

STATE OF NEW HAMPSHIRE
Before the
PUBLIC UTILITIES COMMISSION

DOCKET 21-036

IN THE MATTER OF:

LIBERTY UTILITIES (ENERGYNORTH NATURAL GAS) CORP.
d/b/a LIBERTY UTILITIES

**Petition for Approval of a Renewable Natural Gas Supply and Transportation
Agreement**

DIRECT TESTIMONY

OF

Deandra M. Perruccio
Utility Analyst
New Hampshire Department of Energy

November 12, 2021

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1 **Q. Please state your name, occupation, and business address.**

2 A. My name is Deandra Marie Perruccio. I am employed by the New Hampshire Department of
3 Energy as a Utility Analyst. My business address is 21 S. Fruit Street, Suite 10, Concord,
4 New Hampshire 03301.

5 **Q. Please summarize your education and professional work experience.**

6 A. I hold a BA in Global Studies from Assumption College, Massachusetts, and a MSc. in
7 Community Development and Applied Economics from the University of Vermont. I have
8 worked in research positions for universities as well as state agencies. *See* Deandra M.
9 Perruccio Resume (**Attachment DMP-1**). I joined the Public Utilities Commission in 2017
10 as a Utility Analyst III (UA III) in the Sustainable Energy division. I was promoted to UA
11 IV in 2020. When the PUC split into two agencies in July 2021, my job title changed to UA
12 IV with the New Hampshire Department of Energy (Energy).

13 **Q. Please describe your job responsibilities as a Utility Analyst for the Sustainable Energy**
14 **Division.**

15 A. As a Utility Analyst IV in the Sustainable Energy Division, I review and reconcile annual
16 compliance filings to ensure electricity providers' compliance with the Renewable Portfolio
17 Standard (RPS); review and approve Renewable Energy Certificate (REC) applications for
18 facility registration for all Classes including Class I Thermal; assist with ongoing facility
19 eligibility oversight; and research and evaluate requests for waiver of the New Hampshire
20 Code of Administrative Rules Chapter Puc 2500. I was the lead analyst working with the
21 (then Public Utilities Commission) Legal Division on necessary changes to the Chapter Puc
22 2500 rules to incorporate amendments to the RPS statute, and Chapter Puc 900 rules
23 revisions to incorporate changes to net metering rules following issuance of Public Utility

1 Commission Order No. 26,029 (June 23, 2017)(Docket No. DE 16-576), as well as changes
2 to net metering due to legislation. I provided assistance in some net energy metering docket-
3 related work, including but not limited to studies on system-wide and locational value of
4 distributed generation. I also manage the Sustainable Energy Division’s group net metering
5 program, provide public education, and respond to inquiries from stakeholders and the
6 public.

7 **Q. Have you previously testified before the Public Utilities Commission?**

8 A. I have previously presented live testimony before the Public Utilities Commission as a
9 member of Commission Staff, *see* Docket No. DG 20-136, *Eversource Energy, Recovery*
10 *Mechanism and Rate Treatment for Net Metering and Group Host Costs*, Hearing Transcript
11 (January 20, 2021) This is the first pre-filed testimony I have prepared.

12 **Q. Please summarize the purpose of your testimony.**

13 A. The purpose of my testimony is to provide my analysis and comments on Liberty
14 (EnergyNorth Natural Gas) Corp. d/b/a Liberty Utilities (“Liberty” or “the Company”)’s
15 petition to acquire renewable natural gas (RNG) and potentially develop an RNG production
16 plant from a developer at a landfill located in Bethlehem, New Hampshire. Under Liberty’s
17 proposed supply contract, the RNG Supply and Transportation Agreement (“RNG
18 Agreement,”) the developer, RUDARPA, will install necessary equipment at the landfill site
19 to collect, clean, and compress RNG, sell it to Liberty as compressed RNG, and transport the
20 compressed RNG via truck to one or more injection points. Liberty will be responsible for
21 decompression and injection to serve one or more groups of its customers, including
22 commercial customers under special contract, and voluntary and involuntary pipeline
23 distribution customers.

1 **Q. What aspects of the Company's petition will you address in your testimony?**

2 A. I will primarily focus on the aspects of the Company's petition which are related to the
3 renewable nature of the processed landfill gas, and will recommend that the Public Utilities
4 Commission (PUC) not approve this specific RNG Agreement. My testimony will discuss:

5 1. How thermal renewable energy certificates (TRECs) work and the typical manner in
6 which a facility is deemed eligible to produce TRECs.

7

8 2. The role of TRECs in Liberty's proposal including:

9 a. Why TRECs are appropriately excluded from Liberty's financial calculations
10 and projections; and

11 b. Liberty's description of TRECs for proposed voluntary and involuntary RNG
12 customers, including anticipated special contract customers and uncertainties
13 including whether use of RNG fuel would qualify the Company's customers'
14 facilities to produce TRECs and uncertainty regarding the estimation of a
15 proposed TREC value.

16 **Q. Please explain further.**

17 A. Any mention of TRECs, TREC values, and Liberty's assertion that TRECs will reduce RNG
18 costs, should be treated as an aspiration of the Company. There are many steps required to
19 implement Liberty's described goals including a significant number of unknowns which the
20 Company has been unable to address, and potential amendments to rules and/or statute. I
21 will outline areas within Liberty's petition which Energy believes to be unresolved. These
22 unresolved questions make determining potential TREC eligibility difficult. I also have
23 concerns with Liberty's multiple, contradictory, proposed pathways for TREC eligibility.

1 Given these uncertainties and concerns, I agree with Liberty and fellow analyst Daniel T. Phelan
2 that TREC value(s) should not be included in the financial evaluation of Liberty's RNG
3 proposal. Additionally, in my opinion, it is premature to conclude that the majority of Liberty's
4 customers' facilities are eligible to be certified for TRECs based solely on RNG usage. Further,
5 there are issues with Liberty's request for "approval to credit the proceeds from the sale of New
6 Hampshire environmental attributes of the RNG toward the Company's overall cost of gas
7 (COG)." Please see Clark-Stevens Testimony filed March 4, 2021, Bates page 006, lines 19-21
8 (**Attachment DMP-2**), and this is likely not possible as stated. Given the risks to distribution
9 customers, and the status of the TREC portion of the proposal, it would premature to approve the
10 RNG Agreement under any assumption of access to TRECs at this time.

11 **Q. Please briefly describe the Liberty petition and the renewable aspect of this project**
12 **including its relation to renewable energy certificates (RECs).**

13 A. On March 4, 2021, Liberty filed for approval of the RNG Agreement to purchase processed,
14 pipeline quality RNG from a to-be-built RUDARPA North Country LLC (RUDARPA)
15 facility. RUDARPA will construct a cleaning/production system at the North Country
16 Environmental Services (NCES) landfill located in Bethlehem, New Hampshire, and deliver
17 pipeline-quality gas to three yet to be determined delivery points on the Liberty gas
18 distribution system. Other aspects of the RNG Agreement are discussed by Utility Analyst
19 Mr. Daniel Phalen.

20 Liberty has signed Letters of Intent (LOIs) with three commercial customers that indicate
21 their interest in purchasing RNG. The commodity cost, as specified by the RNG Agreement,
22 will be passed through to the LOI customers. Liberty has stated that TREC eligibility will be
23 the responsibility of LOI customers to pursue, and that the commercial customers will own

1 and retain any TRECs associated with their contracts. Liberty also proposes developing an
2 opt-in tariff to sell RNG to residential pipeline customers. If opt-in and LOI volume is below
3 the delivered quantity of RNG, Liberty states that RNG will be injected directly into
4 Liberty's pipeline and that costs be recovered through Liberty's overall cost of gas (COG).

5 Liberty has suggested that TRECs for the useful thermal energy produced by this RNG
6 supply is also possible; Liberty wants to use what it describes as "associated TRECs" to
7 offset the cost of gas. In testimony, Liberty is requesting ". . . to credit the proceeds from the
8 sale of the New Hampshire environmental attributes of the RNG toward the Company's
9 COG, excluding the attributes of the RNG sold to those customers who have entered into
10 special contracts. . . ." Please see Clark-Stevens Testimony, filed March 4, 2021 Bates 006-
11 7, lines 19-1(**Attachment DMP-2**). However, in the course of discovery, the Company has
12 also suggested that the RNG production facility at the landfill can create and own TRECs.
13 Liberty's Responses to Energy data request (DR) 1-20(**Attachment DMP-3**), and Energy
14 DR 2-7b (**Attachment DMP-4**). Assuming for the sake of argument that either proposed
15 pathway would generate TRECs, both eligibilities are not possible. It remains unclear which
16 pathway the Company intends to pursue. I will address concerns with both scenarios.

17 **Q. Is methane gas an eligible renewable source of electricity or useful thermal energy**
18 **under New Hampshire's RPS policy?**

19 A. Yes, methane gas is an eligible renewable source of electricity and useful thermal energy
20 within the New Hampshire RPS statute, RSA 362-F:4.

21
22

1 **Q. What is “useful thermal energy?”**

2 A. "Useful thermal energy" is defined in New Hampshire statute as “renewable energy delivered
3 from class I sources that can be metered and that is delivered in New Hampshire to an **end**
4 **user** in the form of direct heat, steam, hot water, or other thermal form that is used for
5 heating, cooling, humidity control, process use, or other valid thermal end use energy
6 requirements and for which fuel or electricity would otherwise be consumed.” RSA 362-F:2,
7 XV-a (Emphasis added)

8 **Q. What is an “end user”?**

9 A. In my experience implementing this program, the end user is the entity directly using the
10 useful thermal energy defined in my previous response. End users are typically homes,
11 buildings, schools, hospitals, businesses, and state, county, and municipal buildings.

12 **Q. What/who is eligible to generate TRECs?**

13 A. For the purposes of my testimony, a facility is a boiler, furnace, or process equipment that
14 produces useful thermal energy for an end user located in New Hampshire. The facility
15 owner may apply for its facility to be certified as eligible for TRECs under the New
16 Hampshire RPS provided the facility meets all statutory and Chapter Puc 2500 requirements.
17 *See* RSA 362-F:4, I

18 **Q. Can you please provide a brief overview of the New Hampshire Renewable Portfolio**
19 **Standard (RPS) and Renewable Energy Certificates (RECs)?**

20 A. The New Hampshire RPS statute, RSA 362-F, establishes four classes of renewable energy
21 sources. Class I includes an electricity requirement and separate carve-out for thermal
22 energy (i.e., Class I Thermal). Electricity suppliers must obtain RECs for each of the four
23 classes, as well as the thermal carve-out, at a statutorily defined percentage of their total

1 retail electric load. One REC represents the renewable attributes of one megawatt-hour of
2 electricity or the equivalent amount of thermal energy.

3

4 RECs are generated by certified renewable energy facilities and sold in a regional market.

5 Renewable energy facilities must apply for New Hampshire RPS eligibility. Facility owners
6 submit a class-specific application for review and approval by the Department of Energy

7 (Energy). To certify as eligible to produce RECs, a facility owner must, among other things,

8 purchase and install a revenue quality meter to record the gross output of electricity or useful

9 thermal energy produced by the facility from a renewable fuel (e.g., RNG). The installed

10 revenue-grade production meter is read, and the data is verified, by a registered independent

11 monitor who is retained directly by the facility owner. The independent monitor also inputs

12 this production data into New England Power Pool Generation Information System

13 (NEPOOL GIS), the regional REC tracking system. If the facility is determined eligible, the

14 Department of Energy then certifies the facility as eligible to generate a specific Class of

15 REC. Liberty's petition proposes that an end users' facilities may be certified for Class I

16 TRECs, under state statute and Chapter Puc 2500.

17

18 Given that a facility must be certified to generate any RECs, including TRECs, Liberty's

19 proposal raises questions as to whether end-user customers' facilities using RNG are eligible

20 for TREC certification, and thereby potentially provide a revenue that would offset the cost

21 of RNG for those customers. If certification is possible, the next question becomes what

22 kind of confidence can one have in an estimated TREC value over the RNG-Agreement's

23 minimal timeframe of 17 years or additional optional 10 year renewal period.

1 **Q. Please describe the TREC application and certification process and whether the**
2 **facilities belonging to customers referenced in Liberty's petition may be eligible for**
3 **TRECs?**

4 A. There are currently over 60 Class I Thermal certified facilities located throughout New
5 Hampshire that burn a number of eligible fuels, including wood chips or pellets, eligible
6 biofuel, or RNG. Generally, under current rules, a facility which generates useful thermal
7 energy from a renewable energy source may be eligible to be certified to produce Thermal
8 Renewable Energy Certificates (TRECs).

9

10 The application process includes detailed documentation. For example, the Peterborough
11 Town Library (Library) uses precision dried wood chips to heat and cool the building, and is
12 certified as a Class I Thermal facility. To become certified, the Library submitted an
13 application for Class I Thermal eligibility with documentation showing that:

- 14 1) the library is the end user of the useful thermal energy produced by the precision
15 dried wood chip boiler (i.e., facility);
- 16 2) the useful thermal energy, used to heat and air condition the library, is derived
17 from a renewable fuel (i.e., precision dried wood chips) and is accurately metered;
- 18 3) a revenue-quality meter which accurately measures useful thermal energy
19 produced at the facility was installed;
- 20 4) the system architecture and meter accuracy were verified by a licensed
21 Professional Engineer; and
- 22 5) a registered independent monitor is retained to read the production meter, verify
23 the production, and input production data into the NEPOOL GIS.

1 After certification, production is “minted” into TRECs on a quarterly basis by the
2 NEPOOL GIS administrator. TRECs may be purchased, sold, and retired for RPS
3 compliance purposes.

4
5 In contrast to this example, I have a number of concerns regarding the potential for
6 eligibility related to Liberty’s petition, which I will describe in more detail. I cannot
7 make any firm determination regarding facilities’ eligibility for thermal RECs due to the
8 nascent nature of the proposal. Despite extensive data requests and long technical
9 sessions, Liberty has been unable to provide concrete details and sufficient evidence of
10 finalized plans to date.

11
12 In addition, in Energy’s view, detailed discussions regarding TREC eligibility, and any
13 Company proposals to expand or alter TREC eligibility through amendments or rule
14 changes, are not appropriate to pursue within this docket. Those discussions are better
15 served through legislative efforts and/or a rule docket or working group discussions open
16 to all potentially affected stakeholders. Within this docket, any discussions by the
17 Company regarding TREC eligibility and related RNG cost reductions are therefore best
18 treated as aspirations with limited means for implementation, and as aspirations which
19 may require rule and/or statutory change. That said, it is important for the Public Utilities
20 Commission to understand why Energy has concerns regarding Liberty’s references to
21 TRECs and any potential TREC value in its petition.

22

1 **Q. In your opinion, can Liberty directly “credit the proceeds from the sale of the New**
2 **Hampshire environmental attributes of the RNG toward the Company’s cost of gas**
3 **(COG), excluding the attributes of the RNG sold to those customers who have entered**
4 **into special contracts...”(Clark-Stevens Testimony filed March 4, 2021 Bates 006-7,**
5 **lines 19-1)”?**

6 A. No. Assuming “environmental attributes” means TRECs, it is the facility owner (i.e., thermal
7 end user) whose facility is certified as eligible to produce Class I TRECs, and therefore who
8 owns the “environmental attributes.” Thus, it is Liberty’s customers who would be required
9 to certify their facilities to become eligible producers of Class I TRECs and who would own
10 these (hypothetical) TRECs in the first instance. The facility owner may work with a
11 registered aggregator to market and sell RECs. Liberty’s petition, however, does not clearly
12 address the fact that certification of the end users’ thermal facilities (i.e., Liberty’s
13 customers’ facilities) must happen before REC production can occur. Neither does Liberty
14 address how TRECs would be marketed and sold. Liberty does appear to acknowledge that
15 there are uncertainties regarding these processes. It is not clear, however, if Liberty
16 understands the depth, complexity, and potential time required to develop a clear and
17 workable plan. Please see Clark-Stevens Testimony filed March 4, 2021, Bates page 023,
18 lines 12-16; Bates page 024, lines 4-9 (**Attachment DMP-2**). It is therefore unclear how
19 Liberty would obtain TRECs and credit proceeds from the sale of TRECs, if any, toward the
20 overall cost of gas. Liberty’s request to directly “credit the proceeds” notwithstanding, other
21 aspects of Liberty’s petition and discovery responses appear to indicate that Liberty
22 acknowledges its customers’ facilities are the sources to be certified, and that Liberty is
23 interested in assisting its customers in obtaining TREC eligibility. Please see Clark-Stevens

1 Testimony filed March 4, 2021 Bates 019-020, lines 21-1, bates 023 lines 5-16 (**Attachment**
2 **DMP-2**), as well as Liberty’s Responses to Energy DR 1-18 (**Attachment DMP-3**), Energy
3 DR 2-7b and Energy DR 2-8, (**Attachment DMP-4**)

4

5 During the discovery process, the Company also suggested that the RNG production facility
6 itself could apply for TREC eligibility. Liberty’s Response to Energy DR 2-7b (**Attachment**
7 **DMP-4**). In my experience reviewing and certifying thermal facilities for three years with
8 the Public Utilities Commission, renewable fuel producers have never been considered
9 eligible for renewable energy certification or renewable energy production. For example,
10 there are a number of certified thermal facilities using “produced” or “manufactured”
11 renewable fuels such as wood pellets, chips or liquid biofuel. None of the renewable fuel
12 producers/suppliers are considered eligible to produce TRECs. In my opinion, certifying a
13 producer of renewable fuel for RECs is not allowed under current statute. The certification
14 of a fuel producer would also raise concerns of potential double counting of TRECs for RPS
15 purposes; once for the fuel producer and again for the useful thermal energy producer. This
16 type of certification would be a significant departure from current practice and interpretation
17 of current rules and statute regarding TRECS. I therefore see no way, under current rules and
18 statute, for Liberty to directly obtain TRECs and credit proceeds from the sale of TRECs
19 toward the cost of gas.

20

21 In my opinion, Liberty’s multiple and inconsistent approaches to TREC eligibility show that
22 the TREC portion of Liberty’s petition is premature and should not be considered when

1 evaluating the RNG Agreement at any point in the proposed 17-year contract term, or
2 optional ten-year renewal period.

3 **Q. What is the relevance of TRECs to Liberty’s updated financial calculations and**
4 **projections in its petition?**

5 A. Although Liberty has identified a potential TREC value in its petition, the Company has
6 clarified that this TREC value has not been used in calculating the cost of RNG in the RNG
7 Agreement. Liberty stated that it “[t]he TREC value calculation is not used in the financial
8 projection calculation provided for the delivered cost of gas. The Company decided to . . .
9 not make an assumption that TREC values would be generated by the use of RNG or [an
10 assumption] of TREC values.” Liberty’s Response to Energy DR 1-15 and Energy DR 1-16
11 (**Attachment DMP-3**). The Company additionally states that “...the availability of TRECs
12 for customers using RNG is currently uncertain and...this uncertainty is likely to persist
13 through the hearing date.” Despite this, Liberty has not removed TRECs from its petition,
14 testimony, or discovery responses, and expects to discuss TRECs at the hearing scheduled in
15 February 2022. Liberty’s Response to Energy DR 3-6 (**Attachment DMP-5**).

16
17 In my opinion, uncertainty regarding TREC value persists because Liberty has not provided
18 key information including but not limited to: definitive documentation of injection site
19 locations and who will pay for these locations; executed special contracts with volumes and
20 terms, including possible exits or extensions; and how Liberty envisions LOI and distribution
21 system customer facilities to be eligible to produce TRECs.

22 **Q. How does Liberty’s petition portray the role of TRECs for RNG customers, including**
23 **LOI a/k/a special contract customers?**

1 A. The Company appears to assume that all RNG customers' facilities could be certified as
2 TREC eligible, and that the Company would be able to use revenue from the sale of TRECs
3 to reduce the cost of RNG and, for distribution customers, the overall cost of gas (COG).
4 Energy has concerns about the proposal to use TREC revenues to offset costs due to the
5 uncertainty of facilities' eligibility and certification. Liberty's petition and discovery
6 responses offer a number of novel TREC eligibility pathways. The nascent nature of
7 Liberty's actual plans (as Liberty has described to date) make firm determinations regarding
8 the role of TRECs and associated revenues difficult. As discussed, Liberty has not included
9 TRECS in the financial calculations included with the petition, although Liberty expects to
10 raise TRECs at hearing and has declined to remove TRECs from the petition. Liberty's
11 Response to Energy DR 3-6 (**Attachment DMP-5**). To the extent a special contract
12 customer's interest in RNG is influenced by the production and value of TRECs, that
13 facility's eligibility could be an important condition of the company executing a special
14 contract. This, in turn, impacts the volume of RNG that Liberty proposes to include in the
15 cost of gas due to RNG usage by involuntary pipeline customers. Energy has not been
16 provided evidence that any LOI customer facilities or involuntary customer facilities are
17 TREC eligible at this time.

18
19 To date, despite numerous and on-going requests Liberty has not identified or provided any
20 executed special contracts. Please see Clark-Stevens Testimony filed March 4, 2021 Bates
21 020, lines 1-7 (**Attachment DMP-2**), as well as Liberty's Responses to OCA DR 1-12a
22 (**Attachment DMP-6**), Energy DR 1-26, and to Energy DR 1-44 (**Attachment DMP-3**). It
23 follows that Liberty has not opened dockets to seek PUC review and approval of those

1 special contracts. Liberty has shared that the RNG Agreement at issue, if approved, will
2 require Liberty to buy all the RNG RUDARPA produces no later than Quarter 2 (Q2) or
3 Quarter 3 (Q3) of 2022. Liberty's Response to Energy DR 3-3 (**Attachment DMP-5**). At
4 this time, it seems unlikely that any executed special contracts filed with the PUC would be
5 reviewed and approved by Q2 or Q3 of 2022.

6
7 Liberty has taken somewhat inconsistent views regarding LOI customers' TREC eligibility.
8 On the one hand, Liberty has suggested that LOI customers will own any produced TRECs
9 and the revenue from the sale of TRECs, if any, at the LOI customers' *own risk* of pursuing
10 TREC eligibility. Liberty's Response to Energy DR 2-1 and Energy 2-7 (**Attachment DMP-**
11 **4**). Somewhat inconsistently, however, the Company has also said it has discussed a
12 conservative TREC value with LOI customers, and that the LOI customers hope to apply for
13 TREC eligibility. Liberty's Response to Energy DR 1-10 (**Attachment DMP-3**) and Energy
14 DR 2-8 (**Attachment DMP-4**). While Liberty simultaneously insists that special contracts
15 are not contingent upon TREC eligibility (Liberty's Response to Energy DR 2-7,
16 **Attachment DMP-4**), without reviewing actual executed special contracts, I cannot confirm
17 that the LOI customers' interest is not somewhat dependent upon their ability to obtain
18 TRECs and/or an approximate TREC value. Given that the estimated TREC value provided
19 in Liberty's March 4, 2021 petition is \$4.07/Dth, *see* Attachment WJC/MRS-4, Bates 99-100
20 (**Attachment DMP-2**), and that the cost of RNG for year 1 that the Company identified in
21 the same filing is \$10.47/Dth, it appears that TREC eligibility could be an important
22 consideration for special contracts customers. Similarly, TREC eligibility may be important
23 with regards to estimating the volume of RNG Liberty proposes to inject into the pipeline for

1 use by involuntary pipeline distribution customers, and estimating RNG costs that Liberty
2 expects will be paid for through the overall cost of gas (COG) rates.

3 **Q. What is a preliminary designation?**

4 A. New Hampshire Code of Administrative Rules Chapter Puc 2500 allows for preliminary
5 designation pursuant to Puc 2505.03. A preliminary designation allows a facility owner to
6 submit a preliminary application for a planned facility for preliminary eligibility review by
7 the Department of Energy, and gives the facility owner some assurance that the facility is
8 likely to be found “TREC eligible” when it becomes operational. This process is a way to
9 identify issues before a facility owner makes a significant investment in equipment or
10 contracting for supply. Even with preliminary designation, a facility is not guaranteed
11 eligibility. A facility is only considered eligible to generate RECs when that facility is both
12 operational and after Energy approves its complete application demonstrating the facility
13 meets all applicable rules and requirements.

14

15 To date, none of Liberty’s identified LOI customers have applied for preliminary designation
16 under Puc 2505.03.

17 **Q. Can you outline concerns more specifically by type of customer?**

18 A. I will outline general concerns for five “customer types,” opt-in (voluntary) distribution
19 system customers; involuntary distribution system customers; LOI 1/Keene; LOI 2/Other;
20 and LOI 3/Lebanon. Liberty’s Response to Energy DR 2-21 (**Attachment DMP-4**)

21 **Q. What are your concerns regarding distribution system customers’ facilities?**

22 A. In cases where RNG is injected into the distribution pipeline, whether facilities will be
23 eligible to produce TRECs is uncertain due to the mixed nature of the fuel and concerns

1 about the accurate metering of useful thermal energy produced from an eligible renewable
2 fuel source. Any steps Liberty may take to address TREC eligibility for opt-in or involuntary
3 distribution system customers, as described in Liberty's petition, could require rules changes
4 or even statutory changes to create viable eligibility pathways for those facilities.

5 Specifically, current statutory requirements and resulting rules require accurate metering of
6 useful thermal energy produced by an eligible renewable fuel at the point of thermal
7 production and use by the end user. It is unclear how accurate metering can be accomplished
8 for facilities on a large distribution system when that system co-mingles a renewable fuel and
9 conventional, ineligible fuel at varying levels, amongst thousands of customers. At a
10 minimum, accepting estimated quantities of useful thermal energy, without reference to
11 specific facility characteristics and fuel consumption, would represent a significant departure
12 from current metering standards to which all other certified facilities are held. It may also be
13 impermissible under the law.

14 Certification of a facility is also a concern for facilities that belong to involuntary distribution
15 system customers because current rules and statute require that each end user facility be
16 registered *individually*. For example, the Department of Energy currently has over five
17 thousand individually registered solar facilities in New Hampshire. Many are small
18 residential solar systems which have come online, applied individually, and been certified as
19 REC eligible since 2009. Each of the solar facilities has appropriate electricity production
20 metering installed, separate and apart from utility retail meters, a registered independent
21 monitor verifying production, and most also work with a registered aggregator who markets
22 and sells their RECs. While it is technically feasible for Liberty to work with opt-in

1 customers to install appropriate metering, potentially register to act as an independent
2 monitor or an aggregator for their customers (again, recall they cannot do both); and retain
3 services for the other function, certifying involuntary distribution customers' facilities
4 without confirming proper metering in place for measuring useful thermal energy production,
5 or acquisition of independent monitors, is likely impermissible under the current statute and
6 rules.

7 **Q. What are your concerns regarding the LOI 2/Other facility?**

8 A. Without reviewing a complete application for REC eligibility, I cannot make a determination
9 as to the eligibility of a facility. However, LOI 2/Other, is also on the distribution system
10 and therefore, at a minimum, faces the challenge above of accurately metering renewable
11 fuel thermal production based on a fuel blended at varying levels offsite and distributed
12 amongst thousands of customers.

13 **Q. What are the concerns regarding LOI 1/Keene; and LOI 3/Lebanon facilities?**

14 A. Without reviewing a complete application for TREC registration, I cannot make a
15 determination as to the eligibility of a facility. Based on the limited information provided by
16 the Company within this docket, however, there appear to be two LOI customers; LOI 1/
17 Keene; and LOI 3/ Lebanon that Liberty reports it may supply with 100% RNG. Liberty's
18 Response to Energy DR 3-5 (**Attachment DMP-5**). If that is the case, it appears these LOI
19 facilities could have a pathway to be certified as eligible to produce TRECs under current
20 rules and statute. However, while some Company discovery responses suggest that these two
21 facilities will be supplied with 100% RNG, other discovery responses suggest continued
22 uncertainty due to a lack of clarity around facility injection points. Please see Clark-Stevens
23 Testimony filed March 4, 2021 Bates 016 lines 7-16, (**Attachment DMP-2**), Liberty's

1 responses to Energy DR 1-8 (**Attachment DMP-3**), Energy DR 2-13, and Energy DR 2-13
2 Exhibit A (**Attachment DMP-4**). Liberty has not provided evidence of formal commitments
3 in the form of executed special contracts to resolve these ambiguities.

4
5 Specifically, the LOI 1/Keene facility may have an injection point that only serves that
6 facility and thus could be provided with 100% RNG. In contrast, the LOI 1/Keene facility
7 may have an injection point on a distribution pipeline serving other customers. If the LOI
8 1/Keene facility is on a distribution system which supplies both conventional natural gas,
9 meaning non-renewable natural gas, and RNG, it would face the same blended fuel and
10 metering concerns mentioned above with regard to pipeline distribution customers.

11
12 The Company has also suggested that the LOI 1/Keene facility is already certified as eligible
13 to produce TRECs. I would like to clarify that, while a heating facility belonging to this
14 customer has been certified to produce TRECs because it produces useful thermal energy
15 through the combustion of a liquid biofuel, no facility in Keene has been certified to produce
16 useful thermal energy through the combustion of RNG. I cannot confirm these facilities are
17 the same building, cannot verify appropriate metering, etc. At a minimum the LOI 1/Keene
18 customer would need to submit a facility application for RNG, and document the same
19 information the Peterborough Liberty provided, as discussed above. The application would
20 also need Energy's review and approval.

21
22 Similarly, the LOI 3/Lebanon facility may have an injection point that serves multiple
23 facilities, or it may have a dedicated injection point. Liberty's Responses to Energy DR 1-8

1 (Attachment DMP-3), and to OCA DR 1-5c (Attachment DMP-6). Liberty has also stated
2 that the Company needs approval of a Lebanon franchise in order to serve LOI 3/Lebanon.
3 For LOI 3/Lebanon if both RNG and conventional natural gas are injected into a system
4 serving multiple customers, we again arrive at the fuel and metering issues discussed above,
5 which would affect any facility's ability to be certified for TRECs.

6
7 Should all possible decisions occur in a way which ensures 100% RNG supply for LOI
8 1/Keene and LOI 3/Lebanon facilities, the facilities appear to have a pathway to REC
9 eligibility under the current statute and rules. My basic calculation, based on information
10 provided by Liberty in Liberty's response to Energy 1-24 (Attachment DMP-7), is that LOI
11 1/Keene and LOI 3/Lebanon represent about 34% of Liberty's annual estimated RNG
12 production. See Energy Analysis LOI using Energy DR 1-24 (excel) (Attachment DMP-7)
13 I note that the term of years for any special contract LOI 1/Keene or LOI 3/Lebanon might
14 execute is not firm and is not public.

15 **Q. Do you have concerns regarding Liberty's estimated TREC value?**

16 A. Yes. Liberty included a TREC value estimate with the Company's March 2021 petition, and,
17 although Liberty did not include TREC values in the financial calculations estimating the
18 cost of gas for this project, the Company maintains TRECs are relevant. For the many
19 reasons outlined above, I suggest consideration of TREC value is premature for this proposal
20 in its current form. However, because Liberty provided a value estimate and because Liberty
21 has stated that a "conservative TREC value" is being discussed with LOI customers
22 (Liberty's Response to Energy DR 1-10, Attachment DMP-3), I will briefly address
23 valuation of TRECs.

1

2 The RPS is a market-based policy. TRECs are only generated in New Hampshire and are
3 marketed solely for NH Class I Thermal compliance. There is also a ceiling price, set by the
4 Alternative Compliance Payment (ACP). As with any market, supply and demand determine
5 the actual value of the TRECs. A marked increase in the supply of TRECs will likely lower
6 their value. Policy changes may also impact future TREC value.

7

8 Given the concerns regarding facility eligibility for TRECs, and therefore the uncertainty in
9 overall supply of TRECs in the market, estimating a value is highly speculative and Energy
10 cannot support the value estimate provided by Liberty. Nevertheless, using three simple
11 inputs provided by Liberty, I have done a basic analysis to estimate the volume of RNG
12 TRECs Liberty's RNG supply could produce, assuming, for the sake of argument, that all
13 facilities using Liberty RNG are certified as TREC eligible.

14

15 My input assumptions and calculations are as follows:

- 16 • Total electricity sales = approximately 10.4 million MWh (2020 total electricity sales)
- 17 • RPS 2022 Class I Thermal requirement (assumed year 1 of this petition) = 2.00% of
18 total electricity sales
- 19 • Annual average RNG supply projections (from Liberty discovery response to DOE 1-
20 24; 5 year annual average) = 541,915 Dth

21

22 Result: roughly 60-75% of the total 2022 Class I Thermal RPS requirement could be
23 satisfied with TRECs produced by certified facilities consuming Liberty supplied RNG.

1 *See Attachment DMP-8* (Energy Analysis REC Requirements using Energy DR 1-24
2 (excel)).

3 This approximation demonstrates there is potential for Liberty's RNG aspirations to create a
4 significant supply of TRECs in New Hampshire thereby impacting TREC values (i.e.,
5 prices).

6 **Q. In your opinion has Liberty provided a fully developed petition that is ready for**
7 **approval at this time?**

8 A. No. In my opinion, this petition is not developed enough for a determinative evaluation of
9 TREC eligibility. Liberty's proposal contains a number of open issues, including:

- 10 • **no firm injection points or binding agreement regarding payment;** Please see Clark-
11 Stevens Testimony filed March 4, 2021 Bates 016 lines 7-16 (**Attachment DMP-2**); as
12 well as responses to Energy DR 1-8 (**Attachment DMP-3**), Energy DR 2-13, and 2-13
13 Exhibit A (**Attachment DMP-4**) Energy DR 3-7 and 3-8, (**Attachment DMP-5**), and
14 OCA DR 1-5 (**Attachment DMP-6**)
- 15 • **multiple interpretations of potential for facility TREC eligibility;** Please see Clark-
16 Stevens Testimony filed March 4, 2021 Bates 019-20 lines 21-1, bates 023-024 lines 5-3
17 (**Attachment DMP-2**), as well as responses to Energy DR 1-20 and 1-15b (**Attachment**
18 **DMP-3**), and Energy DR 2-7 (**Attachment DMP-4**);
- 19 • **varied estimations of TREC value and no clear explanation on the use of TREC**
20 **revenues; and** Please see Clark-Stevens Testimony attachment filed March 4, 2021
21 bates 99-100, (**Attachment DMP-2**) as well as Liberty Responses to OCA DR 1-1 att. b
22 2, (**Attachment DMP-9**), Energy DR 1-21d and attachment 1-21d, (**Attachment DMP-3**

1 **and DMP-3a)**, Energy DR 2-8 and attachment 2-8 (**Attachments DMP-4 and DMP-**
2 **4a)**, Energy DR 3-4 and attachment OCA 2-17 (**Attachment DMP-5 and DMP 5a)**;

3 • no clear plan regarding eligibility, monitoring or aggregating TRECs. Please see Liberty
4 Response to Energy DR 1-18 (**Attachment DMP-3**).

5 Moreover, Liberty’s petition may be premature. In its response to Energy 1-10 (**Attachment**
6 **DMP-3**), Liberty suggests that a decision in this docket is not required before special
7 contracts related to the LOI customers are submitted to the Public Utilities Commission for
8 review and approval. It stated, “The Company does not assert a decision in this docket is
9 required prior to submitting the executed contracts for Public Utilities Commission review
10 and approval.” It is therefore unclear why Liberty is moving forward to seek approval of the
11 RNG Agreement at this time.

12 **Q. Please summarize the Liberty materials you have reviewed**

13 A. My testimony is based on review of the testimony sections related to the renewable attributes
14 of this proposal as originally filed on March 4, 2021; as well as the discovery responses
15 provided to Energy as of October 13, 2021.

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

17 A. Yes.