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ATCO PLAN 2025-29

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OVERVIEW

This document discusses ATCO Gas Australia's (**ATCO**) unaccounted for gas (**UAFG**) historical performance and forecast volumes in relation to the strategic initiatives for Access Arrangement six (**AA6**) as well as the pricing strategy to ensure a competitive low UAFG price for the 2025 to 2029 period. As part of ATCO's AA6 proposal, ATCO is required to provide a forecast of its operating expenditure (**opex**). A key component of opex is the cost of replacing UAFG.

UAFG refers to gas supplied into the gas distribution system (**GDS**) that is unaccounted for in delivery to the end customer. UAFG is the difference between the measurement of the quantity of gas delivered *into the gas distribution system* in each period and the measurement of the quantity of gas *delivered from the gas distribution system* during that period. The difference is effectively 'lost' and ATCO is required to replace UAFG under the terms of its Access Arrangement – effectively replacing the gas that belonged to the *Users* (Retailers) of the GDS that has not been delivered to customers.

UAFG is a combination of measurement error, system error and network losses. ATCO manages the UAFG and ensures initiatives are carried out to improve measurement and reduce losses from the GDS. Since 2018, ATCO's UAFG has declined from 2.07% to its current level of 1.71% 12 month rolling total.

ATCO continues programs of work that reduce UAFG such as mains replacement and reducing leaks in targeted locations as well as improving measurement activities. This has resulted in a historically low level of UAFG.

ATCO continues to benchmark well against other gas distribution entities with similar sized networks with respect to its amount of UAFG.

Table 1: Proposed Forecast UAFG % annually over AA6

2025	2026	2027	2028	2029
1.67%	1.67%	1.66%	1.65%	1.64%

This document also outlines ATCO's strategy for forecasting pricing of UAFG over AA6. ATCO has put forward estimated pricing of UAFG based on current cost estimate enquiries from retailers, wholesale market rates, transmission tariffs and retail margins. ATCO will update the price of UAFG in response to the Economic Regulation Authority (**ERA**) Draft Decision based on ATCO procuring actual tendered rates, with this process beginning in November 2023.



1. INTRODUCTION

1.1 Background

As part of the AA6 proposal, ATCO is required to provide a forecast of operating expenditure (opex). An element of the opex forecast is UAFG.

UAFG is the difference between the measurement of the quantity of gas delivered *into the gas distribution system* in each period and the measurement of the quantity of gas *delivered from the gas distribution system* during that period. UAFG makes up a material proportion of opex in each access arrangement; therefore, it is in the long-term interests of customers and consistent with good industry practice that ATCO reduces the UAFG rate to as low as reasonably practicable (**ALARP**).

ATCO's UAFG forecast is based on historical data, forecast consumption and a bottom up pricing model. ATCO needs to determine the most accurate forecast volumes of UAFG and determine a price that is commensurate to the current Western Australian (**WA**) gas market for AA6.

Rule 91 of the National Gas Rules (**NGR**) requires that opex "must be such as would be incurred by a prudent service provider acting efficiently, in accordance with accepted good industry practice, to achieve the lowest sustainable cost of delivering pipeline services." Rule 74(2) of the NGR states that a "forecast or estimate: (a) must be arrived at on a reasonable basis; and (b) must represent the best forecast or estimate possible in the circumstances".

1.2 Purpose

This report outlines the details of ATCO's forecast UAFG and explains why this proposed level of UAFG meets the criteria outlined in Rule 91 and meets the determination of Rule 74 (2) through historical build up and benchmark performance. The report also outlines the pricing mechanism ATCO proposes for the AA6 submission.

1.3 Scope

The scope of this document covers:

- An explanation around the definition of UAFG, causes of UAFG and how UAFG forecasts impact customers
- ATCO's historical UAFG performance for its coastal (Mid-West and South-West) gas distribution system
- The formulation of UAFG energy forecasts for AA6
- The formulation of UAFG pricing forecasts for AA6.

1.4 Assumptions

- ATCO has estimated the UAFG pricing for the *Draft Decision* and will update the UAFG pricing based on actual tendered UAFG pricing rates in line with ATCO's procurement processes.
- The measurement and loss components of UAFG share a relatively equal share of the UAFG forecast.



2. BACKGROUND

2.1 What is UAFG?

UAFG is the difference between the measurement of the quantity of gas delivered *into the gas distribution system* (receipts) in each period and the measurement of the quantity of gas *delivered from the gas distribution system* (withdrawals) during that period.

UAFG is reported on a rolling 12-month average as a percentage of total receipts into the network. This allows a normalisation of UAFG levels removing any seasonal changes and facilitates benchmarking between peer distribution networks.

Although the calculation of UAFG is performed by the Australian Energy Market Operator (AEMO), ATCO as the distribution operator is responsible for the accuracy of receipts and withdrawals of gas.

2.2 Regulatory framework

ATCO is required to comply with the Retail Market Procedures (WA)¹ (RMP). Rule 230 of the RMP covers the calculation methodology for UAFG. ATCO, as the network operator, must calculate UAFG (in energy) using the data supplied by pipeline operators under Part 4.5 & 4.3 of the RMP in conjunction with heating management plans as approved by the Building & Energy Directorate (WA) for its network (which has two or more receipt points of differing gas supplies).

The calculation under this methodology results in a 12-month rolling percentage that is subject to daily revision up to 425 days after the gas has passed through the network to the consumers with the most volatility in results in the first 4 months. ATCO reports UAFG percentages as actuals based on a 4-month delay however payments are based on AEMO's month end volumes and reflect actual consumption 4 months after the yearly financial balances.

2.3 What UAFG means for gas customers

Customers ultimately pay for UAFG volumes and ATCO has a target UAFG allowance issued as part of its approved Access Arrangement. This amount is recoverable in the fixed charges and is seen as an incentive for ATCO to reduce losses and processes under the amount which will be reset every new access period. Where UAFG is above the nominated UAFG value, ATCO must purchase the replacement UAFG as part of its operational costs, which in turn creates an incentive to reduce UAFG volumes. Benefits of reduced UAFG amounts flows on to customers as reduced standing charges, while an increase in UAFG adds financial costs, in purchasing replacement UAFG, and additional carbon emission costs. Lowering UAFG levels has financial impacts but also environmental benefits.

2.4 Factors contributing to UAFG

The sources of UAFG can be grouped into three contributing factors:

1. **Measurement uncertainties:** This can include metering uncertainties, reading errors, and pressure and temperature correction (pressure correction factor).
2. **Network Losses:** This can include mains leaks, meter leaks, theft and third party damages.

¹ Australian Energy Market Operator (2022) "Retail Market Procedures". Available at: <https://aemo.com.au/en/energy-systems/gas/gas-retail-markets/procedures-policies-and-guides/western-australia>



3. **System Errors:** This can include system calculation processes, calculation rounding, data flows and UAFG calculation methodology.

These factors are discussed in more detail below.

2.4.1 Measurement uncertainties

Measurement errors can arise through either gas receipt metering uncertainties or withdrawal metering uncertainties:

- **Receipt metering uncertainties:** Gas receipts are measured through *gate delivery stations*; owned by transmission pipeline operators. In addition, the 'contract to deliver' gas sits with the retailers. Therefore, the vigilance of witnessing the calibration and accuracy of the flow measurement at gate points is typically out of ATCO's control.

ATCO maintains positive professional relationships with pipeline operators injecting into the distribution network and as such is invited to witness gate measurement element testing. ATCO does take this opportunity but can only suggest resolution of potential issues as ATCO can report measurement errors to AEMO but not enforce investigation or resolution. Third party transmission operators self-prescribe the upper error limit of 1% to their physical gate point metering. This has been adopted in operational agreements between third party operators and ATCO. Due to the significant gas inflows at receipt points, 1% of actual flows equates to a large proportion of error in terms of energy.

- **Withdrawal metering uncertainties:** ATCO has direct responsibility for the accuracy of gas meters. The accuracy of these meters is governed by Gas Standards (Gas Supply and System Safety) Regulations 2000 (**GSSSR**). Part 3 – Metering, Section 15 (3) of the GSSSR prescribes that meters measure gas consumption within a margin of error of:
 - “plus or minus 2% of the actual volume of gas supplied, if the master meter has a badged capacity of more than 7.5 m³ per hour in air; or”
 - “plus or minus 3% of the actual volume of gas supplied, if the master meter has a badged capacity of not more than 7.5 m³ per hour in air.”

ATCO ensures that meters installed on the GDS comply with the current regulations through ATCO's asset procurement procedures and installation processes.

- **Pressure Correction Factor:** ATCO has more than 790,000 meters that are subject to fixed pressures. A pressure correction factor (**PCF**) is applied to compensate metered values for the applied pressure. Encompassed within this factor is an additional correction factor applied to compensate for temperature, atmospheric pressure and an elevation factor (refer Section 6, Technical Guide to the Western Retail Market). This factor is calculated and applied annually using a 10 year rolling average as approved by Building and Energy.

Meters using external measurement elements like pressure and temperature correction (i.e., industrial customers) compensate measured volumes on a live basis in place of correction factors. Meters using volume correction within the distribution network account for approx. 50% of total withdrawals. ATCO uses standard industry practices in equipment selection and calibration methods to maintain accuracy of flow correction instrumentation. It can therefore be concluded that the metering uncertainties are weighted towards fixed PCF metering where metering is less sophisticated. On this basis, UAFG can increase as domestic metered networks grow. All these metering uncertainties contribute to the UAFG volumes. ATCO continually tries to improve measurement processes to ensure the metered volumes are as close to consumed volumes as possible.



Temperature variation from the 10-year average will result in a higher or lower than average UAFG. If the yearly average ambient temperature is higher than the 10 year average the result will be a low UAFG. If we have a yearly average ambient temperature that is lower than the 10 year average a high UAFG result will be produced.

The summer of 2021 – 2022 broke all previous records not only for the hottest temperatures but also the number of heat waves and days above 38°C. Followed by a mild winter this has resulted in a lower than normal UAFG for this period. ATCO is currently reviewing the PCF methodology to check that this is the best process moving forwards.

2.4.2 Network losses

Network losses include mains leaks, meter leaks, third party damages, and operational usage and are also known as fugitive emissions.

- **Mains and Service leaks:** Mains and services leaks account for a significant proportion of UAFG. As pipework ages, it is typically the joints or fittings that are susceptible to leaks. Leak rates are often reported as the number of leaks per length of pipe, however the actual amount of gas leaking from a particular location depends on a number of factors including orifice size, network pressure, above or below ground and fault type (e.g. damage, corrosion etc.). It is up to ATCO as the network operator to maintain mains and services and minimise leaks. ATCO continues to carry out initiatives to minimise these, as described below.
 - ATCO has a rigorous leak detection program and has embarked on many pipeline replacement projects to replace cast iron and other aging assets. ATCO has also conducted a community gas safety campaign to encourage customers to report gas smells (leaks) normally reported at the meter and in the street that are dealt with as per procedures attached to KPI reporting.
 - ATCO is actively involved in Before You Dig Australia (BYDA) including Board representation. ATCO works closely with BYDA on Third Party Damage prevention strategies and campaign and actively engages in strategies to reduce third party damage that can cause either small leaks or large network breaks. ATCO has also assisted in the development of a third party underground asset detection process along with attending and organising contractor training sessions. This total asset approach and asset replacement program is having a positive impact on the level of UAFG percentages.
 - Operationally as ATCO expands and maintains the network, activities such as commissioning new mains or other activities release limited amounts of gas to the atmosphere when purging for safety reasons. These contribute to UAFG, however ATCO procedures ensure these activities are minimised to achieve the operational objective and do not overly contribute to UAFG.
- **Meter Leaks:** Meter leaks typically occur at the ‘above ground’ joints and fittings that join the meter and consumer pipework with the GDS. Fittings include the meter, valve, regulator, screwed fittings and test point. The majority of these leaks are publicly reported and ATCO attends a customer’s property to carry out required repairs.
- **Theft:** This is considered to be a growing issue due to the inherent hazards of unskilled work with gas, but still relatively uncommon. ATCO works with retailers who suspect theft activity as well as following up on theft identified by ATCO field personnel conducting work such as routine meter change and reactive fault activities. It is difficult to estimate how much this contributes to UAFG.



2.4.2.1 National Inventory Determination

The Department of Climate Change, Energy, the Environment and Water through their National Inventory Report 2021² determined that UAFG was approximately 30 to 40% of total UAFG. For reporting on emissions, a leakage factor is required, representing the proportion of UAFG that is attributed to leakages in the distribution system. This factor was 0.55 (representing network losses to be approximately 55% of total UAFG). However, in 2020, an internal review of literature, including the 2017 Zincara Review for Victoria's Essential Services Commission³ and public submissions by other distribution companies, concluded that the proportion of UAFG attributable to leaks was in the range of 35–40 per cent. Based on available reported UAFG gas breakdowns from the annual reports of relevant companies, the Australian Energy Regulator, and the Zincara review, the estimate for the leakage proportion of total UAFG was set to 37.3% from 2017/18 onwards.

2.4.3 System errors

System errors occur as a result of errors in system calculation processes, calculation rounding and UAFG calculation methodology.

- **System calculation processes:** ATCO, via the AEMO UAFG calculation processes, declares the energy content of the delivered gas based on various calculations. ATCO measures the metered volumes of gas at customer premises as uncorrected volumes then converted by algorithms to a corrected volume, which is then converted to an energy value and provided for Retailers to bill customers as energy in mega joules (**MJ**). These processes are all subject to rounding and averaging calculations that add to the uncertainty of measurement.
- **Calculation rounding:** Rounding errors do contribute to UAFG levels however this can fall either positive or negative and is assumed to balance out over a longer period (12 month rolling). Some exceptions on small sub-networks within ATCO's GDS are identified but being a small network it has little impact on the overall UAFG total.
- **UAFG calculation methodology:** The UAFG calculation method sits with AEMO (RMP 230). This method relies on the quality of inputs and is estimated on the current gas day and reconciled back as the billed network deliveries are received (approx. 12,000 reads per working day over approximately a 90-day period). This process under the RMP is reconciled for 425 days. Therefore depending on the timing of the results this calculation delay will influence the accuracy of these results.

3. UAFG PERFORMANCE

3.1 Historical UAFG

Figure 1 shows the historical performance of UAFG levels in ATCO's GDS. Included were the target rates provided as part of the AA4/AA5 submission.

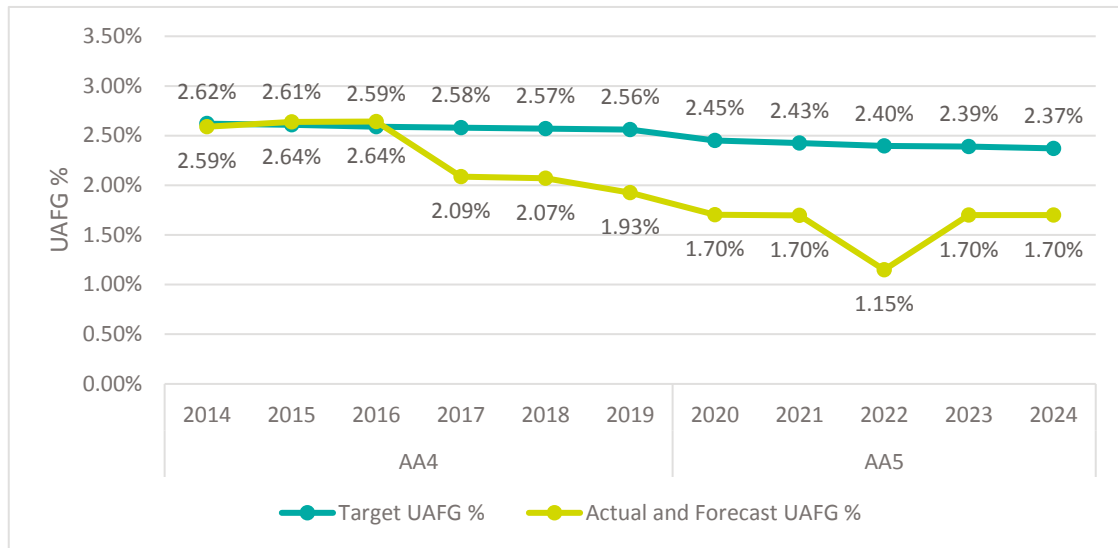
Note: The hot summer and milder winter of 2021-2022 contributed to the decline in UAFG during that period.

² Department of Climate Change, Energy, the Environment and Water (2023) "National Inventory Report 2021" Volume 1. Available at: <https://www.dcceew.gov.au/climate-change/publications/national-inventory-report-2021>

³ <https://www.esc.vic.gov.au/electricity-and-gas/tariffs-and-benchmarks/unaccounted-gas-benchmarks/unaccounted-gas-benchmarks-review-2017#tabs-container2>



Figure 1: Historical performance of UAFG levels against target UAFG over AA4/AA5



The actual UAFG loss until 2022 has remained below the AA5 forecast due to the cumulative impact of UAFG management initiatives such as leak repair and measurement enhancement. ATCO's ongoing improvement efforts continue to yield positive outcomes in reducing UAFG, while the effect of fluctuating environmental factors like seasonal temperature variations on gas measurement is being investigated.

3.2 UAFG Management

ATCO continues to manage UAFG in the GDS through a number of continuous improvement initiatives, and has achieved further reductions in UAFG through:

- Additional accuracy verification tests at third-party interconnections (gate stations) to validate the least metering error possible.
- Strong focus on mains replacement in areas experiencing above-average leakage rates.
- Ensuring all values in the billing system are accurate and using the latest data.
- Increasing leak survey and leak elimination activities while utilising better techniques and technology to ensure better sensitivity and precision.
- Theft mitigation.
- Ongoing review of large consumer metering.

3.2.1 Accuracy verification testing

ATCO regularly attends gate stations to witness the testing of these facilities by the asset owners, to ensure the test processes and results do not identify issues requiring corrective actions and/or revisions to inflow data.

3.2.2 Mains replacement

ATCO increased the mains replacement program in AA4 and continued in AA5. The reduction in unprotected metallic mains and mains with high leak rates have continued to reduce UAFG.



3.2.3 Leak survey and leak elimination

ATCO has a comprehensive leak survey and leakage response/repair strategy that ensures all detected and reported leaks are attended to in a timely manner. Timely repair of leaks assists in minimising UAFG.

In AA6, ATCO will be increasing leak survey and leak elimination activities while utilising better techniques and technology to ensure better sensitivity and precision in locating leaks on the GDS.

3.2.3.1 Picarro Leak Survey

In 2022, ATCO conducted a successful trial of Picarro gas leak detection technology. The Picarro system equips a vehicle with specialised sensors and gas analysers, allowing the operator to drive parallel (i.e., on the road) the distribution networks and remotely identify leaks. The technology can deliver analytical insights, scalability (allowing ATCO to adjust the leak survey program), and data for mains replacement, enhancing our understanding of network vulnerabilities.

3.2.4 Pressure correction factor reviews

The pressure correction factor used for billing a consumer is important in determining the volume of gas used by that customer. If it is incorrect, it will contribute to UAFG. This correction can be positive or negative depending upon the atmospheric temperature. Hence in the summer there is a relatively small UAFG whereas winter has increased UAFG.

ATCO undertakes annual reconciliations of the PCF recorded in ATCO's billing system to ensure the components of the PCF (including pressure and temperature) are not in error and are up-to-date.

3.2.5 Theft mitigation

Theft of gas contributes to UAFG. To combat theft, ATCO investigates sites where consumption of gas may have changed based on historical usage or where a third party report has identified an issue.

The quarterly visit by a meter reader identifies instances where a customer has been using gas illegally, via a stolen meter, or via a bypass function, as well as providing a check for the internal administration of meter connection services.

3.2.6 Ongoing review of large gas consumers

ATCO reviews the gas usage of every interval metered customer every day of the year. ATCO has built dedicated applications to allow the Data Management function to review, investigate anomalies and dispatch personnel if required. Due to the size and potential impact on UAFG, interval-metered data (i.e. for large consumers) is analysed on an individual meter basis to identify changes in consumption patterns that could result in UAFG.

3.2.7 Oversized metering

ATCO identified a number of oversized meters in 2018 and 2019 for replacement and the process for identifying and 'right sizing' similar installations has been imbedded into business as usual activities.



3.3 Gas Measurement Improvement Initiatives

A series of operational expenditure activities are being carried out or completed as part of an ongoing effort to enhance gas measurement and metering validation and ensure the accuracy of gas billing data. Additionally, capital projects have begun or are proposed to continue improvements in data capture and minimising measurement uncertainty. For further insight, refer to Appendix A for the UAFG Operational Management Plan

As of now, capital expenditure (capex) projects for the AA5 period are underway, with some projects still awaiting commencement. These projects aim to further improve gas measurement and metering capabilities, contributing to increased accuracy in data collection and billing processes.

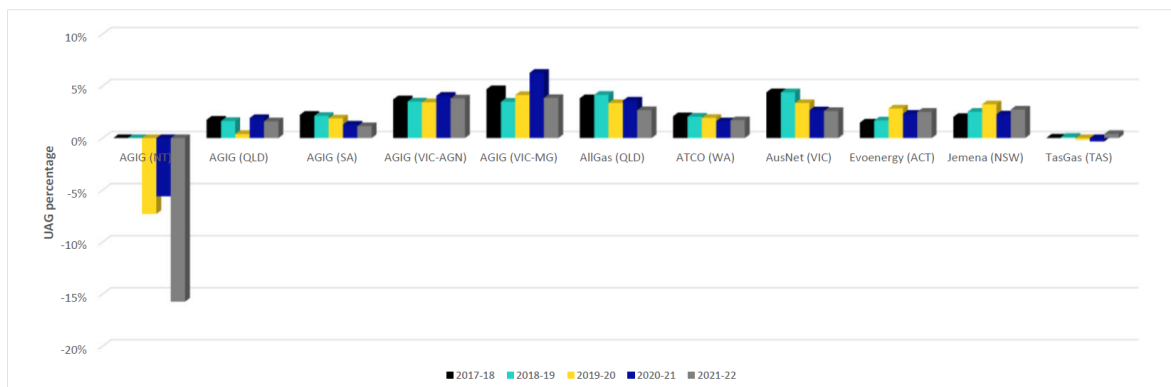
Table 2: Gas measurement and data integrity initiatives

OPEX Activities	CAPEX Projects (Combined AA5 and AA6)
<ul style="list-style-type: none"> Gate point accuracy verification testing (AVT) Zero meter reads check Major customers gas consumption review Metering Data Management activities including data accuracy verification and fault checks North Metro gas zone, South Metro gas zone & Hydrogen blending HHV Management B1/B2 commercial meter change – 10 yearly rotary meters EOL replace with new technology temperature compensated RABO (for accurate gas volume measurement at the meter) 	<ul style="list-style-type: none"> Interval meters live P&T telemetry upgrade project Billing commercial meters EOL program – replace outdated AL150 and DR meters with new temperature compensated RABO meters Telemetry Lite install on top 100 big commercial gas customers North & South Gas Zones Segregation – under Automated Network Pressure Control G-Suite Upgrade Project (GMD, GDBDV, GIMS, Neon, PCF) Gate Station downstream meter – for inflow validation

3.4 UAFG Benchmark Performance

Figure 2 and Figure 3 shows the UAFG of other gas distribution businesses throughout Australia and suggests that ATCO has one of the lowest UAFG levels amongst its peers. ATCO will continue to implement initiatives to reduce UAFG to continue these leading metrics.

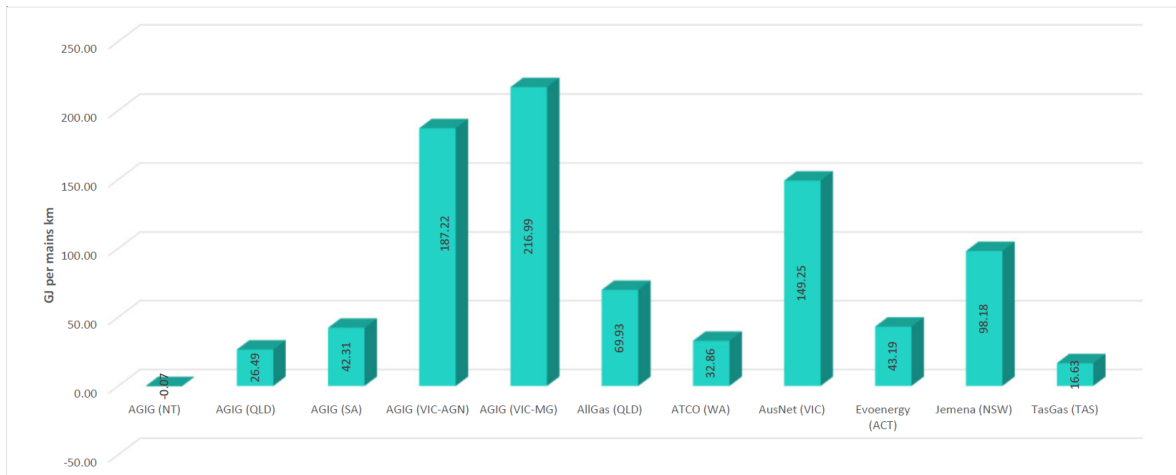
Figure 2: UAFG benchmarking levels against other gas distribution businesses⁴



⁴ Data taken from the “Natural Gas Distribution Benchmarking Report 2021-22” circulated by Energy Networks Australia.



Figure 3: UAFG per km of main benchmarked against other gas distribution businesses





4. PROPOSED UAFG FORECAST

UAFG in the coastal distribution network is at an all-time low historically due to the significant work to replace leaking pipes and improve the measurement of gas. UAFG is susceptible to atmospheric temperature fluctuations and that is evident in the historical low point in 2022 (rolling average).

4.1 AA6 UAFG Forecast

Projected volume assumptions for the AA6 period are as follows:

- The baseline forecast for gas demand was used, provided by an independent third party.
- The percentage of UAFG is a measurement of the ratio of forecast UAFG volume and gas inflow.
- Leak rates are assumed constant as preventative mains replacement programs counterbalance the uncontrolled leaks resulting from an aging network.

ATCO has separately forecast the costs of UAFG in AA5 through the calculation of forecast UAFG volumes using historical UAFG rates as a percentage of total gas throughput and any UAFG initiatives (e.g., leak repair). Table 3 is ATCO's forecast UAFG % over AA5.

Table 3: Forecast gas demand and UAFG volume annually over AA6

Forecast	2025	2026	2027	2028	2029
Total Gas Inflow (TJ)					
Demand Gas Consumption (TJ)	30,052	29,575	29,355	29,115	28,911
*UAFG Volume (TJ)					
UAFG %	1.67%	1.67%	1.66%	1.65%	1.64%

4.2 AA6 UAFG pricing forecast

4.2.1 Commitment to Reduce Fugitive Emissions

The ATCO Gas Australia Sustainability Strategy outlines a number of targets and initiatives to reduce ATCO's impact on Climate Change. One particular commitment is to ensure renewable gases or low carbon alternatives (to natural gas) can be utilised within the GDS.

Introducing renewable gas into the GDS will not alter the volume of UAFG forecasted as per section 4.1. However, pricing for UAFG replacement will vary during the AA6 period due to ATCO's Strategy to replace a portion of UAFG with renewable gas (e.g., biomethane or renewable hydrogen). Sections 4.2.2 and 0 provide a summary of the proposed forecast volumes and pricing of natural gas and renewable gas, respectively.

4.2.2 Proposed Mechanism for Natural Gas

The forecast unit gas price for UAFG based on natural gas has been estimated based on the most recent publicly available information and predictions. The price per unit of natural gas UAFG (per unit of energy, typically gigajoule (GJ)) is made up of:



- Wholesale cost (i.e. the natural gas wholesale market price).
- Transmission tariff (i.e. the cost of transportation of natural gas to the ATCO GDS).
- Retailer charge (i.e. the retail margin to purchase natural gas).

ATCO has utilised the most recent Gas Statement of Opportunities⁵ and industry information to determine the natural gas UAFG pricing for AA6. Figure 4 provides historical data by 'GasTrading' considering spot pricing. What is evident from the chart is the recent price increases.

Figure 4: Historical prices and volume⁶

Gas Trading - Daily Price History

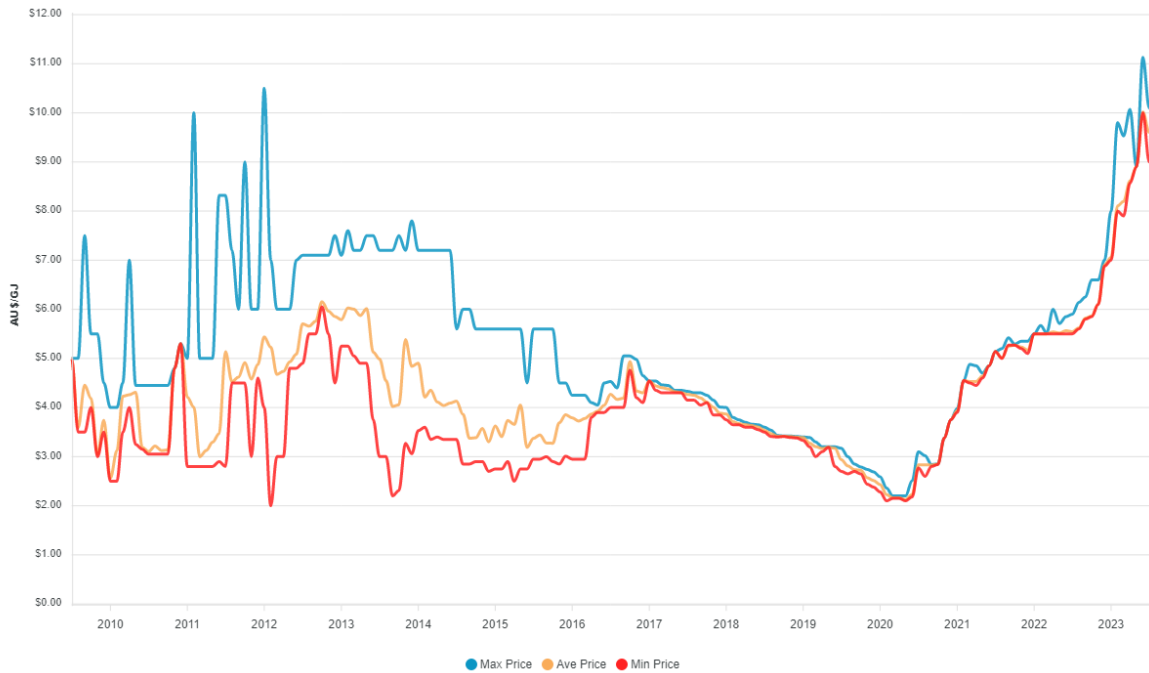


Table 4 provides assumptions on the pricing related to natural gas including wholesale, transmission and retail costs in 2025.

Table 4: Forecast price components assumed for Natural Gas in 2025

Price component (for 2025)	Description
██████████	Retail Margin (remaining proportion) including load factor (\$real as at 31 December 2023) (Assumed – due to seasonal and variation and timing mismatch)
██████████	Transmission tariff (\$real as at 31 December 2023) (regulated - fixed) ⁷
██████████	Forecast natural gas unit price (\$real as at 31 December 2023)

Due to current wholesale market volatility (refer Figure 4), ATCO are assuming an increase in the price of natural gas over the AA6 period. This assumption on natural gas pricing over the 5-years is the baseline for UAFG cost within the Renewable Gas Delivery Strategy. Table 5 provides the assumed pricing and volume forecast over the AA6 period noting that the increase is not linear,

⁵ AEMO (2022) "Gas Statement of Opportunities for Western Australia", December 2017. Available at: <https://www.aemo.com.au/Gas/National-planning-and-forecasting/WA-Gas-Statement-of-Opportunities>

⁶ GasTrading (2023) "Historical Prices and Volume". Available at: <https://www.gastrading.com.au/spot-market/historical-prices-and-volume/daily-price-history>

⁷ <https://www.erawa.com.au/gas/gas-access/dampier-to-bunbury-natural-gas-pipeline/tariff-variations>



however pressures such as inflation, climate action and the wholesale market price will cause natural gas to be higher in 2029.

Table 5: Forecast natural gas volumes and unit pricing over the AA6 period (\$Real as at 31 December 2023)

	2025	2026	2027	2028	2029
Price of natural gas per gigajoule (\$/GJ)					
Volume of natural gas (TJ)					

4.2.3 Proposed Mechanism for Renewable Gas

The proposed mechanism for volume and pricing renewable gas is detailed in the Renewable Gas Delivery Strategy. ATCO have forecasted partial replacement of UAFG with renewable gas within the AA6 period. ATCO are forecasting both biomethane and renewable hydrogen to be utilised as replacement UAFG in AA6. The unit price and forecast volume for both of these renewable gases is given in Table 6.

The required expenditure, infrastructure plans and specific details related to the volumes and pricing of renewable gas are available in the Renewable Gas Delivery Strategy.

Table 6: Forecast renewable gas volumes and unit pricing over the AA6 period (\$Real as at 31 December 2023)

	2025	2026	2027	2028	2029
Price of Biomethane per gigajoule (\$/GJ)					
Price of renewable hydrogen per gigajoule (\$/GJ)					
Volume of Biomethane (TJ)					
Volume of Hydrogen (TJ)					

4.2.4 AA5 forecast UAFG costs

The forecast unit pricing will be subject to change via a tender process to begin in late 2023 for the five year AA6 period from 1 January 2025 to 31 December 2029. This tender process will inform ATCO and the ERA of the actual price of renewable gas and natural gas to replace UAFG that will be used as the basis for our response to the draft decision. This is the most efficient and prudent process and will deliver the lowest total UAFG cost and reduction in fugitive emissions in AA6.

The forecast total annual cost of UAFG is provided in Table 7. This reflects the sum of:

- the assumed volume of UAFG (section 4.1),
- multiplied by the assumed cost of each of:
 - natural gas (Table 7)
 - biomethane (Table 6); and
 - renewable hydrogen (Table 6)

for the forecast volume that ATCO proposes to purchase to replace UAFG.



The availability of renewable gases is discussed within the Renewable Gas Delivery Strategy, which forms the basis of these forecasts.

Table 7: Forecast UAFG annual costs over AA6 (\$Real as at 31 December 2023)

AA6	2025	2026	2027	2028	2029	Total
UAFG Total Cost	\$5,814,000	\$5,811,600	\$6,125,600	\$6,197,600	\$6,823,192	\$30,771,992



APPENDIX A. UAFG OPERATIONAL MANAGEMENT PLAN

This UAFG strategy framework provides a comprehensive overview of the present status of UAFG management, along with a forward-looking perspective. It outlines a series of proposed actions aimed at bridging the gap and achieving the desired outlook for UAFG management.

