

Via Hand Delivery and Electronic Mail

November 3, 2023

Emma Rodvien, Coordinator
Energy Facility Siting Board
89 Jefferson Boulevard
Warwick, RI 02888

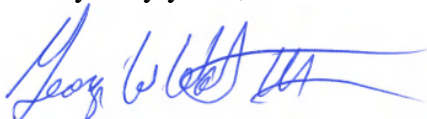
Re: **The Narragansett Electric Company
Aquidneck Island Gas Reliability Project
EFSB Docket No. SB-2021-04
Prefiled Rebuttal Testimony of Jeffrey A. Montigny, Stuart A. Wilson, Brett S.
Feldman, Tyler Olney, and Pat Convery**

Dear Ms. Rodvien:

I am enclosing for filing on behalf of The Narragansett Electric Company an original and seven (7) copies of the following prefiled testimony:

- Prefiled testimony of Jeffrey A. Montigny which is marked as Exhibit No. TNEC-22;
- Prefiled testimony and attachment of Stuart A. Wilson which is marked as Exhibit No. TNEC-23;
- Prefiled testimony of Brett S. Feldman which is marked as Exhibit No. TNEC-24;
- Prefiled testimony of Tyler Olney which is marked as Exhibit No. TNEC-25; and
- Prefiled testimony of Pat Convery which is marked as Exhibit No. TNEC-26.

Very truly yours,



George W. Watson III

Enclosures

Copy to: Docket SB-2021-04 Service List (by electronic mail)

Certificate of Service

I hereby certify that a copy of the cover letter and any materials accompanying this certificate were electronically transmitted to the individuals listed below.

The paper copies of this filing are being hand delivered to the Rhode Island Public Utilities Commission and to the Rhode Island Division of Public Utilities and Carriers.



Heidi J. Seddon

November 3, 2023

Date

SB-2021-04 The Narragansett Electric Company's Application for a License to Mobilize and Operate a Liquefied Natural Gas (LNG) Vaporization Facility at Old Mill Lane (Portsmouth, RI)

Updated October 6, 2023

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THE NARRAGANSETT ELECTRIC COMPANY
EFSB DOCKET NO. SB-2021-04
RE: AQUIDNECK ISLAND GAS RELIABILITY PROJECT
WITNESS: JEFFREY A. MONTIGNY
NOVEMBER 3, 2023

PRE-FILED REBUTTAL TESTIMONY

OF

JEFFREY A. MONTIGNY

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EXECUTIVE SUMMARY

Jeffrey A. Montigny is employed by The Narragansett Electric Company d/b/a Rhode Island Energy (the “Company”) and testifies on its behalf. Mr. Montigny testifies that the Company’s review and selection of the property was based on complexity, reliability, and cost. Mr. Montigny also explains how the Project is designed to mitigate the consequences of an interruption of natural gas supply to Aquidneck Island whether or not such an interruption is precipitated by factors similar to the 2019 loss of supply incident, and whether the Company reassessed the Project following the issuance of the Act on Climate. Finally, Mr. Montigny states his opinion on whether the Project is needed indefinitely and whether the Project will impact the implementation of measures to reduce demand for natural gas.

1 **I. Introduction**

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

3 A. My name is Jeffrey A. Montigny. My business address is 280 Melrose Street, Providence,
4 Rhode Island.

5

6 **Q. By whom are you employed and in what position?**

7 A. I am employed by The Narragansett Electric Company d/b/a Rhode Island Energy (the
8 “Company”) as a Principal Engineer in gas engineering.

9

10 **Q. Have you previously filed testimony or testified before the Rhode Island Energy
11 Facility Siting Board (“EFSB” or the “Board”) or other public utility commissions?**

12 A. Yes. I have filed direct testimony on this docket and on the related Rhode Island Public
13 Utilities Commission Docket, RIPUC Docket No. 22-42-NG.

14

15 **II. Purpose and Structure of Testimony**

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

17 A. In my testimony, I will provide responses to questions on the need for the Project,
18 selection of the location for the Project, the anticipated duration of the Project, the
19 implications of the Act on Climate raised by the EFSB, and whether the Project will
20 impact the implementation of measures to reduce demand for natural gas.

21

1 **Q. How is your testimony structured?**

2 A. Section 1 is the Introduction. Section II presents the purpose and structure of my
3 testimony. Section III presents responses to issues and questions regarding the need,
4 location, duration of the Project, and whether the Project will impact demand reduction
5 measures. Section IV is the conclusion.

6
7 **III. Additional Project Information**

8 **Q. Why did the Company select the property at Old Mill Lane for the Project?**

9 A. The Company selected Old Mill Lane for the Project after an extensive review of
10 alternatives to either increase supply or reduce demand of LNG on Aquidneck Island.
11 All alternatives were considered on the basis of 1) complexity, 2) reliability, and 3) cost.
12 The analysis was lengthy and detailed in order to thoroughly evaluate the viability of
13 each alternative. The alternative that best fit all of these categories was the proposed
14 Project located at Old Mill Lane. In addition, Old Mill Lane was the only option that
15 would immediately address the existing gap between available supply and current
16 customer demand. As discussed in the prefiled rebuttal testimony of Company witness
17 Pat Convery, using portable LNG as an additional source of supply to a local gas
18 distribution system is becoming more common in New England.

19

1 **Q. Would the Project address the loss of supply that resulted from the combination of**
2 **issues leading up to the 2019 loss of supply incident?**

3 A. Yes. However, as the intervenors have previously stated, the likelihood of that precise
4 combination of failures to occur again is low. This is true even though none of the
5 equipment or operations that contributed to the event are presently under the Company's
6 control.

7

8 **Q. Is the Project designed to address the specific factors leading to the 2019 incident?**

9 A. Only insofar as the 2019 incident resulted from Aquidneck Island having a single source
10 of gas supply. The 2019 incident spotlighted the vulnerability of gas supply to
11 Aquidneck Island and the severity of the consequences that can result from this
12 vulnerability. It is important to note that this was not the first time similar conditions
13 have occurred. For example, in March 2014 there was a loss of pressure on the
14 transmission system, but the weather was not as cold as it was during the 2019 incident,
15 so natural gas demand was lower. Another example of a potential cause of an outage is
16 third party damage to the line. One such incident occurred in 2021 when a property
17 owner was installing a fence on his property. The benefit of the Project is that it adds a
18 secondary source of supply that can mitigate the consequences of any pipeline supply
19 disruption irrespective of the cause. The extent of the mitigation will depend on the
20 percentage of supply loss and the gas demand at the time of the supply loss.

21

1 **Q. Did the Company re-assess the Project following the issuance of the Act on Climate?**

2 A. No, it did not. While the Act on Climate's mandates are intended to drive the clean
3 energy transition for Rhode Island, pathways to achieving the Act's mandates are still
4 under development with many of the alternatives showing that natural gas remains part of
5 the overall energy mix. The Project is needed now to ensure safe, reliable, and
6 continuous service to customers in Aquidneck Island, and while the Company recognizes
7 the possibility that customers may elect to transition away from natural gas usage for life-
8 critical home heating, the Company has not observed this shift yet and must maintain gas
9 distribution infrastructure that meets the needs of its customers under design day weather
10 conditions. As noted in the Siting Report, the Project is scalable so it can be adjusted
11 when demand does decrease.

12

13 **Q. Does the Company feel that the Project is needed indefinitely?**

14 A. No. The Company firmly believes that the Project is the most efficient way to ensure
15 safe, reliable service to its customers on Aquidneck Island, especially life-safety critical
16 home heating. When the time comes that service is no longer needed by its customers,
17 the Company can quickly and inexpensively decommission the Project.

18

1 **Q. Will the Project have an impact on the implementation of measures to reduce the**
2 **demand for natural gas such as energy efficiency or demand response?**

3 A. It will not. As summarized in the Siting Report, the non-infrastructure alternatives all
4 relied on the siting of the Project to operate as a peak shaving facility until the capacity
5 constraint could be addressed, at which point the Company would maintain the facility in
6 a backup role for the capacity vulnerability. In fact, all of the alternatives require peak
7 shaving and backup operations to continue at Old Mill Lane until either the infrastructure
8 alternative was brought online or the non-infrastructure alternative reduced gas demand.

9

10 **IV. Conclusion**

11 **Q. Does this complete your testimony?**

12 A. Yes, it does.

THE NARRAGANSETT ELECTRIC COMPANY
EFSB DOCKET NO. SB-2021-04
RE: AQUIDNECK ISLAND GAS RELIABILITY PROJECT
WITNESS: STUART A. WILSON
NOVEMBER 3, 2023

PRE-FILED REBUTTAL TESTIMONY

OF

STUART A. WILSON

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Executive Summary

Stuart A. Wilson provides a response to testimony from Dr. David Hill, that was submitted on behalf of the Conservation Law Foundation, which asserts that The Narragansett Electric Company's peak hour demands show a declining trend at the Portsmouth Gate. Mr. Wilson notes that (i) Dr. Hill failed to account for the effects of weather and day of week on peak hour demands and ignores the fact that the peak demand exceeded 1,000 Dth/hour in February 2023; and (ii) contrary to Dr. Hill's testimony, the demand for natural gas on Aquidneck Island has not been declining and peak demand exceeded 1,000 Dth/hour as recently as this year.

1 **I. Introduction**

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

3 A. My name is Stuart A. Wilson. I am the Director of Energy Planning, Analysis, and
4 Forecasting for LG&E and KU Services Company, which provides services to The
5 Narragansett Electric Company (the “Company”) in Rhode Island and to Louisville Gas
6 and Electric Company (“LG&E”) and Kentucky Utilities Company (“KU”) in Kentucky.
7 My business address is 220 West Main Street, Louisville, Kentucky 40202.

8
9 **Q. What are your responsibilities as Director of Energy Planning, Analysis,
10 Forecasting at LG&E and KU Services?**

11 A. For the Company, I am responsible for forecasting natural gas demand. For LG&E and
12 KU, I am responsible for gas and electric sales forecasting, generation planning, and
13 economic analysis.

14
15 **Q. Please describe your education, training, and experience.**

16 A. I graduated from the University of Louisville with a master’s degree in Electrical
17 Engineering. I also have a Master of Business Administration from Indiana University. I
18 have worked for LG&E and KU Services Company for 25 years. Prior to my current
19 position, I served as Manager Sales Analysis & Forecasting and Manager Generation
20 Planning. I became a CFA Charterholder in 2003. A complete statement of my
21 education and work experience is attached to this testimony as Appendix A.

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Q. Have you previously filed testimony with, or testified before, the Rhode Island Public Utilities Commission (“PUC” or the “Commission”) or other public utility commissions?

A. I have previously filed testimony with and testified before the Rhode Island Public Utilities Commission (“Commission” or “PUC”) in Docket No. 22-42-NG.

II. Purpose of Testimony

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to rebut assertions made by David G. Hill testifying on behalf of the Conservation Law Foundation (“CLF”) regarding the Company’s demand forecast.

III. Discussion of CLF Assertions

Q. What assertions does Dr. Hill make about the Company’s demand forecast?

A. Dr. Hill asserts based on the Company’s peak hour demands from 2015 to 2022 that (a) the general trend in demand for natural gas at the Portsmouth Gate has been declining since the peak of nearly 1,400 Dth/hr in 2017 and (b) demand at the Portsmouth Gate has not exceeded 1,000 Dth/hr since 2018.

1 **Q. Are these the same assertions made by Conservation Law Foundation witness Earnest**
2 **White in testimony provided to the Rhode Island Public Utilities Commission in**
3 **Docket No. 22-42-NG?**

4 A. Yes. Dr. Hill’s testimony on these topics is substantively identical to Mr. White’s
5 testimony in Docket No. 22-42-NG.¹

7 **Q. Do these assertions indicate a declining trend in Aquidneck Island demand?**

8 A. No. As discussed in my rebuttal testimony in Docket No. 22-42-NG,² usage comparisons
9 must consider differences in weather and the day of the week. The table below lists for the
10 last six heating seasons the number of heating degree days (“HDD”) on the peak day and
11 the day of the week on which the peak day occurred. After the 2018/2019 heating season
12 when peak demand exceeded 1,000 Dth/hr at the Portsmouth Gate, peak day weather in the
13 next three heating seasons was milder and the peak days in the 2020/2021, 2021/2022, and
14 2022/2023 heating seasons occurred on the weekend.³ This explains why peak demand
15 was lower in those heating seasons. This data does not indicate a declining trend in
16 demand.

¹ Submitted 3/13/23 under RIPUC 22-42-NG, available at: <https://ripuc.ri.gov/sites/g/files/xkgbur841/files/2023-03/2242-CLF-Testimony-White.pdf>

² Submitted 4/18/23 under RIPUC 22-42-NG, available at: https://ripuc.ri.gov/sites/g/files/xkgbur841/files/2023-04/2242-RIE-RebuttalTestimony_4-18-23.pdf

³ The February 3, 2023 peak occurred on a Friday in gas day terms, but the actual peak occurred on the morning of Saturday, February 4. This caused sendout to be lower than it would have been had the same temperatures occurred on a weekday when more commercial businesses were open.

1 **Heating Season Peaks**

Heating Season	Peak Day HDD	Day on which Peak Day Occurred
2017/2018	57	Monday
2018/2019	59	Monday
2019/2020	47	Thursday
2020/2021	51	Sunday
2021/2022	51	Saturday
2022/2023	62	Friday

2

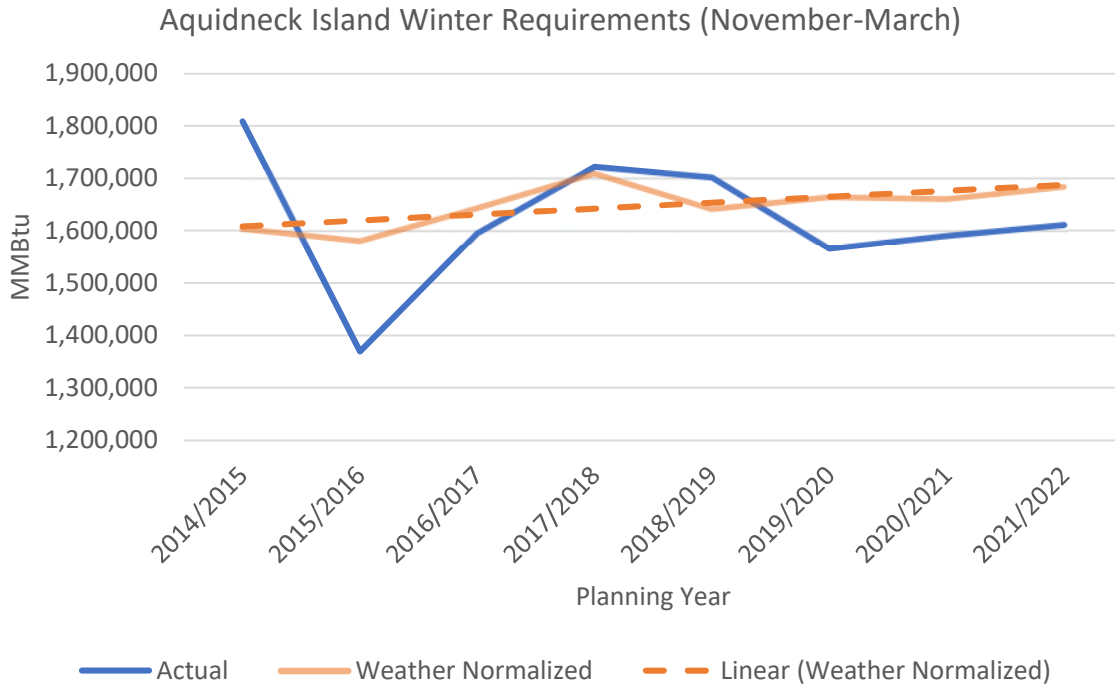
3 **Q. Is Dr. Hill correct in asserting that demand at the Portsmouth gate has not exceeded**
4 **1,000 Dth/hr since 2018?**

5 A. No. As discussed in my rebuttal testimony in Docket 22-42-NG, the peak demand at the
6 Portsmouth gate on February 3, 2023 was 1,171 Dth. Dr. Hill did not update the CLF's
7 testimony in this proceeding to reflect this fact.

8

9 **Q. How has gas demand been trending historically on Aquidneck Island?**

10 A. The chart below shows actual and weather-normalized total requirements for the winter
11 months (November through March) since the 2014/2015 planning year. Estimating
12 weather-normalized requirements provides a clearer look at underlying trends in
13 requirements by removing the variations due to weather. Weather-normalized seasonal
14 requirements increased 4.97 percent over the period with a compound annual growth rate
15 of 0.69 percent. The weather-normalized trend in total winter requirements is indicative
16 of the weather-normalized trend in peak demand. Historically, hourly demands on the
17 island have increased as total seasonal requirements have increased. Furthermore, any
18 changes to this historically increasing trend will likely occur gradually.



1

2 **IV. Conclusion**

3 **Q. Does this complete your testimony?**

4 **A. Yes.**

APPENDIX A

Stuart A. Wilson, CFA

Director, Energy Planning, Analysis and Forecasting
Kentucky Utilities Company
Louisville Gas and Electric Company
220 West Main Street
Louisville, Kentucky 40202
Telephone: (502) 627-4993

Previous Positions

Manager, Generation Planning & Analysis	October 2009 – April 2016
Manager, Sales Analysis & Forecasting	May 2008 – October 2009
Supervisor, Sales Analysis & Forecasting	Aug 2006 – April 2008
Economic Analyst	Aug 2000 – July 2006
Compensation Analyst	Aug 1999 – July 2000
Business Analyst	June 1997 – July 1999

Civic Activities

Big Brothers Big Sisters of Kentuckiana – Board of Directors: 2017 – Present
Barren Heights Christian Retreat – Board of Directors: 2015 – 2021

Professional Memberships

CFA Society of Louisville

Education/Certifications

CFA Charterholder: September 2003

Master of Business Administration;
Indiana University, May 1997

Master of Engineering in Electrical Engineering;
University of Louisville, December 1995

Bachelor of Science in Electrical Engineering;
University of Louisville, December 1995

THE NARRAGANSETT ELECTRIC COMPANY
EFSB DOCKET NO. SB-2021-04
RE: AQUIDNECK ISLAND GAS RELIABILITY PROJECT
WITNESS: BRETT S. FELDMAN
NOVEMBER 3, 2023

PRE-FILED REBUTTAL TESTIMONY

OF

BRETT S. FELDMAN

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EXECUTIVE SUMMARY

Brett Feldman is employed by The Narragansett Electric Company (the “Company”) as a Manager of Customer Energy Management, Rhode Island, overseeing strategy, policy, planning and evaluation for all energy efficiency programs. Mr. Feldman explains his familiarity with the Energy Efficiency Program and Plan (the “EE Plan”) and its applicability to Aquidneck Island. He also testifies as to how long the EE Plan has been reviewed and considered by the Rhode Island Public Utilities Commission, whether interested parties can participate, and if so, have they. Mr. Feldman also testifies as to whether any of the suggestions raised in the pre-filed testimony filed on behalf of Conservation Law Foundation and the Town of Middletown have already been discussed or promoted as they pertain to the EE Plan. Mr. Feldman further elaborates on his observations regarding the suggestion to target energy efficiency incentives to Aquidneck Island at a level that exceeds the incentives offered to Rhode Island customers generally.

1 **I. Introduction**

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

3 A. My name is Brett Feldman. My business address is 280 Melrose Street, Providence,
4 Rhode Island 02907.

5
6 **Q. By whom are you employed and in what position?**

7 A. I am employed by The Narragansett Electric Company d/b/a Rhode Island Energy (the
8 “Company”) as Manager, Customer Energy Management, Rhode Island.

9
10 **Q. What are your responsibilities as Manager?**

11 A. As a Manager, I oversee strategy, policy, planning, and evaluation for all energy
12 efficiency programs. My team is responsible for developing annual and three-year plans,
13 providing quarterly and annual reports, and evaluating program performance. I represent
14 the Company on the Rhode Island Energy Efficiency and Resource Management Council
15 (“EERMC”).

16
17 **Q. Please describe your education, training, and experience.**

18 A. I received a Bachelor of Arts in Economics from University of Michigan and a Masters in
19 Business Administration from Boston University. I started working at Rhode Island
20 Energy in March 2022 (formerly doing business as National Grid) in my current
21 role. Prior to joining the Company, I worked at Guidehouse (formerly Navigant),

1 performing market research and consulting on global energy efficiency and demand
2 response program strategy, evaluation, and policy engagements; Constellation Energy,
3 managing demand side resource portfolios in wholesale markets including ISO-NE,
4 NYISO, and PJM; Eversource Energy, managing commercial and industrial energy
5 efficiency and demand response program implementation; Nexant, consulting on utility
6 energy efficiency and demand response program design and evaluation; and ICF,
7 providing economic and marketing support to US EPA’s EnergyStar program.
8

9 **Q. Have you previously filed testimony or testified before the Rhode Island Energy**
10 **Facility Siting Board (“EFSB” or the “Board”) or other Rhode Island regulatory**
11 **agencies?**

12 A. Yes, I submitted pre-filed testimony and testified before the Rhode Island Public Utilities
13 Commission (“Commission” or “PUC”) in Docket 22-42-NG which was related to this
14 docket. I have also submitted pre-filed testimony and testified before the PUC in Docket
15 No. 22-33-EE regarding the Company’s 2023 Annual Energy Efficiency Plan and
16 submitted pre-filed testimony in PUC Docket No. 23-35-EE regarding the Company’s
17 2024 Annual Energy Efficiency Plan and 2024-2026 Energy Efficiency Three Year Plan.
18

19 **Q. Are you familiar with the Aquidneck Island Gas Reliability Project (the “Project”)?**

20 A. Yes. The Project involves the use of portable equipment on property owned by the
21 Company at Old Mill Lane in Portsmouth for the vaporization and storage of liquefied

1 natural gas (“LNG”) to provide back-up supply of natural gas to the Company’s gas
2 distribution system on Aquidneck Island.

3
4 **Q. What is your role specific to the Project?**

5 A, I am involved in responding to questions on the energy efficiency components of the
6 Non-Infrastructure Solution portion of the Project analysis.

7
8 **Q. Are you familiar with the Application and Siting Report dated April 2022 (“Siting
9 Report”) that were submitted to the Siting Board?**

10 A. Yes.

11
12 **II. Purpose and Structure of Testimony**

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

14 A. In my testimony, I will provide responses to issues and questions on the energy efficiency
15 components of the Siting Report that were raised by the Town of Middletown and the
16 Conservation Law Foundation (“CLF”).

17
18 **Q. How is your testimony structured?**

19 A. Section I is the Introduction. Section II presents the purpose and structure of my
20 testimony. Section III presents responses to issues and questions on the energy efficiency
21 components raised by the Middletown and CLF. Section IV is the conclusion.

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III. Responses to Issues Raised Regarding Energy Efficiency Alternatives Considered

Q. Are you familiar with the Energy Efficiency Program and Plan (“EE” or “EE Plan”) in Rhode Island?

A. Yes. As noted, I oversee strategy, policy, planning, and evaluation for all energy efficiency programs.

Q. Is the current EE Plan applicable to Aquidneck Island?

A. Yes. The Company’s EE Plan is applicable to all portions of the state of Rhode Island within the Company’s service territory, including Aquidneck Island.

Q. For how long has the EE Plan been reviewed and considered by the PUC?

A. The Company has sought PUC approval of, and has administered the state’s EE Plan, since 2007.

Q. Can interested parties participate in the EE docket?

A. Yes, subject to a deadline to intervene and standards for intervention set by the PUC. In addition to intervening, interested parties may also provide public comment. The Energy Efficiency Resource Management Council’s meetings are also open to the public to follow the proceedings and provide public comment.

1 **Q. To date, has CLF or the Town of Middletown intervened in the Company’s EE**
2 **docket, PUC Docket No. 23-35-EE?**

3 A. No, they have not.
4

5 **Q. Are you familiar with the testimony submitted by the Conservation Law Foundation**
6 **and the Town of Middletown in this docket?**

7 A. Yes. I reviewed the testimony submitted by both CLF and the Town of Middletown.
8

9 **Q. Have any of the suggestions raised in the pre-filed testimony filed on behalf of CLF**
10 **and the Town of Middletown already been discussed or promoted in the EE Plan?**

11 A. In general terms, yes, regarding what demand-side solutions consist of and the potential
12 impact of new federal incentives. However, there are some specific comments that have
13 not been discussed. For instance, Town of Middletown’s testimony states “Some
14 customers in Rhode Island already choose electrified heating over fuel-oil, and recent
15 increases in the incentives available for heating electrification are likely to further shift
16 customers away from fuel-oil in cases where gas is not available. In some cases,
17 customers may even select electric heating over natural gas heating equipment.” The
18 Company is not aware of any studies to support such specific claims.
19

1 **Q. Do the EE Plans that are currently pending with the PUC reflect coordination and**
2 **collaboration with other programmatic initiatives and incentives, such as the Clean**
3 **Heat Rhode Island?**

4 **A.** Yes. As described in the pre-filed testimony and EE Plans in Docket No. 23-35-EE, the
5 Rhode Island Office of Energy Resources (“OER”) opened its heat pump incentive
6 program, “Clean Heat RI,” in September 2023. Clean Heat RI offers incentives to
7 customers who switch from delivered fuels to high-efficiency electric heat pumps. In its
8 Plans, the Company considers how it will collaborate with OER to streamline customer
9 participation, mitigate potential confusion, and effectuate the biggest impact.

10
11 **Q. Please describe how the Clean Heat Rhode Island Program, the Inflation Reduction**
12 **Act (“IRA”) and the Infrastructure Investment and Jobs Act (“IIJA”) create**
13 **significant potential to overcome issues associated with costs through Federal tax**
14 **credits and direct incentives supporting efficiency, electrification, infrastructure**
15 **development, and workforce development.**

16 **A.** These matters are address in more detail in Docket 23-35-EE regarding the Company’s
17 annual and three year energy efficiency plans. Clean Heat RI is actively recruiting
18 participants. IRA tax credits are active, while direct incentive funds are expected to be
19 distributed to the state in 2024.

20

1 **Q. You indicated that you participated in Docket No. 22-33-EE regarding the**
2 **Company's 2023 Annual Energy Efficiency Plan. In the context of that docket has**
3 **the Division or any other intervenor recommend targeting of energy efficiency**
4 **measures to Aquidneck Island or any other geographically discrete area of the**
5 **State?**

6 A. No.

7

8 **Q. Do you have any other observations regarding the suggestion to target energy**
9 **efficiency incentives to Aquidneck Island at a level that exceeds the incentives**
10 **offered to Rhode Island customers generally?**

11 A. Yes. The decision to offer significantly enhanced energy efficiency incentives to a
12 discrete geographic area in the state involves a significant public policy question since it
13 would likely result in energy efficiency funds, contractor resources and equipment being
14 distributed inequitably throughout the state.

15

16 Heat electrification via air source or ground source heat pumps faces challenges, starting
17 with the cost for electrification of gas-heated customers in Rhode Island– both upfront
18 cost and ongoing operating costs. Other obstacles include a relatively immature installer
19 base and capacity to install and a longer sales cycle for installations. The mitigation of
20 these barriers would typically involve a longer-term market transformation strategy, one

1 that will be difficult to maintain in support of a relatively geographically narrow
2 opportunity limited to Aquidneck Island.

3
4 As a general matter, the Company's goal is to have a full portfolio of energy efficiency
5 programs with a BCR greater than 1.0 while offering cost-effective programs to all of our
6 customer segments throughout the state. Within the Company's current energy efficiency
7 program portfolio, some programs have higher BCRs than others. Maintaining a high
8 BCR requires the Company to balance programs with lower BCRs against higher BCR
9 programs such offerings to Large C&I customers.

10
11 In addition, Least Cost Procurement Standards require us to ensure Equity of Energy
12 Efficiency program opportunities for all customers statewide. Any changes to these
13 programs require PUC approval.

14
15 **IV. Conclusion**

16 **Q. Does this complete your testimony?**

17 **A. Yes, it does.**

THE NARRAGANSETT ELECTRIC COMPANY
EFSB DOCKET NO. SB-2021-04
RE: AQUIDNECK ISLAND GAS RELIABILITY PROJECT
WITNESS: TYLER OLNEY
NOVEMBER 3, 2023

**PRE-FILED DIRECT TESTIMONY OF
TYLER OLNEY**

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EXECUTIVE SUMMARY

On behalf of The Narragansett Electric Company (“Company”), Tyler Olney, Associate Director at by Guidehouse (“Guidehouse”), provides (i) an overview of what it would take to resolve the capacity constraint on Aquidneck Island using non-infrastructure resources by the winter of 2024-25 (ii) whether the Company has identified a non-infrastructure solution that would solve the supply constraint by 2030, and (iii) the assumptions used in the non-infrastructure solution. Mr. Olney also provides testimony regarding the inclusion of a moratorium in analysis.

1 **I. Introduction**

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

3 A. My name is Tyler Olney. My business address is 685 Third Avenue, New York, NY
4 10017.

5
6 **Q. By whom are you employed and in what position?**

7 A. I am employed by Guidehouse as an Associate Director. Guidehouse is a specialized,
8 global professional services firm that serves public and commercial clients across a range
9 of fields including the energy industry. Guidehouse's global Energy, Sustainability, and
10 Infrastructure segment employs more than 700 consultants who provide advisory services
11 to a diverse range of energy industry clients, including electric and gas utilities.

12

13 **Q. What are your responsibilities as an Associate Director at Guidehouse?**

14 A. As an Associate Director, I lead analyses performed for energy industry client projects.

15

16 **Q. Please described your education, training, and experience.**

17 A. I graduated from Tufts University with a bachelor's degree in Mechanical Engineering
18 with minors in Computer Science and Entrepreneurial Leadership Studies. I have worked
19 with Guidehouse for six years and in that time have provided technical support on a range
20 of energy industry projects, including preparing greenhouse gas ("GHG") emissions
21 analyses for several large utilities across the United States.

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Q. Have you previously filed testimony or testified before the Rhode Island Energy Facility Siting Board (“EFSB” or “Board”) ,Rhode Island Public Utilities Commission (“PUC” or the “Commission”), or other public utility commissions?

A. I have not appeared before the Board, but I have testified before the PUC in a proceeding related to this docket, RIPUC Docket No. 22-42-NG. I have provided expert testimony before the Connecticut Public Utilities Regulatory Authority under Docket Nos. 17-12-03RE03, No. 21-08-02, and No. 22-08-05. I have also presented before the New York Public Service Commission as part of a joint proceeding under Cases 19-G-0309, 19-G-0310, 20-E-0380, and 20-G-0381.

Q. Are you familiar with the Aquidneck Island Gas Reliability Project (the “Project”)?

A. Yes. The Project involves the use of portable equipment on property owned by the Company at Old Mill Lane in Portsmouth for the vaporization and storage of liquified natural gas (“LNG”) to provide back-up supply of natural gas to the Company’s gas distribution system on Aquidneck Island.

Q. What is your role specific to the Project?

A. I am the lead technical analyst responsible for performing the Aquidneck Island Gas Reliability Project Green House Gas (“GHG”) analysis originally presented in the

1 Project's Siting Report submitted to the Board in April 2022 with updates presented and
2 discussed herein.

3
4 **Q. Are you familiar with the Application and Siting Report dated April 2022 ("Siting
5 Report") that were submitted to the Board?**

6 A. Yes. I prepared the original GHG analysis that is included as Section 4.10 of the Siting
7 Report.

8
9 **II. Scope of Testimony**

10 **Q. What is the scope of your testimony?**

11 A. My testimony responds to the comments concerning a non-infrastructure response to the
12 capacity constraint, the assumptions that were made in the non-infrastructure option in
13 the Siting Report, and the reason a moratorium was included in the analysis.

14
15 **III. Resolving Capacity Constraint on Aquidneck Island**

16 **Q. What would it take to resolve the capacity constraint on Aquidneck Island by next
17 winter (2024-25) using non-infrastructure (exclusively demand-side management
18 resources)?**

19 A. According to the Company's Gas Long-Range Resource and Requirements Plan for the
20 Forecast Period 2023/24 to 2027/28, the Peak Hour demand at the Portsmouth gate

1 station in 2024-25 is forecasted to be 1,282 decatherms per hour (Dth/hr).¹ If the portable
2 LNG facility at Old Mill Lane was not in operation, a shortfall of 237 Dth/hr would occur
3 under this forecast.² Note that this demand forecast includes the projected impact of the
4 Company's current demand-side management (DSM) offerings. As identified in the
5 Company's responses to the Town of Middletown's Second Set of Data Requests in
6 Rhode Island Public Utility Commission (RIPUC) Docket No. 22-42-NG, the maximum
7 achievable potential design day savings from energy efficiency and demand response for
8 a single year and incremental to existing offerings is 820 Dth/day of savings.³ As noted
9 in Company testimony in RIPUC Docket No. 22-42-NG, this incremental DSM up to
10 maximum potential achievable savings "was based upon providing 100 percent incentives
11 to customers for energy efficiency projects" which "would lower the cost-effectiveness of
12 the Company's present energy efficiency program portfolio which does not offer 100
13 percent incentives to every customer for every measure."⁴ That 820 decatherms per day
14 (Dth/day) of savings from energy efficiency and demand response equates to about 41
15 Dth/hr, assuming a 1/20th design day demand to design hour demand ratio. That leaves a
16 remaining shortfall of about 196 Dth/hr that would need to be met by electrification of
17 gas customers. As assumed in the analysis of Non-Infrastructure Solutions identified in

¹ Exhibit 2, page 2 of RI Energy's Gas Long-Range Resource and Requirements Plan for the Forecast Period 2023/24 to 2027/28, filed 6/30/23 under Docket No. 22-06-NG, available at:

https://ripuc.ri.gov/sites/g/files/xkgbur841/files/2023-07/2206-RIE-Gas-Long-RangePlan2023_6-30-23.pdf

² Ibid.

³ See Table 1, in the Season 2021-22 row, of the Company's response to Middletown 2-1, filed on 2/1/2023 under Docket No. 22-42-NG

⁴ Prefiled Rebuttal Testimony of Company witness Brett S. Feldman, filed under Docket No. 22-42-NG on 4/18/23, page 5, lines 5-9.

1 the April 2022 Siting Report, the peak hour gas savings from electrification is about
2 0.043 Dth/hr per residential customer and 0.173 Dth/hr per commercial customer, or
3 about 0.06 Dth/hr per weighted average Aquidneck Island gas customer.⁵ Therefore, over
4 3,000 gas customers on Aquidneck Island would need to electrify over the next year to
5 resolve the capacity constraint on Aquidneck Island by next winter (2024-25). That
6 equates to roughly 20% of gas customers on Aquidneck Island. Note that that is in
7 addition to any electrification of gas customers already included in the baseline forecast,
8 electrification of current delivered fuel (e.g., propane, fuel oil) customers, and any heat
9 pump adoption of new construction in the region. Because homeowners typically replace
10 their heating equipment every 15-20 years, only about 5-7% of customers would be
11 expected to consider electrifying each year. Therefore, to electrify roughly 20% of gas
12 customers over one year, many customers would need to replace their existing heating
13 equipment before the end of its useful life. This would require extraordinary levels of
14 incentives and customer outreach.

15
16 **Q. Has the Company identified a Non-Infrastructure Solution that will solve the**
17 **capacity constraint by 2030?**

18 A. Yes. Section 4.8 of the April 2022 Siting Report identifies two solutions – one under
19 business-as-usual (“BAU”) conditions and the other under an assumed moratorium

⁵ See Table A-18 of the September 2020 Aquidneck Island Long-Term Gas Capacity Study, available at: <https://www.rienergy.com/media/pdfs/other/aquidneckislandlong-termgascapacitystudy.pdf>, which shows the annual baseline gas consumption, of which ~1% occurs on the design day, and of that design day demand, 5% is assumed to occur in the peak hour

1 scenario – in which DSM programs could close the demand-supply gap such that the
2 Company could, based on the forecast at the time, “look to retire the current Old Mill
3 Lane site by 2029/30”.⁶

4
5 **Q. What were the assumptions made for that solution?**

6 A. As detailed in Section 4.8 of the April 2022 Siting Report, the Non-Infrastructure
7 Solution “relied on the assumed maximum potential achievable incremental volumes of
8 EE [energy efficiency] and DR [demand response] which... require significant scaling of
9 the programs and adoption of measures by a large portion of the Aquidneck customer
10 base.” As noted in Company testimony under RIPUC Docket No. 22-42-NG, this
11 incremental energy efficiency up to maximum potential achievable savings “was based
12 upon providing 100 percent incentives to customers for energy efficiency projects” which
13 “would lower the cost-effectiveness of the Company’s present energy efficiency program
14 portfolio which does not offer 100 percent incentives to every customer for every
15 measure.”⁷ Additionally, “without a moratorium, 40% of HVAC [heating, ventilation,
16 and air conditioning systems] turnover would be required to electrify with a 5-year ramp
17 up period”, representing “approximately 15% of Aquidneck Island gas customers [by

⁶ Pg. 36-38 of the April 2022 Siting Report under Docket No. SB-2021-04, available at:
<https://ripuc.ri.gov/sites/g/files/xkgbur841/files/2022-07/Aquidneck%20Island%20Gas%20Reliability%20Project%20-%20Siting%20Report%20-%20April%202022%20-%20...PDF>

⁷ Prefiled Rebuttal Testimony of Company witness Brett S. Feldman, filed under Docket No. 22-42-NG on 4/18/23, page 5, lines 5-9.

1 2030].”⁸ Note that achieving this level of cold-climate electric heat pump adoption is
2 assumed to require “significant up-front incentives designed to both reduce customer
3 installation costs as well as mitigate ongoing operating cost increases.”⁹

4
5 **IV. Reason for Inclusion of a Moratorium in Analysis**

6 **Q. Are you familiar with the intervenor’s testimony questioning inclusion of a**
7 **moratorium in analysis?**

8 A. Yes, the testimony of Mr. Jeffrey Loiter on behalf of the Town of Middletown questioned
9 the inclusion of a moratorium in analysis. Specifically, Mr. Loiter stated that “with
10 respect to the availability of gas service, the Company insists on comparing the emissions
11 from continued operation of the facility with the presence of a moratorium on new gas
12 connections, despite the fact that no such moratorium exists.”¹⁰ Mr. Loiter notes further
13 that “the proposed solution (i.e., the LNG [liquified natural gas] facility) does not include
14 a moratorium and therefore the proposed baseline that includes a moratorium
15 unnecessarily complicates the analysis of the GHG [greenhouse gas] emissions.”¹¹

⁸ Pg. 36-38 of the April 2022 Siting Report under Docket No. SB-2021-04

⁹ Ibid.

¹⁰ The Testimony of Loiter on behalf of the Town of Middletown, page 5, lines 11-14.

¹¹ The Testimony of Loiter on behalf of the Town of Middletown, page 5, lines 16-19.

1 **Q. Please explain why the moratorium is included in the analysis.**

2 A. As noted in the April 2022 Siting Report,¹² the Board's Order No. 150 instructed the
3 Company to assume in its analysis: (i) a scenario with a full moratorium, and (ii) a
4 scenario where there is no moratorium.¹³

5

6 **V. Conclusion**

7 **Q. Does this complete your testimony?**

8 A. Yes.

¹² Pg. 35-36 of the April 2022 Siting Report under Docket No. SB-2021-04

¹³ See Order No. 150 submitted under Docket No. SB-2021-04 on 9/17/21, Page 35-36, available at:
https://ripuc.ri.gov/efsb/2021_SB_04/Order_150_Petition_Waiver_SB-2021-04.pdf

THE NARRAGANSETT ELECTRIC COMPANY
EFSB DOCKET NO. SB-2021-04
RE: AQUIDNECK ISLAND GAS RELIABILITY PROJECT
WITNESS: PAT CONVERY
NOVEMBER 3, 2023

PRE-FILED REBUTTAL TESTIMONY

OF

PAT CONVERY

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EXECUTIVE SUMMARY

Pat Convery, PE is President and Chief Engineer at Cornerstone and submits his testimony on behalf of The Narragansett Electric Company (“Company”). Mr. Convery testifies about the history of liquefied natural gas (“LNG”) use in New England and the present and future demand for LNG equipment. Mr. Convery also presents his analysis of the future value and need for the LNG equipment the Company is proposing to purchase for the Aquidneck Island Gas Reliability Project.

1 **I. Introduction**

2 **Q. Please state your name, employer, and position.**

3 A. Pat Convery, PE, President & Chief Engineer of Cornerstone Energy Services.

4 Cornerstone is a full-service engineering and project management provider with roots in
5 New England and operations throughout the US and Ontario, Canada.

6

7 **Q. Please summarize your work experience.**

8 A. I have almost 40 years of experience working in the gas and energy business for
9 operators, engineers, and developers of energy infrastructure around the world. I attended
10 engineering school at Manhattan College and hold graduate degrees from Tufts and
11 Harvard. I am a principal member of the NFPA 59A (LNG) Technical Committee. I am
12 a Licensed Professional Engineer in ten US States and is a Chartered Engineer and a
13 member of the Institute of Engineers of Ireland.

14

15 **II. Scope of Testimony**

16 **Q. What is the scope of your testimony**

17 A. My testimony is intended to address several questions. What is the past, present, and
18 future demand for portable LNG equipment in New England? What is the availability of
19 16,000-gallon smart queen units and 750 MSCFD portable vaporizers? What is the
20 future value and likelihood of redeploying similar equipment in five years' time?

21

1 **Q. Are you familiar with The Narragansett Electric Company’s d/b/a Rhode Island**
2 **Energy (“Company”) proposed Aquidneck Island Gas Reliability Project**
3 **(“Project”)?**

4 A. Yes.

5
6 **III. History of LNG in New England**

7 **Q. What can you tell us about the history of LNG in New England?**

8 A. Since the late 1990s New England has had a local source of large volumes of Liquefied
9 Natural Gas (“LNG”) from the Everett, MA import terminal. From 1999 to about 2014,
10 the gas from Everett was used for winter peak shaving by sending gas out directly into
11 the Boston Gas and Algonquin systems, and by trucking LNG to the several permanent
12 satellite storage locations operated by the Local Distribution Companies (“LDC”) in the
13 region. The demand for portable LNG equipment, including portable vaporizers and
14 storage/pump modules (now known as “Queen” units), was limited to occasional
15 planned and unplanned pipeline outages.

16
17 The energy transition began to take effect in New England around 2014. The desire
18 among policy makers to reduce greenhouse gas emissions to slow or prevent climate
19 change prompted a number of responses. Public and private investment in carbon
20 reducing technologies and practices such as renewable electric generation,
21 electrification of heat, energy efficiency and other measures was noticeable. Along with

1 the investments in decarbonization came opposition to investment in fossil fuel
2 infrastructure.¹

3
4 In 2016 Kinder Morgan officially cancelled the Northeast Direct Gas Pipeline project.
5 This project was aimed at adding substantial incremental pipeline capacity from the
6 production fields in Pennsylvania to the load centers in New England. Since then, there
7 have been some small increases in deliverability (Atlantic Bridge, for example) but no
8 substantial increases despite the steady load growth, including peak day load growth.

9
10 As the peak day load continues to grow, LDCs are investing in extending the life of their
11 fixed LNG assets wherever possible. In addition, they are turning to “enhanced peak
12 shaving” including the use of portable LNG, and portable and fixed compressed natural
13 gas. An additional market response to the peak capacity shortfall is the construction of a
14 new LNG production facility in Charlton, Massachusetts, the first of its kind in
15 Massachusetts since the 1970s. The same market signals that prompted the investment
16 in that facility are indicating that the peak day capacity shortages will continue and
17 likely grow until decarbonization can make measurable inroads into the peak day gas
18 load.

¹ Pipeline supplies from Pennsylvania to New England all pass through the State of New York. Even though a State conceptually should not interfere with interstate commerce, leaders in New York have played an important role in preventing new pipeline capacity projects. <https://yankeeinstitute.org/2022/01/11/policy-corner-with-gas-pipelines-blocked-new-england-leans-on-oil-and-coal/>

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Q. How has the use of portable LNG equipment changed over time?

A. The primary portable LNG assets used in New England are queen units and portable vaporizers. Queen units combine a large storage tank (approximately 16,000 gallons or 1,300 MSCF of gas) with sendout pumps that can boost the pressure of the fluid to match system pressure (in the case of the Project under consideration the pumps can generate 320 PSIG). Portable vaporizers use gas-heated water baths to warm the LNG turning it back into gas vapor for use in pipelines.

Portable LNG has four established uses in New England. These are: 1) peak shaving on winter days; 2) alternate gas supply during planned pipeline outages; 3) on system storage to provide distribution integrity during unplanned outages on the interstate pipelines; and 4) supplying fuel to facilities or communities with no pipeline access, including small power generators and oil/gas production facilities. The need to provide protection against interstate pipeline delivery problems, once unheard of, is now a reality due to much higher utilization factors caused by lack of pipeline expansions, increased heating load, and increased power generation load. The higher utilization leaves the pipelines more exposed to operational problems in the event of mechanical breakdowns at compressor stations, and other equipment failures.

1 The first two uses are complimentary based on time of the year. All scheduled pipeline
2 outages for repairs, expansions and integrity inspections are scheduled for the summer
3 season allowing portable LNG equipment assets to have increased utilization. The third
4 use, distribution integrity, is a growing application. Overuse of the existing pipelines
5 appears to be far outpacing decarbonization efforts. The fourth use is typically reserved
6 for non-utility operators serving communities where there is no gas distribution system
7 access.

8
9 **IV. Present and Future Demand for LNG Equipment**

10 **Q. How do you quantify the demand for the LNG equipment?**

11 A. Quantifying the demand for portable LNG equipment is difficult because each utility
12 operator and non-utility service company conducts their own business and does not
13 publish their procurement history or plans in an accessible way. However, the trends in
14 the demand for this equipment are clear. Upward pressure on demand comes from several
15 fronts as described below.

16
17 The demand for portable LNG equipment for peak shaving has grown since 2014 due to
18 the pipeline capacity limits explained above coupled with the continued growth of the
19 peak winter load, in both maximum demand and number of days when demand is not
20 met by pipeline supply. The demand for the same equipment for pipeline outages has
21 also grown based on the emphasis on pipeline integrity embodied in recent regulations,

1 and the aging of the existing pipeline infrastructure in the region. The fundamentals that
2 are driving this increased demand show no signs of abating. Gas load, including winter
3 peak load continues to grow.² Significant increases in pipeline delivery from
4 Pennsylvania is unlikely to be permitted, or even attract the necessary investment.³

5
6 The manufacturing sector has responded to the demand for portable LNG equipment.
7 Manufacturing capacity has increased since 2014 with new entries such as Applied Cryo
8 Technologies (“ACT”) joining traditional suppliers such as Chart Industries to boost
9 total manufacturing capacity.

10
11 In addition to the Company, substantial purchases of similar equipment along with
12 planning for future purchases have been made by National Grid and Eversource, two of
13 the region’s largest gas utilities. Non-utility demand for similar equipment is generated
14 by service fleets such as Ferris, Transgas, Certarus, REV LNG and Stabilis which
15 continue to expand their services in response to the underlying drivers of the capacity
16 shortage. The service fleets provide portable equipment and operations support to utility
17 operations (outages and peak shaving) as well as non-utility operators (stranded
18 communities, fuel arbitrage for large industrial customers, etc.).

² https://www.iso-ne.com/static-assets/documents/2023/03/a13_b_rca_daily_gas_pipeline_forecast.pdf

³ <https://www.wmtw.com/article/pipelines-unable-carry-natural-gas-new-england-meet-demand/43222951>

1 Alternative approaches to the region's energy use, particularly electrification of heat,
2 could theoretically solve the winter peak gas challenge. The keys to this shift would be a
3 significant increase in the rate of development of carbon free electric generation (Wind,
4 solar, nuclear, hydro, and emerging technologies), along with a mechanism to finance
5 the shift of millions of homes and businesses from gas to electric (heat pump) heating.
6 Massachusetts has set goals to have a substantially decarbonized energy economy by
7 2050, with interim goals along the way. Rhode Island has a goal of achieving 100%
8 renewable electricity production by 2030. In consideration of the time horizons
9 associated with these goals, the demand for fossil fuel infrastructure, including
10 extraordinary infrastructure such as portable LNG equipment should remain strong for
11 at least 20 years.

12
13 **Q. Please summarize the LNG equipment market for new equipment.**

14 A. Two suppliers make up most of the market for this equipment. These are Chart
15 Industries, a well-established manufacturer in cryogenic systems, and ACT a relative
16 newcomer, which have grown their capacity significantly in the last 10 years. Both
17 suppliers were contacted to gather data for this testimony.

18
19 Lead time (the time required to manufacture and deliver the equipment after a purchase
20 order is placed) for queen units and gas fired portable vaporizers is roughly eight
21 months for single units, and staggered deliveries for larger orders. As with most process

1 equipment these units are made to order. Although the product offering is somewhat
2 standard functionally, it is common for buyers to specify customizations to suit their
3 particular operation or application more closely.

4
5 ACT currently has manufacturing capacity to produce eight queens per quarter. They
6 can also produce, in a separate operation, four portable vaporizers per quarter. ACT is
7 considering increases in capacity, however ACT was recently purchased by Plug Power
8 (“Plug”). Plug has a focus on hydrogen technologies including cryogenic hydrogen
9 storage and transport. How the ACT resources are deployed will be based on how they
10 best fit Plug’s mission.

11
12 Chart’s production focuses on storage solutions including queens, transport trailers and
13 fixed ASME (American Society of Mechanical Engineers) storage tanks. Chart’s tank
14 products are deployed globally although its production of vaporizer units is more
15 limited. In general, the availability of portable vaporizers is more limited than queen
16 storage units. The vaporizers for the Project are rated at 750 MSCFH, which represents
17 the high end of the range for this type of equipment.

18
19 **V. Future Value and Need for Proposed Project Equipment**

20 **Q. Do you have an opinion on the future value of the proposed project Equipment?**

21 **A.** The question addressed here is what the Fair Market Value (“FMV”) of the equipment

1 will be in five years' time. For durable process equipment a prediction of value in the
2 short term is best thought of as a deviation from book value. The source of the deviation
3 will be caused by factors such as the required cost and schedule to purchase new
4 equipment of similar function, market upsets that drastically increase the value such as
5 demand outstripping production capacity, or societal or technological changes that
6 render the equipment less useful, such as an alternative way of achieving the same
7 goals.

8
9 The equipment is durable process equipment with wetted parts constructed primarily of
10 stainless steel. This material removes atmospheric corrosion as a source of aging
11 (decrease in value over time) of the equipment. The design life according to the
12 manufacturers is 30 years. A reasonable depreciation schedule from an accounting
13 perspective would be straight line over 30 years at which point the equipment is
14 assumed to have no residual value. As with any process equipment used to provide gas
15 service to customers, routine and capital maintenance is expected through the life of the
16 asset. The main driver for this maintenance is to provide reliability, but it has the
17 additional effect of tending to maintain value as well. In this scenario the book value
18 after five years of service would be approximately 83% of the initial cost. The
19 differential between book and FMV cannot be precisely calculated but is influenced by
20 several factors. These are summarized in Table 1 below:

21

1

Table 1-Factors Influencing FMV

<i>Factor</i>	<i>Impact</i>	<i>Application to this Equipment</i>
Production Capacity	An increase in production capacity, including new entrants, tends to decrease FMV	Over the short term (five years in this case) production capacity is expected to grow slightly. This industrial capacity is not easily added since it requires capital, space, and involves project permitting.
Raw Materials Costs	Increases in raw materials will increase FMV	Materials, including Stainless Steel, aluminum, and electronic controls have been subject to sharp increases in the last five years, and have been quite volatile over the last fifteen years.
Demand	Increased demand for the equipment will increase FMV	Given the several uses for this equipment, demand is expected to grow over the next five years.
Disruptive Technology	The arrival of an alternate technology that accomplishes the same goal will decrease FMV	Disruptive technologies should be expected as we progress through the energy transition. However, the probability of an important change in the next five years is low.

2

3

Given the FMV influences in Table 1, the most likely range of FMV for the equipment

4

after five years' service is between Book and Book plus 10%, or between \$9,244,342

5

and \$10,149,874. The equipment FMV summary is shown in Table 2.

6

1

Table 2 – Future FMV Prediction

<i>Equipment</i>	<i>Initial Cost</i>	<i>Book Value Year 5</i>	<i>Book +10%</i>	<i>Quantity</i>	<i>Initial Cost</i>	<i>Low Total Value after year 5</i>	<i>High Total Value after year 5</i>
Queen 16K	\$1,274,000	\$1,061,242	\$1,167,366	6	\$7,644,000	\$6,367,452	\$7,004,196
Vaporizer 750M	\$1,721,423	\$1,433,945	\$1,577,339	2	\$3,443,290	\$2,867,890	\$3,154,678
Totals					\$11,087,290	\$9,244,342	\$10,149,874

2

3 **Q. In your opinion, what is the likelihood of the equipment being needed in the**
4 **future?**

5 A. As described above, portable LNG equipment has four major uses in New England:
6 peak shaving on winter days; alternate gas supply during planned pipeline outages; on-
7 system storage to provide distribution integrity during outages on the interstate
8 pipelines; and supplying fuel to facilities or communities with no pipeline access. The
9 on-system storage application is most efficiently served by larger permanent LNG
10 facilities like those built in New England in the 1970s. However, regulatory changes
11 since that time, coupled with the societal reluctance to invest in large long-term fossil
12 fuel assets has made new large permanent LNG peak shaving plants less likely to be an
13 accessible tool to the utilities. The equipment in question also has application in other
14 cryogenic gases, particularly liquid nitrogen (“LN2”, or “LIN”). The global market for

1 LN2 is much larger than the LNG market.⁴ The high likelihood of repurposing portable
2 LNG equipment is rooted in the multiple uses of the equipment.

3
4 The need for pipeline outage support using portable LNG is significant and increasing.
5 The two main drivers are developments in gas pipeline safety regulations and the aging
6 of the gas pipeline infrastructure in the region. The primary regulations are the so called
7 “Mega Rule” that was published in 2020 and contains requirements for transmission
8 pipeline integrity inspections and MAOP validations with implementation dates ranging
9 from 2021 to 2035. Transmission outages to comply with this rule cause interruptions to
10 distribution system supply. Often, these interruptions can be managed through
11 deploying portable LNG equipment.

12
13 The latest proposed regulation concerns modifications to pressure regulator facilities on
14 all distribution systems to prevent overpressure incidents.⁵ The requirements are far
15 reaching, and individual utilities’ response plans are yet to be formulated. As the
16 deadlines for implementation arrive, the need for planned outages supported by portable
17 LNG will likely increase.

⁴ <https://www.imarcgroup.com/liquid-nitrogen-market#:~:text=Market%20Overview%3A,6%25%20during%202023%2D2028.>

⁵ <https://www.phmsa.dot.gov/news/usdot-proposes-updates-gas-distribution-pipeline-regulations-bolstering-safety-requirements>

1 Clearly, the availability of the equipment to be redeployed depends on no longer
2 requiring it for winter peak shaving use. The need for winter peak shaving could be
3 mitigated by the construction of a major gas pipeline project from Pennsylvania,
4 demand erosion due to significant electrification of heat in the region, investment in
5 significant permanent LNG facilities in strategic locations, or some other unidentified
6 disruptive technology.⁶ Many of these solutions are regional in nature, and would result
7 in the need for winter peak shaving to be decreased among all the New England utilities.
8 If peak shaving requirements were to decrease significantly the two likely repurposing
9 avenues for the portable LNG equipment would be summer use for pipeline outages
10 (within the Company's service territory, or for another LDC), repositioned for
11 distribution integrity purposes (year-round) or redeployment to serve non-connected
12 industrial loads or communities. Only in the case of substantial decarbonization of the
13 New England energy economy would the portable LNG equipment find no use in New
14 England and would likely be most effectively redeployed outside the region or outside
15 the United States.

16
17 **VI. Conclusion**

18 **Q. Does this complete your testimony?**

19 **A. Yes.**

⁶ Economic collapse would also reduce the winter peak demand. However, the likelihood of that situation is remote and would be accompanied by other disruptive factors that would render the conclusions herein inconsequential.