

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

Docket No. [DG 23-076](#)

**Liberty Utilities (EnergyNorth Natural Gas) Corp. d/b/a Liberty
Winter 2023-2024 and Summer 2024 Cost of Gas
(Re: Revenue Decoupling Adjustment Factor)**

Supplemental Technical Statement of Faisal Deen Arif, Gas Director &
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April 15, 2024

The New Hampshire Department of Energy (“DOE” or the “Department”) submits this supplemental technical statement² pursuant to the proceedings in Dkt. No. [DG 23-076](#) and the assented-to proposed procedural schedule to the Public Utilities Commission (“PUC” or the “Commission”) dated March 12, 2024.³

This statement pertains to the overall RDAF claim of \$5,439,023 (hereafter referred to as \$5.4 million) in the 2022-23 Revenue Decoupling Adjustment Factor (RDAF), as was reported in the [Technical Statement dated January 12, 2024](#)⁴, by Liberty Utilities (EnergyNorth Natural Gas) Corp. d/b/a Liberty (“Liberty”, or “the Company”). This \$5.4 million includes an under-collection of \$4,093,934 (i.e., \$4.1 million) from the residential sector, and a deficiency of \$1,345,089 (i.e., \$1.3 million) from the commercial and industrial (C&I) sector.

The purpose of this statement is to provide the Commission with additional information on the Department’s analytical findings in an effort to validate Liberty’s overall request of \$5.4 million from their fifth Decoupling Year (“DY5”⁵).

The Department supports Liberty’s RDAF claim of \$5.4 million as the Company’s calculation appears to be in compliance with the relevant Tariff provisions pertaining to RDAF [Tariff 11](#)⁶, Original Page 36, Section 19, Sub-section D (5). As such, the Department recommends that the Commission approve recovery of this amount through RDAF rates currently (provisionally) in

¹ See Attachment 1, CV of Ashraf Alam.

² The [technical statement](#) related to Local Delivery Adjustment Charges (LDAC) was submitted on December 5, 2023. See Exhibit 18 in [DG 23-076](#).

³ See [Proposed Procedural Schedule](#).

⁴ See Technical Statement of Tyler J Culbertson & Adam R. M. Yusuf (Bates p. 001), and the accompanying [Schedules](#) (Bates pp. 28-30), Tab 44 in Dkt. No. [DG 23-076](#).

⁵ DY5 spans the time period September 1, 2022 to August 31, 2023.

⁶ For [Tariff 11](#), see Dkt. No. [DG 20-105](#), Exhibit 49, starting at Bates 50.

place for the duration February 1, 2024 through January 31, 2025. See p. 3, 5 of PUC Order No. [26,940](#) (January 31, 2024) in Dkt. No. [DG 23-076](#) (Tab 51).

Notwithstanding the support, the Department observes that the current *Revenue Per Customer* (RPC) decoupling structure may have, inadvertently, over-compensated the Company in a manner that was not envisioned at the development of the current decoupling framework and, therefore, may have contravened the purpose⁷ of RDAF. Consequently, the purely mathematical application of RPC formula may have led to undue harm to the other party, namely the ratepayers, which is an area of significant concern to the Department. For elaborative discussion on this, please see Section 5.

The current technical statement is organized as follows:

1. Background
2. Summary of Docket Activity
3. RDAF Analytical Framework
4. Summary of DOE Analysis
5. DOE Observations
6. DOE Recommendations for DY5

1. Background

Through Order No. [26,872](#) dated August 14, 2023, the Commission established two separate schedules for Cost of Gas (COG) and Local Delivery Adjustment Charges (LDAC)⁸. Pursuant to that order and Section 19 of Liberty's current [Tariff 11](#), the Company made its initial petition for approval of the Revenue Decoupling Adjustment Factor (RDAF) for Decoupling Year 5 ("DY5") on August 21, 2023.

For the proposed LDAC rates, the Commission held a hearing on January 17, 2024. The Department submitted rate recommendations in its [LDAC technical statement](#) dated December 5, 2023. The PUC issued Order No. [26,940](#) approving all components of the LDAC rates (inclusive of the RDAF rates) to be effective through February 1, 2024 – January 31, 2025, but made the RDAF rates provisional. See p. 5 of the Order. The RDAF review was put into a separate procedural schedule.

⁷ See Liberty's [Tariff 11](#), Original Page 35, Section 19, Sub-Section D (1) ("Revenue decoupling eliminates the link between volumetric sales and Company revenue in order to align the interests of the Company and customers with respect to changing customer usage by establishing an allowed revenue per customer ("RPC").

⁸ In Dkt. [DG 23-027](#) and Order No. [26,872](#), the Commission approved *Report 1 and the first framework* filed by the Department of Energy dated July 14, 2023 that

"...consists of a default schedule and guidelines where LDAC adjustments are initiated on or about August 20 each year and COG adjustments are initiated on or about September 1 each year. Adjusted COG rates would be effective November 1 of the same year, while adjusted LDAC rates would be effective February 1 of the following year."

After an extended discovery process, the latest assented-to proposed procedural schedule was submitted to the Commission on March 12, 2024.

2. Summary of Docket Activity

Throughout the proceeding of this case as well as other RDAF-related dockets⁹, thanks to the complexities pertaining to RDAF matters, the Department issued multiple data requests (DRs) and held several technical sessions (TS) with Liberty. The Company provided both reported information and source data¹⁰ related to its DY5 RDAF recovery request.

The current technical statement benefits from this information and/or source data.

3. RDAF Analytical Framework

Liberty's current RDAF is based on a *Revenue Per Customer* ("RPC") model. This model along with its specific RPC values for each rate class were developed in the Company's last rate case, Dkt. No. [DG 20-105](#), and approved in Order No. 26,505 (July 30, 2021) using the 2019 Test Year ("TY") billing determinants.¹¹

As reported previously in the Department's [supplemental technical statement in DG 22-045](#), the Revenue Decoupling Mechanism (RDM) was proposed to "eliminates the link between volumetric sales and Company revenue in order to align the interests of the Company and customers with respect to changing customer usage". See Liberty [Tariff 11](#), Section 19, Sub-Section D (1).

Additionally, the proposed RPC-based decoupling model was designed to "fix a flaw in the traditional ratemaking methodology that does not allow utilities a reasonable opportunity to earn a reasonable return when customer usage is declining" (emphasis added).¹² For a greater discussion on the history of the development of Liberty's Revenue Decoupling Mechanism (RDM) and the current RPC model, see Dkt. No. [DG 17-048](#), [Direct Testimony of Gregg H. Therrien](#) (Exhibit 8) and [Rebuttal Testimony \(of\) Gregg Therrien](#) (Tab 29, Exhibit 27B).

⁹ These include: Dockets No. [DG 17-048](#), [DG 20-105](#), [DG 22-041](#), [DG 22-045](#), and the instant Docket No. [DG 23-076](#).

¹⁰ Source data the *raw* data sources that provides the basis of reported information,

¹¹ The billing determinants, among others, included: i) the number or count of customers per rate class, per month; and ii) the total therm sales per rate class, per month.

¹² See [DG 17-048](#), [Direct Testimony of Gregg H. Therrien](#); Bates 283, lines 6-8.

Two factors – the impact of Energy Efficiency (EE)¹³, and the reasonable opportunity for a reasonable recovery of utility costs and return¹⁴ – played significant role in the development of current RPC decoupling framework. As such, the performance of the current RPC model must be evaluated against the envisioned objective set out for creating a decoupling framework. DOE’s current analysis takes this into account.

The utility business model reflects distribution costs that are largely fixed and change very little in the short run with changes in usage levels. Yet the distribution rates have a significant variable, or usage-based component, that changes revenues and, consequently, the reasonable return.

The RDM was conceived to correct this misalignment by adjusting the Company’s actual revenues to match its approved revenues.^{15,16} As such, the approved revenues and the revenue requirement calculation performed in Liberty’s last distribution rate case (i.e., [DG 20-105](#)) to arrive at the approved revenue requirement level bear significance. A holistic evaluation of the performance of current RPC decoupling framework, therefore, requires a thorough evaluation of the underlying cost components leading up to the approved revenue requirement level.

In particular, performance of the RPC model should evaluate whether Liberty has had a reasonable opportunity to recover its costs. To the extent the costs are recovered, the objective of the decoupling framework would have been met. Alternatively, if the current RPC model provides additional revenues beyond the reasonable recovery of costs, this would essentially run contrary to the envisioned revenue decoupling objective (and also inflict undue harm to ratepayers). See [DG 17-048](#), [Direct Testimony of Gregg H. Therrien](#); Bates 283, lines 6-8. The Department’s analysis takes this into account.

Without undermining the significance of this broader scope of evaluation, in DOE’s view, Liberty appears to have followed the RPC calculation methodology as stipulated in its [Tariff 11](#). This fact was also accounted for in DOE’s recommendations.

Along the course of this docket, DOE’s analysis has generated concerns about the RPC model in general. The development of Liberty’s current RPC model, inherently, reflects an average energy consumption behavior (i.e., the Usage Per Customer, UPC, or simply the usage) by the customers for every rate class, and over a given unit of time (i.e., monthly). With changes in the

¹³ In Dkt. No. [DG 17-048](#), Liberty witness writes: “By eliminating the link between customer consumption and Company earnings, decoupling removes the disincentive for utilities to promote conservation and energy efficiency programs.” See [Direct Testimony of Gregg H. Therrien](#), Bates p. 283, Lines 13-15.

¹⁴ In Dkt. No. [DG 17-048](#), Liberty witness highlights the following: “While reduced energy usage is good for individual consumers and society as a whole, it does have a negative impact on a utility’s ability to earn its allowed rate of return under traditional ratemaking.” See [Direct Testimony of Gregg H. Therrien](#), Bates p. 285, Lines 20-22 (emphasis added).

¹⁵ The “allowed revenue” was calculated on a per customer class basis in [DG 20-105](#) based on approved distribution revenue (emphasis added).

¹⁶ See Liberty [Tariff 11](#), Section 19, Sub-Section D (5) for greater understanding regarding the linkages between “allowed” and “approved” (distribution) revenue.

unit price of the commodity (i.e., price per therm) between the Test Year (“TY”)¹⁷ and the subsequent Decoupling Years (“DYs”), such usage would naturally vary as a response to varying unit prices. The price elasticities would capture such variations. Any UPC variation beyond what can be explained by the price response could be attributed to all other factors (including but not exclusively, the Energy Efficiency).

Additionally, the *per customer* structure of the RPC model implies that the Company is entitled to a certain amount of decoupled revenue for every customer it finds in the subsequent periods. This immediately draws attention to three factors: a) the customer count methodology; b) the impact of customer growth over time on RDAF recovery request; and c) the cost recovery components that were inherent in the allowed revenue requirement calculation.¹⁸

Taken together, the RPC model implies that the current RDAF ask could be explained by the observed variation between the Test Year (TY2019) and the subsequent Decoupling Years (DY3, DY4 and DY5) in terms of:

- i) The variation in customer count (i.e., the customer growth aspect);
- ii) The variation in price per therm; and/or
- iii) The variation in UPC (i.e., the price response and the non-price response aspects).

This provides the basis for the Department’s current analytical framework. See Attachment 2 for a detailed exposition of the theoretical and empirical models used by the Department.

4. Summary of DOE Analysis¹⁹

Based on the information sourced from Dockets No. [DG 20-105](#), from [DG 23-076](#) and the Company’s data responses, the following is a summary of Department’s analytical findings²⁰:

- 4.1 We observe that Liberty has a *Revenue Per Customer* (RPC) decoupling structure. Three variables are of primary interest under an RPC structure. These include:
- a. The commodity unit price, p , measured in terms of price per therm;
 - b. The customer count, n , measured using the Company methodology;
 - c. The usage per customer (UPC), q , measured in terms of average therm consumption.
- These are our variables of interest. See Attachment 2 for an overview of DOE’s analytical models.

¹⁷ When RDM was designed.

¹⁸ The interplay between “embedded costs”, “average costs”, and “marginal costs” and their impacts in the final class-level revenue requirements bear significance for an RPC decoupling structure.

¹⁹ Please see Attachment 3, DOE Summary of Model Results.

²⁰ For all relevant values, please refer to the Tables in Attachment 4 (provided in live format).

4.2 Any RDAF ask could be explained by:

- a. Significant (in the sense of statistical significance) variation in customer numbers (i.e., customer growth factor) between the test year and subsequent decoupling years at levels;
- b. Significant variation in usage per customer (i.e., the UPC factor) between the same timeframes; or
- c. A combination of both.

4.3 Do we observe any difference in these variables? More specifically, do we observe:

- a. The difference at levels? In other words, do we see any differences for the variables of interest between the test year levels and the subsequent decoupling year levels; and
- b. (more importantly) Is there any statistically significant differences in those variables that can related to the current RDAF ask? The answer to the latter question also bears policy significance.

The DOE's analysis attempted to answer these questions.

4.4 In comparing the variables at level, we observe:

Table 1.1 : Customer Count (n - Equivalent Bills)				
	Test Year	DY3	DY4	DY5
Residential	82,909	85,151	85,674	86,214
C&I	12,605	12,913	12,993	13,079
Total	95,514	98,064	98,667	99,293

Table 1.2 : Customer Count – Y-o-Y Growth					
	DY3	DY4	DY5	Avg Growth Rate (DY3 – DY5)	Cumulative Growth Rate (TY to DY5)
Residential	2.7%	3.3%	4.0%	3.3%	1.0%
C&I	2.4%	3.1%	3.8%	3.1%	0.9%
Total	2.7%	3.3%	4.0%	3.3%	1.0%

- a. Liberty had 95,514 customers in an average month in TY2019. In the DY3 year (i.e., between September 2020 and August 2021), they reported 98,064 customers in an average month. For DY4 (spanning September 2021 through August 2022) the reported number of customers was 98,667. This further increased to 99,293 customers in DY5 (i.e., between September 2022 and August 2023). This indicates, relative to TY2019, while Liberty experienced customer growth of 2.7% in DY3, 3.3% in DY4, it was 4.0% in DY5 on an average-month basis. In general, on a cumulative basis, this represents a 1.0% year-over-year growth in the customer base since TY2019. That is, the Company's customer base grows on average by 1% year-over-year.

Table 2.1 : Usage Per Customer (Therm)				
	Test Year	DY3	DY4	DY5
Residential	64.6	58.5	57.7	53.0
C&I	749.3	684.8	675.7	634.1
Total	155.4	141.3	139.5	129.8

Table 2.2 : UPC – Y-o-Y Change					
	DY3	DY4	DY5	Avg Growth Rate (DY3 to DY5)	Cumulative Growth Rate (TY to DY5)
Residential	-9.5%	-10.7%	-17.9%	-12.7%	-4.8%
C&I	-8.6%	-9.8%	-15.4%	-11.3%	-4.1%
Total	-9.1%	-10.3%	-16.5%	-11.9%	-4.4%

- b. At the Company level, Liberty reported an average usage of 155.4 therms per month in TY2019. In DY3, it is reported to be 141.3 therms per month, registering a fall of 9.1% on an average-month. The reported UPC figures for DY4 went further down to 139.5 therms, registering a fall of 10.3% relative to TY2019. On an average month basis, the UPC further went down to 129.8 in DY5, which signified a reduction of 16.5% relative to TY2019. This is a significant drop even relative to DY4! Overall, on a cumulative basis, the UPC diminished by 4.4% year-over-year.

The change in UPC values between DY4 and DY5 was somewhat inconsistent with the DY3 and DY 4 trends. The Department notes that concerns have been raised with regard to the accuracy and stability of Liberty's new SAP billing system implementation and application which occurred in DY5. See also Dkts. No. DG 23-069 and DE 23-039. While comparing between DY5 class-level information with that of the DY3 and DY4 data, the Department observed some anomalies but could not determine if those were generated due to any methodological shifts pertaining to the SAP implementation. It was intriguing, however, to observe that while the year-over-year decline since TY2019 in the UPC value up to DY4 was 3.5%, the inclusion of the DY5 data augments this decline to 4.4% (i.e., a full 1.1% year-over-year decline due to inclusion of the DY5 data). This is significant particularly considering the extent of the impact of DY5 over the years since TY2019. Since the Department took quality of data provided by Liberty as given, it was not possible for the Department to further ascertain methodological consistency across the years. As such, the Department wishes to inform the Commission of this particular observation.²¹

²¹ Methodological consistency is of significant importance as any substantive shift could render comparison between and/or among different years incomparable.

Table 3.1 : Price Per Therm (\$)

	Test Year	DY3	DY4	DY5
Residential	0.7011	1.0076	1.3767	1.6900
C&I	0.7078	0.7628	1.1025	1.3244
Total	0.7044	0.8852	1.2396	1.5072

Table 3.2 : Average Price – Y-o-Y Change

	DY3	DY4	DY5	Avg Growth Rate (DY3 to DY5)	Cumulative Growth Rate (TY to DY5)
Residential	43.7%	96.4%	141.1%	93.7%	24.6%
C&I	7.8%	55.8%	87.1%	50.2%	17.0%
Total	25.7%	76.0%	114.0%	71.9%	20.9%

- c. In terms of price per therm, gas prices are observed to vary significantly both across rate classes and over time. When compared to TY2019, in DY5, price hike registers an increase of 114%. More interestingly, on a cumulative basis, gas prices register a year-over-year increase by 20.9% since TY2019. This temporal price variation, however, is different between the sectors. While, on cumulative growth basis, gas prices encountered by the residential customers rose by 24.6%, for C&I customers it rose by an average of 17.0% per year. This difference is significant as it demonstrates different usage and gas consumption behavior depending on the price elasticity of the specific sector.

Table 4.1 : Sales (Therm)

	Test Year	DY3	DY4	DY5
Residential	64,132,575	59,485,775	59,088,893	54,517,556
C&I	113,906,893	106,307,619	105,709,196	99,523,316
Total	178,039,468	165,793,394	164,798,089	154,040,872

Table 4.2 : Sales – Y-o-Y Change

	DY3	DY4	DY5	Avg Growth Rate (DY3 to DY5)	Cumulative Growth Rate (TY to DY5)
Residential	-7.2%	-7.9%	-15.0%	-10.0%	-4.0%
C&I	-6.7%	-7.2%	-12.6%	-8.8%	-3.3%
Total	-6.9%	-7.4%	-13.5%	-9.3%	-3.6%

- d. For therm sales, at the total Company level the overall sales kept decreasing from about 178 million therms in TY2019 to 165.8 million (i.e., a fall of 6.9% relative to TY) in DY3, to 164.8 million therms (i.e., a fall of 7.4% relative to TY) in DY4, to 154.0 million in DY5

(registering a fall of 13.5% relative to TY). On a cumulative basis, since TY2019, Liberty experienced a year-over-year average fall of gas sales by 3.6%.

e. In summary, since TY2019, we observe an average year-over-year:

- i) customer growth of 1.0%;
- ii) fall in UPC by 4.4%; and
- iii) price (per therm of gas) growth of 20.9%

In practical terms, customer growth with a fall in UPC reinforces an RDAF deficiency scenario and increases the likelihood of a positive RDAF recovery request by the Company. A fall in UPC further indicates a reduction of total gas sales, which is observed in the data.

Table 5.1 : Revenues without RDAF (\$)				
	Test Year	DY3	DY4	DY5
Residential	48,161,903	50,346,404	49,382,370	52,813,149
C&I	38,909,995	39,797,551	39,660,589	43,195,709
Total	87,071,898	90,143,955	89,042,958	96,008,858
<hr/>				
Authorized Revenue:		89,782,950	91,082,950	93,149,033

Table 5.2 : Revenues without RDAF – Y-o-Y Change					
	DY3	DY4	DY5	Avg Growth Rate (DY3 to DY5)	Cumulative Growth Rate (TY to DY5)
Residential	4.5%	2.5%	9.7%	5.6%	2.3%
C&I	2.3%	1.9%	11.0%	5.1%	2.6%
Total	3.5%	2.3%	10.3%	5.4%	2.5%

f. In terms of distribution revenues without RDAF (i.e., removing the Company's proposed decoupling revenues), Liberty reported \$87.1 million in TY2019, which increased to \$90.1 million in DY3 and \$89.0 million in DY4. This further increased to \$96.0 million in DY5. These represented a year-over-year average revenue growth of 2.5% since TY2019.²²

4.5 In comparing the variables of interest at the sectoral level, we observe the following:

²² That is, despite a significant fall in sales volumes, Liberty's overall revenue kept increasing.

Customer Count

- a. In the residential sector, the reported average number of customers per month in TY2019 was 82,909, which was reported to be 85,151 in DY3, 85,674 in DY4, and 86,214 in DY5. Relative to the TY2019, this registers a residential customer growth of 2.7% in DY3, 3.3% in DY4, and 4.0% in DY5 respectively, and a year-over-year average residential customer growth of 1.0% since TY2019. Interestingly, while the R-4 (i.e., low-income residential heating) customers registered a negative growth of 8.9% in DY3, this class showed a 5.1% increase in DY4. The DY5 data did not show this disaggregation. For the R-3 class (i.e., residential heating customers), data indicated a 3% growth in customer count both in DY3 and DY4, but at 13% growth for DY5.
- b. The C&I sector, on the other hand, reported a total of 12,605 customers in an average month during TY2019. This increased to 12,913 customers in DY3 and 12,993 in DY4; reporting a 2.4% and 3.1% customer growth respectively. C&I customers further grew to 13,079 in DY5, registering a 3.8% increase. On a year-over-year basis, customer base has grown by 0.9% in the C&I sector since TY 2019. Please refer to Table 1.1 through 1.5 in Attachment 4 for further details.

Sales

- c. Total therm sales in the residential sector in TY2019 was reported to be 64.1 million therms. This reduced to 59.5 million in DY3, to 59.1 million in DY4, and further to 54.5 million therms in DY5; recording a 7.2%, a 7.9%, and 15.0% decline in total gas sales respectively. The R-3 and R-4 (i.e., heating residential customers) rate classes showed a decline in total consumption in all three years when compared to TY2019; whereas the other residential rate classes showed an increase in consumption. Overall, the residential therm sales on average fell by 4.0% year-over-year since TY2019. See Table 2.1 through 2.5 in Attachment 4.
- d. For the C&I sector, a total consumption of 113.9 million therms was reported in TY2019; which is reduced to 106.3 million therms in DY3, to 105.7 million in DY4, and further reduced to 99.5 million therms in DY5. This registered a 6.7%, 7.2%, and 12.6% decline in total consumption in DY3, DY4, and DY5 respectively. All the C&I rate classes had less consumption except for G-43, G-44, G-45 and G -55 in both DY3 and DY4 when compared to TY2019. The DY5 data did not show this disaggregation and, hence, could not be compared. Overall, the C&I sector oversaw an average 3.3% decline in consumption since TY2019. Detailed information can be found in Table 2.1 through 2.5 in Attachment 4.

Revenues

- e. The reported revenue (without RDAF) for the residential customers in TY2019 was \$48.2 million, which is reported to be \$50.3 million in DY3, \$49.4 million in DY4, and \$52.8 million in DY5. This registers a revenue growth of 4.5% in DY3, 2.5% in DY4, and 9.7% in DY5 respectively. On a cumulative basis, this implies that the residential sector oversaw

an average 2.3% revenue growth since TY2019. See Table 3.1 through 3.5 in Attachment 4.

- f. The C&I sector reported a revenue (without RDAF) of \$38.9 million during TY2019. This increased to \$39.8 million in DY3, \$39.7 million in DY4, and \$43.2 million in DY5; reporting a 2.3%, 1.9%, and 11.0% revenue growth respectively. Since TY2019, this also represents an average year-over-year revenue growth of 2.6%. Please refer to Table 3.1 through 3.5 in Attachment 4 for more details.

Gas (per therm) Price

- g. In TY2019, residential gas prices on average were \$0.7011 per therm. It went up to \$1.0076 (a 43.7% increase) in DY3. In DY4, it further went up to \$1.3767, registering a 96.4% increase relative to TY2019 levels. In DY5, it again went up to \$1.6900, registering a 141.1% increase relative to TY2019 levels. On a year-over-year basis, gas prices in the residential sector rose by an average 24.6% per year between TY2019 and DY5 (until August 31, 2023). See Table 4.1 through 4.5 in Attachment 4.
- h. The average gas price for the C&I sector stood at \$0.7078 in TY2019. By DY3, prices rose to an average \$0.7628 per therm, registering a 7.8% hike. Gas prices further rose to an average \$1.1025 per therm in DY4, representing a 55.8% increase relative to TY2019 levels. In DY5, prices further rose to an average \$1.3244 per therm, representing an 87.1% increase relative to TY2019 levels. Overall, the average gas price rose by 17.0% per year between TY2019 and DY5 (until August 31, 2023). Please refer to Table 4.1 through 4.5 in Attachment 4 for more details.

UPC

- i. In terms of usage per customer (UPC), the residential customer reported an average use of 64.6 therms per month in TY2019. This reduced to 58.5 therms per month in DY3, 57.7 therms per month in DY4, and 53.0 therms per month in DY5; registering a 9.5%, 10.7%, and 17.9% decline in UPC per month respectively. The corresponding UPC values for R-1 and R-5 classes (i.e., non-heating residential customers) are 17.5 therms and 24.8 therms in TY2019. The UPC values for R-1 increased to 18.3 therms and decreased to 23.7 therms for R-5 in DY3. In DY4, the UPC values for R-1 and R-5 both increased to 18.8 and 28.9 therms respectively. And finally, in DY5, the UPC values for R-1 increased further to 19.3 but information for R-5 was missing.

In TY2019, the corresponding UPC values for R-3, R-4, R-6, and R-7 classes (i.e., heating residential customers) are 66.8, 64.9, 102.4 and 87.6 therms respectively. For both DY3 and DY4, the UPC values for the heating residential customer classes witnessed a decline compared to TY2019 values. It is important to note that the DY3, DY4, and DY5 UPC figures are inclusive of the observed customer growth that occurred between TY2019 and until DY5. Overall, the residential sector experienced an average 4.8% year-over-year decline in UPC since TY2019. See Table 5.1 through 5.5 in Attachment 4.

- j. Variations in the C&I sector are significant both across its fourteen separate rate classes²³ as well as in terms of their variability across time (i.e., TY2019 versus DY3, DY4 and DY5). See Attachment 4 for a review of the observed variations. Overall, while the UPC for an average C&I customer was 749.3 therms per month in TY2019, it is 684.8 therms in DY3, 675.7 therms in DY4, and 634.1 therms in DY5 registering a decrease of 8.6%, 9.8%, and 15.4% on an average-month basis. Overall, there has been a 4.1% year-on-year decline in UPC since TY2019 for the C&I sector. See Table 5.1 through 5.5 in Attachment 4.

4.6 Taken together, the observed variations would validate Liberty's current RDAF recovery requests at levels. The question is whether it also validates the claim from a statistical perspective.

4.7 This inquiry led DOE to perform statistical analysis. See Attachment 2 for an overview of the statistical models.

4.8 In comparing the variables of interest for statistical significance, we observe:

- a. Customer growth between TY2019 and all decoupling years (i.e., DY3, DY4, and DY5) are statistically significant in terms of explaining Liberty's RDAF revenue recovery request in respective decoupling years. This implies that customer count in TY2019 is significantly different from that of the customer counts in DY3, DY4, and DY5. This indicates that, from a statistical perspective, the customer growth continues to be predominantly responsible for the requested RDAF recovery amount for all decoupling years.
- b. When looked at the sectoral level, while customer count is found to be a statistically significant variable for the residential sector, it is not for the C&I sector for both DY3 and DY4. It is, however, significant for DY5. Irrespectively, this could imply potential cross-subsidization issues between the sectors that could be attributed to the current RPC structure.
- c. Overall, in DY5, estimates from the data indicate that a 1% increase in customer growth would lead to a 1.39% increase in RDAF revenue request (1.08% for residential and 1.62% for C&I). In terms of levels, the estimates show that one additional customer added to the distribution system (i.e., the marginal customer) would increase the RDAF revenue request for all customers by \$5.89 per month (or \$70.74 annually). The corresponding figures vary across residential and C&I sectors. While the marginal customer in the residential sector raises RDAF revenues for all residential customers by \$70.48 annually, it is observed to be \$88.41 per year for C&I customers. These estimates

²³ That is, G-41, G-42, G-43, G-44, G-45, G-46, G-51, G-52, G-53, G-54, G-55, G-56, G-57, and G-58. G-43 and G-54 classes represent large customers. For example, UPC in G-43 class in TY2019 was 17,515.5 therms per month that declined to 15,290.9 therms per month in DY3 and 15,250.5 therms per month in DY4, a decline of 2,224.6 therms per month in DY3 and 2,265 per month in DY4, between the test year and the corresponding decoupling years.

are all statistically significant which is indicative of growth impact of the current RPC decoupling structure.

The corresponding figures for DY3 and DY4, however, were much different in magnitude. Please see DOE's [supplemental technical statement in DG 22-045](#). Apart from observing the differences in the reported data²⁴ by the Company and the knowledge of SAP implementation by Liberty, the Department was not able to discern the reasons for these observed differences.

- 4.9 A comparison of the usage difference between test year (TY) and decoupling year (DY) is not straight forward. It is because per customer gas usage can vary for multiple reasons. This, however, can be categorized in terms of UPC variation due to price changes (i.e., the price response), and the UPC variation for other reasons (i.e., the non-price response). The latter category can include, among others, usage variation due to the Energy Efficiency program run by the utility.
- 4.10 The price response to UPC variation can be measured through price elasticities. Overall, Liberty's gas sales appear be inelastic in nature for both DY3 and DY4. This is largely due to the inelasticity of the C&I sector, where some customers are significantly larger than the customers in other sectors. Residential customers generally exhibit higher price elasticity relative to their C&I counterparts.
- 4.11 The higher price elasticity of residential customers coupled with the observed hike in gas price per therm between TY2019 and DY3, DY4, and DY5 would imply that the residential sector would have responded by more than proportionally decreasing its sectoral gas demand. This would manifest in terms of significant reduction in usage per customer despite the observed growth in customer count. Indeed, between TY2019 and DY5, the residential UPC fell from 64.6 therms to 58.5 in DY3, to 57.7 therm in DY4, and to 53.0 therms in DY5 on an average-month basis.

5. DOE Observations

- 5.1 As indicated earlier, Liberty has a Revenue Per Customer (RPC) decoupling Structure, that was proposed as a Revenue Decoupling Mechanism (RDM) in [DG 17-048](#), and approved by the Commission in Order No. [26,122](#) (April 27, 2018); see also Order 26,505 (July 30, 2021)
- 5.2 The RDM was proposed to "fix a flaw in the traditional ratemaking methodology that does not allow utilities a reasonable opportunity to earn a reasonable return when customer usage is declining." (emphasis added)²⁵ Additionally, the proposed RPC-based decoupling

²⁴ That is, the class-level monthly data.

²⁵ See DG 17-048, [Direct Testimony of Gregg H. Therrien](#); Bates 283, lines 6-8.

model was designed to “eliminate the link between volumetric sales and Company revenue in order to align the interests of the Company and customers with respect to changing customer usage”. See Liberty [Tariff 11](#), Original Tariff Page 35 Section 19, Sub-Section D (1) (emphasis added).

5.3 As such, the underlying premise, and an inherent part of the ensuing Revenue Decoupling Mechanism (RDM) was to correct the misalignment by adjusting the Company’s actual revenues to match its allowed revenues so that the Company has a reasonable opportunity of a reasonable return of its costs.

5.4 DOE observes that Liberty’s authorized revenue level from its last rate case was determined to be \$91,082,950.²⁶ This included an approved Return on Equity (ROE) of 9.3%, a permanent increase to its distribution revenue requirement of \$6,294,290, and an opportunity to recover capital expenditures placed in service in 2020 and 2021 via two step increases.²⁷ The resulting approved revenue levels for DY3, DY4 and DY5 are summarized in Table 6 below.

Table 6 : Revenue Impact of RPC Decoupling Structure

		Rate Case S/A (DG 20-105)*	DY3	DY4	DY5
(A)	Approved/Authorized Revenues:	91,082,950	89,891,283**	91,082,950	93,149,033***
(B)	Actual Revenue:		90,143,955	89,042,958	96,008,858
(B) - (A)	(Actual - Authorized):		252,671	(2,039,992)	2,859,825
(C)	RDAF Rev. Recovery Request:		2,426,364	3,085,628	5,439,023
(D) = (B) + (C)	Total Rev. (= Actual + RDAF):		92,570,319	92,128,586	101,447,881
(D) - (A)	Revenues above authorized level:		2,679,035	1,045,636	8,298,848

* This represents the final approved revenue level per Settlement Agreement in [DG 20-105](#) effective August 1, 2021.

** The figure is lower since temporary rates plus recoupment were in effect over October 1, 2020 to July 31, 2021 that overlapped the DY3 period.

*** The figure includes \$2,066,083 from approved second step adjustment (PUC Order No. [26,676](#)) effective September 1, 2022 in Dkt. No. [DG 22-028](#)

5.5 Table 6 provides a summary of the impact of RPC decoupling structure on Liberty’s overall distribution revenues. DOE notes that while in DY3 Liberty’s actual revenues exceeded its authorized level, in DY4 it fell short. In DY5, the revenues went up to \$96,008,858. However, with the Company’s recovery of the requested decoupling (i.e., RDAF) revenues, total revenues will exceed authorized level of revenues in all three decoupling years (i.e., by 2.7 million in DY3, \$1.05 million in DY4). It is intriguing to observe that, for DY5, the inclusion of RDAF revenues will exceed authorized level of revenues by over \$8.3 million.

²⁶ See Exhibit 49, in [DG 20-105](#), Bates 005, approved in Order No. 26,505 (July 30, 2021).

²⁷ See PUC Order No. [26,505](#) (July 30, 2021) (approving Settlement Agreement, Permanent Rates and anticipated step increases).

Table 7.1 : Marginal Costs by Rate Class (\$) from [DG 20-105](#)²⁸

Class	Customer-related	Capacity-related	Total
R-1	2,403,000	176,000	2,579,000
R-3, R-4	53,177,000	25,674,000	78,851,000
G-41	6,620,000	11,246,000	17,866,000
G-42	1,746,000	13,608,000	15,354,000
G-43	154,000	3,900,000	4,054,000
G-51	2,620,000	815,000	3,435,000
G-52	494,000	1,863,000	2,357,000
G-53	182,000	1,998,000	2,180,000
G-54	79,000	1,152,000	1,231,000
Total	67,475,000	60,432,000	127,907,000

Table 7.2 : Marginal Costs by Rate Class (%)

Class	Customer-related	Capacity-related	Total
R-1	1.9%	0.1%	2.0%
R-3, R-4	41.6%	20.1%	61.6%
G-41	5.2%	8.8%	14.0%
G-42	1.4%	10.6%	12.0%
G-43	0.1%	3.0%	3.2%
G-51	2.0%	0.6%	2.7%
G-52	0.4%	1.5%	1.8%
G-53	0.1%	1.6%	1.7%
G-54	0.1%	0.9%	1.0%
Total	52.8%	47.2%	100.0%

5.6 Table 7 above provide summary of Liberty’s Marginal Cost Study (MCOSS) submitted in its last distribution rate case in Dkt. No. [DG 20-105](#). The tables show that about 52.8% of additional costs, incurred due to marginal customer i.e., the last customer added to the distribution network, relates to customer-related charges. The rest is incurred due to capacity-related costs.

5.7 In utility business model, the “Capacity-related” marginal costs (MCs) are generally lumpy, meaning that such costs are incurred in blocks/chunks. Also, due to the design-day capacity requirements, utilities generally carry excess capacity. That is, planned redundancy is a feature of the utility business model. The investments leading to these excess capacity-related costs are generally accounted and compensated for through their inclusion into the utility rate base. Furthermore, the utilities earn return on (via ROE) and return of (i.e., through the revenue requirement calculation) these capacity-related investments through the rate case proceedings.

5.8 Given this, the Department observes that the RPC or the *per customer* decoupling structure creates multiple misalignments:

- a. First, the class-level RPCs were developed in Liberty’s last rate case, [DG 20-105](#). The development those RPCs made use of two factors: the exiting number of customers in TY2019, and the allowed revenue requirement figures that were derived using Liberty’s FCOSS and MCOSS.²⁹ Simply put, the RPC is the revenue requirement divided by the number of customers in existence in 2019.

²⁸ See Dkt. No. [DG 20-105](#), [Direct Testimony of Matthew J. DeCoursey](#), Bates II-418, Line 3.

²⁹ The Functional Cost of Service Study (FCOSS) and the Marginal Cost of Service Study (MCOSS). See [Direct Testimony of Kenneth A. Sosnick](#) and [Direct Testimony of Matthew J. DeCoursey](#) in Dkt. No. [DG 20-105](#).

As such, all utility costs inclusive of planned redundancies are inherently included in the approved revenue requirements. The use of RPC beyond the TY, therefore, assumes that all of those costs are instantly incurred with the addition of a marginal customer. This is not necessarily the case in utility management since some costs are incurred in discreet blocks (e.g., main extension with planned redundancies, payroll expense etc.) This topic was highlighted in Liberty's MCOSS and FCOSS in Dkt. No [DG 20-105](#). See [Direct Testimony of Matthew J. DeCoursey](#) and [Direct Testimony of Kenneth A. Sosnick](#).

Liberty's class-level revenue requirements included the planned redundancies. As such, so long as the Company realizes its authorized revenue requirements, the Company is sufficiently compensated for its capacity-related costs. In the context of RPCs, therefore, any RDAF revenue beyond the approved³⁰ level of revenues would unduly harm the ratepayers unless the Company can verifiably demonstrate³¹ that some capacity-related costs have not be compensated for.

- b. Second, the RPC structure does not put any cap on the level of revenue requirement that the Company can realize. This is the reason why Liberty effectively seeks more than the approved level of revenues. See Table 6 above.
- c. Third, when the marginal costs are lower than the average costs³², the use of RPC would over-compensate the Company and unduly harm the ratepayers.
- d. Fourth, the misalignment is further accentuated by periodic updates to RPCs through the approved step-adjustments. In other words, while the step-adjustments compensate the utility for their additional capital investments, it also carries the same assumption of average costs being equal to marginal costs.
- e. Fifth, the *per customer* structure does not allow for price responsiveness aspect to usage adjustments into consideration. When the per therm price goes up, through price elasticities, the customers respond by reducing gas demand. This creates natural usage variations. However, depending on the price elasticity in different sectors, namely residential vs C&I, this may create opportunities for cross-subsidization between the sectors, even within the approved revenue level.
- f. Finally, the RPC structure creates misalignment in terms of compensating the Company for both the reduction in average usage and also for its growth in customer base.

³⁰ That is, the authorized level of revenues approved in Liberty's last rate case in [DG 20-105](#).

³¹ Uncompensated capacity-related costs were not the focus of inquiry in the instant docket, Dkt. No. [DG 22-045](#).

³² Also known as "embedded costs".

5.9 Based on the above and in the absence of demonstration of additional (and verifiable) costs incurred by Liberty to serve new customers, any amount beyond the approved revenue requirement would not be just, reasonable and in the public interest.

6. DOE Recommendation for DY5

In light of the foregone analysis, the presented information, and given the circumstances, including Liberty's [Tariff 11](#), the limited scope of this docket, and adherence to the RPC's mathematical formula, the relief requested by the Company appears to be just and reasonable and in the public interest.

Accordingly, the Department reluctantly recommends that the Commission approve Liberty's RDAF request of \$5,439,023 (DY5) to be recovered through 2023/24 LDAC Season as consistent with its [Tariff 11](#), and thus just and reasonable and in the public interest (said recovery occurring provisionally at this time).

However, the Department's position should not be construed as waiving its regulatory obligation to raise and take a position in a future docket that the RDAF formula itself is not just, reasonable and in the public interest, or that the RDAF tariff clauses should be otherwise modified.