Before the

PUBLIC UTILITIES COMMISSION
STATE OF NEW HAMPSHIRE

DG 22-045

Direct Testimony of
Faisal Deen Arif and Mark Thompson

June 8, 2023

Contents

INTRODUCTION

Q1: Please state your name, occupation, and business address.

A1: My name is Faisal Deen Arif. I am employed by the New Hampshire Department of Energy as the Director of Gas in its Regulatory Division. My business address is 21 South Fruit Street, Suite 10, Concord, New Hampshire, 03301.

Q2: Please summarize your educational and professional experience.

A2: I am an economist by training. I have a Ph.D. in Economics with specialization in Regulatory Economics and International Trade and Finance. I also have over 7 years of relevant professional experience in the field. For additional information, please see Attachment 1 (CV – Deen Arif)

Q3: Please state your name, occupation, and business address.

A3: My name is Mark Thompson. I am president of Forefront Economics Inc, 3800 SW Cedar Hills Blvd, Suite 241, Beaverton, Oregon, 97005. I am currently a sub-contractor working for the New Hampshire Department of Energy on the H. Gil Peach and Associates, LLC team.

Q4: Please summarize your educational and professional experience.

A4: I am an economist by training specializing in the field of econometric modeling and energy utility economics. I have a Master of Science degree in Agricultural and Natural Resource Economics with a minor in statistics from Oregon State University and a Bachelor of Science degree in Agricultural Economics from Oklahoma State University. Since founding Forefront Economics in 1993 I have led and conducted a wide range of empirically based projects in the area of energy utility policy, load forecasting, program impact evaluation and revenue decoupling evaluation. Prior to starting Forefront Economics, I managed DSM program evaluation within the Rates and Regulatory affairs department of Portland General Electric. For additional information, please see Attachment 2 (CV – Mark E. Thompson).

Q5: What is the purpose of your testimony in this proceeding?

A5: Our testimony will:

- provide observations and recommendations on Liberty Utilities (EnergyNorth Natural Gas) Corp. d/b/a Liberty (Liberty, Liberty Gas or the Company) claim of $3,511,438 (hereafter referred to as $3.5 million) in decoupling revenue from Decoupling Year 4 (DY4) in this current Docket No. DG 22-045; and
- highlight other issues relevant to the claim.

SUMMARY

Q6: Please state the issues you intend to explore in your testimony.

A6: In our testimony, we plan to provide the following:

- A discussion on Liberty Gas's current claim to recover $3,511,438 from DY4;
- An analysis of the impacts of:
  - Equivalent Bills (EB) calculation
  - Rate schedule re-classification
  - Other issues; and
- DOE recommendation.

Q7: What is Liberty's claim and what is the basis of its claim?

A7: Liberty Gas proposes to recover $3,511,438 in decoupling revenues that includes:

- $727,670[1] from prior year under-collection[2] from DY3 (spanning from September 1, 2020 to August 31, 2021)
- $2,783,768[3] from under-collection in DY4 (running from September 1, 2021 through August 31, 2022)

[1] $307,157 from residential and $420,513 from Commercial & Industrial (C&I) customers. See page 2, Table 1a of the Technical Statement of Craig A. Holden, Tab 39 in DG 22-045.
[2] In this Technical Statement, Liberty asserts that "[t]he corrected balance carryover of $727,670 for combined residential and commercial solely reflects the estimated uncollected balance of the approved decoupling year 2020/2021 as of August 31, 2022." See page 1, ibid.
[3] $2,551,253 from residential and $232,515 from C&I customers. See page 2, Table 1b, ibid.

- A residential RDAF[4] charge of $0.0423 per therm and a C&I RDAF charge of $0.0055 per therm[5]

Subject to the approval by the New Hampshire Public Utilities Commission (the Commission, or PUC), Section 19, Sub-section D of Tariff 11 provides Liberty the authority to reconcile its decoupling revenues through the RDAF mechanism.

Q8: What is DOE's opinion on Liberty's claim?

A8: Based on the materials reviewed in this case, our most pertinent two observations are summarized as follows:

- **Equivalent Bill (EB) calculation:** is a complex process, performed at the customer-level by Liberty Gas, which is, *de facto*, a proxy for customer count. Given the current decoupling framework that is structured as a Revenue Per Customer (RPC) charge, it is imperative that there be parity in treating actual and trued-up EB counts both for the allowed and actual decoupling revenues. This is not observed in the current case. For a detailed discussion on its impact, please see *Facts and Observations* and *True-ups and Equivalent Bills Calculation* sections of this testimony.
- **Rate Schedule Re-classification:** was performed thrice (in June 2019, June 2020, and July 2021) by the Company[6]. This could impact the allowed revenue targets for rate classes impacted by

[4] RDAF is the Revenue Decoupling Adjustment Factor, a reconciliatory mechanism included in Tariff 11, design to enable the Company to reconcile decoupling revenue accounts.
[5] See page 2, Table 1d of the Technical Statement of Craig A. Holden, Tab 39 in DG 22-045.
[6] See Attachment 3.

reclassification, and specifically impact reported $727,670 prior-period under-collection. See *Rate Schedule Re-classification* section of this testimony for a detailed discussion on this issue.

These two issues are fundamentally linked to Liberty's current $3.5 million claim as they impact the allowed decoupling revenue targets, against which the actual decoupling revenues was compared when Liberty calculated its decoupling revenue shortfall that is presented in this case.

Q9: Please summarize your recommendations on the identified issues.

A9: Due to the significant complexity surrounding the calculations provided by Liberty in support of its decoupling request, the Department of Energy (the Department or DOE) is unable to formulate a specific recommendation on Liberty's current claim; instead, and to assist the Commission, the Department provides summaries of its analysis and observations, which focus on areas where DOE thinks Liberty decoupling mechanism can be made more transparent and reviewable.

ANALYSIS

Facts and Observations

Q10: Please identify the relevant facts related to Liberty's current claim.

A10: Having reviewed the materials from Liberty Gas's multiple submissions as well as the discovery responses, the Department notes the following:

- For Decoupling Year 4 (DY4), Liberty asserts that its overall RDAF under-collection is $3,511,438, of which $727,670 [7] is from prior year under-collection[8] from DY3 (spanning from September 1, 2020 to August 31, 2021), and $2,783,768 [9] is from under-collection in DY4 (covering September 1, 2021 through August 31, 2022).

- The composition of the RDAF under-collection of $2,783,768 from DY4 represents[10]:
    - A revenue deficiency of $1,732,755 (i.e., 62%) due to True-ups (reported four months after any given calendar month)
    - An under-collection of $991,327 (i.e., 36%) due to monthly revenue difference (reported at the end of any given calendar month)
    - A deficiency of $59,686 (i.e., 2%) due to carrying charges (reported at the end of any given calendar month)

- In terms of the disaggregation between the residential and C&I rate classes, the composition of the RDAF under-collection of $2,783,768 from DY4 represents[11]:
    - An under-collection of $2,551,253 (92%) from residential customers
    - A revenue deficiency of $232,515 (8%) from C&I customers

[7] $307,157 from residential and $420,513 from Commercial & Industrial (C&I) customers. See page 2, Table 1a of the Technical Statement of Craig A. Holden, Tab 39 in DG 22-045.
[8] In this December 8, 2022 Technical Statement, Liberty asserts that "[t]he corrected balance carryover of $727,670 for combined residential and commercial solely reflects the estimated uncollected balance of the approved decoupling year 2020/2021 as of August 31, 2022." See page 1, ibid.
[9] $2,551,253 from residential and $232,515 from C&I customers. See page 2, Table 1b, ibid.
[10] See Attachment 9 (page 4), which is based on Liberty's Sch4 RDAF – REVISED Page 3 of 3 (from Attachment appended to Technical Statement of Craig A. Holden, Tab 39 in DG 22-045).
[11] See Attachment 9 (page 4).

- For residential customer classes, of $2,551,253 RDAF under-collection:
    - True-up represents $949,817 (37%) of overall residential RDAF deficiency
    - Monthly revenue difference represents $1,531,167 (60%); and
    - Applied interest (carrying charges) represents $70,268 (3%)

- For C&I customer classes, of $232,515 RDAF under-collection:
    - True-up represents $782,938 (i.e., an under-collection)
    - Monthly revenue difference represents ($539,840) (i.e., an <u>over-collection</u>); and
    - Applied interest (carrying charges) represents ($10,583) (i.e., an <u>over-collection</u>)

- The estimated allowed revenue (reported at the end of a given calendar month and before the True-up process) for DY4 is $91,749,158 [12]. [A]

- The actual revenue (reported at the end of a given calendar month and is never trued-up again) for DY4 is $89,082,025 [13]. This actual revenue goes through a monthly adjustment process to arrive at an Adjusted Actual Revenue of $90,757,832, the composition of which is as follows:
    - Actual Revenue: $89,082,025 [B]
    - MEP[14] Premium: ($112,267) [15] [C]

[12] See Attachment 10 (page 2), which is based on Liberty's response to Data Request Set 3 (November 23, 2022) and Technical Session Data Request Set 1 (May 30, 2023).
[13] ibid.
[14] MEP refers to the Managed Expansion Plan program.
[15] A bracketed figure implies a net over-collection and vice versa.

  - Low Income Discount[16]: $1,228,786 [D]
  - Unbilled daily meter change from prior month[17]: $6,909 [E]
  - Unbilled revenue change from prior month[18]: $552,380 [F]
  - Adjusted Actual Revenue: $90,757,832 [G] = [B]+[C]+[D]+[E]+[F]

- For DY4, the decoupling revenue shortfall based on the monthly adjustments (and prior to the True-up process) is $991,327. [H] = [G] – [A]

- For DY4, the reported decoupling revenue shortfall from the True-up process is $1,739,360 [19].

- The data does not show a commensurate True-up process for the Adjusted Actual Revenue.

True-ups and Equivalent Bills Calculation

Q11: What are Equivalent Bills and why are they important in determining Liberty's revenue decoupling adjustment factor (RDAF)?

[16] Collected through the Gas Assistance Program (RGAP) component of Local Distribution Adjustment Charge (LDAC). This applies only to R-4 (residential heating) customer class. For a list of Liberty accounts affecting the MEP adjustment, see Attachment 11.
[17] This applies only to a sub-set of C&I customers. For a list of Liberty accounts affecting the adjustment due to unbilled daily meter change for any given calendar month, see Attachment 11.
[18] For a list of Liberty accounts affecting the adjustment due to unbilled revenue change for any given calendar month, see Attachment 11.
[19] This revenue deficiency is attributed to an average 4.4% increase in equivalent bill counts from the True-up process.

A11: Equivalent Bills (EBs) can be thought of as the number of customers normalized to a 30-day[20] month. They are used to establish allowed Revenue Per Customer (RPC) within each rate class by dividing total allowed revenue by equivalent bills at the end of the test year[21]. They are also used to establish monthly allowed revenue during a decoupling year by serving as a multiplier to monthly approved RPC for each rate class.

Q12: Is there an issue with how Equivalent Bills are used in Liberty's decoupling mechanism?

A12: Yes. We see several issues related to EBs that impact the RDAF.

Q13: Please explain these issues.

A13: Equivalent bills are multiplied by approved RPC to determine allowed revenue for each rate class and each month. Liberty uses a four-month period following each month to arrive at a final number of equivalent bills for any given month. For example, equivalent bills for August are not known until December. Liberty produces an initial estimate each month and then a final equivalent bill count four months later. The initial count is comprised of actual equivalent bills for that rate class and calendar month and an estimate of bills to complete the month. A final number for the bills to complete the month is released four months later. This process raises the following issues:

- Allowed revenue for any given month is not determined until four months after that month.
- Actual revenue follows a different process and is known soon after the end of the month.

[20] See section 19 D, sub-section 4d of Tariff 11.
[21] Test Year was 2019. See Docket DG 20-105.

- The difference between the initial and final estimates of bills to complete the month, referred to as the true-ups) almost always work to increase the total equivalent bills and hence the allowed revenue for the month.

Q14: How do actual and allowed revenue follow a different process?

A14: For actual revenue Liberty uses revenue actually recorded as received during any given calendar month. Hence, actual revenue is known within a week following the end of a calendar month. Allowed revenue is calculated as actual equivalent bills multiplied by approved RPC. Liberty waits for four full months following the end of any given month before equivalent bills are considered actual and used for a final estimate of allowed revenue. It is unclear why actual revenue can be known within days following the end of the month but actual number of customers (equivalent bills) cannot be known for four months. The impact on the RDAF of this misalignment between the process for determining actual revenues and actual equivalent bills is unknown.

Q15: Please explain the issue related to true-ups.

A15: True-ups relate to the four-month lag between any given calendar month and when actual equivalent bills are known. Within a week following the end of a calendar month, journal entries for revenue decoupling adjustments for the residential and commercial rate groups are made to align actual and allowed revenues. The initial estimate is based on known equivalent bills for the calendar month and an estimate of the equivalent bills outstanding to complete the calendar month. Four months later another set of journal entries are made to true-up the original estimate of allowed revenue with revised numbers for the actual number of customers (equivalent bills) for that month. For example, revenue decoupling adjustments for April are adjusted with a true-up based on what happens to April equivalent bills from billing activity in the months of May, June, July, and August.

In a sense the original estimate of equivalent bills to complete any given month is a forecast and the final estimate of equivalent bills to complete a calendar month, available four months later, is the actual. It is reasonable to expect that when comparing actual to forecast the number of times actual is higher than forecast would be roughly equal to the number of times actual is lower than forecast. Likewise, it is reasonable to expect that the difference between actual and forecast tend to offset each other (i.e., average near zero). However, analysis of data provided by Liberty through Data Requests from this current docket DG 22-045 show that actuals exceed forecast equivalent bills in 98% of the cases examined by DOE over a 12-calendar month period September 2021 through August 2022. The average impact from true-ups was to add 2.4% to residential and 4.4% to commercial original estimates of equivalent bills to complete the calendar month.

It is unclear why actual equivalent bills to complete a calendar month are on average 2.4% and 4.4% higher for residential and commercial, respectively, than forecast but the impact on the RDAF is clear. Through the process of true-ups to equivalent bills, Liberty increases (reduces) the revenue to be collected from (returned to) customers through the RDAF component of LDAC.

Q16: What do you recommend?

A16: DOE recommends that Liberty's decoupling mechanism incorporate a similar process for determining actual and allowed revenue that better aligns the two and reduces the complexity associated with the true-up of equivalent bills. One way to achieve this is to move to a decoupling mechanism that is based on total allowed revenue rather than approved revenue per customer. This is an issue that DOE intends to explore further in Liberty's next rate case when the decoupling provision can be changed.

Rate Schedule Re-classification

Q17: Please define rate schedule reclassification.

A17: Rate schedule reclassification is simply the movement of a customer from one rate schedule to a different rate schedule.

Q18: Why is rate reclassification important in the context of decoupling?

A18: The Liberty Revenue Decoupling Mechanism (RDM) is based on Revenue Per Customer. Allowed (target) revenue for any given month is the number of customers in a rate class multiplied by the allowed RPC for that rate class, summed across all rate classes. A change in a customer's rate schedule that results in a change from one rate class to another, will have an impact on total allowed revenue.

Q19: Is the allowed RPC meaningfully different between rate classes.

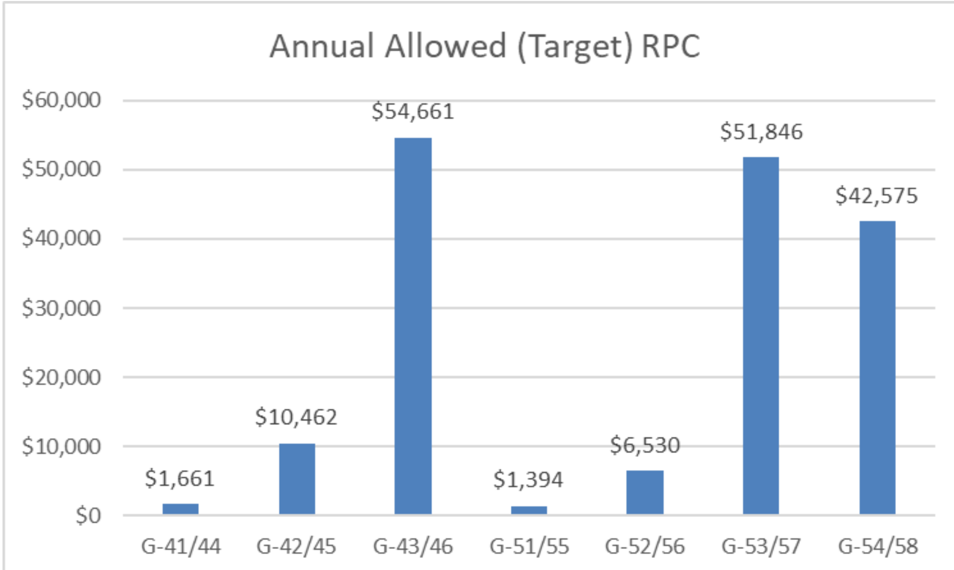
A19: Yes. There are meaningful differences in allowed RPC between the rate classes tied to differences in the cost to serve various customer classes. As stated, allowed RPC varies monthly and by rate class. The table below shows the allowed annual RPC which is equal to the permanent monthly rates from the DG 20-105 Settlement Agreement (Exhibit 49 from DG 20-105) plus the STEP adjustment for each decoupled rate class summed across all months. Table 1 shows the allowed revenue per customer by rate class when a customer is served by Liberty in that rate class for an entire year.

Table 1. Annual Allowed (Target) Revenue Per Customer.[22]

Rate Class	Annual Allowed (Target) RPC
R-1/5	$277
R-3/6	$657
R-4/7	$657
G-41/44	$1,661
G-42/45	$10,462
G-43/46	$54,661
G-51/55	$1,394
G-52/56	$6,530
G-53/57	$51,846
G-54/58	$42,575

As can be seen in Table 1, there are large differences in allowed RPC within the non-residential customer rate classes. Rate classes from the commercial rate group are shown in Figure 1 to better show the large differences in allowed RPC between the commercial rate classes.

[22] Source: Attachment 7 (DG 20-105 Settlement Agreement, Revenue Decoupling Adjustment, Permanent Rates Revenue Per Customer (effective August 1, 2021), Exhibit 49, Bates 036)



Q20: Please provide an example of how rate reclassification impacts allowed revenue.

A20: A customer on, say, rate schedule G-42 that is moved to rate schedule G-43 would increase Liberty's annual allowed revenue by $44,199 ($54,661-$10,462). The Rate Review Process run by Liberty for the period ending May 2021 resulted in the recommendation that 12 commercial customers be moved from G-42 to G-43 (*See* Attachment 3, Liberty's response to DOE Data Requests 3-6 in DG 22-041). If these 12 customers were all present in the test year used for DG 20-105 (12 months ending December 31, 2019) as G-42 customers and then moved to G-43 in a subsequent decoupling year, Liberty's allowed revenue would increase by $530,388 ($44,199 x 12).

Q21: Wouldn't a change in rate schedule also impact actual revenue.

A21: Yes. But because the actual revenue received from the customer would be based on that customer's actual billing determinants and the allowed revenue for that customer is based on the customer class as a whole, there can be significant differences between the impacts to actual and allowed revenues from rate reclassification. Liberty identified a small change to actual annual revenues, a decline of $22 (0.0%) associated with moving all 12 G-42 customers discussed in the previous answer to the G-43 rate schedule (*See* Attachment 3, Liberty's response to DOE Data Requests 3-6 in DG 22-041). Using this example, moving these 12 customers from G-42 to G-43 would have resulted in an increase in the Commercial Revenue Decoupling Deficiency (or reduction in the Excess) of $530,410 ($530,388 + (-22)) for the decoupling year.

Q22: What has been the net effect of rate reclassification on the Revenue Decoupling Deficiency (Excess) recovered through the RDAF?

A22: We don't know and can't say for sure. The Rate Review Process run by Liberty for the period ending May 2021 resulted in 868 commercial customer rate reclassification recommendations (*See* Attachment 3, Liberty's response to DOE Data Requests 3-6 in DG 22-041). Some changes would allow greater decoupling revenue recovery, some rate schedule changes would reduce Liberty's revenue recovery through the decoupling mechanism, and some of the recommended changes may not have been implemented by Liberty after manual review.

Q23: What do you recommend?

A23: Because rate reclassification after the establishment of a test year will result in imbalances between the test year and decoupling year, we recommend that Liberty not conduct the rate review process between rate cases and test years. This is especially important when using an allowed revenue per customer based decoupling mechanism rather than a decoupling mechanism based on total allowed revenue. DOE's recommendation is consistent with the recommendation of Liberty's witness Gregg Therrien, Concentric Energy Advisors, in DG 22-041:

> "Recommendation 1: Any C&I rate review must be incorporated into the adjusted (rate year) equivalent bills calculation, and do not perform any rate reviews between rate cases." See Attachment 8 (Gregg Therrien, "22-041_2022-07-06_ENGI_ATT-TESTIMONY-MENARD.PDF", Bates page 1587).

Mr. Therrien's recommendation basically says to keep existing customers on the same rate schedule as the one they were on in the test year used to establish base rates, and to keep them there at least until the next rate case. DOE agrees.

Other Relevant Issues

Revenue Per Customer vs Total Revenue

Q24: How does RPC impact revenue decoupling vis-à-vis Total Revenue approach?

A24: When revenue is decoupled from volumetric sales, the revenue required by a utility to cover its expenses and earn a reasonable return is established. Fundamentally, decoupling is a mechanism designed to assure that a utility achieves the total allowed revenue by tracking the differences between actual and allowed revenue and adjusting customer bills up or down for any differences. Variants to this fundamental approach based on total allowed revenue include an allowed revenue per customer by design such as the RDAF used by Liberty. The allowed RPC design has the advantage of accommodating new customer growth by automatically adjusting total allowed revenue through a higher number of customers multiplied by allowed RPC.

However, RPC approaches have the disadvantage of being more complex since they introduce another factor in determining total allowed revenue. Any process that impacts the customer count in any decoupled rate class has the potential to materially impact total allowed revenue. In this testimony we have presented two such processes, the true up of equivalent bills and the reclassification of customer rates. Each of these processes has the potential to impact allowed revenue in a significant way. For this reason, DOE recommends that Liberty's decoupling mechanism be reviewed for ways to simplify and make it more transparent. One such way is to move from an RPC based decoupling mechanism to a total revenue based decoupling mechanism. This is an issue that DOE intends to explore further in Liberty 's next rate case when the decoupling provision can be changed.

RECAPITULATION

Q25: Please provide a summary of your discussion.

A25: As highlighted in this testimony, the current RDM design along with its significantly complicated underlying calculation, did not allow DOE to formulate a position on Liberty's current RDAF ask. The Department, instead, provides the following observations:

- Equivalent bill calculation, the True-up process, and the rate schedule reclassification – are some of the issues identified to be inherently linked to the calculation of overall $3,511,438 RDAF under-collection in DY4.

- The true-up of estimated equivalent bills (i.e., the customer count), performed and presented by Liberty four months after any specific calendar month, represents a 4.4% increase in customer counts on average but accounts for 62%[23] of the RDAF revenue deficiency in DY4.

- Liberty performed three rate schedule reclassifications. In the context of revenue decoupling, this would impact allowed (i.e., target) revenues for the rate classes impacted by such reclassification and, thus, materially impact the overall revenue deficiency (excess) calculation.

- In the context of RDM design, Revenue Per Customer (RPC) approach introduces significant complexities. Total Revenue (TR) approach, on the other hand, retains most of the beneficial objectives of revenue decoupling without much of the complexities of an RPC approach.

- The prior period balance of $727,670 in RDAF deficiency from DY3, that is included in the overall $3.5 million under-collection, arguably, suffer from the same methodological issues as presented above.

- These methodological issues are significant in that they materially impact the RDAF over-/under-collection in any given decoupling year, and hence call for continued review of the RDM structure during the next rate case.

[23] That is, of the total DY4 RDAF deficiency of $2,783,768 (see page 2, Table 1b of the Technical Statement of Craig A. Holden, Tab 39 in DG 22-045), the deficiency due to true-ups amounts to $1,732,755 (see Attachment 9).

CONCLUSION

Q26: Does this conclude your testimony?

A26: Yes.

ATTACHMENT 1

Educational and Professional Experience of Dr. Faisal Deen Arif

ATTACHMENT 2

Curriculum Vitae of Mark E. Thompson

ATTACHMENT 3

Liberty's response to Data Request Set 3, Response DOE 3-6 (March 23, 2023) in DG 22-041

ATTACHMENT 4

Liberty's response to Technical Session Data Request Set 1, Responses DOE TS 1-1 through TS 1-5 (attachments omitted) (May 30, 2023) in DG 22-045

ATTACHMENT 5

Liberty's response to Data Request Set 3, Response DOE 3-1 and DOE 3-2 (attachments omitted)(November 23, 2022) in DG 22-045

ATTACHMENT 6

DOE analysis of True-up numbers based on Liberty's response to Data Request Set 3 (November 23, 2022) and Technical Session Data Request Set 1 (May 30, 2023)

ATTACHMENT 7

DG 20-105 Settlement Agreement, Revenue Decoupling Adjustment, Permanent Rates Revenue Per Customer (effective August 1, 2021), Exhibit 49, Bates page 036 (with analysis added by DOE)

ATTACHMENT 8

Recommendations by Gregg Therrien – submitted by Liberty on Jul. 6, 2022 in DG 22-041; see *Attachment – E. Menard*, file titled "22-041_2022-07-06_ENGI_ATT-TESTIMONY-MENARD.PDF", Bates page 1587 (PDF page 1501)

ATTACHMENT 9

DOE calculation at Attachment 9, p. 4 (Excel Tab titled "DOE Calculation Page 4") based on Liberty's Schedule 4 RDAF Revised 12/08/22.

ATTACHMENT 10

DOE analysis based on Liberty's response to Data Request Set 3 (November 23, 2022) and Technical Session Data Request Set 1 (May 30, 2023)

ATTACHMENT 11

List of Liberty Accounts affecting Adjusted Actual Revenue