STATE OF NEW HAMPSHIRE BEFORE THE NEW HAMPSHIRE PUBLIC UTILIITES COMMISSION

Docket No. <u>DG 23-076</u> 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 & Ashraful Alam¹, Utility Analyst Department of Energy, Division of Regulatory Support **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. <u>DG 23-076</u> 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 <u>Technical Statement dated January 12, 2024</u>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 11⁶, Original Page 36, Section 19, Sub-section D (5). As such, the Department recommends the that the Commission approve recovery of this amount through RDAF rates currently (provisionally) in

¹ See Attachment 1, CV of Ashraful Alam.

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

³ See <u>Proposed Procedural Schedule</u>.

⁴ See Technical Statement of Tyler J Culbertson & Adam R. M. Yusuf (Bates p. 001), and the accompanying <u>Schedules (Bates pp. 28-30)</u>, 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. <u>26,940</u> (January 31, 2024) in Dkt. No. <u>DG 23-076</u> (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. <u>26,872</u> 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 <u>Tariff 11</u>, 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 <u>LDAC technical statement</u> dated December 5, 2023. The PUC issued Order No. <u>26,940</u> 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 <u>Tariff 11</u>, 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. <u>DG</u> 23-027 and Order No. <u>26,872</u>, the Commission approved *Report 1 and the first framework* filed by the Department of Energy dated July 14, 2023 that

[&]quot;...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. <u>DG 20-105</u>, 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 <u>supplemental technical statement in DG 22-045</u>, the Revenue Decoupling Mechanism (RDM) was proposed to "eliminates the link between volumetric sales and Company revenue in order to <u>align the interests of the Company and</u> <u>customers</u> with respect to changing customer usage". See Liberty <u>Tariff 11</u>, 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 <u>to</u> <u>earn a reasonable return</u> 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. <u>DG 17-048</u>, <u>Direct Testimony of Gregg H.</u> <u>Therrien</u> (Exhibit 8) and <u>Rebuttal Testimony (of) Gregg Therrien</u> (Tab 29, Exhibit 27B).

⁹ These include: Dockets No. <u>DG 17-048</u>, <u>DG 20-105</u>, <u>DG 22-041</u>, <u>DG 22-045</u>, and the instant Docket No. <u>DG 23-076</u>. 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 <u>DG 17-048</u>, <u>Direct Testimony of Gregg H. Therrien</u>; Bates 283, lines 6-8.

Two factors – the impact of Energy Efficiency (EE) ¹³, and the <u>reasonable</u> opportunity for a <u>reasonable</u> 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., <u>DG 20-105</u>) 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 <u>DG 17-048</u>, <u>Direct Testimony of Gregg H. Therrien</u>; 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 <u>Tariff 11</u>. 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. <u>DG 17-048</u>, 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. <u>DG 17-048</u>, 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 <u>Direct Testimony of Gregg H. Therrien</u>, Bates p. 285, Lines 20-22 (emphasis added).

¹⁵ The "allowed revenue" was calculated on a per customer class basis in <u>DG 20-105</u> based on <u>approved distribution</u> revenue (emphasis added).

¹⁶ See Liberty <u>Tariff 11</u>, 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. <u>DG 20-105</u>, from <u>DG 23-076</u> 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							
				Avg Growth	Cumulative		
				Rate	Growth Rate		
	DY3	DY4	DY5	(DY3 – DY5)	(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								
				Avg Growth	Cumulative			
				Rate	Growth Rate			
	DY3	DY4	DY5	(DY3 to DY5)	(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%			
Residential C&I Total	-9.5% -8.6% -9.1%	-10.7% -9.8% -10.3%	-17.9% -15.4% -16.5%	-12.7% -11.3% -11.9%	-4.8% -4.1% -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% <u>year-over-year</u> 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				

				Avg Growth	Cumulative
				Rate	Growth Rate
	DY3	DY4	DY5	(DY3 to DY5)	(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							
				Avg Growth	Cumulative		
				Rate	Growth Rate		
	DY3	DY4	DY5	(DY3 to DY5)	(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			
Authorized	-	<u>-</u>	-	-			
Revenue:		89,782,950	91,082,950	93,149,033			

Table 5.2 : Revenues without RDAF – Y-o-Y Change							
				Avg Growth	Cumulative		
				Rate	Growth Rate		
	DY3	DY4	DY5	(DY3 to DY5)	(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.

<u>Customer Count</u>

- 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.

<u>Sales</u>

- 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 is consumption since TY2019. Detailed information can be found in Table 2.1 through 2.5 in Attachment 4.

<u>Revenues</u>

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.

<u>UPC</u>

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 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 <u>supplemental technical statement in DG 22-045</u>. 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 <u>DG 17-048</u>, and approved by the Commission in Order No. <u>26,122</u> (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, <u>Direct Testimony of Gregg H. Therrien</u>; Bates 283, lines 6-8.

model was designed to "eliminate the link between volumetric sales and Company revenue in order to <u>align the interests of the Company and customers</u> with respect to changing customer usage". See Liberty <u>Tariff 11</u>, 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 <u>opportunity</u> <u>of a reasonable return</u> 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 <u>DG 20-105</u> 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. <u>26,676</u>) effective September 1, 2022 in Dkt. No. <u>DG 22-028</u>

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 <u>DG 20-105</u>, Bates 005, approved in Order No. 26,505 (July 30, 2021).

²⁷ See PUC Order No. <u>26,505</u> (July 30, 2021) (approving Settlement Agreement, Permanent Rates and anticipated step increases).

Table 7.1	Table 7.1 : Marginal Costs by Rate Class (\$) from			Table 7.2	: Marginal Co	osts by Rate	Class (୨
	<u>DG 20-105</u> -	• •			Customer-	Capacity-	
	Customer-	Capacity-		Class	related	related	Total
Class	related	related	Total	R-1	1.9%	0.1%	2.0%
R-1	2,403,000	176,000	2,579,000	R-3, R-4	41.6%	20.1%	61.6%
R-3, R-4	53,177,000	25,674,000	78,851,000	G-41	5.2%	8.8%	14.0%
G-41	6,620,000	11,246,000	17,866,000	G-42	1.4%	10.6%	12.0%
G-42	1,746,000	13,608,000	15,354,000	G-43	0.1%	3.0%	3.2%
G-43	154,000	3,900,000	4,054,000	G-51	2.0%	0.6%	2.7%
G-51	2,620,000	815,000	3,435,000	G-52	0.4%	1.5%	1.8%
G-52	494,000	1,863,000	2,357,000	G-53	0.1%	1.6%	1.7%
G-53	182,000	1,998,000	2,180,000	G-54	0.1%	0.9%	1.0%
G-54	79,000	1,152,000	1,231,000	Total	52.8%	47.2%	100.0%
Total	67,475,000	60,432,000	127,907,000	Total	52.070	47.270	100.070

- 5.6 Table 7 above provide summary of Liberty's Marginal Cost Study (MCOSS) submitted in its last distribution rate case in Dkt. No. <u>DG 20-105</u>. 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, <u>DG 20-105</u>. 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. <u>DG 20-105</u>, <u>Direct Testimony of Matthew J. DeCourcey</u>, Bates II-418, Line 3.

²⁹ The Functional Cost of Service Study (FCOSS) and the Marginal Cost of Service Study (MCOSS). See <u>Direct</u> <u>Testimony of Kenneth A. Sosnick</u> and <u>Direct Testimony of Matthew J. DeCourcey</u> in Dkt. No. <u>DG 20-105</u>.

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 <u>instantly incurred</u> 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 <u>DG 20-</u>105. See <u>Direct Testimony of Matthew J. DeCourcey</u> and <u>Direct Testimony of Kenneth A.</u> <u>Sosnick</u>.

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 <u>DG 20-105</u>.

³¹Uncompensated capacity-related costs were not the focus of inquiry in the instant docket, Dkt. No. <u>DG 22-045</u>.

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 <u>Tariff 11</u>, 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 <u>Tariff 11</u>, 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.

- Linguistic profile: Excellent oral and written communication skills in English
- **Personal Traits:** Great management and analytical skills; self-motivated problem solver and able to adopt innovative approaches for efficient results; committed to continuous learning, and upholding integrity and respect; sound judgment, values and ethics
- **Professional Goal:** Utilizing my Economics background with analytical skills and professional experience to effectively contribute towards maintaining stable regulatory practices, delivering strategic insights on energy-related proceedings and designing policies for a sustainable and affordable energy economy for the people of New Hampshire

EDUCATION

- MA, Analytical Economics, University of New Hampshire, Durham, N.H., 2023 (duration 2 years)
- Specialization in Data Analytics, Econometrics, Macroeconomic Analysis & Consulting, Financial Modelling and Behavioral Analysis
- MSS, Economics, University of Dhaka, Dhaka, Bangladesh, 2015 (duration 1 year)
- BSS, Economics, University of Dhaka, Dhaka, Bangladesh, 2014 (duration 4 years)

EMPLOYMENT OVERVIEW

Utility Analyst Gas Division; New Hampshire Department of Energy (NHDOE) September 2023 – to-date

- Work on contents and cases associated with various gas dockets before the Department
- Represent Departmental positions on gas dockets before the NH Public Utilities Commission (NHPUC)
- Coordinate communications and work plan among the Department and the regulated utility companies in New Hampshire
- Review and analyze the gas related reports submitted by the regulated utility companies, consolidate the reports and utilize relevant information for regulatory analysis
- Develop analytical frameworks and formats for efficient analysis of company filings
- Assist Departmental Senior Management in performing regulatory and administrative functions

Assistant Director

Department of Financial Monitoring, Bangladesh Rural Electrification Board (BREB) February 2019 – August 2021

- Supervised regulatory activities, analyzed data, and devised actionable activities driven by insights from data analytics
- Wrote reports on performance of rate classes under given rate structure, identification of performance improvement and performed the relevant policy analysis

- Analyzed market conditions and industry trends and recommended applicable rate structures and necessary service changes
- Administered Energy Regulatory Commission guidelines, evaluated utility reports and tariffs for compliance with rules, and settled industry issues
- Fostered collaborative working relationships with development partners, central and local officials, utility representatives and organized cross functional workshops with project stakeholders
- Explored consumer mixes and effectively established strategic cost optimization plans that boosted revenues
- Assessed the sectors eligible for subsidized electricity, accomplished ERP implementation and streamlined the Annual Performance Agreement plan
- Created research reports on resource and income planning approach to prioritize investment decisions

Officer

Southeast Bank Limited

September 2016 – January 2017

- Executed operations in General Banking, Credit and Foreign Exchange departments
- Managed Letter of Credit accounts and coordinated processes like advising and issuance
- Monitored and networked with potential and active clients for revenue enhancement opportunities
- Standardized customer experience, retained existing clients, and secured new ones

Attachment 2 : DOE Analytical Framework

Theoretical Framework:

$$RPC_{TY} = \frac{R_{TY}}{n_{TY}} = \frac{R_0}{n_0}$$

or,
$$RPC_0 = \frac{R_0}{n_o}$$
; where 'TY' is represented by the subscript '0'

Where: TY = Test Year,

 $R_{TY} = R_0$ = Revenue in Test Year $n_{TY} = n_0$ = Number of customers in Test Year $RPC_{TY} = RPC_0$ = Revenue per customer in Test Year

Now,

$$R_{All} = n_{Act} RPC_0 \qquad(1)$$

Where: R_{All} = Allowed/Authorized Revenue
 n_{Act} = Number of customers in Decoupling Year1
 RPC_0 = Revenue per customer in Test Year

Note:

$$R_0 = n_0 p_0 q_0$$

Where:

	R_0 = Revenue in Test Year
	n_0 = Number of customers in Test Year
	p_{0} = Price per therm or the Gas Rates in Test Year
	q_0 = Average therm consumption in Test Year
Note also that,	
	$Q_0 = n_0 q_0$
Where:	Q_0 = Total therm consumption in Test Year
	n_0 = Number of customers in Test Year

0

 \boldsymbol{q}_0 = Average therm consumption in Test Year

Now,

$$R_0 = p_0 Q_0 = p_0 (n_0 q_0)$$

Docket No. DG 23-076 Exhibit 22 Docket No. DG 23-076 Supplemental Technical Statement of Arif and Alam Attachment 2

That is, RPC in the Test Year is equal to the calculated rate from the Test Year (p_0 updated through DG 21-104) multiplied by the average therm consumption.

Applying equation (2) into equation (1), we get:

Similarly, actual revenue in the Decoupling Year (DY1) is:

; where 'Act', for actual, is represented by the subscript '1'

Here:

 R_{Act} = Revenue in Decoupling Year $n_{Act} = n_1$ = Number of customers in Decoupling Year $p_{Act} = p_1$ = Price per therm or Gas Rate in Decoupling Year $q_{Act} = q_1$ = Average therm consumption in Decoupling Year

Note: Decoupling Year runs from August 2022 through July 2023

Now, dividing equation (3) by equation (4) gives:

$$\frac{R_{All}}{R_{Act}} = \frac{n_{Act}p_0q_0}{n_1p_1q_1}$$
$$\frac{R_{All}}{R_{Act}} = \frac{n_1p_0q_0}{n_1p_1q_1}$$

; where ' n_{Act} ' is the same as ' n_1 '

Therefore:

Empirical Framework:

Note: here, q = Average therm consumption

n = Number of customers

So,
$$q = \frac{Q}{n}$$

Multiplying both sides with price per therm or the rate 'p' gives:

$$pq = p \frac{Q}{n} = \frac{R}{n} = Average Revnue$$
; where *Total Revenue*, $R = p Q$

Subtracting equation (2) from equation (1) gives:

Model 1: $R_{All} - R_{Act} = n_1 (p_0 q_0 - p_1 q_1)$

Model 2:
$$\ln (R_{All} - R_{Act}) = \ln (n_1) + \ln (p_0 q_0 - p_1 q_1)$$

Demand function: Q = a - b * p(4)

Using Log-transformed values in demand function gives:

Model 3: $\ln Q = \alpha + \beta \ln p + e$

This yields: $\frac{1}{Q}\frac{\partial Q}{\partial p} = 0 + \beta \frac{1}{p}\frac{\partial p}{\partial p} + 0$

Therefore, price elasticity:

$$\boldsymbol{\varepsilon}_{\boldsymbol{Q},\boldsymbol{p}} = \frac{p}{Q} \frac{\partial Q}{\partial p} = \boldsymbol{\beta}$$

Attachment 3: Tables

Decoupling Year 5

Model 1.1: Level Model (Reg 1_all) - Regress (R_all - R_act) on n_act

	Coefficients	Standard	t Stat	P-value	Lower	Upper	Lower	Upper
		Error			95%	95%	95.0%	95.0%
Intercept	0	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
n_act	5.894737	0.460430571	12.80266	3.993E-24	4.983039	6.806436	4.983039	6.806436

Model 1.2: Level Model (Reg 1_RES) - Regress (R_all - R_act) on n_act

	Coefficients	Standard	t Stat	P-value	Lower	Upper	Lower	Upper
		Error			95%	95%	95.0%	95.0%
Intercept	0	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
n_act	5.873419	0.815880251	7.198874	2.12E-08	4.217094	7.529744	4.217094	7.529744

Model 1.3: Level Model (Reg 1_C&I) - Regress (R_all - R_act) on n_act

	Coefficients	Standard	t Stat	P-value	Lower	Upper	Lower	Upper
		Error			95%	95%	95.0%	95.0%
Intercept	0	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
n_act	7.367822	1.372495389	5.368194	7.09E-07	4.637984	10.09766	4.637984	10.09766

Model 2.1: Ln Model (Reg 2_all) - Regress Ln(R_all - R_act)_adj on Ln(n_act)

	Coefficients	Standard	t Stat	P-value	Lower	Upper	Lower	Upper
		Error			95%	95%	95.0%	95.0%
Intercept	0	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Ln (n_act)	1.390535	0.052186	26.6458	2.7E-49	1.287094	1.493977	1.287094	1.493977

Model 2.2: Ln Model (Reg 2_RES) - Regress Ln(R_all - R_act)_adj on Ln(n_act)

	Coefficients	Standard	t Stat	P-value	Lower	Upper	Lower	Upper
		Error			95%	95%	95.0%	95.0%
Intercept	0	#N/A						
Ln (n_act)	1.085435	0.070658	15.36191	6.45E-14	0.939605	1.231265	0.939605	1.231265

Model 2.3: Ln Model (Reg 2_C&I) - Regress Ln(R_all - R_act)_adj on Ln(n_act)

	Coefficients	Standard	t Stat	P-value	Lower	Upper	Lower	Upper
		Error			95%	95%	95.0%	95.0%
Intercept	0	#N/A						
Ln (n_act)	1.618528	0.060404	26.79515	1.28E-42	1.498387	1.738669	1.498387	1.738669

	Coefficients	Standard	t Stat	P-value	Lower	Upper	Lower	Upper
		Error			95%	95%	95.0%	95.0%
Intercept	13.56646	0.140258	96.72515	5.5E-106	13.28841	13.8445	13.28841	13.8445
Ln(p_act)	-0.36989	0.273996	-1.34999	0.179868	-0.91306	0.173273	-0.91306	0.173273

Model 3.1: Ln Model (Reg 3_all) - Regress Ln(Q_act) on Ln(p_act)

Model 3.2: Ln Model (Reg 3_RES) - Regress Ln(Q_act) on Ln(p_act)

	Coefficients	Standard	t Stat	P-value	Lower	Upper	Lower	Upper
		Error			95%	95%	95.0%	95.0%
Intercept	12.87329	0.830197	15.50631	1.14E-13	11.1559	14.59068	11.1559	14.59068
Ln(p_act)	0.029891	1.422618	0.021011	0.983418	-2.91302	2.9728	-2.91302	2.9728

Model 3.3: Ln Model (Reg 3_C&I) - Regress Ln(Q_act) on Ln(p_act)

	Coefficients	Standard	t Stat	P-value	Lower	Upper	Lower	Upper
		Error			95%	95%	95.0%	95.0%
Intercept	13.68545	0.092297	148.2759	2.1E-101	13.50184	13.86906	13.50184	13.86906
Ln(p_act)	-0.20168	0.188925	-1.0675	0.288879	-0.57751	0.174154	-0.57751	0.174154

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Attachment 4

Table: 1.1

Table: 1.2

Customer Count (n - E	quivalent 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

Customer Count :	Y-o-Y Growth				
					Cumulative
				Avg Growth Rate	Growth Rate
	DY3	DY4	DY5	(DY3 to DY5)	(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%

Table: 1.3

n0: Customer Count (Equivalent Bills) : Test Year 2019

Calendar Month -													12 Month	% dist by rate
DIII3	lan-19	Feb-19	Mar-19	Apr-19	May-19	lun-19	Jul-19	Aug-19	Sen-19	Oct-19	Nov-19	Dec-19		classes
R-1	3.556	3.208	3.554	3.435	3.550	3.433	3.532	3.541	3.426	3.536	3.429	3.548	3.479	3.6%
R-3	74 568	67 504	74 858	72 371	74 609	72 049	74 381	74 383	72 235	75 025	72 971	76 009	73 414	76.9%
R-4	6,206	5,597	6.169	5.875	5.955	5.680	5,709	5.570	5,309	5.662	5.879	5.874	5,791	6.1%
R-5	37	43	47	53	55	63	66	60	67	67	70	70	58	0.1%
R-6	86	94	100	125	146	180	191	178	202	212	233	237	165	0.2%
R-7	1	1	1	2	3	3	3	3	3	3	3	3	2	0.0%
Total Residential	84,454	76,448	84,729	81,860	84,318	81,407	83,883	83,735	81,244	84,505	82,585	85,741	82,909	86.8%
G-41	9,722	8,810	9,759	9,395	9,534	9,045	9,208	9,146	8,865	9,410	9,417	9,843	9,346	9.8%
G-42	1,438	1,300	1,439	1,383	1,423	1,371	1,437	1,451	1,402	1,461	1,428	1,477	1,418	1.5%
G-43	60	53	58	54	55	52	53	49	48	50	48	53	53	0.1%
G-44	1	2	2	2	2	2	2	3	3	4	4	4	3	0.0%
G-45	4	4	4	4	4	4	4	6	7	7	7	7	5	0.0%
G-46	0	1	2	3	4	5	6	7	8	9	10	11	6	0.0%
G-51	1,339	1,208	1,338	1,291	1,327	1,284	1,342	1,354	1,303	1,350	1,308	1,347	1,316	1.4%
G-52	390	352	392	381	397	385	401	406	392	409	401	417	394	0.4%
G-53	37	34	35	34	36	35	34	33	33	34	33	34	34	0.0%
G-54	28	26	29	27	28	27	27	26	25	26	25	27	27	0.0%
G-55	3	3	3	3	3	3	3	3	3	3	3	3	3	0.0%
G-56	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
G-57	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
G-58	1	1	1	1	1	1	1	1	1	1	1	1	1	0.0%
Total C&I	13,024	11,794	13,063	12,579	12,815	12,214	12,519	12,485	12,091	12,764	12,685	13,223	12,605	13.2%
Total	97,478	88,242	97,791	94,439	97,133	93,621	96,402	96,220	93,334	97,269	95,270	98,964	95,514	100.0%
% dist by calendar														
months	102.1%	92.4%	102.4%	98.9%	101.7%	98.0%	100.9%	100.7%	97.7%	101.8%	99.7%	103.6%	100.0%	

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Table: 1.4

n1: Customer Count (Equivalent Bills) : Decoupling Year 5 (DY5 - Sept 2022 to Aug 2023)

Calendar Month - Equivalent Bills	1 22	5.k 22	Mar 22	4		ture 22		A	6	0.4.22	No. 22	Dec 22	12 Month	<u>% dist by</u>
	Jan-23	FED-23	<u>iviar-23</u>	Apr-23	<u>Iviay-23</u>	Jun-23	<u>Jui-23</u>	Aug-23	<u>Sep-22</u>	000-22	<u>NOV-22</u>	Dec-22	Average	rate classes
K-1	3,488	3,187	3,390	3,404	3,391	3,251	3,474	3,395	3,360	3,408	3,381	3,484	3,385	3.4%
R-5	64,414	//,06/	65,040	64,175	84,449	80,450	60,473	04,000	/9,425	85,050	60,762	63,435	02,000	65.5%
R-4	0	0	0	0	0	0	0	0	1,505	0	0	0	125	0.1%
R-5	0	0	0	0	0	0	0	0	42	0	0	0	4	0.0%
R-0	0	0	0	0	0	0	0	0	150	0	0	0	12	0.0%
K-/ _	97.003	0 254	97.026	97.570	97.940	93 701	80.047	0 202	94 491	96.457	94.164	96.010	0	0.0%
TOTAL RESIDENTIAL	87,902	80,254	87,030	87,579	67,640	65,701	69,947	00,203	04,401	80,457	64,104	86,919	80,214	00.0%
G-41	10,040	9,226	10,013	10,037	9,981	9,382	10,036	9,845	9,150	9,707	9,586	9,972	9,748	9.8%
G-42	1,491	1,376	1,515	1,523	1,530	1,454	1,557	1,530	1,452	1,504	1,463	1,499	1,491	1.5%
G-43	65	62	66	66	66	65	67	64	63	63	63	65	65	0.1%
G-44	0	0	0	0	0	0	0	0	1	0	0	0	0	0.0%
G-45	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
G-46														0.0%
G-51	1,307	1,205	1,308	1,316	1,317	1,253	1,347	1,321	1,275	1,311	1,273	1,304	1,295	1.3%
G-52	425	393	428	429	430	409	442	435	406	421	409	425	421	0.4%
G-53	32	33	34	33	32	32	35	34	30	33	33	33	33	0.0%
G-54	26	26	25	27	28	27	27	27	26	26	25	27	26	0.0%
G-55	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
G-56	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
G-57														0.0%
G-58	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
INAT _	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
Total C&I	13,388	12,321	13,388	13,432	13,385	12,622	13,510	13,257	12,404	13,064	12,852	13,325	13,079	13.2%
Total	101,290	92,576	100,423	101,010	101,225	96,323	103,458	101,540	96,885	99,522	97,016	100,244	99,293	100.0%
% dist by calendar	,	,		,	. ,===			. ,			,		,	
months	102.0%	93.2%	101.1%	101.7%	101.9%	97.0%	104.2%	102.3%	97.6%	100.2%	97.7%	101.0%	100.0%	

Table: 1.5

Customer Count (Equivalent Bills) : % Change relative to TY2019 ((n1 - n0) / n0)

Calendar Month -													12 Month
Therms	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-22	Oct-22	Nov-22	Dec-22	Average
R-1	-1.9%	-0.6%	-4.6%	-0.9%	-4.5%	-5.3%	-1.6%	-4.1%	-1.9%	-3.6%	-1.4%	-1.8%	-2.7%
R-3	13.2%	14.2%	11.7%	16.3%	13.2%	11.7%	16.3%	14.1%	10.0%	10.7%	10.7%	9.8%	12.6%
R-4	-	-	-	-	-	-	-	-	-71.7%	-	-	-	-97.8%
R-5	-	-	-	-	-	-	-	-	-37.0%	-	-	-	-93.9%
R-6	-	-	-	-	-	-	-	-	-25.9%	-	-	-	-92.4%
R-7	-	-	-	-	-	-	-	-	16.7%	-	-	-	-85.4%
Total Residential	4.1%	5.0%	2.7%	7.0%	4.2%	2.8%	7.2%	5.4%	4.0%	2.3%	1.9%	1.4%	4.0%
G-41	3 3%	1 7%	2.6%	6.8%	1 7%	3 7%	9.0%	7.6%	3.2%	3.7%	1.8%	1 3%	1 3%
G-42	3.7%	5.9%	5.2%	10.1%	7.6%	6.1%	8.4%	5.4%	3.6%	2.9%	2.5%	1.5%	5.2%
G-43	8.5%	17.7%	13.0%	22.5%	20.2%	24.3%	26.0%	30.8%	31 1%	26.7%	31.4%	22.7%	21.9%
G-44 G-44	-	-	-	-	-	- 24.576	- 20.076		-		-	22.770	- 21.570
G-45	_	_	_	_	_	_	-	-	-				_
G-46													
G-51	-2.4%	-0.2%	-2.2%	1 9%	-0.8%	-2.4%	0.4%	-7.4%	-2.2%	-2.9%	-2.7%	-3.2%	-1.6%
G-52	9.1%	11.7%	9.1%	12.7%	8 3%	6.1%	10.1%	7.1%	3.7%	2.8%	2.1%	1.9%	6.8%
G-53	-13.0%	-4.3%	-2.1%	-1.9%	-10.3%	-8.8%	1.6%	4.1%	-8.6%	-3.1%	0.1%	-3.7%	-3.3%
G-54	-6.6%	-0.4%	-13.6%	0.6%	0.3%	-0.1%	0.7%	4.2%	4.5%	0.2%	0.1%	0.1%	-1.9%
G-55									-				
G-56													
G-57													
G-58	-	-	-	-	-	-	-	-	-	-	-	-	-
INAT													
Total C&I	2.8%	4.5%	2.5%	6.8%	4.4%	3.3%	7.9%	6.2%	2.6%	2.4%	1.3%	0.8%	3.8%
Total	3.9%	4.9%	2.7%	7.0%	4.2%	2.9%	7.3%	5.5%	3.8%	2.3%	1.8%	1.3%	4.0%

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-4.0%

-3.3%

-3.6%

Avg Grw RateGrowth Rate(DY3 to DY5)(TY to DY5)

-10.0%

-8.8%

-9.3%

Table: 2.1

Table: 2.2

Residential

C&I

Total

Sales : Y-o-Y Change

DY4

-7.9%

-7.2%

-7.4%

-15.0%

-12.6%

-13.5%

-7.2%

-6.7%

-6.9%

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: 2.3

Q0: Consumption (Therms) : Test Year 2019

Calendar Month - Therms													12 Month	% dist by rate
	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Total	classes
R-1	98.270	82,477	81.173	62.569	51,406	39,204	32,708	33,562	36.196	47.312	74,356	90,773	730.007	0.4%
R-3	11.047.615	9.168.849	7.837.906	4.355.776	2,468,802	1.285.524	995.157	1.013.378	1.276.765	2.884.173	7.047.568	9.245.832	58.627.344	32.9%
R-4	885,912	727,579	628,272	349,015	195,398	104,607	78,949	78,217	93,638	212,528	547,644	690,935	4,592,696	2.6%
R-5	2,418	2,166	1,977	1,255	802	477	411	401	537	1,006	1,789	2,314	15,553	0.0%
R-6	24,771	22,729	20,328	12,107	7,073	3,298	2,618	2,697	3,953	10,649	23,344	31,643	165,208	0.1%
R-7	236	219	205	132	74	29	23	21	31	116	286	395	1,767	0.0%
Total Residential	12,059,223	10,004,020	8,569,861	4,780,853	2,723,555	1,433,138	1,109,867	1,128,276	1,411,120	3,155,784	7,694,988	10,061,892	64,132,575	36.0%
G-41	5,171,612	4,279,458	3,531,133	1,765,781	864,883	351,762	235,341	241,313	352,412	1,015,786	3,004,170	4,153,306	24,966,957	14.0%
G-42	6,530,418	5,475,772	4,725,518	2,672,542	1,482,039	693,556	501,810	534,815	768,009	1,758,714	4,271,746	5,595,225	35,010,164	19.7%
G-43	1,905,835	1,561,041	1,434,525	899,966	603,914	340,002	280,487	298,376	341,006	635,398	1,308,963	1,674,106	11,283,618	6.3%
G-44	835	771	571	277	153	72	63	78	170	1,122	2,450	3,539	10,101	0.0%
G-45	17,066	15,009	11,928	6,338	5,143	985	423	1,270	5,105	13,408	24,517	32,298	133,489	0.1%
G-46	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
G-51	513,365	436,895	422,665	331,851	298,122	249,134	231,853	258,476	254,156	285,859	390,874	456,217	4,129,466	2.3%
G-52	1,167,695	988,029	975,249	771,679	657,758	552,333	541,766	581,009	589,257	702,220	958,011	1,079,925	9,564,929	5.4%
G-53	1,337,134	1,065,891	1,038,207	826,277	776,434	663,509	663,090	697,644	647,913	782,805	956,209	1,067,796	10,522,907	5.9%
G-54	1,327,434	1,206,315	1,185,882	1,309,095	1,639,560	1,668,852	1,770,028	1,766,454	1,625,766	1,665,368	1,544,839	1,293,390	18,002,982	10.1%
G-55	621	577	504	263	172	58	12	57	59	157	421	625	3,525	0.0%
G-56	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
G-57	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
G-58	19,016	33,980	31,595	29,380	21,467	17,183	16,968	16,982	20,073	22,561	23,451	26,099	278,754	0.2%
Total C&I	17,991,031	15,063,736	13,357,776	8,613,449	6,349,644	4,537,445	4,241,840	4,396,473	4,603,926	6,883,398	12,485,650	15,382,524	113,906,893	64.0%
Total	30,050,254	25,067,756	21,927,637	13,394,303	9,073,199	5,970,583	5,351,707	5,524,748	6,015,045	10,039,183	20,180,637	25,444,416	178,039,468	100.0%
% dist by calendar														
months	16.9%	14.1%	12.3%	7.5%	5.1%	3.4%	3.0%	3.1%	3.4%	5.6%	11.3%	14.3%	100.0%	

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Table: 2.4

Q1: Consumption (Therms): Decoupling fear 5 (D15 - Sept 2022 to Aug 2025)	Q1: Consumption	(Therms)	: Decoupling	Year 5 (DY5	- Sept 2022 to Aug 2023	
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Calendar Month -														% dist by rate
Therms	Jan-23	Feb-23	Mar-23	<u>Apr-23</u>	May-23	<u>Jun-23</u>	<u>Jul-23</u>	Aug-23	Sep-22	Oct-22	Nov-22	Dec-22	12 Month Total	<u>classes</u>
R-1	116,525	95,870	88,373	62,568	46,763	36,282	28,494	34,059	34,925	51,370	76,568	110,928	782,726	0.5%
R-3	9,329,701	8,465,362	7,569,224	4,246,158	2,220,578	1,365,550	1,026,452	1,164,300	1,419,761	2,791,355	5,463,419	8,651,928	53,713,788	34.9%
R-4	0	0	0	0	0	0	0	0	18,893	0	0	0	18,893	0.0%
R-5	0	0	0	0	0	0	0	0	337	0	0	0	337	0.0%
R-6	0	0	0	0	0	0	0	0	1,786	0	0	0	1,786	0.0%
R-7	0	0	0	0	0	0	0	0	24	0	0	0	24	0.0%
Total Residential	9,446,226	8,561,233	7,657,597	4,308,726	2,267,340	1,401,831	1,054,946	1,198,359	1,475,727	2,842,726	5,539,988	8,762,857	54,517,556	35.4%
G-41	4,040,241	3,707,974	3,255,844	1,659,695	689,554	369,014	247,475	278,160	406,082	948,173	2,160,083	3,680,755	21,443,051	13.9%
G-42	5,229,624	4,785,614	4,459,339	2,570,209	1,221,290	694,110	488,490	546,070	824,689	1,732,707	3,239,691	4,936,113	30,727,946	19.9%
G-43	1,664,167	1,568,185	1,556,851	985,201	620,382	422,696	283,855	327,210	385,136	770,427	1,142,259	1,583,809	11,310,176	7.3%
G-44	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
G-45	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
G-46														0.0%
G-51	436,236	379,206	363,480	288,024	259,887	228,667	210,418	231,034	248,621	315,924	339,987	410,523	3,712,007	2.4%
G-52	946,592	872,545	866,272	685,066	593,181	528,095	489,857	548,357	557,388	652,378	750,703	900,399	8,390,834	5.4%
G-53	976,089	861,796	1,016,960	805,898	751,177	680,987	585,303	662,093	588,990	720,439	688,706	913,998	9,252,436	6.0%
G-54	1,234,927	1,091,431	1,073,946	1,139,872	1,488,830	1,406,733	1,315,908	1,328,847	1,230,371	1,330,713	1,065,279	980,006	14,686,865	9.5%
G-55	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
G-56	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
G-57														0.0%
G-58	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
INAT	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
Total C&I	14,527,876	13,266,750	12,592,692	8,133,966	5,624,301	4,330,302	3,621,306	3,921,772	4,241,277	6,470,762	9,386,708	13,405,604	99,523,316	64.6%
Total	23,974,102	21,827,983	20,250,289	12,442,692	7,891,641	5,732,133	4,676,252	5,120,130	5,717,005	9,313,488	14,926,695	22,168,461	154,040,872	100.0%
% dist by calendar														
months	15.6%	14.2%	13.1%	8.1%	5.1%	3.7%	3.0%	3.3%	3.7%	6.0%	9.7%	14.4%	100.0%	

Table: 2.5

Consumption (Therms) : % Change relative to TY2019 ((Q1 - Q0) / Q0)

Calendar Month -													12 Month
Therms	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-22	Oct-22	Nov-22	Dec-22	Average
R-1	18.6%	16.2%	8.9%	0.0%	-9.0%	-7.5%	-12.9%	1.5%	-3.5%	8.6%	3.0%	22.2%	7.2%
R-3	-15.6%	-7.7%	-3.4%	-2.5%	-10.1%	6.2%	3.1%	14.9%	11.2%	-3.2%	-22.5%	-6.4%	-8.4%
R-4	-	-	-	-	-	-	-	-	-	-	-	-	-
R-5	-	-	-	-	-	-	-	-	-37.2%	-	-	-	-
R-6	-	-	-	-	-	-	-	-	-54.8%	-	-	-	-
R-7	-	-	-	-	-	-	-	-	-21.5%	-	-	-	-
Total Residential	-21.7%	-14.4%	-10.6%	-9.9%	-16.8%	-2.2%	-4.9%	6.2%	4.6%	-9.9%	-28.0%	-12.9%	-15.0%
G-41	-21 9%	-13.4%	-7.8%	-6.0%	-20 3%	4 9%	5.2%	15 3%	15.2%	-6.7%	-78 1%	-11 4%	-14 1%
G-42	-19.9%	-12.6%	-5.6%	-3.8%	-17.6%	0.1%	-2.7%	2.1%	7.4%	-1.5%	-24.2%	-11.8%	-12.2%
G-43	-12.7%	0.5%	8.5%	9.5%	2.7%	24.3%	1.2%	9.7%	12.9%	21.3%	-12.7%	-5.4%	0.2%
G-44		-	-	-									
G-45	-	-	-	-	-	-	-	-	-	-	-		-
G-46													
G-51	-15.0%	-13.2%	-14.0%	-13.2%	-12.8%	-8.2%	-9.2%	-10.6%	-2.2%	10.5%	-13.0%	-10.0%	-10.1%
G-52	-18.9%	-11.7%	-11.2%	-11.2%	-9.8%	-4.4%	-9.6%	-5.6%	-5.4%	-7.1%	-21.6%	-16.6%	-12.3%
G-53	-27.0%	-19.1%	-2.0%	-2.5%	-3.3%	2.6%	-11.7%	-5.1%	-9.1%	-8.0%	-28.0%	-14.4%	-12.1%
G-54	-7.0%	-9.5%	-9.4%	-12.9%	-9.2%	-15.7%	-25.7%	-24.8%	-24.3%	-20.1%	-31.0%	-24.2%	-18.4%
G-55	-	-	-	-	-	-	-	-	-	-	-	-	-
G-56													
G-57													
G-58	-	-	-	-	-	-	-	-	-	-	-	-	-
INAT													
Total C&I	-19.2%	-11.9%	-5.7%	-5.6%	-11.4%	-4.6%	-14.6%	-10.8%	-7.9%	-6.0%	-24.8%	-12.9%	-12.6%
Total	-20.2%	-12.9%	-7.6%	-7.1%	-13.0%	-4.0%	-12.6%	-7.3%	-5.0%	-7.2%	-26.0%	-12.9%	-13.5%

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Avg Grw Rate

5.6%

5.1%

5.4%

9.7%

11.0% 10.3% Cumulative

Growth Rate

2.3%

2.6%

Table: 3.1

Table: 3.2

Residential

C&I Total

Revenue : Y-o-Y Change

4.5%

2.3%

3.5%

2.5%

1.9%

2.3%

Revenue without RDA	Revenue without RDAF (\$)													
		Rate Case S/A												
	Test Year	(DG 20-105)	DY3	DY4	DY5									
Residential	48,161,903	50,380,528	50,346,404	49,382,370	52,813,149									
C&I	38,909,995	40,702,422	39,797,551	39,660,589	43,195,709									
Total	87,071,898	91,082,950	90,143,955	89,042,958	96,008,858									

Table: 3.3

R0: Revenue (\$) : Test Year 2019

Calendar Month -													12 Month	
Revenue	10-lan	19-Eob	19-Mar	19-Apr	10-May	10-lun	10-101	19-0-00	10-Son	19-Oct	19-Nov	19-Dec	Total	<u>% dist by rate</u>
R-1	00 772	80.487	<u>94 012</u>	76 520	72 /2/	67.029	<u>13-301</u> 66.076	66 525	65 705	71 674	77.608	99 262	909 206	1.0%
N-1	7 177 502	6 240 179	64,912 E E 22 E 09	2 620 521	2 500 000	1 011 212	1 694 069	1 605 145	1 200 174	71,074	4 402 724	6 216 217	45 629 172	E2.4%
R-J	221 669	100 524	178 462	116 / 91	2,505,050	57 252	52 210	51 200	52 157	2,740,731	1/1 192	100.000	1 /22 511	1.6%
R-4	201,008	1010	178,403	1670	1491	1400	1500	1200	1502	1010	141,103	250,005	21/433,311	0.0%
R-6	1925	1919	1904	11721	2401	5026	5676	5471	1395	11800	2272	2321	159701	0.0%
R-7	15055	10521	10035	E2	3000 4E	3330	21	24/1	22	11050 E7	107	120	742	0.2%
Total Posidontial	7 521 660	6 540 502	E 91E EE0	2 926 495	2 671 907	1 042 55	1 910 570	1 010 077	1 026 606	2 012 052	4 726 401	6 624 021	/42	EE 2%
Total Residential	7,521,000	0,540,502	3,813,330	5,620,465	2,071,807	1,945,551	1,810,575	1,019,077	1,930,000	2,913,933	4,750,401	0,024,931	48,101,903	33.376
G-41	2,264,401	1,973,915	1,777,690	1,188,393	835,359	630,220	600,531	599,223	620,369	877,370	1,437,750	1,982,533	14,787,756	17.0%
G-42	2,246,068	1,962,433	1,768,370	1,170,033	736,078	469,305	418,536	432,779	497,941	824,405	1,456,621	2,030,089	14,012,658	16.1%
G-43	527705	449633	415125	279848	111172	77943	71518	70704	75425	111359	330929	471437	2992799	3.4%
G-44	476	482	415	283	220	180	189	264	298	777	1345	1806	6735	0.0%
G-45	7873	6963	5994	3801	3113	1401	1140	2015	3833	7106	11663	14663	69565	0.1%
G-46		943	1887	2830	3773	4717	5660	6604	7547	8490	9434	10377	62262	0.1%
G-51	177,119	156,405	161,170	142,146	136,995	125,110	125,347	131,120	127,160	135,859	148,830	167,986	1,735,247	2.0%
G-52	281837	245759	251897	217343	157571	143273	145459	151356	148770	164333	241496	275201	2424297	2.8%
G-53	249154	205176	200567	165764	89151	79252	78795	80594	76558	88218	174510	204212	1691952	1.9%
G-54	105845	96421	97226	103763	77590	77932	81733	80439	74947	76940	117178	102513	1092528	1.3%
G-55	389	355	360	297	282	241	231	248	241	277	333	389	3642	0.0%
G-56													0	0.0%
G-57													0	0.0%
G-58	2580	3723	3622	3406	1969	1744	1767	1767	1874	2018	2915	3167	30553	0.0%
Total C&I	5,863,447	5,102,208	4,684,323	3,277,909	2,153,274	1,611,318	1,530,907	1,557,114	1,634,963	2,297,153	3,933,005	5,264,372	38,909,995	44.7%
Total	13,385,107	11,642,710	10,499,873	7,104,395	4,825,081	3,554,869	3,341,486	3,376,991	3,571,570	5,211,107	8,669,406	11,889,303	87,071,898	100.0%
% dist by calendar														
months	15.4%	13.4%	12.1%	8.2%	5.5%	4.1%	3.8%	3.9%	4.1%	6.0%	10.0%	13.7%	100.0%	

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Table: 3.4

R1: Revenue (\$) : Decoupling Year 5 (DY5 - Sept 2022 to Aug 2023)

Calendar Month -														% dist by rate
Therms	Jan-23	Feb-23	Mar-23	Apr-23	<u>May-23</u>	Jun-23	<u>Jul-23</u>	Aug-23	Sep-22	Oct-22	<u>Nov-22</u>	Dec-22	12 Month Total	<u>classes</u>
R-1	123,788	103,533	100,893	87,470	76,739	69,064	68,493	68,380	69,532	78,838	92,489	115,296	1,054,516	1.1%
R-3	8,177,320	7,067,862	6,353,884	4,178,415	2,758,944	2,130,638	2,002,064	2,026,811	2,146,787	3,102,244	4,658,213	7,114,531	51,717,715	53.9%
R-4	0	0	0	0	0	0	0	0	35,269	0	0	0	35,269	0.0%
R-5	0	0	0	0	0	0	0	0	1,066	0	0	0	1,066	0.0%
R-6	0	0	0	0	0	0	0	0	4,492	0	0	0	4,492	0.0%
R-7	0	0	0	0	0	0	0	0	90	0	0	0	90	0.0%
Total Residential	8,301,109	7,171,395	6,454,778	4,265,885	2,835,683	2,199,702	2,070,556	2,095,192	2,257,236	3,181,082	4,750,702	7,229,827	52,813,149	55.0%
G-41	2,480,311	2,184,439	2,004,421	1,388,700	898,902	737,526	732,953	703,119	735,151	979,998	1,501,727	2,181,748	16,528,997	17.2%
G-42	2,481,760	2,171,556	2,034,891	1,383,437	754,529	546,465	490,464	485,657	589,283	945,739	1,578,651	2,217,634	15,680,066	16.3%
G-43	605,489	532,961	521,952	356,947	143,542	113,407	95,133	94,057	106,463	163,292	402,829	535,566	3,671,637	3.8%
G-44	0	0	0	0	0	0	0	0	41	0	0	0	41	0.0%
G-45	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
G-46														0.0%
G-51	191,223	168,202	170,257	154,314	146,023	134,684	137,050	134,074	140,006	157,672	160,593	180,656	1,874,754	2.0%
G-52	303,760	274,014	277,053	241,075	179,534	165,217	167,032	165,371	168,662	187,177	248,934	284,815	2,662,645	2.8%
G-53	214,662	189,350	220,167	180,993	99,879	92,682	85,634	87,743	82,291	97,430	156,893	199,143	1,706,866	1.8%
G-54	111,448	99,723	97,944	104,650	85,016	80,673	77,132	73,701	72,751	76,762	97,855	93,049	1,070,704	1.1%
G-55	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
G-56	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
G-57														0.0%
G-58	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
INAT	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
Total C&I	6,388,652	5,620,244	5,326,684	3,810,116	2,307,426	1,870,654	1,785,399	1,743,722	1,894,647	2,608,070	4,147,483	5,692,611	43,195,709	45.0%
Total	14,689,761	12,791,640	11,781,462	8,076,001	5,143,109	4,070,356	3,855,955	3,838,914	4,151,884	5,789,152	8,898,185	12,922,439	96,008,858	100.0%
% dist by calendar														
months	15.3%	13.3%	12.3%	8.4%	5.4%	4.2%	4.0%	4.0%	4.3%	6.0%	9.3%	13.5%	100.0%	

Table: 3.5

Revenue (\$): % Change relative to TY2019 ((R1 - R0) / R0)

Calendar Month -													12 Month
Therms	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-21	Oct-21	Nov-21	Dec-21	Average
R-1	36.4%	28.6%	18.8%	14.3%	4.5%	3.0%	3.7%	2.8%	5.7%	10.0%	19.2%	30.5%	16.0%
R-3	13.9%	13.3%	14.8%	15.4%	10.0%	17.6%	18.8%	19.6%	18.7%	12.9%	3.7%	12.6%	13.3%
R-4	-	-	-	-	-	-	-	-	-33.7%	-	-	-	-97.5%
R-5	-	-	-	-	-	-	-	-	-33.1%	-	-	-	-95.0%
R-6	-	-	-	-	-	-	-	-	-34.5%	-	-	-	-97.2%
R-7	-	-	-	-	-	-	-	-	174.1%	-	-	-	-87.8%
Total Residential	10.4%	9.6%	11.0%	11.5%	6.1%	13.2%	14.4%	15.1%	16.6%	9.2%	0.3%	9.1%	9.7%
G-41	9.5%	10.7%	12.8%	16.9%	7.6%	17.0%	22.1%	17.3%	18.5%	11.7%	4.4%	10.0%	11.8%
G-42	10.5%	10.7%	15.1%	18.2%	2.5%	16.4%	17.2%	12.2%	18.3%	14.7%	8.4%	9.2%	11.9%
G-43	14.7%	18.5%	25.7%	27.6%	29.1%	45.5%	33.0%	33.0%	41.2%	46.6%	21.7%	13.6%	22.7%
G-44	-	-	-	-	-	-	-	-	-86.3%	-	-		-99.4%
G-45	-	-	-	-	-	-	-	-	-	-	-	-	-
G-46													
G-51	8.0%	7.5%	5.6%	8.6%	6.6%	7.7%	9.3%	2.3%	10.1%	16.1%	7.9%	7.5%	8.0%
G-52	7.8%	11.5%	10.0%	10.9%	13.9%	15.3%	14.8%	9.3%	13.4%	13.9%	3.1%	3.5%	9.8%
G-53	-13.8%	-7.7%	9.8%	9.2%	12.0%	16.9%	8.7%	8.9%	7.5%	10.4%	-10.1%	-2.5%	0.9%
G-54	5.3%	3.4%	0.7%	0.9%	9.6%	3.5%	-5.6%	-8.4%	-2.9%	-0.2%	-16.5%	-9.2%	-2.0%
G-55	-	-	-	-	-	-	-	-	-	-	-	-	-
G-56													
G-57													
G-58	-	-	-	-	-	-	-	-	-	-	-		-
INAT													
Total C&I	9.0%	10.2%	13.7%	16.2%	7.2%	16.1%	16.6%	12.0%	15.9%	13.5%	5.5%	8.1%	11.0%
Total	9.7%	9.9%	12.2%	13.7%	6.6%	14.5%	15.4%	13.7%	16.2%	11.1%	2.6%	8.7%	10.3%

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Table: 4.4

p1: Price Per Therms (\$) : Decoupling Year 5 (DY5 - Sept 2022 to Aug 2023)

Table: 4.2

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

Average Price : Y-o	-Y Change				
					Cumulative
				Avg Grw Rate	Growth Rate
	DY3	DY4	DY5	(DY3 to DY5)	(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%

Table: 4.3

Calendar Month -													12 month
Gas Price Per Therm	lan-19	Eab.10	Mar-19	Apr-19	May-19	lun-19	Jul_10	Aug.19	Son-10	Oct-19	Nov-19	Dec-19	12-month
D 1	1 2009	1 1210	0.0716	1.0220	0.8040	0.8040	1.0060	1 0060	1 0060	1.0060	1 0257	1.0257	1 0177
N-1	1.2008	1.1219	0.9710	1.0329	0.0545	0.0545	1.0000	1.0000	1.0000	1.0000	1.0337	1.0357	1.0177
R-3	1 2008	1 1219	0.9716	1.0329	0.8949	0.8949	1.0000	1.0000	1.0000	1.0060	1.0357	1.0357	1.0177
R-5	0 3844	0 3844	0 3844	0 3844	0 3844	0.3844	0 3844	0 3844	0 3844	0 3844	0 3844	0 3844	0 3844
R-6	0.3844	0.3844	0 3844	0 3844	0 3844	0 3844	0 3844	0 3844	0 3844	0 3844	0 3844	0 3844	0 3844
R-7	0.3844	0.3844	0 3844	0 3844	0 3844	0 3844	0 3844	0 3844	0 3844	0 3844	0 3844	0 3844	0 3844
Residential Average	0.7926	0 7532	0.6780	0 7087	0.6397	0.6397	0.6952	0.6952	0.6952	0.6952	0 7101	0 7101	0.3044
nesidentiantierage	017520	017552	0.0700	017007	0.0007	0.0007	0.0552	0.0552	0.0552	0.0552	0.7101	0.7101	0.7011
G-41	1.2097	1.1308	0.9805	1.0418	0.9018	0.9018	1.0122	1.0122	1.0122	1.0122	1.0512	1.0512	1.0265
G-42	1.2097	1.1308	0.9805	1.0418	0.9018	0.9018	1.0122	1.0122	1.0122	1.0122	1.0512	1.0512	1.0265
G-43	1.2097	1.1308	0.9805	1.0418	0.9018	0.9018	1.0122	1.0122	1.0122	1.0122	1.0512	1.0512	1.0265
G-44	0.3844	0.3844	0.3844	0.3844	0.3844	0.3844	0.3844	0.3844	0.3844	0.3844	0.3844	0.3844	0.3844
G-45	0.3844	0.3844	0.3844	0.3844	0.3844	0.3844	0.3844	0.3844	0.3844	0.3844	0.3844	0.3844	0.3844
G-46	0.3844	0.3844	0.3844	0.3844	0.3844	0.3844	0.3844	0.3844	0.3844	0.3844	0.3844	0.3844	0.3844
G-51	1.2150	1.1361	0.9858	1.0471	0.9107	0.9107	1.0234	1.0234	1.0234	1.0234	1.0580	1.0580	1.0346
G-52	1.2150	1.1361	0.9858	1.0471	0.9107	0.9107	1.0234	1.0234	1.0234	1.0234	1.0580	1.0580	1.0346
G-53	1.2150	1.1361	0.9858	1.0471	0.9107	0.9107	1.0234	1.0234	1.0234	1.0234	1.0580	1.0580	1.0346
G-54	1.2150	1.1361	0.9858	1.0471	0.9107	0.9107	1.0234	1.0234	1.0234	1.0234	1.0580	1.0580	1.0346
G-55	0.3844	0.3844	0.3844	0.3844	0.3844	0.3844	0.3844	0.3844	0.3844	0.3844	0.3844	0.3844	0.3844
G-56	0.3844	0.3844	0.3844	0.3844	0.3844	0.3844	0.3844	0.3844	0.3844	0.3844	0.3844	0.3844	0.3844
G-57	0.3844	0.3844	0.3844	0.3844	0.3844	0.3844	0.3844	0.3844	0.3844	0.3844	0.3844	0.3844	0.3844
G-58	0.3844	0.3844	0.3844	0.3844	0.3844	0.3844	0.3844	0.3844	0.3844	0.3844	0.3844	0.3844	0.3844
INAT													
C&I Average	0.7986	0.7591	0.6840	0.7146	0.6456	0.6456	0.7015	0.7015	0.7015	0.7015	0.7197	0.7197	0.7078
Total	0.7956	0.7561	0.6810	0.7116	0.6426	0.6426	0.6984	0.6984	0.6984	0.6984	0.7149	0.7149	0.7044

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Table: 4.4

p1: Price Per Therms (\$) : Decoupling Year 5 (DY5 - Sept 2022 to Aug 2023)

Calendar Month - Gas													
Price Per Therm													Average by
	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-22	Oct-22	Nov-22	Dec-22	rate classes
R-1	1.9534	1.0767	0.8685	0.7568	1.9078	1.8747	1.8380	1.5273	1.8742	1.8742	2.0515	1.8766	1.6233
R-3	2.0924	1.2157	1.0075	0.8958	2.0468	2.0137	1.9770	1.6663	2.0132	2.0132	2.1905	2.0156	1.7623
R-4	1.2009	0.7187	0.6042	0.5427	2.0468	2.0137	1.9770	1.6663	2.0132	2.0132	1.2536	1.1574	1.4340
R-5	2.1073	1.2306	1.0224	0.9107	2.0617	2.0286	1.9919	1.6812	2.0281	2.0281	2.2054	2.0305	1.7772
R-6	2.2880	1.4113	1.2031	1.0914	2.2424	2.2093	2.1726	1.8619	2.2088	2.2088	2.3861	2.2112	1.9579
R-7	1.3085	0.8263	0.7118	0.6503	2.2424	2.2093	2.1726	1.8619	2.2088	2.2088	1.3612	1.2650	1.5856
Total Residential	1.8251	1.0799	0.9029	0.8080	2.0913	2.0582	2.0215	1.7108	2.0577	2.0577	1.9081	1.7594	1.6900
G-41	1.7733	0.8966	0.6884	0.5767	1.7279	1.6948	1.6581	1.3474	1.6844	1.6844	1.8723	1.6974	1.4418
G-42	1.7395	0.8628	0.6546	0.5429	1.6941	1.6610	1.6243	1.3136	1.6506	1.6506	1.8385	1.6636	1.4080
G-43	1.7046	0.8279	0.6197	0.5080	1.5170	1.4839	1.4472	1.1365	1.4735	1.4735	1.8036	1.6287	1.3020
G-44	1.8797	1.0030	0.7948	0.6831	1.8343	1.8012	1.7645	1.4538	1.7908	1.7908	1.9787	1.8038	1.5482
G-45	1.8358	0.9591	0.7509	0.6392	1.7904	1.7573	1.7206	1.4099	1.7469	1.7469	1.9348	1.7599	1.5043
G-46	1.7905	0.9138	0.7056	0.5939	1.5602	1.5271	1.4904	1.1797	1.5167	1.5167	1.8895	1.7146	1.3666
G-51	1.6262	0.7495	0.5413	0.4296	1.5807	1.5476	1.5109	1.2002	1.5359	1.5359	1.7252	1.5503	1.2944
G-52	1.6014	0.7247	0.5165	0.4048	1.4942	1.4611	1.4244	1.1137	1.4494	1.4494	1.7004	1.5255	1.2388
G-53	1.6029	0.7262	0.5180	0.4063	1.4691	1.4360	1.3993	1.0886	1.4243	1.4243	1.7019	1.5270	1.2270
G-54	1.4883	0.6116	0.4034	0.2917	1.4132	1.3801	1.3434	1.0327	1.3684	1.3684	1.5873	1.4124	1.1417
G-55	1.6888	0.8121	0.6039	0.4922	1.6433	1.6102	1.5735	1.2628	1.5985	1.5985	1.7878	1.6129	1.3570
G-56	1.6565	0.7798	0.5716	0.4599	1.5308	1.4977	1.4610	1.1503	1.4860	1.4860	1.7555	1.5806	1.2846
G-57	1.6585	0.7818	0.5736	0.4619	1.4982	1.4651	1.4284	1.1177	1.4534	1.4534	1.7575	1.5826	1.2693
G-58	1.5094	0.6327	0.4245	0.3128	1.4254	1.3923	1.3556	1.0449	1.3806	1.3806	1.6084	1.4335	1.1584
INAT													
Total C&I	1.6825	0.8058	0.5976	0.4859	1.5842	1.5511	1.5144	1.2037	1.5400	1.5400	1.7815	1.6066	1.3244
Average by calendar	1.7538	0.9429	0.7503	0.6469	1.8378	1.8047	1.7680	1.4573	1.7988	1.7988	1.8448	1.6830	1.5072
months													

Table: 4.5

Price : % Change relative to TY2019 ((p1 - p0) / p0)

Calendar Month - Gas	5												
Price Per Therm													12 Month
	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-22	Oct-22	Nov-22	Dec-22	Average
R-1	62.7%	-4.0%	-10.6%	-26.7%	113.2%	109.5%	82.7%	51.8%	86.3%	86.3%	98.1%	81.2%	59.5%
R-3	74.3%	8.4%	3.7%	-13.3%	128.7%	125.0%	96.5%	65.6%	100.1%	100.1%	111.5%	94.6%	73.2%
R-4	0.0%	-35.9%	-37.8%	-47.5%	128.7%	125.0%	96.5%	65.6%	100.1%	100.1%	21.0%	11.8%	40.9%
R-5	448.2%	220.1%	166.0%	136.9%	436.3%	427.7%	418.2%	337.4%	427.6%	427.6%	473.7%	428.2%	362.3%
R-6	495.2%	267.1%	213.0%	183.9%	483.4%	474.7%	465.2%	384.4%	474.6%	474.6%	520.7%	475.2%	409.3%
R-7	240.4%	115.0%	85.2%	69.2%	483.4%	474.7%	465.2%	384.4%	474.6%	474.6%	254.1%	229.1%	312.5%
Total Residential	130.3%	43.4%	33.2%	14.0%	226.9%	221.8%	190.8%	146.1%	196.0%	196.0%	168.7%	147.8%	141.1%
G-41	46.6%	-20.7%	-29.8%	-44.6%	91.6%	87.9%	63.8%	33.1%	66.4%	66.4%	78.1%	61.5%	40.5%
G-42	43.8%	-23.7%	-33.2%	-47.9%	87.9%	84.2%	60.5%	29.8%	63.1%	63.1%	74.9%	58.3%	37.2%
G-43	40.9%	-26.8%	-36.8%	-51.2%	68.2%	64.5%	43.0%	12.3%	45.6%	45.6%	71.6%	54.9%	26.8%
G-44	389.0%	160.9%	106.8%	77.7%	377.2%	368.6%	359.0%	278.2%	365.9%	365.9%	414.8%	369.3%	302.8%
G-45	377.6%	149.5%	95.3%	66.3%	365.8%	357.2%	347.6%	266.8%	354.4%	354.4%	403.3%	357.8%	291.3%
G-46	365.8%	137.7%	83.6%	54.5%	305.9%	297.3%	287.7%	206.9%	294.6%	294.6%	391.5%	346.0%	255.5%
G-51	33.8%	-34.0%	-45.1%	-59.0%	73.6%	69.9%	47.6%	17.3%	50.1%	50.1%	63.1%	46.5%	25.1%
G-52	31.8%	-36.2%	-47.6%	-61.3%	64.1%	60.4%	39.2%	8.8%	41.6%	41.6%	60.7%	44.2%	19.7%
G-53	31.9%	-36.1%	-47.5%	-61.2%	61.3%	57.7%	36.7%	6.4%	39.2%	39.2%	60.9%	44.3%	18.6%
G-54	22.5%	-46.2%	-59.1%	-72.1%	55.2%	51.5%	31.3%	0.9%	33.7%	33.7%	50.0%	33.5%	10.4%
G-55	339.3%	111.3%	57.1%	28.0%	327.5%	318.9%	309.3%	228.5%	315.8%	315.8%	365.1%	319.6%	253.0%
G-56	330.9%	102.9%	48.7%	19.6%	298.2%	289.6%	280.1%	199.2%	286.6%	286.6%	356.7%	311.2%	234.2%
G-57	331.5%	103.4%	49.2%	20.2%	289.8%	281.1%	271.6%	190.8%	278.1%	278.1%	357.2%	311.7%	230.2%
G-58	292.7%	64.6%	10.4%	-18.6%	270.8%	262.2%	252.7%	171.8%	259.2%	259.2%	318.4%	272.9%	201.4%
INAT													
Total C&I	110.7%	6.2%	-12.6%	-32.0%	145.4%	140.2%	115.9%	71.6%	119.5%	119.5%	147.5%	123.2%	87.1%
Average by calendar	120.4%	24.7%	10.2%	-9.1%	186.0%	180.8%	153.2%	108.7%	157.6%	157.6%	158.0%	135.4%	114.0%
months													

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Table: 5.1

Table: 5.2

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								

UPC : Y-o-Y Change					
					Cumulative
				Avg Grw Rate	Growth Rate
	DY3	DY4	DY5	(DY3 to DY5)	(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%

Table: 5.3

q0: Usage Per Customer, UPC (Therms) : Test Year 2019

Calendar Month -													12-month
Therms	<u>Jan-19</u>	Feb-19	<u>Mar-19</u>	<u>Apr-19</u>	<u>May-19</u>	<u>Jun-19</u>	<u>Jul-19</u>	Aug-19	<u>Sep-19</u>	<u>Oct-19</u>	<u>Nov-19</u>	<u>Dec-19</u>	<u>average</u>
R-1	27.6	25.7	22.8	18.2	14.5	11.4	9.3	9.5	10.6	13.4	21.7	25.6	17.5
R-3	148.2	135.8	104.7	60.2	33.1	17.8	13.4	13.6	17.7	38.4	96.6	121.6	66.8
R-4	142.8	130.0	101.8	59.4	32.8	18.4	13.8	14.0	17.6	37.5	93.2	117.6	64.9
R-5	65.4	50.4	42.1	23.7	14.6	7.6	6.2	6.7	8.0	15.0	25.6	33.1	24.8
R-6	288.0	241.8	203.3	96.9	48.4	18.3	13.7	15.2	19.6	50.2	100.2	133.5	102.4
R-7	236.0	219.0	205.0	66.0	24.7	9.7	7.7	7.0	10.3	38.7	95.3	131.7	87.6
Total Residential	142.8	130.9	101.1	58.4	32.3	17.6	13.2	13.5	17.4	37.3	93.2	117.4	64.6
G-41	531.9	485.8	361.8	187.9	90.7	38.9	25.6	26.4	39.8	107.9	319.0	422.0	219.8
G-42	4,541.3	4,212.1	3,283.9	1,932.4	1,041.5	505.9	349.2	368.6	547.8	1,203.8	2,991.4	3,788.2	2,063.8
G-43	31,763.9	29,453.6	24,733.2	16,666.0	10,980.3	6,538.5	5,292.2	6,089.3	7,104.3	12,708.0	27,270.1	31,586.9	17,515.5
G-44	835.0	385.5	285.5	138.5	76.5	36.0	31.5	26.0	56.7	280.5	612.5	884.8	304.1
G-45	4,266.5	3,752.3	2,982.0	1,584.5	1,285.8	246.3	105.8	211.7	729.3	1,915.4	3,502.4	4,614.0	2,099.7
G-46		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
G-51	383.4	361.7	315.9	257.0	224.7	194.0	172.8	190.9	195.1	211.7	298.8	338.7	262.1
G-52	2,994.1	2,806.9	2,487.9	2,025.4	1,656.8	1,434.6	1,351.0	1,431.1	1,503.2	1,716.9	2,389.1	2,589.7	2,032.2
G-53	36,138.8	31,349.7	29,663.1	24,302.3	21,567.6	18,957.4	19,502.6	21,140.7	19,633.7	23,023.7	28,976.0	31,405.8	25,471.8
G-54	47,408.4	46,396.7	40,892.5	48,485.0	58,555.7	61,809.3	65,556.6	67,940.5	65,030.6	64,052.6	61,793.6	47,903.3	56,318.7
G-55	207.0	192.3	168.0	87.7	57.3	19.3	4.0	19.0	19.7	52.3	140.3	208.3	97.9
G-56													
G-57													
G-58	19,016.0	33,980.0	31,595.0	29,380.0	21,467.0	17,183.0	16,968.0	16,982.0	20,073.0	22,561.0	23,451.0	26,099.0	23,229.6
Total C&I	1,381.4	1,277.2	1,022.6	684.7	495.5	371.5	338.8	352.1	380.8	539.3	984.3	1,163.3	749.3
Total	308.3	284.1	224.2	141.8	93.4	63.8	55.5	57.4	64.4	103.2	211.8	257.1	155.4

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Table: 5.4

q1: Usage Per Customer, UPC (Therms) : Decoupling Year 5 (DY5 - Sept 2022 to Aug 2023)

Calendar Month -													12-month
Therms	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-22	Oct-22	Nov-22	Dec-22	average
R-1	33.4	30.1	26.1	18.4	13.8	11.2	8.2	10.0	10.4	15.1	22.6	31.8	19.3
R-3	110.5	109.8	90.5	50.4	26.3	17.0	11.9	13.7	17.9	33.6	67.6	103.7	54.4
R-4	-	-	-	-	-	-	-	-	-	-	-	-	-
R-5	-	-	-	-	-	-	-	-	-	-	-	-	-
R-6	-	-	-	-	-	-	-	-	-	-	-	-	-
R-7	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Residential	107.5	106.7	88.0	49.2	25.8	16.7	11.7	13.6	17.5	32.9	65.8	100.8	53.0
G-41	402.4	401.9	325.2	165.4	69.1	39.3	24.7	28.3	44.4	97.7	225.3	369.1	182.7
G-42	3,507.3	3,477.7	2,944.4	1,687.9	798.0	477.3	313.7	357.0	567.8	1,152.4	2,214.2	3,292.1	1,732.5
G-43	25,562.5	25,142.2	23,747.1	14,895.9	9,381.6	6,538.1	4,250.6	5,105.3	6,122.3	12,165.6	18,112.1	24,359.2	14,615.2
G-44	-	-	-	-	-	-	-	-	-	-	-	-	-
G-45	-	-	-	-	-	-	-	-	-	-	-	-	-
G-46													
G-51	333.7	314.7	277.9	218.9	197.4	182.5	156.2	174.8	195.0	241.0	267.1	314.8	239.5
G-52	2,225.6	2,219.3	2,025.5	1,595.6	1,379.4	1,292.7	1,109.4	1,260.7	1,371.2	1,551.4	1,834.4	2,119.1	1,665.4
G-53	30,320.1	26,492.6	29,667.2	24,172.7	23,267.0	21,336.4	16,939.6	19,267.8	19,522.0	21,860.3	20,845.0	27,910.4	23,466.8
G-54	47,217.3	42,131.2	42,843.6	41,973.2	53,006.9	52,167.5	48,388.3	49,035.6	47,080.5	51,091.7	42,575.3	36,255.7	46,147.2
G-55	-	-	-	-	-	-	-	-	-	-	-	-	-
G-56													
G-57													
G-58	-	-	-	-	-	-	-	-	-	-	-	-	-
G-58	-	-	-	-	-	-	-	-	-	-	-	-	-
Total C&I	1,085.2	1,076.7	940.6	605.6	420.2	343.1	268.0	295.8	341.9	495.3	730.4	1,006.0	634.1
Total	236.7	235.8	201.6	123.2	78.0	59.5	45.2	50.4	59.0	93.6	153.9	221.1	129.8

Table: 5.5

UPC (Therms) : % Change relative to TY2019 ((q1 - q0) / q0)

Calendar Month -													12 Month
Therms	Jan-23	Feb-23	Mar-23	Apr-23	<u>May-23</u>	Jun-23	Jul-23	Aug-23	Sep-22	Oct-22	Nov-22	Dec-22	Average
R-1	20.9%	17.0%	14.1%	0.9%	-4.8%	-2.3%	-11.4%	5.8%	-1.6%	12.7%	4.4%	24.5%	9.9%
R-3	-25.4%	-19.1%	-13.6%	-16.2%	-20.5%	-4.9%	-11.3%	0.7%	1.1%	-12.6%	-30.0%	-14.8%	-18.5%
R-4	-	-	-	-	-	-	-	-	-	-	-	-	-
R-5	-	-	-	-	-	-	-	-	-	-	-	-	-
R-6	-	-	-	-	-	-	-	-	-	-	-	-	-
R-7	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Residential	-24.7%	-18.5%	-13.0%	-15.8%	-20.1%	-4.9%	-11.4%	0.7%	0.6%	-12.0%	-29.4%	-14.1%	-17.9%
G-41	-24.4%	-17.3%	-10.1%	-12.0%	-23.8%	1.1%	-3.5%	7.1%	11.6%	-9.5%	-29.4%	-12.5%	-16.9%
G-42	-22.8%	-17.4%	-10.3%	-12.7%	-23.4%	-5.7%	-10.2%	-3.2%	3.7%	-4.3%	-26.0%	-13.1%	-16.1%
G-43	-19.5%	-14.6%	-4.0%	-10.6%	-14.6%	0.0%	-19.7%	-16.2%	-13.8%	-4.3%	-33.6%	-22.9%	-16.6%
G-44	-	-	-	-	-	-	-	-	-	-	-	-	-
G-45	-	-	-	-	-	-	-	-	-	-	-	-	-
G-46													
G-51	-13.0%	-13.0%	-12.0%	-14.9%	-12.1%	-5.9%	-9.6%	-8.4%	0.0%	13.8%	-10.6%	-7.1%	-8.6%
G-52	-25.7%	-20.9%	-18.6%	-21.2%	-16.7%	-9.9%	-17.9%	-11.9%	-8.8%	-9.6%	-23.2%	-18.2%	-18.1%
G-53	-16.1%	-15.5%	0.0%	-0.5%	7.9%	12.5%	-13.1%	-8.9%	-0.6%	-5.1%	-28.1%	-11.1%	-7.9%
G-54	-0.4%	-9.2%	4.8%	-13.4%	-9.5%	-15.6%	-26.2%	-27.8%	-27.6%	-20.2%	-31.1%	-24.3%	-18.1%
G-55	-	-	-	-	-	-	-	-	-	-	-	-	-
G-56													
G-57													
G-58	-	-	-	-	-	-	-	-	-	-	-	-	-
INAT													
Total C&I	-21.4%	-15.7%	-8.0%	-11.6%	-15.2%	-7.6%	-20.9%	-16.0%	-10.2%	-8.2%	-25.8%	-13.5%	-15.4%
Total	-23.2%	-17.0%	-10.1%	-13.1%	-16.5%	-6.7%	-18.6%	-12.2%	-8.4%	-9.3%	-27.4%	-14.0%	-16.5%