



ATCO Gas and Pipelines Ltd.

2023 Unaccounted-For Gas Rider D and Rider P

October 17, 2023

Alberta Utilities Commission

Decision 28406-D01-2023

ATCO Gas and Pipelines Ltd.

2023 Unaccounted-For Gas Rider D and Rider P

Proceeding 28406

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1 Decision summary

1. For the reasons set out in this decision, the Alberta Utilities Commission approves ATCO Gas's, a division of ATCO Gas and Pipelines Ltd., unaccounted-for gas (UFG) rate Rider D of 1.346 per cent and Rider P of 1.328 per cent, effective November 1, 2023. The Commission directs ATCO Gas to use the most recent five-year average for calculating UFG Rider D and Rider P amounts for 2023-2024 and in the future.

2 Introduction and background

2. In the process of delivering natural gas to customers through the distribution system, some gas goes unaccounted for, and a variance results between the amount of natural gas that goes into ATCO Gas's distribution system (from gas producers or gas transmission pipelines) and the deliveries actually received by customers (as measured at customers' meters). This difference is referred to as unaccounted-for gas or UFG.

3. There are a number of reasons why gas may be lost throughout the distribution system: these can be broadly categorized into (i) physical losses (such as pipeline leaks or pipeline damages caused by a third party); and (ii) measurement and accounting errors.¹ Although it is not possible to completely eliminate UFG, a utility should make efforts to keep it at reasonable levels to reduce costs to customers, ensure the safety of its distribution system and protect the environment.

4. In accordance with the currently approved regulatory framework, the cost of UFG is ultimately passed on to customers through retailers; gas producers using the distribution system to deliver their product also pay for their share of UFG. In ATCO Gas's case, it is done by means of Rider D and Rider P.

5. Rider D recovers UFG in-kind from all retailers and default supply providers that use the ATCO Gas distribution system. For example, if a Rider D of 1.346 per cent is approved, retailers and default supply providers must buy an extra 1.346 per cent of natural gas above what is delivered to their customers to offset for UFG, and zero balance the deliveries and receipts on the system.²

6. Rider P recovers UFG associated with producer accounts, to ensure the quantity of gas ATCO Gas delivers on behalf of gas producers is kept in balance with the quantity of gas ATCO

¹ UFG is commonly referred to as "gas losses"; however, there are many other drivers of UFG. For example, metering and billing errors may result in a positive amount of UFG (i.e., gas "gains" rather than "losses").

² Exhibit 28406-X0003, Attachment 2.

Gas receives from the producers. Approved in Decision 26283-D01-2021,³ Rider P ensures that gas producers account for their share of UFG, in-kind. For example, if a Rider P of 1.328 per cent is approved, gas producers will have to inject 1.328 per cent more gas in ATCO Gas's distribution system, to ensure that the contracted amount is delivered to a point of delivery.

7. Both riders are similarly designed. Historically, Rider D was calculated annually using the most recent three-year average of ATCO Gas's annual UFG percentages, derived by dividing UFG (system receipts minus deliveries) by system deliveries. Rider P was similarly calculated using the most recent three-year average of annual UFG percentages, but used system receipts as the denominator to calculate the annual UFG recovery requirement.⁴

8. On August 18, 2023, ATCO Gas filed an application with the Commission requesting approval of its 2023-2024 UFG Rider D and Rider P, effective November 1, 2023. ATCO Gas calculated Rider D to increase from the currently approved value of 1.271 per cent to 1.418 per cent, and Rider P to increase from 1.270 per cent to 1.397 per cent. In response to a Commission information request (IR), ATCO Gas revised these values to be 1.346 for Rider D and 1.328 for Rider P, using the most recent five-year average calculations.

9. In past UFG decisions,⁵ the Commission directed ATCO Gas to continue to file Rider D and Rider P applications jointly. The Commission also directed ATCO Gas to provide reasons for UFG increases or decreases, information on practices that ATCO Gas has employed to reduce UFG, details with respect to all measurement adjustments, the net results of the adjustments to UFG and a table showing the monthly line heater fuel usage, the associated carbon levy dollars and the difference from the previous year.

3 Analysis of issues

3.1 UFG calculations and Rider D and Rider P amounts

10. In the application, ATCO Gas calculated Rider D and Rider P using the most recent three-year averages. In an IR, the Commission observed that the other gas distribution utility, Apex Utilities Inc., calculates its UFG percentages using the most recent five-year historical average.⁶ As UFG amounts are driven by generally unpredictable causes, they are inherently variable. Accordingly, the Commission asked ATCO Gas whether calculating its Rider D and Rider P percentages using a five-year average would be an improvement over the currently used three-year average as it will better smooth out the year-to-year fluctuations. In response, ATCO Gas agreed that a five-year average will provide a smoother and more stable representation of UFG over time.⁷

³ Decision 26283-D01-2021: ATCO Gas and Pipelines Ltd., 2020 General Rate Application – Phase II Compliance Filing, Proceeding 26283, March 19, 2021.

⁴ Unlike for other services on the distribution system, where measurement is undertaken at the point of delivery, measurement for producer transportation service is undertaken at the point of receipt. Due to this, UFG for producer accounts must be calculated on measured receipt quantities and requires a separate rider that is calculated as a percentage of receipts.

⁵ Most recently in Decision 27583-D01-2022: ATCO Gas and Pipelines Ltd., 2022 Unaccounted-For Gas Rider D and Rider P, Proceeding 27583, September 19, 2022.

⁶ Decision 28368-D01-2023: Apex Utilities Inc., 2023-2024 Unaccounted-For Gas Rider E and Rider H, Proceeding 28368, September 11, 2023, PDF page 5, paragraph 10.

⁷ Exhibit 28406-X0009, ATCO Gas Round One IR Responses to AUC, AG-AUC-2023SEP19-002.

11. Using the most recent five-year average, ATCO Gas recalculated the UFG Rider D and Rider P as shown in Table 1 below, which also includes 10 years of historical values for reference.

Table 1. Determination of UFG Rider D and Rider P amounts for 2023

UFG percentages for the year ended October 31	Annual UFG percentage loss	
	Rider D	Rider P
2013	1.368	N/A
2014	1.196	N/A
2015	0.908	N/A
2016	0.565	N/A
2017	0.827	N/A
2018	1.211	1.197
2019	1.266	1.250
2020	1.038	1.027
2021	1.432	1.411
2022	1.785	1.753
Arithmetic average (2018-2022)	1.346	1.328

Sources: Exhibit 28406-X0009, ATCO Gas Round One IR Responses to AUC, AG-AUC-2023SEP19-002, tables 1 and 2,

12. The Commission compiled Table 2 below showing the last five years of approved Rider D values. As Rider P was only approved in 2021, there are no Rider P amounts listed in Table 2 for 2018-2020. In the table, the riders in years prior to 2023 are calculated using a three-year average of annual UFG losses, while the 2023 value is calculated using a five-year average of UFG losses.

Table 2. Historical Commission-approved UFG Rider D and Rider P⁸

Year	Rider D	Rider P
2018	0.766	N/A
2019	0.864	N/A
2020	1.102	N/A
2021	1.176	1.162
2022	1.271	1.270
2023	1.346	1.328

13. In prior decisions, the Commission recognized that UFG is an expected element of operating a natural gas distribution system. The Commission also recognized that, due to the many factors that impact UFG, the UFG amount will fluctuate over time.⁹ The Commission approves ATCO Gas's calculation of the UFG Rider D and Rider P using the most recent five-

⁸ Compiled using the approved Rider D and Rider P from Decision 27583-D01-2022; Decision 26776-D01-2021: ATCO Gas and Pipelines Ltd., 2021 Unaccounted-For Gas Rider D and Rider P, Proceeding 26776, September 22, 2021; Decision 25798-D01-2020: ATCO Gas and Pipelines Ltd., 2022 Unaccounted-for Gas Rider D, Proceeding 25798, October 23, 2020; Decision 24815-D01-2019: ATCO Gas and Pipelines Ltd., 2019 Unaccounted-For Gas Rider D, Proceeding 24815, October 24, 2019; Decision 23838-D01-2018: ATCO Gas and Pipelines Ltd., 2018 Unaccounted-For Gas Rider D, Proceeding 23838, October 25, 2018.

⁹ Decision 27583-D01-2022, PDF page 9, paragraph 24.

year historical average as it will provide a smoother and more stable representation of UFG over time as compared to using the last three-year average. The Commission directs ATCO Gas to use this methodology for calculating UFG Rider D and Rider P amounts in future applications.

14. While the proposed riders D and P are higher than the recent historical range of UFG percentages, the Commission accepts ATCO Gas’s analysis of the potential causes of UFG as detailed in Section 3.2 of this decision. For the purposes of this decision, the Commission is satisfied that the reported variances in ATCO Gas’s UFG are not a cause of concern.

3.2 Reasons for increasing UFG percentages

15. In accordance with the Commission direction in Decision 27583-D01-2022, ATCO Gas identified and ranked a number of sources that could contribute to an increase or decrease in UFG. They are as follows:

Table 3. Sources of UFG¹⁰

Ranking	Source	Issue/Concern
1	Equipment failure	Event in which any part of the equipment does not perform according to its operational specifications. This includes meters, gas sampling, etc.
2	Heat area sampling	Heat area is determined by sampling the heat value of a gas source. Mixed heat area billing leads to unaccounted-for gas in pipeline systems that blend different gas sources. To adhere to Measurement Canada regulations, gas is sampled from each pipeline, and all customers on the system are billed at the lower heat value causing UFG due to the disparity between billing and measurement values.
3	Construction	Mixing of heat areas during construction. Purging and filling pipelines.
4	Pipeline Leaks	Gas lost to atmosphere.
5	Unauthorized use	Gas lost to theft.
6	Seasonal operating plans	The timing of when the seasonal operating plan can be implemented is dependent on the weather. In the shoulder months of spring and fall, temperatures can vary significantly and may affect UFG due to timing of the implementation of the seasonal operating plan.
7	Third-party damage to pipelines	Gas lost to atmosphere.

16. In an IR, the Commission asked ATCO Gas to comment on the apparent recent upward trend in annual UFG percentages. In response, ATCO Gas noted that the increase in UFG percentages in the last three years can largely be attributable to the implementation of a new Geographical Information System (GIS) and how it assigns “heat areas” to customers. A “heat area” refers to a physical area within ATCO Gas’s distribution system that is supplied with natural gas of a certain heat value.¹¹ When a physical area is supplied with gas from multiple different sources, it is called a mixed heat area.

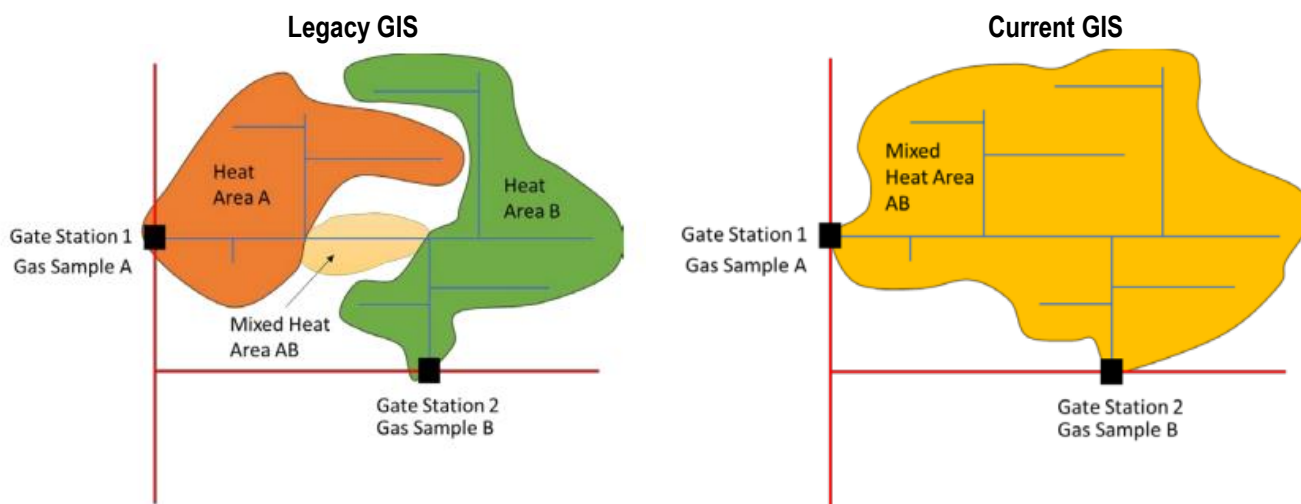
17. ATCO Gas’s legacy GIS did not assign heat areas; rather, a manual process was used to assign heat areas to customers based on which source the customer was closest to within a physically valved area, where possible. The new GIS relies on real spatial and gas network boundaries and does not allow ATCO Gas to manually assign heat areas. Consequently, a single

¹⁰ Exhibit 28406-X0001, application, Table 4, PDF page 8.

¹¹ The heat value of natural gas is a measure of the energy that a certain volume of natural gas delivers. A lower heat value indicates the natural gas will deliver less energy and more natural gas will therefore be required to heat a home, for example.

heat area is assigned to all customers within a physically valved area. As directed by Measurement Canada, ATCO Gas then bills all customers in a heat area based on the lowest heat value of the natural gas sources used to service the area. This approach results in discrepancies between delivered natural gas volumes and billed natural gas volumes. ATCO Gas provided the following figures in order to further illustrate the difference between the legacy GIS and the new GIS.¹²

Figure 1. Difference in heat area assignments



Source: Exhibit 28406-X0013, ATCO Gas Round Two IR Response to AUC.

18. ATCO Gas further commented that while there are several mixed heat areas in its distribution system, the largest mixed heat area without (closed) valves, in terms of consumption, is the city of Calgary. The Calgary network is complex, with 25 gate stations (sample points).

19. ATCO Gas indicated it had initiated a project to determine a solution to resolve the low heat value assignments in the mixed areas where physical heat area valves are not present. Specifically, this project, which is in the testing phase, is actively exploring a virtual valve solution to enhance heat area accuracy by creating discrete heat areas and thereby reducing the size of the mixed heat areas (similar to the legacy process).

20. From ATCO Gas's response, it appears to the Commission that the increase in UFG was an unintended by-product of implementing the new GIS system. While the cost of UFG is ultimately recovered from customers, for the purposes of this decision the Commission considers that an increase in UFG in 2021 and 2022 is likely to be temporary issue and is not a cause of concern, at this time. First, the incremental UFG amount is relatively small; as can be estimated from Table 1 above, the UFG increased by approximately 0.3 percentage points in 2021 and 0.6 percentage points in 2022 as compared to the average UFG percentage in 2018-2020 (i.e., before the new GIS system was implemented). Second, the increase in UFG due to heat area assignment did not result in a net loss to all customers; rather, it resulted in an indirect cross-subsidization to customers that received gas with higher heat value but were billed at a lower heat value.

¹² Exhibit 28406-X0013, ATCO Gas Round Two IR Responses to AUC, AG-AUC-2023SEP28-001, PDF pages 5-6.

21. Finally, ATCO Gas has initiated a project to determine a solution to resolve this issue. The Commission directs ATCO Gas to update the Commission on this solution in the next Rider D and Rider P application. If ATCO Gas does not proceed with the contemplated solution, or delays its implementation with the result that higher UFG values persist over an extended period of time, the Commission may explore and implement an alternative approach so that customers do not bear the full of costs of higher UFG amounts.

3.3 Compliance with previous Commission directions

22. In addition to identifying and ranking the most significant causes of UFG, ATCO Gas provided the following information in compliance with the direction in Decision 27583-D01-2022:¹³

- Explanations of seasonal UFG differences, measurement corrections and reasons for increases or decreases.
- Information on practices and procedures it has employed to reduce UFG.
- Details with respect to all measurement adjustments showing the reconciliation of prior years' data.
- Net results of the adjustments to UFG, both in terms of energy and as a percentage of receipts.

23. ATCO Gas provided the following explanation of the seasonal differences in UFG:

10. ATCO Gas has over 1.2 million delivery points of which the vast majority are read on monthly cycles. Cycle billing is the most efficient method for billing large numbers of customers. The DFSS [Daily Forecasting and Settlement System] allocates monthly meter readings to daily flow using daily average temperature as well as other factors such as season and day of week. As a result, the calendarized monthly deliveries reported are calculated estimates and affect the accuracy of UFG on a month-to-month basis in the shoulder and summer months. ATCO Gas maintains that the accuracy of UFG is more appropriately reviewed over a longer period of time, such as a year, to reduce the timing effect of the DFSS estimates.¹⁴

24. ATCO Gas also provided details of the aggregated 473 terajoules of measurement adjustments processed in 2022, explaining that there were 21 instances of measurement equipment problems, two occurrences of reallocations of measurement, and two occurrences of late meter reads.¹⁵

25. In response to the Commission's direction, ATCO Gas stated that it has taken continuous steps to reduce UFG, including meter sizing procedures, seasonal operating plans, an annual leak detection and repair program, and efforts in collaboration with ATCO Pipelines, the owner of the natural gas transmission system to which ATCO Gas's distribution system connects.¹⁶

26. The Commission expects that ATCO Gas will improve its ability to identify and quantify the causes of UFG at various points on its system, which will help it identify and pursue the most

¹³ Decision 27583-D01-2022, paragraph 25.

¹⁴ Exhibit 28406-X0001, application, paragraph 10.

¹⁵ Exhibit 28406-X0001, application, paragraph 12.

¹⁶ Exhibit 28406-X0001, application, paragraphs 15-20.

cost-effective solutions for minimizing UFG fluctuations and overall UFG amounts. Accordingly, the Commission directs ATCO Gas, in its next UFG application, to continue to provide:

- A relative ranking of UFG causes and quantify the causes of UFG, where possible.
- Explanations of seasonal UFG differences, measurement corrections and reasons for increases or decreases.
- Information on practices and procedures it has employed to reduce UFG.
- Details with respect to all measurement adjustments showing the reconciliation of prior years' data.
- Net results of the adjustments to UFG, both in terms of energy and as a percentage of receipts.

27. In Decision 27583-D01-2022, the Commission also directed ATCO Gas to discuss whether the monthly line heater usage and associated carbon levy table included in previous UFG Rider D and Rider P applications better belongs in the load balancing deferral account (LBDA) rider (Rider L) application dealing with the recovery of the carbon levy amounts.¹⁷ ATCO Gas's response was as follows:

26. Line Heaters are now tracked more accurately, and their gas usage can be measured. As a result, ATCO Gas no longer considers line heater usage a source of UFG. In response to AUC Decision no. 27583-D01-2022, ATCO Gas recommends reporting carbon levy associated with line heater usage included with future Rider L Applications due to their quantifiability.¹⁸

28. The Commission agrees with ATCO Gas's proposed treatment, and directs ATCO Gas to report the carbon levy associated with heater line usage in future Rider L applications.

4 Order

29. It is hereby ordered that:

- (1) ATCO Gas and Pipelines Ltd.'s Rider D is approved, effective November 1, 2023, as set out in [Appendix 3](#) of this decision.
- (2) ATCO Gas and Pipelines Ltd.'s Rider P is approved, effective November 1, 2023, as set out in [Appendix 4](#) of this decision.

¹⁷ Decision 27583-D01-2022, paragraph 27.

¹⁸ Exhibit 28406-X0001, application, paragraphs 25-26.

Dated on October 17, 2023.

Alberta Utilities Commission

(original signed by)

Doug Hawkins
Acting Commission Member

Appendix 1 – Proceeding participants

Name of organization (abbreviation) Company name of counsel or representative
ATCO Gas and Pipelines Ltd. (ATCO Gas)

Alberta Utilities Commission
Commission panel D. Hawkins, Acting Commission Member
Commission staff C. Young V. Wang

Appendix 2 – Summary of Commission directions

This section is provided for the convenience of readers. In the event of any difference between the directions in this section and those in the main body of the decision, the wording in the main body of the decision shall prevail.

1. For the reasons set out in this decision, the Alberta Utilities Commission approves ATCO Gas's, a division of ATCO Gas and Pipelines Ltd., unaccounted-for gas (UFG) rate Rider D of 1.346 per cent and Rider P of 1.328 per cent, effective November 1, 2023. The Commission directs ATCO Gas to use the most recent five-year average for calculating UFG Rider D and Rider P amounts for 2023-2024 and in the future paragraph 1
2. In prior decisions, the Commission recognized that UFG is an expected element of operating a natural gas distribution system. The Commission also recognized that, due to the many factors that impact UFG, the UFG amount will fluctuate over time. The Commission approves ATCO Gas's calculation of the UFG Rider D and Rider P using the most recent five-year historical average as it will provide a smoother and more stable representation of UFG over time as compared to using the last three-year average. The Commission directs ATCO Gas to use this methodology for calculating UFG Rider D and Rider P amounts in future applications paragraph 13
3. Finally, ATCO Gas has initiated a project to determine a solution to resolve this issue. The Commission directs ATCO Gas to update the Commission on this solution in the next Rider D and Rider P application. If ATCO Gas does not proceed with the contemplated solution, or delays its implementation with the result that higher UFG values persist over an extended period of time, the Commission may explore and implement an alternative approach so that customers do not bear the full of costs of higher UFG amounts..... paragraph 21
4. The Commission expects that ATCO Gas will improve its ability to identify and quantify the causes of UFG at various points on its system, which will help it identify and pursue the most cost-effective solutions for minimizing UFG fluctuations and overall UFG amounts. Accordingly, the Commission directs ATCO Gas, in its next UFG application, to continue to provide:
 - A relative ranking of UFG causes and quantify the causes of UFG, where possible.
 - Explanations of seasonal UFG differences, measurement corrections and reasons for increases or decreases.
 - Information on practices and procedures it has employed to reduce UFG.
 - Details with respect to all measurement adjustments showing the reconciliation of prior years' data.
 - Net results of the adjustments to UFG, both in terms of energy and as a percentage of receiptsparagraph 26
5. The Commission agrees with ATCO Gas's proposed treatment, and directs ATCO Gas to report the carbon levy associated with heater line usage in future Rider L applications. paragraph 28

Appendix 3 – ATCO Gas Rate Rider D

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Appendix 3 - ATCO
Gas Rider D

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Appendix 4 – ATCO Gas Rate Rider P

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Appendix 4 - ATCO
Gas Rider P

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Effective November 1, 2023 by Decision 28406-D01-2023
This Replaces Rider "D"
Previously Effective November 1, 2022

ATCO GAS AND PIPELINES LTD.
ATCO GAS RIDER "D" TO DISTRIBUTION ACCESS SERVICE CUSTOMERS
FOR THE RECOVERY OF UNACCOUNTED FOR GAS (UFG)

All Retailer and Default Supply Provider Customers utilizing Distribution Access Service for delivering gas off the ATCO Gas distribution system will be assessed a distribution UFG charge of 1.346 percent at the Point of Delivery. The UFG assessment will be made up "In-Kind" from each Customer Account.

Effective November 1, 2023 by Decision 28406-D01-2023
This Replaces Rider "P"
Previously Effective November 1, 2022

**ATCO GAS AND PIPELINES LTD.
ATCO GAS RIDER "P" TO PRODUCERS
FOR THE RECOVERY OF UNACCOUNTED FOR GAS (UFG)**

All Producers utilizing Distribution Access Service for exporting gas off the ATCO Gas distribution system will be assessed a distribution UFG charge of 1.328 percent at the Point of Export. The UFG assessment will be made up "In-Kind" from each Producer Account.