ESSENTIAL SERVICES COMMISSION

Review of Unaccounted for Gas Benchmarks: Draft Decision – Calculation

October 2017

An appropriate citation for this paper is:

Essential Services Commission 2017, *Review of Unaccounted for Gas Benchmarks: Draft Decision – Calculation,* October

Copyright notice

Contents

Executive summary

The commission's draft decision on the calculation of Unaccounted for Gas (UAFG) benchmarks for the years 2018 to 2022 comprises the following elements:

1. The commission proposes to retain the current class A UAFG benchmarks.
2. The commission proposes to use the revealed cost approach with 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, provided the UAFG data is settled and represents efficient levels of UAFG.
3. The commission proposes the following UAFG benchmarks for the DTS networks.

Distributor	Class B 2018-2022	Class A 2018-2022
AGN (Victoria)	3.8%	0.3%
AGN (Albury)	3.8%	0.1%
Multinet	5.3%	0.3%
AusNet Services	4.6%	0.3%

4. The commission proposes the following UAFG benchmarks for the non-DTS networks.

Distributor	Class A and class B 2018-2022
AGN	2.0%
Multinet	2.0%
AusNet Services	4.9%

5. The commission proposes to amend the date in clause 2.4(b) of the GDSC by which distributors must provide AEMO with the information required by that clause, from 30 April of the year after the gas has been withdrawn to 30 April of the following year.

UAFG refers to the difference between the measured quantity of gas entering the gas distribution system from various supply points and the gas delivered to customers.

In Victoria, UAFG is managed via a benchmark process. The Gas Distribution System Code (GDSC) sets out UAFG benchmarks for each Victorian gas distributor – Australian Gas Networks (AGN), Multinet and AusNet Services (AusNet). The GDSC requires gas distributors to use reasonable endeavours to ensure that UAFG is less than their benchmark.

The 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 based on whether actual UAFG is over or under the benchmark. 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.

The current UAFG benchmarks in the GDSC will expire on 31 December 2017. The commission's review will set UAFG benchmarks for each distributor which should represent the economically efficient level of UAFG. The review will set the UAFG benchmarks for the 2018-2022 five year regulatory period.

The commission is **undertaking the review of UAFG benchmarks in two stages**. The first stage of the review involved consultation on the methodology to calculate the UAFG benchmarks. The second stage involves consultation on the calculation of the UAFG benchmarks. This paper is the draft decision on the second stage and includes the commission's proposed UAFG benchmarks for the years 2018-2022.

The final decision on methodology (July 2017) invited written submissions on the calculation of the new UAFG benchmarks, as well as the proposed amendment to clause 2.4(b) of the GDSC. The commission required the submissions from distributors to include:

- actual UAFG data that has been settled as part of the reconciliation process that is administered by AEMO
- a detailed assessment of the causes of UAFG to support their respective UAFG benchmark proposals
- a detailed explanation of how they have efficiently sought to reduce UAFG levels during the 2013-2017 regulatory period
- a comprehensive strategy for how they will seek efficiencies to minimise UAFG levels during the 2018-2022 regulatory period.

The commission received three submissions – from AGN, AusNet and Multinet.

The commission proposes to **retain the current class A UAFG benchmarks**. The UAFG percentage for class B customers can only be determined by holding constant the UAFG percentage for class A customers. This means that class A benchmarks can only be changed via a bottom up approach. As indicated in our final decision on methodology, the use of a bottom up approach is not practical. Further, no alternative approaches are available at this time.

The commission proposes to use the **revealed cost approach with a three year average** to calculate the **class B UAFG benchmarks** for the Declared Transmission System (DTS) networks. This approach was also used in the 2008 and 2013 UAFG reviews, and we consider that it represents the best trade-off between mitigating year-to-year variations in UAFG levels and reflecting the most recent conditions of the network. For the DTS networks, we consider that each distributor has been efficiently investing in measures to reduce UAFG, and that the data reflects efficient levels of UAFG.

The commission proposes to **retain the current UAFG benchmarks for the non-DTS networks**. For AGN, there is no settled UAFG data, noting the commission's final decision on methodology stated that we will only use settled data to calculate the benchmarks. For Multinet, the UAFG data is highly volatile and we are not satisfied that it represents efficient levels of UAFG. For AusNet, the UAFG data has risen to high levels that substantially exceed AusNet's current benchmark and we are not satisfied that it represents efficient levels of UAFG.

In the commission's final decision on methodology, we noted that the timeline specified in clause 2.4(b) of the GDSC does not satisfy its intended purpose because it does not align with the Australian Energy Market Operator (AEMO) UAFG procedures. The clause requires distributors to provide AEMO with written notice by 30 April each year of the volume of gas they have withdrawn from the network for the preceding year. The commission's draft decision is to **amend the date in clause 2.4(b) of the GDSC** from 30 April of the year after the gas has been withdrawn **to 30 April of the following year**, in line with the proposal from distributors.

1. About the review

1.1. What is Unaccounted for Gas?

Unaccounted for Gas (UAFG) refers to the difference between the measured quantity of gas entering the gas distribution system from various supply points and the gas delivered to customers.

The causes of UAFG are discussed in section 1.4.

1.2. The UAFG process

In Victoria, UAFG is managed via a benchmark process. The Gas Distribution System Code (GDSC) sets out UAFG benchmarks, expressed as a percentage of the aggregate quantity of gas injected into the distribution system for each Victorian gas distributor – Australian Gas Networks (AGN, formerly Envestra), Multinet and AusNet Services (AusNet, formerly SP AusNet).[1]

The UAFG benchmarks apply to class A and class B customers on the Declared Transmission System (DTS) and non-DTS networks. The DTS was previously known as the Principal Transmission System (PTS), and the non-DTS was previously known as the non-PTS. The GDSC, which currently uses the old terms PTS and non-PTS, will be updated by the commission as part of this review to reflect the new terms DTS and non-DTS.

Class A customers use more than 250 terajoules per annum and are typically serviced by high pressure mains. Class B customers use less than 250 terajoules per annum and are serviced by high, medium and low pressure mains.

AGN has two DTS networks – one in Victoria and the other in the New South Wales town of Albury. The two AGN networks are interconnected, with the Albury network fed from the northern zone of the Victorian network. Multinet and AusNet each have one DTS network in Victoria.

A non-DTS network is a transmission pipeline in Victoria that does not form part of the DTS. AGN has non-DTS networks in Bairnsdale and Paynesville. Multinet's non-DTS networks are in the South Gippsland towns which include Korumburra, Leongatha, Inverloch and Wonthaggi. AusNet has non-DTS networks in Ararat, Stawell and Horsham.

The GDSC requires gas distributors to use reasonable endeavours to ensure that UAFG is less than their benchmark. The Australian Energy Market Operator (AEMO) administers an annual

[1] Schedule 1, Part C of the Gas Distribution System Code (GDSC), Version 11.0.

reconciliation between gas distributors and retailers based on whether actual UAFG is over or under the benchmark.[2]

Under the Victorian UAFG model, retailers are required to purchase sufficient gas to cover customer consumption and actual UAFG. If actual UAFG is greater than the benchmark, the relevant gas distributor is required to compensate the retailers for the UAFG in excess of the benchmark. Where actual UAFG is lower than the benchmark, the retailers make reconciliation payments to the relevant gas distributor.[3]

The UAFG requirements in the GDSC incentivise the gas distributors to take steps to efficiently minimise the level of UAFG. As a result, the UAFG benchmarks affect the three gas distributors, as well as the cost of gas supply to retailers and, ultimately, Victorian households and businesses.

The GDSC contains UAFG benchmarks for the years 2013 to 2017. The current UAFG benchmarks in the GDSC will expire on 31 December 2017. This review will set the UAFG benchmarks for the years 2018 to 2022.

The UAFG benchmarks are required by the *National Gas Rules 2008*.[4] Under Part 19 of the *National Gas Rules 2008*, AEMO has established procedures for reconciling UAFG.[5] The UAFG benchmarks in the GDSC are adopted by AEMO in its procedures.

The current (2017) UAFG benchmarks for the DTS networks are shown in table 1 below.

[2] The UAFG requirements are specified in clause 2.4 of the GDSC.

[3] The specific calculation is outlined in Schedule 1, Part C of the GDSC.

[4] Rule 235(8) of the *National Gas Rules 2008* requires the assignment of a UAFG benchmark in accordance with a declared metering requirement. Under section 42(1) of the *National Gas (Victoria) Act 2008*, the Minister for Energy by Order dated 27 June 2013 declared Part C1 of Schedule 1 of the GDSC as a declared metering requirement for the purposes of rule 235(8) of the *National Gas Rules 2008* (Victoria Government Gazette No. S 242, 28 June 2013).

[5] Wholesale Market Distribution UAFG Procedures (Victoria), Version 3.0.

Table 1 2017 DTS UAFG benchmarks

Distributor	Class B	Class A
AGN (Victoria)	3.7%	0.3%
AGN (Albury)	3.7%	0.1%
Multinet	4.1%	0.3%
AusNet Services	5.4%	0.3%

The current (2017) UAFG benchmarks for the non-DTS networks are shown in table 2 below.

Table 2 2017 non-DTS UAFG benchmarks

Distributor	Class A and class B
AGN	2.0%
Multinet	2.0%
AusNet Services	4.9%

1.3. The commission's approach to the review

The commission is undertaking the review of UAFG benchmarks in two stages.

The first stage of the review, which included the draft decision published on 22 May 2017 and the final decision published on 31 July 2017, involved consultation on the methodology to calculate the UAFG benchmarks.

The second stage of the review involves consultation on the calculation of the UAFG benchmarks. It will set UAFG benchmarks for the years 2018-2022 based on the commission's final decision on methodology, including the key issues that were considered as part of the first stage of the review.

The final decision on methodology invited written submissions by 11 August 2017 on the calculation of the new UAFG benchmarks, as well as the proposed amendment to clause 2.4(b) of the GDSC.

The commission required the submissions from gas distributors to include:

- actual UAFG data that has been settled as part of the reconciliation process that is administered by AEMO
- a detailed assessment of the causes of UAFG to support their respective UAFG benchmark proposals
- a detailed explanation of how they have efficiently sought to reduce UAFG levels during the 2013-2017 regulatory period
- a comprehensive strategy for how they will seek efficiencies to minimise UAFG levels during the 2018-2022 regulatory period.

The commission received three submissions – from AGN[6], AusNet[7, 8] and Multinet[9, 10]. The submissions, which are published on the commission's website, have informed the development of this draft decision on the calculation of the UAFG benchmarks.

The commission expects to publish a final decision on the calculation of the UAFG benchmarks, and the proposed amendment to clause 2.4(b) of the GDSC, in December 2017. The commission will then amend the GDSC to give effect to the final decision.

1.4. Causes of UAFG

There is some uncertainty about the causes of UAFG and the extent to which each of the known causes contributes to UAFG levels. Information provided to the commission indicates there are approximately 17 components that contribute to UAFG.[11] These components can be divided into five categories:

---

[6] AGN, August 2017.

[7] The commission received two submissions from AusNet. The first submission is dated 11 August 2017. The second submission, dated 30 August 2017, was made in response to a request from the commission for additional information. Both submissions from AusNet are published on the commission's website.

[8] AusNet, 11 August 2017; AusNet, 30 August 2017.

[9] Multinet, August 2017; Multinet, September 2017.

[10] On 21 September 2017, Multinet provided the commission with settled UAFG data for 2015 for its DTS network, and a public version of its UAFG strategy for the 2017-2022 calendar years.

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

- fugitive emissions
- metering errors
- heating value
- data quality
- theft.

The extent to which distributors have control over these causes varies for each cause. For example, fugitive emissions are largely within the control of distributors through their mains replacement programs. In contrast, heating value is entirely outside the control of distributors because they do not source the gas that is supplied into their networks.

Even in the case of a new gas distribution network, there will be some amount of UAFG because it is impossible to entirely mitigate all UAFG. Also, although new technology and improved business practices can reduce UAFG levels, continued expansion of the networks may increase the absolute level of system-wide UAFG.

It is also possible that a one-off event – such as leaving a gas valve open between networks – could contribute to UAFG levels.

The commission's final decision on methodology contains more information about the causes of UAFG and the many sources of uncertainty associated with UAFG.[12]

In response to the commission's request, the distributors provided information about the causes of UAFG in their respective networks.[13] This information has informed the commission's analysis of how the distributors have managed UAFG during the current regulatory period, which is discussed in sections 4, 5 and 6.

1.5. Structure of this paper

The remaining sections of this draft decision are as follows:

Section 2 applies the commission's final decision on methodology to the calculation of UAFG benchmarks. It also discusses the comments received from stakeholders in response to the final decision on methodology.

[12] Essential Services Commission 2017, Review of Unaccounted for Gas Benchmarks: Final Decision – Methodology, July, section 2.

[13] AGN, August 2017, pp. 18-21; AGN, August 2017, report prepared for AGN by Asset Integrity Australasia, pp. 11-18; AusNet, 30 August 2017, pp. 9-17; Multinet, September 2017, pp.22-23; Multinet, August 2017, report prepared for Multinet by Asset Integrity Australasia, pp. 13-21.

Section 3 discusses the proposed amendment to clause 2.4(b) of the GDSC, and concludes with the commission's draft decision on this issue.

Sections 4, 5 and 6 describe how each of the distributors have managed UAFG during the 2013-2017 regulatory period and how they propose to manage UAFG during the 2018-2022 regulatory period. Each section concludes with the commission's draft decision on the class B UAFG benchmarks for the DTS networks, and the combined class A and class B benchmarks for the non-DTS networks, for the 2018-2022 regulatory period.

Section 7 contains the commission's draft decision on the calculation of UAFG benchmarks for the years 2018 to 2022, and the proposed amendment to clause 2.4(b) of the GDSC.

Section 8 outlines the consultation process for the review of UAFG benchmarks, including the next steps following this draft decision.

2. Application of final decision on methodology

Section 8A of the *Essential Services Commission Act 2001* (Vic) requires the commission, in seeking to promote the long term interests of Victorian consumers, to have regard to efficiency in the gas industry and incentives for long term investment. Further, the GDSC requires that distributors use reasonable endeavours to ensure that their quantity of UAFG is below their UAFG benchmark. Therefore, the commission must set efficient benchmarks and distributors must use reasonable endeavours to meet their benchmark.

The UAFG benchmark regime exists to incentivise the gas distributors to efficiently minimise UAFG levels. The distributors are financially rewarded for reducing UAFG levels below the benchmarks set by the commission. On the other hand, they are financially penalised for UAFG levels above the benchmarks.

The regime relies on basic profit-maximising principles and incentivises the distributors to efficiently invest in reducing UAFG if the benefits of doing so exceed the costs.

The level of the UAFG benchmarks does not actually influence incentives as the marginal incentives for distributors are constant for any given level of UAFG. Regardless of the level at which the UAFG benchmarks are set, the distributors will be rewarded or penalised for any reduction or increase in UAFG at the same rate. It is the existence of a benchmark that underpins the incentive for distributors to efficiently invest in minimising UAFG.

Despite this, higher UAFG levels may not be indicative of underperformance by a distributor. There are exogenous factors beyond the distributors' control which partly determine the level of UAFG. The distributors' actions to minimise UAFG levels are focused on the known causes of UAFG that are within their control.

Further, UAFG is not the main incentive driving distributors' investment decisions. The distributors' primary obligations relate to safety and reliability. These factors largely drive business decisions on, for example, mains replacement programs and maintenance expenditure. Such activities potentially reduce UAFG levels, which is a benefit to the distributors in terms of revenue. The UAFG benchmarks are a marginal incentive on top of safety and reliability considerations which are taken into account when the distributors make investment decisions and plan maintenance, but it is only one factor.

To meet its statutory objectives, the commission will set efficient UAFG benchmarks to incentivise the distributors to efficiently invest in reducing UAFG if the benefits of doing so exceed the costs.

2.1. Final decision on methodology

The commission's final decision on the methodology to calculate the UAFG benchmarks comprised the following elements:

1. The commission will use the revealed cost approach with a multi-year average to calculate the UAFG benchmarks.
2. The commission will use actual UAFG data that has been settled by distributors and retailers to calculate the UAFG benchmarks.
3. The commission will not account for possible reductions in UAFG resulting from the distributors' mains replacement programs.
4. The commission will not account for possible increases in UAFG caused by continued deterioration of the distribution networks.
5. The commission will consider whether there are any efficiencies that can be achieved by the distributors, and may decide to adjust the forward UAFG benchmarks accordingly.
6. The commission will retain separate UAFG benchmarks for class A and class B customers.

The comments received from stakeholders in response to the commission's final decision on methodology are discussed below.

2.2. Revealed cost approach and multi-year average

Final decision on methodology

In our final decision on methodology, the commission decided to use the revealed cost approach with a multi-year average to calculate the UAFG benchmarks for the next regulatory period. The commission stated that it would consider how many years of data to include in the multi-year average as part of its draft decision on the calculation of the UAFG benchmarks. The commission noted that in both the 2008 and 2013 UAFG reviews it used the revealed cost approach with a three year average to determine UAFG benchmarks.

Stakeholder comments

AGN and Multinet supported the revealed cost approach with a three year average to calculate the UAFG benchmarks for class B customers in their DTS networks. Multinet commented that this was consistent with the approach taken when setting the UAFG benchmarks for the current regulatory period.[14]

[14] AGN, August 2017, p. 16; Multinet, August 2017, p. 1.

AusNet submitted that, should the commission elect to apply a simple multi-year average, a three year average is the most appropriate time period to include in the average, consistent with the commission's approach in the 2013 UAFG review. AusNet argued that not applying a consistent approach between UAFG reviews exposes networks to asymmetric risk. It commented that a consistent approach promotes regulatory certainty and ensures networks face symmetrical incentives when making investment decisions aimed at improving performance.[15]

Commission response

As indicated by the commission in the first stage of this review, there are a number of considerations when deciding the optimal number of years of UAFG data to include in a multi-year average. 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.[16]

The commission considers that the most practical options for the number of years of UAFG data to include in the multi-year average are three, four or five years. If a time 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 time period of more than five years would include older UAFG data and may result in the same outcome.

As noted by the commission in the first stage of this review, the incentive structure under the revealed cost approach may become unreliable if distributors believe that benchmarks for future periods will be based on past performance. This is because distributors have an incentive to artificially inflate UAFG levels in the years they believe will be included in the multi-year average to calculate future UAFG benchmarks. In theory, using a five year average – which coincides with the number of years between UAFG reviews – reduces this incentive as all years in the regulatory period would be weighted equally.

However, using a five year average to calculate UAFG benchmarks could be problematic due to variability in the timing to settle UAFG data. Where the number of years of UAFG data that has been settled since the last UAFG review is other than five years, using a five year average would

[15] AusNet, 11 August 2017, p. 4.

[16] Essential Services Commission 2017, Review of Unaccounted for Gas Benchmarks: Final Decision – Methodology, July, p. 17.

either double count or omit certain years.[17] This could result in distortions to the incentive structure which may render the five year average unreliable from one regulatory period to the next. The same difficulty is likely to arise if a four year average is used. The commission notes that if the settlement process guaranteed settling five years of UAFG data for each distributor in each regulatory period, a five year average may be appropriate.

On this basis, the commission proposes to use 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. The application of this approach is discussed in section 4, 5 and 6.

As stated in the final decision on methodology, for the commission to use the revealed cost approach with a multi-year average to calculate the forward UAFG benchmarks, we must be satisfied that distributors have been efficiently investing in measures to reduce UAFG and that the data reflects efficient levels of UAFG. For this reason, the commission required each distributor to provide a detailed explanation of how it has sought to efficiently reduce UAFG levels during the 2013-2017 regulatory period. This information is discussed in sections 4, 5 and 6.

The commission also required each distributor to provide a comprehensive strategy for how it will seek efficiencies to minimise UAFG levels during the 2018-2022 regulatory period. This information is discussed in sections 4, 5 and 6. Although the commission does not reach any conclusions in relation to the adequacy of each distributor's strategy, we intend to use the information to monitor the UAFG management and performance of distributors. The commission may also use the information in the next UAFG review to compare each distributor's strategy with how it has efficiently sought to minimise UAFG levels during the 2018-2022 regulatory period.

2.3. Settled or unsettled data

Final decision on methodology

In our final decision on methodology, the commission indicated that it will use actual UAFG data that has been settled by distributors and retailers to calculate the UAFG benchmarks. The commission's final decision on this issue, which was made after considering the comments from stakeholders, was based on our view that reliable UAFG data which has been accepted by all relevant parties must be used to set efficient UAFG benchmarks.

[17] For example, if four years of UAFG data had been settled since the last UAFG review, a five year average would take into account one year of data that had already been included in the previous review. Similarly, if six years of data had been settled, a five year average would omit one year of data from being included.

Stakeholder comments

AGN and Multinet restated the positions from their earlier submissions that the most recent UAFG data should be used to calculate the UAFG benchmarks, whether it is settled or unsettled. Both businesses put forward essentially the same arguments.

AGN submitted that the most recent unsettled data should be used in the calculation of the UAFG benchmarks because it reflects the most recent conditions for the network. It argued that using out of date data to set the UAFG benchmarks is unlikely to promote the long term interests of Victorian consumers and achieve the objectives of efficiency in the industry and incentives for long term investment. AGN also stated that, based on its past experience, the total UAFG data provided to retailers does not materially change from settled data. It commented that agreement with the retailers is focused on the amount of UAFG allocated to each retailer, rather than the total amount of UAFG which is relevant for setting UAFG benchmarks going forward.[18]

Multinet submitted that its unsettled UAFG data is reliable because the data has been audited as part of Multinet's financial accounts. It commented that any discrepancy between settled and unsettled UAFG data relates to the allocation between retailers and not the total in Multinet's accounts. Multinet also claimed that using settled data only will incentivise retailers to delay the settlement process so that the most recent data is not used in the calculation of the UAFG benchmarks.[19]

AusNet supported the use of the most recent, reliable UAFG data to set benchmarks, in line with good regulatory practice. AusNet submitted that although more recent, unsettled data may be more relevant for setting UAFG benchmarks, it accepted that the commission's practice has been to use settled data only. Accordingly, AusNet accepted the commission's final decision on this issue. AusNet also proposed that relevant data which is currently unsettled but becomes settled prior to the conclusion of the UAFG review should be reflected in the final benchmarks.[20]

Commission response

The commission notes the comments from AGN and Multinet regarding the proposed use of unsettled data in the calculation of the UAFG benchmarks. However, the comments restate the views expressed in earlier submissions, which the commission has already considered and

[18] AGN, August 2017, pp. 14-15.

[19] Multinet, August 2017, pp. 2-3.

[20] AusNet, 11 August 2017, p. 5.

addressed in reaching its final decision on methodology.[21] The commission does not intend to revisit its final decision on this issue.

The commission agrees with AusNet that relevant UAFG data which is currently unsettled but becomes settled prior to the conclusion of this review should be taken into account when setting the new benchmarks. We will advise gas distributors of the final date by which they can provide settled data to the commission ahead of the final decision on calculation.

For AGN, the most recent three years of settled UAFG data are 2011, 2012 and 2013. For Multinet, and AusNet, the most recent three years of settled UAFG data are 2013, 2014 and 2015.

2.4. Adjusting for efficiencies

Final decision on methodology

In our final decision on methodology, the commission indicated that it will consider whether there are any efficiencies that can be achieved by the distributors, and may decide to adjust the forward UAFG benchmarks accordingly. The revealed cost approach assumes that distributors are efficiently minimising UAFG because they are subject to a profit-maximising incentive structure, but there is nevertheless a risk that distributors may not be acting efficiently in all cases.

The commission stated that the forward UAFG benchmarks should only be adjusted for an expected efficiency if the efficiency can be identified and its impact on UAFG levels can be quantified. The process to be adopted by the commission will depend on the type of efficiency and the circumstances of the particular case.

Stakeholder comments

AusNet restated the concerns about efficiency adjustments from its June 2017 submission. It submitted that adjusting the benchmarks for expected efficiency improvements is problematic due to the inherent uncertainty around the drivers of UAFG. AusNet did not support adjusting the forward UAFG benchmarks to reflect potential efficiencies if these efficiencies cannot be clearly established and robustly quantified. It argued that the expected efficiency improvements for which the commission applied a downward adjustment to AusNet's non-PTS benchmarks during the

[21] Essential Services Commission 2017, Review of Unaccounted for Gas Benchmarks: Final Decision – Methodology, July, pp. 29-30.

2013 UAFG review did not eventuate during the 2013-2017 regulatory period, and suggested this adjustment was incorrectly applied.[22]

Commission response

The commission notes AusNet's comments on this issue, however they repeat the views expressed in AusNet's June 2017 submission, which the commission has already considered and addressed in reaching its final decision on methodology.[23] The commission does not intend to revisit its final decision.

2.5. Class A benchmarks

Final decision on methodology

In our final decision on methodology, the commission decided to retain separate UAFG benchmarks for class A and class B customers.

There are two reasons for setting separate UAFG benchmarks for class A and class B customers. First, the metering errors for class B customers exceed those for class A customers. Class A customers are large customers with more sophisticated equipment for measuring their gas consumption compared with class B customers. Second, the class A customers are typically supplied from the distributors' high pressure mains which experience lower rates of leakage than the low and medium pressure mains which supply most of the class B customers.

Therefore, having separate UAFG benchmarks for class A and class B customers reduces any cross subsidy in UAFG costs between these two classes of customers, and results in a UAFG allocation that is more cost reflective.

Stakeholder comments

AGN and Multinet proposed to retain their current class A UAFG benchmarks for their DTS networks.[24]

AGN submitted that it does not report actual UAFG performance for AGN's Victorian and Albury networks for class A, and that the distinction between class A and class B UAFG is purely arbitrary.

---

[22] AusNet, 11 August 2017, pp. 5-6.

[23] Essential Services Commission 2017, Review of Unaccounted for Gas Benchmarks: Final Decision – Methodology, July, pp. 25-27.

[24] AGN, August 2017, p. 10; Multinet, August 2017, pp. 1-2.

It also stated that distributors simply allocate an amount of UAFG to class A that equates to the benchmark, and hence actual and benchmark UAFG for class A will always be equal.[25]

Further, AGN commented that its class A benchmark levels have been set at 0.3 per cent for Victoria and 0.1 per cent for Albury since 2006. Based on this historical practice, AGN proposed that its class A benchmarks for the 2018-2022 regulatory period should remain unchanged. It noted that the commission did not alter the class A benchmarks during the 2013 UAFG review.[26]

Commission response

The gas consumption of each class A and class B customer is measured by their individual customer meter. This means it is relatively simple to calculate the total gas consumption of class A and class B customers. As UAFG is not measured on each customer meter and is instead lost across the network, it is not possible to determine the UAFG split between class A and class B customers.

As a consequence, the UAFG percentage for class B customers can only be determined by holding constant the UAFG percentage for class A customers. This means that UAFG benchmarks for class A customers are difficult to change. A bottom up approach would be required to determine the components which contribute to class A UAFG, followed by an estimate of each of their contributions. As stated in the commission's final decision on methodology, the use of a bottom up approach is not practical. Given the uncertainty associated with the causes of UAFG and how much each cause contributes to UAFG levels, a bottom up approach would result in the use of technical assumptions that are unlikely to be sufficiently robust. Further, no alternative approaches are available at this time.

For the above reasons, the commission proposes to retain the current UAFG benchmarks for class A customers in the DTS networks. Sections 4, 5 and 6 discuss the class B UAFG benchmarks for the DTS networks, and the combined class A and class B benchmarks for the non-DTS networks.

[25] AGN, August 2017, p. 10.

[26] Ibid.

3. Proposed amendment to clause 2.4(b) of the GDSC

Final decision on methodology

In our final decision on methodology, the commission responded to a proposal from Multinet and AGN that clause 2.4(b) of the GDSC should be either deleted or amended. The clause provides that a distributor must give written notice to AEMO by 30 April each year of the volume of gas withdrawn by the distributor for a customer.

The commission acknowledged that the timeline specified in clause 2.4(b) of the GDSC no longer satisfies its intended purpose because it does not align with the process detailed in AEMO's Wholesale Market Distribution UAFG Procedures (Victoria). In particular, the date of 30 April is earlier than the period ending 118 business days after the end of December – which is the earliest date that AEMO can provide injections, net system load and pricing data to distributors.

The commission noted that the date of 30 April was inserted into the GDSC prior to the introduction of full retail competition in 2002. At that time, it was possible for the distributors to provide the required information to AEMO by 30 April because there were only host retailers.[27]

The commission did not agree with Multinet and AGN that clause 2.4(b) should be deleted. This clause imposes an important regulatory requirement for the UAFG process, so the commission needs to be confident that distributors will provide the required information to AEMO in compliance with their obligations. The commission therefore considered that the date in clause 2.4(b) should be amended.

To this end, the commission invited comments on what would be a more appropriate date by which distributors must give the required information to AEMO.

Stakeholder comments

Multinet restated the proposal from its June 2017 submission that clause 2.4(b) of the GDSC should be amended to refer to 30 April of the following year. It submitted that the proposed date would provide a realistic chance of settling UAFG.[28]

---

[27] Host retailers, also known as tier 1 retailers, are required to offer to supply gas to all customers in their local area.

[28] Multinet, August 2017, p. 3.

AGN and AusNet supported Multinet's proposal to extend the timeline by one year. AGN agreed with Multinet that reconciling data with all parties can take extended periods of time.[29] AusNet submitted that extending the timeline by one year would allow sufficient time for all parties to review and agree on the UAFG data, and avoid further non-compliance with the current GDSC requirements.[30]

Commission response

The commission agrees with the three distributors that 30 April of the following year is a more appropriate date by which distributors must provide AEMO with the information required by clause 2.4(b) of the GDSC.

Under clause 8.1(a) of the GDSC and clause 20(2) of the Energy Retail Code, a gas distributor must carry out an actual reading of a customer's meter at least once every 12 months. This means that it can take up to an entire calendar year for a distributor to finalise consumption data for a customer. The distributor must then collate and verify the data before sending it to each of the retailers for their agreement. Under clause 2.3.1 of AEMO's Wholesale Market Distribution UAFG Procedures (Victoria), the retailers must review and agree on the consumption data within eight weeks. After receiving the data back from the retailers, the distributor must again collate and verify the data before providing it to AEMO.

Based on the analysis above, the commission considers that the distributors' proposal is reasonable. Therefore, the commission's draft decision is to amend the date in clause 2.4(b) of the GDSC by which distributors must provide AEMO with the information required by that clause, from 30 April of the year after the gas has been withdrawn to 30 April of the following year.

[29] AGN, August 2017, p. 33.

[30] AusNet, August 2017, p. 8.

4. AGN

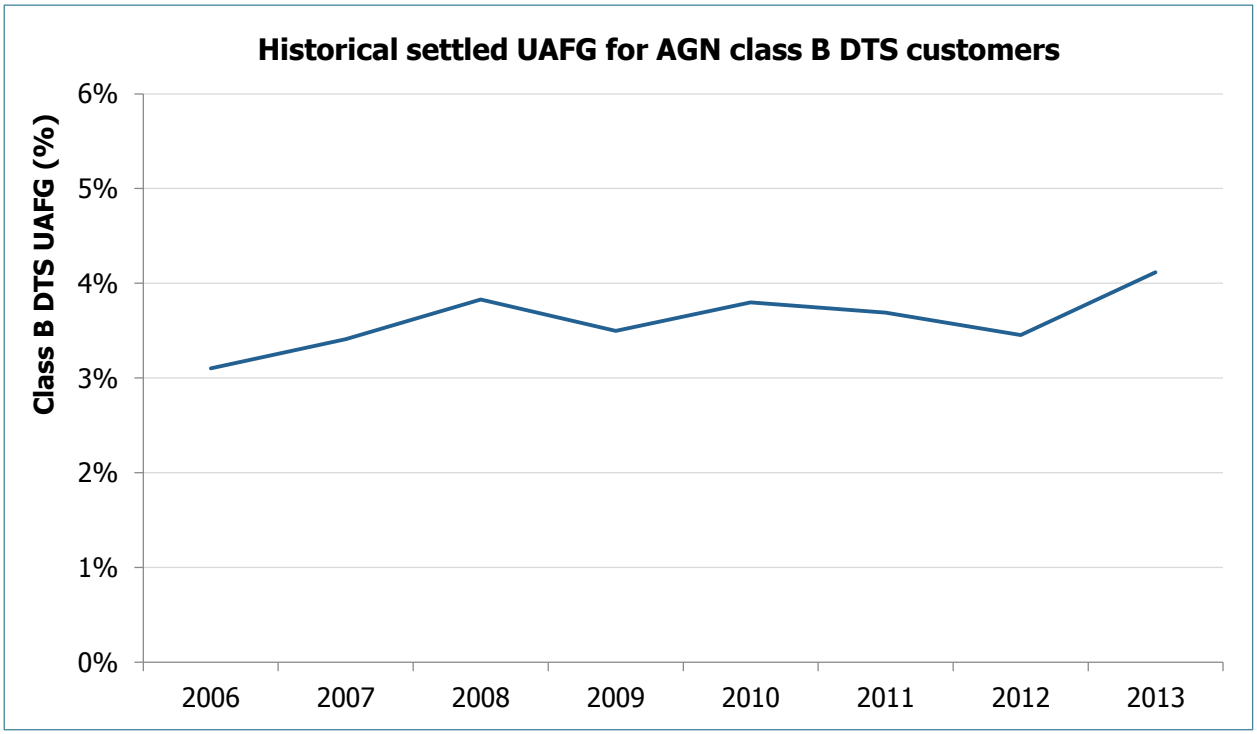
4.1. DTS networks

Data

AGN submitted settled UAFG data from 2006 to 2013 for its DTS networks in Victoria and Albury. The Victorian and Albury networks are interconnected and UAFG is not measured separately. On this basis, they will be referred to as a single network in this section, except where stated otherwise. The data shows that AGN's UAFG for class B customers in its DTS network has been relatively stable across time with a minimum of 3.1 per cent in 2006 and a maximum of 4.1 per cent in 2013. This data is represented in figure 1 below.

AGN also provided unsettled UAFG data for 2014 and 2015.

Figure 1



UAFG management for 2013-2017 regulatory period

Section 4 of AGN's submission details how AGN has sought to reduce UAFG levels during the 2013-2017 regulatory period.[31] The actions and initiatives implemented by AGN are discussed below.

AGN prepares a UAFG report for all of its networks (DTS and non-DTS) on a monthly basis. The UAFG report, which is reviewed by AGN's senior management, compares the rolling annual total UAFG against the benchmark. It focuses on parts of the network where the data indicates possible anomalies, erroneous inputs, faults, theft or other unusual factors. A report prepared for AGN by Asset Integrity Australasia (AIA) in 2017[32] found that UAFG has a high priority within the management of the AGN network, and that minutes of meetings indicate that any increases in UAFG are promptly investigated and action is taken to remedy the causes.

AGN has a mains replacement program which targets replacing the older cast iron, unprotected steel and PVC pipes that have the highest leakage rates. AGN submitted that it is on track to deliver the approved replacement of 696 kilometres of gas mains over the 2013-2017 regulatory period. AGN reviews its mains replacement program annually.

AGN has a program to test the accuracy of meters and replace them when the accuracy of their measurements falls outside the prescribed band. The AIA review found that actual meter replacement undertaken in the 2013-2017 regulatory period was in line with the planned replacement levels and was an increase from the 2008-2012 regulatory period by around 15 per cent.

AGN uses a Supervisory Control and Data Acquisition (SCADA) system to provide surveillance and control of network pressures in parts of their network. The network pressure data collected by the SCADA system is reviewed and analysed to diagnose pressure control equipment faults and network capacity problems. The system was upgraded in 2014, and AIA confirmed that the upgrade has significantly improved the quality of pressure control and reduced the frequency of the system defaulting to high pressure.

AGN has a leak survey and leakage response/repair strategy so that detected and reported leaks are attended to in a timely manner. AIA found that AGN has a strong performance focus on leakage management.

---

[31] AGN, August 2017, pp. 22-27.

[32] AGN, August 2017, report prepared for AGN by Asset Integrity Australasia.

AGN monitors third party incidents that result in damage to the network to understand their impact on leakage and identify opportunities to prevent such incidents. The primary activity aimed at reducing third party damage is the Dial Before You Dig service which provides information to the public about the location of the gas distribution network.

AGN replaces or refurbishes custody transfer meters (CTM) based on their condition and performance. A CTM is replaced where it is operating outside of its specified capacity range. AIA found that AGN is working collaboratively with APA GasNet to complete the required upgrades or replacements.

AIA found that AGN undertakes regular checks to minimise UAFG associated with the assumed pressure and temperature factors that are applied to the meter volume used to bill customers. AGN has also upgraded systems to identify and review anomalies in basic metered consumption, including the adjustment of correction factors.

Due to the size and potential impact on UAFG, interval meter data for large customers is analysed on an individual meter basis to identify changes in consumption patterns which may indicate anomalies. These reviews have resulted in some increases to recorded customer consumption, which has reduced UAFG.

Draft decision on UAFG benchmark

On the basis of the actions and initiatives discussed above, the commission considers that AGN has been efficiently investing in measures to reduce UAFG during the current regulatory period. Therefore, the commission considers that the data submitted by AGN for its DTS network reflects efficient levels of UAFG.

Based on a three year average of the most recent settled UAFG data for the years 2011, 2012 and 2013, the commission's draft decision is that the class B UAFG benchmarks for AGN's DTS networks (Victoria and Albury) for the 2018-2022 regulatory period are 3.8 per cent.

Table 3 AGN DTS network UAFG data and three year average

2011	2012	2013	Three year average
3.691%	3.456%	4.117%	3.8% (3.755%)

UAFG management for 2018-2022 regulatory period

Section 5 of AGN's submission explains how AGN will seek efficiencies to minimise UAFG levels during the 2018-2022 regulatory period.[33] The proposed actions and initiatives are discussed below.

AGN is planning to complete its mains replacement program during the 2018-2022 regulatory period by replacing the last 297 kilometres of pipes under the program.

AGN will continue with its meter replacement program to manage the integrity of meters and ensure they operate within a prescribed tolerance band for metering accuracy. The program includes replacement of domestic and commercial meters based on their age profile and life extension testing results.[34]

AGN proposes to extend the SCADA network to regional towns and certain fringe points of the network. This will enable real-time monitoring of network conditions and, in some cases, for the remote control of gas flows and pressures to improve system performance, safety and management of UAFG.

AGN will continue to monitor leakage response and repair times, and report monthly to senior management, in accordance with its asset management plan.

AGN plans to continue with its program to replace or refurbish CTMs, with 12 CTM sites identified for the next regulatory period.

AGN will continue to invoice third parties causing damage to its distribution network.

AGN is planning to install domestic meters with pressure and temperature correction at strategic locations around the network to determine the impact on UAFG caused by current billing assumptions of pressure and temperature. The data will feed into a study on the cost effectiveness of extending pressure and temperature correction to commercial and domestic meters.

AGN intends to continue with billing system audits to ensure that customer billing data is accurate and consistent between the customer billing system and asset management system.

AIA has indicated that AGN's proposed strategies to manage UAFG levels during the 2018-2022 regulatory period are robust and prudent.

---

[33] AGN, August 2017, pp. 28-32.

[34] Life extension testing is when a sample of meters is tested to determine whether their accuracy is within the limits specified in the GDSC. If it is, then the life of the meters in the sample can be extended.

4.2. Non-DTS network

Data

AGN submitted unsettled UAFG data from 2008 to 2015 for its non-DTS network. AGN stated that its non-DTS data is unsettled because of a mistaken belief that it was exempt from the settlement process due to the Bairnsdale Adjunct Agreement 2005. AEMO recently advised AGN that the AEMO UAFG procedures override this agreement and that AGN is required to comply with the settlement process for its non-DTS network.

AGN commented that the historical performance for its non-DTS network has been highly variable between 2008 and 2015. For this reason, as well as the low volume of gas injected (approximately 0.45 per cent of the DTS volume of gas injected), AGN proposed that the UAFG benchmark for its non-DTS network should remain unchanged at 2 per cent for the 2018-2022 regulatory period.[35]

Draft decision on UAFG benchmark

In our final decision on methodology, and in section 2.3 of this paper, the commission indicated it will only use actual UAFG that has been settled by distributors and retailers to calculate the UAFG benchmarks.

Given there is no settled UAFG data, the commission's draft decision is to retain the current UAFG benchmark for AGN's non-DTS network of 2 per cent for the 2018-2022 regulatory period.

[35] AGN, August 2017, p. 10.

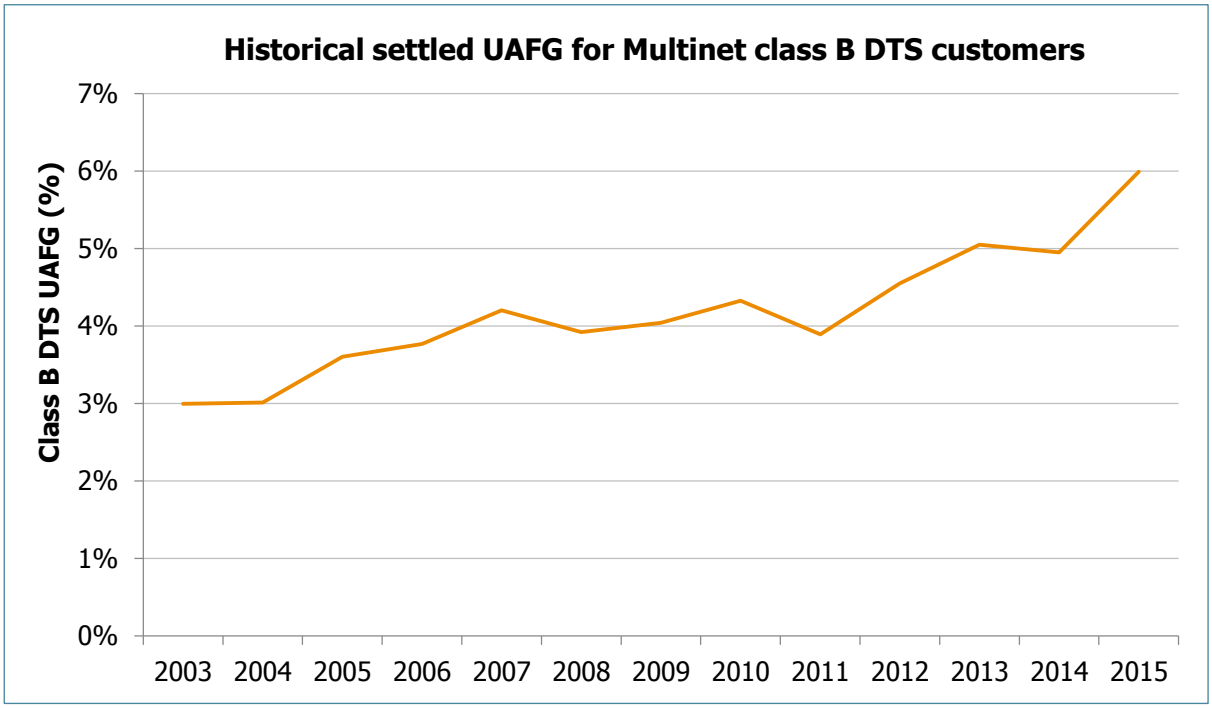
5. Multinet

5.1. DTS network

Data

Multinet submitted settled UAFG data from 2003 to 2015 for its DTS network. The data shows that Multinet's UAFG for class B customers in its DTS network has increased over time, and particularly in recent years, with a minimum of 3.0 per cent in 2003 and a maximum of 6.0 per cent in 2015. This data is represented in figure 2 below.

Figure 2



UAFG management for 2013-2017 regulatory period

Multinet submitted its UAFG strategy for the 2017-2022 calendar years[36], and a report from AIA that was prepared in 2017[37], to explain how it has sought to reduce UAFG levels during the 2013-2017 regulatory period.

[36] Multinet, September 2017.

[37] Multinet, August 2017, report prepared for Multinet by Asset Integrity Australasia.

Since 2012, Multinet has engaged AIA on three occasions in an effort to quantify and reduce its UAFG levels. On the most recent occasion in 2017, Multinet engaged AIA to review the appropriateness of its actions and processes to minimise UAFG, including reviewing how it has actioned the key recommendations in AIA's 2013 report. AIA confirmed that Multinet has addressed all of the recommendations set out in AIA's 2013 report. AIA's findings are summarised below.

AIA found that Multinet's policies and procedures are designed to cost effectively minimise UAFG, and that Multinet applies these policies and procedures when managing its distribution network.

Multinet's mains replacement strategy aims to support the completion of its mains replacement program by 2033. AIA specified that the replacement of low pressure and medium pressure cast iron and unprotected steel mains in Multinet's network is critical to reducing Multinet's UAFG as these materials have by far the highest leakage rates. AIA considered that the larger amount of these assets for Multinet (1,268km) compared to AusNet and AGN who have 340km and 214km left on their networks respectively, is the major cause of Multinet's higher level of UAFG. AIA also assessed that the deterioration rate of the remaining cast iron and unprotected steel pipes accounts for much of Multinet's increasing UAFG level.

Multinet expects to replace 527 kilometres of low pressure mains with high pressure mains over the 2013-2017 regulatory period, which is more than double the Australian Energy Regulator's original forecast. This increased volume means that Multinet's mains replacement program remains on track for completion by 2033.[38]

In 2015, Multinet established an internal team of engineers to address its increasing levels of UAFG. The team sought to identify the reasons for the increase and the areas where there is potential to reduce UAFG, as well as to review the UAFG calculation. The initiatives developed by the team are discussed in section 5.2.4 of the AIA report.

Multinet implemented a program to replace seven CTMs which were nearing their end-of-life. Two meters were replaced in December 2016 and one is scheduled for replacement by the end of 2017. The remainder are scheduled for replacement in 2018-2019. Multinet also has ongoing field life extension testing and an annual meter replacement program to achieve compliance with meter accuracy limits.

[38] Multinet, July 2017, p. 9.

Faulty meter indexes affect UAFG as the index may stop recording gas during times of usage. A May 2017 investigation identified that 15 large customers had a faulty meter index. This investigation has been extended to include domestic connections.

In 2016, both pressure and temperature flow correction was made mandatory for all tariff D customers. As a result, 28 tariff D meters were identified for upgrade or replacement to ensure they supported pressure and temperature flow correction. A further 16 tariff D meters require upgrade or replacement for temperature correction only. Multinet has commenced implementation in 2017 with completion expected in 2018.

A number of pressure correction factor errors have been identified by Multinet since 2014. An investigation was initiated to review and rectify the causes of pressure correction factor errors in Multinet's systems. The investigation identified a number of system improvements to reduce pressure correction factor errors, which were implemented in 2016.

An audit of Multinet's UAFG calculations conducted by AIA in 2014 found that Multinet was compliant with AEMO's procedures.

AIA concluded that Multinet's UAFG management and policies are robust and in-line with best industry practice. AIA also stated that there are no additional cost effective actions available to Multinet that would have effectively reduced class B UAFG levels.

Draft decision on UAFG benchmark

On the basis of the information provided by Multinet, including the initiatives discussed above, the commission considers that Multinet has been efficiently investing in measures to reduce UAFG during the current regulatory period. Therefore, the commission considers that the data submitted by Multinet for its DTS network reflects efficient levels of UAFG.

Based on a three year average of the most recent settled UAFG data for the years 2013, 2014 and 2015, the commission's draft decision is that the class B UAFG benchmark for Multinet's DTS network for the 2018-2022 regulatory period is 5.3 per cent.

Table 4 Multinet DTS network UAFG data and three year average

2013	2014	2015	Three year average
5.048%	4.950%	5.992%	5.3% (5.330%)

UAFG management for 2018-2022 regulatory period

AIA's 2017 report made six recommendations in relation to the operation of Multinet's network during the 2018-2022 regulatory period, which Multinet has accepted.[39] To implement AIA's recommendations, Multinet proposes to:

1. replace (as part of its mains replacement program) 531 kilometres of low pressure pipe, 24 kilometres of medium pressure pipe, and 40 kilometres of early first generation high-density polyethylene pipe
2. work with APA GasNet to upgrade and/or replace 11 CTM sites
3. undertake a review of larger tariff D meters to ensure all aspects of their metering design, operation and maintenance are in order
4. work with the other gas distributors to undertake a review of the method and ability to change fixed correction factors for basic meters to reflect the actual or weighted average temperature of gas
5. work with AEMO to review the current methodology for heating value compensation
6. continue to undertake annual reviews of the class A customers.

Section 6 of Multinet's UAFG strategy details its work program to manage UAFG in the 2018-2022 regulatory period.[40]

5.2. Non-DTS network

Data

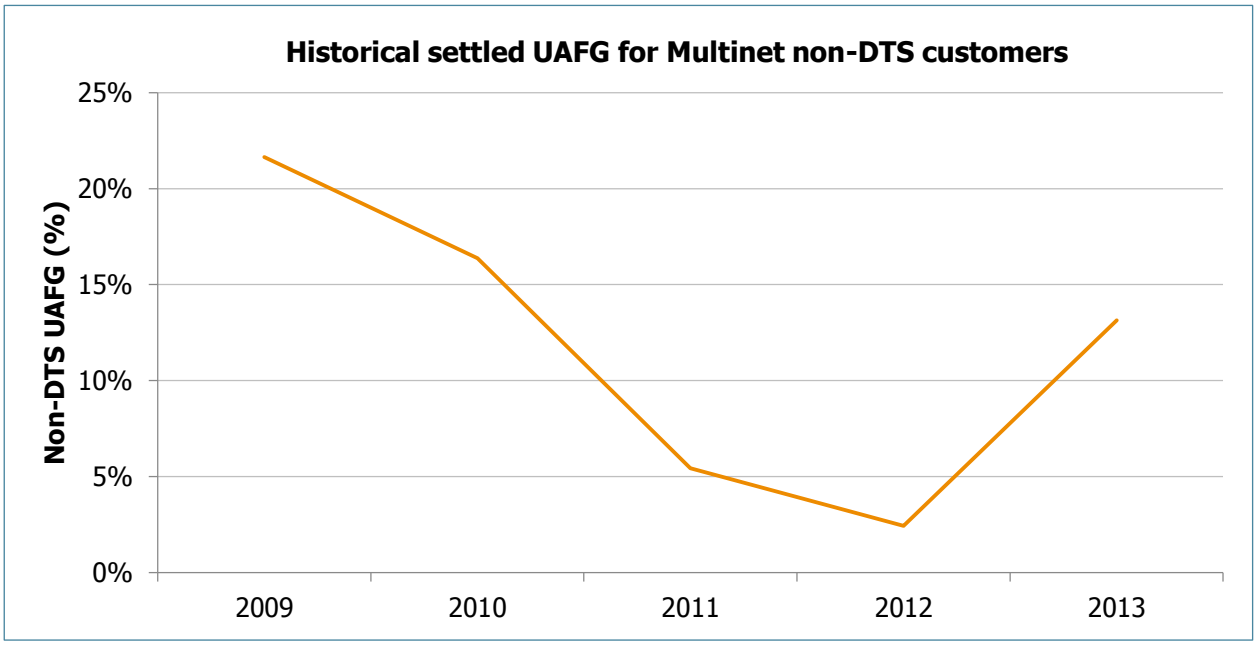
Multinet submitted settled UAFG data from 2009 to 2013 for its non-DTS network. The data shows that Multinet's UAFG in its non-DTS network has been highly volatile across time with a minimum of 2.4 per cent in 2012 and a maximum of 21.6 per cent in 2009. This data is represented in figure 3 below.

Multinet also provided unsettled UAFG data for 2014.

[39] Multinet, August 2017, p. 2.

[40] Multinet, September 2017, pp. 41-46.

Figure 3



Multinet proposed that the UAFG benchmark for its non-DTS network should remain unchanged at 2 per cent for the 2018-2022 regulatory period.[41] Multinet submitted that UAFG for its non-DTS network is extremely erratic. It commented that volatility in UAFG in the early years of a new gas distribution network is to be expected because initial volumes are low (contributes approximately 1 per cent of annual throughput in comparison to Multinet's DTS network), purging and venting is occurring for each new connection, and there may be additional metering errors at low gas flows. Multinet stated that it expects UAFG levels to become more stable as gas flows increase.[42]

UAFG management

Multinet's UAFG strategy states that its actions to reduce UAFG in the non-DTS network are analogous to its actions in the DTS network.[43]

Draft decision on UAFG benchmark

As stated in section 2.2, for the commission to use the revealed cost approach with a multi-year average of past UAFG data to determine the forward benchmarks, we must be satisfied that the

[41] Multinet, August 2017, pp. 1-2.

[42] Multinet, September 2017, pp. 13-14.

[43] Ibid, p. 7.

data represents efficient levels of UAFG. For Multinet's non-DTS network, there is a high degree of volatility and for this reason the commission considers that the data is not reliable for the purposes of setting forward UAFG benchmarks. On this basis, the commission is not satisfied that the data represents efficient levels of UAFG.

The commission's draft decision is to retain the current UAFG benchmark for Multinet's non-DTS network of 2 per cent for the 2018-2022 regulatory period.

6. AusNet

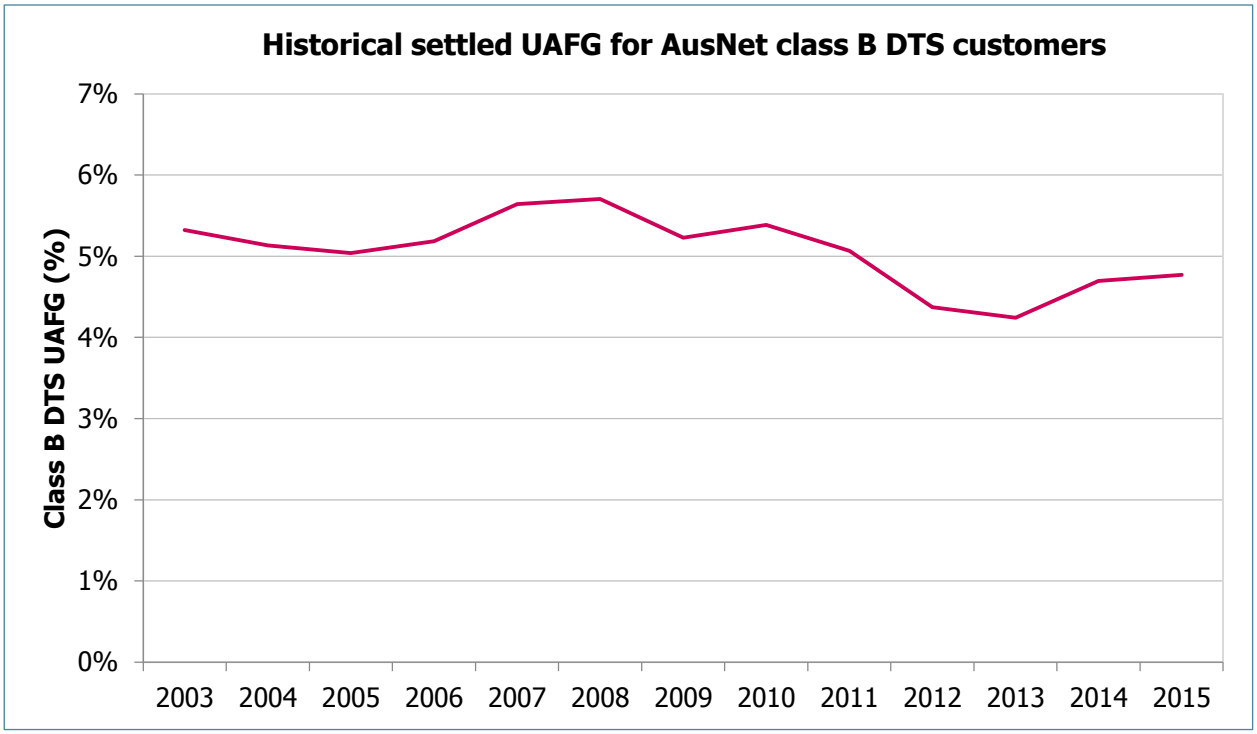
6.1. DTS network

Data

AusNet submitted settled UAFG data from 2003 to 2015 for its DTS network. The data shows that AusNet's UAFG for class B customers in its DTS network has varied over time, with a minimum of 4.2 per cent in 2013 and a maximum of 5.7 per cent in 2008. This data is represented in figure 4 below.

AusNet also provided unsettled UAFG data for 2016.

Figure 4



UAFG management for 2013-2017 regulatory period

Section 5 of AusNet's UAFG strategy details the findings from a 2013 AIA report regarding the sources of UAFG in its network and AusNet's current and proposed activities to reduce UAFG.[44] These actions and initiatives are discussed below.

AusNet indicated that the timing of meter readings may affect UAFG levels[45], so it has established a process to monitor the number of estimated reads and is satisfied that the current number is not a contributor to UAFG. AusNet proposes to audit this process if the number of estimated meter reads reaches a concerning level.

The CTM meters which supply gas to AusNet's DTS network are maintained and calibrated by the APA Group on an annual basis. APA notifies AusNet when CTMs are planned to be calibrated so that AusNet may have an on-site presence.

AusNet uses network gas to fuel the equipment which manages the temperature and pressure of its network. Approximately 50 per cent of AusNet's own gas use is metered.

AusNet performed an investigation which aimed to identify whether larger tariff D meters were measuring accurately and whether there were any anomalies that could influence UAFG. The investigation revealed that the total amount of gas lost from the tariff D meters was negligible.

In line with regulatory requirements in the GDSC, AusNet tests families of meters[46] to ensure the meters are operating within a prescribed tolerance band for metering accuracy. Any meter families which are operating outside the acceptable range are subject to the meter replacement program. The metering units of large industrial and commercial customers undergo regular maintenance checks to ensure that they are operating reliably.

AusNet's mains replacement program aims to replace low and medium pressure pipes in areas considered to have the greatest benefit. These are usually the areas with the highest risk of breakage and leakage.

AusNet reports internally on the rate of third party damage to mains and services on a monthly basis. AusNet also provides a free Dial Before You Dig service to allow the public and industry to locate underground assets.

---

[44] AusNet, 30 August 2017, pp. 9-21.

[45] This is because some readings are estimated reads until an actual read can be made.

[46] A family of meters is a group of meters as defined in AS/NZS 4944, which is an Australian and New Zealand standard for metering equipment.

AusNet operates a SCADA system which enables the pressures in the majority of its high pressure mains to be increased or decreased remotely. This means that AusNet can reduce the amount of gas lost to the atmosphere when mains are damaged.

Draft decision on UAFG benchmark

The actions discussed above are AusNet's asset management practices. AusNet commented that since 2012, its actual UAFG levels for the DTS network have been below the benchmark and accordingly, internal business priorities shifted away from a direct focus on minimising UAFG through specific projects or investments.

The commission acknowledges that AusNet's UAFG for its DTS network has been below the benchmark for each year in the 2013-2017 regulatory period.

On the basis that AusNet employs practices which have resulted in its actual UAFG levels being below the benchmark, the commission considers that AusNet's UAFG data for its DTS network is a reliable indicator of efficient UAFG levels going forward.

Based on a three year average of the most recent settled UAFG data for the years 2013, 2014 and 2015, the commission's draft decision is that the class B UAFG benchmarks for AusNet's DTS network for the 2018-2022 regulatory period is 4.6 per cent.

Table 5 AusNet DTS network UAFG data and three year average

2013	2014	2015	Three year average
4.242%	4.694%	4.771%	4.6% (4.569%)

UAFG management for 2018-2022 regulatory period

AusNet commented that the UAFG levels for its DTS network have been below the benchmark since 2012, indicating that a continuation of the current approach was appropriate. The other actions proposed by AusNet for the 2018-2022 regulatory period are summarised below.

AusNet will consider auditing its process for estimating meter readings to ensure that it follows the process required by AEMO. This audit may also determine a more accurate estimate of the associated errors.

AusNet indicated that any sites where its own gas use is not metered should be separately metered and this will remove the own gas use component of UAFG.

The performance of all CTM and class A meters should be included in a meter audit to assess their current performance against initial design standards to ensure that there has been no change in performance over time. A review of the procedures and techniques used by AusNet to identify faulty or problematic batches of class B meters should be undertaken to ensure they meet current operational needs.

AusNet proposes to review the application of heating value in the calculation of metered energy at CTMs with specific meters. This would be done in conjunction with the proposed audits of these sites.

AusNet plans to include high volume meters in any maintenance or calibration audits using the same criteria as that applied to CTMs.

AusNet stated that if the industry is willing to change the current framework for pressure and temperature correction factors, the calculations for pressure and temperature compensation could be automated through SCADA or on the spot measurements with mobile equipment.

AusNet indicated that measures could be taken to reduce the incidence of theft, by placing tamper-proof seals on valves and changing the design of couplings so that everyday tools cannot be used to disconnect meters. Another option is to incentivise meter readers to identify and report evidence of meter or bypass tampering.

AusNet has been granted approval to implement a proactive domestic regulator replacement program. The aim is to proactively replace domestic regulators before they become faulty to minimise possible leakage losses.

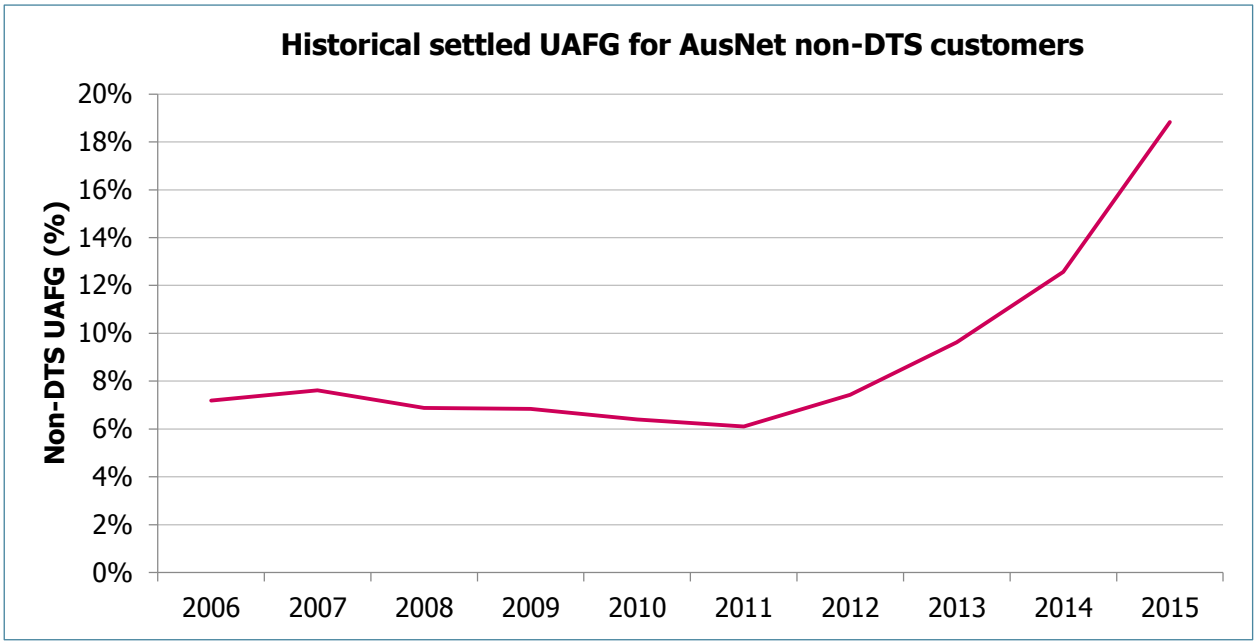
6.2. Non-DTS network

Data

AusNet submitted settled UAFG data from 2006 to 2015 for its non-DTS network. The data shows that AusNet's UAFG in its non-DTS network was relatively stable from 2006 to 2011 before sharply and consistently increasing over the next four years. AusNet's minimum UAFG occurred in 2011 at 6.1 per cent and its maximum UAFG occurred in 2015 at 18.8 per cent. This data is represented in figure 5 below.

AusNet also provided unsettled UAFG data for 2016.

Figure 5



UAFG management for 2013-2017 regulatory period

AusNet submitted that it is currently undertaking an investigation to determine the causes of the high UAFG levels in its non-DTS network. Section 8.5 of AusNet's UAFG strategy provides the details of this investigation.[47]

AusNet indicated that it received draft 2014 UAFG data from AEMO in October 2015, and draft 2015 UAFG data from AEMO in July 2016. In both cases, AusNet requested AEMO to check the accuracy of the injections data because of the high level of UAFG. AEMO subsequently confirmed the accuracy of the injections data – in August 2016 for the 2014 UAFG data and January 2017 for the 2015 UAFG data.[48]

The volume of UAFG in its non-DTS network is approximately 200 terajoules. This is equivalent to the annual consumption of 5,000 residential customers in a network that only has approximately 12,000 residential customers connected, or almost the entire annual consumption of the eight large industrial users in the network. On this basis, AusNet believes that the UAFG is not an actual loss but instead is a measurement error. [49] In addition, AusNet conducted leakage surveys which confirmed that leaks were minor in nature. The combination of leakage surveys, engineering

[47] AusNet, 30 August 2017, pp. 25-37.

[48] Ibid, p. 19, footnote l.

[49] Ibid, p. 27.

assessments and engineering experience led AusNet to rule out an actual leak being the cause of the high UAFG.

AusNet's next step was to ensure that the Carisbrook CTM, which supplies the non-DTS network, was calibrated correctly. AEMO confirmed that the injection value in its database was correct and IM&C Engineering – who calibrate the Carisbrook CTM – confirmed that the CTM was measuring flow accurately. AusNet summed the metered gas entering each town in the non-DTS network and found that the difference in energy between the towns and the Carisbrook CTM was marginal at 1.1 per cent. AusNet also compared the daily flow at Carisbrook with the daily flow of the three towns, and found that the data series were in alignment. These investigations indicated that the Carisbrook CTM was not the cause of the high UAFG.

AusNet then verified the withdrawals data, which confirmed that all industrial users were included in the UAFG dataset. AusNet also checked and confirmed that estimated reads were not the cause of the high UAFG.

AusNet then reviewed the trends in consumption of small to medium customers and confirmed that average customer consumption in the non-DTS network followed a similar pattern to the DTS network. This was done on a network, town and street basis.

Using injections and withdrawals data, AusNet calculated an estimated UAFG in each of the three towns – Ararat, Stawell and Horsham. The results of the analysis are shown in table 6 below.

Table 6 AusNet 2015 non-DTS UAFG by town

	Ararat	Stawell	Horsham
2015 UAFG	9.8%	6.8%	28.7%

This analysis suggests that the cause of the high UAFG in AusNet's non-DTS network is related to the very high UAFG in Horsham. AusNet stated that the town meters did not exist for a full year prior to 2015, so it is not possible to determine whether the recent increase in UAFG in these towns is solely due to the very high UAFG in Horsham.

Finally, to ensure that the energy billed to customers matched the underlying meter reads, AusNet calculated UAFG in volumetric (m^3) terms and found similar results to the town-specific results above. This indicates that the parameters used to convert the volume of gas to energy are accurate. AusNet did not comment further on Horsham's UAFG.

AusNet concluded that its investigations to date have returned a set of conclusions which are on face value inconsistent. First, the reported UAFG is too high to be an actual loss and must be due

to a measurement error in the injection value or withdrawal value. Second, the injection value seems to be correct because it reconciles to three downstream meters. Third, the withdrawal value seems to be correct because it comprises a full set of customers, the consumption reconciles to underlying meter reads, and the consumption trends are consistent with the DTS network.[50]

Draft decision on UAFG benchmark

For the commission to use past UAFG data as a reliable indicator for efficient UAFG levels in the future, we must be satisfied that the past UAFG data represents efficient levels of UAFG. This means that the distributor must have been efficiently investing in measures to reduce UAFG.

AusNet's non-DTS network has shown consistent increases in UAFG since 2011, culminating in the UAFG level of 18.8 per cent in 2015. AusNet has acknowledged that this is a high level of UAFG.[51]

AusNet stated that it commenced an investigation into its non-DTS UAFG levels in early 2017 after receiving final data for 2015 from AEMO in January 2017. The commission considers that AusNet should have commenced its investigation sooner given that UAFG levels had by this time been increasing for four consecutive years, culminating in a UAFG level of 18.8 per cent.

The commission notes AusNet's comments that final UAFG data for 2015 was not received from AEMO until January 2017. However, for some time before this event, AusNet had three years of final UAFG data which indicated that UAFG was consistently and sharply increasing. Even data from 2013 indicated that UAFG had risen to levels that had not been seen on AusNet's non-DTS network. The commission would expect this information to elicit some response from a prudent distributor in that it should have at least attempted to identify the cause or causes of the increase in UAFG, particularly given that UAFG had been lower and stable between 2006 and 2011.[52]

Through more robust internal processes or monitoring, AusNet may have become aware of its sharply rising UAFG levels sooner and could have instigated its non-DTS investigation earlier. If

---

[50] Ibid, p. 37.

[51] Ibid, p. 27.

[52] For example, AGN prepares a monthly UAFG report for all of its networks which is reviewed by senior management. The report includes a summary of rolling annual total UAFG, variances against benchmarks, volume and percentage statistics for the major zones in its Victorian distribution network, and a three year history to identify and highlight trends. Particular attention is paid to sub-networks where trends indicate anomalies or other unusual factors. The report informs and optimises the implementation of AGN's UAFG management strategy.

this were the case, AusNet's non-DTS investigation would be at a more advanced stage than it is currently. The actions that AusNet is proposing to undertake in late 2017 and early 2018 (see AusNet's ongoing non-DTS investigation, below) would have been undertaken already. As a result, the cause or causes of AusNet's high level of UAFG may have been identified and addressed in a more timely and efficient manner. If this were the case, UAFG levels may not have risen to the extent observed.

The commission also notes that AusNet's non-DTS network has been operating for a significant number of years, and UAFG was stable from the inception of the network in 2006 until 2011. From 2012 onwards, there was a sharp increase in UAFG levels. This indicates to the commission that lower and stable levels of UAFG are not unreasonable in AusNet's non-DTS network.

In accordance with the final decision on methodology, AusNet was required to provide a detailed assessment of the causes of UAFG to support its UAFG benchmark proposals. The information burden is on AusNet to explain the substantial increases in UAFG levels in their non-DTS network. AusNet has not provided the commission with information detailing the reasons for the increasing UAFG within its non-DTS network. Without this information, the commission does not have a basis to move away from AusNet's current non-DTS benchmarks.

Based on the above analysis, the commission does not have confidence that the recent UAFG data for AusNet's non-DTS network represents efficient levels of UAFG. Therefore, the commission's draft decision is to retain the current UAFG benchmark for AusNet's non-DTS network of 4.9 per cent for the 2018-2022 regulatory period.

Ongoing non-DTS investigation

AusNet plans to undertake the following actions in late 2017 and early 2018 as part of its ongoing investigations into the high UAFG levels in the non-DTS network:

- An independent review of the Carisbrook 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 GPV pipeline.
- Confirm that the conversion characteristic applied for billing purposes (pressure and heating value) is aligned with the DTS network. This will confirm that the end to end billing process in the non-DTS network is accurate and consistent with the DTS network.
- 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 unaccounted for losses in the network. This will identify the location of potential losses that have not been accounted for.

7. Draft decision on calculation of UAFG benchmarks

The commission's draft decision on the calculation of UAFG benchmarks for the years 2018 to 2022 comprises the following elements:

1. The commission proposes to retain the current class A UAFG benchmarks.
2. The commission proposes to use the revealed cost approach with 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, provided the UAFG data is settled and represents efficient levels of UAFG.
3. The commission proposes the following UAFG benchmarks for the DTS networks.

Distributor	Class B 2018-2022	Class A 2018-2022
AGN (Victoria)	3.8%	0.3%
AGN (Albury)	3.8%	0.1%
Multinet	5.3%	0.3%
AusNet Services	4.6%	0.3%

4. The commission proposes the following UAFG benchmarks for the non-DTS networks.

Distributor	Class A and class B 2018-2022
AGN	2.0%
Multinet	2.0%
AusNet Services	4.9%

5. The commission proposes to amend the date in clause 2.4(b) of the GDSC by which distributors must provide AEMO with the information required by that clause, from 30 April of the year after the gas has been withdrawn to 30 April of the following year.

8. Consultation

8.1. Submissions

The commission invites written submissions from regulated businesses and other interested stakeholders on our draft decision for the calculation of UAFG benchmarks for the years 2018-2022, as well as the proposed amendment to clause 2.4(b) of the GDSC. The submissions received in response to the draft decision will inform the development of the final decision.

Submissions should be made by 5pm on 27 October 2017 in either of the following forms, noting our preference that submissions are made in electronic form:

By email: energy.submissions@esc.vic.gov.au

By post: Essential Services Commission
Level 37, 2 Lonsdale Street
Melbourne VIC 3000

The commission's general approach is that submissions will be published on our website, except for any information that is commercially sensitive or confidential. Submissions should clearly identify which information is commercially sensitive or confidential.

For any questions regarding this consultation, please contact us on (03) 9032 1300. The commission's approach to consultation is set out in our *Charter of Consultation and Regulatory Practice* (2012).

8.2. Next steps

The commission expects to publish its final decision on the calculation of the new UAFG benchmarks, and the proposed amendment to clause 2.4(b) of the GDSC, in December 2017. The commission will then amend the GDSC to give effect to the final decision.

Abbreviations

AEMO	Australian Energy Market Operator
AGN	Australian Gas Networks
AIA	Asset Integrity Australasia
AusNet	AusNet Services
Commission	Essential Services Commission
CTM	Custody Transfer Meter
DTS	Declared Transmission System
GDSC	Gas Distribution System Code
Multinet	Multinet Gas
Non-DTS	Non-Declared Transmission System
Non-PTS	Non-Principal Transmission System
PTS	Principal Transmission System
SCADA	Supervisory Control and Data Acquisition
UAFG	Unaccounted for Gas