

APPENDIX
SCHEDULES
AND
ATTACHMENTS

Appendix A

Maureen L. Reno

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Maureen Reno is a seasoned expert with 20 years of experience in the field of public utility regulation. After she completed her Ph.D. studies in Economics at the University of New Hampshire, Ms. Reno launched her career in public utility regulation as a utility analyst and program manager at the New Hampshire Public Utilities Commission, where she worked for the next 10 years. In this capacity, she provided expert testimony on rate of return (to include return on equity) in electricity, natural gas, and water utility rate cases. Ms. Reno also led the development and implementation of New Hampshire's Renewable Portfolio Standard program, helping both owners of distributed generation and load serving entities meet compliance requirements and maneuver the dynamic wholesale energy and renewable energy certificate markets. In addition, she managed New Hampshire's participation in the Regional Greenhouse Gas Initiative.

Subsequently, Ms. Reno served as a Senior Energy Economist with the Union of Concerned Scientists. In this capacity, she developed clean energy financing policies and advocated for electricity sector solutions to global warming.

Since 2012, Ms. Reno has served as an independent consultant, working with other small businesses to advise government and industry clients on diverse utility-related matters. In addition, she has served as an expert witness on rate design and rate of return (to include return on equity) in numerous cases. Her testimony has been presented to public utility commissions across the United States, to include the Arizona Corporation Commission, Georgia Public Service Commission, Missouri Public Service Commission, the New Mexico Public Regulation Commission, the Oklahoma Corporation Commission, and the Public Utility Commission of Texas.

Ms. Reno stays abreast of the latest developments in utility regulatory law and policy through her research and professional activities. Given the complexity of Federal and state regulations that affect her clients, Ms. Reno dedicates significant time and energy to reviewing regulatory developments enacted by the U.S. Department of Energy, the Federal Energy Regulatory Commission (FERC), and the U.S. Environmental Protection Agency.

Ms. Reno currently serves the interests of residential rate payers in New Hampshire as the Rate and Market Policy Director at the New Hampshire Office of the Consumer Advocate.

EDUCATION

- Completed all course work and exam requirements towards the Doctorate of Philosophy in Economics – University of New Hampshire, Durham.
Fields of Specialization: Industrial Organization and Environmental Economics
- Master of Arts in Economics – University of New Hampshire, Durham, 1998
- Bachelor of Arts in Economics – University of Maine, Orono, 1996

PROFESSIONAL EXPERIENCE

- Rate and Market Policy Director, New Hampshire Office of the Consumer Advocate (2021-Present)
- Independent Consultant (2012-Present)
- Senior Energy Economist, Union of Concerned Scientists (2011-2012)
- Analyst, Program Manager, Utility Analyst, and Economist, New Hampshire Public Utilities Commission (2001-2011)
- Survey Manager, New Hampshire Small Business Development Center (1999-2001)
- Adjunct Instructor, University of New Hampshire (1999-2001)

EXPERT WITNESS TESTIMONY

- Before the Texas Public Utility Commission, Docket No. 52195, on behalf of the U.S. Department of Defense. Testimony regarding a fair return on equity for El Paso Electric Company.
- Before the New Mexico Public Regulation Commission, Case No. 20-00222-UT, on behalf of Bernalillo County. Testimony regarding the net benefits and risks of Avangrid Network's Merger and Acquisition of Public Service Company of New Mexico.
- Before the New Mexico Public Regulation Commission, Case No. 20-00121-UT, on behalf of Bernalillo County. Testimony regarding Rate Design (specifically, Decoupling Rate Adjustment Mechanism) for Public Service Company of New Mexico.
- Before the New Mexico Public Regulation Commission, Case No. 19-00170-UT, on behalf of Commission Staff. Testimony regarding a fair return on equity for Southwestern Public Service Company.
- Before the Georgia Public Service Commission, Docket No. 42516, on behalf of the U.S. Department of Defense and all other Federal Executive Agencies. Testimony regarding Rate Design (specifically, Impact of Alternative Rate Plan and Rate Adjustment Mechanism on Company Risk), Cost of Capital, and Return on Equity for Georgia Power Company.
- Before the Arizona Corporation Commission, Docket No. E-01933A-19-0028, on behalf of the U.S. Department of Defense and all other Federal Executive Agencies. Testimony regarding a fair return on equity for Tucson Electric Power Company.
- Before the New Mexico Public Regulation Commission, Case No. 18-00124-UT, on behalf of the City of Clovis, New Mexico. Testimony regarding a fair return on equity for EPCOR Water New Mexico Inc.

- Before the Oklahoma Corporation Commission, Cause No. PUD 201700151, on behalf of the U.S. Department of Defense and all other Federal Executive Agencies. Testimony regarding a fair return on equity for Public Service Company of Oklahoma.
- Before the Oklahoma Corporation Commission, Cause No. PUD 201500208, on behalf of the U.S. Department of Defense and all other Federal Executive Agencies. Testimony regarding Rate Design (specifically, Environmental Compliance Rider and Impact on Company Risk), Cost of Capital, and Return on Equity for Public Service Company of Oklahoma.
- Before the Texas Public Utility Commission, Docket No. 43695, on behalf of the U.S. Department of Energy. Testimony regarding a fair return on equity for Southwestern Public Service Company.
- Before the Missouri Public Service Commission, Case No. ER-2014-0370, on behalf of the U.S. Department of Energy. Testimony regarding a fair return on equity for Kansas City Power & Light Company.
- Before the Texas Public Utility Commission, Docket No. 41791, on behalf of the U.S. Department of Energy. Testimony regarding a fair return on equity for Entergy Texas, Inc.
- Before the New Hampshire Public Utilities Commission, Docket No. DE 05-178, on behalf of Commission Staff. Testimony regarding the Rate of Return for Unitil Energy Systems, Inc.
- Before the New Hampshire Public Utilities Commission, Docket No. DE 04-177 on behalf of Commission Staff. Testimony regarding the Rate of Return for Public Service Company of New Hampshire's generation assets.
- Before the New Hampshire Public Utilities Commission, Docket No. DW 04-056 on behalf of Commission Staff. Testimony regarding the Rate of Return for Pennichuck Water Works, Inc.
- Before the New Hampshire Public Utilities Commission, Docket No. DE 03-200 on behalf of Commission Staff. Testimony regarding the Rate of Return for Public Service Company of New Hampshire.
- Before the New Hampshire Public Utilities Commission, Docket No. DE 03-166 on behalf of Commission Staff. Testimony regarding the Modification of Schiller Station for Public Service Company of New Hampshire.
- Before the New Hampshire Public Utilities Commission, Docket No. DE 01-247 on behalf of Commission Staff. Testimony regarding the Rate of Return for Concord Electric Company and Exeter & Hampton Electric Company.
- Before the New Hampshire Public Utilities Commission, Docket No. DE 01-168 on behalf of Commission Staff. Testimony regarding the Refinancing of Series A, B and C Pollution Control Revenue Bonds, Including an Increase in the Short-term Debt Limit, Issuance of First Mortgage Bonds and Utilization of Derivative Instruments for Public Service Company of New Hampshire.
- Before the New Hampshire Public Utilities Commission, Docket No. DG 01-182 on behalf of Commission Staff. Testimony regarding the Rate of Return for Northern Utilities, Inc.

- Before the New Hampshire Public Utilities Commission, Docket No. DW 01-081 on behalf of Commission Staff. Testimony regarding the Rate of Return for Pennichuck Water Works, Inc.

UTILITY-RELATED MATTERS

As an independent consultant and owner of Reno Energy Consulting Services, LLC, Ms. Reno:

- Provided written testimony on behalf of Bernalillo County in an electric utility rate case. Evaluated Public Service Company of New Mexico (“PNM”)’s proposed Decoupling Rate Adjustment Mechanism and assessed the impacts of PNM’s proposal on ratepayers, business and financial risk, and the cost of capital.
- Provided written testimony on behalf of New Mexico Public Regulation Commission Staff in an electric utility rate case. Assessed Southwestern Public Service Company’s weighted average cost of capital and estimated the rate of return on equity using discounted cash flow, risk premium, and capital asset pricing models.
- Provided written and oral testimony on behalf of large federal executive agencies, such as the U.S. Department of Defense and the U.S. Department of Energy, in electric utility rate cases before the Arizona Corporation Commission, Georgia Public Service Commission, Missouri Public Service Commission, Corporation Commission of Oklahoma, and the Public Utility Commission of Texas. Assessed each utility’s weighted average cost of capital and estimated the rate of return on equity using discounted cash flow, risk premium, and capital asset pricing models.
- Prepared the financial analysis and ratepayer impacts of a long-term contract requirement under Maryland’s RPS for the Power Plant Research Program (PPRP) on behalf of the Maryland Department of Natural Resources. The report titled “Final Report Concerning the Maryland Renewable Portfolio Standard as Required by Chapter 393 of the Acts of the Maryland General Assembly of 2017” was publicly released in December 2019.
- Evaluated utility proposals for deployment, cost-benefit analysis, and cost recovery of Maryland’s Statewide Electric Vehicle Portfolio on behalf of the Maryland Energy Administration through the PPRP in Case No. 9478 In the Matter of the Petition of the Electric Vehicle Work Group for Implementation of a Statewide Electric Vehicle Portfolio.
- Conducted research and drafted sections of regional energy market operations manuals for the US Department of Energy’s Federal Energy Management Program. The reports focused on how federal facilities were pursuing renewable energy development under different market constructs, such as by vertically integrated electric utilities, electric utilities with the PJM footprint, and electric utilities in California, and how those market constructs affected the prospects for future renewable energy development.

As an independent consultant for Stephenson Strategic Communications LLC, Ms. Reno:

- Provided consulting services to build support in New Hampshire for strong national climate and energy policies on behalf of a nationally recognized, non-profit environmental organization.

- Mobilized experts and leaders in New Hampshire to engage elected federal, state and local officials through targeted senator visits, media interviews, public events, letters to the editor, and opinion and editorial articles.
- Communicated directly with targeted legislators and their staff to determine their positions on climate and clean air policies and address their concerns.

As an independent consultant for TrueLight Energy LLC, Ms. Reno:

- Acted as director of regulatory affairs to expand upon current services to provide clients with guidance on how to navigate the dynamic deregulated electricity industry.
- Developed regulatory service product for clients, to include ISO/utility tariff tracking and rate impact analysis, policy analysis, new market identification and participation in regulatory processes.
- Identified and originated new commercial opportunities in the United States to support principal product/service lines: retail supplier solutions; generation asset management; and sustainability management solutions for large energy users.
- Developed and implemented business development and business-to-business marketing strategies in coordination with senior management.

As a senior energy economist at the Union of Concerned Scientists, Ms. Reno:

- Promoted the development of clean energy technologies and policies in the electricity sector. Designed and evaluated energy policies at the state, regional, and national levels to maximize economic benefits and overcome market barriers to renewable energy.
- Evaluated and developed alternative financial policies to national and state renewable energy standards. Completed internal documents and research focusing on master limited partnerships and real estate investment trusts as possible sources of financing capital for renewable energy projects.
- Informed and enhanced coalition strategies by evaluating and developing appropriate responses to federal policy opportunities, including a low-carbon electricity standard, production tax credit, and other emerging opportunities.
- Evaluated the net benefits and opportunities for economic development in renewable energy manufacturing and the supply chain.

As an analyst and program manager at the New Hampshire Public Utilities Commission, Ms. Reno:

- Developed internal protocols for managing New Hampshire's RPS program pursuant to NHPUC's RPS program rules (N.H. Code of Administrative Rules PUC 2500), including designing resource eligibility application forms.
- Verified electricity providers' compliance with New Hampshire's RPS program and processed applications for renewable energy source eligibility.
- Prepared and submitted annual RPS compliance reports, including program evaluation and policy analysis, to the State legislature on behalf of the NHPUC.
- Monitored and forecasted renewable energy certificate market trends in New England and New Hampshire to estimate available revenues supporting rebate programs.

- Maintained an RPS program website and renewable energy sources database.
- Participated in various regional working groups, including the Regional Greenhouse Gas Initiative (“RGGI”) Allowance Auction and Offset Market Groups, and the New England Power Pool Generation Information System (“NEPOOL GIS”) Regulators’ Caucus to help develop and maintain the NEPOOL GIS Operating Rules.
- Developed Greenhouse Gas Emissions Reduction Fund Cost Effectiveness Analysis model for request for proposal applicants.

As a utility analyst and economist at the New Hampshire Public Utilities Commission, Ms. Reno:

- Reviewed, analyzed and prepared oral and written recommendations in eight electric, natural gas and water utility rate cases in which she calculated each company’s weighted average cost of capital and estimated the rate of return on equity using discounted cash flow, risk premium, and capital asset pricing models.
- Reviewed, analyzed and prepared oral and written recommendations for the PUC on utility requests for changes in energy service rate charges and other surcharges reflected in utility company tariffs.
- Advised the Commissioners on utilities’ debt financings, bond issuances, power plant retrofit, advanced/net metering, demand response, environmental disclosure, and incentives for in-state energy efficiency programs.
- Collaborated on behalf of the NHPUC with public and private entities to write New Hampshire’s RPS law (HB 873), law concerning state participation in RGGI (HB 1434) and the NHPUC’s RPS program rules (N.H. Code of Administrative Rules Puc 2500).
- Advised the Commissioners on the development of the RGGI carbon dioxide emission limits and the Allowance Auction Market.
- Assisted researchers at the University of New Hampshire in estimating the net benefits of New Hampshire’s RPS and its participation in RGGI for the state legislature, which included environmental and economic development benefits.
- Advised the Commissioners on RGGI’s impact on regional and state economies by serving on the RGGI Modeling Subgroup and helped the Northeast States for Coordinated Air Use Management develop the Northeast version of the MARKAL (MARKet Allocation) model.
- Prepared fiscal impact statements regarding proposed legislation and regulations in the State of New Hampshire using cost-benefit analysis and estimated ratepayer impacts.

As a Survey Manager for the New Hampshire Small Business Development Center, Ms. Reno:

- Designed and distributed a survey to collect data on the characteristics of New Hampshire manufacturers.
- Managed survey data collection, designed a database for the data collected, and oversaw data entry efforts.
- Analyzed the economic and behavioral factors that lead to the growth of New Hampshire manufacturing companies using multivariate regression, factor and cluster analysis of survey data.

As an Adjunct Instructor for the University of New Hampshire, Ms. Reno:

- Taught undergraduate courses in Principles of Macroeconomics and Microeconomics (to include daily lectures) and developed lesson plans and teaching materials.
- Managed teaching assistant's work correcting and grading testing materials and writing assignments.

RESEARCH

- Conference Paper – “The Effect of Rate and Energy Efficiency Policies on Electricity Demand: Evidence from New Hampshire” by Chris Schlegel and Maureen L. Sirois, presented at the 22nd Annual Eastern Conference of the Advanced Workshop in Regulation and Competition, Skytop, PA, May 2003.
- Dissertation for Ph.D. – “Participation in Environmental Management Systems: The Effect of Supply-Chain Relationships on Company Behavior,” presented at the Eastern Economic Association meeting, New York City, NY, February 2001.
- Report under the Manufacturing Management Grant – “Report on U.S. Small Business Administration Funded Survey of New Hampshire Manufacturers in Rural Areas,” by Linda G. Sprague and Maureen L. Sirois, presented at the Global Manufacturing Research Group (GMRG) Annual Meeting, University of Western Ontario, Canada, August 2000.

Schedule MLR-1a REDACTED

TENN DRACUT ESTIMATE MONTHLY PRICES

Hist. Month/Yr	NYMEX	Dracut	Dracut	COG	REC	RNG-REC	Dth	Days	Cost/(Benefit)	Opportunity Costs	RNG Supply Cost	Retail Customer
		Basis	total	RNG	Value ¹					at Dracut COG		Cost/(Benefits)
Nov-17				\$10.47	\$4.95	\$5.52	1,474	30	\$88,717	\$155,410	\$244,128	\$31,589
Dec-17				\$10.47	\$4.95	\$5.52	1,474	31	(\$309,253)	\$561,518	\$252,265	(\$94,312)
Jan-18				\$10.47	\$4.95	\$5.52	1,474	31	(\$654,107)	\$906,372	\$252,265	(\$179,585)
Feb-18				\$10.47	\$4.95	\$5.52	1,474	28	(\$578,671)	\$806,523	\$227,852	(\$166,401)
Mar-18				\$10.47	\$4.95	\$5.52	1,474	31	(\$93,183)	\$345,448	\$252,265	(\$32,773)
Apr-18				\$10.47	\$4.95	\$5.52	1,474	30	\$137,410	\$106,717	\$244,128	\$57,714
May-18				\$10.47	\$4.95	\$5.52	1,474	31	\$149,668	\$102,597	\$252,265	\$71,568
Jun-18				\$10.47	\$4.95	\$5.52	1,474	30	\$96,634	\$147,494	\$244,128	\$49,530
Jul-18				\$10.47	\$4.95	\$5.52	1,474	31	\$96,610	\$155,655	\$252,265	\$49,127
Aug-18				\$10.47	\$4.95	\$5.52	1,474	31	\$137,238	\$115,027	\$252,265	\$76,838
Sep-18				\$10.47	\$4.95	\$5.52	1,474	30	\$171,818	\$72,310	\$244,128	\$83,792
Oct-18				\$10.47	\$4.95	\$5.52	1,474	31	\$152,364	\$99,901	\$252,265	\$64,988
Nov-18				\$10.88	\$4.95	\$5.93	1,567	30	\$109,928	\$168,990	\$278,918	\$39,142
Dec-18				\$10.88	\$4.95	\$5.93	1,567	31	(\$519,307)	\$807,522	\$288,215	(\$158,372)
Jan-19				\$10.88	\$4.95	\$5.93	1,567	31	(\$1,030,883)	\$1,319,098	\$288,215	(\$283,029)
Feb-19				\$10.88	\$4.95	\$5.93	1,567	29	(\$952,329)	\$1,221,950	\$269,621	(\$273,850)
Mar-19				\$10.88	\$4.95	\$5.93	1,567	31	(\$131,045)	\$419,260	\$288,215	(\$46,089)
Apr-19				\$10.88	\$4.95	\$5.93	1,567	30	\$136,777	\$142,142	\$278,918	\$57,447
May-19				\$10.88	\$4.95	\$5.93	1,567	31	\$176,173	\$112,042	\$288,215	\$84,242
Jun-19				\$10.88	\$4.95	\$5.93	1,567	30	\$163,813	\$115,105	\$278,918	\$83,963
Jul-19				\$10.88	\$4.95	\$5.93	1,567	31	\$165,970	\$122,246	\$288,215	\$84,397
Aug-19				\$10.88	\$4.95	\$5.93	1,567	31	\$165,387	\$122,829	\$288,215	\$92,598
Sep-19				\$10.88	\$4.95	\$5.93	1,567	30	\$168,750	\$110,168	\$278,918	\$82,296
Oct-19				\$10.88	\$4.95	\$5.93	1,567	31	\$163,880	\$124,335	\$288,215	\$69,900
Nov-19				\$11.73	\$4.95	\$6.78	1,458	30	\$154,986	\$141,425	\$296,411	\$55,186
Dec-19				\$11.73	\$4.95	\$6.78	1,458	31	(\$269,947)	\$576,238	\$306,291	(\$82,325)
Jan-20				\$11.73	\$4.95	\$6.78	1,458	31	(\$545,907)	\$852,198	\$306,291	(\$149,879)
Feb-20				\$11.73	\$4.95	\$6.78	1,458	28	(\$475,481)	\$752,130	\$276,650	(\$136,728)
Mar-20				\$11.73	\$4.95	\$6.78	1,458	31	(\$29,923)	\$336,214	\$306,291	(\$10,524)
Apr-20				\$11.73	\$4.95	\$6.78	1,458	30	\$170,034	\$126,377	\$296,411	\$71,416
May-20				\$11.73	\$4.95	\$6.78	1,458	31	\$210,598	\$95,693	\$306,291	\$100,703
Jun-20				\$11.73	\$4.95	\$6.78	1,458	30	\$201,442	\$94,968	\$296,411	\$103,250
Jul-20				\$11.73	\$4.95	\$6.78	1,458	31	\$196,901	\$109,389	\$306,291	\$100,126
Aug-20				\$11.73	\$4.95	\$6.78	1,458	31	\$197,173	\$109,118	\$306,291	\$110,395
Sep-20				\$11.73	\$4.95	\$6.78	1,458	30	\$203,586	\$92,825	\$296,411	\$99,284
Oct-20				\$11.73	\$4.95	\$6.78	1,458	31	\$206,530	\$99,761	\$306,291	\$88,091
Nov-20				\$12.64	\$4.95	\$7.69	1,570	30	\$196,302	\$165,912	\$362,215	\$69,897
Dec-20				\$12.64	\$4.95	\$7.69	1,570	31	(\$144,273)	\$518,561	\$374,288	(\$43,999)
Jan-21				\$12.64	\$4.95	\$7.69	1,570	31	(\$307,005)	\$681,293	\$374,288	(\$84,288)
Feb-21				\$12.64	\$4.95	\$7.69	1,570	28	(\$268,196)	\$606,263	\$338,067	(\$77,122)
Mar-21				\$12.64	\$4.95	\$7.69	1,570	31	\$79,288	\$295,000	\$374,288	\$27,886
Apr-21				\$12.64	\$4.95	\$7.69	1,570	30	\$219,473	\$142,742	\$362,215	\$92,181

Schedule MLR-1a REDACTED

TENN DRACUT ESTIMATE MONTHLY PRICES

Hist. Month/Yr	NYMEX	Dracut	Dracut	COG	REC	RNG-REC	Dth	Days	Cost/(Benefit)	Opportunity Costs	RNG Supply Cost	Retail Customer
		Basis	total	RNG	Value ¹					at Dracut COG		Cost/(Benefits)
May-21				\$12.64	\$4.95	\$7.69	1,570	31	\$258,615	\$115,674	\$374,288	\$123,663
Jun-21				\$12.64	\$4.95	\$7.69	1,570	30	\$246,505	\$115,710	\$362,215	\$126,347
Jul-21				\$12.64	\$4.95	\$7.69	1,570	31	\$248,736	\$125,553	\$374,288	\$126,484
Aug-21				\$12.64	\$4.95	\$7.69	1,570	31	\$248,492	\$125,796	\$374,288	\$139,129
Sep-21				\$12.64	\$4.95	\$7.69	1,570	30	\$250,602	\$111,613	\$362,215	\$122,213
Oct-21				\$12.64	\$4.95	\$7.69	1,570	31	\$256,035	\$118,253	\$374,288	\$109,207
Nov-21				\$9.66	\$4.95	\$4.71	1,354	30	(\$151,481)	\$342,839	\$191,358	(\$53,938)
Dec-21				\$9.66	\$4.95	\$4.71	1,354	31	(\$928,363)	\$1,126,099	\$197,736	(\$283,121)
Jan-22				\$9.66	\$4.95	\$4.71	1,354	31	(\$1,782,339)	\$1,980,076	\$197,736	(\$489,341)
Feb-22				\$9.66	\$4.95	\$4.71	1,354	28	(\$1,601,628)	\$1,780,228	\$178,601	(\$460,561)
Mar-22				\$9.66	\$4.95	\$4.71	1,354	31	(\$536,360)	\$734,097	\$197,736	(\$188,639)
Apr-22				\$9.66	\$4.95	\$4.71	1,354	30	(\$7,724)	\$199,082	\$191,358	(\$3,244)
May-22				\$9.66	\$4.95	\$4.71	1,354	31	\$49,481	\$148,255	\$197,736	\$23,661
Jun-22				\$9.66	\$4.95	\$4.71	1,354	30	\$46,707	\$144,650	\$191,358	\$23,940
Jul-22				\$9.66	\$4.95	\$4.71	1,354	31	\$35,840	\$161,897	\$197,736	\$18,225
Aug-22				\$9.66	\$4.95	\$4.71	1,354	31	\$33,825	\$163,911	\$197,736	\$18,938
Sep-22				\$9.66	\$4.95	\$4.71	1,354	30	\$55,400	\$135,958	\$191,358	\$27,017
Oct-22				\$9.66	\$4.95	\$4.71	1,354	31	\$46,459	\$151,277	\$197,736	\$19,816
Total									(\$5,223,259)	\$21,937,736	\$16,714,477	(\$421,936)

1. Source: Attachment OCA 1-1.b.2.

TENN DRACUT ESTIMATE MONTHLY PRICES

	Dracut	Dracut	Delivered									
				REC						Opportunity Costs		Retail Customer
Hist. Month/Yr	NYMEX	Basis	total	COG	Value ¹	RNG-REC	Dth	Days	Cost/(Benefit)	at Dracut COG	RNG Supply Costs	Cost/(Benefits)
Nov-17				\$10.47	\$0.00	\$10.47	1,474	30	\$307,636	\$155,410	\$463,046	\$109,540
Dec-17				\$10.47	\$0.00	\$10.47	1,474	31	(\$83,037)	\$561,518	\$478,481	(\$25,324)
Jan-18				\$10.47	\$0.00	\$10.47	1,474	31	(\$427,891)	\$906,372	\$478,481	(\$117,477)
Feb-18				\$10.47	\$0.00	\$10.47	1,474	28	(\$374,347)	\$806,523	\$432,176	(\$107,646)
Mar-18				\$10.47	\$0.00	\$10.47	1,474	31	\$133,033	\$345,448	\$478,481	\$46,788
Apr-18				\$10.47	\$0.00	\$10.47	1,474	30	\$356,329	\$106,717	\$463,046	\$149,662
May-18				\$10.47	\$0.00	\$10.47	1,474	31	\$375,884	\$102,597	\$478,481	\$179,739
Jun-18				\$10.47	\$0.00	\$10.47	1,474	30	\$315,553	\$147,494	\$463,046	\$161,738
Jul-18				\$10.47	\$0.00	\$10.47	1,474	31	\$322,826	\$155,655	\$478,481	\$164,159
Aug-18				\$10.47	\$0.00	\$10.47	1,474	31	\$363,454	\$115,027	\$478,481	\$203,494
Sep-18				\$10.47	\$0.00	\$10.47	1,474	30	\$390,737	\$72,310	\$463,046	\$190,554
Oct-18				\$10.47	\$0.00	\$10.47	1,474	31	\$378,580	\$99,901	\$478,481	\$161,476
Nov-18				\$10.88	\$0.00	\$10.88	1,567	30	\$342,677	\$168,990	\$511,667	\$122,017
Dec-18				\$10.88	\$0.00	\$10.88	1,567	31	(\$278,799)	\$807,522	\$528,723	(\$85,025)
Jan-19				\$10.88	\$0.00	\$10.88	1,567	31	(\$790,375)	\$1,319,098	\$528,723	(\$216,997)
Feb-19				\$10.88	\$0.00	\$10.88	1,567	29	(\$727,339)	\$1,221,950	\$494,612	(\$209,152)
Mar-19				\$10.88	\$0.00	\$10.88	1,567	31	\$109,462	\$419,260	\$528,723	\$38,498
Apr-19				\$10.88	\$0.00	\$10.88	1,567	30	\$369,526	\$142,142	\$511,667	\$155,204
May-19				\$10.88	\$0.00	\$10.88	1,567	31	\$416,680	\$112,042	\$528,723	\$199,246
Jun-19				\$10.88	\$0.00	\$10.88	1,567	30	\$396,562	\$115,105	\$511,667	\$203,259
Jul-19				\$10.88	\$0.00	\$10.88	1,567	31	\$406,477	\$122,246	\$528,723	\$206,696
Aug-19				\$10.88	\$0.00	\$10.88	1,567	31	\$405,894	\$122,829	\$528,723	\$227,256
Sep-19				\$10.88	\$0.00	\$10.88	1,567	30	\$401,499	\$110,168	\$511,667	\$195,802
Oct-19				\$10.88	\$0.00	\$10.88	1,567	31	\$404,388	\$124,335	\$528,723	\$172,484
Nov-19				\$11.73	\$0.00	\$11.73	1,458	30	\$371,519	\$141,425	\$512,944	\$132,286
Dec-19				\$11.73	\$0.00	\$11.73	1,458	31	(\$46,196)	\$576,238	\$530,042	(\$14,088)
Jan-20				\$11.73	\$0.00	\$11.73	1,458	31	(\$322,156)	\$852,198	\$530,042	(\$88,448)
Feb-20				\$11.73	\$0.00	\$11.73	1,458	28	(\$273,383)	\$752,130	\$478,748	(\$78,613)
Mar-20				\$11.73	\$0.00	\$11.73	1,458	31	\$193,828	\$336,214	\$530,042	\$68,170
Apr-20				\$11.73	\$0.00	\$11.73	1,458	30	\$386,567	\$126,377	\$512,944	\$162,362
May-20				\$11.73	\$0.00	\$11.73	1,458	31	\$434,349	\$95,693	\$530,042	\$207,695
Jun-20				\$11.73	\$0.00	\$11.73	1,458	30	\$417,975	\$94,968	\$512,944	\$214,235
Jul-20				\$11.73	\$0.00	\$11.73	1,458	31	\$420,653	\$109,389	\$530,042	\$213,904
Aug-20				\$11.73	\$0.00	\$11.73	1,458	31	\$420,924	\$109,118	\$530,042	\$235,671
Sep-20				\$11.73	\$0.00	\$11.73	1,458	30	\$420,119	\$92,825	\$512,944	\$204,883
Oct-20				\$11.73	\$0.00	\$11.73	1,458	31	\$430,281	\$99,761	\$530,042	\$183,528
Nov-20				\$12.64	\$0.00	\$12.64	1,570	30	\$429,418	\$165,912	\$595,330	\$152,902
Dec-20				\$12.64	\$0.00	\$12.64	1,570	31	\$96,613	\$518,561	\$615,174	\$29,464
Jan-21				\$12.64	\$0.00	\$12.64	1,570	31	(\$66,119)	\$681,293	\$615,174	(\$18,153)
Feb-21				\$12.64	\$0.00	\$12.64	1,570	28	(\$50,622)	\$606,263	\$555,641	(\$14,557)
Mar-21				\$12.64	\$0.00	\$12.64	1,570	31	\$320,174	\$295,000	\$615,174	\$112,606
Apr-21				\$12.64	\$0.00	\$12.64	1,570	30	\$452,588	\$142,742	\$595,330	\$190,091

TENN DRACUT ESTIMATE MONTHLY PRICES

Hist. Month/Yr	NYMEX	Dracut	Dracut	Delivered	REC	RNG-REC	Dth	Days	Cost/(Benefit)	Opportunity Costs		Retail Customer
		Basis	total	COG	Value ¹					at Dracut COG	RNG Supply Costs	
May-21				\$12.64	\$0.00	\$12.64	1,570	31	\$499,500	\$115,674	\$615,174	\$238,849
Jun-21				\$12.64	\$0.00	\$12.64	1,570	30	\$479,620	\$115,710	\$595,330	\$245,831
Jul-21				\$12.64	\$0.00	\$12.64	1,570	31	\$489,622	\$125,553	\$615,174	\$248,976
Aug-21				\$12.64	\$0.00	\$12.64	1,570	31	\$489,378	\$125,796	\$615,174	\$273,998
Sep-21				\$12.64	\$0.00	\$12.64	1,570	30	\$483,717	\$111,613	\$595,330	\$235,898
Oct-21				\$12.64	\$0.00	\$12.64	1,570	31	\$496,921	\$118,253	\$615,174	\$211,952
Nov-21				\$9.66	\$0.00	\$9.66	1,354	30	\$49,591	\$342,839	\$392,430	\$17,658
Dec-21				\$9.66	\$0.00	\$9.66	1,354	31	(\$720,588)	\$1,126,099	\$405,511	(\$219,756)
Jan-22				\$9.66	\$0.00	\$9.66	1,354	31	(\$1,574,564)	\$1,980,076	\$405,511	(\$432,296)
Feb-22				\$9.66	\$0.00	\$9.66	1,354	28	(\$1,413,960)	\$1,780,228	\$366,268	(\$406,596)
Mar-22				\$9.66	\$0.00	\$9.66	1,354	31	(\$328,585)	\$734,097	\$405,511	(\$115,564)
Apr-22				\$9.66	\$0.00	\$9.66	1,354	30	\$193,348	\$199,082	\$392,430	\$81,208
May-22				\$9.66	\$0.00	\$9.66	1,354	31	\$257,257	\$148,255	\$405,511	\$123,014
Jun-22				\$9.66	\$0.00	\$9.66	1,354	30	\$247,780	\$144,650	\$392,430	\$127,001
Jul-22				\$9.66	\$0.00	\$9.66	1,354	31	\$243,615	\$161,897	\$405,511	\$123,880
Aug-22				\$9.66	\$0.00	\$9.66	1,354	31	\$241,600	\$163,911	\$405,511	\$135,270
Sep-22				\$9.66	\$0.00	\$9.66	1,354	30	\$256,473	\$135,958	\$392,430	\$125,076
Oct-22				\$9.66	\$0.00	\$9.66	1,354	31	\$254,234	\$151,277	\$405,511	\$108,439
Total									\$8,196,900	\$21,937,736	\$30,134,636	\$5,142,763

1. Source: Attachment OCA 1-1.b.2.

37.36%

Schedule MLR-2a

TENN DRACUT ESTIMATE MONTHLY PRICES

Dracut												
Month/Yr	NYMEX	Basis	Dracut Total	Delivered COG	REC Value ¹	RNG-REC	Dth	Days	Cost/(Benefit)	Opportunity Costs at Dracut COG	RNG Supply Cost	Retail Customer Cost/(Benefits)
Jan22	\$5.888	\$16.595	\$22.483	\$10.47	\$4.95	\$5.52	1,474	31	(\$775,212)	\$1,027,478	\$252,265	(\$212,834)
Feb22	\$5.787	\$16.395	\$22.182	\$10.47	\$4.95	\$5.52	1,474	28	(\$687,767)	\$915,620	\$227,852	(\$197,773)
Mar22	\$5.437	\$6.500	\$11.937	\$10.47	\$4.95	\$5.52	1,474	31	(\$293,258)	\$545,523	\$252,265	(\$103,140)
Apr22	\$3.997	\$0.703	\$4.700	\$10.47	\$4.95	\$5.52	1,474	30	\$36,287	\$207,840	\$244,128	\$15,241
May22	\$3.841	(\$0.485)	\$3.356	\$10.47	\$4.95	\$5.52	1,474	31	\$98,895	\$153,370	\$252,265	\$47,289
Jun22	\$3.877	(\$0.483)	\$3.395	\$10.47	\$4.95	\$5.52	1,474	30	\$94,002	\$150,125	\$244,128	\$48,181
Jul22	\$3.919	(\$0.213)	\$3.707	\$10.47	\$4.95	\$5.52	1,474	31	\$82,877	\$169,388	\$252,265	\$42,144
Aug22	\$3.922	(\$0.170)	\$3.752	\$10.47	\$4.95	\$5.52	1,474	31	\$80,798	\$171,467	\$252,265	\$45,238
Sep22	\$3.901	(\$0.713)	\$3.189	\$10.47	\$4.95	\$5.52	1,474	30	\$103,113	\$141,015	\$244,128	\$50,286
Oct22	\$3.931	(\$0.480)	\$3.451	\$10.47	\$4.95	\$5.52	1,474	31	\$94,554	\$157,711	\$252,265	\$40,330
Nov22	\$4.014	\$2.085	\$6.099	\$10.47	\$4.95	\$5.52	1,474	30	(\$25,607)	\$269,734	\$244,128	(\$9,118)
Dec22	\$4.172	\$5.830	\$10.002	\$10.47	\$4.95	\$5.52	1,474	31	(\$204,828)	\$457,093	\$252,265	(\$62,466)
Jan23	\$4.261	\$10.800	\$15.061	\$10.88	\$4.95	\$5.93	1,567	31	(\$443,559)	\$731,774	\$288,215	(\$121,779)
Feb23	\$4.174	\$10.338	\$14.512	\$10.88	\$4.95	\$5.93	1,567	29	(\$389,966)	\$659,587	\$269,621	(\$112,138)
Mar23	\$3.864	\$4.623	\$8.487	\$10.88	\$4.95	\$5.93	1,567	31	(\$124,121)	\$412,337	\$288,215	(\$43,654)
Apr23	\$3.204	\$0.165	\$3.369	\$10.88	\$4.95	\$5.93	1,567	30	\$120,508	\$158,410	\$278,918	\$50,614
May23	\$3.122	(\$0.388)	\$2.735	\$10.88	\$4.95	\$5.93	1,567	31	\$155,353	\$132,862	\$288,215	\$74,286
Jun23	\$3.168	(\$0.375)	\$2.793	\$10.88	\$4.95	\$5.93	1,567	30	\$147,591	\$131,327	\$278,918	\$75,648
Jul23	\$3.220	(\$0.240)	\$2.980	\$10.88	\$4.95	\$5.93	1,567	31	\$143,425	\$144,790	\$288,215	\$72,933
Aug23	\$3.234	(\$0.278)	\$2.957	\$10.88	\$4.95	\$5.93	1,567	31	\$144,567	\$143,649	\$288,215	\$80,942
Sep23	\$3.233	(\$0.640)	\$2.593	\$10.88	\$4.95	\$5.93	1,567	30	\$156,995	\$121,923	\$278,918	\$76,563
Oct23	\$3.269	(\$0.450)	\$2.819	\$10.88	\$4.95	\$5.93	1,567	31	\$151,248	\$136,968	\$288,215	\$64,512
Nov23	\$3.375	\$1.540	\$4.915	\$10.88	\$4.95	\$5.93	1,567	30	\$47,815	\$231,103	\$278,918	\$17,025
Dec23	\$3.578	\$4.618	\$8.196	\$10.88	\$4.95	\$5.93	1,567	31	(\$109,982)	\$398,198	\$288,215	(\$33,541)
Jan24	\$3.686	\$8.505	\$12.191	\$11.73	\$4.95	\$6.78	1,458	31	(\$244,770)	\$551,061	\$306,291	(\$67,201)
Feb24	\$3.624	\$8.253	\$11.877	\$11.73	\$4.95	\$6.78	1,458	28	(\$208,242)	\$484,892	\$276,650	(\$59,882)
Mar24	\$3.392	\$3.175	\$6.567	\$11.73	\$4.95	\$6.78	1,458	31	\$9,448	\$296,843	\$306,291	\$3,323
Apr24	\$2.997	\$0.215	\$3.212	\$11.73	\$4.95	\$6.78	1,458	30	\$155,904	\$140,506	\$296,411	\$65,481
May24	\$2.964	(\$0.373)	\$2.592	\$11.73	\$4.95	\$6.78	1,458	31	\$189,149	\$117,142	\$306,291	\$90,447
Jun24	\$3.019	(\$0.365)	\$2.654	\$11.73	\$4.95	\$6.78	1,458	30	\$180,314	\$116,097	\$296,411	\$92,420
Jul24	\$3.074	(\$0.193)	\$2.882	\$11.73	\$4.95	\$6.78	1,458	31	\$176,041	\$130,250	\$306,291	\$89,518
Aug24	\$3.089	(\$0.258)	\$2.832	\$11.73	\$4.95	\$6.78	1,458	31	\$178,301	\$127,990	\$306,291	\$99,829
Sep24	\$3.088	(\$0.603)	\$2.486	\$11.73	\$4.95	\$6.78	1,458	30	\$187,685	\$108,726	\$296,411	\$91,530
Oct24	\$3.126	(\$0.403)	\$2.724	\$11.73	\$4.95	\$6.78	1,458	31	\$183,183	\$123,108	\$306,291	\$78,133
Nov24	\$3.228	\$2.025	\$5.253	\$11.73	\$4.95	\$6.78	1,458	30	\$66,623	\$229,788	\$296,411	\$23,722
Dec24	\$3.447	\$4.365	\$7.812	\$11.73	\$4.95	\$6.78	1,458	31	(\$46,829)	\$353,120	\$306,291	(\$14,281)
Jan25	\$3.551	\$5.503	\$9.054	\$12.64	\$4.95	\$7.69	1,570	31	(\$66,289)	\$440,578	\$374,288	(\$18,200)
Feb25	\$3.476	\$5.418	\$8.894	\$12.64	\$4.95	\$7.69	1,570	28	(\$52,842)	\$390,908	\$338,067	(\$15,195)
Mar25	\$3.292	\$3.203	\$6.495	\$12.64	\$4.95	\$7.69	1,570	31	\$58,241	\$316,047	\$374,288	\$20,484
Apr25	\$2.897	\$0.195	\$3.092	\$12.64	\$4.95	\$7.69	1,570	30	\$216,600	\$145,615	\$362,215	\$90,974
May25	\$2.867	(\$0.388)	\$2.480	\$12.64	\$4.95	\$7.69	1,570	31	\$253,626	\$120,662	\$374,288	\$121,278
Jun25	\$2.905	(\$0.385)	\$2.520	\$12.64	\$4.95	\$7.69	1,570	30	\$243,538	\$118,677	\$362,215	\$124,826

Schedule MLR-2a

TENN DRACUT ESTIMATE MONTHLY PRICES

Dracut												
Month/Yr	NYMEX	Basis	Dracut Total	Delivered COG	REC Value ¹	RNG-REC	Dth	Days	Cost/(Benefit)	Opportunity Costs at Dracut COG	RNG Supply Cost	Retail Customer Cost/(Benefits)
Jul25	\$2.949	(\$0.208)	\$2.742	\$12.64	\$4.95	\$7.69	1,570	31	\$240,877	\$133,412	\$374,288	\$122,487
Aug25	\$2.965	(\$0.273)	\$2.693	\$12.64	\$4.95	\$7.69	1,570	31	\$243,261	\$131,027	\$374,288	\$136,200
Sep25	\$2.957	(\$0.623)	\$2.335	\$12.64	\$4.95	\$7.69	1,570	30	\$252,274	\$109,941	\$362,215	\$123,028
Oct25	\$2.990	(\$0.418)	\$2.573	\$12.64	\$4.95	\$7.69	1,570	31	\$249,101	\$125,188	\$374,288	\$106,249
Nov25	\$3.095	\$1.955	\$5.050	\$12.64	\$4.95	\$7.69	1,570	30	\$124,390	\$237,825	\$362,215	\$44,291
Dec25	\$3.311	\$3.980	\$7.291	\$12.64	\$4.95	\$7.69	1,570	31	\$19,481	\$354,808	\$374,288	\$5,941
Jan26	\$3.421	\$5.328	\$8.749	\$9.66	\$4.95	\$4.71	1,354	31	(\$169,480)	\$367,216	\$197,736	(\$46,531)
Feb26	\$3.371	\$5.253	\$8.624	\$9.66	\$4.95	\$4.71	1,354	28	(\$148,340)	\$326,940	\$178,601	(\$42,656)
Mar26	\$3.201	\$3.028	\$6.229	\$9.66	\$4.95	\$4.71	1,354	31	(\$63,703)	\$261,440	\$197,736	(\$22,405)
Apr26	\$2.831	\$0.143	\$2.974	\$9.66	\$4.95	\$4.71	1,354	30	\$70,572	\$120,786	\$191,358	\$29,641
May26	\$2.811	(\$0.440)	\$2.371	\$9.66	\$4.95	\$4.71	1,354	31	\$98,214	\$99,522	\$197,736	\$46,964
Jun26	\$2.859	(\$0.438)	\$2.422	\$9.66	\$4.95	\$4.71	1,354	30	\$92,995	\$98,363	\$191,358	\$47,665
Jul26	\$2.908	(\$0.255)	\$2.653	\$9.66	\$4.95	\$4.71	1,354	31	\$86,377	\$111,359	\$197,736	\$43,923
Aug26	\$2.924	(\$0.325)	\$2.599	\$9.66	\$4.95	\$4.71	1,354	31	\$88,644	\$109,092	\$197,736	\$49,631
Sep26	\$2.926	(\$0.675)	\$2.251	\$9.66	\$4.95	\$4.71	1,354	30	\$99,920	\$91,437	\$191,358	\$48,729
Oct26	\$2.963	(\$0.470)	\$2.493	\$9.66	\$4.95	\$4.71	1,354	31	\$93,093	\$104,643	\$197,736	\$39,707
Nov26	\$3.073	\$1.793	\$4.866	\$9.66	\$4.95	\$4.71	1,354	30	(\$6,282)	\$197,640	\$191,358	(\$2,237)
Dec26	\$3.291	\$3.503	\$6.794	\$9.66	\$4.95	\$4.71	1,354	31	(\$87,419)	\$285,156	\$197,736	(\$26,660)
Total									\$1,367,380	\$15,347,097	\$16,714,477	\$1,425,962

1. Source: Attachment OCA 1-1.b.2.

8.91%

Schedule MLR-2b

TENN DRACUT ESTIMATE MONTHLY PRICES

		Dracut	Dracut	Delivered								
					REC					Opportunity Costs		Retail Customer
Month/Yr	NYMEX	Basis	total	COG	Value ¹	RNG-REC	Dth	Days	Cost/(Benefit)	at Dracut COG	RNG Supply Cost	Cost/(Benefits)
Jan22	\$5.888	\$16.595	\$22.483	\$10.47	\$0.00	\$10.47	1,474	31	(\$548,997)	\$1,027,478	\$478,481	-\$150,727
Feb22	\$5.787	\$16.395	\$22.182	\$10.47	\$0.00	\$10.47	1,474	28	(\$483,443)	\$915,620	\$432,176	-\$139,018
Mar22	\$5.437	\$6.500	\$11.937	\$10.47	\$0.00	\$10.47	1,474	31	(\$67,042)	\$545,523	\$478,481	-\$23,579
Apr22	\$3.997	\$0.703	\$4.700	\$10.47	\$0.00	\$10.47	1,474	30	\$255,206	\$207,840	\$463,046	\$107,189
May22	\$3.841	(\$0.485)	\$3.356	\$10.47	\$0.00	\$10.47	1,474	31	\$325,111	\$153,370	\$478,481	\$155,460
Jun22	\$3.877	(\$0.483)	\$3.395	\$10.47	\$0.00	\$10.47	1,474	30	\$312,921	\$150,125	\$463,046	\$160,389
Jul22	\$3.919	(\$0.213)	\$3.707	\$10.47	\$0.00	\$10.47	1,474	31	\$309,093	\$169,388	\$478,481	\$157,176
Aug22	\$3.922	(\$0.170)	\$3.752	\$10.47	\$0.00	\$10.47	1,474	31	\$307,014	\$171,467	\$478,481	\$171,894
Sep22	\$3.901	(\$0.713)	\$3.189	\$10.47	\$0.00	\$10.47	1,474	30	\$322,032	\$141,015	\$463,046	\$157,048
Oct22	\$3.931	(\$0.480)	\$3.451	\$10.47	\$0.00	\$10.47	1,474	31	\$320,770	\$157,711	\$478,481	\$136,818
Nov22	\$4.014	\$2.085	\$6.099	\$10.47	\$0.00	\$10.47	1,474	30	\$193,312	\$269,734	\$463,046	\$68,832
Dec22	\$4.172	\$5.830	\$10.002	\$10.47	\$0.00	\$10.47	1,474	31	\$21,388	\$457,093	\$478,481	\$6,523
Jan23	\$4.261	\$10.800	\$15.061	\$10.88	\$0.00	\$10.88	1,567	31	(\$203,051)	\$731,774	\$528,723	-\$55,748
Feb23	\$4.174	\$10.338	\$14.512	\$10.88	\$0.00	\$10.88	1,567	29	(\$164,975)	\$659,587	\$494,612	-\$47,440
Mar23	\$3.864	\$4.623	\$8.487	\$10.88	\$0.00	\$10.88	1,567	31	\$116,386	\$412,337	\$528,723	\$40,933
Apr23	\$3.204	\$0.165	\$3.369	\$10.88	\$0.00	\$10.88	1,567	30	\$353,257	\$158,410	\$511,667	\$148,371
May23	\$3.122	(\$0.388)	\$2.735	\$10.88	\$0.00	\$10.88	1,567	31	\$395,861	\$132,862	\$528,723	\$189,291
Jun23	\$3.168	(\$0.375)	\$2.793	\$10.88	\$0.00	\$10.88	1,567	30	\$380,340	\$131,327	\$511,667	\$194,945
Jul23	\$3.220	(\$0.240)	\$2.980	\$10.88	\$0.00	\$10.88	1,567	31	\$383,932	\$144,790	\$528,723	\$195,232
Aug23	\$3.234	(\$0.278)	\$2.957	\$10.88	\$0.00	\$10.88	1,567	31	\$385,074	\$143,649	\$528,723	\$215,599
Sep23	\$3.233	(\$0.640)	\$2.593	\$10.88	\$0.00	\$10.88	1,567	30	\$389,744	\$121,923	\$511,667	\$190,070
Oct23	\$3.269	(\$0.450)	\$2.819	\$10.88	\$0.00	\$10.88	1,567	31	\$391,755	\$136,968	\$528,723	\$167,095
Nov23	\$3.375	\$1.540	\$4.915	\$10.88	\$0.00	\$10.88	1,567	30	\$280,564	\$231,103	\$511,667	\$99,900
Dec23	\$3.578	\$4.618	\$8.196	\$10.88	\$0.00	\$10.88	1,567	31	\$130,525	\$398,198	\$528,723	\$39,806
Jan24	\$3.686	\$8.505	\$12.191	\$11.73	\$0.00	\$11.73	1,458	31	(\$21,019)	\$551,061	\$530,042	-\$5,771
Feb24	\$3.624	\$8.253	\$11.877	\$11.73	\$0.00	\$11.73	1,458	28	(\$6,144)	\$484,892	\$478,748	-\$1,767
Mar24	\$3.392	\$3.175	\$6.567	\$11.73	\$0.00	\$11.73	1,458	31	\$233,199	\$296,843	\$530,042	\$82,017
Apr24	\$2.997	\$0.215	\$3.212	\$11.73	\$0.00	\$11.73	1,458	30	\$372,438	\$140,506	\$512,944	\$156,427
May24	\$2.964	(\$0.373)	\$2.592	\$11.73	\$0.00	\$11.73	1,458	31	\$412,900	\$117,142	\$530,042	\$197,439
Jun24	\$3.019	(\$0.365)	\$2.654	\$11.73	\$0.00	\$11.73	1,458	30	\$396,847	\$116,097	\$512,944	\$203,405
Jul24	\$3.074	(\$0.193)	\$2.882	\$11.73	\$0.00	\$11.73	1,458	31	\$399,792	\$130,250	\$530,042	\$203,297
Aug24	\$3.089	(\$0.258)	\$2.832	\$11.73	\$0.00	\$11.73	1,458	31	\$402,052	\$127,990	\$530,042	\$225,105
Sep24	\$3.088	(\$0.603)	\$2.486	\$11.73	\$0.00	\$11.73	1,458	30	\$404,218	\$108,726	\$512,944	\$197,128
Oct24	\$3.126	(\$0.403)	\$2.724	\$11.73	\$0.00	\$11.73	1,458	31	\$406,934	\$123,108	\$530,042	\$173,570
Nov24	\$3.228	\$2.025	\$5.253	\$11.73	\$0.00	\$11.73	1,458	30	\$283,156	\$229,788	\$512,944	\$100,823
Dec24	\$3.447	\$4.365	\$7.812	\$11.73	\$0.00	\$11.73	1,458	31	\$176,922	\$353,120	\$530,042	\$53,955
Jan25	\$3.551	\$5.503	\$9.054	\$12.64	\$0.00	\$12.64	1,570	31	\$174,596	\$440,578	\$615,174	\$47,935
Feb25	\$3.476	\$5.418	\$8.894	\$12.64	\$0.00	\$12.64	1,570	28	\$164,733	\$390,908	\$555,641	\$47,370
Mar25	\$3.292	\$3.203	\$6.495	\$12.64	\$0.00	\$12.64	1,570	31	\$299,127	\$316,047	\$615,174	\$105,204
Apr25	\$2.897	\$0.195	\$3.092	\$12.64	\$0.00	\$12.64	1,570	30	\$449,715	\$145,615	\$595,330	\$188,885
May25	\$2.867	(\$0.388)	\$2.480	\$12.64	\$0.00	\$12.64	1,570	31	\$494,512	\$120,662	\$615,174	\$236,464
Jun25	\$2.905	(\$0.385)	\$2.520	\$12.64	\$0.00	\$12.64	1,570	30	\$476,653	\$118,677	\$595,330	\$244,310

Schedule MLR-2b

TENN DRACUT ESTIMATE MONTHLY PRICES

Month/Yr	NYMEX	Dracut	Dracut	Delivered	REC	RNG-REC	Dth	Days	Cost/(Benefit)	Opportunity Costs	RNG Supply Cost	Retail Customer
		Basis	total	COG	Value ¹					at Dracut COG		Cost/(Benefits)
Jul25	\$2.949	(\$0.208)	\$2.742	\$12.64	\$0.00	\$12.64	1,570	31	\$481,762	\$133,412	\$615,174	\$244,979
Aug25	\$2.965	(\$0.273)	\$2.693	\$12.64	\$0.00	\$12.64	1,570	31	\$484,147	\$131,027	\$615,174	\$271,069
Sep25	\$2.957	(\$0.623)	\$2.335	\$12.64	\$0.00	\$12.64	1,570	30	\$485,389	\$109,941	\$595,330	\$236,713
Oct25	\$2.990	(\$0.418)	\$2.573	\$12.64	\$0.00	\$12.64	1,570	31	\$489,987	\$125,188	\$615,174	\$208,994
Nov25	\$3.095	\$1.955	\$5.050	\$12.64	\$0.00	\$12.64	1,570	30	\$357,505	\$237,825	\$595,330	\$127,296
Dec25	\$3.311	\$3.980	\$7.291	\$12.64	\$0.00	\$12.64	1,570	31	\$260,366	\$354,808	\$615,174	\$79,403
Jan26	\$3.421	\$5.328	\$8.749	\$9.66	\$0.00	\$9.66	1,354	31	\$38,295	\$367,216	\$405,511	\$10,514
Feb26	\$3.371	\$5.253	\$8.624	\$9.66	\$0.00	\$9.66	1,354	28	\$39,328	\$326,940	\$366,268	\$11,309
Mar26	\$3.201	\$3.028	\$6.229	\$9.66	\$0.00	\$9.66	1,354	31	\$144,072	\$261,440	\$405,511	\$50,670
Apr26	\$2.831	\$0.143	\$2.974	\$9.66	\$0.00	\$9.66	1,354	30	\$271,645	\$120,786	\$392,430	\$114,093
May26	\$2.811	(\$0.440)	\$2.371	\$9.66	\$0.00	\$9.66	1,354	31	\$305,989	\$99,522	\$405,511	\$146,317
Jun26	\$2.859	(\$0.438)	\$2.422	\$9.66	\$0.00	\$9.66	1,354	30	\$294,067	\$98,363	\$392,430	\$150,725
Jul26	\$2.908	(\$0.255)	\$2.653	\$9.66	\$0.00	\$9.66	1,354	31	\$294,152	\$111,359	\$405,511	\$149,578
Aug26	\$2.924	(\$0.325)	\$2.599	\$9.66	\$0.00	\$9.66	1,354	31	\$296,419	\$109,092	\$405,511	\$165,962
Sep26	\$2.926	(\$0.675)	\$2.251	\$9.66	\$0.00	\$9.66	1,354	30	\$300,993	\$91,437	\$392,430	\$146,788
Oct26	\$2.963	(\$0.470)	\$2.493	\$9.66	\$0.00	\$9.66	1,354	31	\$300,868	\$104,643	\$405,511	\$128,329
Nov26	\$3.073	\$1.793	\$4.866	\$9.66	\$0.00	\$9.66	1,354	30	\$194,790	\$197,640	\$392,430	\$69,359
Dec26	\$3.291	\$3.503	\$6.794	\$9.66	\$0.00	\$9.66	1,354	31	\$120,356	\$285,156	\$405,511	\$36,705
Total									\$14,787,540	\$15,347,097	\$30,134,636	\$6,990,661

1. Source: Attachment OCA 1-1.b.2.

96.35%

Liberty Utilities (EnergyNorth Natural Gas) Corp. d/b/a Liberty

DG 21-036

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

OCA Data Requests - Set 1

Date Request Received: 3/31/21
Request No. OCA 1-1

Date of Response: 4/12/21
Respondent: William J. Clark
Mark R. Stevens

REQUEST:

Refer Testimony of William J. Clark and Mark Stevens, Attachment WJC/MRS-4, Bates pages 99-100.

- a. Please provide Attachment WJC/MRS-4 in live EXCEL format.
- b. Please provide the supporting documents (including live EXCEL files) that support the estimation of the TREC values.
- c. Does the Company have any historical data on TREC values that the estimates can be compared with? If yes, please provide the relevant data.
- d. Does the Company have any insight into how liquidity in the TRECs market has changed over the previous 7 years? If yes, please share that insight.
- e. Does the Company have any insight into how liquidity in the TRECs market is expected to evolve over the next ten years? If yes, please share that insight.

RESPONSE:

- a. See Attachment OCA 1-1.a.xlsx.
- b. See Attachments OCA 1-1.b.1.xlsx and OCA 1-1.b.2.xlsx.
- c. Historical data on TREC values are included in Attachment OCA 1-1.b.1.xlsx.
- d. Based on the information in Attachment OCA 1-1.b.1.xlsx, the TREC market appears to be liquid as the TREC prices are close to the ACP Market prices.
- e. The Company expects liquidity in the TRECs market to continue to follow the trend of the past seven years, assuming there are no statutory or regulatory changes.

ATTACHMENT MLR-1

Page 2 of 2

Attachment OCA 1-1.a

Rate Base model		CapEx			Ratio	Rate	Weighted Rate	PreTax	
Purchase Price		\$ 12,500,000			Long Term Debt	49.85%	4.42%	2.20%	2.20%
Decompression (Broken Bridge)		\$ 804,368			Short Term Debt	0.95%	2.49%	0.02%	0.02%
Total Cost		\$ 13,304,368			CommonEquity	49.21%	9.30%	4.58%	6.32%
Required Return (pre tax)		8.55%						6.80%	8.55%
Depreciation		\$ 665,218							
OpEx		\$ 10,000							
									Decompressic \$ 655,972
									contingency 15%
									Sub-Total \$ 754,368
									Internal Labor \$ 25,000
									Eng Review \$ 25,000
									Total \$ 804,368

Yea	MACRS Rates	MACRS Table	Book Depreciation	Delta	Tax Rate	DIT	ADIT	Rate Base	Return Required	O&M - Ins 1.7% escalator (2)	Revenue Requirement	Dth Projections (1)	\$/Dth	Rudarpa Fee 1.7% escalat	Deliverrec COG	Rudarpa ownership	TREC Estimate	COG N/TREC	Potential Savings
								\$13,304,368											
1	3.75%	\$ 498,914	\$ 665,218	\$ 166,305	27.48%	\$ 45,701	\$ 45,701	\$12,684,850	\$1,110,817	\$ 10,000.00	\$1,786,035	538,083	\$3.32	\$6.11	\$9.43	\$10.47	\$ 4.07	\$5.36	
2	7.22%	\$ 960,442	\$ 665,218	\$ (295,224)	27.48%	\$ (81,128)	\$ (35,427)	\$11,938,504	\$1,052,438	\$ 10,170.00	\$1,727,826	572,077	\$3.02	\$6.21	\$9.23	\$10.88	\$ 4.07	\$5.16	
3	6.68%	\$ 888,333	\$ 665,218	\$ (223,114)	27.48%	\$ (61,312)	\$ (96,739)	\$11,211,974	\$989,485	\$ 10,342.89	\$1,665,046	532,220	\$3.13	\$6.32	\$9.45	\$11.73	\$ 4.07	\$5.38	
4	6.18%	\$ 821,811	\$ 665,218	\$ (156,592)	27.48%	\$ (43,032)	\$ (139,770)	\$10,503,724	\$928,160	\$ 10,518.72	\$1,603,897	572,977	\$2.80	\$6.43	\$9.23	\$12.64	\$ 4.07	\$5.16	
5	5.71%	\$ 760,079	\$ 665,218	\$ (94,860)	27.48%	\$ (26,068)	\$ (165,838)	\$9,812,438	\$868,342	\$ 10,697.54	\$1,544,258	494,219	\$3.12	\$6.54	\$9.66	\$12.86	\$ 4.07	\$5.59	25%
6	5.29%	\$ 703,136	\$ 665,218	\$ (37,917)	27.48%	\$ (10,420)	\$ (176,258)	\$9,136,800	\$809,918	\$ 10,879.40	\$1,486,016	458,786	\$3.24	\$6.65	\$9.89	\$13.07	\$ 4.07	\$5.82	24%
7	4.89%	\$ 650,317	\$ 665,218	\$ 14,901	27.48%	\$ 4,095	\$ (172,163)	\$8,475,676	\$752,783	\$ 11,064.35	\$1,429,065	425,750	\$3.36	\$6.76	\$10.12	\$13.30	\$ 4.07	\$6.05	24%
8	4.52%	\$ 601,624	\$ 665,218	\$ 63,595	27.48%	\$ 17,476	\$ (154,687)	\$7,827,934	\$696,840	\$ 11,252.44	\$1,373,311	394,946	\$3.48	\$6.88	\$10.35	\$13.52	\$ 4.07	\$6.28	23%
9	4.46%	\$ 593,641	\$ 665,218	\$ 71,577	27.48%	\$ 19,669	\$ (135,018)	\$7,182,385	\$641,563	\$ 11,443.73	\$1,318,225	375,000	\$3.52	\$6.99	\$10.51	\$13.75	\$ 4.07	\$6.44	24%
10	4.46%	\$ 593,508	\$ 665,218	\$ 71,711	27.48%	\$ 19,706	\$ (115,312)	\$6,536,872	\$586,381	\$ 11,638.27	\$1,263,238	375,000	\$3.37	\$7.11	\$10.48	\$13.99	\$ 4.07	\$6.41	25%
11	4.46%	\$ 593,641	\$ 665,218	\$ 71,577	27.48%	\$ 19,669	\$ (95,642)	\$5,891,323	\$531,199	\$ 11,836.12	\$1,208,254	314,478	\$3.84	\$7.23	\$11.07	\$14.22	\$ 4.07	\$7.00	22%
12	4.46%	\$ 593,508	\$ 665,218	\$ 71,711	27.48%	\$ 19,706	\$ (75,936)	\$5,245,811	\$476,017	\$ 12,037.34	\$1,153,273	291,197	\$3.96	\$7.35	\$11.32	\$14.47	\$ 4.07	\$7.25	22%
13	4.46%	\$ 593,641	\$ 665,218	\$ 71,577	27.48%	\$ 19,669	\$ (56,266)	\$4,600,262	\$420,835	\$ 12,241.97	\$1,098,296	270,000	\$4.07	\$7.48	\$11.55	\$14.71	\$ 4.07	\$7.48	22%
14	4.46%	\$ 593,508	\$ 665,218	\$ 71,711	27.48%	\$ 19,706	\$ (36,560)	\$3,954,750	\$365,654	\$ 12,450.09	\$1,043,322	270,000	\$3.86	\$7.61	\$11.47	\$14.96	\$ 4.07	\$7.40	23%
15	4.46%	\$ 593,641	\$ 665,218	\$ 71,577	27.48%	\$ 19,669	\$ (16,891)	\$3,309,201	\$310,472	\$ 12,661.74	\$988,352	270,000	\$3.66	\$7.74	\$11.40	\$15.22	\$ 4.07	\$7.33	25%
16	4.46%	\$ 593,508	\$ 665,218	\$ 71,711	27.48%	\$ 19,706	\$ 2,815	\$2,663,689	\$255,290	\$ 12,876.99	\$933,385	270,000	\$3.46	\$7.87	\$11.32	\$15.48	\$ 4.07	\$7.25	27%
17	4.46%	\$ 593,641	\$ 665,218	\$ 71,577	27.48%	\$ 19,669	\$ 22,485	\$2,018,140	\$200,108	\$ 13,095.90	\$878,422	270,000	\$3.25	\$8.00	\$11.26	\$15.74	\$ 4.07	\$7.19	28%
18	4.46%	\$ 593,508	\$ 665,218	\$ 71,711	27.48%	\$ 19,706	\$ 42,191	\$1,372,627	\$144,926	\$ 13,318.53	\$823,463	270,000	\$3.05	\$8.14	\$11.19	\$16.01	\$ 4.07	\$7.12	30%
19	4.46%	\$ 593,641	\$ 665,218	\$ 71,577	27.48%	\$ 19,669	\$ 61,860	\$727,079	\$89,744	\$ 13,544.94	\$768,508	270,000	\$2.85	\$8.28	\$11.12	\$16.28	\$ 4.07	\$7.05	32%
20	4.46%	\$ 593,508	\$ 665,218	\$ 71,711	27.48%	\$ 19,706	\$ 81,566	\$81,566	\$34,563	\$ 13,775.21	\$713,556	270,000	\$2.64	\$8.42	\$11.06	\$16.55	\$ 4.07	\$6.99	33%
21	2.23%	\$ 296,820																	

(1) No Landfill Expansion
(2) Last ten year average

541,915

Liberty Utilities (EnergyNorth Natural Gas) Corp. d/b/a Liberty

DG 21-036

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

OCA Data Requests - Set 1

Date Request Received: 3/31/21
Request No. OCA 1-4

Date of Response: 4/12/21
Respondent: William J. Clark
Mark R. Stevens

REQUEST:

Refer Testimony of William J. Clark and Mark Stevens, Bates page 012, Lines 8 to Bates page 013, Line 2.

- a. Please provide the RNG facility's daily production levels (Dth per day) for years 2016, 2017, 2018, 2019 and 2020 in live EXCEL format (in one column).
- b. Refer to part a. For each and every day for which data is provided in response to part a., for the exact daily production levels as responded to in part a., please provide the actual supply cost of gas assuming that EnergyNorth relied on the most expensive units (Dth) (per its historically observed portfolio) to fulfill that daily demand; include propane and LNG purchases as relevant. Please provide this information in live EXCEL format in a column adjacent to the one requested in part a. Please confirm that these costs do not include demand costs.
- c. Please provide the RNG facility's expected daily production levels (Dth per day) for years 2020-21, 2021-22, and 2022-23. Please provide this information in live EXCEL format.

RESPONSE:

- a. The Company is not able to provide the RNG facility's daily production levels as the facility has not been constructed and will not be operational until Q4 of 2021 or Q1 of 2022.
- b. See response to a.
- c. The RNG Facility's expected daily production levels for years 2022 and 2023 can be found in Attachment OCA 1-4.c.xlsx.

<u>YEAR</u>	<u>2022</u>	<u>2023</u>
Estimated Output DTH/Day	1,687	1,680
Estimated Output DTH/Year	590,450	588,000

Liberty Utilities (EnergyNorth Natural Gas) Corp. d/b/a Liberty

DG 21-036

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

OCA Data Requests - Set 1

Date Request Received: 3/31/21
Request No. OCA 1-1

Date of Response: 4/12/21
Respondent: William J. Clark
Mark R. Stevens

REQUEST:

Refer Testimony of William J. Clark and Mark Stevens, Attachment WJC/MRS-4, Bates pages 99-100.

- a. Please provide Attachment WJC/MRS-4 in live EXCEL format.
- b. Please provide the supporting documents (including live EXCEL files) that support the estimation of the TREC values.
- c. Does the Company have any historical data on TREC values that the estimates can be compared with? If yes, please provide the relevant data.
- d. Does the Company have any insight into how liquidity in the TRECs market has changed over the previous 7 years? If yes, please share that insight.
- e. Does the Company have any insight into how liquidity in the TRECs market is expected to evolve over the next ten years? If yes, please share that insight.

RESPONSE:

- a. See Attachment OCA 1-1.a.xlsx.
- b. See Attachments OCA 1-1.b.1.xlsx and OCA 1-1.b.2.xlsx.
- c. Historical data on TREC values are included in Attachment OCA 1-1.b.1.xlsx.
- d. Based on the information in Attachment OCA 1-1.b.1.xlsx, the TREC market appears to be liquid as the TREC prices are close to the ACP Market prices.
- e. The Company expects liquidity in the TRECs market to continue to follow the trend of the past seven years, assuming there are no statutory or regulatory changes.

Customer TREC Calculation

T	96,000,000,000
Eff	80%
EC	960,000
V	125,000
R	50%
Eug	120,000,000,000
Eum	48,000,000,000

Btu's/Trec	3,412,000
Q=	14,068.00

Value calculation

Trec	14068.00
------	----------

		<u>TREC ACP</u>	<u>Discount Factor</u>
\$/Trec	\$	16.88	\$ 25.97 65%

		<u>\$/Mmbtu</u>	<u>Retirement Factor</u>
\$/Mmbtu	\$	4.95	\$ 4.95 0%

Savings	\$	237,474.79
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TREC valued at current 2018 ACP of \$25.97/MWh

- (1) "Q" means the useful thermal energy generated, stated in MWh
- (2) "T" means calculated total useful thermal energy Btu's equal to EUg multiplied by Eff or (EUg*Eff)
- (3) "Eff" means average estimated efficiency of .80
- (4) "EC" means Btu's per Mcf of gas delivered
- (5) "V" means Mcf of gas delivered as measured by sources utility standard gas meter
- (6) "R" means the percentage of gas delivered that is qualified methane supply as certified by the suppliers delivery documents
- (7) "EUg" means BTU's of gas delivered (V multiplied by EC or V*EC)
- (8) "EUM" means BTU's of qualified methane delivered (R multiplied T or R*T)

$$Q = EUM / 3,412,000$$

Liberty Utilities (EnergyNorth Natural Gas) Corp. d/b/a Liberty

DG 21-036

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

OCA Data Requests - Set 1

Date Request Received: 3/31/21
Request No. OCA 1-12

Date of Response: 4/12/21
Respondent: William J. Clark
Mark R. Stevens

REQUEST:

Refer Attachments WJC/MRS-5, -6 and -7 (Bates pages 105-115):

- a. These letters of intent (LOIs) are dated, respectively, August 29, 2018, February 27, 2018, and November 6, 2019. What is the basis for the Company's belief that each of the LOI counterparties still intends to enter into a special contract given the extended period since these LOIs were executed?
- b. Have either of the LOI counterparties in WJC/MRS -6 and -7 terminated Liberty's exclusive right to negotiate with the counterparty pursuant to section 6 of each LOI?
- c. The section 6 exclusivity rights referenced in subpart b of this question are not identical. Why do they differ?

RESPONSE:

- a. The Company has maintained regular communications with the three LOI counterparties and is currently in the final stages of executing the Special Contracts with all three.
- b. No.
- c. The exclusivity rights are not identical as each LOI was the subject of separate negotiations with the counterparty, each of which had different concerns and issues to be addressed.

Liberty Utilities (EnergyNorth Natural Gas) Corp. d/b/a Liberty

DG 21-036

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

OCA Data Requests - Set 1

Date Request Received: 3/31/21
Request No. OCA 1-9

Date of Response: 4/12/21
Respondent: William J. Clark
Mark R. Stevens

REQUEST:

Refer Testimony of William J. Clark and Mark Stevens, Bates page 022, Lines 11-14.

- a. Please provide the supporting worksheets (live EXCEL format) for the analysis behind the finding that “the Year 1 contract price of \$1.047 (and making reasonable simplifying assumptions) would cause the Liberty COG rate to increase by less than one penny per therm.”
- b. For the years 2013-20, please provide EnergyNorth’s annual sendouts and the landfill’s RNG annual sendouts in live EXCEL format.
- c. For the entire contract period, please provide EnergyNorth’s projected annual sendouts and the landfill’s projected RNG annual sendouts in live EXCEL format.
- d. Please indicate, whether in the event the RNG pricing and TRECs’ value demonstratively do not result in any upside, the Company believes that all customers should share the downside. If the answer is in the affirmative, please provide the basis for that position.

RESPONSE:

- a. Please see Attachment OCA 1-9.a.xlsx. The assumptions included in the analysis are as follows:
 - Based on EnergyNorth Winter 2020–2021 COG Filing
 - Assumes \$0 for TREC value
 - Assumes no customers other than LOI customers sign-up for RNG
 - Does not reflect potential savings from utilizing less LNG/propane
 - Based on commodity price savings only
- b. Please see Attachment OCA 1-9.b.xlsx for the 2013–2020 annual EnergyNorth sendout (in Dth). The RNG Facility has not been constructed so no data is available for production volumes for those years.
- c. Please see Attachment OCA 1-9.c.1.xlsx for the projected EnergyNorth sendout (in Dth). Please see Attachment OCA 1-9.c.2.xlsx for RNG projections (in Dth) supplied to Liberty from RUDARPA.

Docket No. DG 21-036 Request No. OCA 1-9

- d. The Company believes the RNG will be an attractive option for customers, as evidenced in large part by the LOI commitments, which should result in the program being “sold out.” The Company also believes the availability of RNG should drive new customer growth as two of the LOI customers will be new to the system and a direct result of RNG. These two new customers will bring approximately \$432,000 in incremental distribution revenues. However, if there is a *de minimis* increase to the COG as a result the Company believes there are wider benefits. Currently, the methane being collected at this existing landfill is being flared into the atmosphere with no purpose. The RNG facility, as proposed, will lessen emissions benefitting all residents and customers.

EnergyNorth 2020-2021 Peak Winter COG Filing

Winter Commodity only cost	\$	28,276,980	056, Line 12
Winter Sales Forecast therms		88,213,529	056, Line 81
Average Commodity Cost	\$	0.32	
RNG Cost Year 1	\$	1.047	
RNG Socialized Volume		850,000	
Winter Sales Minus RNG Volume		87,363,529	
Winter Commodity Cost w/o RNG	\$	28,004,511	
RNG Commodity Cost	\$	889,950	
Commodity Cost including RNG	\$	28,894,461	
Impact per therm		\$0.007	

Rudarpa Must Deliver Volume	490000
LOI Customer Volumes	320,000
Unsold Volume Winter	85000

Liberty Utilities (EnergyNorth Natural Gas) Corp. d/b/a Liberty

DG 21-036

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

OCA Data Requests - Set 1

Date Request Received: 3/31/21
Request No. OCA 1-10

Date of Response: 4/12/21
Respondent: William J. Clark
Mark R. Stevens

REQUEST:

Refer Testimony of William J. Clark and Mark Stevens, Bates page 024, Lines 4-9.

- a. Please indicate whether the Company has conducted any detailed analysis to determine the impact on the COG for existing customers. If so, please provide the workpapers/worksheets in their native form. If EXCEL was used, please provide the live EXCEL file(s).
- b. Given the scale of the procurement/project requested in the instant docket, please provide the Company's position on what constitutes "de minimus" impact when quantifying the impact on the COG for existing customers.

RESPONSE:

- a. The Company has not conducted a detailed analysis to determine the impact on the COG for existing customers as results will be dependent on Opt-in customer participation.
- b. Please see the Company's response to OCA 1-9.a. for an impact under reasonable assumptions. However, please see Attachment OCA 1-10.b.xlsx for a similar analysis based on the highest annual output projection and zero RNG sold at the prevailing RNG rate. This model assumes no LOI customer purchases any RNG. The outcome was an increase in the COG of approximately \$.02 per therm.

EnergyNorth 2020-2021 Peak Winter COG Filing

Rudarpa Max Volume	572977
LOI Customer Volumes	0
Unsold Volume Winter	286489

Winter Commodity only cost	\$	28,276,980	056, Line 12
Winter Sales Forecast therms		88,213,529	056, Line 81
Average Commodity Cost	\$	0.32	

RNG Cost Year 1	\$	1.047
RNG Socialized Volume		2,864,885
Winter Sales Minus RNG Volume		85,348,644
Winter Commodity Cost w/o RNG	\$	27,358,637
RNG Commodity Cost	\$	2,999,535
Commodity Cost including RNG	\$	30,358,171
Impact per therm		\$0.024

	\$	(2,081,191)
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Supplemental

Liberty Utilities (EnergyNorth Natural Gas) Corp. d/b/a Liberty

DG 21-036

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

Energy Data Requests - Set 3

Date Request Received: 9/29/21
Request No. Energy 3-11

Date of Response: 11/9/21
Respondent: William J. Clark
Mark R. Stevens

REQUEST:

Reference: Liberty's response to Energy's data request 1-3 (c)

Please provide the monthly update regarding LOI customers and special contracts for RNG as agreed in Liberty's response to Energy's data request 1-3 (c). Please provide all responsive information for the period September 1, 2021 through October 13, 2021. Please provide copies of any available special contracts or drafts. Please indicate whether all three LOI customers previously identified remain interested and committed to purchasing RNG in 2022.

RESPONSE:

Please see Confidential Attachment Energy 3-11.xlsx for updated correspondence with LOI customers. All three LOI customers remain interested and committed to purchasing RNG in 2022.

Confidential Attachment Energy 3-11.xlsx lists key portions of the special contract drafts, which contain "confidential, commercial, or financial information" protected from disclosure by RSA 91-A:5, IV. The names of the LOI customers are also confidential at this time pursuant to RSA 363:38. Therefore, pursuant to those statutes and Puc 203.08(d), the Company has a good faith basis to seek confidential treatment of this information and will submit a motion confirming confidential treatment prior to the final hearing in this docket.

SUPPLEMENTAL RESPONSE (November):

Please see Confidential Attachment Energy 3-11.Nov.xlsx for the monthly update regarding LOI customers. The Company seeks confidential treatment of this information as noted above.

Liberty Utilities (EnergyNorth Natural Gas) Corp. d/b/a Liberty

DG 21-036

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

Department of Energy Data Requests - Set 1

Date Request Received: 7/23/21
Request No. DOE 1-2

Date of Response: 8/6/21
Respondent: William J. Clark
Mark R. Stevens

REQUEST:

Reference testimony of Clark and Stevens at Bates 10, lines 16-19.

- a. What "certain required infrastructure" is needed to deliver RNG to the Company's customers?
- b. How does said infrastructure differ from that required to deliver Compressed Natural Gas?
- c. How much does said infrastructure cost, and what quantity will be purchased or leased? Please include any "skids" or decompression trailers in your response

RESPONSE:

- a. Decompression facilities will be needed to deliver RNG to the Company's customers.
- b. There is no difference when comparing infrastructure required for CNG to RNG. The Company considers RNG to be interchangeable with conventional CNG and the same decompression equipment would be utilized for both.
- c. The Company estimates the infrastructure to cost in the range of \$750,000 to \$850,000 per decompression facility, and there could be up to three decompression facilities required.

Liberty Utilities (EnergyNorth Natural Gas) Corp. d/b/a Liberty

DG 21-036

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

OCA Data Requests - Set 1

Date Request Received: 3/31/21
Request No. OCA 1-9

Date of Response: 4/12/21
Respondent: William J. Clark
Mark R. Stevens

REQUEST:

Refer Testimony of William J. Clark and Mark Stevens, Bates page 022, Lines 11-14.

- a. Please provide the supporting worksheets (live EXCEL format) for the analysis behind the finding that “the Year 1 contract price of \$1.047 (and making reasonable simplifying assumptions) would cause the Liberty COG rate to increase by less than one penny per therm.”
- b. For the years 2013-20, please provide EnergyNorth’s annual sendouts and the landfill’s RNG annual sendouts in live EXCEL format.
- c. For the entire contract period, please provide EnergyNorth’s projected annual sendouts and the landfill’s projected RNG annual sendouts in live EXCEL format.
- d. Please indicate, whether in the event the RNG pricing and TRECs’ value demonstratively do not result in any upside, the Company believes that all customers should share the downside. If the answer is in the affirmative, please provide the basis for that position.

RESPONSE:

- a. Please see Attachment OCA 1-9.a.xlsx. The assumptions included in the analysis are as follows:
 - Based on EnergyNorth Winter 2020–2021 COG Filing
 - Assumes \$0 for TREC value
 - Assumes no customers other than LOI customers sign-up for RNG
 - Does not reflect potential savings from utilizing less LNG/propane
 - Based on commodity price savings only
- b. Please see Attachment OCA 1-9.b.xlsx for the 2013–2020 annual EnergyNorth sendout (in Dth). The RNG Facility has not been constructed so no data is available for production volumes for those years.
- c. Please see Attachment OCA 1-9.c.1.xlsx for the projected EnergyNorth sendout (in Dth). Please see Attachment OCA 1-9.c.2.xlsx for RNG projections (in Dth) supplied to Liberty from RUDARPA.

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- d. The Company believes the RNG will be an attractive option for customers, as evidenced in large part by the LOI commitments, which should result in the program being “sold out.” The Company also believes the availability of RNG should drive new customer growth as two of the LOI customers will be new to the system and a direct result of RNG. These two new customers will bring approximately \$432,000 in incremental distribution revenues. However, if there is a *de minimis* increase to the COG as a result the Company believes there are wider benefits. Currently, the methane being collected at this existing landfill is being flared into the atmosphere with no purpose. The RNG facility, as proposed, will lessen emissions benefitting all residents and customers.

Year	Dth Projections
1	538,083
2	572,077
3	532,220
4	572,977
5	494,219
6	458,786
7	425,750
8	394,946
9	375,000
10	375,000
11	314,478
12	291,197
13	270,000
14	270,000
15	270,000
16	270,000
17	270,000
18	270,000
19	270,000
20	270,000

Liberty Utilities (EnergyNorth Natural Gas) Corp. d/b/a Liberty

DG 21-036

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

OCA Data Requests - Set 2

Date Request Received: 9/29/21
Request No. OCA 2-21

Date of Response: 10/12/21
Respondent: William J. Clark
Mark R. Stevens

REQUEST:

Please provide monthly forward NYMEX prices and Dracut prices for January 2022 through December 2027 in live EXCEL format.

RESPONSE:

Please see Attachment OCA 2-21.xlsx for forward NYMEX and Dracut prices for January 2022 through December 2026. Note, we are unable to obtain prices beyond December 2026 at this time.

Month	NYMEX	DRACUT
Jan22	\$5.888	\$16.60
Feb22	\$5.787	\$16.40
Mar22	\$5.437	\$6.50
Apr22	\$3.997	\$0.70
May22	\$3.841	(\$0.49)
Jun22	\$3.877	(\$0.48)
Jul22	\$3.919	(\$0.21)
Aug22	\$3.922	(\$0.17)
Sep22	\$3.901	(\$0.71)
Oct22	\$3.931	(\$0.48)
Nov22	\$4.014	\$2.09
Dec22	\$4.172	\$5.83
Jan23	\$4.261	\$10.80
Feb23	\$4.174	\$10.34
Mar23	\$3.864	\$4.62
Apr23	\$3.204	\$0.17
May23	\$3.122	(\$0.39)
Jun23	\$3.168	(\$0.38)
Jul23	\$3.220	(\$0.24)
Aug23	\$3.234	(\$0.28)
Sep23	\$3.233	(\$0.64)
Oct23	\$3.269	(\$0.45)
Nov23	\$3.375	\$1.54
Dec23	\$3.578	\$4.62
Jan24	\$3.686	\$8.51
Feb24	\$3.624	\$8.25
Mar24	\$3.392	\$3.18
Apr24	\$2.997	\$0.22
May24	\$2.964	(\$0.37)
Jun24	\$3.019	(\$0.37)
Jul24	\$3.074	(\$0.19)
Aug24	\$3.089	(\$0.26)
Sep24	\$3.088	(\$0.60)
Oct24	\$3.126	(\$0.40)
Nov24	\$3.228	\$2.03
Dec24	\$3.447	\$4.37
Jan25	\$3.551	\$5.50
Feb25	\$3.476	\$5.42
Mar25	\$3.292	\$3.20
Apr25	\$2.897	\$0.20
May25	\$2.867	(\$0.39)
Jun25	\$2.905	(\$0.39)
Jul25	\$2.949	(\$0.21)
Aug25	\$2.965	(\$0.27)

Sep25	\$2.957	(\$0.62)
Oct25	\$2.990	(\$0.42)
Nov25	\$3.095	\$1.96
Dec25	\$3.311	\$3.98
Jan26	\$3.421	\$5.33
Feb26	\$3.371	\$5.25
Mar26	\$3.201	\$3.03
Apr26	\$2.831	\$0.14
May26	\$2.811	(\$0.44)
Jun26	\$2.859	(\$0.44)
Jul26	\$2.908	(\$0.26)
Aug26	\$2.924	(\$0.33)
Sep26	\$2.926	(\$0.68)
Oct26	\$2.963	(\$0.47)
Nov26	\$3.073	\$1.79
Dec26	\$3.291	\$3.50

Liberty Utilities (EnergyNorth Natural Gas) Corp. d/b/a Liberty

DG 21-036

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

OCA Data Requests - Set 1

Date Request Received: 3/31/21
Request No. OCA 1-3

Date of Response: 4/12/21
Respondent: William J. Clark
Mark R. Stevens

REQUEST:

Please provide the following information on EnergyNorth's reliance on daily spot purchases.

- a. Please provide the Company's projection of daily spot prices over the next five years. In the same file also provide the expected daily RNG prices as an additional column. Please provide this information in live EXCEL format.
- b. Please indicate how many days over the winter for years 2015-16, 2016-17, 2017-18, 2018-19, and 2019-20, respectively, did EnergyNorth rely on spot purchases to meet its daily requirements?
- c. Refer to part b. Please provide the data on the daily quantities associated with the spot purchases and corresponding prices in live EXCEL format. If multiple spot purchases were made on some days, format the EXCEL file appropriately to include dates in rows and sources of supply and corresponding prices in columns.

RESPONSE:

- a. The Company does not forecast daily prices. Rather, the forecasts prepared by the Company use available published prices. These forecasts are prepared monthly, as available published index prices and basis are only available monthly. Please see Attachment OCA 1-3.a.xlsx for a projection of the monthly Dracut and Zone 6 prices. The price for the RNG will be determined annually per the Supply & Transportation Contract, please reference Attachment OCA 1-1.a.xlsx for the annual RNG cost located in column Q of the EXCEL file. If the Company executes the option and is granted authority from the NHPUC to purchase the RNG Cleanup Facility, the annual RNG cost will decrease significantly and can be seen in Column O of Attachment OCA 1-1.a.xlsx.
- b. The number of days in the Winter period where Spot Purchases were made to meet daily requirements are listed below:

Winter 2015–2016	60 days
Winter 2016–2017	87 days
Winter 2017–2018	118 days

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Winter 2018–2019 133 days

Winter 2019–2020 126 days

- c. Please see Attachment OCA 1-3.c.xlsx.