COMMONWEALTH OF MASSACHUSETTS

BEFORE THE

DEPARTMENT OF PUBLIC UTILITIES

Liberty Utilities (New England Natural Gas Company) Corp. d/b/a Liberty	**D.P.U. 22-32**

PETITION OF LIBERTY UTILITIES (NEW ENGLAND NATURAL GAS COMPANY) CORP. D/B/A LIBERTY FOR APPROVAL OF AN AGREEMENT TO PURCHASE RENEWABLE NATURAL GAS FROM FALL RIVER RNG, LLC AND OF THE LIBERTY RNG PROGRAM

EXPERT TESTIMONY OF

DR. DEAN MURPHY AND MR. JOSH FIGUEROA

ON BEHALF OF

THE COMMONWEALTH OF MASSACHUSETTS, OFFICE OF THE ATTORNEY GENERAL, OFFICE OF RATEPAYER ADVOCACY

JULY 15, 2022

CONTENTS

I. Introduction

Q: Please state your name, occupation, and business address for the record.

A: My name is Dean Murphy and I am a Principal of The Brattle Group, whose business address is One Beacon Street, Suite 2600, Boston, Massachusetts, 02108.

Q: Briefly describe your education and professional qualifications.

A: I have thirty years of experience in economic consulting, focused on energy in the electricity and natural gas sectors. My recent work has focused on decarbonizing both the gas sector and the electricity sector, including interactions between the two. I also have deep experience in topics such as resource and investment planning, valuation for contract disputes and asset transactions, climate change policy and analysis, competitive industry structure and market behavior, and market rules and mechanics. I have examined these and other matters from the perspectives of investor-owned and public electric utilities, state agencies, regulators, independent energy producers and investors, industry groups, consumers, and system operators.

I have testified before the New Hampshire Public Utilities Commissions, the Connecticut Department of Public Utility Control, the New Jersey Department of Public Utilities, and the Public Utilities Board of Manitoba. I have testified before committees of the state legislatures in New Jersey, New York, and Pennsylvania, and have presented to advisory committees to the Pennsylvania Department of Environmental Protection. I have also testified before the United States Court of Federal Claims, the U.S. Bankruptcy Court (both New Jersey and Southern District of New York), and the United States District Court (Vermont). I have submitted written testimony on behalf of the Massachusetts Attorney General's Office addressing the procurement of offshore wind in the Section 83C proceedings.

I hold a Ph.D. in Industrial Engineering and Engineering Management and an M.S. in Engineering-Economic Systems, both from Stanford University, and a B.E.S. in Materials Science and Engineering from the Johns Hopkins University.

Q: Please state your name, occupation, and business address for the record.

A: My name is Josh Figueroa and I am an Associate at The Brattle Group, whose business address is One Beacon Street, Suite 2600, Boston, Massachusetts, 02108.

Q: Briefly describe your education and professional qualifications.

A: I have over 10 years of experience working in the regulated utility industry. At Brattle, I specialize in financial and economic topics in the energy sector with expertise in regulatory economics and finance, energy markets, and infrastructure. I co-lead Brattle's Future of Gas practice helping clients develop strategies, utility programs, and alternative regulatory structures in response to the evolving landscape for natural gas utilities. I have co-sponsored testimony submitted before the Public Utility Commission of Oregon and the Barbados Fair Trading Commission.

Prior to joining Brattle, I worked at Con Edison Transmission where I led the acquisition, development, and management of natural gas transmission assets. I began my career at Con Edison's regulated natural gas utility in several roles in Gas Operations and Gas Supply. At Gas Supply, I managed the utilities' pipeline transportation and storage capacity portfolio. I was also a natural gas purchaser and scheduler for Con Edison's regulated gas utilities and steam generation units.

I have a B.S. in Mechanical Engineering from Columbia University, a B.S. in Neuroscience from Brandeis University, and an M.B.A. from NYU's Stern School of Business.

Q: What is the purpose of your testimony in this proceeding?

A: We have been asked by the Massachusetts Attorney General Office ("AGO"), Office of Ratepayer Advocacy to examine several issues in regard to a petition submitted by Liberty

Utilities (New England Natural Gas Company) Corp d/b/a/ Liberty ("Liberty" or the "Company") to the Commonwealth of Massachusetts Department of Public Utilities ("D.P.U."). Liberty is requesting approval of an agreement to purchase renewable natural gas from Fall River RNG, LLC. ("Fall River", which is a subsidiary of Fortistar Methane Group, LLC, "Fortistar") and of Liberty's RNG Program (together, the "Petition").[1] We have been asked to evaluate whether the proposed contract would result in the delivery of renewable natural gas, including the Environmental Attributes of that gas, to Liberty's distribution system and its customers. We have also been asked to discuss the criteria for review of renewable natural gas supply contracts, to provide an overview of the maturity of renewable natural gas technologies and markets, and to discuss RNG's potential role as a more sustainable alternative to natural gas. We have not been asked at this time to comment on the Liberty RNG program.

Q: Please provide a brief summary of the major conclusions from your testimony.

A: As it is currently structured, the proposed contract would not deliver RNG, with its Environmental Attributes, to Liberty's distribution system.[2] This is because the contract assigns the Environmental Attributes of the gas to Fortistar, not to Liberty.[3] This makes the proposed agreement a contract for gas without Environmental Attributes—effectively a contract for natural gas. This is made clear by the contract itself, which includes an option for Liberty to purchase the Environmental Attributes; if Liberty were to exercise that option, then the agreement would deliver RNG, with its Environmental Attributes, to Liberty's system. However, exercising this option would increase the price substantially, from $9.25/Dth to $34.25/Dth for the first year. If Liberty were to nonetheless attempt to claim credit for the Environmental Attributes, despite that they are allocated to Fortistar,

---

1 Liberty Utilities (New England Natural Gas Company) Corp. d/b/a Liberty, "Petition of Liberty Utilities (New England Natural Gas Company) Corp. d/b/a Liberty for Approval of an Agreement to Purchase Renewable Natural Gas from Fall River RNG, LLC and of the Liberty RNG Program," D.P.U. 22-32, March 31, 2022. ("Liberty Petition")

2 For clarity, the Liberty Petition refers to "Environmental Attributes" whereas the RNG Purchase and Sale Agreement refers to "Renewable Attributes." For purposes of this testimony, we rely on the Liberty Petition convention and use "Environmental Attributes."

3 Direct Testimony of William J. Clark and Patricia B. Walker, Liberty Utilities (New England Natural Gas Company) corp. d/b/a Liberty, D.P.U. 22-32 ("Clark and Walker Testimony"), Exhibit LU-WC/TW-2, p. 27

this would be double-counting. This double-counting is unlikely to be allowed under any future Massachusetts gas policy, and would not reduce GHG emissions.

Beyond this, if this were an RNG contract (*e.g.*, if Liberty exercised the option to purchase the Environmental Attributes), the standard for reviewing the contract should differ considerably from the standard of review for typical natural gas contracts. This is true for several reasons. First, RNG serves a different and broader set of needs than natural gas, and the contract should be evaluated against that broader set of needs. Second, the available market information for RNG is quite different from the information available for natural gas. In light of these issues, we consider what should be the proper standard of review for RNG contracts. We find that the utility's need for GHG reduction should be defined, and the contract's contribution to that need assessed. It is challenging to evaluate the reasonableness of pricing, since RNG markets do not offer the visible price information that is available for natural gas. Nonetheless, the contract price should be compared to available references and alternatives, including alternative ways to reduce GHG emissions, on the basis of the cost of achieving the required GHG reductions. The Petition has not provided sufficient information to support the proper type of review.

Further, the fundamental role of the gas distribution system is under active discussion in Massachusetts, both in the D.P.U. 20-80 Future of Gas docket and within the Administration, as the Commonwealth transitions to a net-zero energy economy by 2050. Some of the decarbonization pathways under consideration rely relatively heavily on RNG, though its long-term availability at the levels that would be required is in question. Other possible pathways may involve considerable reductions to the scale and scope of the gas distribution system, or even its complete elimination. The proposed contract is for a term of 20 years, far longer than most of the natural gas supplies acquired by gas local distribution companies ("LDCs") in the normal course of business, and extending deep into the period in which the gas system may change fundamentally from its current form. In this context, the rationale for beginning to build up a long-term portfolio of renewable gas has not been established.

II. Regulatory and Policy Context

II.A. Liberty's Petition

Q: Briefly summarize Liberty's Petition submitted in this proceeding.

A: The Company's petition request approval of a twenty-year purchase and sale agreement for renewable natural gas ("RNG") with Fall River RNG LLC, a subsidiary of Fortistar.[4] Fortistar will construct an RNG facility at the existing Fall River Landfill, which will interconnect to Liberty's gas distribution system.[5] Under the terms of the contract, Liberty will purchase 163,997 to 281,137 Dth per year in contract year 1 (expected start of November 1, 2022).[6] This would satisfy 2.4% to 4.1% of Liberty's forecasted demand (6,841,624 Dth) in 2023/2024.[7] The contracted RNG volumes gradually decline to 84,458 to 168,917 Dth per year by contract year 20.[8] The initial contract price is $9.25/Dth and escalates at 2% per year to $13.48/Dth in the final year.[9] Fortistar will retain the Environmental Attributes associated with production of the RNG (referred to as Renewable Attributes in the contract).[10] Liberty retains any Massachusetts-specific Environmental Attributes if the Commonwealth were to establish a state renewable credit mechanism for RNG, though the contract requires that Liberty indemnify Fortistar for any lost value of the Environmental Attributes if this occurs.[11] The contract also gives Liberty the option in the first two years to purchase all Environmental Attributes for the duration of the contract at a price of $25/Dth (not escalated).[12]

---

4 *Id.*, p. 1.

5 *Id.,* p. 2.

6 *Id.*, Exhibit B.

7 Liberty Utilities (New England Gas Company) Corp response to Information Request SC-2-4, D.P.U. 22-32, July 11, 2022. Add note that this is the sum of total residential and commercial, excludes company use.

8 Clark and Walker Testimony, pp. 42-43.

9 Liberty Petition, p. 2.

10 Clark and Walker Testimony, p. 27.

11 *Id.*, pp. 27–28.

12 *Ibid*.

In addition, Liberty proposes an opt-in RNG program called Liberty RNG for its customers in Fall River and North Attleboro service territories. Participating customers could purchase RNG to displace 100%, 50%, or 25% of their total natural gas usage.[13] The customer would be charged an RNG Factor based on the RNG supply cost under the Fortistar contract, the interconnect costs, and the associated administrative and program costs.[14] The customer bill impacts for opting in at the 100%, 50%, and 25% levels are $636 (42.6%), $318 (21.3%), and $159 (10.6%), respectively, for the average use residential heating customer.[15] To the extent that customers opt-in for less volume than what Liberty purchases under the contract, the remaining RNG volumes will be provided to non-participating customers and costs will be recovered through the overall seasonal cost of gas adjustment factor.[16]

II.B. On-Going Future of Gas Discussions

Q: Please explain the regulatory and policy context surrounding Liberty's Petition.

A: Liberty's Petition comes at a time when there is on-going discussion about the future of natural gas and the natural gas distribution company systems in the Commonwealth. On April 22, 2020, the Executive Office of Energy and Environmental Affairs ("EEA") established a statewide net-zero greenhouse gas ("GHG") emissions limit of net-zero by 2050.[17] Interim statutory GHG emissions reduction goals of 50% by 2030 and 75% by 2040 were subsequently established.[18]

---

[13] Liberty Petition, p. 3

[14] *Ibid*.

[15] Direct Testimony of David A. Heintz, ("Heintz Testimony") Exhibit LU-DAH-1, D.P.U. 22-32, March 31, 2022, p. 8.

[16] Liberty Petition p. 3 and Clark and Walker Testimony, p. 28.

[17] The Commonwealth of Massachusetts Executive Office of Energy and Environmental Affairs, "Determination of a Statewide Emissions Limit for 2050," April 22, 2020, p. 1, https://www.mass.gov/doc/final-signed-letter-of-determination-for-2050-emissions-limit/download

[18] Chapter 8 of the Session Laws Acts of 2021, "An Act Creating Next-Generation Roadmap for Massachusetts Climate Policy," approved March 26, 2021, https://malegislature.gov/Laws/SessionLaws/Acts/2021/Chapter8

In response to a petition by the AGO,[19] the D.P.U. opened an investigation (D.P.U. 20-80) into the future role of natural gas utilities as the Commonwealth achieves its legislative-mandated GHG emissions reduction goals.[20] The D.P.U. ordered the Massachusetts gas LDCs, including Liberty, to retain an Independent Consultant to study various decarbonization pathways that the LDCs could pursue to achieve the Commonwealth's emissions goals. In March 2022, the Independent Consultant retained by the LDCs published its report examining eight potential decarbonization pathways, ranging from more efficient use of natural gas to full decommissioning of the gas distribution system, each with their own set of considerations for customer costs, infrastructure requirements, workforce impacts, equity and energy justice, *etc.*[21] Each pathway relies on a combination of efficiency improvements, electrification with heat pumps (air-source, ground-source or networked geothermal),[22] and substitution of renewable natural gas (biomethane, hydrogen, and synthetic natural gas) to meet the Commonwealth's GHG emissions reduction goals.[23] Figure 1 below replicates Figure 15 from the Independent Consultant's Pathways Report, illustrating the level of reliance on renewable gases, and the declining use of natural gas in the building sector, in each of the eight pathways considered, using optimistic assumptions regarding renewable gas.

---

[19] The Commonwealth of Massachusetts Office of the Attorney General, "Petition of the Attorney General, pursuant to G.L. c. 12, §§ 11E, 10; and its common law authority to act in the public interest, Requesting an Investigation, pursuant to the Department of Public Utilities' authority under G.L. c. 164 §§ 76, 105A into the impact of continuing business operations of local gas distribution companies as the Commonwealth achieves its target 2050 climate goals." D.P.U. 20-80, June 4, 2020.

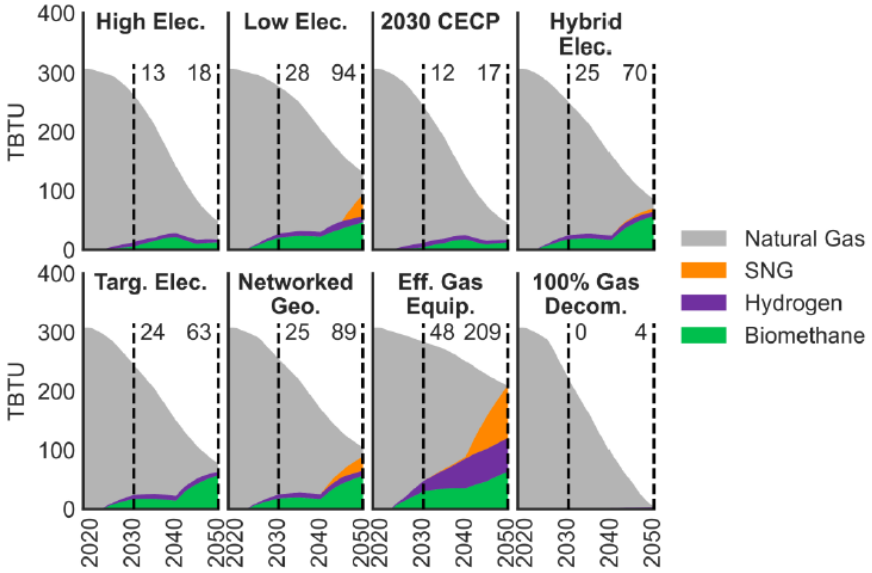
[20] The Commonwealth of Massachusetts Department of Public Utilities, "Vote and Order Opening Investigation," D.P.U. 20-80, October 29, 2020.

[21] E3 and Scott Madden, "The Role of Gas Distribution Companies in Achieving the Commonwealth's Climate Goals," D.P.U. 20-80, March 18, 2022 ("Independent Consultant Report").

[22] Air Source Heat Pumps (ASHP) use outside air as a source for heat, with a fan to move the air across a heat exchanger. Ground Source Heat Pumps (GSHP) use groundwater or the ground itself as a source of heat, with a ground loop that circulates refrigerant to absorb heat. Networked geothermal is essentially a group of buildings that use an interconnected network of pipes and ground loops as a heat source for their GSHPs.

[23] Independent Consultant Report, p. 50.

FIGURE 1: MASSACHUSETTS BUILDING SECTOR
GAS THROUGHPUT AND COMPOSITION; OPTIMISTIC RENEWABLE GAS ASSUMPTIONS
(Replication of Figure 15 of Independent Consultant Report)[24]



Contemporaneous with the filing of the Independent Consultant's Pathways report and associated appendices, each of the gas LDCs filed Net Zero Enablement Plans ("NZEP"), describing the near-term actions each utility proposes to take to achieve emissions reductions, informed by the pathways analyses. Liberty's NZEP builds on the Independent Consultant's Hybrid Electrification pathway, assuming that its customers will convert to an air source heat pump with a gas supplemental heating system, or use efficient gas appliances (*e.g.*, gas heat pumps), while also pursuing building shell retrofits and energy efficiency measures.[25] Liberty's NZEP proposed to achieve the remainder of the GHG reduction necessary by blending renewable gas (biomethane, hydrogen, and SNG) into its gas supply, offsetting natural gas consumption.[26]

The D.P.U. 20-80 proceeding is ongoing and the D.P.U. has not issued any final orders regarding LDCs' actions towards achievement of the Commonwealth's 2050 climate goals.

---

[24] *Ibid*.

[25] Liberty Utilities (New England Natural Gas Company) Corp. d/b/a Liberty, "D.P.U. 20-80 Liberty's Proposal to Support Massachusetts 2050 Climate Goals: Initial Net Zero Enablement Plan," D.P.U. 20-80, p. 13, March 18, 2022

[26] *Id*., p. 16.

That is, the extent of the use of renewable gases (*e.g.*, biomethane, hydrogen, and synthetic natural gas ["SNG"]) as a tool to decarbonize the gas distribution system has not been determined. Of note however, on June 30, 2022, the EEA released its Clean Energy and Climate Plan ("CECP") for 2025 and 2030, which sets sector and sub-sector limits for GHG emissions.[27] The CECP adopts a "phased" approach, with a clear preference for widespread building electrification rather than relying on renewable gas to achieve the established GHG emissions limits. However, the CECP also recognizes that renewable gases could be used to reduce emissions further even with declining gas use, and could provide optionality if the desired pace of electrification is not realized.[28]

Q: What are the implications for Liberty's RNG Petition given the on-going regulatory and policy discussions on the future of gas utilities in the Commonwealth?

A: Liberty's RNG Petition is the first of its kind since the Department initiated its investigation on the future role of natural gas utilities in docket D.P.U. 20-80. Liberty filed its petition only two weeks after filing its NZEP, effectively asking the D.P.U. to approve a major component of its NZEP before the D.P.U. has issued any final order in D.P.U. 20-80. Because the other gas LDCs' NZEPs also rely on blending increasing amounts of RNG into their gas supply, the Liberty petition in this docket will likely establish a precedent for evaluating future petitions for RNG supply contracts and RNG programs for customers. To that end, before acting on Liberty's Petition, the D.P.U. should consider the potential future of the gas system, the role that RNG will or may play in achieving net-zero by 2050, and how it should evaluate RNG contracts and programs like this.

The entire context of gas system planning is likely to change in the near future. Primarily, RNG contracts under the decarbonization plans are intended to fulfill a broader set of purposes than traditional natural gas supply purchases—not just filling supply needs at reasonable cost, but doing so in a way that significantly reduces GHG emissions. Second, in all eight of the pathways that the LDCs' Independent Consultant evaluated, gas

---

[27] The Commonwealth of Massachusetts Executive Office of Energy and Environmental Affairs, "Massachusetts Clean Energy and Climate Plan for 2025 and 2030," June 30, 2020.

[28] *Id.*, p. 29.

throughput falls significantly over the next couple decades (see Figure 1 above). Indeed, by 2040, near the last year of Liberty's proposed RNG contract, Massachusetts gas throughput falls by 46% in the Independent Consultant's Hybrid Electrification pathway—the pathway on which all of the LDCs' NZEPs are based.[29]

Taken together, these factors imply that the D.P.U. should evaluate LDC RNG contracts according to a different set of criteria than traditional supply acquisitions, and the DPU will need additional information to support this evaluation. As more fully discussed below, Liberty's petition does not include all of the information that will be necessary to support a proper evaluation of the proposed RNG contract.

II.C. Biomethane Availability

Q: What are the current challenges facing renewable gas development?

A: As shown in Figure 1 above, Liberty and the other Massachusetts gas LDCs intend to significantly increase the amount of renewable gas in their distribution system—from about zero today up to 86 trillion Btu by 2050 under the hybrid electrification scenario that forms the basis of their NZEPs. However, there are significant challenges to overcome to scale RNG to such a level in the Commonwealth.

Q: Please explain the limitations of biomethane availability in Massachusetts.

A: Converting biological waste to biomethane using anaerobic digestion is a relatively mature technology. For years, most of the waste gas from landfills or wastewater treatment facilities has been captured and used for on-site energy needs[30] or, to a lesser extent,

---

[29] While the individual NZEPs do not exactly match the statewide Hybrid Electrification pathway in quantitative terms, all are qualitatively modeled on it.

[30] American Gas Foundation, "Renewable Sources of Natural Gas: Supply and Emissions Reduction Assessment," December 2019, p. 17.

cleaned and injected to the local gas distribution system.[31] But the amount of Landfill Gas ("LFG") is small relative to annual gas LDC demand (the proposed contract would satisfy just 2.5–4.5% of Liberty's current gas demand initially, and falling[32]), and one cannot create more or bigger landfills to satisfy biomethane demand. Conservation policies in Massachusetts have reduced landfill waste over the past decade despite growing GDP and population, and target a 90% reduction by 2050.[33]

Q: What is the forecasted potential for biomethane and other renewable gases?

A: Figure 2 below shows several recent forecasts of LFG and RNG supplies in Massachusetts from the American Gas Foundation ("AGF"),[34] National Grid,[35] and the Independent Consultant in D.P.U. 20-80 (Hybrid Electrification scenario).[36] Under optimistic assumptions, LFG is forecasted to increase to 9.34 million Dth by 2040, which could serve only 5.80% of the projected (greatly reduced) gas demand by then. Looking more broadly at all forms of RNG, the potential is still quite limited. By 2040, these projections show total RNG could reach 27.92 million Dth, 17.33% of 2040 demand. While there are more advanced forms of "renewable" gas (*e.g.*, hydrogen and synthetic natural gas or SNG), those are still technologically immature, their longer-term availability is uncertain, and their cost likely to be quite high (and also uncertain).

---

31 Fresh Kills Landfill in Staten Island, New York began producing pipeline quality RNG over 30-years ago. Source: New York City Department of Parks & Recreation, "Fresh Kills Park," accessed July 11, 2022, https://www.nycgovparks.org/park-features/freshkills-park/about-the-site.

32 Liberty Utilities, "Liberty Utilities (New England Natural Gas Company) Corp. D/B/A/ Liberty Long Range Forecast and Supply Plan, 2020/2021 through 2024/2025," Massachusetts D.P.U. 20-92, August 17, 2020, p. 5. Based on 2021/22 Final Planning Load.

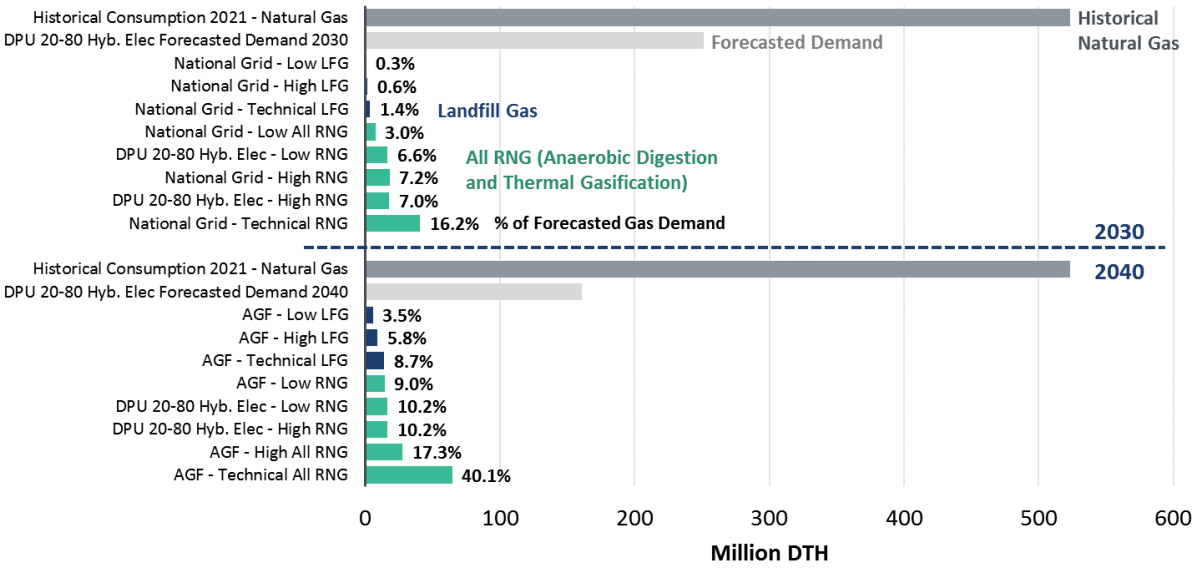
33 Massachusetts Department of Environmental Protection, "Massachusetts 2030 Solid Waste Master Plan: Working Together Towards Zero Waste," October 2021, p. 2, https://www.mass.gov/doc/2030-solid-waste-master-plan-working-together-toward-zero-waste/download

34 *Supra* 30.

35 National Grid, "Renewable Gas – Vision for a Sustainable Gas Network," 2010.

36 D.P.U. 20-80, Response to Information Request DPU-Comm 6-4 and Attachment DPU-Comm 6-4 and Response to Information Request DPU-Comm 6-5 and Attachment DPU-Comm 6-5, June 6, 2022.

FIGURE 2: MASSACHUSETTS LFG AND RNG SUPPLY POTENTIAL 2030 AND 2040[37]



Q: What are the implications of limited biomethane availability for the policy regarding the gas sector?

A: Primarily, the lack of abundant biomethane, combined with the likely high price of more advanced renewable gases like hydrogen and SNG, means that pathways that rely heavily on renewable natural gas may be quite challenging and costly.[38] Further, there may be stiff competition for available supplies from other sectors that are harder to decarbonize, such as industrial uses, backup electric generation, and transportation fuels. It will likely be important for the Commonwealth and the D.P.U. to manage the limited RNG supply and direct those resources to the highest-value, hard-to-decarbonize sectors.[39] This implies that there are still substantial questions, at best, about the viability or desirability of the Hybrid pathway, or any other heavily gas-reliant pathway for decarbonizing the gas distribution

---

[37] Historical Consumption 2021 excludes natural gas used for power generation. Sourced from U.S. Energy Information Agency, Annual Energy Outlook 2022, Table 13, accessed July 8, 2022, https://www.eia.gov/outlooks/aeo/

[38] The LDC's Independent Consultant report demonstrates that there is unlikely to be enough biomethane to supply the Hybrid pathway on which the LDCs' NZEPs are based, and would require supplementing with hydrogen and SNG. The report underestimates the pathway's cost by failing to acknowledge that the marginal resource would set the price for all renewable gas.

[39] As an indicator of the value in other sectors, the transportation sector currently pays about $42/Dth for RINs to help decarbonize transportation fuels like diesel and jet fuel.

system. The gas delivery system has mostly fixed costs and thus relies on having a sufficient level of gas throughput to be viable. If throughput is inadequate to sustain the delivery system, it may not be viable to use renewable gases, even though their use would reduce emissions. Thus, caution should be used in making very long-term commitments regarding the gas system, including for renewable gas supplies, until the future of the entire gas system becomes clearer.

III. Impacts on Greenhouse Gas Emissions

III.A. Environmental Attributes in the Proposed Contract

Q: Please explain the Environmental Attributes associated with RNG production and use as it relates to the proposed contract.

A: The contract makes a distinction between the Environmental Attributes of RNG arising under Massachusetts law ("Massachusetts Attributes"), and the attributes arising under the laws of other jurisdictions (the "Remaining Attributes"). Currently, there are no recognized Environmental Attributes for RNG in Massachusetts. That is, Massachusetts law places no monetary value on RNG, nor a requirement that the LDCs source some given amount of RNG. RNG does have Environmental Attributes at the federal level, however. In 2005 Congress passed the Energy Policy Act of 2005, which created a Federal Renewable Fuel Standard ("RFS") program.[40] The program requires that renewable fuels be blended into transportation fuel, heating oil, and jet fuel, thereby reducing the volume of fossil fuels needed. The U.S. Environmental Protection Agency ("EPA") has designated four types of renewable fuels that qualify under the RFS Program (advanced biofuel, biomass-based diesel, cellulosic biofuel, and renewable fuel).[41] When a renewable fuel is produced, an associated Environmental Attribute, called a Renewable Identification Number ("RIN"), is

---

[40] United States Environmental Protection Agency, "Overview of Renewable Fuel Standard," accessed July 13, 2022, https://www.epa.gov/renewable-fuel-standard-program/overview-renewable-fuel-standard. D3 RIN Price of $3.23 as of May 23, 2022.

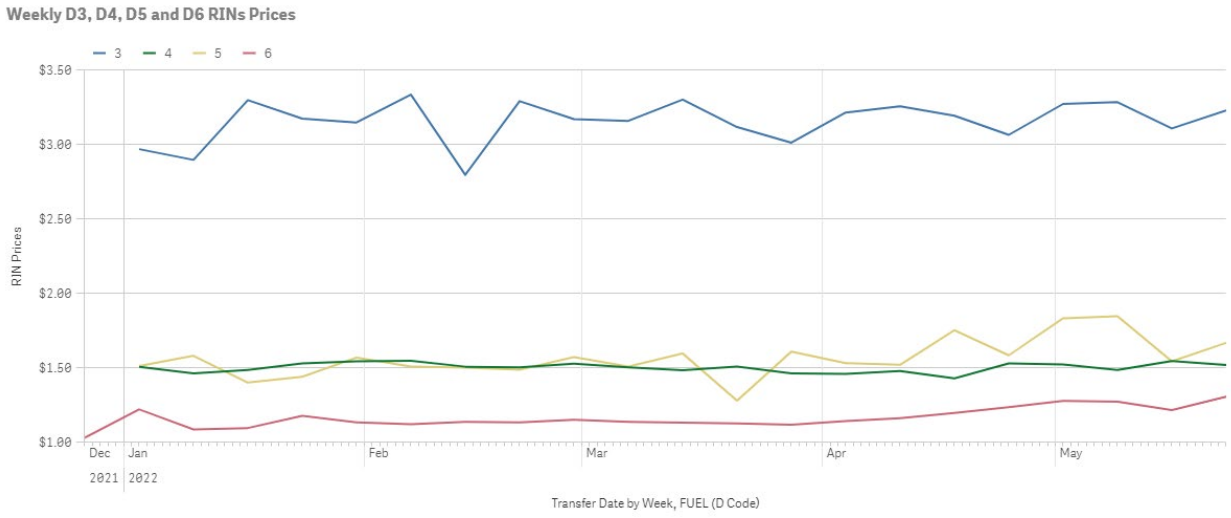
[41] *Ibid*.

generated for each gallon of renewable fuel or equivalent. In lieu of blending renewable fuel into fossil-based transportation fuels, obligated parties can meet their obligations under the RFS by purchasing RIN credits from the market. Liberty reports that the RNG produced at the Fall River Landfill qualifies as cellulosic biofuel and generate RINs classified as D3 RINs under the RFS program.[42] Thus the RNG associated with the proposed contract currently has Remaining Attributes at the federal level.

Q: What is the monetary value of the D3 RINs generated from LFG?

A: Under the RFS program, obligated parties must demonstrate compliance either by buying renewable fuels with RINs attached or purchasing separated RINs in the market. The price for each classification of RIN is posted on the EPA's website. Figure 3 below shows the current weekly RIN price according to the EPA, with D3 RINs currently priced at $3.23.

FIGURE 3: RIN PRICES[43]



[42] Clark and Walker Testimony pp. 27–28. See also United States Environmental Protection Agency, "Approved Pathways for Renewable Fuels," accessed July 14, 2022, https://www.epa.gov/renewable-fuel-standard-program/approved-pathways-renewable-fuel.

[43] United States Environmental Protection Agency, "RIN Trades and Price Information," accessed July 13, 2022, https://www.epa.gov/fuels-registration-reporting-and-compliance-help/rin-trades-and-price-information

A RIN is generated for each gallon of renewable fuel or equivalent—for biogas, one gallon of renewable fuel is equal to 77,000 Btu.[44] Therefore each D3 RIN is worth approximately $41.95/MMBtu (or per Dth) today.

$$\frac{\$3.23}{\text{RIN}} \times \frac{\text{RIN}}{0.077\ \text{MMBtu}} = \frac{\$41.95}{\text{MMBtu}}$$

Even at today's elevated gas prices (approximately $8/Dth), the RINs are worth over five times the value of the biomethane commodity. Relative to the $9.25/Dth price in the proposed contract, the RINs are worth about 4.5 times more.

Q: How are the Environmental Attributes handled in Liberty's proposed contract?

A: The proposed contract specifies that the Environmental Attributes generated from the production of RNG at the Fall River Landfill will be retained by Fortistar.[45] Liberty has the option, for the first two years of the contract, to purchase all the Environmental Attributes (*i.e.*, the Remaining Attributes, in addition to the Massachusetts Attributes which Liberty already holds) for the duration of the contract at a price of $25/Dth (not escalated) under Article 6.2 of the contract.[46] Since there are currently no renewable gas requirements for natural gas utilities in the Commonwealth, holding onto the Environmental Attributes does not help meet any compliance obligation for Liberty. Instead, the attributes are more valuable if they are separated from the RNG and sold in the transportation sector as RINs under the RFS. Notably, the contract specifies that Liberty retains priority to any Massachusetts-specific Environmental Attributes, if such a mechanism was established in the Commonwealth. However, if Liberty claims these attributes, and if there is material conflict between the Massachusetts Attributes and the Remaining Attributes in any other jurisdiction, Liberty is required to indemnify Fortistar for the lost value.[47] Either way, the effect is that Fortistar, not Liberty, receives the value of the Environmental Attributes.

---

[44] United States Environmental Protection Agency, "Information about Renewable Fuel Standard for Landfill Gas Energy Projects," accessed July 13, 2022, https://www.epa.gov/lmop/information-about-renewable-fuel-standard-landfill-gas-energy-projects

[45] Clark and Walker Testimony p. 27.

[46] *Id.* pp. 27–28.

[47] Liberty Petition, Exhibit LU-WC/TW-2, p. 22.

Q: What are the implications of Fortistar retaining the Environmental Attributes?

A: In effect, allocating the Environmental Attributes to Fortistar (and requiring Liberty to indemnify Fortistar if Liberty claims the rights) means that the product that Liberty is purchasing from Fortistar under this contract is not RNG, but natural gas. If Liberty were to receive the Environmental Attributes, then it would be purchasing RNG. This distinction is made particularly clear by the contract itself. If Liberty were to choose to exercise its option to purchase the Remaining Attributes, it would then actually be purchasing RNG, with its full complement of Environmental Attributes, at an initial price of $34.25/Dth. This makes clear that without exercising this option, and without receiving the Remaining Attributes, Liberty would be receiving a considerably less valuable product, precisely because it does not include the Environmental Attributes of RNG.

Q: Does the contract allow for Liberty to retain the Massachusetts Attributes, at the same time Fortistar retains the Remaining Attributes (in other jurisdictions)?

A: Yes, but this could only happen in a meaningful way if the Massachusetts and Remaining Attributes do not conflict—*i.e.*, if the Environmental Attributes of the RNG could be claimed both in Massachusetts and in some other jurisdiction, under the relevant laws. That is unlikely, because allowing the Environmental Attributes to be claimed in more than one jurisdiction would be double-counting, akin to creating both a Massachusetts REC and a New Hampshire REC for the same megawatt hour of wind power. This would conflict with the Commonwealth's GHG reduction goals, and probably also the goals of the other jurisdiction(s) and would not reduce GHG emissions. Although it is not possible to know now exactly how a future Massachusetts program would be structured, it is probably not reasonable to assume that it would be designed to allow double-counting.

Assuming double-counting would be disallowed, there would be a "material conflict" between the Massachusetts Attributes and the Remaining Attributes, as described in Article 6.1 of the contract. That is, claiming the Massachusetts Attributes would make it impossible to also claim the Remaining Attributes. This would require Liberty to indemnify Fortistar for the lost value of the Remaining Attributes (assuming it had not previously exercised its option to purchase the Remaining Attributes outright). This

contract allows Fortistar to create a valuable product for the transportation fuel industry (taking at face value the claim that absent the contract, Fortistar would flare the gas). But Liberty's customers would receive no benefit from this; they would receive the equivalent of natural gas under a 20 year contract at $9.25/Dth, and Fortistar would receive the Environmental Attributes and their value.

When evaluating RNG contracts, the rights to Environmental Attributes and the monetization of their value must be considered carefully by the Department. In addition, it is important to demonstrate how the use of RNG and the associated Environmental Attributes will reduce net GHG emissions for the LDC customer or for other GHG emissions sources in Massachusetts. Biomethane is a relative scarce resource, and it should be managed effectively to help achieve Massachusetts' climate goals.

III.B. Net-Zero Emission Resource

Q: Is RNG a net-zero emission resource?

A: RNG is classified by the Massachusetts Greenhouse Gas Inventory as a net-zero emissions resource because the creation and use of RNG displaces the use of fossil natural gas, displacing its emissions.[48] However, the actual emissions impact associated with RNG is more complicated and nuanced. This was recognized in the Independent Consultant's Report in D.P.U. 20-80, which states:

> The Consultants realize that treating renewable fuels[49] as carbon neutral is a simplification of the complex carbon flux associated with fuel production. For example, fossil fuel use in feedstock production or key feedstock conversion steps can increase the embodied carbon emissions of renewable fuels. Considerations in evaluating the carbon impact of biogenic fuels include the duration of carbon

[48] Commonwealth of Massachusetts Department of Environmental Protection, "MassDEP Emissions Inventories," https://www.mass.gov/lists/massdep-emissions-inventories

[49] Page 9 of the Independent Consultant Report defines Renewable fuels as, "Umbrella term referring to renewably produced alternatives to fossil fuels. *This includes renewable gases in the distribution system*, as well as renewable fuels in the transportation sector." (Emphasis added)

> sequestration over the fuel lifecycle and their respective timing of carbon release; the emissions associated with the growth, production and supply of fuels; and their jurisdictional boundaries.[50]

In this instance, the Fall River Landfill is currently producing LFG that is being captured and used to fire an electric generator, with the electricity being sold to a local municipal utility.[51] Fortistar has represented to Liberty that the existing electric generator will soon be shut down, and absent this arrangement with Liberty, the LFG would be flared to atmosphere,[52] which could materially change the GHG implications. For the purposes of our testimony, we take these statements by Liberty and Fortistar at face value, which makes flaring the RNG the relevant comparison to the contract, regarding its GHG emissions impact. If the LFG is completely combusted during flaring, the associated GHG emissions is from carbon dioxide. Instead, if the LFG is converted to biomethane and any of it leaks from the gas distribution system, the associated GHG emissions is from methane. Methane leaks are especially problematic because methane has 80 times the GHG warming potential compared to carbon dioxide over a 20-year period.[53] We have not attempted a thorough accounting of the GHG implications of the Fall River RNG and this contract, relative to the situation that would prevail absent the contract, but this is the type of comparison that the Department should consider requiring of the LDCs when proposing a contract for RNG.

---

50 Independent Consultant Report, p. 28.

51 Testimony of Deborah M. Gilbertson and Kristin Jardin, Liberty Utilities (New England Natural Gas Company) Corp. d/b/a Liberty, D.P.U. 22-32, p. 34, ("Gilbertson and Jardin Testimony")

52 *Ibid*.

53 Andrew Moseman, "Why do we compare methane to carbon dioxide over a 100-year timeframe? Are we underrating the importance of methane emissions?" MIT Climate Portal, June 28, 2021, https://climate.mit.edu/ask-mit/why-do-we-compare-methane-carbon-dioxide-over-100-year-timeframe-are-we-underrating

IV. Criteria for RNG Contract Evaluation

IV.A. Differences Between RNG and Natural Gas Markets

Q: If this was actually an RNG contract—for instance, if Liberty exercised its option to purchase the Remaining Attributes—would you evaluate it in the same way a natural gas contract would be evaluated?

A: No, for several reasons. RNG is acquired for a different and broader range of purposes than natural gas. Further, the market references that are available for natural gas are largely absent for RNG.

Q: What are the important differences between RNG markets and natural gas markets, and what implications does this have for the standard of review?

A: RNG markets are fundamentally different and much less mature relative to natural gas markets. These differences should be considered in any standard of review for new RNG supply contracts. Natural gas is a highly liquid traded product with deep national (and international) markets. Gas utilities procure baseload supplies based on their forecasted demand in the coming months or season, typically purchasing monthly, seasonal, or sometimes annual products.[54] The contracts are either fixed priced or indexed to a published natural gas price at a trading hub. Fixed-price, multi-year (or multi-decade) supply contracts are not common because they would create significant commodity price risk for the supplier, and also for the utility on behalf of its customers.[55] In Massachusetts, the gas LDCs seek approval from the D.P.U. for any new supply contract in their Forecast and Supply Plan ("F&SP") filings.

At present, there are no liquidly traded or deep RNG markets in the U.S. RNG is typically sold to off-takers located near the RNG facility using long-term fixed-price contracts.

---

[54] The difference between baseload supplies and daily demand is met using a combination of spot purchase, storage withdrawals, or delivered products.

[55] American Gas Association, "LDC Supply Portfolio Management During the 2018–2019 Winter Heating Season," December 20, 2019, https://www.aga.org/globalassets/whs-2018-2019-report-final-12-20_2019-.pdf

Among other things, a long-term contract allows the developer to secure investor financing to construct the facility. In this case, Liberty seeks authorization to enter into a 20-year biomethane supply contract at a fixed price of $9.25/Dth, growing with inflation. Unlike modern natural gas markets, the capacity (the biomethane facility) and the commodity are bundled together in the contract price. RNG contracts are typically more expensive than natural gas. The price of RNG can also vary widely, depending on production method, feedstock availability, location, and the infrastructure requirements to produce, gather, and deliver the gas. The higher price is also warranted in part by the Environmental Attributes of the commodity, which can currently be separated from the RNG and traded as a separate product.[56] These major differences make the comparison of RNG supply contracts with other alternatives (*i.e.* other RNG contracts or natural gas supply contracts) significantly more complicated, but also that much more important.

IV.B. RNG Contract Evaluation Criteria

Q: What criteria should the D.P.U. use to evaluate RNG contracts like the one proposed by Liberty?

A: This is a difficult question to answer directly because RNG plays a very different role in a gas utility's supply portfolio than natural gas does, and RNG contracts are often structured quite differently from natural gas contracts. And as noted, the types of market reference points that are typically used when evaluating natural gas purchases are not available for RNG. We do not claim to offer the final word on evaluating RNG contracts, in part because the market is immature and changing, and future policy may create new requirements or products that may enter into the evaluation criteria. But we raise here at least some of the important issues.

Broadly, one can begin by asking whether the proposed contract fills an identified need for RNG. Next, whether it fills that need economically, relative to available alternatives. To

[56] *E.g.*, the Environmental Attributes of RNG can be traded as RINS under the RFS. Recent prices for RINs range from $9 to $80 per Dth. See Brad Pleima, "Biogas to RNG Projects: What, Why, and How," March 11, 2019, accessed July 11, 2022, https://www.biocycle.net/biogas-rng-projects/

answer both of these questions, one must account for additional considerations beyond what would be needed to evaluate a traditional natural gas supply contract. This is largely because RNG fills two roles—both meeting physical gas demand, and potentially reducing GHG emissions—whereas natural gas supplies only address the first of these.

IV.B.1. Gas Supply Needs

Q: How would you think about whether a proposed RNG contract fills an identified need?

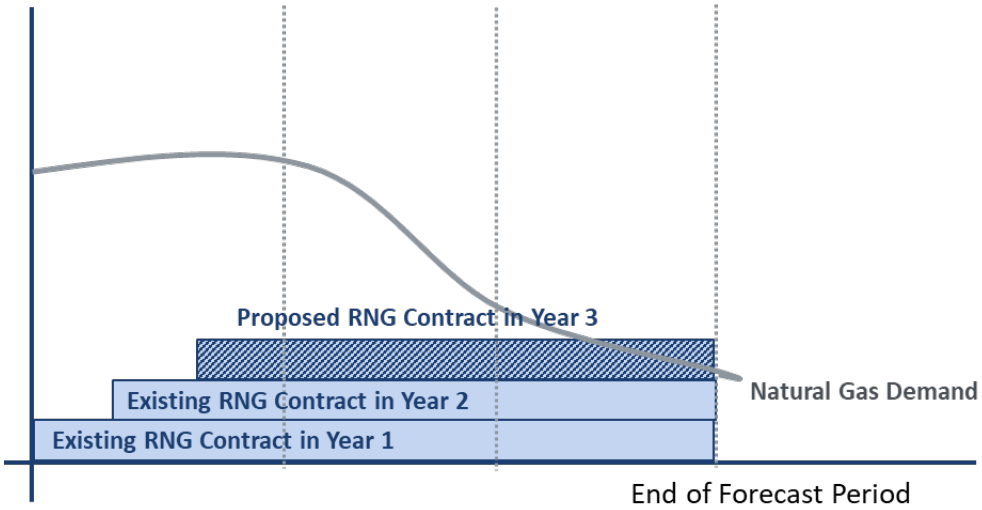
A: This question is roughly analogous to a question that one would ask about a more traditional natural gas contract. Is there a need for additional supply, given the utility's demand forecast and its existing portfolio of supply resources? There is an important difference, however. Because the purpose of acquiring RNG supplies is not solely to serve gas demand, but also to reduce GHG emissions, both considerations must be accounted for. So, for a proposed RNG contract, the question becomes whether there is a need for the gas supply that the RNG contract will provide, and also whether there is a need for the GHG reduction it will provide. The latter will refer to an administrative schedule of emissions reductions or limits that are desired or mandated, rather than a physical demand. After these questions are evaluated, then the contract economics and the price of comparable supply alternatives can be considered.

Q: How should RNG's ability to satisfy gas supply needs over a 20-year contract period be considered?

A: Long-dated RNG supply contracts could play a role in a gas LDCs supply portfolio, depending on the characteristics of the contract, and may be useful in encouraging RNG supply development. However, the D.P.U. should require the gas LDCs to show that the contracted volumes will be used and useful through the entire life of the contract—that is, the total amount of contracted supplies, including the proposed contract, will not exceed forecasted demand. Figure 4 below illustrates this point. The first two existing RNG contracts provide long-duration baseload supply. The total volume from both contracts is

always below forecasted demand throughout the horizon. A third contract is proposed, but with its addition, the total amount of baseload RNG supply will exceed forecast demand near the end of the forecast period. The contract quantity and/or duration may need to be adjusted so that the company will not be oversubscribed on supply. Of course, in the current circumstances, a utility's gas demand is not known, even approximately, over a long period like 20 years, in large part because of the current policy uncertainty surrounding the gas distribution sector. Given this, the supply portfolio should be evaluated against the lowest plausible future demand, and the utility should be cautious about committing to supplies in excess of this.

FIGURE 4: ILLUSTRATIVE RNG SUPPLY PORTFOLIO VERSUS DEMAND



Another potential question is whether and how the RNG contract will address the LDC's peak needs. In the near term, addressing peak needs may not be particularly important, because the much larger natural gas portion of the portfolio should be able to manage the swings in demand. However, as the total amount of RNG in a utility's portfolio supply increases, it may become necessary to account more carefully for the (presumed) baseload nature of RNG supplies relative to the variability of demand during peak demand periods. For instance, as RNG supplies displace baseload natural gas supplies, the remaining natural gas supply requirements would have to be served by shorter duration or callable supplies (spot, storage, delivered services, *etc.*). It will become increasingly important to account for these interactions, including the supply cost implications. In the longer term, as RNG becomes a larger share of baseload supplies, it will become necessary to shape RNG

supplies using storage (behind the city gate or upstream), delivered services (*e.g.*, trucked RNG), or other mechanism to meet the utility's monthly and daily demand fluctuations.

Finally, we note that this long duration supply plan is not currently possible under the existing F&SP framework, which only requires that utilities forecast demand five years into the future. Consideration of contracts longer than this will require a correspondingly longer forecast horizon. Currently, expectations about the continued demand for natural gas in the Commonwealth are highly uncertain, and the regulatory framework to guide the LDC's transition remain open because D.P.U. 20-80 is still ongoing.

IV.B.2. GHG Reduction Needs

Q: How should the need for GHG reductions be considered?

A: First, it is important to note that the need for GHG reductions is driven by administrative policy, not physical demand. Given that, an important factor regarding the need for GHG reduction and the reductions that any particular RNG supply may provide is that these reductions cannot be expressed directly in terms of RNG quantity (Dth, cubic feet, *etc*.). Different sources of RNG may have differing GHG abatement value, and thus the actual GHG implications of the particular RNG being considered must be characterized as noted in the report of the LDCs' Independent Consultant (*e.g.*, quantifying composition of GHG constituents, transportation methods and potential for leakage, *etc*.). The responsibility for characterizing prospective GHG reductions should naturally fall on the utility seeking approval, perhaps with the RNG supplier or an independent verification service actually demonstrating it, and the utility's filing communicating it to the D.P.U. Making this distinction and properly characterizing the RNG's GHG implications will enable proper GHG accounting for the utility and the state, and will ensure that the utility will be able to achieve its GHG reduction goals.[57]

---

[57] Without commenting here on the GHG properties of the RNG associated with this proposed contract, some forms of RNG have different GHG implications than others, and these distinctions should be taken into account in evaluating them. For example, the production of some RNG may involve the use of fossil fuels (*e.g.*, to drive tractors to harvest and trucks to transport feedstocks, intermediates, and final products), and this must be taken into account for each RNG source to properly measure and characterize the utility's overall GHG reduction

IV.B.3. Contract Economics

Q: How should a regulator and/or an LDC evaluate whether the proposed contract is economically reasonable, relative to the available alternatives?

A: Evaluating whether a proposed RNG contract is reasonable in economic terms presents some additional challenges, which are evident by contrast with how a natural gas contract would be evaluated on pricing dimensions. Regional and national natural gas markets are deep and liquid with several reference pricing hubs. In addition, numerous types of physical and financial products are offered in the market (*e.g.*, spot, term gas, delivered services, forwards and futures, basis swaps, *etc.*). Prices at various hubs and for different products are readily observable from market information. Once it has been shown that the contract is needed to meet demand, evaluating its economics often comes down to a relatively straightforward comparison with market prices. If the contract price is comparable to observable market prices for a comparable natural gas supply product, then the price is likely to be considered reasonable, almost by definition.

However, such objective and observable market prices do not currently exist for RNG. Relatively little RNG is produced and utilized, compared with natural gas volumes. In 2021, 35,746 million Dth of natural gas[58] were generated and consumed in the U.S. for all end uses, compared to only 78.8 million Dth of RNG, less than 0.25%.[59] Most RNG is sold under long-term contract, with contract terms that may not be made public. We are not aware of any standardized products, trading hubs, centralized markets or brokers, or price indices for RNG. Certainly these do not exist for RNG in the same way they do for natural gas. This lack of market structure is not surprising for a nascent market like the RNG

---

progress. The current Massachusetts GHG inventory calculation paradigm does not account for these differences. It assumes implicitly that all RNG has zero GHG emissions. However, to accurately measure the Commonwealth's GHG reduction progress and ensure its goals are achieved in the longer term, this will likely need to be revisited.

[58] U.S. Energy Information Administration, EIA, "Annual Energy Outlook 2022," March 3, 2022, Table 13.

[59] U.S. Department of Energy, "FOTW #1242, June 13, 2022: Production Capacity of Renewable Natural Gas Projects was 574 million Diesel-Gallon Equivalents in 2021," June 13, 2022, Accessed on July 14, 2022, https://www.energy.gov/eere/vehicles/articles/fotw-1242-june-13-2022-production-capacity-renewable-natural-gas-projects

market, of course. And to some extent, if RNG production will be ramped up to significant volumes over the next couple decades as a way to reduce GHG emissions, it will be necessary for the industry to "bootstrap" a more liquid market and market price indicators into existence. As market participants produce, consume, and transact increasing amounts of RNG, volumes and transaction frequency will begin to reach levels that can support the development of particular products, trading hubs, trading platforms, price indices, *etc.* This is what has happened for other energy products over time, including natural gas, electricity, and Renewable Energy Credits ("RECs").

Q: What are the considerations regarding commodity price risk of longer duration RNG contracts?

A: Long duration supply contracts create commodity price risk for the buyer and the seller because the market price could fall below (or increase above) the contract price. In the natural gas markets, this risk can be reduced (but not eliminated) by buying shorter duration contracts (monthly or seasonal supply) and assessing the proposed contract price against the prevailing market price of natural gas futures contracts or by linking the price to a market index. As noted above, most RNG is sold through long-term contracts and there are no liquid spot, forward or futures markets for RNG in the U.S. Therefore, it is not easy to assess the reasonableness of the contract price for the duration of the proposed RNG contract. Gas LDCs petitioning for approval of an RNG supply contract should provide evidence that the proposed contract is reasonable, compared to alternative supply choices. First, they should have to show that the price is consistent with recent and comparable RNG contract prices. Second, they should have to show that the RNG contract price and duration are reasonably balanced against expectations of future RNG or alternative decarbonized supply prices.

Q: How can the economic reasonableness of an RNG contract be evaluated in the absence of good market information?

A: There are several ways to approach RNG contract evaluation, none as simple as the readily available market comparisons for natural gas. One is to hold a competitive solicitation, like

the RFP that Liberty held in this instance, on the presumption that with a sufficient number of competing potential suppliers, competition will provide economic discipline for the bids. Liberty received three bids in response to its RFP, one of which is the Fortistar LFG bid that resulted in the proposed contract. The two other bids were also for LFG. One would be delivered as compressed renewable natural gas ("CRNG") via CNG trailer, and the other had a source outside New England, with the gas to be delivered via interstate pipeline. Liberty reports that "Fortistar's proposal had the lowest price, lowest interconnection costs, and more non-price benefits such as reliability, flexibility and diversity than the other responses."[60]

Another approach to price comparison would be to compare this contract price with the price of other RNG contracts (for LFG or digester gas) over a wider geographic market—*e.g.*, New England, or the entire U.S. While most of these alternatives would not be viable RNG sources for actual gas delivery to Liberty's system, they may provide useful, if imprecise, information on typical and reasonable pricing for RNG.

The RNG contract price can also be compared to alternative ways to decarbonize the gas system, such as electrification, to determine whether the RNG contract is economically competitive with a broader set of alternatives. By comparing the RNG contract price to the natural gas price (over the relevant time horizon), the premium paid under the contract for RNG can be determined. This RNG premium can then be related to the GHG savings associated with this RNG supply, to show how cost-effective the proposed RNG contract is in reducing gas system emissions. The cost of GHG reductions from the RNG contract can then be compared with the cost of alternatives, perhaps in fundamentally different ways to reduce the sector's emissions.

Further, to the extent that the Environmental Attributes of the RNG can be financially separated from the gas molecules themselves (as this contract actually does), it may not be necessary to require delivery of renewable gas molecules to Liberty's system in order to enable a renewable gas program. This is not possible under current laws since Massachusetts has no RNG requirement, but under a hypothetical future requirement, it

[60] "Gilbertson and Jardin Testimony", p. 28.

might be possible to deliver RNG onto a different gas system (perhaps outside Massachusetts) to offset fossil emissions there, and separate the Environmental Attributes to credit them to Liberty's customers, creating an alternative way to provide RNG, and thus a viable comparison for a proposed contract for local RNG. This is similar to how RECs work in the electricity market. The required renewable power itself is not generally delivered to each particular distribution system that has a REC obligation. Rather, the Environmental Attributes are financially separated from the power itself, creating a REC, and the distribution system purchases the necessary RECs from a supplier who may be quite remote, and retire the RECs to meet the renewable obligation. RECs often require that the power be delivered to the same regional power network, but that network will encompass very many different distribution companies.

IV.C. Information in the Liberty Petition

Q: Does the Liberty Petition provide the information necessary to evaluate the proposed contract?

A: No. In the first instance, the petition fails to show that the contract would actually deliver RNG, including its Environmental Attributes. In fact it demonstrates the opposite—that the contract does not provide the Environmental Attributes to Liberty and its customers.

Regarding identification of the need for RNG, Liberty does not identify how much RNG it needs, and over what timeframe, nor how this contract would fit with that need. Particularly since this is such a long-term contract, covering a period when the gas system and gas volumes are likely to change dramatically, it is important to show Liberty has a need for the volumes that would be provided under the contract, over the contract's full life. The petition does not do this, and in fact, does less to demonstrate need than a typical petition to approve a natural gas contract, which would demonstrate the need for the supply.

Regarding the reasonableness of the proposed contract price, Liberty did conduct an RFP, inviting competing suppliers to bid to provide RNG. It describes the RFP process very

briefly in its petition, saying only that Liberty received three bids, which it evaluated on price and other non-price factors. It concludes: "As a result of its evaluation, the Company selected Fortistar to enter into the RNG Contract. Fortistar's proposal had the lowest price, lowest interconnection costs, and more non-price benefits such as reliability, flexibility and diversity than the other responses."[61] It gave no further detail on the RFP process or the alternative bids, though additional information is needed to evaluate the RFP process and its result. For example, it would be useful to know the identity of the alternative bidders (were any of them affiliates of Fortistar?), the price and the non-price terms of their bids, *etc.*

Liberty also does not attempt any other methods of comparing the pricing and terms of this proposed contract with other alternatives, either other RNG contracts, or alternative ways to provide GHG reductions.

V. Conclusion

Q: Please summarize the main arguments of your testimony?

A: The proposed RNG contract does not deliver RNG with its Environmental Attributes to Liberty customers, as the contract is currently structured. The assignment of Environmental Attributes generated by the production of the RNG to Fortistar makes this equivalent to a contract for natural gas, without any Environmental Attributes. The contract gives Liberty the option to purchase the Environmental Attributes (RINs or future Massachusetts specific attributes); however, doing so would substantially increase the price. If Liberty does not exercise this option, but attempts to claim credit for the Environmental Attributes, this would be double-counting. Such double-counting is unlikely to be allowed by future Massachusetts policy, and would not contribute to reducing GHG emissions.

[61] *Id.*, p. 28.

The Liberty RNG petition is the first of its kind since Massachusetts began discussing the role of natural gas utilities in meeting the Commonwealth's net-zero 2050 goal. Within this context, the standard of review for this or any RNG contract should differ from a natural gas contract review because (1) RNG serves a different and broader set of needs than natural gas and (2) the available market information for RNG is different and less readily available. Liberty's petition has not provided sufficient information to support a proper evaluation of an RNG contract.

Finally, these decarbonization regulatory and policy discussions are still ongoing in a number of forums, including D.P.U. 20-80. That is, the role of RNG as a decarbonization resource has not been determined. The proposed contract has a term of 20 years, by which time the natural gas system is likely to be fundamentally different on any pathway. In this context, the rationale for beginning to build up a long-term portfolio of renewable gas has not been established.

Q: Does this conclude your testimony?

A: Yes.