Envestra
Investing in energy infrastructure

VICTORIA & ALBURY NETWORKS

RESPONSE TO DRAFT DECISION: UAFG BENCHMARKS 2013-17

PUBLIC VERSION

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TABLE OF CONTENTS

Note: Certain sections of this paper have been marked [c-i-c] denoting 'commercial in confidence'.

1. Executive Summary

On 28 March 2013, the Essential Services Commission (ESV) released its "Draft Decision – Gas Distribution System Code, Review of Unaccounted for Gas Benchmarks" (the "Draft Decision"). This followed a consultation process that commenced with an ESC background paper and call for submissions on 7 December 2012 ("Consultation Paper"). Envestra made a submission to the ESC on 21 December 2012 (Envestra's "Submission").

The review of UAFG benchmarks was referred to the ESC, by the AER, late in the 2013-17 Victorian gas access arrangement review process. The reasons for this are explained in the Consultation Paper. Envestra (and other distributors) made submissions to the ESC (concerning UAFG benchmarks) that essentially replicated material provided to the AER for the Victorian gas access arrangement reviews, on the basis that there should be a natural linkage between the AER review and the setting of UAFG benchmarks.

The Draft Decision portrays inadequacies in the information provided to the ESC on UAFG. Envestra rejects this finding. In fact, given Envestra's extensive networks beyond Victoria and Envestra's significant operating and financial interest in the subject, Envestra has a comprehensive data-base of UAFG performance across 30 individually segmented network areas, both in regional and large metropolitan centres. Envestra has developed a sophisticated understanding of the various drivers causing UAFG trends, including that arising from mains replacement. The purpose of this submission is to supplement material previously provided to the ESC and the AER to demonstrate the Envestra actively manages UAFG, and that the benchmarks proposed by Envestra in its submission are appropriate.

In the Draft Decision, the ESC has made a decision that preserves the status quo on the basis of a stated lack of information. Given the ESC has now articulated its information requirements, that information is provided in this submission. In addition, Envestra has also addressed each of the issues raised in the Draft Decision.

The information supplied in this submission demonstrates that:

(a) Envestra has a strong understanding of the components of UAFG;

(b) Envestra has extensive processes in place to monitor, assess and minimise UAFG. The outcomes of those processes has led to a significant reduction in UAFG compared to what otherwise would have been the case. Without those processes, Envestra's UAFG would currently be around 4.7% in lieu of 3.7%;

(c) Envestra has undertaken all reasonable and appropriate measures to minimise UAFG, consistent with those of a distributor acting prudently and in accordance with good industry practice;

(d) Envestra's level of mains replacement in comparison with benchmarks has not materially impacted Envestra's performance in respect of UAFG; and

(e) Envestra's UAFG outcomes would have been closer to benchmarks, had it not been disadvantaged by heating value issues previously raised with the ESC.

The additional information provided in this submission supports the proposed benchmarks that Envestra set out in its original Submission, which benchmarks are base on actual, revealed UAFG outcomes.

The ESC in its Draft Decision used an average of actual UAFG outcomes from 2008-10 to set the benchmarks for SP AusNet. For reasons discussed in this submission, Envestra believes that the benchmarks should be based on the most recent outcomes, and if an average were to be used, the outcomes for 20010-11 should be averaged.

Envestra considers that it would be preferable to backdate the new benchmarks to 1 January 2013 to align with the Access Arrangement Period. The Distribution System Code provides that authority for the ESC to set a retrospective benchmark if it consults with the Commission's Consumer Consultative Committee. However, Envestra notes ESC's concerns with setting retrospective benchmarks. Should the ESC form the view that it is unable to set retrospective benchmarks, Envestra recommends that a "blended" benchmark be used to keep the Company in a financially neutral position. Envestra proposes that 'blended' benchmarks be set for the remainder of the regulatory period, such that any difference between the new and old benchmark (in relation to the period January to June 2013) is accounted for by an appropriate adjustment to the new benchmarks. This would ensure that there is no windfall gain or loss to all parties as a result of the delay in implementation of new benchmarks. This is also consistent with the approach used by the AER in setting tariffs for the 4.5 year regulatory period beginning 1 July 2013 (versus the normal 5-year regulatory period which was expected to commence on 1 January 2013), as well as the approach used by the ESC in setting tariffs for the 4.5 year regulatory period ending in December 2012.

Envestra notes that the setting of artificially low benchmarks does not result in benefits to consumers, but merely higher profit margins for gas retailers.

[CIC]

2. Synopsis of ESC Reasoning

The ESC's Draft Decision to leave Envestra's benchmarks unchanged was based upon its view that there is a lack of evidence to suggest that Envestra has taken sufficient steps to minimise UAFG over the 2008-2012 regulatory period. The ESC suggests that if Envestra were concerned about UAFG, and about the fact that it was exceeding its benchmarks, Envestra would have undertaken a significant review of the causes of UAFG, considered a comprehensive strategy for reducing the level of UAFG, and that evidence of such a strategy would be a report of the type procured by SP AusNet (that sought to quantify each component of UAFG). The ESC concluded that because it had not been presented with any evidence that Envestra had an understanding of UAFG or had taken steps to minimise UAFG, the setting of higher benchmarks was not justified.

A significant factor in the ESC's reasoning was also the fact that Envestra had not completed all of the mains replacement that was approved for the regulatory period, and that this may partly explain why Envestra had not met its UAFG benchmarks. The ESC consequently "expects Envestra and Multinet to explain why they did not complete their funded low pressure mains replacement programs and how these decisions have impacted UAFG levels"[1], citing this as a further lack of information that prevented it from justifying higher benchmarks.

[1] P26, Draft Decision

The ESC also briefly discussed the issue raised by distributors that new benchmarks would not be implemented until July 2013, six months later than expected. The ESC concluded that it was not appropriate to set benchmarks on a retrospective basis, citing practical and administrative issues.

In the Draft Decision, the ESC made a number of conclusions or observations, many of which Envestra believes do not have a sound basis. Key issues are addressed in the body of this submission, but Attachment 4 provides a response or reference to all issues for completeness.

3. Envestra UAFG Management

3.1 General

The ESC indicated that there was a lack of evidence demonstrating that Envestra adequately manages UAFG and takes appropriate steps to minimise UAFG. This section provides an overview of the processes used by Envestra (and its operator, APA Group) to continually monitor and minimise UAFG.

As a national gas distributor, Envestra places a significant emphasis on the analysis and mitigation of UAFG across each of its networks. UAFG is reviewed by Envestra at both senior management and Board levels in recognition of the safety, cost and environmental impact this item has on Envestra's business. On a commercial basis alone, UAFG represents one of Envestra's largest operating costs across its networks, directly costing around $15m annually, with a further $20m being required each year in leak repair activities. This accounts for around 25% of Envestra's annual operating costs. UAFG expenditure is therefore a major focus of management.

Envestra has gas distribution networks in every state apart from Western Australia. It therefore has a national perspective when considering UAFG and is able to leverage a 'best practice' approach that incorporates outcomes across all of its networks. That is, the extensive number of networks owned by Envestra across Australia means that the experience gained in addressing UAFG in one network can be leveraged to address a similar issue in another network elsewhere in Australia. For example, Envestra undertook a study into UAFG for Envestra's South Australian gas networks, with the learning and increased understanding gained from this exercise flowing through to the management and analysis of its Victorian distribution networks as well as the other networks owned by Envestra. That review investigated the following UAFG variables:

- linepack factor (increasing volume of linepack from network expansions);
- pressure correction factors;
- differences between actual and billed domestic pressures;
- difference between actual and standard billing temperature;
- domestic metering bias;
- difference between actual and billed metering pressures;
- errors in network injection measurements;
- differences in transmission and distribution measured heating values;
- inconsistent treatment of heating values;
- potential differences in Envestra's Works Management and Metering/Billing Systems; and
- potential of missing meters in metering/billing systems.

On a monthly basis, a UAFG report is prepared for all of Envestra's networks, including the Victorian and Albury gas networks. This UAFG report compares the rolling moving annual total UAFG against both the regulated benchmark position and Envestra's budgeted position.

The report contains, amongst other matters, the following components:

- a high level summary, that reports current moving annual total UAFG and variances;
- tabulated volume and percentage statistics for the seven major zones in the Victorian distribution network;
- graphs of three-year history, to highlight monthly and rolling annual UAFG data to identify and highlight trends (see sample output in Attachment 1); and
- summary data on progress of UAFG "wash-ups".

The report is compiled and analysed by APA on a monthly basis. The report is subsequently reviewed by senior Envestra management in conjunction with senior APA management, with particular attention paid to sub-networks where trends indicate anomalies, or the possibility of erroneous inputs, potential pipeline faults, theft, or other unusual factors. The results of this analysis are used to optimise execution of Envestra's UAFG management strategy.

The UAFG data is analysed in greater granularity by APA staff on an on-going basis. The seven Victorian UAFG zones are further divided into 35 distinct sub-networks, to provide greater scope to analyse the data and undertake corrective investigations and activities.

APA's UAFG review team includes the following positions:

- Asset Planning Manager;
- 2 Asset Engineers;
- UAFG Projects Manager;
- 3 revenue assurance analysts; and
- Supervisor Interval Metering

The above detailed reviews drive actions to minimise UAFG. Examples of specific actions and outcomes are set out in section 4 of this submission.

3.2 Recurrent Activities

In addition to the rigorous monthly analysis of UAFG results, Envestra undertakes the following recurrent activities as part of its UAFG management strategy.

Mains Replacement

Envestra has a Victorian mains replacement strategy that targets the replacement of all aged and leaky pipes by 2020-21. This strategy will eliminate leakage from cast iron and unprotected steel pipes, which contribute to UAFG and fugitive emissions. This mains replacement strategy has been in place for more than 15 years, albeit it has been recently accelerated following the temporary reduction during the Global Financial Crisis.

The mains replacement strategy is regularly reviewed, and involves an analysis of expected impacts on UAFG and leak repair costs. As demonstrated in previous access arrangement review submissions (mains replacement plans), Envestra attempts to quantify UAFG impacts, notwithstanding the limited data and limitations concerning leakage measurement.

Theft Mitigation

Customer sites reported as "inlet only" sites are included in the list of sites visited and checked by meter readers on a bi-monthly basis. These are sites where the following activities may have occurred:

- a gas connection requested, and the inlet/service riser installed, but the computerised works management system has yet to record details of the gas meter being installed;
- the customer has requested removal of the meter for renovations or other reasons; or
- the meter has been removed at the request of a retailer for credit risk concerns.

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

Envestra understands that this "inlet only inspection" activity is not undertaken by other Victorian gas distributors.

Pressure Correction Factor Reviews

Envestra undertakes reconciliations of pressure correction factors recorded in Envestra's asset management system and metering/billing system to ensure there have been no administrative errors in billing consumption details. This provides an additional cross-check on the UAFG monitoring process that ensures accurate delivery point billing details, thereby distilling further confidence in Envestra's UAFG calculations.

Envestra also undertakes reviews of customer pressures by suburb to identify potential billing discrepancies.

Meters that Under-record Consumption

Envestra undertakes periodic reviews of basic metered sites that indicate zero or low annual consumption, to identify potential issues with meters malfunctioning, or under-recording consumption. These details are reviewed against historic consumption for each site, and where there are unexplained changes in consumption patterns, a site visit is arranged to investigate. This often results in inaccurate meters being replaced.

Ongoing Review of Large Consumers

Due to the size and potential impact on UAFG, interval-metered data (i.e. for large consumers) is analysed on an individual meter basis to identify changes in consumption patterns that could result in UAFG.

These reviews have resulted in a number of instances of on-market and off-market adjustments to increase recorded customer consumption (and therefore reduce UAFG).

Gate Station Meter Tolerance Reviews

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

Leakage Management

Envestra has a comprehensive leak survey and leakage response/repair strategy that ensures all detected and reported leaks are attended to in a timely manner. The basic purpose of the leak management program is to reduce UAFG to a minimum.

Meter Management

Envestra has a meter management policy that ensures all meters are removed from the field and tested for accuracy on a regular basis. This not only provides confidence to the consumer in respect of billing accuracy, but minimises the metering error component of UAFG.

4. Effectiveness of Envestra Strategy and Processes

Section 3 describes various recurrent activities undertaken by Envestra to ensure all controllable variables contributing to UAFG are investigated in a timely fashion and any issues addressed in accordance with the processes of a prudent and efficient operator. In this section, Envestra provides examples of where those processes have identified issues impacting on UAFG in recent years. They demonstrate that Envestra has effective processes in place to minimise UAFG.

In relation to the Victorian network, the areas that Envestra has identified and actioned had the impact or potential to annually impact Envestra's UAFG by around 600 TJ (at a cost of approximately $2.4m). Without Envestra's strategies in place, Envestra's UAFG percentage would be around 4.7% instead of 3.7%.

Nil Consumption Sites

An investigation of nil-consumption sites was undertaken in Victoria following similar work done for Envestra's South Australian gas network. The South Australian review encompassed all delivery points that showed nil consumption for a twelve-month period with no apparent reason (i.e. the meter was not identified in Envestra's records as being "locked" or disconnected). Site visits were arranged and meters examined to investigate whether there were issues with the meters. The sample review for South Australia identified metering errors in some 15% of the sites visited. On the basis of these results, Envestra undertook a national review of zero-consumption sites.

In Victoria, approximately 5,600 nil-consumption sites were identified and visited. This resulted in 666 meter changes and 197 meters being removed.

It is estimated that this reduced UAFG by approximately 30TJ per year (valued around $120k/yr).

Ring Main Pigging Project

A large pigging project, coordinated amongst all of the distributors and GasNet, was undertaken in respect of a major gas transmission main, affecting all gas distributors in Victoria. This project resulted in it being necessary to allow flows of gas into networks unmetered. It was consequently necessary for such gas flows into the Envestra network to be estimated.

AEMO (VenCorp at the time) was responsible for the estimation of injections into both Multinet and Envestra networks during the period of this project (approximately 2 weeks). However, Envestra's review and analysis of the injection data concluded that the injection numbers provided by AEMO to the gas market were too high for the Envestra network. AEMO accepted Envestra's analysis and this resulted in a downward revision to the injections.

The revised injections reduced UAFG by 284TJ. That is, the impact on Envestra would have been an increase in UAFG of around 0.6%, costing Envestra around $1.1m if Envestra's review had not been undertaken and the data appropriately corrected.

Heating Value Impact through Changed Source of Gas Supply

As a result of Envestra's UAFG review processes, Envestra identified an issue concerning the heating value of gas. Envestra conducted detailed analysis that concluded that changing sources of gas supply in Victoria were significantly contributing to increasing UAFG in its network. The changing source of gas supply changed the zonal heating values used in undertaking the gas consumption calculation of customers.

Envestra identified that the changing source of gas had adversely affected Envestra's UAFG (and billed revenue) [CIC]. This matter was raised with AEMO in order to change the state-wide average daily flow-weighted heating value used in the basic meter energy calculation, to a daily-flow weighted zonal heating value.

AEMO independently reviewed Envestra's findings and confirmed Envestra's calculation that there was indeed an inequity between distributors as a result of the changing source of gas supply in Victoria. AEMO however did not amend the market rules, on the basis that the impact per individual Victorian customer was negligible (despite the impact on Envestra's business being material), and that this heating value impact would be taken into consideration at the next gas access arrangement review by the AER. This view was also expressed by the ESC in its October 2010 Final Decision "Unaccounted for Gas Related to Heating Value Allocation". Unfortunately the ESC's recent Draft Decision has not taken into account that advice.

The impact of the heating value error contributes approximately 190 TJ ($0.8m) per year to Envestra's UAFG, in addition to lost revenue to Envestra through under-billing of gas delivered. [CIC].

Beveridge Gate Station

Envestra's review and analysis processes identified higher than expected UAFG for the Beveridge region. This was a new network at the time and Envestra was concerned that the percentage level of UAFG being reported was significantly above levels that could be expected for a new network. Envestra consequently undertook discussions with the gate station owner regarding the level of UAFG.

Over the course of the next year, numerous reviews and discussions were held, which culminated in Envestra having the field regulators turned off so that there was no supply possible into the network. During this time the gate station continued to record injections of gas, which should not have been possible. GasNet eventually identified that the gate station had been installed incorrectly, the result of which was that gas injections were being incorrectly recorded.

Envestra subsequently sought revisions to market data to reflect appropriate levels of injections. The impact of this error on UAFG was approximately 10 TJ ($40k) per year. (Although the error appears immaterial, this example highlights the detailed level of enquiry and robust processes undertaken to remedy UAFG issues.

Rosedale Leak

Envestra's review and analysis processes identified an increasing UAFG trend for the Rosedale sub-network in Victoria. This was a small sub-network at the time, consisting of approximately 500 basic metered customers and one interval metered customer.

A thorough investigation of this sub-network was undertaken over several months with consideration given to leaks, theft, understated interval metered consumption, errors in gate station data, potential for a large customer not being billed, etc. The following specific activities were undertaken:

- gate station data was analysed and an additional gate station meter check was conducted;
- line of main leak surveys were conducted;
- investigations into the interval metered customer were undertaken, including changing the customer's meter;
- a review was undertaken of meter pressures and customer status of the 500 basic metered customers;
- a review was conducted to verify a reduction in consumption of the interval metered customer, whereby it was confirmed that the customer had lost a major international contract that significantly reduced its gas requirements during the period in question;
- an engineer visited the region to review potential customers not recorded in the metering and billing systems; and
- discussions were held with local gas fitters and police to investigate the potential for illegal gas use.

The investigation eventually identified the cause of the UAFG to be a leak situated on a 500 metre service line across a rural property. As normal industry practice does not routinely involve leak survey of service lines, this leak had gone undetected prior to the UAFG investigation. As a result, the leak survey practice for regional areas was changed to incorporate service lines.

The UAFG impact was estimated as 49 TJ ($200k) per year.

Interval Meter Reporting Systems

Envestra's approach to having prudent reporting and review processes is further demonstrated by its "Business Case V49" submitted as part of Envestra's 2013-2017 gas access arrangement review submission. That project involved:

- expanding Envestra's telemetry reporting system to enable Envestra to monitor consumption patterns of its large Victorian customer sites and to react to errors in a timelier manner; and
- carrying out manual index reads for the purposes of checking large customers' consumption against telemetered data (i.e. manual check reads).

Due to the large volumes of gas passing through Tariff D meters, Envestra places significant focus on ensuring the accuracy of such data.

Review of Meter Requirements for Large Customers

Envestra recently undertook a project to review and ascertain if the design parameters of the metering installations at large customer sites appropriately match the demand characteristics of the customer. A mismatch can result in inaccurate metering and therefore affect UAFG.

The review covered a total of 339 operation sites that are currently registered on the Market Information Bulletin Board with interval meters. These sites recorded 35-40% of the total gas sales in the Victorian and NSW gas market from August 2011 to July 2012.

The review resulted in the following findings:

- 4 sites exceeded the manufacturer's recommended capacity of the meter;
- 42 turbine meters where the hourly flow was below the manufacturer's recommended minimum hourly flow rate;
- 2 sites exceeded the design capacity (subsequently scheduled for an upgrade);
- 1 site still with a basic meter connected;
- 2 sites exceeded the design capacity of the meter on a few occasions and are subsequently being monitored; and
- a metering error that was contributing to around 2TJ of UAFG per year.

Correction of these various discrepancies/errors and equipment will yield a more accurate UAFG assessment in Victoria.

Templestowe Bi-Directional Valve

During an annual UAFG 'washup' process, Envestra's analysis identified a potential anomaly which resulted in the detection of an error in AEMO's data systems, i.e. AEMO's system had been incorrectly recording outflows from the Templestowe bi-directional valve as inflows into the Envestra network, thereby overstating UAFG in Envestra's network.

The potential impact on UAFG would have been 84 TJ (valued at $340k) per year.

Regional Areas UAFG

Over a period of time, the UAFG for a regional Victorian town had been showing an increasing trend. Over the next 18 months extensive reviews were undertaken including:

- leak surveys;
- line of main reviews for possible customers not in Envestra's billing system;
- potential for illegal use;
- review of all commercial and industrial customer meters and recorded pressures;
- review of all basic metered billing details; and
- changing the meter for a large Tariff D customer.

As a result of the above, UAFG began to then trend downwards to expected levels, reducing annual UAFG by around 16 TJ (valued at $60k) per year.

Summary

The above examples demonstrate that Envestra has robust processes in place to minimise UAFG. These processes sometimes involve considerable detailed analyses and lengthy discussions and negotiations with other parties to detect and eliminate even minor sources of UAFG.

5. UAFG Component Analysis

5.1 General

The Draft Decision appears to have been influenced by a view that Envestra did not supply a detailed analysis of the components of UAFG, and that the absence of such analysis demonstrates the lack of prudent processes for the minimisation of UAFG.

As discussed in sections 3 and 4 of this submission, Envestra has prudent processes and strategies in place to minimise UAFG. Envestra does undertake continual analysis of UAFG data, and has recently undertaken further detailed analysis. That analysis is summarised in section 5.2, with detailed supporting data contained in Attachment 2. Envestra's analysis has been reviewed and endorsed by Asset Integrity Australia Pty Ltd (the same consultant employed by SP AusNet for its analysis), as set out in Attachment 3.

5.2 Detailed UAFG Analysis

UAFG is comprised of the following components:

(1) Timing 'mismatch' – if data inputs do not relate to the same periods of time, network injections and deliveries will be mis-matched, resulting in either a positive or negative contribution to UAFG. The impact of this component is minimised by using longer (annual) time periods and ensuring appropriate data is used.

(2) Tolerance on gate station meters (injection meters) – all meters, including those at gate stations, have inherent margins of accuracy.

(3) Pressure compensation – the pressure of gas at most delivery points is not measured but regulated to be within certain limits. The difference between actual pressure and billing pressures results in a positive contribution to UAFG, as billing factors are designed to ensure that consumers are not disadvantaged.

(4) Temperature compensation – the temperature of gas at most delivery points is not measured but assumed to be at a certain temperature. The difference between actual and assumed temperature results in a positive contribution to UAFG, as billing factors are designed to ensure that consumers are not disadvantaged.

(5) Heating value differences – Envestra must use, under AEMO's rules, a state-wide heating value in calculating the energy delivered to each consumer, whereas the actual heating value is known to be different, resulting in a reported higher level of UAFG in Envestra's network, versus what would be the case otherwise.

(6) Metering accuracy at delivery points – all meters have an inherent tolerance, and can measure slightly above or below the actual volume of gas delivered.

(7) Change in linepack – as networks grow, gas is required to fill the new pipes, giving rise to relatively small increases in UAFG over time.

(8) Company own use – gas can be used to purge new mains and services, and to drive compressors, water bath heaters or other equipment.

(9) Theft

(10) Line losses/leakage (mains, services, meters, regulators) – leakage from pipe joints and fittings represents a material amount of loss in all distribution networks, due to the technical practicalities associated with materials and construction.

(11) Third party damage – gas pipes are often damaged by other parties, resulting in gas lost to atmosphere.

Envestra has analysed each of the above components (and is some cases sub-components, eg leakage attributable separately to mains, services, etc) in order to estimate their quantitative contribution to UAFG in the Victorian network (see Figure 5.1). In some cases, the confidence level associated with the calculated quantity outcome is relatively high, while in other cases the confidence level is relatively low, and this is indicated in uncertainty spans shown for each UAFG component shown in Figure 5.1.

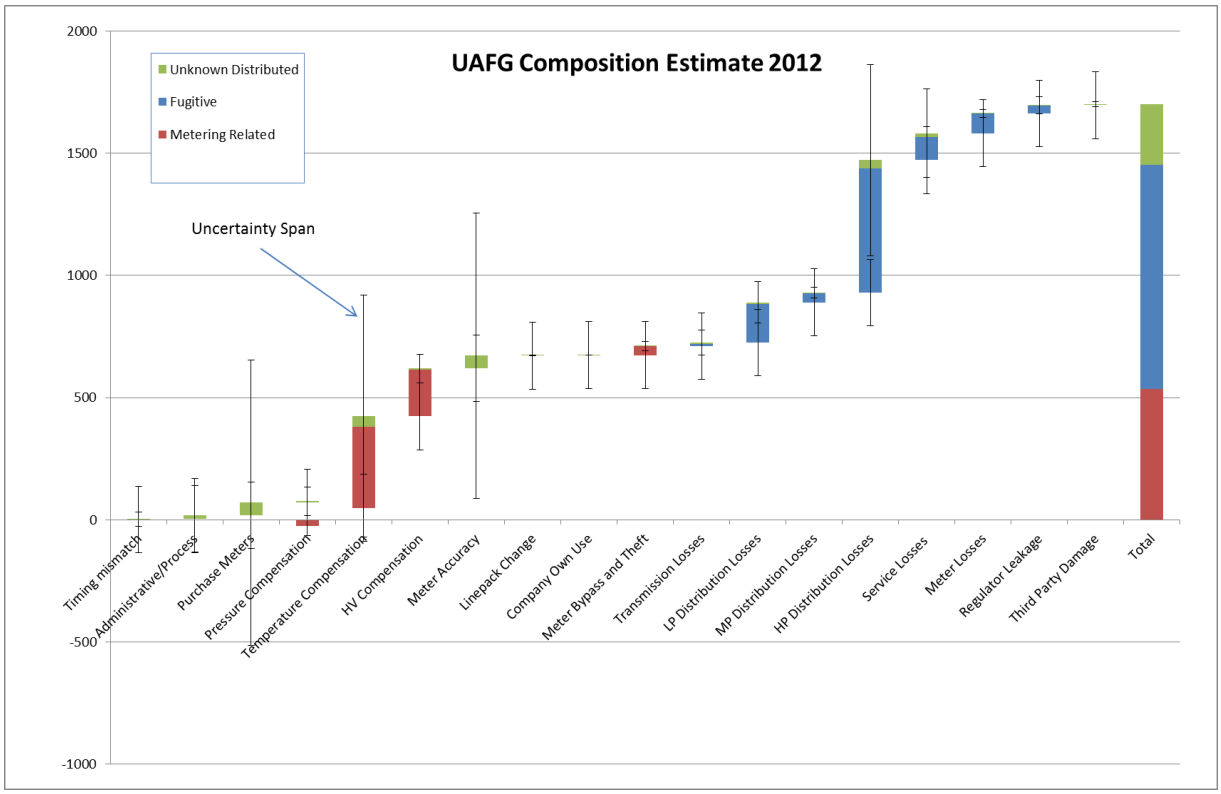

Figure 5.1: UAFG by Category

The following table sets out the components and estimated respective contribution in order of magnitude. Supporting data is supplied in Attachment 2 to this submission. [CIC].

UAFG by Component	Env TJ	%	[CIC]	[CIC]
High Pressure Distribution Losses	507	30%		
Temperature Compensation	331	19%		
Heating Value Compensation	191	11%		
Low Pressure Distribution Losses	157	9%		
Service Losses	94	6%		
Meter Losses	80	5%		
Medium Pressure Distribution Losses	38	2%		
Meter Bypass and Theft	36	2%		
Regulator Leakage	31	2%		
Transmission Losses	10	1%		
Administrative/Process	2	0%		
Third Party Damage	2	0%		
Linepack Change	1	0%		
Company Own Use	0.0	0.0%		
Timing mismatch	0.0	0.0%		
Purchase Meters	0.0	0.0%		
Meter Accuracy	0.0	0.0%		
Pressure Compensation	-27.0	-2%		
Unknown Distributed	247	15%		
Total	**1700**	**100.0%**		

Table 5.1: UAFG Contribution by Category

The above indicates that:

(a) approximately 15% of Envestra's network UAFG cannot be easily attributable to any particular category; and

(b) leakage from the low pressure portion of the network is estimated to comprise around 9% of UAFG (the same percentage as for the SP AusNet network).

Envestra's UAFG strategy focuses on those aspects of UAFG that are controllable, or able to be influenced, this being predominantly low pressure mains. While public safety is an important driver of mains replacement, the reduction of UAFG is also a key benefit, and the eventual elimination of aged low pressure mains by 2020/21 will assist in minimising the respective contribution to UAFG. In the interim, it is believed that continual deterioration of the remaining stock of these mains is countering the benefits gained from those mains that are replaced. (It should also be noted that due to inherent leakage in all mains, when low pressure mains are replaced with high pressure mains, some level of leakage will still occur in the high pressure mains).

Temperature and pressure compensation represent factors that to-date have not been economic to fully address except for those customers that consume large volumes of gas and who have meter sets capable of measuring and correcting for gas temperature and pressure. Nevertheless, this area remains one of continual assessment in relation to developing technologies and optimisation of metering and billing systems.

High pressure distribution losses, meter losses and service losses are inherent in the operation of any distribution network, and Envestra has a comprehensive leak detection and response strategy to deal with these as they arise. The leak response strategy is part of Envestra's overall asset management strategy, which has been approved by Energy Safe Victoria.

A large proportion of all leak calls received by Envestra are as a result of a leak at a meter installation. In recent years, Envestra conducted a detailed investigation into the causes of such leaks and means of minimising such leakage, with various changes in processes introduced across Envestra's networks. Envestra regularly analyses leak data to ensure that areas for follow-up are identified and actioned.

Finally, one other material factor that receives particular Envestra focus is that of heating value error, which accounts for around 10% of Envestra's UAFG. This is discussed further in section 5.5.

5.3 Detailed UAFG Analysis - Conclusion

Envestra's recent analysis confirms its previous analyses of UAFG that:

(a) it is difficult to accurately quantify components of UAFG (and hence the uncertainty bands associated with most components are wide), and that a percentage of UAFG will always be unidentifiable. Envestra's analysis is that, for its network, around 15% is unidentifiable. [CIC];

(b) such analyses are subject to assumptions and estimations, and accordingly outputs are generally used to identify areas for prioritising actions, rather than for quantification. A notable exception is where detailed data is readily available, e.g. heating value; and

(c) only a portion of UAFG is controllable to any significant degree. As discussed above (and in section 3 of this submission), Envestra's strategy focuses on those aspects of UAFG that are controllable and which have the biggest impact on reducing UAFG.

5.4 Estimate of Impact of Mains Replacement

The Draft Decision appears to place importance on the fact that Envestra did not complete all of its approved mains replacement in the 2008-12 regulatory period[2], and that this might be a consideration in setting the new UAFG benchmarks. Interestingly, the ESC appears to have paid no regard to the historical level of mains replacement in the 10 years prior to the recent regulatory period (it is noted that Envestra exceeded its benchmark in the 2003-07 regulatory period). Of relevance is also the fact that Envestra has more or less the same level of remaining cast iron pipe within its network as SP AusNet, reflecting the significant work undertaken by Envestra in previous periods.

[2] P3, Draft Decision

The ESC reviewed documentation pertaining to Envestra's 2013-17 gas access arrangement review in its assessment of the UAFG benchmarks (refer Draft Decision footnotes numbers 35, 39, 40, 41 and 42). The documentation submitted by Envestra[3] as part of that access arrangement review explained why Envestra was unable to complete the low pressure mains replacement program:

> "*The GFC (Global Financial Crisis) dramatically increased investors' aversion to risk and restricted the availability of debt and equity capital to 1 in 100 year levels that were not anticipated at the time business plans and Access Arrangements were approved.*
>
> *…Envestra responded to these financial pressures by deferring expenditure where this would not unreasonably compromise safety and service performance. Total capital expenditure was around 40% below benchmark levels over the 2008 to 2010 period, which was largely driven by a 70% reduction in mains replacement expenditure. There were also significant reductions in augmentation, IT and marketing expenditure over this period*."[4]

The reasons for the deferral of capital expenditure were also acknowledged by the AER in its final decision[5].

The ESC was also made directly aware by Envestra in 2008 that Envestra would be unlikely to complete the forecast level of mains replacement, due to the Global Financial Crisis[6].

Envestra's response to the GFC was a prudent one of reducing capital expenditure and increasing operating expenditure (leak response and repairs). This was possible, as explained by the AER in its recent Victorian gas access arrangement decision, because mains replacement is not the only means of managing leakage. Envestra made a prudent decision taking into account the economic circumstances at the time that were not forecast by the ESC in its 2008 gas access arrangement decision. The outcome reflects the regulatory regime whereby businesses are set a regulatory forecast and are then required to optimise their decisions within those constraints. The incentive properties of the regulatory regime are designed to allow distributors to optimise 'opex/capex trade-off', taking into account economic conditions.

The ESC infers that Envestra has made a windfall gain by not undertaking all of its approved capital expenditure (notwithstanding sound reasons for deferring the capital expenditure). But the ESC has failed to acknowledge that over the same period, Envestra has needed to undertake more operating expenditure than otherwise would have been necessary due to the higher number of maintenance issues arising (e.g. Envestra needed to address around 20 times the number of water-in-mains incidents in 2010 than it did in 2007[7]). That is, the ESC has not acknowledged that the 'capex/opex trade-off', and that Envestra has in fact been subject to a windfall loss due to:

(a) the negative impact of higher operating expenditure compared to the positive impact of lower capital expenditure; and

(b) actual gas demand falling short of regulatory benchmarks that were set for the period:

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3 See section 2.2.5.3, Envestra Victorian Access Arrangement Information, 30 March 2012

4 ibid

5 P66, Access Arrangement Final Decision Envestra Ltd 2013-17 Part 2, AER, March 2013

6 Presentation by Envestra to Andrew Chow, ESC, on 2 July 2008

7 P16, Victoria Networks Mains Replacement Plan, Attachment 7.4 to Envestra Access Arrangement Information, February 2012

> "These lower volume outcomes have resulted in actual haulage revenue being around $33 million lower than benchmark haulage revenue. This reduction in revenue recovery has offset any benefit that Envestra might have received as a result of actual capital expenditure being below benchmark levels, which amount Envestra has estimated to be around $26 million over the 2008 to 2012 Access Arrangement period."[8]

Hence, Envestra received no windfall gain, and its actions were consistent with those of a prudent operator. This was indeed the AER's conclusion in its assessment of Envestra's capital expenditure over the 2008-2013 regulatory period.

> "*The AER considers that the revealed actual volumes [of mains replacement] over a five year period, which smooths the impact of both windfall gains and losses resulting from unforeseen impacts on expenditure, is the best proxy for estimating the prudent and efficient volumes in these circumstances.*"[9]

Notwithstanding the effects of the GFC, Envestra managed to spend around 70% of the approved funding for mains replacement by the end of the recent regulatory period, and is now ramping up its rate of replacement (above the recently approved AER benchmarks) as shown in the following graph.

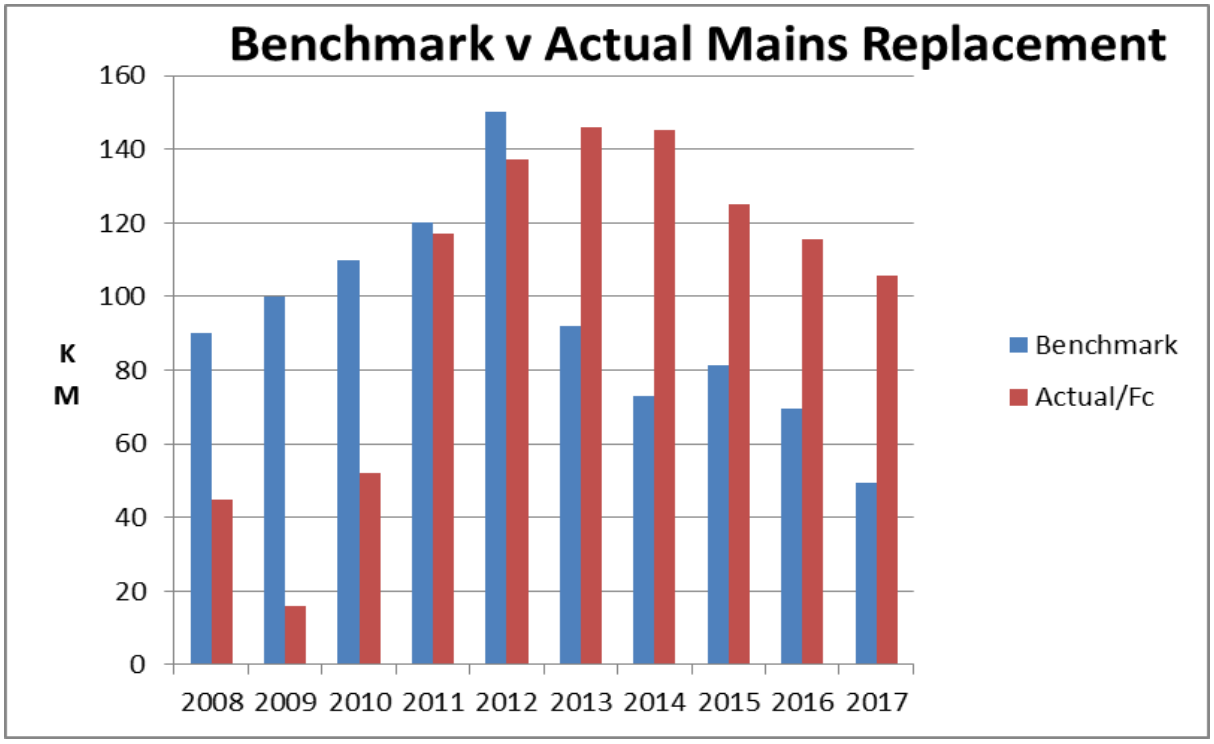

Figure 5.2: Benchmark versus Actual/Forecast Mains Replacement

Notwithstanding that Envestra acted prudently in not completing its approved level of mains replacement, Envestra has estimated the theoretical impact on UAFG, had Envestra completed the approved level. In section 5.2, Envestra has set out its latest UAFG analysis, which includes the current level of leakage attributable to low pressure mains. If the analysis is replicated using:

- the length of low pressure mains in service as at the start of the regulatory period; and
- the length of low pressure mains had Envestra completed all of its approved mains replacement by the end of the regulatory period,

[8] P47, Envestra Victoria Access Arrangement Information, March 2012
[9] P67, Access Arrangement Final Decision Envestra Ltd 2013-17 Part 2, AER, March 2013

then the respective outcomes are as shown in the following graph.

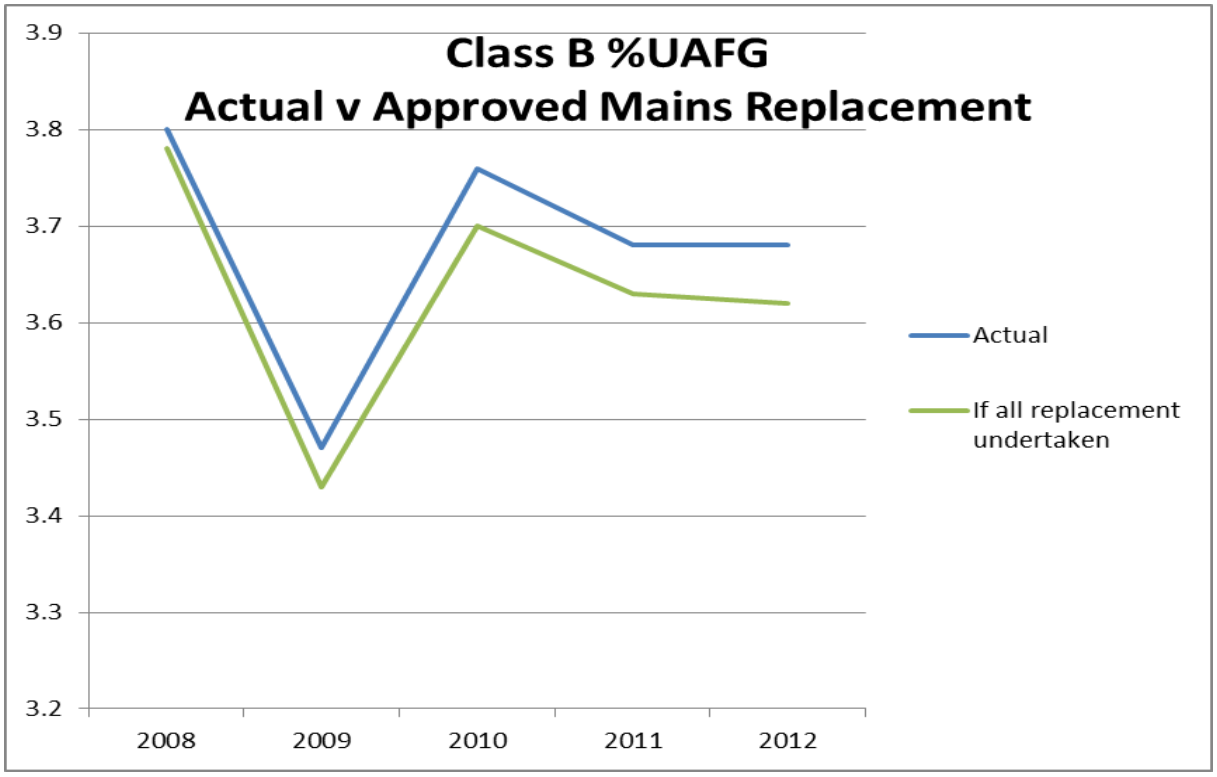

Figure 5.3: Impact of Mains Replacement on UAFG

As shown in Figure 5.3, if Envestra had undertaken all of its approved mains replacement, then all things being equal, the level of Victorian Class B UAFG would have been 3.62% as opposed to the actual figure of 3.68%, a difference of only 0.06%.

It is concluded therefore that the failure of Envestra to complete all of its approved mains replacement was not a material factor in Envestra's performance against its UAFG benchmark.

5.5 Impact of Heating Value

The impact of heating value has been an important industry issue in recent years, as discussed in other parts of this submission and in Envestra's Submission. In summary:

(a) During the 2008-2012 regulatory period, Envestra's UAFG analysis identified that Envestra's UAFG was increasing as a result of industry-wide averaging of heating value. The cause of this was established by Envestra as being a change in sources of natural gas (changes away from Bass Strait gas to other gas production sources) that were supplied to the market. Envestra raised this with the ESC, advising that Envestra's UAFG was higher as a result of heating value averaging, a method which was previously appropriate when most gas originated from the one source;

(b) AEMO conducted an investigation which concluded that Envestra's analysis was correct; and

(c) ESC conducted a review which concluded that the heating value impact should be considered when the benchmarks were next reset.

Envestra stated in its Submission that:

> "*Both Envestra and AEMO's analysis of heating values has identified an impact of approximately 0.3%-0.5% to Envestra's detriment over the 2008-2010 calendar years.*"[10]

The analysis that supports this conclusion is set out in Envestra's submission to the ESC on this issue submitted on 30 June 2010[11].

As set out in section 5.2, Envestra estimates that the heating value related component of UAFG is material, and accounts for approximately 190 TJ or 11% of UAFG.

The impact of the heating value allocation error is shown on the following graph. The impact on UAFG is around 0.5%, increasing Envestra's UAFG from 3.2% to 3.7%.

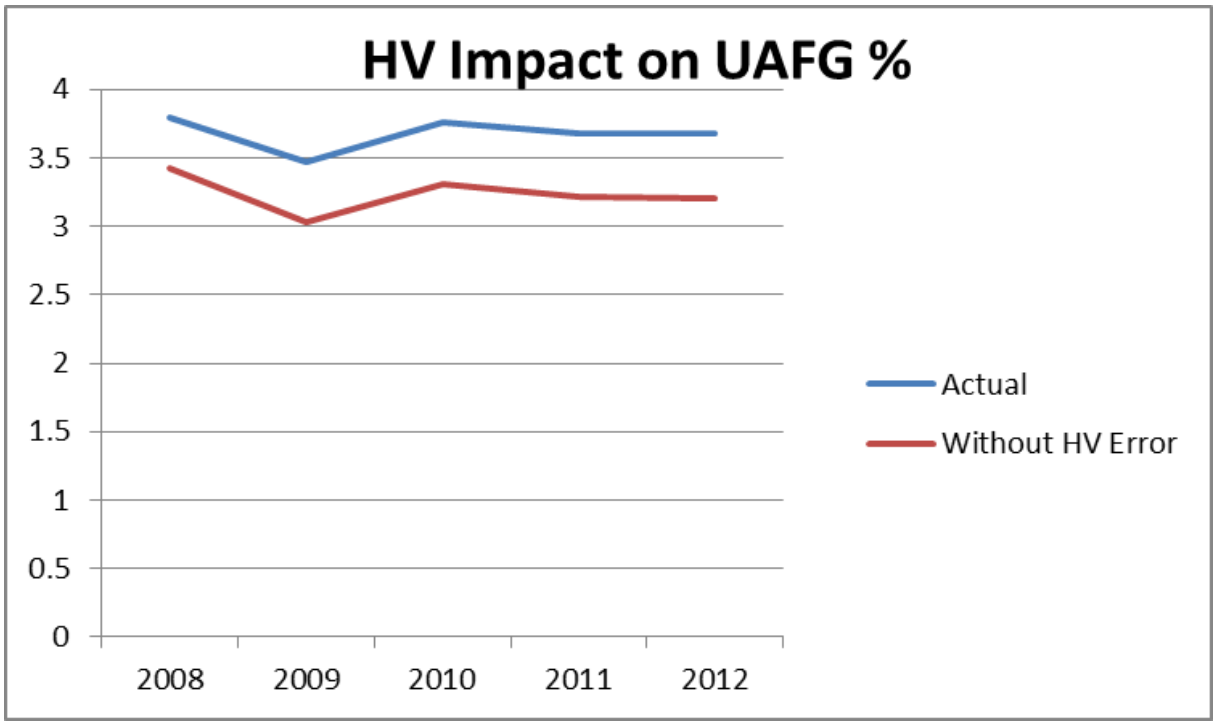

Figure 5.4: Impact of Heating Value Error on UAFG

As noted in Envestra's Submission[12], sources of natural gas into the Victorian networks are not expected to materially change over the 2013-17 regulatory period. However, Envestra's benchmarks for that period need to be based on the most recent revealed level of UAFG to reflect current production sources of natural gas. That is, given the changes in sources of gas since the benchmarks were last set, it is not possible for those benchmarks to be correct today.

5.6 Conclusion

The analysis above demonstrates that various factors comprise UAFG, of which only a few are materially within Envestra's control. It is clear that the combination of factors, and variability of factors, together with levels of uncertainty, make it difficult to precisely forecast UAFG using a 'bottom up' approach over long periods of time. Reductions in one area can be countered by increases in other areas, eg. deterioration of existing mains, impact of more mains operating at higher pressure, etc.

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10 P4, Envestra Submission

11 Envestra Response to Unaccounted for Gas Related to Heating Value Allocation Issues Paper, 30 June 2010

12 P4, Envestra Submission

While leakage losses from low pressure mains is one area where a distributor has some control, there are many other factors contributing to UAFG. Envestra was unable to complete all of its targeted low pressure replacement for reasons beyond its control (Global Financial Crisis). However, the analysis above shows that the difference in level of replacement would not have had a material impact on the level of UAFG achieved.

Figure 5.4 shows that actual UAFG over the last regulatory period has varied between 3.5% and 3.8%. The initiatives undertaken to reduce UAFG in this period have been offset by the ongoing deterioration of the network. Envestra notes that actual UAFG over the period is substantially higher than the benchmark (2.6%). As a consequence, Envestra has been required to make payments to its "host" retailer through the annual wash up process of between $1m to $2m per annum. These annual UAFG payments are not recovered through Reference Tariffs.

Envestra's analysis demonstrates that:

- the existing benchmark of 2.6% is unreasonable and not consistent with actual outcomes; and
- the benchmark proposed by Envestra of 3.7% is consistent with past outcomes.

6. Correct Approach to Setting of Benchmarks

This section sets out factors that Envestra believes should be taken into consideration in the setting of the UAFG benchmarks.

6.1 High Level Analysis of Recent Performance

The following graphs, contained in section 3.2.1 of the Draft Decision, set out the performance of each distributor relative to the benchmarks.

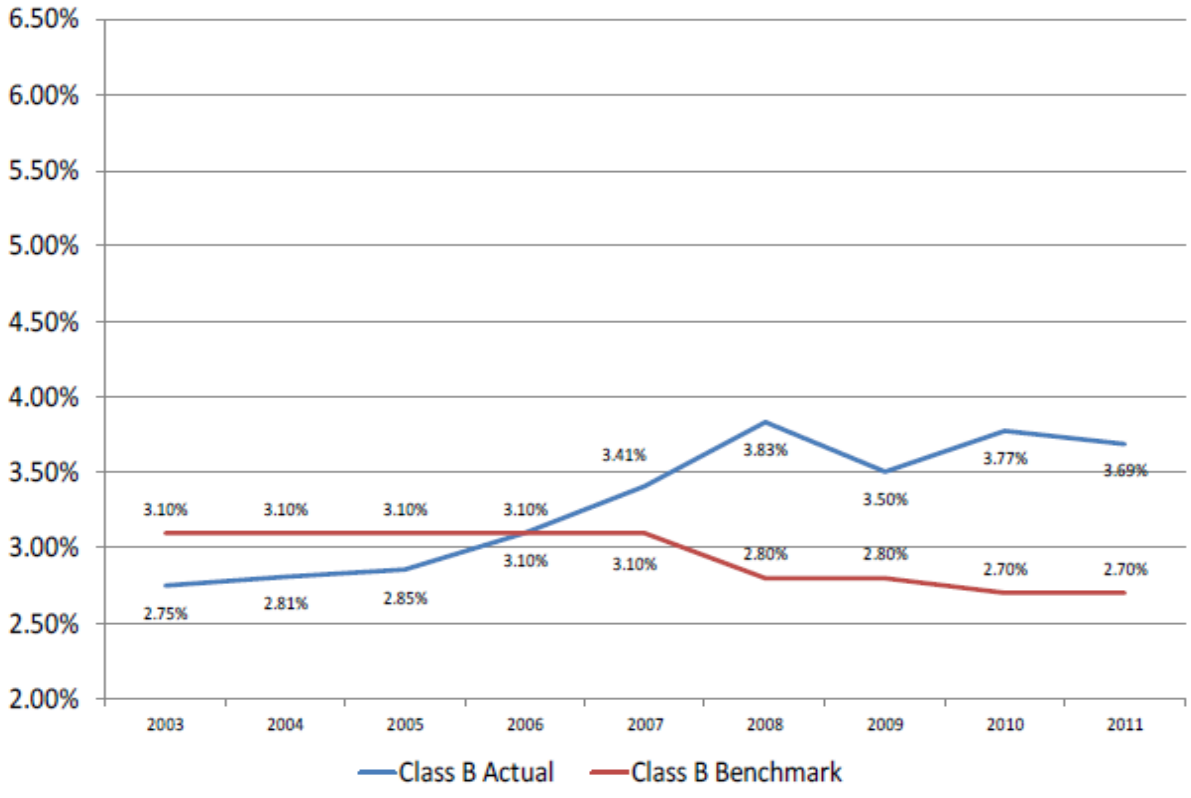

Figure 6-1: UAFG Actual versus Class B Benchmarks - Envestra

Figure 6-2: UAFG Actual versus Class B Benchmarks - Multinet

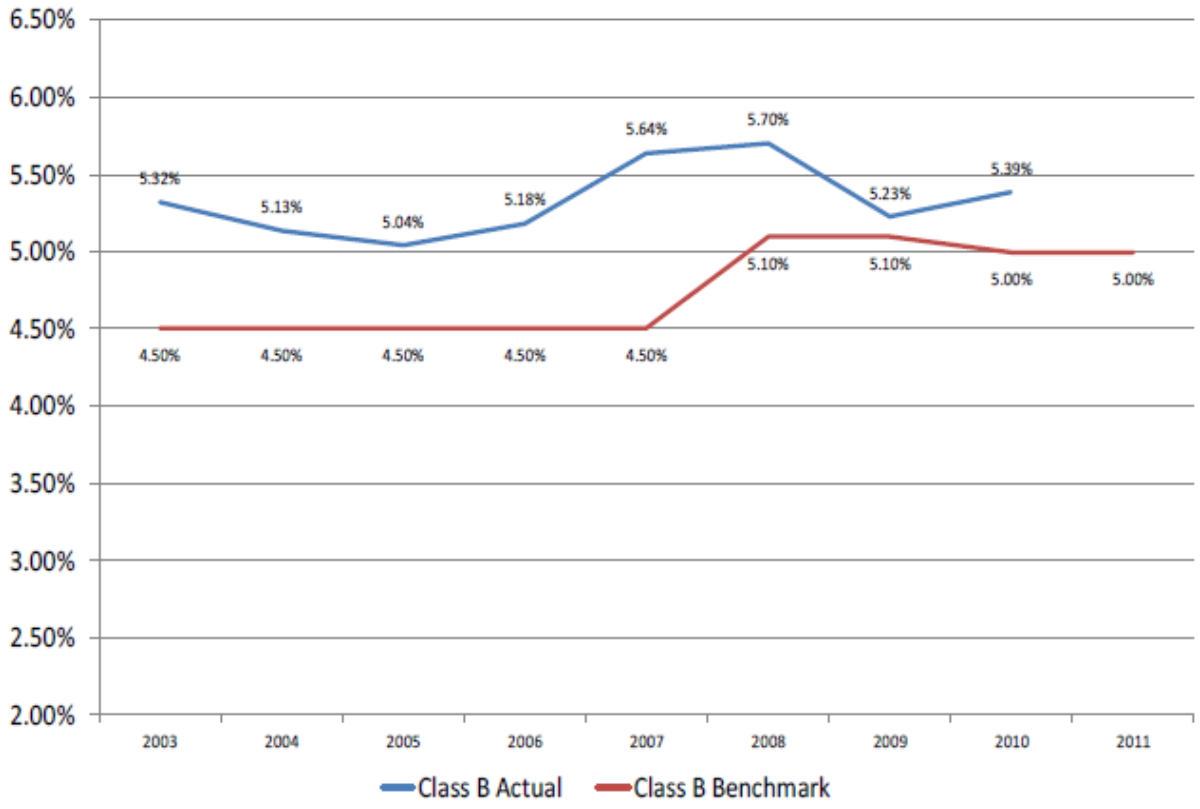

Figure 6-3: UAFG Actual versus Class B Benchmarks –SP AusNet

It is noted that Envestra has achieved the lowest UAFG level of all three distributors. It can also be seen from the above graphs that all cases, the distributors have not been able to achieve the benchmarks previously set by the ESC. There may be various reasons as to why this is the case. These reasons may pertain to one of, or a combination of, the following factors:

(a) A distributor not taking sufficient action in a particular area of its business;
(b) The inability of a distributor to control material aspects of UAFG (i.e. factors beyond its control);
(c) The economics of achieving low levels of UAFG;
(d) The difficulty of setting benchmarks, given the vagaries of UAFG (i.e. benchmarks being incorrectly set).

It appears that the ESC has defaulted to the first reason above (i.e. a distributor not taking sufficient action) as a conclusion as to why Envestra has not met its benchmarks. It is not clear from the Draft Decision why other reasons have not been taken into consideration. Furthermore, given the incentive nature of the regulatory regime, and the significant financial penalties on a distributor for failure to meet the benchmarks, Envestra believes that a failure of a distributor to take action would not be the most likely factor, particularly if there was no evidence to suggest this.

The current levels of UAFG demonstrate that all distributors have experienced difficulty in meeting the benchmarks. This suggests that there may be factors that the ESC has not considered in its conclusion as to why all distributors have not met the benchmarks.

[CIC]

[CIC]	[CIC]	[CIC]

Table 6.1 [CIC]

6.2 Revealed Expenditure Approach

Envestra submits that the ESC should have regard to actual levels of UAFG in a network (when setting new benchmarks), particularly given the uncertainty in precisely forecasting this parameter. Clearly it is unreasonable to set a benchmark which a distributor cannot reasonably achieve, because this is in effect imposing upon a distributor a financial penalty it cannot avoid or manage. Any such penalty, by reducing the funds otherwise available to manage the network, is not consistent with the long term interests of consumers (contrary to the requirements of the *Essential Services Commission Act 2001*).

Envestra submits that the ESC should set a benchmark that:

(a) takes into account recent/revealed evidence;
(b) provides a target that is achievable; and
(c) provides a target that is reasonable.

In setting benchmarks, regulators often rely on current/recent evidence or revealed outcomes because the regulatory regime provides incentives to businesses to reveal efficient outcomes. This revealed expenditure approach is what was relied upon by the AER in the setting of businesses' operating cost benchmarks for the current regulatory period, and was also used by the ESC in the previous access arrangement review. Such an approach also has the advantage that it avoids the need to undertake detailed bottom-up analyses, particularly where individual drivers are not known with the required level of precision, or where drivers are not all within the control of the regulated business.

ESC's proposed benchmark for Envestra Victoria is 2.6% when the latest actual figure is 3.7%, i.e. the ESC has set a benchmark that is 30% below the current level. Such a benchmark does not appear to meet any of the above objectives. In its own background paper, the ESC stated:

> "*In Victoria UAFG is managed via a benchmark process. The UAFG benchmarks are intended to incentivise the gas distribution businesses to take steps to minimise the level of UAFG*."[13]

Envestra agrees with this proposition. However the approach adopted by the ESC in the Draft Decision by which the benchmark is set at the same level that was set in 2008 (which approach is not based on any technical analysis) is inconsistent with this principle. Retaining the 2008 benchmark, when that benchmark was not achieved, and furthermore when actual outcomes have seen the level of UAFG trending in a direction further away from the 2008 benchmark, is more akin to a penalty rather than an incentive, as Envestra has no reasonable chance of achieving the benchmarks set in 2007.

This is the fundamental principle underlying incentive regulation, and is one that the ESC has relied upon when undertaking reviews of distributors' access arrangements and forecast operating costs. That is, the ESC concluded that the most appropriate approach to determining a forecast associated with operating costs is to take the most recent revealed data, and use that as a starting point for forecast operating expenditure:

> "*As noted in Chapter 5 the ECM [efficiency carryover mechanism] is also intended to provide distributors with an incentive to reveal actual efficient costs which can then be used as a basis for establishing future expenditure forecasts*."[14]

This approach was then applied by the ESC in its Access Arrangement Final Decision of 7 March 2008:

> *"In relation to Class B customers, the Commission considered that an assessment of historical UAFG levels is a necessary starting point in the determination of UAFG benchmarks for the third regulatory period*".[15]

The ESC went on to conclude that:

> "*given that the UAFG data for 2006 had not been finalised, the Commission considered that the starting point to determine Class B benchmarks for the third regulatory period should be the average of each distributor's actual UAFG performance for the period 2003 to 2005*".[16]

The ESC also acknowledged the incentive nature of the current regime in its Consultation Paper:

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13 P2, Gas Distribution System Code – Review of Unaccounted for Gas Benchmarks – Call for Submissions, ESC, 7 December 2012

14 P117, ESC Consultation Paper No 2, Gas Access Arrangement Review 2008-2012, October 2006

15 P186, ESC Final Decision – Envestra, Gas Access Arrangement Review 2008-2012, 7 March 2008

16 Ibid, p186

"*The current benchmarks are designed to incentivise the gas distribution businesses to take steps to minimise the level of UAFG*".[17]

Envestra submits that the approach taken by the ESC to set benchmarks for the 2008-12 period, and also used for SP AusNet for the 2013-17 period, should also be applied to Envestra.

6.3 Consistency with Access Arrangement Expenditure Benchmarks

The setting of the UAFG benchmarks outside of the AER access arrangement review process is occurring due to an issue in the transitioning of powers from the ESC to the AER. Ordinarily, the setting of the UAFG benchmarks would be done in tandem with the setting of access arrangement operating cost benchmarks. The fact that these two processes have, in this case, been separated, should not result in each issue being decided in isolation, i.e. the Draft Decision would leave Envestra facing a large UAFG annual cost when in fact the AER had approved no such cost in Envestra's operating cost allowance. Envestra notes that one of the factors that the ESC must take into account, is section 8A of the *Essential Services Commission Act 2001* - consistency with national regulation (in this case the National Gas Law).

The ESC Draft Decision effectively imposes a large financial penalty which Envestra would need to bear, by virtue of its actual level of UAFG being considerably higher than the (now obsolete) benchmark. As stated by the ESC:

"*If the level of UAFG meets the benchmarks, the gas distribution businesses do not contribute towards the cost of UAFG. However, if the volume exceeds the benchmark the gas distribution business is required to compensate the retailers for the UAFG in excess of the benchmarks*."[18]

By imposing a benchmark that Envestra cannot achieve, the ESC is imposing a significant impost on Envestra by requiring it to meet the cost of exceeding the benchmark, when the ESC would be aware that Envestra's approved operating expenditure under its approved access arrangement makes no allowance for such costs. That is, Envestra's operating expenditure for the forecast period was approved (by the AER) on the basis that the benchmark level of UAFG would be realigned with actual UAFG. Envestra believes that the Draft Decision is an inappropriate regulatory outcome arising from the separation of processes for setting:

(a) expenditure benchmarks (by the AER); and

(b) UAFG benchmarks (by the ESC).

The resultant outcome represents an inconsistency between the AER and ESC, which Envestra submits is inconsistent with section 8A of the *Essential Services Commission Act 2001,* which requires the ESC to consider, amongst other things, efficiency in the industry, the financial viability of the industry and consistency in regulation between States and on a national basis.

Furthermore, the outcome only serves to create a windfall loss to Envestra, and a windfall gain to one retailer [CIC]. The setting of UAFG benchmarks that are artificially low will not benefit consumers, due to the UAFG settlement cost structure. If the benchmarks in the Draft Decision were retained, Envestra would incur additional costs beyond those approved in the AER's operating cost benchmarks, and such costs would be borne by Envestra. There would be no commensurate cost reduction to network tariffs for consumers. The costs to Envestra would arise from Envestra's UAFG gas payments to retailers, and such payments would merely serve to increase one retailer's profits.

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[17] P1, Review of Unaccounted For Gas Benchmarks – Call for Submissions, ESC, 7 December 2012

[18] P2, Draft Decision

The above is an outcome of the Victorian gas market (operated under the Retail Market Procedures and National Gas Rules) and the UAFG settlement or 'washup' process, which is summarised as follows:

1. Retailers make available for injection an amount of gas into the network each that equates to their customers' forecast requirements plus the relevant benchmark amount of UAFG (section 235 of the National Gas Rules).

2. If the amount of gas consumed on a day is higher than that forecast, the additional cost of the additional gas is borne by each distributor's "host" retailer (in Envestra's case, Energy Australia). Retailers are therefore providing all gas for the market, as required for the market and as required in order to satisfy all UAFG needs.

3. Once the gas consumption data for a complete year has been collected, reconciled and agreed upon (which usually occurs after two or three years), payments between Envestra and the host retailer occur (in accordance with rule 317 of the National Gas Rules):

    (a) If the amount of actual UAFG is high than the benchmark, then Envestra will reimburse the host retailer the difference.
    (b) If the amount of actual UAFG is lower than the benchmark, then the host retailer will pay Envestra the difference.

It can be seen therefore that if the benchmark is set too low, this merely results in increased payments from Envestra [CIC], some years after actual deliveries. Those payments (which currently amount to $1m to $2m annually) represent an additional retail profit margin, and do not result in tariffs to consumers being lowered.

6.4 Adjustment for Heating Value Impact

In determining the benchmarks, the ESC has not taken into account the impact of the heating value error that has impacted the measurement of UAFG in recent years, and which is now inherent in the level of actual UAFG.

Envestra's actual level of UAFG is higher than it otherwise would be, due to the influence of different gas sources compared to when the benchmarks were last set back in 2007 by the ESC. Envestra has asserted previously that the current benchmarks should have been reset when the heating value error became known. While this was not done, it would be erroneous not to correct for that error going forward. In adopting the current benchmark as the benchmark for the 2013-17 period, the ESC is effectively perpetuating a known error in the benchmark.

On one hand, the ESC has acknowledged the heating value error:

> "*Specifically in relation to the changing supply sources, the Commission accepts the AEMO view that Envestra and Multinet may have been disadvantaged by the use of a state wide heating value*".[19]

But on the other hand, the ESC did not acknowledge the heating value error in the resetting of the benchmarks, which Envestra submits is an error in the proposed benchmarks set out in the Draft Decision.

[19] P19, Draft Decision

7. Delay in Benchmark Implementation

Envestra set out in its submission its concerns regarding the delay in the implementation of new benchmarks:

> "*Envestra submits that UAFG benchmarks should be corrected as soon as practicable, and certainly no later than the start of the new regulatory period (1 January 2013). Envestra's key concern is to ensure correct benchmarks are in place by the time that the first annual reconciliation is undertaken in accordance with Schedule 1 Part C2 of the Code, so that the annual reconciliation payment amounts for the whole year (including for the period from 1 January 2013) are calculated using the correct benchmarks*"[20].

Applying New Benchmarks Retrospectively

In section 5.1 of the Draft Decision, the ESC provided its reasoning as to why it deemed it inappropriate or not possible to apply new benchmarks retrospectively. However, Envestra does not believe that the reasons have a sound basis. These are addressed in turn below.

Decision

> "*The Commission does not consider it appropriate to make the benchmarks retrospective as the Order sets the benchmarks until the Order is repealed*." (p32)

Envestra Response

Envestra's advice is that there is no impediment to setting benchmarks such that they have a retrospective impact. That is, once new benchmarks are put in place, they are applied to daily market reconciliations going forward, and then applied separately for the annual UAFG wash-up.

The fact that different benchmarks would have applied for the first six months of the year would only mean that the annual UAFG 'washup' payment might involve a larger differential than otherwise may have been the case.

Decision

> "*In addition, the Commission notes there are practical issues for AEMO — which uses the benchmarks prospectively for wholesale market settlement purposes — in making the benchmarks retrospective*." (p32)

Envestra Response

Envestra does not believe there are practical issues for AEMO, since (as discussed in Envestra's Submission[21]) Envestra believes it is possible for AEMO to use one benchmark for daily reconciliations up to 30 June, and a different benchmark for daily reconciliations up to 31 December, the latter also being used for the annual ''wash up' .

[20] Cover letter, Envestra submission of 21 December 2012

[21] Cover letter, Envestra submission of 21 December 2012

Decision

> *"There are also administrative issues for the Commission to consider in making the benchmarks retrospective. Specifically schedule 4 of the GDSC states that: the date specified on the amendment must not be earlier than the date on which the amendment is made without the prior agreement from Distributors and the Commission's Customer Consultative Committee."* (pp32-33)

Envestra Response

Envestra submits that such an administrative issue can be easily resolved by obtaining the agreement of the relevant parties.

Applying Blended Benchmarks

The ESC also rejected the proposition of providing a "blended' benchmark, e.g. for the second half of 2013, which would take into account the 6-month delay in start of the new benchmark period:

> *"A separate option raised by some GDBs in meetings is to provide a blended 2013 UAFG benchmark effective from 1 July 2013 that accounts for the lower first half 2013 UAFG benchmark. The Commission has not accepted this proposal as it (1) does not have any data across all components of UAFG upon which to assess the accuracy of any blended UAFG benchmark, (2) is concerned about seasonal aspects in providing a blended figure, and (3) considers that any blended figure would exacerbate the uncertainty in UAFG over the full 2013 year."*[22]

Envestra submits that none of the three reasons put forward by the ESC above have a sound basis. These are addressed in turn below.

Decision

> "*The Commission …does not have any data across all components of UAFG upon which to assess the accuracy of any blended UAFG benchmark" (p33)*

Envestra Response

Envestra submits that it is not necessary to have data relating to components of UAFG in order to calculate a blended benchmark, as the latter would simply be the average of two benchmarks. Benchmarks have never been conditional upon an understanding of components of UAFG. Likewise the blending of two benchmarks does not require such an understanding. Moreover, and as set out in this submission, it is not possible to precisely quantify the components of UAFG.

Decision

> *"The Commission ….is concerned about seasonal aspects in providing a blended figure*" (p33)

[22] P33, Draft Decision

Envestra Response

Envestra submits that as the annual UAFG 'washup' calculation is an annual calculation that takes into account a full year (and all seasons), there would be no seasonal issues associated with the provision of a blended benchmark.

Decision

> *"The Commission …considers that any blended figure would exacerbate the uncertainty in UAFG over the full 2013 year" (p33)*

Envestra Response

It is not clear what the ESC is referring to here, but in any case Envestra submits that there is no more uncertainty in the application of a blended figure than there is in an unblended figure.

Proposed Benchmarks

It is clear that the delayed application of a benchmark (as a result of a regulatory process that is outside of Envestra's control) that is higher than the existing benchmark means that Envestra would be denied a reasonable opportunity to recover its efficient costs, as discussed in section 6 of this submission. The ESC appears to acknowledge this, but believes it is constrained in rectifying this anomaly.

Envestra believes that the most appropriate solution is to apply blended benchmarks going forward, such that the net outcome over one year, 2013 (Option 1)) or over the whole of the regulatory period 2013-2017 (Option 2), is financially neutral to all parties. Envestra has calculated the respective benchmarks that would apply in each case, as shown in the following table.

	Period	Base	Increase	Total
Option 1	2013 Jan - Jun	2.6%	-	2.6%
	2013 Jul - Dec	3.73%	+1.05%	4.78%
	2014 - 2017	3.73%	--	3.73%
Option 2	2013 Jan - Jun	2.6%	-	2.6%
	2013 Jul - Dec	3.73%	0.15%	3.88%
	2014 - 2017	3.73%	0.15%	3.88%

Table 7.1: Options for Proposed Class B Benchmarks

Envestra proposes that Option 2 be adopted, given that it allows for the impact to spread over the whole of the regulatory period, and that it represents a change of only 0.15% to the benchmark. This approach is also consistent with:

(a) the approach used by the AER in setting Envestra's tariffs for the 4.5 year regulatory period beginning 1 July 2013 (versus the normal 5-year regulatory period which was expected to commence on 1 January 2013); and

(b) the approach used by the ESC in setting Envestra's tariffs for the 4.5 year regulatory period beginning 1 July 2008:

"The release of this final decision has been delayed beyond the original time frames. As a result no amendments were made to distribution tariffs on 1 January 2008.

New distribution tariffs will now apply from 1 July 2008 until 31 December 2008. The calculation of the Po factor for each distributor has taken into account the fact that the new tariffs will only apply for six months. Tariffs will be amended on 1 January 2009 and on an annual basis thereafter."[23]

8. Summary

As noted by the ESC on page 9 of the Draft Decision, in performing its functions and exercising its powers the ESC is to promote the long term interests of Victorian consumers with regard to price, quality and reliability of essential services (section 8 of the *Essential Services Commission Act 2001*).

Further under section 8A of the *Essential Services Commission Act 2001* the ESC must have regard to (amongst other things) efficiency in the industry, the financial viability of the industry and consistency in regulation between States and on a national basis.

In undertaking the process for setting UAFG benchmarks, the ESC is performing an administrative law function. Its decision must therefore be reasonable[24], be based on relevant considerations[25] and reflect a correct application of the law[26].

As Envestra understands the essence of the ESC's decision, it is to the effect that as Envestra has not provided sufficient evidence to substantiate the causes of the levels of Envestra's UAFG, then the appropriate decision is to leave the benchmarks unchanged.

In this submission Envestra has, as requested by the ESC, provided the additional information. However Envestra submits that it is not the correct discharge of the ESC's statutory duties for the ESC to start with the position that benchmarks should not be changed unless the ESC is persuaded otherwise. Rather the role of the ESC is to assess what should be the appropriate level of benchmarks given the factors in the *Essential Services Commission Act 2001*.

The decision of the ESC does not, in Envestra's submission, take sufficient account of the fact that Envestra is incentivised by the regulatory regime to minimise UAFG. There seems an implication in the Draft Decision that Envestra is not doing enough to control UAFG, but there is no evidence before the ESC of this matter (and indeed the evidence is to the contrary) and the decision is counterintuitive. Given Envestra is rewarded if it beats the benchmarks and punished if it fails to achieve them, the starting assumption should be that Envestra is doing what it can to beat the benchmarks. In this respect Envestra notes that over the period 2008-11 it has had to pay $5.8m because it has not been able to achieve the benchmark. Given the incentive nature of the regime, this is evidence that the benchmarks are set too low rather than evidence that Envestra is not properly seeking to manage UAFG. As a consequence Envestra is not being afforded a reasonable opportunity to recover its costs.

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[23] P566, ESC Final Decision – Envestra, Gas Access Arrangement Review 2008-2012, 7 March 2008

[24] *Associated Provincial Picture Houses Ltd* v *Wednesbury Corporation* [1948] 1 KB 223; *Prasad* v *Minister for Immigration and Ethnic Affairs* (1985) 65 ALR 549; *Chem Yee Kin* v *Minister for Immigration* (1989) 160 CLR 379.

[25] *Minister for Aboriginal Affairs* v *Peko-Wallsend Ltd* (1986) 162 CLR 24.

[26] *Re Minister for Immigration and Multicultural Affairs; Exparte Applicant 5201 2002* (2003) 198 ALR 59; *Australian Broadcasting Tribunal* v *Bond* (1990) 170 CLR 321.

Envestra notes that at the time of the previous setting of UAFG benchmarks the ESC accepted that Envestra was acting prudently in minimising UAFG and that the incentive nature of the regulatory regime would ensure that Envestra would continue to do so. Given this (and consistent with the approach taken to setting operating expenditure in access regimes), a historical average was used at the time of the previous review to set the UAFG benchmark. Envestra notes that one of the factors in section 8A of the *Essential Services Commission Act 2001* is consistency with national regulation (in this case the National Gas Law). To depart from setting benchmarks based on the incentive nature of the regulatory regime is a departure from prevailing regulatory practice. Sudden changes in regulatory practice create uncertainty for management of networks and for investment in them and is not consistent with promoting the long term interests of consumers.

However as noted above, it is not correct to take as a starting point that the ESC will only change a distributor's benchmark if persuaded to do so by that distributor. Rather the ESC must seek to set the most appropriate value for the UAFG benchmark. If the existing benchmarks are to be left unchanged, this must be because there is a reasoned basis for concluding they are the appropriate benchmarks. Envestra submits it is not correct to reach the view that Envestra's existing benchmark is appropriate when regard is had to the incentive nature of the regime and to the fact that in the case of one of the Victorian distributors the ESC has accepted that despite efforts to minimise UAFG, UAFG levels will increase. [CIC].

Envestra also notes that the ESC "*accepts the AEMO view that Envestra and Multinet may have been disadvantaged by the use of a state wide heating value*." AEMO, which is an independent and impartial party, previously estimated that Envestra may have been disadvantaged by up to 0.4% on account of differences in heating value. However despite this clear evidence of a factor which will increase the UAFG benchmarks the ESC has not changed the benchmarks. In Envestra's submission this is an error of law in that a decision has been made contrary to the substantiated evidence before the ESC. In Envestra's submission the benchmarks are required, as a matter of law, to be amended to reflect this evidence unless the evidence is demonstrated to be incorrect or unless contrary evidence is adduced.

This submission has addressed each of the issues raised by the ESC in the Draft Decision, and explains why the latest revealed evidence of UAFG levels is an appropriate basis for setting the benchmarks going forward.

In setting the new benchmarks, the ESC should have regard to the six month delay in implementing the new benchmarks, and proposes that the new benchmarks should be adjusted accordingly to ensure that all parties remain neutral in terms of UAFG payments. The proposed Class B benchmark for Envestra (for its Victorian and Albury networks) is 3.88% for the remainder of the current regulatory period (July 2013 to December 2017).

Attachment 1: Sample of Monthly UAFG Data

[CIC]

Attachment 2: UAFG Factor Analysis

[see separate confidential spreadsheet: Envestra UAFG Vic component analysis.xlsx]

RPC 050 UAFG

REVIEW OF ENVESTRA CALCULATIONS AND ANALYSIS OF UAFG

4TH MAY 2013

Table of Contents

Review of Envestra UAFG Analysis

1 BACKGROUND

Subsequent to the ESC Draft Decision on UAFG for the Victorian Gas Distribution Businesses in March 2013, Asset Integrity Australasia Pty Ltd (AIA) were requested by Envestra to review their analysis of the elements that contribute to UAFG together with their calculations of the TJ contribution of individual elements and the potential uncertainty of each element.

Envestra had analysed the UAFG elements in a similar format to SPAusNet's UAFG submission to the ESC, and presented it as the attached spreadsheet (UAFG Vic source estimates review 2).

2 INFORMATION PROVIDED

The spreadsheet includes a stacked chart as shown in Figure 1 that indicates the individual contribution of each UAFG element. For each UAFG element there is a separate tab that sets out the UAFG calculation and the likely uncertainty of each element. The stacked chart also distributes the "unknown UAFG" (the difference between the Envestra assessment of UAFG and reconciled UAFG) to each element in proportion to the uncertainty of each element. This unknown UAFG is 14% of the total UAFG, which in itself indicates the Envestra analysis appears robust.

3 AIA OPINION

AIA reviewed the Envestra calculations of each element of UAFG including the asset details, assumptions, references, factors applied and the uncertainties that were applied and consider the Envestra UAFG analysis and calculations to be reasonable and consistent with their portfolio of assets. In particular, AIA considers the factors and assumptions used in the calculation of the highest contributors to UAFG, namely LP, MP and HP distribution main losses, temperature compensation and HHV compensation to be appropriate.

4 STACKED CHART BY COMPONENT

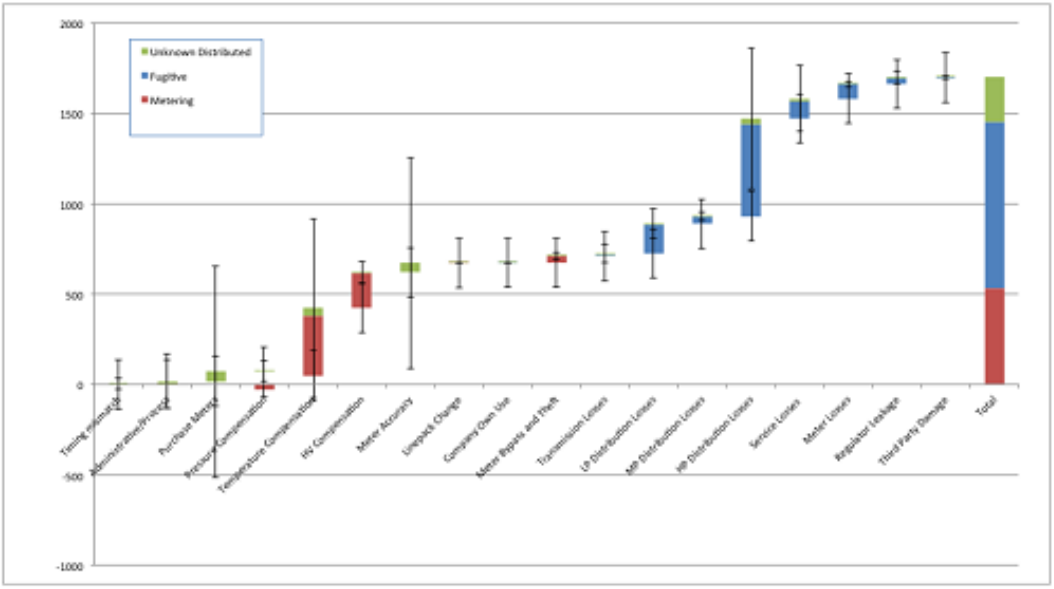

Figure 1 – Stacked Chary by component

UAFG Components	TJ	%
Timing mismatch	0	0.0%
Administrative/Process	2	0.1%
Purchase Meters	0	0.0%
Pressure Compensation	-27	-1.6%
Temperature Compensation	331	19.5%
HV Compensation	191	11.2%
Meter Accuracy	0	0.0%
Linepack Change	1	0.1%
Company Own Use	0	0.0%
Meter Bypass and Theft	36	2.1%
Transmission Losses	10	0.6%
LP Distribution Losses	157	9.2%
MP Distribution Losses	38	2.2%
HP Distribution Losses	507	29.8%
Service Losses	94	5.5%
Meter Losses	80	4.7%
Regulator Leakage	31	1.8%
Third Party Damage	2	0.1%
Unknown Distributed	247	14.5%
Total	1700.000	100.0%

Table 1 – UAFG component values

Attachment 4: Consolidated Issues Response

In the Draft Decision, the ESC made a number of conclusions or observations, many of which Envestra believes do not have a sound basis. Key issues are addressed in the body of this submission, but this attachment provides a response or reference to all issues for completeness. In each case, the relevant excerpt from the Draft Decision is quoted, followed by Envestra's response. Envestra believes that the explanations and information provided may assist the ESC in its further assessment of the UAFG benchmarks.

Item 1

Decision

> "*The Commission notes that the actual data for class A has been stable over time, which reflects the type of infrastructure that supplies class A customers—high pressure mains that have very low leakage rates and more accurate interval meters*." (p1)

Envestra Response

The statement above suggests that the ESC believes that Class A UAFG outcomes are actual outcomes, and that the stability of the actual outcome is essentially due to an element of accuracy in the setting of Class A benchmarks and the ability to accurately report Class A UAFG. Envestra advises that this is not the case, i.e. there is no reporting of actual UAFG for Class A.

The distinction between Class A and Class B UAFG is purely arbitrary, and distributors simply allocate an amount of UAFG to Class A that equates to the benchmark. Hence actual and benchmark UAFG for Class A will always be equal. This explains why "the actual data for class A has been stable over time".

Item 2

Decision

> "*the Commission is concerned that the GDBs have not made sufficient attempts to identify and understand the causes of UAFG. The exception is SP AusNet, which commissioned a study to determine the contributors to UAFG and to help SP AusNet develop a strategy to reduce UAFG levels…….*" (p2)

Envestra Response

Envestra disagrees that it has not made sufficient attempts to identify and understand the causes of UAFG, and believes that there was sufficient information available to the ESC for it to conclude otherwise. For example, the ESC would have been aware from:

(a) its extensive deliberations on UAFG in past access arrangement reviews (as discussed by the ESC in section 3.2 of its Draft Decision, where it alluded to its 2008 access arrangement decision and the contribution of leakage to UAFG);

(b) Envestra's Submission of 21 December 2012;

(c) its previous correspondence and consultations concerning the heating value impact on Envestra's UAFG (ESC Final Decision, Unaccounted for Gas Related to Heating Value Allocation, October 2010); and

(d) the teleconference meeting between the ESC and Envestra on 15 February 2013, whereby the ESC alluded to Envestra's previous work on the leakage component of UAFG (in the 2008 access arrangement review)

that Envestra has undertaken much work on UAFG.

Envestra (and its predecessor entities) has undertaken extensive work into UAFG over many decades, giving Envestra a good understanding of where to target its effort and how to manage UAFG in order to achieve the lowest level that is practicable and economically prudent. UAFG represents a considerable cost to Envestra's business, and it is incorrect to assert that Envestra does not undertake prudent measures to minimise this cost.

[CIC]

Item 3

Decision

> "*Envestra and Multinet should demonstrate how they have taken significant steps to seek out efficiencies to minimise UAFG"* (p2)

Envestra Response

Envestra believes it has addressed this issue in sections 3 and 4 of this submission.

Notwithstanding, it was Envestra's understanding that the ESC's review of UAFG benchmarks would:

(a) build upon or rely upon previous work that the ESC had undertaken in this area; and

(b) therefore focus on the methodology for setting benchmarks; and not

(c) constitute a review of the causes of UAFG, distributors' understanding of UAFG, and distributors' actions in minimising UAFG, which matters have been discussed in previous correspondence with the ESC since 1999.

Item 4

Decision

> "*the Commission does not have sufficient information to understand why Envestra and Multinet were unable to meet previous benchmarks."* (p3)

Envestra Response

Envestra, given past correspondence with the ESC, had prepared its Submission on the assumption of a level of understanding by the ESC of drivers and UAFG, and Envestra's experience in this area. To the extent that such understanding was not there, Envestra would have readily provided such information to the ESC if requested to do so, noting that the ESC Consultation Paper did not forewarn Envestra that such information would be required.

Notwithstanding the above, Envestra has provided further information in this submission to assist the ESC to understand why Envestra did not meet its benchmarks.

Item 5

Decision

> *"these GDBs [Envestra and Multinet] failed to explain why they did not complete their funded low pressure mains replacement programs, and how these decisions impacted UAFG levels. Without this information, the Commission does not have a basis for moving away from the current class B benchmarks."* (p3)

Envestra Response (underlined items)

Section 5.4 of this submission explains:

(a) why Envestra did not complete the funded level of mains replacement; and

(b) why, even if Envestra had completed that level of mains replacement, it would not have impacted UAFG materially.

Item 6

Decision

> *"these GDBs failed to explain why they did not complete their funded low pressure mains replacement programs, and how these decisions impacted UAFG levels. Without this information, the Commission does not have a basis for moving away from the current class B benchmarks."* (p3)

Envestra Response (underlined items)

Section 5.4 of this submission provides information in relation to the theoretical impact of mains replacement on UAFG.

Item 7

Decision

> *"these GDBs failed to explain why they did not complete their funded low pressure mains replacement programs, and how these decisions impacted UAFG levels. Without this information, the Commission does not have a basis for moving away from the current class B benchmarks."* (p3)

Envestra Response (underlined items)

Envestra believes that the ESC has erred in its assessment that benchmarks set in 2007 must remain unchanged unless information is available on the theoretical impact from mains replacement work that did not eventuate. As discussed in section 5.4 of this submission, the correct setting of benchmarks should take into consideration the existing/recent level of a parameter and not a hypothetical level that might have existed under other scenarios, particularly where those scenarios were not possible to achieve and cannot be demonstrated with any reasonable level of accuracy.

Furthermore, the ESC conclusion (i.e. without further information, there is no basis for moving away from the current benchmarks) and request for information (as to how UAFG may have been impacted) conflicts with:

(a) another conclusion in the Draft Decision:

> "*The Commission finds that from an analysis of the information provided it is not possible to quantify the gas loss in the network, nor is it possible to quantify the gas savings from a reduction in leaks resulting from the low pressure to high pressure upgrading*".[27]

(b) the ESC conclusion in its Final Decision on Unaccounted for Gas Related to Heating Value Allocation, October 2010, which acknowledged Envestra's analysis and the impact of heating value allocation on UAFG. In that decision "The Commission acknowledges Envestra's advice that it is affected by variability in UAFG related to heating value allocation"[28] but the ESC decided not to amend the benchmarks part way through an access arrangement period, indicating that it was more appropriate to amend the benchmarks at the next price review:

> "*The Commission is concerned to see the accuracy of heating value calculations improved in a cost-effective way. This could be a matter for consideration in the next Access Arrangement price review, to be conducted by the AER*."

That is, all else aside, the ESC previously concluded that the benchmarks should be adjusted at the next review to correct for the heating value anomaly. Envestra therefore believes that the ESC did in fact have evidence before it to depart from the current benchmarks.

Item 8

Decision

> "*Again, the information burden is on Envestra and Multinet to explain the high levels of UAFG.*
>
> *In contrast, SP AusNet largely completed its mains replacement program and provided detailed information on the causes of UAFG for its specific network. Also, SP AusNet demonstrated it is in the process of developing a more comprehensive strategy to minimise UAFG levels*." (p3)

Envestra Response

The inference from the Draft Decision is that Envestra has high levels of UAFG, and that this may be because, unlike SP Ausnet, Envestra does not have a strategy to minimise UAFG. As is evident from other parts of this submission, Envestra does not accept this proposition.

Envestra does not have a high level of UAFG – the current level is around 3.7%, the lowest of all three distributors. [CIC].

Envestra submits that its low level of UAFG is due to the effective strategies that Envestra has had in place for many years. Furthermore, this low level would be even lower if Envestra had not been disadvantaged by the heating value impact.

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[27] P18, Draft Decision

[28] P8, Final Decision on Unaccounted for Gas Related to Heating Value Allocation, ESC, October 2010

The evidence therefore points to Envestra having low levels of UAFG, and a comprehensive strategy to minimise UAFG (see also sections 3 and 4 of this submission).

Item 9

Decision

> *" Finally, the gap between the 2008–12 benchmarks and SP AusNet's actual UAFG levels is significantly lower compared to Envestra and Multinet."* (p3)

Envestra Response

The ESC conclusion has failed to take into account the anomaly caused by the heating value allocation error, which has caused Envestra's UAFG to depart further from the benchmark, [CIC]. This anomaly has had a significant financial impact on Envestra over the 2008-12 regulatory period.

Item 10

Decision

> "*The GDBs, with the exception of SP AusNet, did not provide detailed information that demonstrates they have attempted to identify the causes of UAFG*" (p15).

Envestra Response

Refer Item 3.

Item 11

Decision

> *"Commission View – The Commission accepts that there is a high degree of uncertainty about the causes of UAFG…..the study SP AusNet commissioned recommends a broader understanding of UAFG is needed, and that the quality of data available in all UAFG categories can be improved."* (p19)

Envestra Response

Envestra interprets the above conclusion as meaning that distributors in general do not have a broad understanding of UAFG, and that they should be taking steps to improve the quality of their data.

As mentioned in Item 2 in this section, Envestra already has considerable understanding of UAFG, employing a senior full-time engineer responsible for UAFG management, together with other staff as outlined in section 3.1. There have been many investigations into UAFG by the gas industry over many decades, and the nature of the underlying factors means that significant costs can be incurred by a business in attempting to conduct detailed investigations to estimate or quantify factors, with very little return.

In accordance with the National Gas Rules, a prudent business is required to ensure that its expenditure is efficient and in accordance with good industry practice. Good industry practice, both nationally and internationally, involves businesses focussing on those aspects of UAFG where there is an element of control, and where it is possible to extract a reasonable return for the input (as required under the National Gas Rules). While it may be possible to improve the quality of data in certain categories of UAFG, Envestra's extensive experience in this area is that the cost of doing so may not always be commensurate with the reward, and this is always considered before undertaking expenditure.

Section 4 of this submission provides examples that demonstrate Envestra's considerable understanding of UAFG, and that there is sufficient quality of data to enable appropriate actions to be taken to minimise UAFG.

Item 12

Decision

> *"The Commission, however, is not clear how Envestra and Multinet have assessed the contribution of heating value on the increase in UAFG"* (p19).

Envestra Response

Attachment 2 to Envestra's Submission[29] contained the ESC's Final Decision on Unaccounted for Gas Relating to Heating Value Allocation (October 2010). The submissions made to the ESC, and which led to the ESC's final decision, made clear how the contribution of heating value on UAFG was assessed. That methodology was discussed by the ESC in detail in section 2 of that final decision.

Item 13

Decision

> *"SP AusNet is ahead of the other GDBs. It commissioned a study by AIA that assessed how much each of the various factors contributes to UAFG. AIA identify key categories that SP AusNet can effectively target to reduce UAFG costs."* (p20)

Envestra Response

Refer Item 2.

Item 14

Decision

> "*The Commission expects Envestra and Multinet to provide a more detailed assessment of the causes of UAFG."* (p20)

Envestra Response

See section 5 of this submission.

[29] ibid

Item 15

Decision

> *"Further, these GDBs should demonstrate the steps they have taken to seek out efficiencies."* (p20)

Envestra Response

See section 4 of this submission.

Item 16

Decision

> "*The lack of information provided by Envestra and Multinet, as discussed above, is therefore particularly concerning to the Commission*." (p22)

Envestra Response

Refer Item 3, where Envestra discusses its understanding of the scope of the ESC review.

Envestra also notes that the ESC made only one request for further information between the time of Envestra's submission (21 December 2012) and its Draft Decision (28 March 2013). Envestra is always willing to provide further information as required to assist a regulatory process.

Item 17

Decision

> "*Over 2008–11, Envestra was allowed $79.1 million for mains replacement ($2012) though it only expended $37.1 million*." (p25)

Envestra Response

Responses to Items 5 and 6 in this section, and section 5.4 of this submission, discuss the relevance of mains replacement to the setting of UAFG benchmarks going forward.

Notwithstanding, Envestra advises that over the whole of the recent regulatory period (2008-2012), Envestra spent a total of $88m ($2011) versus an allowance of $129m. In accordance with the improving financial conditions following the Global Financial Crisis, and as evidenced in data provided as part of the recent access arrangement review process, Envestra has been ramping up its mains replacement expenditure, and plans to exceed the benchmarks recently approved by the AER, as discussed in section 5.4.

There is an inference from the Draft Decision that Envestra may have had a windfall gain by not undertaking all of its approved capital expenditure (notwithstanding sound reasons for deferring the capital expenditure). This is discussed in section 5.4 of this submission.

Item 18

Decision

> "*The Commission maintains the view that a multi-year average is likely to provide a more accurate forecast. As discussed in section 3.2 above, UAFG levels can vary significantly from year-to-year. Specifically, the Commission has used a three-year, 2008–10 average to set the UAFG starting point—consistent with the previous decision. The Commission considers this approach provides a reasonably up-to-date basis for forward benchmarks.*." (p24)

Envestra Response

Envestra considers that the most recent actual UAFG position is that which is most reflective of the current environment a distributor is operating in, and incorporates all current variables that impact on UAFG as discussed throughout this submission. In the situation of a changing environment (changes in source of supply gas and hence changing heating values), there are inherent flaws in taking an average that incorporates data that extends too far back in time, i.e. to 2008 and 2009. Such a technique would not incorporate the learnings from the previous setting of benchmarks (that failed to take into account the changing source of gas supply for the Victorian market, thereby materially impacting the UAFG for Envestra). Envestra considers that since the market has exhibited more stability in gas supply since 2009, an average of 2010-2011 is appropriate. It is noted that that is reflected in Envestra's actual Class B UAFG percentage rate, which has been relatively stable for the last 2 calendar years (2010 and 2011), with an average of 3.73%.