

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

Docket No. DG 18-140

Liberty Utilities (EnergyNorth Natural Gas) Corp. d/b/a Liberty Utilities  
Approval of Renewable Natural Gas Supply and Transportation Contract

**CORRECTED TESTIMONY**

**OF**

**WILLIAM J. CLARK**

**AND**

**MARK E. SALTSMAN**

March 5, 2019

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1   **I. INTRODUCTION**

2   **Q. Please state your names, positions, and business addresses.**

3   A. (WC) My name is William J. Clark and my title is Director, Business Development. My  
4       business address is 116 N Main St., Concord, NH.

5       (MS) My name is Mark Saltzman and my title is Business Development, Northeast. My  
6       business address is 116 N Main St., Concord, NH.

7   **Q. By whom are you employed?**

8   A. We are employed by Liberty Utilities Service Corp. (“Liberty”), which provides service  
9       to Liberty Utilities (EnergyNorth Natural Gas) Corp. d/b/a Liberty Utilities  
10      (“EnergyNorth” or “the Company”).

11   **Q. On whose behalf are you testifying today?**

12   A. We are testifying on behalf of EnergyNorth.

13   **Q. Mr. Clark, please state your educational background and professional experience.**

14   A. I graduated from St. Anselm College in Goffstown, New Hampshire, with a Bachelor of  
15       Science degree in Financial Economics in 1991. I have 25 years of experience in the  
16       natural gas and electric utility industries with roles in Operations, Sales, Marketing, and  
17       Business Development. I joined Liberty in 2012 and progressed into my current position  
18       as Director, Business Development. In this role, I am responsible for strategic growth  
19       and expansion opportunities for both EnergyNorth and Granite State Electric.

1   **Q.    Have you previously testified before the Commission?**

2    A.    Yes, I have testified before the Commission regarding EnergyNorth's various growth  
3       initiatives.

4   **Q.    Mr. Saltzman, please state your educational background and professional**  
5       **experience.**

6    A.    I have a Bachelor of Science degree in Business Management from Franklin Pierce  
7       College, Rindge, New Hampshire, where I graduated Summa Cum Laude and was a  
8       member of the Alpha Sigma Lambda National Honor Society. My educational  
9       achievements have been supplemented by additional coursework at various technical  
10      schools in subjects directly related to operations and maintenance of utility systems and  
11      associated equipment. Before joining Liberty Utilities, I had more than 25 years of  
12      experience serving as the Vice President and General Manager of Concord Steam  
13      Corporation, a New Hampshire regulated utility. My professional activities in the  
14      community include having served on the Governor's energy task force to study  
15      renewable energy credit opportunities in thermal energy.

16   **Q.    Have you previously testified before the Commission?**

17    A.    Yes, I previously testified before the Commission for various rate and other cases in my  
18      capacity as Vice President and General Manager of Concord Steam Corporation.

19   **II.    PURPOSE OF TESTIMONY**

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

21    A.    Our testimony pertains to the request for approval of a renewable natural gas ("RNG")

1 supply and transportation agreement between EnergyNorth and RUDARPA, Inc. Our  
2 testimony will review the terms of the contract, how EnergyNorth will utilize and account  
3 for the RNG including environmental attributes and Letters of Intent (“LOIs”) from  
4 commercial customers to purchase the RNG, as well as new infrastructure required,  
5 project timeline, and the interchangeability of RNG and traditional pipeline natural gas.

6 **Q. As an initial matter, what is RNG?**

7 A. RNG, also referred to as biomethane or biogas, is gas byproduct from the decomposition  
8 of raw organic materials, such as agricultural waste, manure, municipal waste, plant  
9 material, or food waste (i.e., compost). The largest component of this gas is methane.  
10 Landfill gas (“LFG”) is a type of biogas. The process of producing RNG includes  
11 removing the non-methane components from biogas so that the resultant RNG meets the  
12 receiving pipeline's gas quality specifications and can be injected into an existing pipeline  
13 system.

14 **III. RNG SUPPLY AND TRANSPORTATION CONTRACT**

15 **Q. Who are the parties that have entered into this contract?**

16 A. The contract has been executed between RUDARPA, Inc., a Utah corporation  
17 (“Supplier”), and EnergyNorth (“Purchaser”). An executed copy of the contract is  
18 provided as Attachment WJC/MES-1.

19 **Q. Has Liberty Utilities’ senior management reviewed and approved the RNG supply  
20 and transportation contract?**

21 A. Yes, a business case was submitted and signed by senior leadership, including the CEO

1 of Liberty's parent company, Algonquin Power and Utilities Corp. Please see  
2 Confidential Attachment WJC/MES-2 for a copy of the Business Case. In addition, a  
3 Board resolution was executed authorizing EnergyNorth's president to execute the RNG  
4 Supply and Transportation contract. A copy of the Board resolution is included as  
5 Attachment WJC/MES-3.

6 **Q. Where will the RNG production facility be located?**

7 A. The location of the facility will be the North Country Environmental Services (NCES)  
8 landfill in Bethlehem, New Hampshire.

9 **Q. Which party is responsible for the design, construction, and cost of the production**  
10 **facility?**

11 A. RUDARPA is solely responsible for the design, construction, and financing of the  
12 facility.

13 **Q. Please summarize the contracts material terms and conditions.**

14 A. RUDARPA has executed a contract and ground lease with Casella Waste Systems, the  
15 owner of the NCES landfill, which grants RUDARPA rights to all of the facility's LFG.  
16 The LFG is currently being collected and flared on-site. RUDARPA will construct an  
17 RNG processing facility that will clean the raw LFG into pipeline-quality RNG. After  
18 the RNG is produced and tested, it will be compressed into compressed natural gas  
19 (CNG) for delivery to EnergyNorth receipt points. Receipt points outlined in the contract  
20 are Broken Bridge Road in Concord, as well as Keene and Lebanon. RUDARPA is  
21 responsible for all costs associated with the collection, cleaning, compression, and

1 delivery of the RNG to these receipt points. EnergyNorth has agreed to pay a fixed per-  
2 therm cost, with a consumer price index (CPI) escalator with an annual cap of 2%, for the  
3 RNG and delivery services. EnergyNorth is responsible for the construction, operation,  
4 and maintenance of the required infrastructure at the EnergyNorth-owned receipt points.  
5 The contract also contains a condition precedent purchase option, as well as a general  
6 purchase option for EnergyNorth. If EnergyNorth is required or elects to purchase the  
7 production facility per the contract terms, it would reduce the per-therm cost of the RNG  
8 by 23% for our customers by year four. For an analysis of RNG pricing under  
9 EnergyNorth ownership, please see Confidential Attachment WJC/MES-4.

10 **Q. Has EnergyNorth identified the potential risks associated with this project and its**  
11 **ownership structure?**

12 A. Yes, the Company has identified three material risks. They are construction  
13 costs/estimates, RNG production quantities, and RNG production quality.

14 **Q. What steps has the Company taken to mitigate risks associated with construction**  
15 **costs and financing terms?**

16 A. EnergyNorth has negotiated for a fixed price purchase option of the facility based on  
17 construction and financing estimates. If construction costs or financing terms for the  
18 production facility exceed the contracted purchase price and financing terms, RUDARPA  
19 will be responsible for those overage amounts, not EnergyNorth.

1   **Q.   What steps has EnergyNorth taken to mitigate risks associated with RNG production**  
2       **quantities?**

3   **A.**   The Company has reviewed the LFG production estimates compared to the actual flared  
4       gas volumes. Please see Confidential Attachment WJC/MES-5 for a comparison. Over  
5       the last 15 years, actual flared gas volumes have averaged 5% more than what the  
6       corresponding estimates predicted. EnergyNorth and RUDARPA have utilized these  
7       more conservative LFG projections over the contract term to determine the estimated  
8       volumes. However, understanding that these projections are just that, the Company  
9       negotiated and received minimum annual supply quantities (“MASQ”) from RUDARPA.  
10      These quantities are broken into three intervals. For contract years 1–5, the MASQ is  
11      490,000 dekatherms (Dth) annually. For contract years 6–10, the MASQ is 375,000 Dth  
12      annually. For contract years 11–17, the MASQ is 270,000 Dth annually. Details of the  
13      MASQs can be found in Section 4.1 of the contract, Attachment WJC/MES-1.

14      If the MASQ is not met, RUDARPA will pay EnergyNorth an amount equal to the  
15      difference between the revenue requirement from that contract year and the MASQ  
16      quantity for that contract year. For an example of the calculation, please see Exhibit G of  
17      Attachment WJC/MES-1. To ensure payment of any potential shortfall amounts, the  
18      Company required, and RUDARPA accepted, the establishment of an escrow account.  
19      RUDARPA will fund the escrow in the amount of \$500,000 on the date of the first RNG  
20      delivery. RUDARPA will add \$125,000 per year to the escrow account through Contract  
21      year five, which will bring the account balance to \$1,125,000. RUDARPA and  
22      EnergyNorth will maintain this account until the eleventh anniversary of the first RNG



1 delivery. If no escrow withdrawals have been made by this point, EnergyNorth will  
2 refund to RUDARPA \$125,000 per year until the contract end, with any remaining  
3 balance returned to RUDARPA.

4 **Q. What steps has the Company taken to mitigate risks associated with RNG production**  
5 **quality?**

6 A. The Company has been and will be taking steps to mitigate quality risks from both a  
7 safety and financial standpoint. The contract requires RUDARPA to deliver to  
8 EnergyNorth “pipeline quality” RNG from this facility, at ~~the~~ standards that Liberty and  
9 RUDARPA developed after review of specified in the *Gas Technology Institute (GTI)*  
10 *Guidance Document for the Introduction of Landfill-Derived Renewable Natural Gas*  
11 *into Natural Gas Pipelines*. Please see the direct testimony of Kristine Wiley, coauthor  
12 of the Guidance ~~d~~Document, for more on ~~this topic~~ the Guidance Document. The  
13 Minimum specifications that Liberty and RUDARPA agreed upon can ~~also~~ be found in  
14 Exhibit B of the contract, Attachment WJC/MES-1. Liberty will be capable of  
15 monitoring, in real time, the content of RNG as it is being compressed into trailers via a  
16 gas chromatograph. EnergyNorth will be checking the Bill of Lading for all trucks as  
17 they arrive at the designated receipt points to ensure only RNG meeting the minimum  
18 quality standards is introduced into EnergyNorth’s distribution system. Any RNG that  
19 does not meet the minimum guidelines will be turned away and will not count towards  
20 the MASQ.

1   **Q.    In the event EnergyNorth purchases the RNG production facility, who is responsible**  
2       **for ongoing maintenance, operation, taxes, and delivery of the RNG?**

3    A.    If EnergyNorth executes its Purchase Option or is required to purchase the production  
4       facility under the condition precedent terms, RUDARPA will still be responsible for  
5       operating and maintaining the production facility, including payment of real estate taxes  
6       and electrical costs. RUDARPA will also remain responsible for delivery of the RNG to  
7       the designated receipt points. These costs include but are not limited to CNG trailers,  
8       trucks, drivers, fuel, and tolls. EnergyNorth will pay a fixed charge per dekatherm for  
9       these services with annual CPI adjustments. As mentioned previously, and demonstrated  
10      in Confidential Attachment WJC/MES-4, the revenue requirement associated with  
11      EnergyNorth's ownership of the facility, plus these fixed cost terms, will reduce the cost  
12      of RNG for EnergyNorth's customers by approximately 23% starting in year four as  
13      compared to the costs that would be incurred under continued RUDARPA ownership.

14   **IV.    UTILIZATION AND ACCOUNTING OF RNG**

15   **Q.    How does the Company intend to utilize the RNG?**

16   A.    The Company intends to utilize a portion of the RNG to serve new customers, with the  
17      balance to be added to the EnergyNorth commodity mix and socialized among all Sales  
18      customers through the Cost of Gas ("COG") rate component.

19   **Q.    Has EnergyNorth received any commitments from customers willing to utilize the**  
20       **RNG?**

21   A.    Yes. EnergyNorth secured Letters of Intent ("LOIs") from two customers. Please see  
22      Confidential Attachment WJC/MES-6 and Confidential Attachment WJC/MES-7. In

1 both LOIs the customers agreed to execute special contracts for delivery of RNG  
2 whereby they will pay the actual cost of the RNG in their COG portion of the gas bill.  
3 All other charges (Customer Charge, Distribution Charges, and the Local Delivery  
4 Adjustment Charge) will be at standard tariff rates applicable to each customer's rate  
5 classification along with any adjustments to these charges resulting from subsequent  
6 approved rate proceedings. These customers will also own any State of New Hampshire  
7 environmental attributes such as Thermal Renewable Energy Certificates ("TRECs") that  
8 may be available to them at the time. These Special Contracts will be subject to approval  
9 by the New Hampshire Public Utilities Commission.

10 **Q. How much of the annual volume of RNG will these two customers consume?**

11 A. Based on projections provided by these customers and assuming the five-year average of  
12 the RNG projections, it is anticipated these customers will use 44% of the annual  
13 production from the facility.

14 **Q. How does EnergyNorth intend to use the remaining RNG?**

15 A. EnergyNorth plans to socialize the remaining RNG for purposes of making RNG  
16 available to residential and other customers who would not otherwise have access to it.  
17 The Company intends to allocate the remaining volumes of RNG between pipeline  
18 EnergyNorth customers, Keene Division customers, and potential customers in the  
19 recently approved Hanover/Lebanon franchise area. It is the Company's intent to direct  
20 these deliveries to the designated receipt points where it will have the most beneficial  
21 outcomes for our customers.

1   **Q.    How does the Company intend to treat any New Hampshire environmental attributes,**  
2       **such as TRECs for the remaining RNG?**

3    A.    EnergyNorth plans to reduce the COG for customers by monetizing the associated  
4       TRECs. The Company will aggregate and sell the TRECs through the established  
5       marketplace and credit 100% of the proceeds back to customers through the COG. The  
6       TREC proceeds will be allocated proportionally to customers in each division based on  
7       the volumes of RNG delivered to each receipt point.

8   **Q.    Has the Company performed an analysis on the value of TRECs and, if so, what was**  
9       **the conclusion?**

10   A.    Yes. We have calculated the TREC value to be between approximately \$3.92–\$4.65 per  
11       Dth. The reason for the variance is that the efficiency factor of end-use heating systems  
12       can vary between 80% and 95% efficient. The higher the efficiency rating the more  
13       value the TREC will have. Additionally, the Company’s calculations include an assumed  
14       35% discount from the initial value of the TREC, from \$25.69 to \$16.70 per megawatt-  
15       hour (“MWh”). The discount was applied under the assumption that the value of the  
16       TREC on the open REC market would need to be less than the alternative minimum  
17       compliant payment (ACP) in order to competitively market the TRECs. Converting the  
18       discounted value from MWh to Dth results in the \$3.92–\$4.65 per Dth range described  
19       above.

20   **Q.    Excluding the TRECs, what impact does adding RNG have on customers of the**  
21       **traditional pipeline system through the COG?**

22   A.    It has a *de minimus* impact on the COG for existing customers. The RNG is a baseload

1 supply within the EnergyNorth commodity mix through this Supply and Transportation  
2 contract because it will be available for delivery on a daily basis. During the summer  
3 COG period, the RNG will be displacing pipeline-only supplies and will be an  
4 incrementally more expensive option. However, in the winter COG period, as a baseload  
5 supply, the RNG will reduce purchases of propane, LNG, and spot gas commodities,  
6 which are more expensive than the RNG supply. Therefore, on an annual basis there will  
7 be minimal impact to the COG rates by adding this renewable, environmentally  
8 beneficial commodity to EnergyNorth's portfolio.

9 **Q. How will the ability to aggregate TRECs and socialize the monetary benefits back to**  
10 **customers affect the impact?**

11 A. If EnergyNorth were to receive the median estimated TREC value of \$0.43 per therm,  
12 and credit that amount back to customers, RNG would become the least-cost option for  
13 incremental supply currently available to EnergyNorth's customers on an annual basis.  
14 Since November 2011, the EnergyNorth Cost of Gas (COG) has averaged \$.6237. If  
15 EnergyNorth were to receive the median TREC estimate of \$.43, the delivered price for  
16 RNG would be \$.5560.

17 **Q. What percent of EnergyNorth's annual sales volume would RNG represent when the**  
18 **project comes online?**

19 A. The average annual RNG supply volume over the first five years of the contract is  
20 541,915 Dth. The combined Sales Volume of the Keene Division, the traditional  
21 EnergyNorth Division, and the volumes from the potential customers with signed LOIs is  
22 approximately 9,697,529 Dth. Therefore, RNG would represent approximately 6% of

1 annual Sales customer volumes. For an analysis of this data, please see Confidential  
2 Attachment WJC/MES-8.

3 **Q. Is expansion of the NCES required to provide the needed volumes of RNG to support**  
4 **the project's economics?**

5 A. No. All RNG volumes discussed are based on the estimated production of the existing  
6 landfill footprint. Neither the current operations or any future expansion of the NCES  
7 has any bearing on the economics of the project as presented.

8 **V. INFRASTRUCTURE, TIMELINE, AND INTERCHANGEABILITY.**

9 **Q. What infrastructure will be required from EnergyNorth to receive the RNG at the**  
10 **Receipt Points?**

11 A. EnergyNorth will be required to construct, own, and operate a new decompression skid at  
12 Broken Bridge Road in Concord. The decompression skid will be located within the  
13 existing LNG yard and within fencing which is already set up to receive LNG shipments.  
14 The decompression skid will be capable of having two trailers connected and off-loading  
15 simultaneously. Depending on the capabilities of the specific trailers being utilized, the  
16 RNG production facility at the landfill site will be capable of filling three to five trailers  
17 over a 24-hour period. The planned receipt points in Keene and Lebanon are satellite  
18 locations, which will also have CNG infrastructure in place capable of receiving the  
19 compressed RNG supply.

1   **Q.    Has the Company received any third party estimates for construction and installation**  
2       **of this decompression skid?**

3    A.    Yes. EnergyNorth has contracted with i3 Services and received an estimate for this work.  
4        The principal of i3 Services has experience with these installations in New Hampshire, as  
5        well as other regions of the country. The decompression skid will meet all federal  
6        requirements, 49 CFR Part 192, as well as New Hampshire Public Utilities Commission  
7        requirements. The direct cost estimate for material, labor, and site work is [REDACTED]  
8        EnergyNorth has added a [REDACTED] contingency to this amount in the event that unforeseen  
9        events increase costs, and [REDACTED] for project oversight and analysis. These amounts  
10       would bring the decompression skid installation to \$804,368, which was used in the  
11       economic/pricing analysis contained in Confidential Attachment WJC/MES-4. For a  
12       copy of the i3 Services project estimate, please refer to Confidential Attachment  
13       WJC/MES-9.

14   **Q.    What is the estimated project timeline for completion and commencement of the**  
15       **production facility?**

16    A.    EnergyNorth and RUDARPA are planning to have the project completed in time for  
17        RNG deliveries to commence in late summer of 2019. RUDARPA has estimated facility  
18        construction, from equipment orders to start-up, will take eight to nine months.  
19        RUDARPA has begun the local permitting process and is preparing for the required DES  
20        permits. Financing arrangements are in process and will be contingent on Commission  
21        approval of the RNG Supply and Transportation Agreement. Therefore, in order to  
22        achieve the RNG delivery timeline, an order would need to be forthcoming in early 2019.

1 **Q. Is RNG interchangeable with traditional pipeline natural gas?**

2 A. Yes. RNG, or biomethane, has a practically identical chemical composition to  
3 conventional pipeline natural gas. RNG is different from LFG in that the removal of  
4 other chemical constituents results in RNG with a methane content of more than 95%.  
5 Some other LFG-to-energy projects utilize LFG with a lower methane content and more  
6 trace constituents, due to project economics and equipment specifications. These projects  
7 are not considered “RNG” facilities, as they do not remove other constituents to achieve  
8 interchangeability with pipeline natural gas. For a more detailed analysis of this issue,  
9 please see the direct testimonies of Mr. David Cox and Ms. Kristine Wiley.

10 **Q. Are there projects currently injecting RNG into natural gas pipelines?**

11 A. Yes. There are currently 79 projects online or in development within the United States,  
12 along with many Canadian projects. One of the first projects came online in 1982 at the  
13 Fresh Kills landfill in New York. Most recently, Vermont Gas received Public Service  
14 Commission approval to introduce RNG into its pipeline system for delivery to  
15 customers. For a list of RNG facilities, please see Attachment DC-1 included with Mr.  
16 Cox’s testimony.

17 **Q. Does the American Gas Association (“AGA”) have a position on RNG?**

18 A. Yes. The AGA states “Renewable gas is natural gas or biomethane produced from  
19 existing waste streams and a variety of renewable and sustainable biomass sources,  
20 including animal waste, landfills, crop residuals and food waste. Once processed, it is  
21 interchangeable with traditional pipeline-quality natural gas. It is carbon neutral,  
22 extremely versatile and fully compatible with the U.S. pipeline infrastructure.” A link to



1 the AGA website regarding RNG can be found here: <https://www.aga.org/natural->  
2 [gas/renewable/](https://www.aga.org/natural-gas/renewable/)

3 **Q. Has the National Association of Regulatory Utility Commissioners (“NARUC”)**  
4 **indicated a position on RNG?**

5 A. Yes. NARUC has issued a “Resolution Supporting Pipeline Quality Biomethane  
6 Development as a Renewable Gas Resource in the Clean Energy Economy.” In this  
7 resolution NARUC has: “RESOLVED, That the Board of Directors of the National  
8 Association of Regulatory Utility Commissioners, convened at its 2010 Winter  
9 Committee Meetings in Washington, D.C., supports the role and development of biogas,  
10 and in particular, pipeline quality biomethane, as a feasible renewable fuel in an effort to  
11 capture methane greenhouse gas emissions and simultaneously provide an alternative  
12 source of renewable energy.” For a complete copy of this resolution, please Attachment  
13 WJC/MES-10.

14 **VI. CONCLUSION**

15 **Q. Do you believe approval of the RNG Supply and Transportation Agreement is in the**  
16 **public good?**

17 A. Yes. We believe Commission approval is in the public good for many reasons.  
18 Renewable natural gas will take a waste product currently being flared into the  
19 atmosphere and transform it into a fuel that can be used interchangeably with pipeline  
20 natural gas to heat residences and businesses, for hot water and cooking, industrial  
21 processing, combined heat and power systems,, as well as for transportation fuel. RNG  
22 will assist customers, municipalities, and the state with reaching their sustainability goals.

1 SB577, which qualifies RNG for State TRECs, was signed into law this year,  
2 demonstrating a commitment to expanding RNG as a public policy goal of the State of  
3 New Hampshire. We have identified significant customer commitment to RNG, as  
4 demonstrated in the form of the two LOIs attached to this filing. We believe  
5 EnergyNorth has secured the lowest-cost RNG in the region, which will have a *de*  
6 *minus* impact on customer bills even without TRECs, and will be the lowest cost  
7 option for incremental supply on an annual basis when revenue from TRECs is credited  
8 back to customers through COG. EnergyNorth believes approval of this contract will  
9 signal to the development market the viability of such projects and will send a message to  
10 existing and potential customers that RNG is an economically viable solution to help  
11 achieve their sustainability goals. Therefore, we believe approval of the RNG Supply  
12 and Transportation Agreement is in the public good.

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

14 **A.** Yes.