ESSENTIAL SERVICES COMMISSION

Review of Unaccounted for Gas Benchmarks

Final Decision

19 December 2022

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Executive Summary

Unaccounted for Gas (UAFG) describes the difference between the measured quantity of gas entering the gas distribution system and the gas delivered to customers. In Victoria, UAFG is managed via a benchmark process as set out in the Gas Distribution System Code of Practice (GDSCoP).[1]

If UAFG is managed appropriately, the discrepancy between the total gas that is supplied into the system and what customers consume is reduced. There are several known causes that contribute to UAFG, which include fugitive emissions (system leakage), metering errors, variations in the heating value of gas, data quality and theft. However, it is complex to determine the extent that each of these known causes individually contribute to UAFG levels.

Retailers are required to purchase sufficient gas to cover customer consumption and actual UAFG. There is also an annual reconciliation between gas distributors and retailers to settle financial obligations to each other, based on whether actual UAFG is over or under the benchmark – the purpose of the benchmarks is to assist energy companies with this financial reconciliation processes.[2]

The current UAFG benchmarks will expire on 31 December 2022. Our final decision is to firstly extend the current benchmarks for a six-month period to 30 June 2023. This aligns the benchmarks with the Australian Energy Regulator's Victorian gas distribution access arrangement review period, which has changed from calendar years to financial years.[3]

We have also set final UAFG benchmarks to apply for the next regulatory period from 1 July 2023 to 30 June 2028.

The benchmarks were derived using a methodology that has been applied since 2013, which takes the recent past performance of distributors, based on data and information that has been settled with retailers.[4]

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[1] Gas Distribution System Code of Practice, clause 2.4.

[2] Under the financial reconciliation process, if actual UAFG is greater than the benchmark, the gas distributor must compensate the retailers. If actual UAFG is less than the benchmark, the retailers must compensate the gas distributor.

[3] The change from calendar to financial years took effect pursuant to the National Energy Legislation Amendment Act 2020, Part 1, section 1(b).

[4] The methodology is known as a 'revealed cost approach' based on a multi-year average of UAFG historical performance, and settled data reached between distributors and retailers.

We have heard, however, strong feedback from community groups and individuals about the management of UAFG, suggesting that the current framework is not sufficient in addressing climate change concerns and broader objectives.[5]

One contributor of UAFG is the fugitive emissions of methane through the network, which of course contributes to greenhouse gas emissions. Without in any way diminishing the critical importance of this issue, it is noted that the UAFG benchmarking process is simply a mechanism to facilitate financial reconciliation between energy retailers and distributors and is not intended as a driver for investment decisions in gas infrastructure.

In line with the framework of economic regulation applying to gas networks, it is the Australian Energy Regulator who sets the amount of revenue that network businesses can recover from customers for using their networks. A decision by the commission to lower UAFG benchmarks to promote better climate outcomes (in addition to being beyond the scope of narrow purpose of these benchmarks) could have capital investment consequences, disconnected to decisions already made by the Australian Energy Regulator regarding the networks' revenue. A relevant consideration is also whether additional large capital expenditure on Victorian gas networks (recoverable by gas consumers) would be efficient in the context of Victorian government policy such as the Gas Substitution Roadmap.[6]

Therefore, on balance, we consider that the current approach to UAFG benchmarking is appropriate to address its limited objectives. Given this, we intend to reconsider the appropriateness of our role in the setting of these benchmarks from next year, particularly as Australian Energy Market Operator currently supports UAFG reconciliation processes in Victoria, and the Australian Energy Regulator are the economic regulator overseeing investments proposed by Victorian gas distributors.

However, we also recognise the strong concerns of the community that climate change mitigation objectives should be a factor when the commission considers regulatory changes affecting the Victorian gas network.

Next year, we will begin reviewing our Gas System Code of Practice. We encourage stakeholders to engage with us as we review the code, where we can discuss and consider how climate change objectives and targets could be considered in the specific obligations for gas distribution businesses in Victoria. We thank all stakeholders for their input and submissions into this consultation.

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[5] We note that we received one individual stakeholder submission that suggested a need for increased gas exploration.

[6] Gas substitution Roadmap, p40

Summary of final decisions

1. Extend and maintain all current benchmarks for the 2018 to 2022 regulatory period by an additional six months for the transitional period 1 January 2023 to 30 June 2023.
2. Make minor drafting amendments to the Gas Distribution System Code of Practice to address:
    a. The UAFG benchmarks six-month transitional period.
    b. The definition of *regulatory year* in regards to the change from calendar year to financial year. This is to align with the National Gas (Victoria) Act 2008 and harmonise with the Australian Energy Regulator's Gas Access Arrangement review process framework.
    c. Consequential and administrative amendments to UAFG benchmarks and drafting, to improve clarity including the Guaranteed Service Level transitional arrangements.
3. Continue to apply our 2017 UAFG methodology in calculating the benchmarks, for the 1 July 2023 to 30 June 2028 forward regulatory period. This involves the revealed cost approach with three-year average settled data. This is then used to calculate the Class B UAFG benchmarks for the Declared Transmission System (DTS). The same applies to the combined Class A and Class B benchmarks for the Non-Declared Transmission System (Non-DTS), provided the UAFG data is settled and represents efficient levels of UAFG.
4. For the Declared Transmission System (DTS) networks, due to a relatively neutral performance trend, the following UAFG benchmarks are set for the 1 July 2023 to 30 June 2028 forward regulatory period:

Distributor	Class A 1 July 2023 – 30 June 2028	Class B 1 July 2023 – 30 June 2028
Australian Gas Networks (Victoria)	0.3%	4.06%
Australian Gas Networks (Albury)	0.1%	4.06%
AusNet Services	0.3%	4.60%
Multinet	0.3%	5.49%

5. For the Non-Declared Transmission System (Non-DTS) networks, the following UAFG benchmarks are set for the 1 July 2023 to 30 June 2028 forward regulatory period:

Distributor	Combined Class A and Class B 1 July 2023 – 30 June 2028
Australian Gas Networks	2.0%
AusNet Services	4.9%
Multinet	2.0%

Introduction

In Victoria, the Gas Distribution System Code of Practice we administer sets the benchmarks for unaccounted for gas (UAFG).[7] The UAFG benchmarks apply on a calendar year basis and are set for five years. The current set of benchmarks will expire on 31 December 2022.

In our 26 October 2022 draft decision, we proposed and consulted on the UAFG benchmarks to be set for gas distributors' next regulatory period from 1 July 2023 to 30 June 2028. We also proposed a six-month bridging period to transition and align with the National Gas (Victoria) Act 2008, which amended the regulatory period from calendar to financial years.

What is unaccounted for gas?

Unaccounted for gas (UAFG) is the difference between the measured quantity of gas entering the gas distribution system and the gas delivered to customers.

There are several known causes that contribute to UAFG in gas distribution systems.

Based on information submitted by Victorian gas distributors to us for this review and in previous reviews, there are up to 17 different components that contribute to UAFG.[8] These are broadly itemised into five categories of causes for UAFG:

- fugitive emissions (system leakage)
- metering errors
- heating value
- data quality
- theft.

However, it is difficult to determine the extent that each of these known causes individually contribute to UAFG levels. In particular, the measurement of gas necessarily requires several assumptions to account for the physical environment compared to the ideal environment used for conversion calculations.

The extent to which distributors have control over how much UAFG occurs also varies. For example, fugitive emissions are largely within the control of distributors, as some system leaks can be identified and reduced through distributors' asset management and mains replacement

[7] Gas Distribution System Code of Practice, schedule 1, part C.

[8] Review of Unaccounted for Gas Benchmarks – Methodology, Prepared for Essential Services Commission by Zincara Pty Ltd, July 2017, p. 9; Review of Gas Distribution Businesses Unaccounted for Gas, Prepared for Essential Services Commission by Zincara Pty Ltd, September 2022, p. 11.

programs (the process of replacing old pipes with new). However, we note that even new gas distribution systems or pipes will contribute some level of UAFG. This is because new gas pipelines operate at higher pressure where any leaks occur at a higher rate. It can also introduce pressure conversion errors, but we recognise that new technology and improved business practices can reduce UAFG levels.[9]

Other factors, such as the influence of gas heating values are outside the control of distributors, as distributors do not source the gas that is supplied into their networks.[10]

Appendix A provides further details on the causes of UAFG.

The purpose and method for setting UAFG benchmarks

Purpose of UAFG benchmarks

The Essential Services Commission currently sets UAFG benchmarks, which are set out in Schedule 1, Part C of the Gas Distribution System Code of Practice.

The benchmarks provide a basis to help distributors and retailers process, account for and reconcile UAFG and to settle respective financial obligations to each other. As retailers enter gas contracts with suppliers the retailers must purchase enough gas to account for the UAFG. Therefore, retailers use the UAFG benchmark as a basis to gauge the total amount of gas to purchase from suppliers.

Because residential customer gas meters are manually checked, there is a difference in the actual UAFG in a year compared to the benchmark amount. Clauses 2.4(c)-(e) of the Gas Distribution System Code of Practice sets out a process for distributors and retailers to reconcile the financial difference between the bulk gas initially purchased including the UAFG benchmark amount and the actual UAFG that is measured.

The commission last set benchmarks in 2017, to apply from 1 January 2018 to 31 December 2022.

Categorising unaccounted for gas benchmarks

As previously discussed, UAFG is highly dependent on a range of factors, which are also influenced by the type of distribution network and the equipment of different end-use customers.

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[9] Review of Unaccounted for Gas Benchmarks – Methodology, Prepared for Essential Services Commission by Zincara Pty Ltd, July 2017, p. 9; Review of Gas Distribution Businesses Unaccounted for Gas, Prepared for Essential Services Commission by Zincara Pty Ltd, Sept 2022, p. 11.

[10] Essential Services Commission, Review of Unaccounted for Gas Benchmarks: Final Decision – Methodology, July 2017, p. 5.

Therefore, we have set different UAFG benchmarks that vary between distribution business, types of gas network, and different classes of customers.

The Victorian gas networks

We set benchmarks that apply to Victorian gas networks that connect to two different types of transmission systems in Victoria:

- The **Declared Transmission System (DTS)**, which is the main transmission network in Victoria. It provides gas in bulk to gas distributors who then subsequently supply Victorian gas customers.
- The **non-Declared Transmission Systems (non-DTS)**, these are smaller bespoke gas networks which sit outside the DTS. Non-DTS typically focus on a small geographic region where gas distributors serve the related customers. We consider specific benchmarks are required for the non-DTS as UAFG varies in these networks due to:
  - metering issues
  - smaller network size (compared to the DTS)
  - insufficient gas quantity or flow during customer build up
  - new connection commissioning (e.g gas purging).[11]

Customer classifications used in UAFG benchmarking

The measurement of UAFG also depends on the metering equipment of the end customer. In Victoria, we apply two different UAFG benchmarks to distributors to account for different types of customers:

- **Class A benchmarks** – these benchmarks refer to customers who consume 250 Terajoules (TJ) or more per year and are typically serviced by high pressure mains (generally commercial and industrial customers).

  Customers to whom Class A benchmarks refer to are typically large businesses with more complex facilities, which means these include more sophisticated equipment and more accurate meters installed at customer sites.
- **Class B benchmarks** – these benchmarks refer to customers connected to the high, medium or low-pressure mains that consume less than 250 TJ per year (generally residential and small business customers).

[11] Australian Gas Network, Multinet and AusNet 2017 UAFG review submissions.

We note there are significantly more residential and small business customers in Victoria, which the Class B benchmarks refer to, compared to those customers referred to for Class A benchmarks. The accuracy of meters installed at residential properties are also less accurate than commercial and industrial quality meters, which contribute to differences in UAFG.

Our approach

This chapter sets out our approach to the final decision, and our consideration of stakeholder submissions and feedback. This chapter is structured in two parts:

- Firstly, we have applied the current UAFG benchmarks for an additional six months, as a transitional arrangement to align with recent legislative changes.
- Secondly, we have set updated UAFG benchmarks to apply for the new forward regulatory period that applies from 1 July 2023 to 30 June 2028.

Extending current UAFG benchmarks for a six-month transitional period

On 20 October 2020, Victorian legislation was amended to adjust the regulatory period of the Victorian Gas Access Arrangement framework from calendar to financial years.[12] The Victorian Gas Access Arrangement is the national economic regulatory framework for gas distributors, administered by the Australian Energy Regulator (AER).

However, the current Gas Distribution System Code of Practice sets out UAFG benchmarks that apply in calendar years, resulting in a misalignment with the new financial year regulatory period for the Victorian Gas Access Arrangement. In Victoria, the next regulatory period for gas distribution networks will be from 1 July 2023 to 30 June 2028.

Our draft decision proposed changes to realign the UAFG benchmark period, by extending current UAFG benchmarks for six-month.

Distributors did not support the draft decision approach. Australian Gas Networks and Multinet did 'not believe there is material benefit to be gained in changing to Regulatory Years' and suggested that Australian Energy Market Operator would need 'to update existing settlement processes and system changes to allow for UAFG settlements for a regulatory year period'.[13] AusNet also recommended retaining the existing UAFG benchmark calendar year period, to provide certainty when submitting revised gas access arrangement proposals to the Australian Energy Regulator later in 2022.[14] However, we note that distributors did not provide an estimate of what the implementation costs may be for the proposed transitional period, and also note that the Australian Energy Regulator and the Australian Energy Market Operator have not raised any concerns with this approach. Further, two retailers and several community groups supported the six-month

[12] National Energy Legislation Amendment Act 2020, Part 1, section1, (b).

[13] Australian Gas Networks and Multinet submission to our draft decision, p2

[14] AusNet submission to our draft decision, p3

transitional arrangement.[15] In particular, Red and Lumo Energy considered the six-month transitional period 'to be a practical and effective approach to aligning benchmark periods with the timing of the Australian Energy Regulator's Victorian gas distribution access arrangement review period'.[16]

We consider the six-month transitional approach provides clarity for distributors and retailers, as it will enable a period of adjustment and directly aligns with the Australian Energy Regulator's process to extend its current 2018-2022 Victorian Gas Access Arrangement review period by six months.[17] We also expect this to minimise variations between the UAFG considerations that were accounted for in the 2018-2022 Victorian Gas Access Arrangement, which also has been extended for six-month.

Methodology for new UAFG benchmarks from 1 July 2023

In 2017, our approach to determining a methodology and calculating the UAFG benchmarks was substantively reviewed, with stakeholders generally supporting the final methodology.[18]

We considered three different methodologies in setting Declared Transmission System (DTS) benchmarks, and concluded that the revealed cost method, using a multi-year average of settled data resulted in a more reliable and efficient approach to setting UAFG benchmarks.[19] Appendix B provides further information on the methodologies we considered in 2017. Further detail can also be found in our 2017 decision available on our website.[20]

Our October 2022 draft decision also proposed applying the same methodologies. We note that this methodology has been applied consistently since 2013. We consider there are benefits in continuing to apply this methodology, as it enables a consistent assessment of distributors' long term historical performance without the potential uncertainties that come from a change in methodology which could reduce the ability to compare.

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[15] AGL submission to our draft decision, p1, Darebin Climate Action Now submission to our draft decision, p1, Darebin Climate Action Now submission to our draft decision, p1, Friends of the Earth submission to our draft decision, p1, Beyond Gas Networks submission to our draft decision, p1, Lighter Footprint submission to our draft decision, p1, Red/Lumo Energy submission to our draft decision, p1.

[16] Red/Lumo Energy submission to our draft decision, p1

[17] Australian Energy Regulator's review of Australian Gas Networks' Gas Access Arrangement six-month extension.

[18] AGL, AusNet Services, Australian Gas Networks, Red and Lumo Energy submissions to the 2017 draft decision methodology - June 2017.

[19] Essential Services Commission, Review of Unaccounted for Gas Benchmarks: Final Decision – Methodology, July 2017, p. 18.

[20] 'Unaccounted for gas benchmarks review 2017', Essential Services Commission, accessed 11 October 2022, https://www.esc.vic.gov.au/electricity-and-gas/tariffs-and-benchmarks/unaccounted-gas-benchmarks/unaccounted-gas-benchmarks-review-2017#tabs-container2.

Therefore, our final decision is to apply the previous methodologies in calculating UAFG benchmarks for 1 July 2023 to 30 June 2028.

Methodology for Declared Transmission System benchmarks

Our final decision for the Declared Transmission System (DTS) continues with the same methodology as applied in 2017 and has been used to calculate the updated UAFG benchmarks.

This method uses the revealed cost methodology, and we have used three years of settled data to determine the final UAFG benchmarks for the regulatory period of 1 July 2023 to 30 June 2028. A three-year average of settled data was used to calculate the UAFG benchmarks, to account for any variations and fluctuations in year-to-year UAFG levels. We will also retain two separate benchmarks for the DTS (Class A and Class B), as per our 2017 methodology which most stakeholders previously supported.[21]

Our final decision also continues with separate DTS benchmarks when supplying Class A and B customers. This will reduce any cross subsidy in UAFG costs between these two customer classes to result in a more cost-reflective UAFG allocation.

Methodology for non-Declared Transmission System benchmarks

Our draft decision for the non-Declared Transmission System (non-DTS) did not apply the revealed cost methodology, instead we proposed to retain the same 2017 benchmarks for the next regulatory period covering 1 July 2023 to 30 June 2028. This was based on distributors' non-DTS UAFG data being unsettled or distributors not being able to demonstrate processes or policies to efficiently manage levels of UAFG. We have also not received updated data or information for the non-DTS which we could confidently consider changing our draft decision approach.

Stakeholder feedback on our methodology for UAFG benchmarks

In making our final decision, we also considered stakeholder feedback into our proposed methodology. Stakeholders suggested that we consider other factors in the methodology for setting benchmarks particularly from 1 July 2023 onwards including:

- the effect of the mains gas replacement program on UAFG performance
- the effect of hydrogen-injection in gas networks, and proposed changes to zonal heating values on UAFG levels, and

[21] Essential Services Commission, Review of Unaccounted for Gas Benchmarks: Final Decision – Methodology, July 2017, p28

- climate change mitigation objectives and targets when setting UAFG benchmarks, particularly in reducing fugitive emissions (which are a component of UAFG).

The following sections summarise the feedback we received from stakeholders, and our consideration to this feedback in making our final decision.

Considering the effect of mains gas replacement programs on UAFG performance

Victorian gas distributors have been undertaking mains gas replacement programs, with Australian Gas Networks expecting to complete its program at the end of 2022, and AusNet and Multinet to continue implementing their programs into at least the next regulatory period. These programs involve replacing older gas mains pipelines, including old cast iron and unprotected steel mains pipes.

Two retailers, Red and Lumo Energy and EnergyAustralia, suggested the UAFG benchmarks should consider the potential effect of mains gas replacement programs in reducing UAFG.[22] EnergyAustralia particularly commented:

> "…the UAFG of 4% set for AGN is based on settled data to 2018, since this time AGN has virtually completed its low-pressure mains replacement program, a program that has cost consumers $200 million, which should have resulted in a reduction in the UAFG achievable by AGN."[23]

The commission notes, without in any way diminishing the critical importance of this issue, given the narrow purpose for the setting of UAFG benchmarks (i.e. to assist the financial reconciliation of UAFG between distributors and retailers), it is unnecessary for the commission to form a view on the effectiveness of the mains gas replacement programs in reducing UAFG. In that respect, our current methodology is primarily based on historic UAFG levels and data, and we have not tested whether (or to what extent) the mains gas replacement programs could contribute to managing UAFG.

Considering hydrogen-injection in gas networks and proposed changes to zonal heating values

We recognise recent proposals and policies that support the injection of hydrogen and other renewable gases into the Victorian gas network, most notably:

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[22] Red/Lumo Energy submission to our draft decision, p2, Energy Australia submission to our draft decision, Engage Victoria summary document.

[23] Energy Australia submission to our draft decision, summary document

- The Australian Energy Market Commission's (AEMC) have finalised rule changes for Declared Wholesale Gas Market (DWGM) Distribution Connected Facilities.[24] These amendments were initiated by the Victorian government to better facilitate and promote the participation of distributed gas sources, such as renewable hydrogen, into the Victorian gas market.
- The Australian Energy Market Operator is currently consulting on implementing zonal heating values, as requested by the Victorian government, which may enable distributors to better quantify UAFG through more granular zonal heating values.[25]

Red and Lumo Energy and AGL suggested that these potential changes could affect the measurement and performance of UAFG, and therefore affect the application of the benchmarks.[26] AGL particularly noted:

> "This will be particularly relevant if the Commission can no longer rely on nine years of historical data from Gas Distribution Businesses to calculate UAFG as the introduction of gas blends into the mix could substantively change the actual performance of the UAFG and the associated benchmarking requirements."[27]

We also note that the Friends of the Earth Melbourne suggested we consider reviewing the benchmark more frequently, suggesting to:

> "Review the benchmark for UAFG every three years, rather than five years to allow for a more agile response to the rapid rate of change in our energy matrix statewide, nationally and internationally."[28]

We note that legislative and regulatory changes would be needed to allow the injection of hydrogen or other renewable gases into the gas distribution system.[29]

Given the lack of clarity in the timing of hydrogen injection at a wide scale across the network, we consider the current benchmarking process appropriate for the next regulatory period.

However, the commission will consider, in its discretion, a proposed variation to the UAFG benchmarks within the 2023-2028 regulatory period. We also note that the primary objective of

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[24] https://www.aemc.gov.au/rule-changes/dwgm-distribution-connected-facilities

[25] https://www.aemo.com.au/initiatives/trials-and-initiatives/renewable-gas-blending-in-victoria

[26] Red/Lumo Energy submission to our draft decision, p1, AGL submission to our draft decision, p2

[27] AGL submission to our draft decision, p2

[28] Friends of the Earth Melbourne, submission to our draft decision, p3

[29] In particular, the order under section 8 of the Gas Industry Act, Act (see Victoria Government Gazette No. S 197 Tuesday 29 October 2002), gas quality standards that are regulated by Energy Safe Victoria, and Australian Energy Market Operator's review on possible zonal heating values to be applied in Victoria.

UAFG benchmarks is largely operational, in that it supports the financial reconciliation processes between distributors and retailers. Therefore, as part of its wider review into the Gas Distribution System Code of Practice (which will commence in 2023) our role in the setting of these benchmarks will be considered, particularly given Australian Energy Market Operator currently support UAFG reconciliation processes in Victoria, and the Australian Energy Regulator are the economic regulator overseeing the investments and expenditure proposed by Victorian gas distributors

Considering climate change mitigation objectives and targets

In response to our draft decision paper, we received six submissions from community stakeholders and representative groups, who strongly suggested that the commission should consider climate change mitigation objectives and targets when benchmarking UAFG.[30]

Community stakeholders also suggested we should consider preparing for the shrinking of the gas distribution network in an orderly manner. However, we also note one public submission that supported the continued use of natural gas in Victoria.[31] Darebin Climate Action Now suggested that:

> "Safety and economics are too narrow as objectives for UAFG management. ESC should take the lead in widening the objectives to include mitigation of climate change."[32]

Beyond Gas Networks also noted that the commission should consider the Commonwealth Climate Change Bill and Victoria's Climate Change Act, which 'requires net zero by 2050 with targets for emissions to reduce 28–33% below 2005 levels by the end of 2025 and for emissions to reduce 50% below 2005 levels by the end of 2030'.[33]

We also note that several community stakeholders suggested we specifically consider regulating fugitive emissions (e.g. methane) in Victorian gas networks, rather than our current processes relating to UAFG. Lighter Footprints suggested that:

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[30] Bass Coast Climate Action Network submission to our draft decision, p1, Beyond Gas Networks submission to our draft decision, p1, Darebin Climate Action now submission to our draft decision, p1, Friends of the Earth Melbourne submission to our draft decision, p1, John Godfrey submission to our draft decision, p1, Lighter Footprints, p1

[31] Anonymous 1, submission comments to the questions we posed on our Engage Victoria consultation page

[32] Darebin Climate Action now submission to our draft decision, p1

[33] Beyond Gas Networks submission to our draft decision, p1

> "…part of UAFG that represents an allowance for fugitive emissions should be reduced in the coming five year period."[34]

One contributor of UAFG is the fugitive emissions of methane through the network, which of course contributes to greenhouse gas emissions. Without in any way diminishing the critical importance of this issue, it is noted that the limited objective of the UAFG benchmarks is to support the financial reconciliation to settle costs between retailers and distributors.

In line with the framework of economic regulation applying to gas networks, it is the Australian Energy Regulator who sets the amount of revenue that network businesses can recover from customers for using their networks. A decision by the commission to lower UAFG benchmarks to promote better climate outcomes (in addition to being beyond the scope of narrow purpose of these benchmarks) could have capital investment consequences, disconnected to decisions made by the Australian Energy Regulator regarding the networks' revenue. A relevant consideration is also whether additional large capital expenditure on Victorian gas networks (recoverable by gas consumers) would be efficient in the context of Victorian Government policy such as the Gas Substitution Roadmap.[35]

We therefore consider that the current approach to UAFG benchmarking is appropriate to address its limited objectives. However, we recognise the strong concerns of the community that climate change mitigation objectives should be a factor when the commission considers regulatory changes affecting the Victorian gas network.

Next year, we will begin reviewing our Gas Distribution System Code of Practice. We encourage stakeholders to engage with us as we review the code, where we can discuss and consider how climate change objectives and targets could be considered in the specific obligations for gas distribution businesses in Victoria.

[34] Lighter Footprints submission to our draft decision, p2-3.

[35] Gas Substitution Roadmap, p40

Unaccounted for gas benchmarks

This chapter details our final decision for unaccounted for gas (UAFG) benchmarks in Victoria, applying the approach and methodology described previously:

- The first section sets out the benchmarks for a six-month transitional period.
- The second section sets out the benchmarks that will apply for the next forward regulatory period.

UAFG benchmarks to apply for a transitional period from 1 January to 30 June 2023

For both the Declared Transmission System (DTS) and non-Declared Transmission System (non-DTS), the current 2018 – 2022 UAFG benchmarks have been set to continue for a six-month transitional period from 1 January 2023 to 30 June 2023, as shown in table 1 and 2 below.

Table 1 Declared Transmission System (DTS) – Transitional UAFG benchmarks between 1 January 2023 to 30 June 2023

Distributor	Class A	Class B
Australian Gas Networks (Victoria)	0.3%	4.0%
Australian Gas Networks (Albury)	0.1%	4.0%
AusNet Services	0.3%	4.6%
Multinet Gas	0.3%	5.3%

Table 2 Non-Declared Transmission System (Non-DTS) – Transitional UAFG benchmarks between 1 January 2023 to 30 June 2023

Distributor	Combined Class A and Class B
Australian Gas Networks	2.0%
AusNet Services	4.9%
Multinet Gas	2.0%

UAFG benchmarks to apply in the next regulatory period from 1 July 2023 to 30 June 2028

For our final decision we have considered further updated data and information. We also engaged an independent technical consultant, Zincara, to provide a third-party review of the revised data and information submitted by distributors.

The considerations for each distributors' settled UAFG data and UAFG management plans, which have been used to inform our final decision, are set out below.

Declared Transmission System (DTS) – Class A UAFG benchmarks

The DTS Class A UAFG benchmarks are associated with high pressure gas infrastructure for bulk gas delivery. High pressure gas infrastructure is designed and built to different and more robust requirements with sophisticated and accurate metering equipment able to accurately quantify UAFG amounts. As a result, there are materially less leakage and metering error issues. This is reflected by the DTS Class A UAFG benchmarks being set at a low percentage value and remaining unchanged since at least 2013.

Based on the above factors, we have set the DTS Class A UAFG benchmarks as shown in Table 3, which have not changed from current benchmarks.

Table 3 DTS class A UAFG benchmarks.

Distributor	Class A 1 July 2023 – 30 June 2028
Australian Gas Networks (Victoria)	0.3%
Australian Gas Networks (Albury)	0.1%
AusNet Services	0.3%
Multinet Gas	0.3%

Declared Transmission System (DTS) – Class B UAFG benchmarks

We applied the recent performance data of distributors against the revealed cost methodology to calculate the Class B UAFG benchmarks for the Declared Transmission System (DTS), shown in Table 4. We note that Australian Gas Networks and Multinet provided amended UAFG data due to an identified error in its submitted spreadsheet.[36] AusNet provided some additional information regarding their UAFG management actions, but no updated data.

[36] Australian Gas Networks and Multinet submission to our draft decision, p3.

We also note that the DTS Class B benchmarks for distributors are relatively stable against the historical trends in UAFG performance.

Table 4 DTS class B UAFG benchmarks.

Distributor	Class B 1 July 2023 – 30 June 2028
Australian Gas Networks (Victoria)	4.06%
Australian Gas Networks (Albury)	4.06%
AusNet Services	4.60%
Multinet Gas	5.49%

The benchmarks have been slightly adjusted from the draft decision, due to updated data and information provided by distributors. The DTS Class B benchmarks have increased from 4.00% to 4.06% for Australian Gas Networks, and from 5.40% to 5.49% for Multinet.

Non-Declared Transmission System (non-DTS) – Combined Class A and Class B UAFG benchmarks

For the non-DTS, we are continuing to combine Class A and Class B UAFG benchmarks in line with our 2017 UAFG review approach.[37]

Australian Gas Networks and Multinet were unable to provide up to date settled data, and AusNet have only recently demonstrated lower UAFG performance levels. Therefore, we have retained the current non-DTS UAFG benchmarks for the next regulatory period, as shown in Table 5.

Table 5 Non-DTS combined Class A and Class B UAFG benchmarks.

Distributor	Combined Class A and Class B 1 July 2023 – 30 June 2028
Australian Gas Networks	2.0%
AusNet Services	4.9%
Multinet Gas	2.0%

[37] In the 2008 Gas Access Arrangement review, the commission set a combined Class A and Class B benchmarks for the non-DTS network due to their small scale. This approach has been continued since.

Consequential changes to the Gas Distribution System Code of Practice

We administer and enforce the Gas Distribution System Code of Practice to regulate gas distribution businesses. The Gas Distribution System Code of Practice also includes obligations relating to the unaccounted for gas (UAFG) benchmarks and reconciliation processes between distributors and retailers.

As part of this review, the introduction of a six-month transitional UAFG benchmark period requires consequential amendments to the Gas Distribution System Code of Practice.

However, the transitional six-month period also has effects on the operation of the Guaranteed Service Level (GSL) scheme – a scheme that provides payments to gas customers who experience particularly low levels of service. Therefore, we have made consequential changes to the Gas Distribution System Code of Practice to clarify the operation of the GSL scheme during the transitional six-months period.

Consequential code drafting amendments to support UAFG benchmarks

Stakeholders generally supported our proposed drafting amendments to the Gas Distribution System Code of Practice to support UAFG benchmarks. Our final decision includes amendments to Schedule 1, Part C and Part E of the Gas Distribution System Code of Practice. We have also included consequential and administrative amendments to improve clarity to existing obligations. These include:

- Adding a definition of *regulatory year*, following the change from calendar year to financial year under the National Energy Legislation Amendment Act 2020
- Updated definitions of *declared transmission system (DTS)* and of *non-DTS distribution system*
- Adjustments to Part C3 to update out-of-date drafting.
- Guaranteed Service Level (GSL) amendment notes to clarify how the GSL applies during the six-month transitional period.
- DUAFG period guidance note amendments to assist with clarity.

The full version of the amended Gas Distribution System Code of Practice can be found on our website.

Consequential changes to apply the Guaranteed Service Level scheme for a six-month transitional period

In its submission, Red and Lumo Energy highlighted that the proposed Gas Distribution System Code of Practice amendments in our draft decision could unintentionally result in customers receiving duplicate (or not being eligible for) payments under the Guaranteed Service Level scheme during the transitional six-month period from 1 January to 30 June 2023.

We note that the Guaranteed Service Level scheme under the Electricity Distribution Code of Practice faced similar issues, as the Victorian revenue determination regulatory periods were similarly changed from calendar to financial years. We made a consequential change to provide for a Guaranteed Service Level scheme that would apply for the transitional six-month period.

In this final decision, we have made a similar consequential change to the Guaranteed Service Level scheme in the Gas Distribution System Code of Practice. For the six-month transitional period, we will halve the thresholds for when a Guaranteed Service Level payment must be made to a customer, as well as halve the payment amounts for the number of unplanned interruptions faced by a customer. The remaining categories of Guaranteed Service Level payments under the scheme are not affected by the transitional period.

We also note that distributors raised broader concerns on the implementation of a transitional six-month period resulting in process or system changes. However, we consider that the changes required for a six-month transitional period for the Guaranteed Service Level scheme would have minimal impact, noting that the total amount of payments across all categories and distributors in 2021 was approximately $146,000.[38] [39]

Our final decision includes amendments to Schedule 1, Part E, footnote of the Gas Distribution System Code of Practice to give effect to these arrangements.

The transitional arrangement for the Guaranteed Service Level scheme is outlined in the following table.

[38] We also note that our final decision for a transitional period only applies to the category of frequency of unplanned interruptions, which is only one out of the four Guaranteed Service Level categories to which the total payments apply to.

[39] Australian Energy Regulator - 2021 Regulatory Information Notices

Table 6 Transitional arrangements for Guaranteed Service Level payments for 1 January to 30 June 2023

Guaranteed Service Level category	Threshold for payment	Payment between 1 January 2023 – 30 June 2023 (six-month period)
Number of unplanned interruptions	Upon 2nd interruption	$75
	Upon 5th interruption	$75 (additional)

For context, the complete current Guaranteed Service Level scheme for gas distribution is as follows.

Table 7 Guaranteed Service Level payments to apply each financial year from 1 July 2023

Guaranteed Service Level category	Threshold for payment	Payment each financial year (from 1 July 2023)
Number of unplanned interruptions	Upon 5th interruption	$150
	Upon 10th interruption	$150 (additional)
Sustained hours of interruptions	within 12 hours	$150
	within 18 hours	$150 (additional)
Connections	Failure to connect within 1 day of agreed date	$80 per day (maximum of $240)
Failure to attend appointment	Customer present (2 hours)	$50 per event
	Customer absent (agreed date)	$50 per event

We do not propose a further review of the broader scheme. From 1 July 2023, the current Guaranteed Service Level payment scheme will continue to apply, but on a financial year basis (rather than a calendar year basis).

Distributor performance in managing unaccounted for gas

The following chapter provides further detail on the levels of UAFG in Victorian gas distribution networks, including the actions distributors undertook to manage UAFG levels.

To inform our decision, we requested distributors' UAFG performance data and information demonstrating their management of UAFG. During public consultation, Australian Gas Networks and Multinet provided updated DTS data to correct a calculation issue they identified.

Distributors undertake UAFG management activities across different timeframes. For example, some UAFG management activities such as leakage surveys or temperature and pressure conversion and correction factor checks are operationally undertaken on an ongoing basis. Others such as the maintenance or replacement of Custody Transfer Meters would occur infrequently (every few years).

We also report on distributors performance, and regularly publish each distributor's actual UAFG levels against the benchmarks through our annual Victorian Energy Market Report. Previous reports can be accessed at our website.[40]

Australian Gas Networks – performance and actions to manage UAFG

Declared Transmission System (DTS)

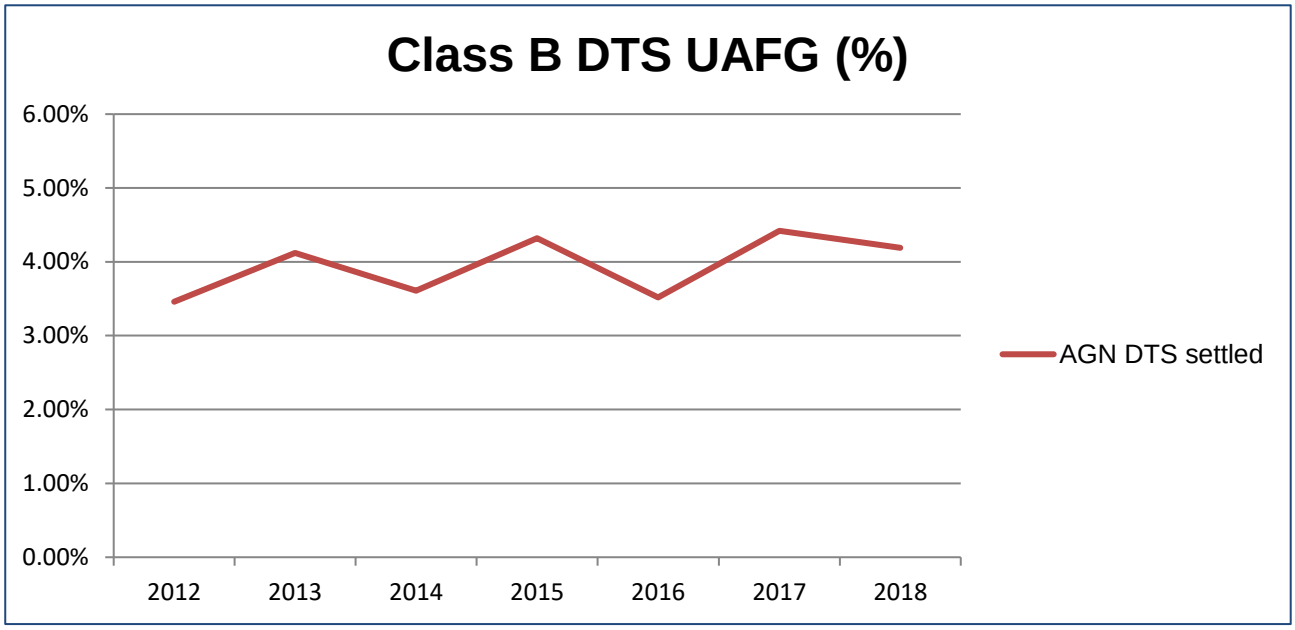
In November 2022, Australian Gas Networks submitted updated nine years of data between 2012 to 2020 (the 2021 data was not available for the final decision) for the Victoria and Albury networks. Because these two networks are interconnected and its UAFG levels are not measured separately, these will be referred to as a single network.

We note that Australian Gas Networks submitted settled data up to 2018 but the 2019 data remained unsettled and therefore not used in informing our final decision. For the final decision, three years of the latest available settled data (i.e. between 2016 and 2018) from Australian Gas Networks has been considered.

[40] www.esc.vic.gov.au/electricity-and-gas/market-performance-and-reporting/victorian-energy-market-report

Figure 1 illustrates Australian Gas Network's UAFG performance based on provided settled data. We engaged an independent consultant, Zincara Pty. Ltd (Zincara), to assist our analysis of distributor information and UAFG performance and management strategies to set the UAFG benchmarks

Figure 1 Australian Gas Networks DTS settled data UAFG performance



Australian Gas Networks' submission indicated approximately 17 activities,[41] which Zincara considered to be good industry practice to manage UAFG.[42] Some of the key activities include:

- Liaising with APA Group (the transmission operator) annually on the maintenance and replacement of APA's custody transfer meters (CTM), which are the injection points into the networks, to ensure their ongoing accuracy.
- Ensuring that meters on customers' sites are accurate through its ongoing time expired meter replacement program and replacement of faulty meters.
- Carrying out checks on the temperature and pressure corrections on its industrial customers and ensure that the residential customers are supplied at the appropriate pressure to avoid any incorrect pressure and temperate correction factors.
- Monitoring Australian Energy Market Operator's implementation of heating value zones in Victoria and the impact on UAFG.

[41] Review of Gas Distribution Businesses Unaccounted for Gas, Prepared for Essential Services Commission by Zincara Pty Ltd, September 2022, p9.

[42] Ibid, p12.

- Ensuring that theft of gas is minimised by regular checks on industrial customers and monitoring the gas consumption of residential customers.
- Completing its low-pressure mains replacement program by replacing 297 kms of gas mains in the current Access Arrangement period.
- Carrying out leakage surveys on a regular basis.
- Monitoring the networks through its Supervisory Control and Data Acquisition (SCADA) system to ensure that the network is operating at the lowest pressure required thus reducing the quantity of gas leaks.
- Reducing third party damage through participating in the Energy Safe Victoria (ESV) led Gas Asset Damage mitigation project.

We note that these actions are consistent with Australian Gas Networks' UAFG management approach made during our 2017 UAFG review. Although Australian Gas Networks' UAFG performance fluctuated on a yearly basis over the current regulatory period, when averaged, Australian Gas Networks performed relatively consistently at around the current benchmark of 4.06 per cent in recent years.

Given the consistent approach Australian Gas Network has taken to manage UAFG levels, and the stable averaged performance of its DTS UAFG in recent years, using Australian Gas Networks' updated data, the DTS Class B UAFG benchmarks for the next regulatory period has been slightly adjusted from 4.0 per cent to 4.06 per cent, consistent with Zincara's recommendations.[43] We consider that seeking to improve Australian Gas Networks' UAFG performance relative to the cost to achieve it from their current stable performance may have limited benefits. However, we expect Australian Gas Networks will maintain its UAFG performance and where appropriate, pursue improvement strategies and actions to its assets and systems.

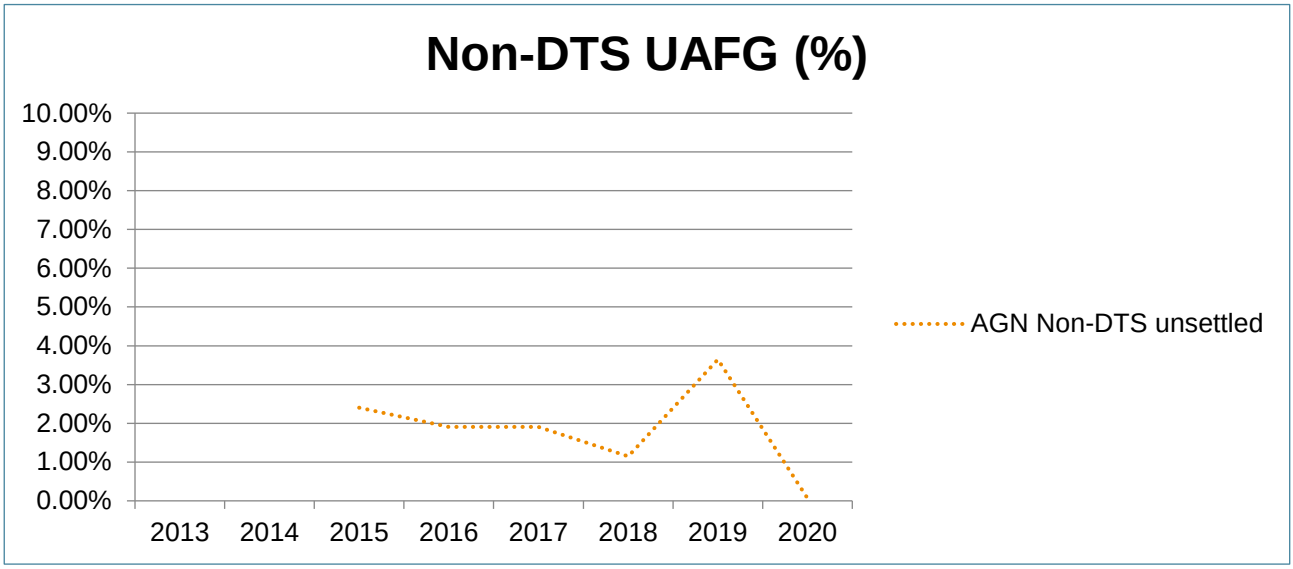
Non-Declared Transmission System (non-DTS)

Australian Gas Networks' submission provided only partially settled data to inform our draft decision. However, Australian Gas Networks is currently seeking assistance from the Australian Energy Market Operator to settle non-DTS UAFG benchmarks. Because the last settled data dates back to 2015, we consider this data too out of date to be useful for the purposes of setting new non-DTS UAFG benchmarks.

[43] Review of Gas Distribution Businesses Unaccounted for Gas, Prepared for Essential Services Commission by Zincara Pty Ltd, December 2022, p4.

With no new settled data, we have retained the current non-DTS UAFG benchmarks of two per cent. This aligns with Zincara's recommendations.[44]

Figure 2 Australian Gas Networks non-DTS UAFG performance (unsettled data)



AusNet Services – performance and actions to manage UAFG

Declared Transmission System (DTS)

In late August and early September 2022, AusNet Services (AusNet) submitted nine years of data between 2012 to 2020. We requested 10 years of data, but 2021 data was not available at the time of the request. With no updated data to consider, our final decision has been informed by AusNet's three years of latest available settled data between 2017 and 2019.

[44] Review of Gas Distribution Businesses Unaccounted for Gas, Prepared for Essential Services Commission by Zincara Pty Ltd, December 2022, p4.

Figure 3 AusNet Services DTS settled data UAFG performance

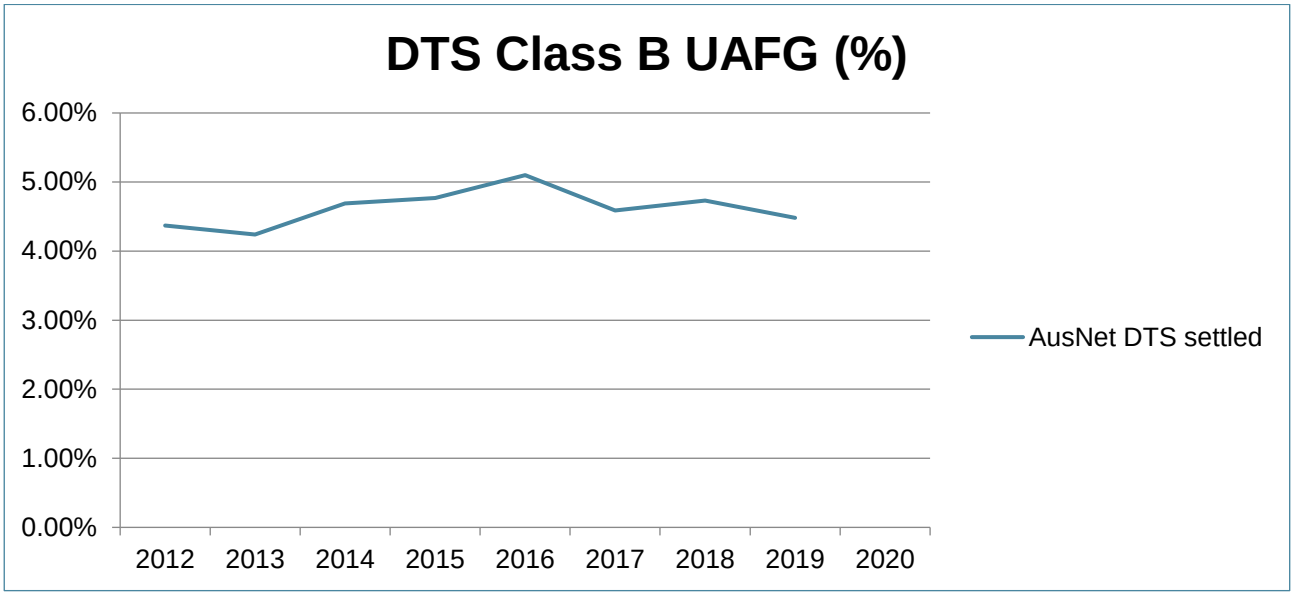


Figure 3 illustrates AusNet's DTS UAFG performance based on settled data. Zincara's review indicated that AusNet's approach to categorising UAFG sources differed slightly to those of the other two distributors as the categorisation was more consolidated but undertook similar strategies and activities to manage and minimise UAFG.[45]

Zincara also noted that the UAFG management strategy document submitted by AusNet was dated in 2018. Some of AusNet's key activities to address UAFG include:

- UAFG key performance indicators are monitored by a UAFG taskforce that also develops strategies. The Asset Management Committee receives annual reports on UAFG performance.
- The age and accuracy of custody transfer meters are reviewed and replaced by APA as necessary. AusNet also proposes to install town gas meters in Ararat, Stawell and Horsham.
- The heating value of the gas injected into the AusNet networks is monitored for consistency.
- As AusNet has only limited visibility how Australian Energy Market Operator has applied pressure correction factors for industrial customers, AusNet propose to engage with Australian Energy Market Operator on establishing a process for receiving periodic usage data for industrial and commercial customers.
- The ongoing mains replacement program on its low-pressure networks will reduce the number of leaks in the network. AusNet prioritises areas considered to be high risk and high benefit.

[45] Review of Gas Distribution Businesses Unaccounted for Gas, Prepared for Essential Services Commission by Zincara Pty Ltd, September 2022, p12.

- AusNet proposes to extend its leakage survey to regional areas. It also proposes to analyse the leak repairs in several towns to understand the economics of using leakage survey and repair to manage UAFG.
- The pressure in the network is monitored by the Supervisory control and Data Acquisition (SCADA) system to ensure that the pressure in the network is at its optimal level to supply customers but also at a level that reduces the amount of gas leaking.

Similar to the other distributors, we note AusNet's DTS UAFG performance on a yearly basis fluctuated over the current regulatory period, but when averaged, performed relatively consistently at around the current benchmark of 4.6 per cent in recent years.

To the extent that AusNet's approach is consistent with the strategy outlined in its 2018 UAFG management document, AusNet's actions are observed to be consistent with the UAFG management approach it has used since our 2017 UAFG review.

With relatively stable DTS UAFG performance in recent years, our final decision sets AusNet's DTS Class B UAFG benchmarks for the next regulatory period at 4.6 per cent, consistent with Zincara's recommendations.[46]

Non-Declared Transmission System (non-DTS)

Based on AusNet's settled data up to 2019, we observe that its non-DTS UAFG performance has returned to approximately pre-2013 UAFG levels after a period of significant variation as indicated in Figure 5.

These variations in performance were also observed in our 2017 review where we decided not to apply the revealed cost method. We continued to apply the 2013 non-DTS UAFG benchmark of 4.9 per cent, as this was the expected performance AusNet should have been managing towards.

To address their performance issues, AusNet undertook a plan of action in late 2017 and early 2018. The results of AusNet's investigations into high UAFG levels in its non-DTS network resulted in the following: [47]

- An independent review of the Carisbrook Custody Transfer Meter (CTM) in terms of calibration, performance and operation. This will confirm that the source supply of gas metering is accurate. This will then isolate the issue to AusNet's non-DTS network rather than the pipeline owned by Gas Pipelines Victoria (GPV).

[46] Review of Gas Distribution Businesses Unaccounted for Gas, Prepared for Essential Services Commission by Zincara Pty Ltd, December 2022, p4.

[47] Review of Unaccounted for Gas Benchmarks: Final Decision – Calculation, December 2017, p46.

- Field audits of meters at Horsham, Stawell and Ararat to confirm the integrity of Custody Transfer Meter.
- Complete an asset audit of meters installed in the three towns to determine if there are any new meters that have not been accounted for.
- Perform a downstream flow balance on the Horsham network to understand if there are any UAFG losses in the network. This will identify the location of potential losses that have not been accounted for.
- Further reconciliation of metering data with customer data sets.
- Further leakage detection within the non-DTS network and desktop modelling of the potential volume of gas which would arise from leaks at different pressure levels on the network.
- Further scrutiny of theft as a potential contributor to rising UAFG levels.

AusNet provided separate information relating to its non-DTS network, indicating that some of the actions have been addressed (such as the Stawell meter being replaced). Further, AusNet's submission stated:

> "…We know this because in response to the spike experienced from 2013-15, we completed exhaustive remediation activities… Nonetheless, we do accept that it was appropriate to remove the data associated with the leakage UAFG spike from 2013 to 2016.
>
> It is worth reinforcing, as we did in the previous UAFG review for 2018-2022, that the current non-DTS benchmark of 4.9% had its genesis in the Commission's 2013-2017 UAFG benchmark review of 2013… That is, the Commission relied on revealed UAFG for the five years between 2006 and 2010 and drew a (linear) line of best fit through those five data points. The Commission then extended that trendline forward to the end of the 2013-2017 period it was setting benchmarks…."[48]

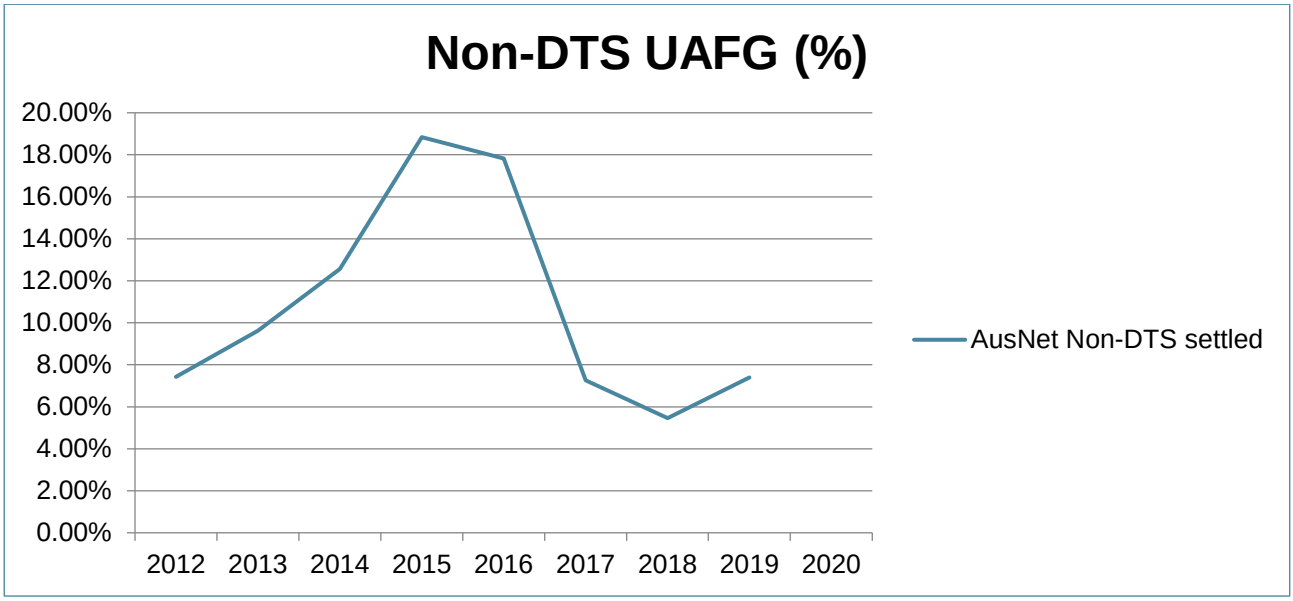
AusNet commented that our non-DTS benchmarks were set based on historical performance data going back to the 2006 to 2010, and consider it an inadequate approach.

However, we highlight that AusNet had particularly poor non-DTS performance between 2012 to 2017, and have only recently achieved performance to 2011 levels (i.e. AusNet appears to have only recently addressed its historically poor non-DTS performance). Therefore, we do not consider it appropriate to use recent data for the upcoming UAFG benchmarks. We have retained the

[48] AusNet submission to our draft decision, p1

current non-DTS UAFG benchmarks of 4.9 per cent, which has also been recommended by Zincara.[49]

Figure 4 AusNet non-DTS settled UAFG performance.



Multinet Gas Networks – performance and actions to manage UAFG

Declared Transmission System (DTS)

In November 2022, Multinet submitted nine years of updated data between 2012 to 2020 (the 2021 data was not available for the final decision). We note that Multinet submitted settled data up to 2018 but 2019 data remained unsettled and was not able to be considered in our final decision.

Our final decision has considered Multinet's three years of latest available settled data (between 2016 and 2018).

[49] Review of Gas Distribution Businesses Unaccounted for Gas, Prepared for Essential Services Commission by Zincara Pty Ltd, December 2022, p13.

Figure 5 Multinet DTS settled UAFG performance

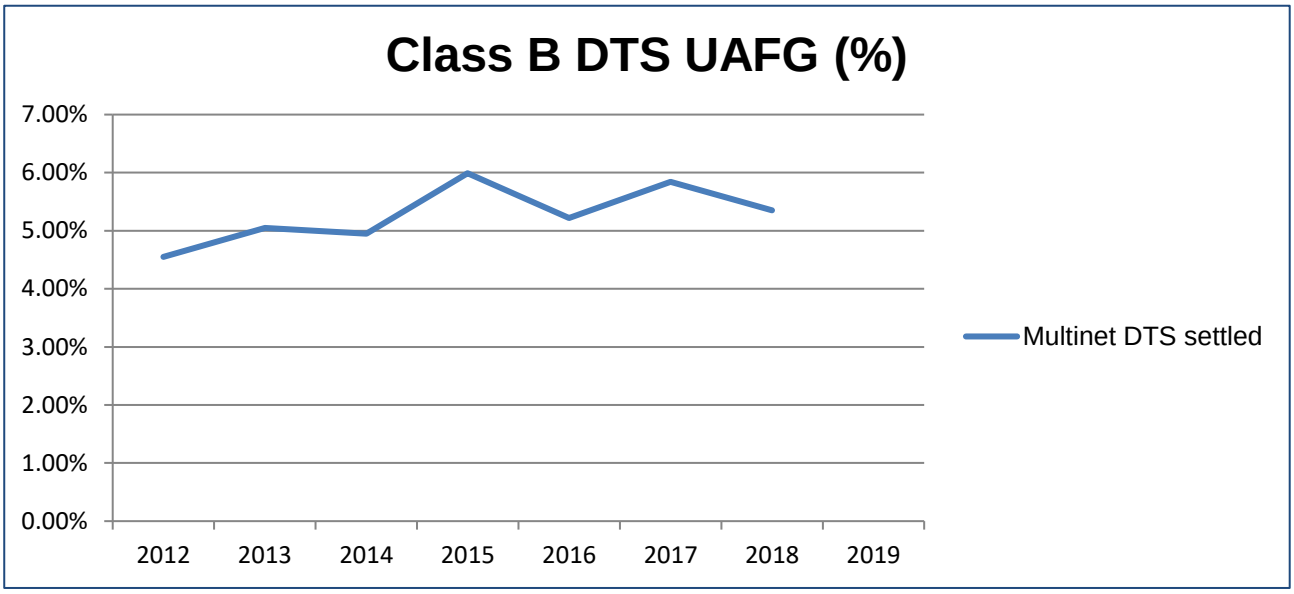


Figure 5 illustrates Multinet's DTS UAFG performance from their settled data. Zincara noted the similarities between submissions from Multinet and the Australian Gas Networks, noting the joint ownership of the two licensees by the Australian Gas Infrastructure Group (AGIG). This is particularly reflected in Multinet's activities and strategies to manage UAFG, which mirrors that of Australian Gas Networks'. Zincara considered Multinet's strategy and approach to be reasonable practice in managing UAFG.[50]

Multinet's yearly DTS UAFG performance fluctuated over the current regulatory period. As a result, its three-year averaged performance has slightly increased. Based on the averaged DTS UAFG performance in recent years, Multinet's DTS Class B UAFG benchmarks for the next regulatory period to be set at 5.49 per cent, a slight increase from the current benchmark of 5.3 per cent, consistent with Zincara's recommendations.[51]

We expect Multinet to maintain and, where appropriate, seek to improve their DTS UAFG performance. We will also continue monitoring Multinet's annual UAFG performance through our Victorian Energy Market Report.

[50] Review of Gas Distribution Businesses Unaccounted for Gas, Prepared for Essential Services Commission by Zincara Pty Ltd, September 2022, p5.

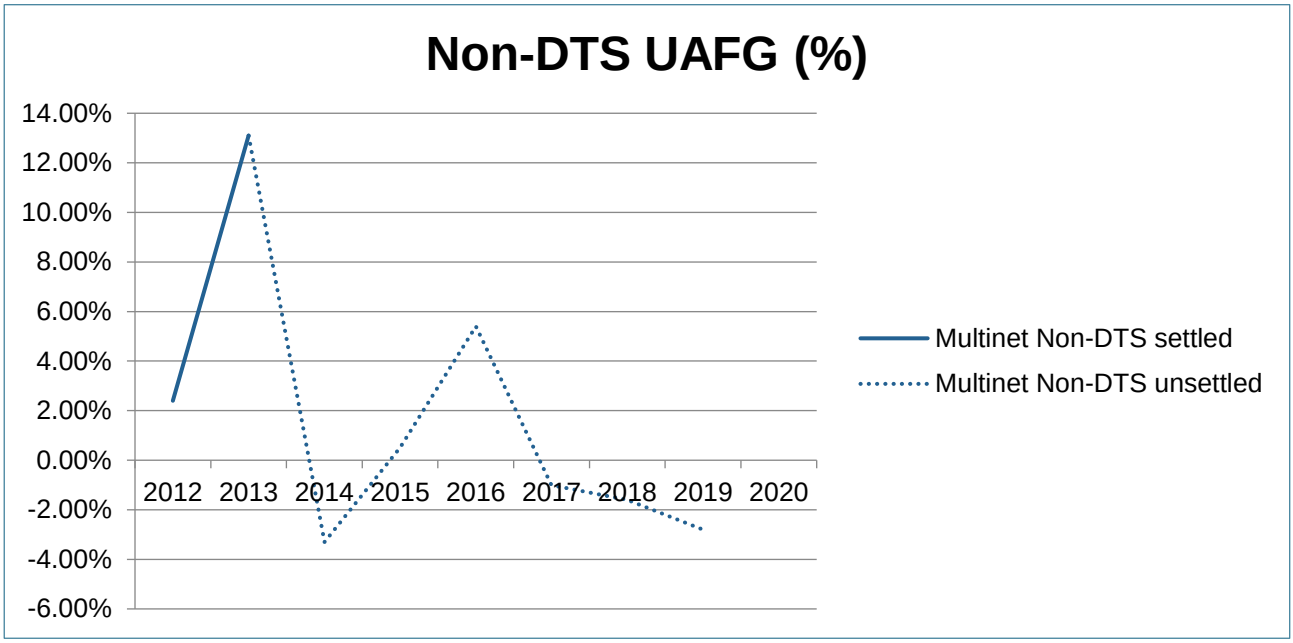
[51] Review of Gas Distribution Businesses Unaccounted for Gas, Prepared for Essential Services Commission by Zincara Pty Ltd, December 2022, p4.

Non-Declared Transmission System (non-DTS)

Multinet's non-DTS submission provided much less settled data than the other distributors. Multinet also noted that it was seeking assistance from the Australian Energy Market Operator to settle non-DTS UAFG benchmarks. Because the last settled data is up to 2013 and there is no updated data, we consider this data too out of date to be useful for the purposes of setting new UAFG benchmarks.

Therefore, our final decision retains the current non-DTS Class B UAFG benchmarks of two per cent. This aligns with Zincara's recommendations.[52]

Figure 6 Multinet non-DTS UAFG performance



[52] Review of Gas Distribution Businesses Unaccounted for Gas, Prepared for Essential Services Commission by Zincara Pty Ltd, December 2022, p4.

Appendix A – Causes of unaccounted for gas

Unaccounted for gas (UAFG) is the difference between the measured quantity of gas entering the gas distribution system and the gas delivered to customers. There are several known causes that contribute to UAFG in any gas distribution system, as summarised below.

Fugitive emissions

Fugitive emissions refers to gas that is lost into the atmosphere from each distributor's network due to leakage. The level of fugitive emissions is within the control of the distributors to an extent given that they are responsible for maintaining the quality of their distribution networks. Leaks are usually caused by defects, material failure and third-party damage.[53]

Metering errors

The two types of meters that contribute to metering errors are customer meters and Custody Transfer Meters (CTM). A customer is billed for their gas usage using the measured volume of gas passing through the customer meter at their premises. The volume of gas is then converted to energy by multiplying the volume by the heating value, and for large customers by the pressure and temperature of the gas supplied to the customer.

In Victoria, allowable meter errors are specified by Part B, Schedule 1 of the Gas Distribution System Code. The maximum allowable error limits are not more than 2 percent in favour of the distributor, and not more than 3 percent in favour of the customer.[54] There is a further allowance of ±1% for equipment used by large customers designed to correct their volume measurement from actual to standard conditions.

These measurement inaccuracies do contribute to UAFG, but it is difficult to quantify the extent without extensive investigation and at best it is an estimate. In general, metering error is somewhat within the control of distributors with the scope to use higher quality meters to mitigate some of the metering errors, but this may not be economical.[55][56]

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[53] Essential Services Commission, Review of Unaccounted for Gas Benchmarks: Final Decision – Methodology, July 2017, p5.

[54] Schedule 1, Part B of the Gas Distribution System Code of Practice (GDSCoP), Version 15.

[55] Review of Gas Distribution Businesses Unaccounted for Gas, Prepared for Essential Services Commission by Zincara Pty Ltd, September 2022, p13.

[56] Essential Services Commission, Review of Unaccounted for Gas Benchmarks: Final Decision – Methodology, July 2017, p6.

Heating value

The heating value of gas is used to convert the measured volume of gas consumption to energy units for the purposes of billing customers. The level of UAFG is calculated using energy instead of volume because customers are billed for the amount of energy they have consumed, and retailers pay for the amount of energy that has been supplied by gas producers. However, gas can only be measured in volume, which can be influenced by temperature and pressure. Because of this, the process of converting heating value into energy, which could be subject to local conditions, could vary and differ from the theoretical ideal conversion, introducing variations and discrepancies.

Data quality

Data quality issues also have some impact on UAFG. As residential and small commercial gas meters are read at different times and days, accounting, administrative and timing errors occur where the total demand for Class B customers lag the automated meter reading between the transmission and distribution systems.[57]

Theft

Theft occurs when gas is illegally removed from the networks without the knowledge of the distributor or retailer. It is thought that meter bypassing is one of potential methods to achieve this, with the percentage of that gas theft contributing to UAFG, which is unquantifiable.

[57] Review of Gas Distribution Businesses Unaccounted for Gas, Prepared for Essential Services Commission by Zincara Pty Ltd, September 2022, p. 14.

Appendix B – Methodologies for setting unaccounted for gas benchmarks

In 2017, our approach to determining a methodology and calculating the unaccounted for gas (UAFG) benchmarks was substantively reviewed, with stakeholders generally supporting the final methodology. A detailed description of the methodology used in 2017, and proposed for setting new benchmarks in this draft decision is set out below,

Revealed cost approach

The revealed cost method considers three key themes as the basis in calculating and setting the benchmarks. The revealed cost approach:

- uses past UAFG performance as the basis for determining future UAFG benchmarks
- assumes distributors have been efficiently investing in measures to reduce UAFG and so the data reflects efficient levels of UAFG
- requires distributors to provide an explanation of how they have efficiently sought to reduce UAFG levels during the preceding benchmarking period.

This approach has the major advantage of considering the distributors' network circumstances, even when the individual drivers of UAFG are not known with the required level of precision or where the drivers are out of the control of the distributors. For example, data quality and theft are mostly out of the distributors' control. In historical data, the amount to which these causes contribute to UAFG is difficult to quantify. Under the revealed cost approach, the unknown contribution of data quality and theft is included in an efficient benchmark as historical data accounts for these causes. Under other methodologies, it would be much more difficult to accurately incorporate these factors.[58]

The drawback associated with this approach is that distributors may underspend on investment associated with reducing UAFG, and, as a result, the actual UAFG amounts may increase leading to an increase in UAFG benchmark based on historical data. This could have the undesirable effect of distributors benefiting at the expense of retailers for prolonged periods of underinvestment in UAFG reducing strategies.

However, the consistency in applying this methodology and the resultant trend, enables the monitoring of distributors' long term performance to observe lagging factors such as chronic

[58] Essential Services Commission, Review of Unaccounted for Gas Benchmarks: Final Decision – Methodology, July 2017, p18.

underspending translating to UAFG performance. For example, it could help inform whether a particular level of UAFG on a network is reasonable at a point in time. In this regard, the review considered ten years of distributors raw data along with reviewing their current UAFG management strategies towards how distributors will continuously manage their UAFG.

Multi-year average

When using a multi-year average approach, the effect of any variations in year-to-year UAFG levels are minimised as an average of actual UAFG levels across years is used. For this reason, there is a greater likelihood that a multi-year average will provide a better estimate of future UAFG levels.[59]

With the 2022 review continuing to use the 2017 method, this results with the use of a three-year average period as the optimal number of years of UAFG data to include in a multi-year average.[60]

The reasoning behind this is, if a shorter period is used, the data is more recent and therefore more likely to reflect the distributors' current circumstances. If the period used is extended, the effects of year-to-year variations are reduced. However, the relevance of the data diminishes as the period used is extended because older data may not reflect the current circumstances faced by the distributors.[61]

We considered that the most practical options for the number of years of UAFG data to include in the multi-year average is three years. If a period of less than three years is used, the effect of any variations in year-to-year UAFG levels may result in the average being unreliable because it may not represent efficient UAFG levels in the future. Conversely, a period of more than three years would include older UAFG data and may result in the same outcome.

On this basis, we will continue the use of a three-year average to calculate the Class B UAFG benchmarks for the DTS networks, as well as the combined Class A and Class B benchmarks for the non-DTS networks, for the next regulatory period.

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[59] Essential Services Commission, Review of Unaccounted for gas benchmarks: draft decision – methodology, May 2017.

[60] Essential Services Commission, Review of Unaccounted for Gas Benchmarks: Final Decision – Methodology, July 2017, p19.

[61] Essential Services Commission, Review of Unaccounted for gas benchmarks: final decision – calculation, December 2017, p11.

Settled data

We propose using only settled data to calculate UAFG benchmarks for the 2022 review, as we similarly decided for our 2017 UAFG benchmarks.[62]

As part of the UAFG settlement procedure, a gas distributor must consolidate all the UAFG data and apportion it to the relevant retailers. This data is called the unsettled data. Upon receipt of the data, each retailer will scrutinise the data and either seek to correct the data or accept the data as accurate. If the data must be corrected, the process is repeated till both the retailer and the distributor accept the data as correct. This final set of data is called settled data.[63]

There are several factors to be to be considered when deciding if settled or unsettled data should be used to determine UAFG benchmarks, as the final settled data could materially differ to the unsettled data. Expanding further:

- The benchmark UAFG is the base figure for the calculation of UAFG compensation from either the distributor to retailer or vice versa. It is therefore important to ensure that the benchmark has been calculated using the data that all parties have agreed upon.
- The principle of the distributor allocating UAFG to each retailer and seeking their approval means that there is a degree of independent scrutiny of the data from the retailers which ensures that the data is reliable.
- The use of unsettled data is like using unaudited data and therefore cannot be claimed to be true and correct.
- It is not possible to assume that the settled data is the same as the unsettled data. In the future, there could be a situation when erroneous unsettled data is used due to complexity in determining the contribution of the multiple factors that contribute to UAFG.[64]

Given these factors, the 2022 review will only use settled data to calculate the UAFG benchmarks.

[62] Review of Unaccounted for Gas Benchmarks – Methodology, Prepared for Essential Services Commission by Zincara Pty Ltd, July 2017, p22.

[63] Ibid.

[64] Ibid.