony of Francisco C. DaFonte and William R. Killeen resulted in a 0.1% decrease in Normal Year and Design Year demand in the last year of the Forecast Period (i.e., 2021/22). There were no changes to the Design Day results.

1 **IV. RESPONSE TO DIRECT TESTIMONY OF THE LIBERTY CONSULTING**  
2 **GROUP**

3 **Q. Does Liberty Consulting's testimony support aspects of the Company's Updated**  
4 **Demand Forecast?**

5 A. Yes, it does. Liberty Consulting generally concluded that the approach and methods used  
6 to forecast demand were reasonable and appropriate. Specific findings were:

- 7 1. The econometric models and results are reasonable;<sup>10</sup>
- 8 2. An out-of-model adjustment in the existing service territory is reasonable and  
9 appropriate (while noting concerns regarding the magnitude of the adjustment);<sup>11</sup>
- 10 3. The energy efficiency savings are reasonable;<sup>12</sup>
- 11 4. The adjustments for unaccounted-for gas and unbilled sales are reasonable;<sup>13</sup>
- 12 5. The approach to translating the monthly requirements to forecasts of daily  
13 requirements is reasonable;<sup>14</sup> and
- 14 6. Both the method for developing the Planning Standards and the resulting Planning  
15 Standards are reasonable.<sup>15</sup>

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<sup>10</sup> Direct Testimony of The Liberty Consulting Group, Bates 008.

<sup>11</sup> *Ibid.*, Bates 009-012.

<sup>12</sup> *Ibid.*, Bates 008.

<sup>13</sup> *Ibid.*, Bates 012.

<sup>14</sup> *Ibid.*

<sup>15</sup> *Ibid.*, Bates 015.

1 **Q. Does Liberty Consulting express any concerns with the Updated Demand Forecast?**

2 A. Yes, it does. Liberty Consulting expresses a concern related to the out-of-model  
3 adjustment associated with the level of customer additions for the existing service territory;  
4 specifically, with the magnitude of that adjustment. Liberty Consulting also concludes that  
5 the compound annual growth rate (“CAGR”) for the Company’s forecasted volumes over  
6 the Forecast Period is too high.<sup>16</sup> Liberty Consulting’s conclusion regarding the  
7 Company’s CAGR is based on a lower out-of-model adjustment for the number of  
8 customer additions in the existing service territory and on a comparison of the Company’s  
9 CAGR to that of Northern Utilities, Inc. (“Northern”).<sup>17</sup>

10 **A. Overview of the Application of Out-Of-Model Adjustments**

11 **Q. Please describe the role of the econometric models in developing the demand forecast.**

12 A. As noted in the Initial Filing, econometric models for the number of customers and use per  
13 customer were developed for four customer segments: residential heating, residential non-  
14 heating, commercial and industrial (“C&I”) heating, and C&I non-heating.<sup>18</sup> The number  
15 of customers and use per customer forecasts were multiplied together to estimate demand  
16 for each segment, and summed across the segments to derive total firm demand.<sup>19</sup>

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<sup>16</sup> *Ibid.*, Bates 012 and 016.

<sup>17</sup> *Ibid.*, Bates 012-013.

<sup>18</sup> 2017 LCIRP, Bates 013.

<sup>19</sup> *Ibid.*, Bates 012.

1 **Q. Please provide a summary of the out-of-model adjustments to the Company's**  
2 **Updated Demand Forecast.**

3 A. The out-of-model adjustments applied to the Updated Demand Forecast, which reflect  
4 certain growth trends or events, are: (1) estimates of customer additions in the Company's  
5 existing service territory greater than those forecast by the econometric models; (2)  
6 estimates of the number of customers in new service territories in which the Company is  
7 expanding; and (3) demand associated with iNATGAS.<sup>20</sup>

8 **Q. Is there academic support for including out-of-model adjustments in forecasts?**

9 A. Yes, there is. For example, Michael Intriligator discusses the use of "add factors" (out-of-  
10 model adjustments) in *Econometric Models, Techniques, & Applications*:

11 The add factors are based on judgments of factors not explicitly included  
12 in the model. For example, in a macroeconomic model there may be  
13 no explicit account taken of strike activity, but if major union contracts  
14 are expiring and a strike appears likely in the forecast period, the  
15 forecasts of production should be appropriately revised downward.  
16 Many other factors may not have been included in the model because  
17 their occurrence is rare or because data are difficult to obtain, but this  
18 does not mean that they must be overlooked in formulating a forecast.  
19 Indeed, it would be inappropriate to ignore relevant considerations  
20 simply because they were omitted from the model. In this sense  
21 forecasting with an econometric model is not simply a mechanical  
22 exercise but rather a blending of objective and subjective  
23 considerations. The subjective considerations embodied in the add  
24 factors, general improve significantly on the accuracy of the forecasts  
25 made with an econometric model.<sup>21</sup>

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<sup>20</sup> 2017 LCIRP, Bates 025-027.

<sup>21</sup> Michael D. Intriligator, *Econometric Models, Techniques, & Applications*, at 516-517.

1 As such, including out-of-model adjustments for factors that are not explicitly included or  
2 reflected in the historical data used to develop the econometric models are reasonable and  
3 necessary.

4 **Q. Why is an out-of-model adjustment necessary for the customer additions in the**  
5 **existing service territory?**

6 A. The out-of-model adjustment for the number of customer additions in the Company's  
7 existing service territory was required because the customer additions resulting from the  
8 econometric models were below the Company's recent experience. Stated differently,  
9 relying solely on the customer addition results from the econometric models would  
10 understate the forecast of customer additions based on recent actual Company  
11 performance. Specifically, as noted in Attachment Staff Tech 1-7.1, the econometric  
12 models resulted in customer additions of approximately 1,180 per year over the Forecast  
13 Period. As shown on page 10 of Liberty Consulting's testimony and in Table 4 of  
14 Attachment Staff Tech 1-7.1, the Company's actual customer additions have outpaced the  
15 results forecasted by the econometric models. By way of example, in 2017 the Company  
16 added over 1,700 customers, which is approximately 500 customers, or more than 40%,  
17 greater than the econometric model results noted above.<sup>22</sup>

18 In addition, the Company has received approval for innovative customer growth programs  
19 such as the managed expansion program ("MEP") from the Commission, and has invested

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<sup>22</sup> See, Attachment Staff Tech 1-7.1 in the response to Staff Tech 1-7, at 5-6 (provided as Attachment DF-3).

1 in internal resources including additional Sales and Marketing staff.<sup>23</sup> As such, the actual  
2 customer additions experienced (e.g., 1,700 in 2017), coupled with the Company's  
3 innovative customer growth programs and investments in New Hampshire Sales and  
4 Marketing employees, supports the use of an out-of-model adjustment and the expectation  
5 that the recent level of customer additions is sustainable and should be planned for.

6 **Q. Please explain the out-of-model adjustments for new service territories.**

7 A. The out-of-model adjustment for customer additions in the Company's new service  
8 territories was necessary because these towns and associated potential customers are not  
9 reflected in the historical dataset used to develop the econometric models. Specifically,  
10 the Company has adjusted the results of the econometric models to reflect customer  
11 additions from the new franchise areas (i.e., Windham and Pelham) because natural gas  
12 demand in these towns is exogenous to the econometric model results.

13 **Q. Why is an out-of-model adjustment necessary for demand associated with iNATGAS?**

14 A. An out-of-model adjustment for the volumes associated with iNATGAS was required  
15 because iNATGAS represents a single large customer that the Company has a contractual  
16 obligation to provide certain levels of service as outlined in the special contract approved  
17 by the Commission, and its usage was not reflected in the historical data.

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<sup>23</sup> As discussed in the responses to Staff 2-4 and CLF 1-9 (see, Attachment DF-3), the Company has expanded its Sales and Marketing team by six full time equivalents ("FTEs"). These employees reside and are active in their local communities and provide "feet on the ground" with respect to participating in business organizations and town activities.

1 **Q. Regarding the out-of-model adjustment for iNATGAS, has the Commission**  
2 **previously approved such an approach for iNATGAS?**

3 A. Yes, the Commission has. As discussed in Attachment Staff Tech 1-7.1 in the response to  
4 Staff Tech 1-7:

5 The use of adjustments to improve the results of an econometric model  
6 have been presented to, and approved by, the Commission. By way of  
7 example, in the NED proceeding (i.e., Docket No. DG 14-380), the  
8 Company adjusted the results of the econometric model to reflect three  
9 markets that were exogenous to the results of the econometric model;  
10 specifically, the Company included adjustments for: (i) potential  
11 volumes to Keene, NH, as an incremental market; (ii) reverse migration  
12 of capacity exempt customers, reflecting recent market trends; and (iii)  
13 incremental volumes for iNATGAS, a new, large customer in the  
14 existing service territory.

15 As it did in the Northeast Energy Direct (“NED”) Project proceeding (Docket No. DG 14-  
16 380), the Company adjusted the results of the demand forecast based on the econometric  
17 models to reflect the incremental volume associated with iNATGAS in the Updated  
18 Demand Forecast.

19 **Q. Why was the out-of-model adjustment for the existing service territory performed on**  
20 **a customer, and not a volume, basis?**

21 A. As noted in the Initial Filing, it was assumed that the new customers added in the existing  
22 service territory would have usage similar to existing EnergyNorth customers.<sup>24</sup> This  
23 approach allowed the Company to incorporate additional customer growth in the service  
24 territory that was not reflected in the historical data, while also relying on the econometric

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<sup>24</sup> 2017 LCIRP, Bates 026.

1 forecast of use per customer. Doing so ensured that the resulting volumes were not only  
2 based on both exogenous customer growth expectations, but also the statistical analysis of  
3 use per customer.

4 **Q. Does the Company make supply decisions based on its forecast of number of**  
5 **customers?**

6 A. No, it does not. The number of customers forecast is used in conjunction with the use per  
7 customer forecast to estimate demand; and it is the demand forecast that is used in the  
8 SENDOUT® portfolio optimization model to review and evaluate the Company's supply  
9 resource portfolio and inform gas supply portfolio strategy.

10 **B. Comparison of Forecast to Actual Experience**

11 **Q. How does the Updated Demand Forecast compare to normalized actual demand?**

12 A. As shown in Table 1, the normalized actual demand in 2017/18 was 129,046 Dth higher  
13 than the Company's forecast (a 0.9% difference). Focusing on the most recent data (i.e.,  
14 2018/19 year-to-date),<sup>25</sup> normalized actual demand exceeded the Company's forecast by  
15 415,435 Dth (a 3.0% difference). Although the total number of customers added was  
16 somewhat below the forecast of customer additions, normalized actual demand is  
17 consistent with the Company's Updated Demand Forecast.

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<sup>25</sup> 2018/19 year-to-date ("YTD") represents the period November 2018 through August 2019.

**Table 1: Forecast Versus Actual Demand (Dth)<sup>26</sup>**

<b>Year</b>	<b>Updated Demand Forecast – Normal Year</b>	<b>Normalized Actual Demand</b>	<b>Difference</b>	<b>% Difference</b>
2017/18	14,475,900	14,604,947	129,046	0.9%
2018/19 YTD	14,025,783	14,441,219	415,435	3.0%

**Q. How does the Updated Demand Forecast compare to normalized actual demand by customer segment?**

**A.** As shown in Tables 2 and 3 below, the normalized actual demand was higher in each customer segment in 2017/18 and 2018/19 YTD, with the lone exception being the C&I heating segment in 2017/18.

**Table 2: 2017/18 Forecast vs. Normalized Actual Demand (Dth)<sup>27</sup>**

	<b>Residential Non-Heating</b>	<b>Residential Heating</b>	<b>C&amp;I Heating</b>	<b>C&amp;I Non-Heating</b>	<b>Total</b>
Forecast	67,147	6,071,864	6,367,971	1,968,918	14,475,900
Normalized Actual	73,221	6,188,550	6,275,233	2,067,942	14,604,947
Difference	6,074	116,686	-92,738	99,024	129,046
Difference (%)	9.0%	1.9%	-1.5%	5.0%	0.9%

<sup>26</sup> The normalized actual data is based on billing data on a customer segment basis. To provide an appropriate comparison, the Updated Demand Forecast includes energy efficiency, but is presented prior to adjustments for unbilled sales and lost and unaccounted for. Values have been rounded to nearest Dth. Please note that volumes for iNATGAS are excluded.

<sup>27</sup> The normalized actual data is based on billing data on a customer segment basis. To provide an appropriate comparison, the forecast demand includes energy efficiency, but is presented prior to adjustments for unbilled sales and lost and unaccounted for. Values have been rounded to nearest Dth. Please note that volumes for iNATGAS are excluded.

**Table 3: 2018/19 YTD Forecast vs. Normalized Actual Demand (Dth)<sup>28</sup>**

	<b>Residential Non-Heating</b>	<b>Residential Heating</b>	<b>C&amp;I Heating</b>	<b>C&amp;I Non- Heating</b>	<b>Total</b>
Forecast	60,430	5,923,772	6,272,358	1,769,224	14,025,783
Normalized Actual	63,372	6,054,235	6,386,978	1,936,634	14,451,100
Difference	2,942	130,463	114,620	167,410	415,435
Difference (%)	4.9%	2.2%	1.8%	9.5%	3.0%

**Q. Which customer segments contribute to the difference between the Updated Demand Forecast and normalized actual demand?**

A. The residential heating and C&I heating volumes are within approximately 2.0% of the forecast for those segments in both 2017/18 and 2018/19 YTD. Although the percentage variance between normalized actual demand and the forecast for the residential non-heating customer segment is larger, residential non-heating demand represents less than 0.5% of the total demand. That is, the volumes associated with the residential non-heating customer segment are not a significant driver of the variance between the normalized actual demand and the forecast. However, the percentage variance in demand for the C&I non-heating customer segment was relatively higher at 5.0% and 9.5% for 2017/18 and 2018/19 YTD, respectively.

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<sup>28</sup> 2018/19 YTD represents the period November 2018 through August 2019 (i.e., 10 months). The volumes in 2018/19 YTD are generally lower than 2017/18 because they do not represent a full year (i.e., 12 months).

1 **Q. Has the Company determined what factors may contribute to the higher normalized**  
2 **actual demand in the C&I non-heating customer segment?**

3 A. Yes, it has. While there are likely several factors that contribute to the variance in  
4 normalized actual demand for the C&I non-heating customer segment, the Company has  
5 identified and reviewed two drivers, which are the volume associated with C&I non-  
6 heating customers added in 2016/17 and the recent reverse migration of capacity-exempt  
7 customer to firm sales or capacity-assigned transportation service.

8 **Q. Please discuss the first factor, the C&I non-heating customer volume added in**  
9 **2016/17.**

10 A. As a preliminary matter, customers added in any split-year (i.e., November to October) are  
11 added throughout the year and, as such, the volumes associated with additions in any one  
12 year are not fully reflected in that year, but rather in subsequent years.

13 As shown in Attachment Staff (Revised) 8-2.xlsx in the response to Staff 8-2 (Docket No.  
14 DG17-198),<sup>29</sup> the 2016/17 estimated volumes were significantly higher than the prior two  
15 split-years. As such, these higher estimated volumes are likely contributing to the variance  
16 in volumes in 2017/18 and 2018/19 YTD.

17 **Q. Please discuss the second factor, reverse migration.**

18 A. Since 2015, nine customers have switched from capacity-exempt to firm sales or capacity-  
19 assigned transportation service.<sup>30</sup> Those customers are now included in the C&I heating

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<sup>29</sup> See, Attachment DF-3.

<sup>30</sup> See, the supplemental response to Staff 4-8, provided in Attachment DF-3.

1 and non-heating customer segments. The Updated Demand Forecast did not explicitly  
2 assume reverse migration because the impact of reverse migration is not embedded in the  
3 full range of historical data used to generate the forecast. As such, the additional C&I  
4 customers, which are now included in the normalized actual data, serve to increase demand  
5 above the forecast.

6 **Q. Has the Company assessed whether the variance in volumes will persist over the**  
7 **Forecast Period?**

8 A. Although the Company has not conducted a review of all the factors that may contribute to  
9 the continuation of the variance in volume, the following additional factors were reviewed.

10 First, the historical dataset includes a certain volume addition from existing customers.  
11 However, the volume added by existing customers is significantly higher in 2018/19 YTD  
12 than the prior periods.

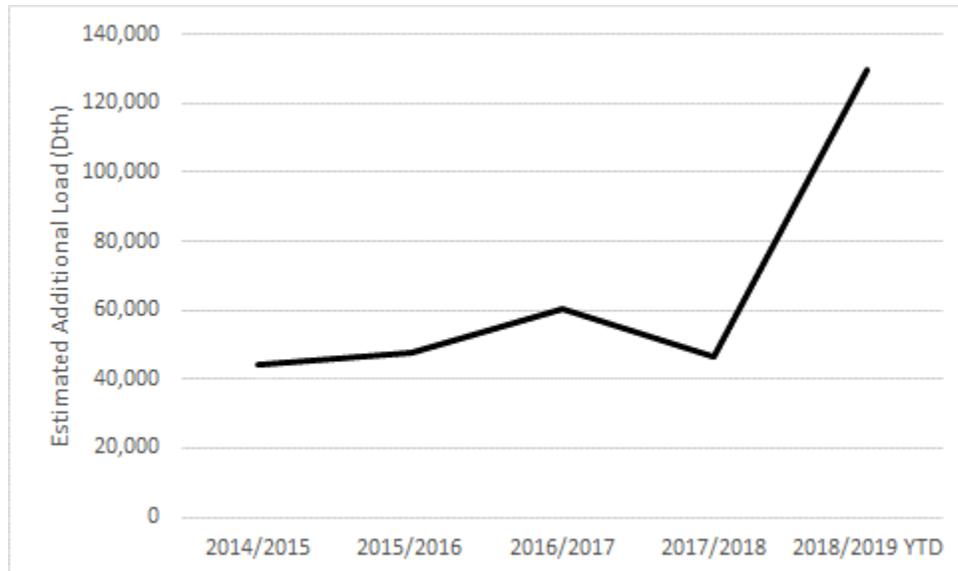
13 The volumes presented in Chart 1, below, represent estimated additional annual load  
14 reported, not actual volumes delivered and billed in that year.<sup>31</sup> Those additional annual  
15 loads are reported when the customers' equipment is installed, a higher capacity meter is  
16 set, or the Company identifies a significant change in load. The load is then billed  
17 throughout the subsequent year, so that any annual increase in demand from an existing  
18 customer may not be fully reflected in load on the system until subsequent years.

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<sup>31</sup> Additional annual load is the incremental annual load above a customer's existing annual load.

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**Chart 1: Additional Load for Existing C&I Customers<sup>32</sup>**



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3 As shown in Chart 1, existing C&I customers added a relatively high level of load in  
4 2018/19 YTD.<sup>33</sup> As such, the higher added load at existing customer locations in 2018/19  
5 YTD would contribute to higher demand over the Forecast Period.

6 Second, the Company currently has approximately 60 capacity-exempt customers. As  
7 noted above, since 2015 nine customers have switched from capacity-exempt to firm sales  
8 or capacity-assigned transportation service. It is possible that additional capacity-exempt  
9 customers could migrate to firm sales or capacity-assigned transportation service.  
10 Additional customers returning to firm sales or capacity-assigned transportation service

<sup>32</sup> The Company implemented its new customer relationship management system (i.e., the ZOHO system) on May 30, 2014. As such, 2014/15 is the first full split-year the data are available. 2018/19 YTD data are through September 2019.

<sup>33</sup> Almost two-thirds of the additional load from existing customers in 2018/19 YTD was associated with two C&I non-heating customers: [REDACTED]

1 during the Forecast Period could contribute to higher demand than projected in the Updated  
2 Demand Forecast.

3 **Q. What are your conclusions as they relate to the reasonableness of the Updated**  
4 **Demand Forecast relative to normalized actual demand?**

5 A. Although the Company agrees that the number of customer additions have been somewhat  
6 below the Company's projections, additional volumes added in 2016/17 were higher than  
7 prior years, and capacity-exempt customers returning to firm sales or capacity-assigned  
8 transportation service have increased demand for the C&I customer segments. In addition,  
9 recent experience showing higher than expected increasing loads for existing customers  
10 points to continued increases in demand over the Forecast Period. As such, the Updated  
11 Demand Forecast continues to be reasonable and is supported by actual experience over  
12 the most recent two years of the five-year Forecast Period.

13 **C. Comparison of Growth Rates in New England**

14 **Q. Do you have any observations related to Liberty Consulting's concern that the**  
15 **CAGRs for demand are too high in the Updated Demand Forecast relative to**  
16 **Northern's demand forecast?**

17 A. Yes, we do. The CAGRs in the Company's and Northern's demand forecasts should be  
18 reviewed in proper context. As discussed in Attachment Staff Tech 1-7.1, in the Updated  
19 Demand Forecast, the annual and Design Day demand for iNATGAS increases from a  
20 minimal amount in 2017/18 to higher volumes in 2021/22 (see, Table 4, below).

1

**Table 4: iNATGAS Volumes (Dth)<sup>34</sup>**

Split-Year	Annual Volume	Design Day
2017/18	266	20
2018/19	300,000	4,251
2019/20	300,000	4,251
2020/21	500,000	4,251
2021/22	500,000	4,251

2

3

Because the CAGR is calculated relative to a starting year of 2017/18, the updated assumptions related to iNATGAS result in a relatively higher CAGR over the Forecast Period. Removing the effect of iNATGAS would result in overall CAGRs of 2.3% for the Normal Year and the Design Year, and 1.9% for the Design Day.

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These CAGRs that result from EnergyNorth’s Updated Demand Forecast are greater than those for Northern (which are 1.4% for the Normal Year, Design Year, and Design Day), but the Company’s CAGRs are less than the forecasted CAGRs in the Company’s 2013 LCIRP (Docket No. DG 13-313), which were between 2.4% and 2.5% for the Normal Year,<sup>35</sup> Design Year, and Design Day.<sup>36</sup> It is also important to recognize that the CAGR for normalized *actual* demand for EnergyNorth during the period 2010/11 through 2016/17 was 2.2%, and if calculated through 2017/18 the CAGR increased to 2.5%.<sup>37</sup> These observations are consistent with the growth rates in the Updated Demand Forecast.

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<sup>34</sup> As described in Attachment Staff 1-7.1 in the response to Staff 1-7, the forecast design day volume for iNATGAS of 4,251 Dth is consistent with its highest daily usage in the 2017/18 winter.

<sup>35</sup> 2017 LCIRP, Bates 031.

<sup>36</sup> 2013 LCIRP, Docket No. DG 13-313, Bates 045.

<sup>37</sup> The normalized actual data is based on billing data on a customer segment basis. Please note that volumes for iNATGAS are excluded.

1 **Q. How do the Updated Demand Forecast CAGRs excluding iNATGAS compare to**  
2 **other LDCs in New England?**

3 A. The Company reviewed recent demand forecasts for LDCs in New England to determine  
4 if the Company's CAGRs for the Normal Year, Design Year, and Design Day are  
5 consistent with other LDCs.<sup>38</sup> Based on the Company's review, the CAGRs for the other  
6 New England LDCs generally fall in the range of 0% to 2%, which reflect the unique  
7 circumstances of each LDC. The Company's CAGRs are generally consistent with that  
8 range.

9 **Q. What are your conclusions related to Liberty Consulting's comparison of the growth**  
10 **rates in the Updated Demand Forecast to those in Northern's demand forecast?**

11 A. Liberty Consulting's comparison of the growth in the Updated Demand Forecast to a single  
12 LDC (Northern) provides little insight into the unique factors in the Company's service  
13 territory that affect its growth. When accounting for the effect of iNATGAS on the growth  
14 rate, the CAGRs are consistent with both the Company's historical growth and forecast  
15 growth in the Company's previous LCIRP, and those of other LDCs in New England.

16 **V. RESPONSE TO THE DIRECT TESTIMONY OF MR. CHERNICK**

17 **Q. Please summarize Mr. Chernick's direct testimony as it relates to the Company's**  
18 **demand forecast.**

19 A. Mr. Chernick does not raise any concerns with the Company's econometric models, the  
20 general forecasting approach, or the Planning Standards. However, there are three areas in

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<sup>38</sup> See, Attachment DF-4.

1 which Mr. Chernick raises concerns with the demand forecast methodology. Specifically,  
2 Mr. Chernick (1) states the Company is “promoting the shifting of customer loads from  
3 other fuels to natural gas,”<sup>39</sup> (2) opines that the application of energy efficiency in the  
4 demand forecast is incorrect and should reflect a cumulative trend,<sup>40</sup> and (3) argues that the  
5 Company failed to consider additional “cost-effective” energy efficiency and demand-side  
6 programs.<sup>41</sup>

7 **Q. Do you have any concerns with the demand forecast data presented in Mr. Chernick’s**  
8 **direct testimony?**

9 A. Yes, we do. As noted in Section III above, the Company made certain revisions and  
10 updates to the demand forecast, which resulted in the Updated Demand Forecast. The data  
11 presented in Tables 1, 3, 5, and 6 of Mr. Chernick’s direct testimony do not reflect the  
12 Updated Demand Forecast.<sup>42</sup> Rather, Mr. Chernick’s testimony is based on the forecast  
13 presented in the Initial Filing and does not reflect the Company’s current Updated Demand  
14 Forecast.<sup>43</sup> Please note, we have provided updated versions of Tables 22 and 24 from the  
15 Initial Filing in Appendix A of our Rebuttal Testimony.

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<sup>39</sup> Direct Testimony of Paul Chernick on behalf of the Conservation Law Foundation, at 9.

<sup>40</sup> *Ibid.*, at 25-26.

<sup>41</sup> *Ibid.*, at 27.

<sup>42</sup> Mr. Chernick also references calculations based on those results in his direct testimony.

<sup>43</sup> Although in response to discovery, Mr. Chernick acknowledged that he was aware the Company had updated its demand forecast. *See*, Mr. Chernick’s response to Liberty Utilities data request 1-9.

1 **Q. Do you have any additional observations related to the energy efficiency savings**  
2 **presented by Mr. Chernick?**

3 A. Yes, we do. The historical energy efficiency savings presented in Mr. Chernick's Table 4  
4 represent the savings for all EnergyNorth customers. The same is true for the estimated  
5 savings in 2018 as referenced on page 25 of Mr. Chernick's direct testimony. The energy  
6 efficiency savings applied to the Company's Updated Demand Forecast (and those  
7 referenced in Mr. Chernick's Tables 3, 5, and 6) reflect only the portion of the total savings  
8 attributable to sales and capacity-assigned transportation customers. That is, it is not  
9 possible to do a direct comparison between the historical energy efficiency savings and the  
10 forecast savings Mr. Chernick presents, because the historical energy efficiency savings  
11 likely include some level of energy efficiency from capacity-exempt customers, for which  
12 the Company does not need to plan.

13 **A. Sales and Marketing Program**

14 **Q. Please describe Mr. Chernick's concern with the Company's "promotional efforts."**

15 A. Mr. Chernick reviews the out-of-model adjustments described on pages 21-23 of the Initial  
16 Filing and calculates the difference by customer segment between the demand forecast  
17 before and after those out-of-model adjustments.<sup>44</sup> Mr. Chernick states that if those out-  
18 of-model adjustments were excluded, the CAGR of the demand forecast would fall from  
19 2.7% to 0.9%.<sup>45</sup> As a result, Mr. Chernick concludes that if the Company did not have a

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<sup>44</sup> Direct Testimony of Paul Chernick on behalf of Conservation Law Foundation, at 8.

<sup>45</sup> *Ibid.*, at 9. Mr. Chernick notes, "Without these new heating customers, Liberty's forecast would fall from 2.7% annually to 0.9%." Please note Mr. Chernick's calculation assumes a decrease in customer growth in all customer segments, not just the residential heating and C&I heating segments.

1 Sales and Marketing program promoting customers to switch to natural gas, the “need for  
2 additional resources would be dramatically reduced.”<sup>46</sup> Further, Mr. Chernick believes  
3 EnergyNorth has not shown that adding customers is in the public interest.<sup>47</sup>

4 **Q. Does the Company agree with Mr. Chernick’s conclusions?**

5 A. No, the Company wholeheartedly disagrees with Mr. Chernick’s conclusion. As discussed  
6 in detail below, the Commission has supported the Company’s various growth initiatives  
7 as plainly serving the public interest.

8 **Q. Has the Company received approval from the Commission for its growth initiatives?**

9 A. Yes, it has. As discussed in Attachment Staff 1-7.1 in the response to Staff Tech 1-7  
10 (provided as Attachment DF-3):

11 [T]he Company has proposed and received approval from the  
12 Commission for innovative expansion plans, such as revisions to the  
13 contribution-in-aid-of-construction policy (e.g., including the  
14 assumption that 60% of customers located along a main extension will  
15 take service) and the Managed Expansion Program (“MEP”) approved  
16 by the Commission in August 2016. The MEP not only provides a  
17 mechanism to unitize expansion costs and collect those expenses over  
18 time, but also provides the Company an opportunity to install service  
19 lines for any end use application during the construction of a main, thus  
20 positioning the Company to add load from an existing customer. Stated  
21 differently, the Company, under MEP, can provide a service line to a  
22 customer for an end use application, such as water heating, and thus  
23 natural gas is a fuel choice for that customer when their existing heating  
24 equipment fails or needs to be replaced. In addition, the Company (1)  
25 eliminated the \$900 flat fee for a new residential customer, (2) allowed  
26 for no-cost service connections of heating customers within 100 feet of  
27 an existing natural gas main, (3) allowed for no-cost service connections  
28 of non-heating customers within 100 feet if they commit to taking

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<sup>46</sup> *Ibid.*

<sup>47</sup> *Ibid.*

1 service prior to a main extension or replacement, and (4) lowered the  
2 level of revenue justification required for main and service extensions.

3 In granting approval for these growth initiatives, the Commission noted, “Liberty proposes  
4 a program, rates and tariffs that are designed to promote economic expansion of gas service  
5 in Liberty’s service territory.”<sup>48</sup> The Commission supported the expansion of natural gas  
6 service: “We support Liberty’s efforts to economically expand natural gas service to more  
7 customers.”<sup>49</sup>

8 Further, in the Commission’s order in Docket No. DG 15-362, approving a settlement  
9 agreement granting EnergyNorth the franchise rights to Windham and Pelham, the  
10 Commission noted that, “Exercise of franchise rights by Liberty in Pelham and Windham  
11 must be for the public good, and the conditions pertaining thereto must be considered to be  
12 in the public interest.”<sup>50</sup> The Commission concluded: “[W]e find the Settlement  
13 Agreement in the public interest, and the expansion of Liberty’s franchise into Pelham and  
14 Windham as for the public good.”<sup>51</sup>

15 **Q. Do customers benefit from the Company’s ability to expand its offering of natural gas**  
16 **service?**

17 **A.** Yes, they do. EnergyNorth continues to focus on providing energy choice to businesses  
18 and residents of New Hampshire. As noted above, the Company has invested in increasing

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<sup>48</sup> State of New Hampshire Public Utilities Commission, Managed Expansion Program Rules, Order Approving Rates and Tariffs, Docket No. DG 16-447, Order No. 25,933, August 4, 2016, at 6.

<sup>49</sup> *Ibid.*, at 7.

<sup>50</sup> State of New Hampshire Public Utilities Commission, Petition for Franchise Approval in Pelham and Windham, Order Settlement Agreement and Franchise Petition, Docket No. DG 15-362, Order No. 25,987, February 8, 2017, at 11.

<sup>51</sup> *Ibid.*, at 12.

1 its local Sales and Marketing efforts, as well as expanding its service territory, to provide  
2 natural gas as an energy choice to the business community and homeowners. The  
3 Company provides customers with the opportunity to choose natural gas service, but  
4 potential customers are not required to take service from the Company. Customers  
5 consider their unique circumstances and requirements and make decisions based on their  
6 individual needs and associated budgets.

7 Furthermore, existing customers benefit from the expansion of gas service. Increasing gas  
8 sales, and consequently gas revenue, lowers rates for all customers by spreading the  
9 embedded fixed costs of providing service over more customers and more volumes.

10 **Q. Have any potential customers in unserved areas expressed interest in natural gas**  
11 **service?**

12 A. Yes, they have. Energy choice was raised as an important factor in the Company seeking  
13 to serve the Town of Pelham:

14 The Town's Planning Director, Mr. Jeff Gowan, testified that Pelham is  
15 a growing community with approximately 13,000 residents, with around  
16 100 homes being built per year. Tr. at 58. Mr. Gowan noted frustration  
17 among Pelham's residents and municipal leadership that there is no  
18 natural gas service available even though the TGP Concord Lateral  
19 passes through Pelham. Tr. at 58-59. Mr. Gowan also expressed the  
20 importance of broader energy availability to Pelham's economic  
21 development plans. He testified that the Pelham Board of Selectmen  
22 voted unanimously to support the Settlement Agreement. Tr. at 59.<sup>52</sup>

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<sup>52</sup> *Ibid.*, at 8.

1 Representatives from the Town of Windham made similar statements in a letter to the  
2 Commission regarding the importance of energy choice:

3 On behalf of the Windham Board of Selectmen, I send this letter to  
4 express to you the Board's support of Liberty Utilities' petition to the  
5 Commission for expansion of their current franchise to include the  
6 Town of Windham. The Board, as part of their regular meeting on  
7 October 5, voted unanimously to endorse Liberty's request after hearing  
8 at length from their representatives, as well as residents who were in  
9 attendance. As you may know, the towns of Windham and Pelham are  
10 the only two (2) communities in this portion of the State whose residents  
11 and businesses cannot avail themselves of the option to utilize natural  
12 gas; an overall less costly and cleaner energy solution.<sup>53</sup>

13 The Greater Derry Londonderry Chamber of Commerce also supported EnergyNorth's  
14 petition for franchise rights in Windham and Pelham, noting that the lack of access to  
15 natural gas "has proved a detriment to economic development" and providing natural gas  
16 service would "help to lower residential heating bills."<sup>54</sup> The Greater Derry Londonderry  
17 Chamber of Commerce also stated that large employers have located their businesses  
18 outside of Windham and Pelham "in part because of the lack of natural gas infrastructure,"  
19 and ultimately concluded that, "In short, approving Liberty Utilities' petition to expand  
20 natural gas infrastructure to Windham, Pelham, and parts of Londonderry will be a win for  
21 business and residential consumers alike."<sup>55</sup>

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<sup>53</sup> Letter from Town of Windham Board of Selectmen to the State of New Hampshire Public Utilities Commission, Docket No. DG 15-362, October 9, 2015.

<sup>54</sup> Letter from the Greater Derry Londonderry Chamber of Commerce to the State of New Hampshire Public Utilities Commission, Docket No. DG 15-362, December 10, 2015.

<sup>55</sup> *Ibid.*

1 Further, although the Commission did not grant the Company franchise rights to the Town  
2 of Epping, it is important to note that the Town of Epping issued a Request for Proposals  
3 from EnergyNorth and Northern to serve the businesses and residents in the town.<sup>56</sup> That  
4 is, the Town of Epping expressed its interest to the Company for access to natural gas  
5 service.

6 **Q. What are your conclusions related to the Company's growth initiatives?**

7 A. Mr. Chernick's conclusion that the "need for additional resources would be dramatically  
8 reduced" if the Company did not have a Sales and Marketing program is irrelevant, as that  
9 conclusion is true for any gas utility, should the choice to select natural gas be banned. The  
10 approach advocated by Mr. Chernick is simply a moratorium on individual customer  
11 choice, would maintain unnecessarily higher rates for gas service, and is simply bad public  
12 policy.

13 The Company's growth initiatives, which have been Commission-approved as serving the  
14 public interest, provide businesses and homeowners in New Hampshire the opportunity to  
15 take natural gas service and affords them the benefit of additional fuel choice. Given the  
16 wide range of support for increasing access to natural gas service from the Commission,  
17 towns, and Chambers of Commerce, the Company disagrees with Mr. Chernick that the  
18 EnergyNorth's growth initiatives are not in the public interest.

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<sup>56</sup> Town of Epping, Request for Proposals, Natural Gas Distribution Services in Epping, NH, July 17, 2018.

1           **B. Application of Energy Efficiency**

2   **Q. Please describe Mr. Chernick’s concern with the application of energy efficiency in**  
3   **the demand forecast.**

4   A. Mr. Chernick reviews Table 24 of the Initial Filing, which shows the annual energy  
5   efficiency savings, and suggests that these values reflect minimal incremental energy  
6   efficiency savings. Mr. Chernick comes to this conclusion by reviewing what he calculates  
7   as incremental savings relative to EnergyNorth’s historical energy efficiency savings. Mr.  
8   Chernick believes that the application of energy efficiency in the demand forecast is  
9   incorrect and the savings in each year should be calculated cumulatively.<sup>57</sup>

10 **Q. Please provide a brief summary of the application of energy efficiency into the**  
11 **Updated Demand Forecast.**

12 A. As described on pages 23 through 24 of the Initial Filing, the Company incorporated its  
13 annual energy efficiency goals approved by the Commission in the 2018-2020 Statewide  
14 Energy Efficiency Plan (“EE Plan”) to estimate future savings.<sup>58</sup> Energy efficiency savings  
15 goals were developed through calendar year 2020, consistent with the planning period of  
16 the EE Plan. To estimate the energy efficiency savings for the final two years of the  
17 Updated Demand Forecast (i.e., after 2020), the Company applied the percentage of energy  
18 efficiency savings relative to total demand in 2020 to the total demand in the final two  
19 forecast years. The energy efficiency savings in the Updated Demand Forecast are

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<sup>57</sup> Direct Testimony of Paul Chernick on behalf of Conservation Law Foundation, at 24-26.

<sup>58</sup> As shown in Appendix 2 of the Initial Filing, the energy efficiency savings in the Updated Demand Forecast are consistent with the Company’s energy efficiency goals for the period 2018-2020, as approved by the Commission. *See*, 2018-2020 New Hampshire Statewide Energy Efficiency Plan, Docket No. DE 17-136, September 1, 2017, Revised January 12, 2018.

1 provided in Table 5, below. As shown, energy efficiency savings are expected to increase  
2 by approximately 22,000 Dth over the Forecast Period, or at a CAGR of 4.8%.

3 **Table 5: Energy Efficiency Savings (Dth)<sup>59</sup>**

<b>Split-Year</b>	<b>Savings</b>
2017/2018	106,785
2018/2019	113,258
2019/2020	121,480
2020/2021	125,408
2021/2022	128,686
CAGR	4.8%

4  
5 The Updated Demand Forecast was adjusted downward in each year to reflect the energy  
6 efficiency savings in Table 5.

7 **Q. Is the application of energy efficiency in the Updated Demand Forecast similar to the**  
8 **Company's past practice?**

9 A. Yes, it is. The Company used a similar approach to apply energy efficiency savings to the  
10 demand forecast presented and approved by the Commission in the NED proceeding,  
11 Docket No. DG 14-380.

12 **Q. Are there multiple approaches that are used to apply energy efficiency savings to a**  
13 **demand forecast?**

14 A. Yes, there are. Energy efficiency savings in demand forecasts can be applied using  
15 different methodologies, including the approaches taken by Mr. Chernick and the

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<sup>59</sup> Represents energy efficiency savings for sales and capacity-assigned transportation customers.

1 Company. One approach may be favored by a jurisdiction over another, which may guide  
2 a company in the application of energy efficiency in its demand forecast. In this  
3 proceeding, the Company has used a reasonable approach in its Updated Demand Forecast,  
4 which is consistent with the approach relied on by (i) the Company in the NED proceeding,  
5 and (ii) LDCs in other jurisdictions (discussed in more detail below).

6 The underlying assumption of the Company's application of energy efficiency savings is  
7 that because the Updated Demand Forecast is developed using econometric models, which  
8 are based on historical data, a trend in energy efficiency savings over the historical  
9 analytical period is already reflected in the forecast. As Mr. Chernick shows in his Table  
10 4, and as provided in Table 2-2 of the Initial Filing, the Company was engaged in energy  
11 efficiency programs before and during the Company's analytical period.<sup>60</sup> These energy  
12 efficiency programs resulted in relatively consistent savings during the analytical period.  
13 As such, the historical data likely reflects a trend in energy efficiency savings. A  
14 cumulative calculation, as Mr. Chernick suggests, may result in energy efficiency savings  
15 being double counted, i.e., reflected in the econometric model forecasts and in an out-of-  
16 model adjustment.

17 **Q. How do historical energy efficiency savings compare to those used in the Updated**  
18 **Demand Forecast?**

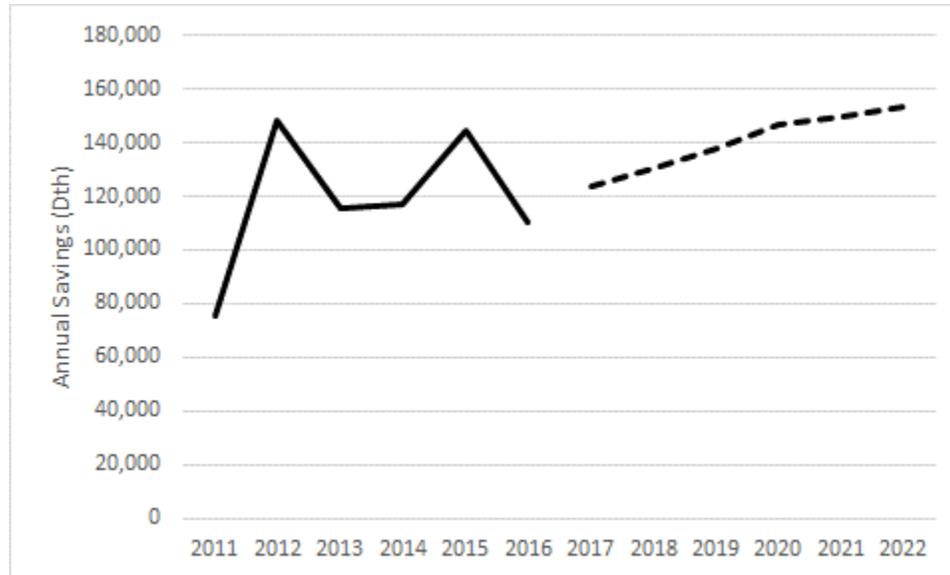
19 A. As shown in Chart 2, the forecasted energy efficiency savings are generally greater than  
20 historical levels. Because forecast energy efficiency savings from the EE Plan are greater

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<sup>60</sup> The analytical period used to develop the econometric models was from August 2010 through April 2017.

1 than historical savings, an adjustment to reflect additional energy efficiency savings is  
2 appropriate.

3 **Chart 2: Energy Efficiency Savings Over Time (Dth)<sup>61</sup>**



4  
5 The relationship between the Company’s historical actual energy efficiency savings and  
6 the forecast is further illustrated in Table 6, below.

7 **Table 6: Average Annual Energy Efficiency Savings (Dth)<sup>62</sup>**

2011-2016 (Actual)	2017-2022 (Forecast)
118,494	140,349

8

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<sup>61</sup> Represents total energy efficiency savings (i.e., including sales, capacity-assigned transportation, and capacity-exempt customers).  
<sup>62</sup> Represents total energy efficiency savings (i.e., including sales, capacity-assigned transportation, and capacity-exempt customers).

1 **Q. Did you prepare any additional analyses as a reasonableness check on the application**  
2 **of energy efficiency savings in the Updated Demand Forecast?**

3 A. Yes, we did. As another approach to assess if the Updated Demand Forecast captures the  
4 trend in energy efficiency savings present in the historical data, the Company performed a  
5 regression analysis wherein the dependent variable was the monthly historical energy  
6 efficiency savings<sup>63</sup> and a time trend variable and dummy variables for each month were  
7 the independent variables. The historical data included the period from August 2010  
8 through April 2017, consistent with the analytical period on which the econometric models  
9 were based. The Company then compared the energy efficiency savings predicted by the  
10 regression analysis to the energy efficiency forecast used in the Updated Demand  
11 Forecast.<sup>64</sup> Those results are shown in Table 7, below.

12 **Table 7: Energy Efficiency Forecast vs. Trend (Dth)**

<b>Split-Year</b>	<b>Savings in Updated Demand Forecast</b>	<b>Regression Predicted Savings</b>	<b>Difference</b>
2017/18	106,785	112,224	-5,439
2018/19	113,258	116,199	-2,941
2019/20	121,480	120,173	1,308
2020/21	125,408	124,147	1,261
2021/22	128,686	128,121	565

13

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<sup>63</sup> The monthly historical energy efficiency values were derived from the annual savings provided in Table 2-2 of the Initial Filing. The allocation of the annual energy efficiency savings to a monthly basis were performed in the same manner as described on page 24 of the Initial Filing.

<sup>64</sup> The Company did not rely on this analysis to develop its energy efficiency forecast or its application in the demand forecast. Rather, the analysis is presented here to check the reasonableness of the Company’s energy efficiency assumptions.

1 **Q. How should the results in Table 7 be interpreted?**

2 A. If the energy efficiency savings predicted by the regression analyses were equal to the  
3 savings forecast in the Updated Demand Forecast, then the difference would be zero and  
4 there would be no need to adjust the Updated Demand Forecast. That is, all forecast energy  
5 efficiency savings are accounted for in the trend present in the historical data. A negative  
6 difference in Table 7 suggests that the trend in the historical data is greater than the amount  
7 of savings based on the Company's energy efficiency goals. As such, an adjustment to the  
8 forecast is not needed because the trend in energy efficiency savings is greater than the  
9 energy efficiency savings forecast. A positive difference suggests that the historical trend  
10 does not fully account for expected increases in energy efficiency savings, and an upward  
11 adjustment to account for that difference may be warranted.

12 **Q. What are your conclusions based on the regression analysis?**

13 A. The results in Table 7 support the Company's conclusions that (1) the historical data  
14 includes a trend in energy efficiency savings, and (2) the expected energy efficiency  
15 savings in the Updated Demand Forecast, which are based on the goals established in the  
16 EE Plan, are greater than what would be expected by the historical trend in 2019/20 through  
17 2021/22. As shown in Table 8, the difference between the regression analysis and the  
18 Company's energy efficiency forecast is less than the incremental savings in the Updated  
19 Demand Forecast. As such, the treatment of energy efficiency in the Updated Demand  
20 Forecast includes additional energy efficiency savings above what would be implied based  
21 on the historical trend and is a reasonable assessment of the effect of energy efficiency on  
22 the Company's sendout requirements.

1

**Table 8: Incremental Energy Efficiency Savings (Dth)**

<b>Split-Year</b>	<b>Difference from Table 7</b>	<b>Year-Over-Year Savings in Updated Demand Forecast</b>
2017/18	-5,439	5,379
2018/19	-2,941	6,473
2019/20	1,308	8,222
2020/21	1,261	3,927
2021/22	565	3,278

2

3 **Q. Are there any other reasons that the energy efficiency savings in the Updated Demand**  
4 **Forecast are conservative?**

5 A. Yes. As noted above, the predicted savings based on the historical trend in energy  
6 efficiency are similar to the energy efficiency savings in the Updated Demand Forecast. In  
7 the first year of the Updated Demand Forecast, the energy efficiency savings do not only  
8 reflect an adjustment above the historical trend, but include the entire year’s worth of  
9 energy efficiency savings. That is, rather than include only the year-over-year savings  
10 presented in Table 8 (i.e., 5,379 Dth), savings of 106,785 Dth were assumed in the forecast.  
11 As such, the Company took a conservative approach in including additional energy  
12 efficiency savings, even though the historical data may suggest that savings are already  
13 accounted for in the econometric results.

14 **Q. Do other utilities rely on a similar methodology to account for energy efficiency in the**  
15 **forecast?**

16 A. Yes. The Company’s methodology approaches energy efficiency in a manner similar to  
17 that of several companies in New York and Rhode Island that the Company reviewed.

1 LDCs in New York and Rhode Island recognize that the historical data used in their  
2 modeling includes a trend that captures savings from company-sponsored energy  
3 efficiency programs. For example, in its 2018-19 Winter Supply Review, National Grid  
4 developed econometric models for customers and use per customer to forecast demand,  
5 similar to the approach developed by EnergyNorth.<sup>65</sup> In its discussion of the treatment of  
6 energy efficiency, National Grid noted, “The forecast includes this trend in continuing load  
7 reduction based on the historical successes in energy efficiency reductions in load. No  
8 further adjustments were made to the forecast.”<sup>66</sup> Similarly, New York State Electric &  
9 Gas (“NYSEG”) and Rochester Gas and Electric (“RG&E”) noted in their 2018-19 Winter  
10 Supply Plan, “The impacts of existing gas efficiency programs are assumed to be implicitly  
11 contained in the history used to generate the forecasts so out of model adjustments are only  
12 made for projected future incremental EE impacts.”<sup>67</sup> Because the historical annual  
13 savings exceeded the projected energy efficiency program savings, NYSEG and RG&E  
14 did not make an adjustment to the demand forecast.

15 The Narragansett Electric Company (“Narragansett”), in Rhode Island, also considers  
16 historical energy efficiency to determine if an adjustment is necessary to its demand  
17 forecast. In its most recent Gas Long-Range Resource and Requirements Plan,  
18 Narragansett noted:

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<sup>65</sup> National Grid, 2018-19 Winter Supply Review, New York Department of Public Service, Case 18-M-0272, July 16, 2018, at 5-6.

<sup>66</sup> *Ibid.*, at 6.

<sup>67</sup> New York State Electric & Gas and Rochester Gas and Electric, 2018-2019 Winter Supply Plan, New York Department of Public Service, Case 18-M-0272, July 16, 2018 at 32.

1 Because the Company's econometric forecast is based on historical  
2 data, which does not fully incorporate the increasing penetration of the  
3 Company's energy efficiency programs in the Residential and  
4 Commercial and Industrial sectors, the Company reviewed its historical  
5 energy efficiency efforts to see if its retail demand forecast required any  
6 adjustment to reflect the increases in energy efficiency efforts. Analysis  
7 of the Company's historical energy efficiency programs shows that  
8 historical data should have embedded within annual savings of 226,572  
9 MMBtu for Residential customers and 234,479 MMBtu for Commercial  
10 and Industrial customers. These figures are based on the three-year  
11 average of 2016 through 2018 actual energy efficiency savings. The  
12 Company uses a three-year average in lieu of the most recent year to  
13 smooth out the year-to-year fluctuations that may occur. The  
14 Company's analysis indicated no further adjustment was required to its  
15 forecast this year.<sup>68</sup> [Emphasis added]

16 **Q. What are your conclusions as they relate to the application of energy efficiency in the**  
17 **Updated Demand Forecast?**

18 A. Contrary to Mr. Chernick's concern, the energy efficiency savings were applied  
19 appropriately to the Updated Demand Forecast. The "minimal amounts of energy-  
20 efficiency load reductions"<sup>69</sup> Mr. Chernick references, which are consistent with the year-  
21 over-year energy efficiency savings noted in Table 8 above, actually imply increasing  
22 levels of energy efficiency savings above what the trend in the historical data would  
23 suggest. As such, the Updated Demand Forecast incorporates the Company's increasing  
24 energy efficiency goals, is a reasonable approach, and has been approved by the  
25 Commission. Lastly, the approach used by the Company is similar to that of certain LDCs  
26 in New York and Rhode Island.

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<sup>68</sup> The Narragansett Electric Company, Gas Long-Range Resource and Requirements Plan for the Forecast Period 2019/20 to 2023/24, Pursuant to the Joint Memorandum in RIPUC Docket No. 4816, July 2, 2019, at 8.

<sup>69</sup> Direct Testimony of Paul Chernick on behalf of Conservation Law Foundation, at 24.

1                   **C. Level of Energy Efficiency Savings in Demand Forecast**

2       **Q. Does Mr. Chernick believe the Company has reflected an appropriate level of energy**  
3       **efficiency savings in the demand forecast?**

4       A. No, he does not. Mr. Chernick points to the Massachusetts Joint Statewide Electric and  
5       Gas Three-Year Energy Efficiency Plan 2019-2021 and the most recent ACEEE scorecard  
6       to suggest that EnergyNorth’s energy efficiency savings are out of line with other LDCs.  
7       Mr. Chernick also states that the Company should consider additional “cost-effective”  
8       energy efficiency and demand-side programs beyond those developed as part of the 2018-  
9       2020 New Hampshire Statewide Energy Efficiency Plan.<sup>70</sup>

10      **Q. Please provide background regarding the process to develop the Company’s energy**  
11      **efficiency goals.**

12      A. On August 2, 2016, the Commission issued an order approving a unanimous settlement  
13      agreement by and among stakeholders, including CLF, which established the Energy  
14      Efficiency Resource Standard (“EERS”), a framework for implementing the energy  
15      efficiency programs consisting of three-year planning periods and savings goals.<sup>71</sup>

16      Subsequently, the New Hampshire utilities noted:

17                   Since the August 2, 2016 Commission Order, the NH Utilities have  
18                   elicited and received significant stakeholder feedback to inform the  
19                   preparation of the 3-Year Plan. The main bodies for stakeholder  
20                   discussion and input are NH’s Energy Efficiency and Sustainable  
21                   Energy (EESE) Board and a committee of the Board, the EERS  
22                   Committee. In early 2017, the NH Utilities and the EESE Board, with  
23                   the advice and assistance of the stakeholder consultant, jointly hosted a

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<sup>70</sup> *Ibid.*, at 27.

<sup>71</sup> State of New Hampshire Public Utilities Commission, Energy Efficiency Resource Standard, Order Approving Settlement Agreement, Order No. 25,932, August 2, 2016.

1 series of stakeholder workshops designed to allow deeper discussion  
2 and input on the key topic areas for the 3-Year Plan. The workshops  
3 were well attended and generated a great deal of information and  
4 discussion to inform the planning process.<sup>72</sup>

5 On January 2, 2018, the Commission issued an order approving another unanimous  
6 settlement agreement by and among all stakeholders, including CLF, for the three-year  
7 energy efficiency plan for the 2018 through 2020 period.<sup>73</sup> This settlement included the  
8 following:

9 The plan calls for the establishment of stakeholder working groups to  
10 further analyze key issues including: evaluation, measurement and  
11 verification of the approved energy efficiency programs; alternate  
12 sources of funding and financing of programs; the benefit/cost test used  
13 to screen energy efficiency programs; potential changes to the  
14 calculation of performance incentives; and the calculation of demand  
15 savings in connection with lost base revenues.<sup>74</sup>

16 As described in the Commission's order, the programs are screened using a detailed  
17 benefit/cost analysis, and the programs implemented by the utilities in New Hampshire are  
18 subject to evaluation, measurement, and verification.<sup>75</sup>

19 **Q. Why did the Company rely on the savings goals from the 2018-2020 New Hampshire**  
20 **Statewide Energy Efficiency Plan in the Updated Demand Forecast?**

21 A. As discussed above, the Company relied on a rigorous and collaborative process involving  
22 numerous stakeholders, which was reviewed and approved by the Commission, to develop

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<sup>72</sup> 2018-2020 New Hampshire Statewide Energy Efficiency Plan, Docket No. DE 17-136, September 1, 2017, Revised January 12, 2018, at 16. [Footnotes omitted]

<sup>73</sup> State of New Hampshire Public Utilities Commission, 2018-2020 New Hampshire Statewide Energy Efficiency Plan, Order Approving Settlement Agreement, Order No. 26,095, Docket No. DE 17-136, January 2, 2018.

<sup>74</sup> *Ibid.*, at 1.

<sup>75</sup> *Ibid.*, at 10-11.

1 its energy efficiency goals for the 2018 to 2020 period. The Commission’s order stated  
2 that, “The parties acknowledge that the Three-Year Plan includes a comprehensive, cost-  
3 effective portfolio of [energy efficiency] programs... Based on the record, the Three-Year  
4 Plan meets the requirements of the 2016 EERS Order and is consistent with applicable law,  
5 including the least cost integrated planning requirements promoting energy efficiency.”<sup>76</sup>  
6 As such, the goals developed through that process represent a reasonable forecast of cost-  
7 effective energy efficiency over the Forecast Period.

8 **Q. What is your response to Mr. Chernick’s assertion that the energy efficiency savings**  
9 **in the Updated Demand Forecast are inconsistent with other states?**

10 A. Although Mr. Chernick reviews the energy efficiency savings for a select number of states,  
11 he does not consider the range of energy efficiency savings targets for other LDCs in New  
12 England. As noted on page 6 of Mr. Stanley’s direct testimony, the sales reductions targets  
13 for the Company are within the range of New England LDCs. In addition, Mr. Chernick  
14 points to the current Massachusetts energy efficiency savings goal of 1.25% for the period  
15 2019 through 2021.<sup>77</sup> The individual savings goals for the LDCs in Massachusetts are  
16 provided in Table 9, below.

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<sup>76</sup> *Ibid.*, at 18.

<sup>77</sup> Direct Testimony of Paul Chernick on behalf of Conservation Law Foundation, at 27.

**Table 9: Massachusetts Savings Goals by LDC (as a Percentage of Sales)<sup>78</sup>**

<b>Company</b>	<b>Total (2019-2021)</b>
NSTAR Gas Company	1.34%
National Grid	1.28%
Columbia Gas of Massachusetts	1.28%
Fitchburg Gas & Electric d/b/a Unitil	0.78%
Berkshire Gas Company	0.65%
Liberty Utilities (New England Natural Gas Company)	0.58%
Aggregate Statewide	1.25%

The energy efficiency savings in the Updated Demand Forecast, which increase from 0.75% of total sales in 2018 to 0.82% in 2020, are within the range of savings goals for LDCs in Massachusetts.

**VI. CONCLUSION**

**Q. Please summarize the results of the Updated Demand Forecast.**

A. The Updated Demand Forecast is provided in Table 10, below.

**Table 10: Updated Demand Forecast Results (Dth)**

<b>Split-Year</b>	<b>Normal Year</b>	<b>Design Year</b>	<b>Design Day</b>
2017/2018	14,640,845	15,833,870	157,848
2018/2019	15,235,354	16,449,392	164,571
2019/2020	15,648,467	16,923,283	167,643
2020/2021	16,150,273	17,414,989	168,942
2021/2022	16,565,963	17,862,082	174,618
CAGR	3.1%	3.1%	2.6%
CAGR – excluding iNATGAS	2.3%	2.3%	1.9%

<sup>78</sup> Massachusetts Department of Public Utilities Order, Docket Nos. D.P.U. 18-110 through 18-119, January 29, 2019, at 13.

1 **Q. Please summarize your conclusions with respect to the Company's Updated Demand**  
2 **Forecast.**

3 A. The Updated Demand Forecast remains reasonable and appropriate without further  
4 adjustment. The Updated Demand Forecast to date has been in line with, although  
5 somewhat below, normalized actual demand. The somewhat higher normalized actual  
6 demand relative to the Updated Demand Forecast is driven by increased volumes from new  
7 customers and reverse migration. Furthermore, additional load from existing customers  
8 and the potential for additional reverse migration support higher demand over the  
9 remainder of the Forecast Period.

10 Mr. Chernick's assertion that the Company's growth initiatives are not in the public interest  
11 is inconsistent with the wide range of support from the Commission, towns, and Chambers  
12 of Commerce. Mr. Chernick's assertion that energy efficiency savings were incorrectly  
13 applied to the forecast does not consider the trend in energy efficiency within the historical  
14 data. Mr. Chernick's approach of applying energy efficiency on a cumulative basis could  
15 result in a double counting of energy efficiency in the Updated Demand Forecast. Lastly,  
16 the energy efficiency goals in the EE Plan were developed through a rigorous and  
17 collaborative process, are consistent with the range of goals of other LDCs, and represent  
18 a reasonable expectation of energy efficiency savings over the Forecast Period.

19 **Q. Does this conclude your Rebuttal Testimony?**

20 A. Yes, it does.