April 23, 2018

Debra Howland Executive Director and Secretary
New Hampshire Public Utilities Commission
21 S. Fruit Street, Suite 10
Concord New Hampshire 03301
RE: DG 17-198 Granite Bridge Pipeline and LNG liquefaction and storage facility
Liberty Utilities (EnergyNorth Natural Gas) Corp. d/b/a Liberty Utilities

Thank you for accepting my comments and questions on the Granite Bridge pipeline project and associated LNG facility to be sited in Epping, NH.

This is a revision of the comment I submitted on April 8, 2018 addressing forecasted growth versus historical data from Liberty's Annual Reports.

My first question is about the size of the project and whether it is justified.
Unfortunately, I did not take into account "transportation" customers in my original version of this comment. Transportation customers are those who do not buy gas through Liberty's default supply, but contract with competitive suppliers for the actual gas purchased. Transportation customers pay distribution charges.

On page 30 of the Annual Report for 2016, Liberty notes that it had 79,128 residential customers in 2016 and 78, 626 customers in 2015; an increase of 502 residential customers or a growth rate of 0.6%. In 2016 Liberty had 11,738 Commercial and Industrial customers, up from 11,608 in 2015 for an increase of 1.1%.
https://www.puc.nh.gov/Gas-Steam/Annual%20Reports/2016/Liberty%20ENNG%202016%20Annual%20Report.pdf

The 2017 annual report shows an increase in the number of customers due to the purchase of the Concord Steam plant. That number should be regarded as a "windfall" rather than a trend since the 100+ "ready-made" customers who converted from delivered steam to Liberty natural gas service had very little choice if they wanted heat in their buildings. As an example of the forced nature of these conversions, please read the comment on DG 16-769 by South Congregational Church of Concord, https://www.puc.nh.gov/Regulatory/Docketbk/2016/16-769/COMMENTS/16-769_2016-10-05_S_CONGREGATIONAL_CHURCH_COMMENT.PDF

In https://www.puc.nh.gov/Regulatory/Docketbk/2017/17-152/INITIAL%20FILING%20-%20PETITION/17-152_2017-10-02_ENGI_LCIRP.PDF Liberty forecasts C&I customer growth at 1.3%,

Table 12: C&I Heating Customer Forecast

Split-Year	Avg. # of Customers
2017/18	10,451
2018/19	10,617
2019/20	10,764
2020/21	10,868
2021/22	11,019
CAGR (2017/18-2021/22)	1.3%

The C&I Heating Customer Forecast and C&I Non-Heating Customer Forecast should be added together to get the total C&I Customer count.

Table 15: C&I Non-Heating Customer Forecast

Split-Year	Avg. # of Customers
2017/18	1,635
2018/19	1,654
2019/20	1,668
2020/21	1,681
2021/22	1,696
CAGR (2017/18-2021/22)	0.9%

In https://www.puc.nh.gov/Regulatory/Docketbk/2013/13-313/INITIAL%20FILING%20-%20PETITION/13-313%202013-11-01%20ENGI%20DBA%20LIBERTY%20INTEGRATED%20RESOURCE%20PLAN.PDF Liberty forecasted a 1.4% average growth rate in C&I customers,

EnergyNorth Natural Gas, Inc. Annual Average Customer Count Forecast
2013/14 - 2017/18
Base Case

	2013/14	2014/15	2015/16	2016/17	2017/18	Average Increment or Percent	Total Increment or Percent
Residential Heating	71,855	72,968	74,186	75,362	76,424	1,142	4,570
Residential Non-heating	3,503	3,423	3,337	3,210	3,048	-114	-455
Residential	75,358	76,391	77,523	78,572	79,473	1,029	4,115
Commercial & Industrial	11,347	11,577	11,808	12,018	12,209	215	862
Traditional Market	86,705	87,968	89,331	90,590	91,681	1,244	4,976
Non-traditional markets	0	0	0	0	0	0	0
Total	86,705	87,968	89,331	90,590	91,681	1,244	4,976
Percent of Total							
Residential Heating	83%	83%	83%	83%	83%		
Residential Non-heating	4%	4%	4%	4%	3%		
Residential	87%	87%	87%	87%	87%		
Commercial & Industrial	13%	13%	13%	13%	13%		
Traditional Market	100%	100%	100%	100%	100%		
Non-traditional markets	0%	0%	0%	0%	0%		
Total	100%	100%	100%	100%	100%		
Growth Rate							
Residential Heating		1.5%	1.7%	1.6%	1.4%	1.6%	6.4%
Residential Non-heating		-2.3%	-2.5%	-3.8%	-5.0%	-3.4%	-13.0%
Residential		1.4%	1.5%	1.4%	1.1%	1.3%	5.5%
Commercial & Industrial		2.0%	2.0%	1.8%	1.6%	1.8%	7.6%
Traditional Market		1.5%	1.5%	1.4%	1.2%	1.4%	5.7%
Non-traditional markets		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total		1.5%	1.5%	1.4%	1.2%	1.4%	5.7%

Synthesizing this data to include actuals from Annual Reports, the number of C&I customers are,

Year	Actuals from Annual Reports (inc Trans)	Forecast in 2013 IRP	Forecast in 2017 IRP
2011	10,908		
2012	11,764		
2013	11,382	11,347	
2014	11,198	11,577	
2015	11,608	11,808	
2016	11,738	12,018	
2017	11,804	12,209	12,086
2018			12,271
2019			12,432
2020			12,549
2021			12,715

In fact, with the concept of “decoupling” rates from volumes of gas moved and linking rates to distribution services delivered instead, basing growth on the number of forecasted customers is the correct approach to predicting system growth.

Is it reasonable to expect that Liberty will double its customer base in a timeframe that will protect existing ratepayers from stranded costs? If Liberty achieved the 1.3% CAGR for C&I customers in the forecast, it would take 54 years to double the customer base. To double the customer base in 20 years

or less, the CAGR would need to be over 3.5%. Doubling the customer base within a more traditional 5-year planning horizon would require a CAGR of 14.87%.

In fact, Liberty uses a CAGR of 2.9% in delivered gas volume to make the case for doubling system needs over a period of 24 years.
On page 27 of https://www.puc.nh.gov/Regulatory/Docketbk/2017/17-152/INITIAL%20FILING%20-%20PETITION/17-152_2017-10-02_ENGI_LCIRP.PDF

Table 26: Comparison of Planning Load (Dth)

Split-Year	2013 IRP (DG 13-313) – Total Planning Load	2017 IRP – Total Planning Load
2013/14	12,849,714	--
2014/15	13,162,317	--
2015/16	13,532,759	--
2016/17	13,822,754	--
2017/18	14,136,177	15,634,082
2018/19	--	16,075,247
2019/20	--	16,575,525
2020/21	--	17,000,558
2021/22	--	17,527,589
CAGR (2013/14-2017/18)	2.4%	--
CAGR (2017/18-2021/22)	--	2.9%

Synthesizing these forecasts against actuals,

Year	Actuals from Annual Report	Forecast in 2013 IRP	Forecast in 2017 IRP
2011	15,010,486		
2012	13,855,323		
2013	16,252,894	12,849,714	
2014	17,161,462	13,162,317	
2015	17,410,240	13,532,759	
2016	15,455,166	13,822,754	
2017		14,136,177	15,634,082
2018			16,075,247
2019			16,575,525
2020			17,000,558
2021			17,527,589

The volume forecast in the 2013 IRP is surprisingly low given actuals in 2011 and 2012. Moreover, the actuals seem to track Heating Degree Data much more closely than forecasted models.

Year	Actuals from Annual Report	Forecast in 2013 IRP	Forecast in 2017 IRP	HDD
2011	15,010,486			5813
2012	13,855,323			4911
2013	16,252,894	12,849,714		6094
2014	17,161,462	13,162,317		6244
2015	17,410,240	13,532,759		6068
2016	15,455,166	13,822,754		5453
2017		14,136,177	15,634,082	5482
2018			16,075,247	
2019			16,575,525	
2020			17,000,558	
2021			17,527,589	

How does the proposed 150,000 DTH/Day Granite Bridge pipeline capacity compare with the volumes that are delivered today? On page 42, line 37 of the annual report, Liberty states that it delivered 15,716,088 DTH of natural gas (including Distribution Losses of 1.8%) in 2016. On page 49, line 3, the monthly Sendout volume peaks in February at 2,429,756 DTH for an average capacity requirement of 86,777 DTH/Day.

On page 33 of the 2017 IRP, "In total, the Company has Design Day resources of approximately 155,033 Dth/day, which are comprised of upstream transportation contracts and on-system LNG and propane facilities."

The Granite Bridge 150,000 DTH/Day proposal would nearly double that Design Day resource capability even before the LNG Liquefaction and Storage project is considered.

If nearly doubling Liberty's delivery capacity in 20 years seems unreasonable; Liberty apparently agrees, as the Sendout models they provided are based on a capacity of 75,000 DTH/Day.

From Page 17 of 22 in http://www.puc.state.nh.us/Regulatory/Docketbk/2017/17-198/INITIAL%20FILING%20-%20PETITION/17-198_2017-12-22_ENGI_PDTESTIMONY_LYONS.PDF

"Q. How were the results of the levelized cost analysis for Granite Bridge Pipeline used in the Company's analysis of supply options?

A. A unit cost was calculated to reflect the cost per volume of capacity of the Granite Bridge Pipeline. Specifically, the levelized annual cost was divided by the annual capacity to determine the unit cost. The unit cost was used by the Company to evaluate the Granite Bridge Pipeline on an "apples-to-apples" basis with alternative supply options. As discussed in the Killeen/Stephens Testimony, the Granite Bridge Pipeline was compared to an expansion of the TGP Concord Lateral. Since the estimated daily rate on the expansion of the TGP Concord Lateral was based on a proposed capacity of 75,000 Dth per day, the same volume level was used to calculate the unit cost for the Granite Bridge Pipeline.[14] Therefore, the resulting unit cost for the Granite Bridge Pipeline was estimated to be approximately (redacted) per Dth per day."

[14]

The "need" for capacity is described in, http://www.puc.state.nh.us/Regulatory/Docketbk/2017/17-198/INITIAL%20FILING%20-%20PETITION/17-198_2017-12-22_ENGI_PDTESTIMONY_FLECK_DAFONTE.PDF

"**Statement of Need for capacity (page 8)**
"The Company's existing service territory in southern and central New Hampshire is currently served exclusively by the Tennessee Gas Pipeline Company, LLC's ("Tennessee" or "TGP") Concord Lateral, which has reached capacity. EnergyNorth had previously requested and received approval from the Commission for a precedent agreement with Tennessee for 115,000 dekatherms ("Dth") per day of firm transportation…"

The order for the precedent agreement with TGP,
https://www.puc.nh.gov/Regulatory/Docketbk/2014/14-380/ORDERS/14-380%202015-10-02%20ORDER%20NO%2025-822.PDF
However, on page 24 of the order, the Commissioners state,
"**VII. COMMISSION ANALYSIS**
A. Scope and Standard of Review
Our statutory review of the Precedent Agreement is limited to consideration of EnergyNorth's prudence in entering into the Precedent Agreement, and the reasonableness of the terms of the agreement. We do not undertake any review of the merits or the siting of the NED Pipeline. The Precedent Agreement is not effective unless the NED Pipeline is approved, constructed, and providing service."

Therefore, even if DG 14-380 found the "need" for a contracted 115,000 DTH/Day, the Commission should require that the analysis be repeated with the most recent data to determine whether this large increase in "need" is still justified.

Thank you very much for accepting my comments and questions. I am also studying the LNG Liquefaction and storage facility and the proposed increases to the rate base. I will submit additional comments and questions on those.

Sincerely,

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