Energy Consumers Coalition of South Australia

Australian Energy Regulator

SA Gas Distribution Revenue Reset

AGN Application

A response

by

Energy Consumers Coalition of South Australia

August 2015

Assistance in preparing this submission by the Energy Consumers Coalition of SA (ECCSA) was provided by Headberry Partners Pty Ltd.

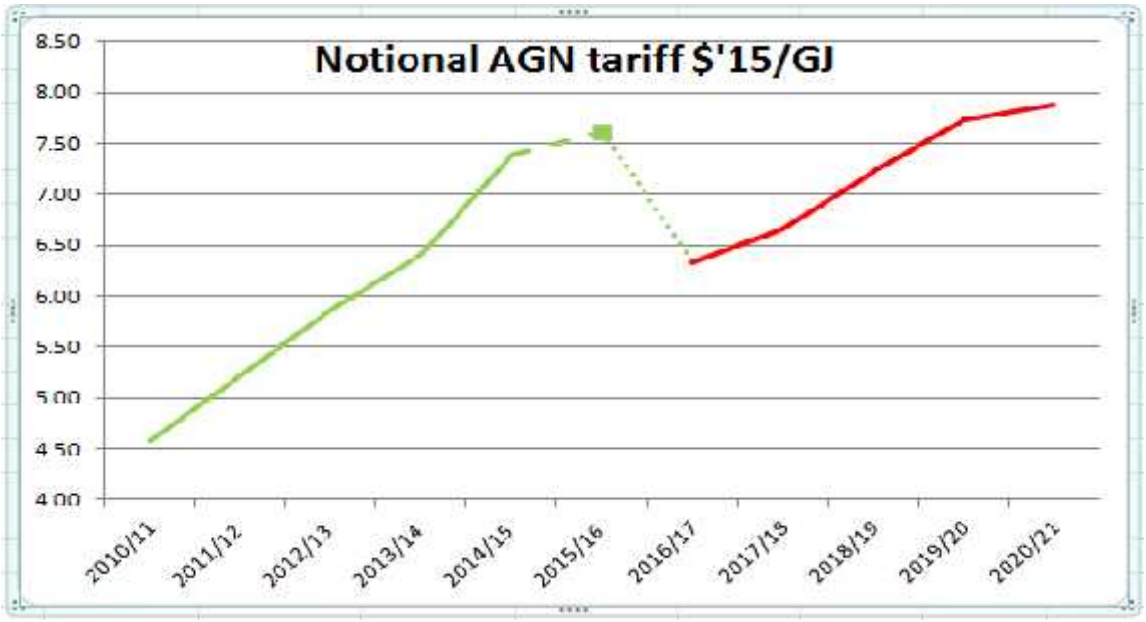
This project was part funded by Energy Consumers Australia as part of its grants process for consumer advocacy and research projects for the benefit of consumers of electricity and natural gas.

CONTENTS Page

Executive Summary

The Energy Consumers Coalition of South Australia (ECCSA) welcomes the opportunity to provide its review of the AGN SA gas distribution application for its revenue reset.

Overall, AGN is seeking a very large increase in tariffs and the impacts of the low utilisation of the network and the large capex programs from the current period and forecast for the next period are shown in the following chart.



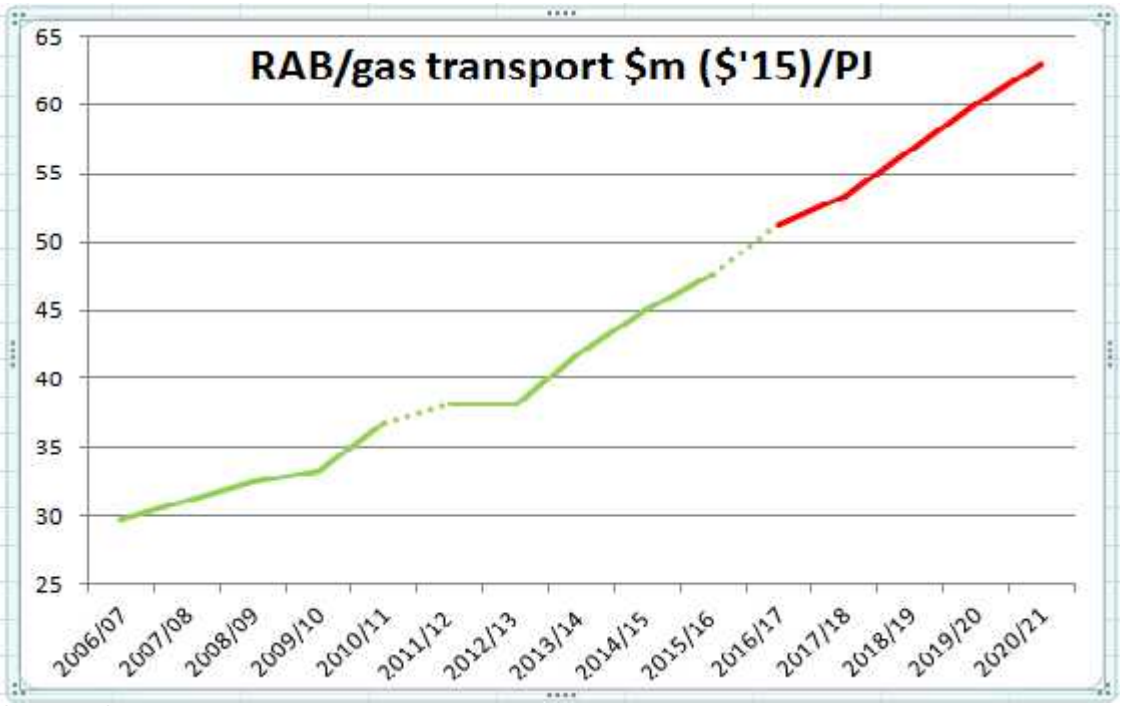
Source: AGN RIN, AGN/Envestra proposals, ESCoSA, AER decisions

The causes of the increases in the current period are attributable to a very large capex allowance combined with an excessively high WACC, all measured against a declining amount of network capacity being sold. AGN seeks to further expand its capex in the next period and partially conceals the impact of the increase through a WACC that is low because current low interest rate costs. If the WACC was assessed on long term average costs for capital, there would be no reduction in the average tariff in the early years of the next period.

This is the fourth regulatory review of AGN and the AER should be able to assess AGN's efficient costs based on past performance. Whilst opex has been self benchmarked and analysis shows the areas where AGN has over claimed, the claims for capex and rate of return exhibit outcomes totally at odds with the provision of an efficient gas transport network.

ECCSA is extremely concerned about the cumulative impact of the current period high capex program coupled to the expanded capex program proposed for the next period. The ECCSA has calculated the impacts of the capex programs on the regulatory asset base and related these to the volumes of gas transport (actual for small customers and annualised MDQ for large customers)

to identify the efficiency of the capex programs. This is shown in the following chart.



Source: AGN RIN

The chart shows the impact of the massive amount of capital provided to transport gas in the past decade and even larger capital program forecast will drive this cost even higher by the end of the next period. This growth is unsustainable and is not efficient.

ECCSA is very concerned at the proposal by AGN to ignore the AER guideline on rate of return. The proposal by AGN does not reflect the current view that the cost of capital is at the lowest levels seen form decades whereas the AER guideline does incorporate the impact of the current low costs of capital. Comparing the AGN proposal to those seen by other networks clearly shows that there is a coordinated pushback by regulated networks to overturn the AER guideline. What is also concerning is that AGN does not even attempt to show where its approach to rate of return provides an outcome which is more in the long term interests of consumers than the AER guideline. The AGN approach has the indications of a network seeking to maximise its own benefits at the expense of consumers.

ECCSA notes that AGN has decided to continue with the price cap approach rather than use a revenue cap. This is of concern to ECCSA as it implies that AGN sees there is a greater avenue to enhance its revenue stream through maintaining price caps rather than protecting its revenue stream through use of a revenue cap. There are a number of ways that AGN could bias its tariff development to enhance its revenue stream and the ECCSA considers the AER

should ensure that AGN applies strict cost reflective approaches to developing the tariffs and their bands.

Overall, the AGN proposal shows all the hallmarks of an entity seeking to maximise its revenue despite the clear indications that the utilisation of its network is falling to dangerously low levels relative to the value of the assets involved. The proposed high tariffs coupled to the already increasing pressures from gas price rises, will merely increase the already apparent decline in gas usage throughout the network.

The ECCSA sees that the AER has a major task ahead to balance the interests of consumers against the desires of AGN for continuing to increase its revenue from the network regardless of market realities.

1. Introduction

1.1 The ECCSA

The Energy Consumers Coalition of SA (ECCSA) is a forum representing large energy consumers in South Australia. The ECCSA is an affiliate of the Major Energy Users Inc (MEU), which comprises more than 20 major energy using companies in NSW, Victoria, SA, WA, NT, Tasmania and Queensland.

The ECCSA welcomes the opportunity to provide comments on the AER's review of the revenue reset for the South Australian gas distribution pipeline system.

Analysis of the gas usage by the members of ECCSA shows that in aggregate they consume a significant proportion of the gas used in SA. As such, they are highly dependent on the gas transmission and distribution networks to deliver efficiently the gas so essential to their operations. Many of the members are regionally based in SA and therefore heavily dependent on local suppliers of hardware and services. As a consequence, members have an obligation to represent the views of these local suppliers. With this in mind, the members require their views to not only represent the views of large energy users but also those of smaller power and gas using facilities, and even of the residences used by their workforces.

The companies represented by the ECCSA (and their suppliers) have identified that they have an interest in the **cost** of the energy network services as these comprise a large cost element in their electricity and gas bills.

Although gas is an essential source of energy required by each member company in order to maintain their operations, a failure in the supply of gas (or electricity) effectively will cause every business affected to cease production, and members' experiences are no different. Thus the **reliable supply** of gas (and electricity) is an essential element of each member's business operations.

With the introduction of highly sensitive equipment required to maintain operations at the highest level of productivity, the **quality** of energy supplies has become increasingly important with the focus on the performance of the distribution businesses because they control the quality of electricity and gas delivered. Variation of electricity voltage (especially voltage sags, momentary interruptions, and transients) and gas pressure and water content by even small amounts now has the ability to shut down critical elements of many production processes. Thus member companies have become increasingly more dependent on the quality of electricity and gas services supplied.

Each of the businesses represented by ECCSA has invested considerable capital in establishing their operations and in order that they can recover the capital costs invested, long-term **sustainability** of energy supplies is required.

If sustainable supplies of energy are not available into the future, these investments will have little value.

Accordingly, ECCSA (and its affiliate MEU) are keen to address the issues that impact on the **cost, reliability, quality** and the long term **sustainability** of their gas and electricity supplies.

The recent changes, and potential future changes, in both the electricity and gas markets, have further heightened the concerns of all these users with the outcomes of the regulatory processes. In particular, ECCSA members highlight:

- The considerable capital that has been invested by ECCSA members in businesses and equipment that uses gas;

- The importance of a reliable supply of gas; gas is central to their operations and there is no short term substitute available in most instances;

- The impact on their businesses of cost increases in both electricity and gas, and the potential threat of further substantial increases in the cost of gas in the next five years and more; and

- The potential shortage of gas in SA if the current political impasse impacting gas supplies on the east coast cannot be satisfactorily resolved.

While little can be done by either Australian Gas Networks (AGN) or the AER about the political aspects of the SA gas supply constraints, ECCSA (and its affiliate MEU) are keen to see both AGN and the AER proactively address the issues that impact on the **cost, reliability, quality** and the long-term **sustainability** of their gas (and electricity) supplies.

AA2016 provides an opportunity to simultaneously address each of these issues by ensuring that only prudent and efficient expenditures and financing costs are allowed by the AER.

1.2 The scope of this review

In 2012, the AEMC amended the National Gas Rules (NGR) following an extensive review of the issues that had emerged in the economic regulation of electricity and gas transmission and distribution services.

The AER undertook extensive consultation with all stakeholders during 2013 to develop Guidelines and an approach to implementing the amendments to the National Electricity Rules (NER) and the National Gas Rules (NGR).

However, the reforms to the NGR are less extensive than those to the NER and, it could be argued, somewhat limit the AER's discretion more than might be the case with electricity network regulation. Equally, there are aspects of the NGR that impose greater involvement by the regulator, such as the requirement to prove that past capital expenditure (capex) incurred by the gas network was "conforming".[1]

Importantly, the major changes to the assessment of the rate of return for both gas and electricity are critical to restoring the balance between investor interests and the long-term interests of consumers that existed before the implementation of economic regulation under the AER.

In addition to the requirements applying to AGN under the National Gas Law (NGL) and the NGR, AGN is subject to general Australian Corporations laws, SA laws and SA specific industry regulatory requirements.

The majority of these legislative obligations are long standing obligations that have been incorporated already into the cost base of AGN. Indeed, the ECCSA believes that with the current and proposed expenditure on IT systems, compliance with these obligations should be at lower cost than occurred in the past.

However, there are a number of changes to regulatory obligations, including:

- The introduction in SA of the National Energy Consumer Framework (NECF), which imposes various new obligations on distribution networks

- The introduction and ongoing changes to the short term trading market (STTM)[2] from mid 2010, which require greater operational transparency and information reporting from distribution companies.

AGN has also undergone a sale process which will have impacted various organisational elements. ECCSA would expect that this should lead to some synergy savings but these are not evident in the proposal. The ECCSA also cautions that these related entity structures still enable profit shifting and a 'veil of secrecy' to descend, restricting the ability of regulators and consumers to determine the real costs and profits of these businesses.

1.3 Summary of Recent Developments

It is concerning that regulatory revenue reviews under the AER may have lost sight of the objective of network regulation, to service the long-term interests of consumers. In AA2011, for instance, there was a heavy emphasis on

[1] NGR, Rule 79
[2] Although the STTM was introduced subsequent to the last access arrangement, the 2009 AA was established in a way that fully accommodated the requirements of the STTM

encouraging investment in the networks without sufficient consideration of the price impacts of this on consumers or, over time, the impact of prices on energy usage.

The subsequent collapse in the growth trajectory of both electricity and gas consumption may have its roots in the global financial crisis (GFC), but it has clearly been exacerbated by the parallel increases in electricity and gas prices, particularly in SA.

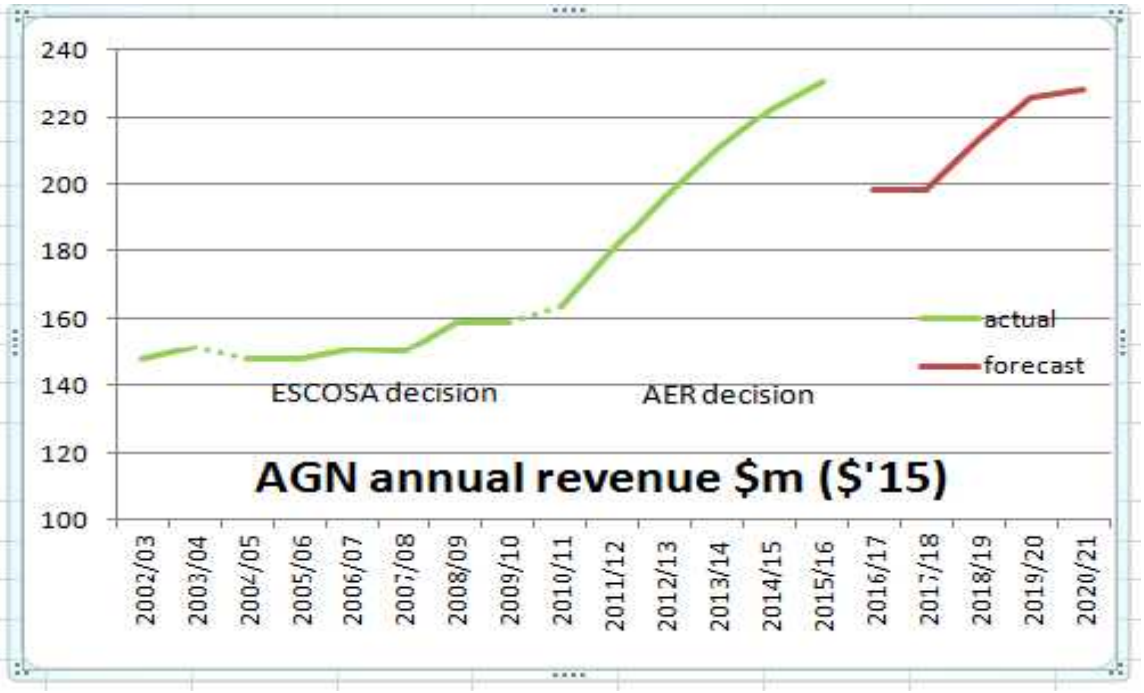
In the face of this, AGN proposed significant increases in average gas network tariffs of over 25% in AA2011. While the final determination modified this outcome somewhat, it still reflected the lack of realisation by networks that the energy supply situation was and still is changing rapidly.

The current proposal by AGN seems to pay some heed to these developments and attempts to limit increases in some aspects. In other aspects, the proposal has the hallmarks of a grab for money. However, the ECCSA believes strongly that AGN and consumers' long-term interests are much better served if there is a more vigorous approach to cutting costs.

ECCSA notes that AGN is proposing to reduce tariffs in the early years of the next period, although ECCSA notes that tariffs in real terms later in the next period are even higher than those that apply now. However, with the continuing growth in the revenue stream (primarily driven by lower costs of capital than apply in the current period) and falling consumption, the ECCSA finds it difficult to reconcile, any revenue growth with the lower consumption forecast.

1.4 An overview of the AGN application

The increased revenue sought by AGN for the new regulatory period is significant, as the following chart shows:



Source: AGN/Envestra proposals, ESCoSA, SAIPAR, AER decisions

Capex is forecast to rise and opex to stay relatively constant, so the apparent reduction in revenue forecast is a result of the lower cost of capital.

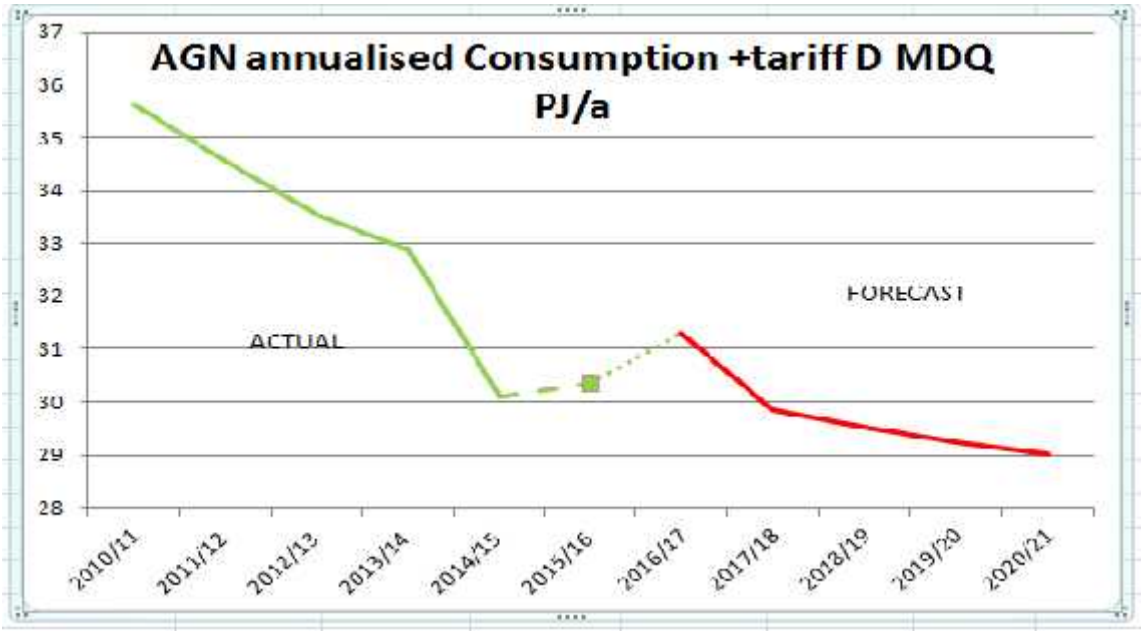
The ECCSA noted in its submissions to the reset review for AA2011, that it was very concerned at the rise in revenues being contemplated, particularly with regard to the amount of capex proposed. The concerns of ECCSA are becoming very apparent in the outcomes of performance in the current period.

Historically, AGN has sought more revenue than the previous regulators (SAIPAR, ESCoSA and AER) allowed. Equally, it must be noted that the actual revenue recovered by AGN has been less than that allowed by the regulators. However, it must be also noted that the regulatory allowances were much closer to the actual revenue than have been the revenues proposed by AGN. What is concerning is the step increase in revenue seen in the current period; AGN attempts to minimise the effect of this on the basis that the actual revenue was less than the amounts allowed by the AER. That is, despite the increase in revenue allowed by ESCoSA and the AER, the falls in consumption of gas has not enabled AGN to recover the revenue allowances ESCoSA and the AER had identified as being appropriate. .

To counter the small under-run in revenue, AGN's costs tended to be much less than the regulators allowed so that the less than expected revenue was more than offset by opex and capex under-runs, implying the profitability of AGN was not impacted by the lower than expected revenue.

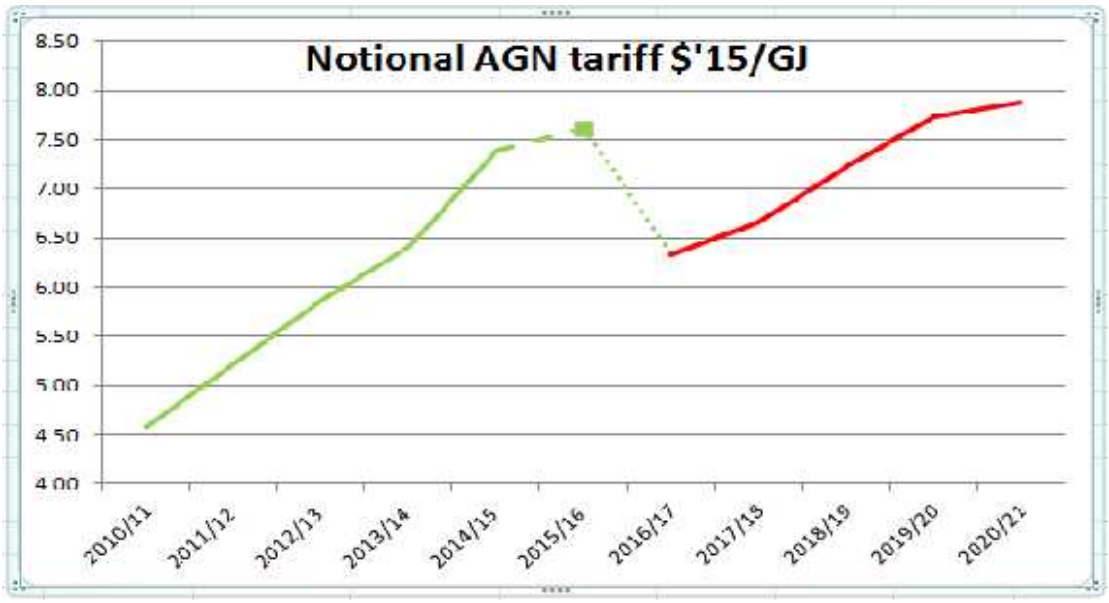
Holding the revenue relatively constant between the current period and the next, but with a lower expected volume of gas forecast, would imply that tariffs would have to rise, but this is not what AGN is forecasting in new tariffs as all

tariffs are forecast to decrease after a small increase. The ECCSA considers that this apparent anomaly needs to be investigated more thoroughly, and is dependent on a forecast significant rise in gas sales in 2015/6 and 2016/7, as the following chart[3] shows:



Source: AGN RIN

The development of a notional tariff highlights the anomalies more clearly. The following chart tracks revenue against expected sales of gas capacity[4] giving a notional average tariff:



Source: AGN RIN, AGN/Envestra proposals, ESCoSA, AER decisions

[3] ECCSA is intrigued that the forecasts for 2015/16 and 2016/17 years show a significant increase in the expected tariff D MDQ sales followed by the continuation of falls.
[4] The sales of gas used for this purpose are the sales of gas to residential and commercial customers plus the annualised MDQ sales to tariff D customers

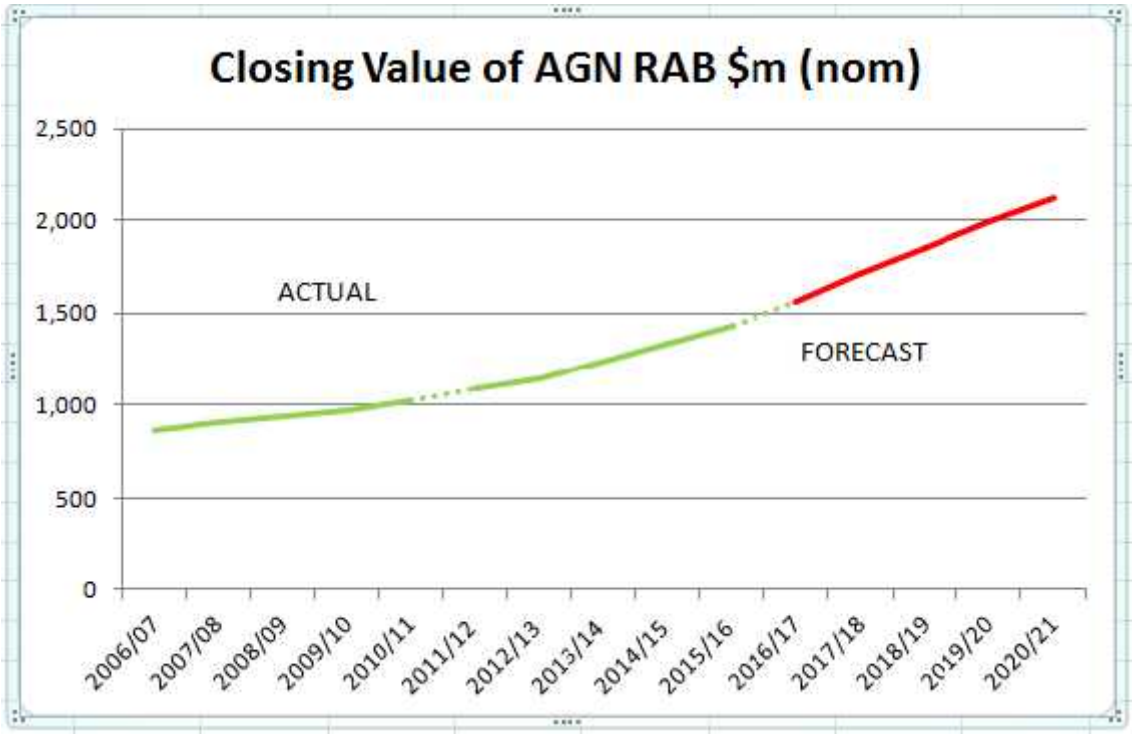
The forecast reductions in tariffs proposed by AGN are the result of very high tariffs carried over from the current period which are based on inflated forecast sales for the last year of the current period and small reductions in forecast revenue coupled to increased sales of capacity for the final year of the current period and the first year of the next period.

In its submission to the Envestra proposal in 2010, ECCSA commented;

> "For this massive increase in claimed expenditure allowances, consumers will have to pay considerably more, but ironically, will receive basically the same service. The regulatory bargain is now so unbalanced that it has undergone a major shift in favour of the distribution business. What is totally missing from the applications is an assessment of value for money."

It is now quite apparent that AGN will continue to enjoy the benefits of the increased investments made during the current period despite significant falls in consumption. This asset growth despite lower consumption can be seen by examination of movements of the Regulatory Asset Base (RAB) over time

The forecast RAB is expected to further increase by the end of the next period, to more than double over a period of 10 years, as the following chart shows:



Source: AGN RIN

Over the same period of time that the RAB is forecast double, the volume of gas used by residential and commercial users plus the capacity sold to tariff D

customers is expected to fall by 23% over the same 10 year period. The impact of these two contrary movements will affect consumers for decades to come

There is a clear disconnect between the amount of gas transported on the AGN network and the value of the assets used in transporting it!

The excessive amount of asset provision is further exemplified by examining the benchmarking of the asset costs between the different gas networks. This has identified that AGN asset productivity was some distance from the efficient frontier when the data was taken and this is shown in the following chart derived from the Economic Insights review of AGN performance

Figure 3.2: **Asset cost per customer relative to customer density (avg. 2009–2013)**

Source: Economic Insights gas utility database. Asset cost is defined as real revenue minus real opex.

The chart is based on the average of 2009-2013 data, but the significant growth in RAB in the later years of the current period will result in AGN becoming even less efficient with regard to asset utilisation.

There is also a distortion in the basis for the productivity assessment as the parameters are based on customer numbers. An increase in customer numbers but a declining consumption highlights that utilisation of the AGN assets is falling dramatically and will get worse

The proposed increase in RAB over the next period because of the even larger capex proposal than used in the current period will take AGN even further from the efficient frontier!

AGN proposes that it should increase its capex to connect new customers and to replace HDPE mains that are exhibiting issues of concern. These new initiatives are in addition to the continuing program to replace the CI and unprotected steel gas mains commenced in previous years. The ECCSA is

concerned that the costs for these programs are being implemented at a time of already observed falling demand which can only be exacerbated by much higher gas prices expected in the next few years and greater energy efficiency programs implemented as a result of increasing gas prices.

The main issue for the AER (other than the bottom up capex build up implicit in the AGN proposal) is to develop a holistic view of whether the claims being made are valid and whether consumers will be able to pay for the targeted revenue stream, especially in a market of falling consumption. It is not merely an issue of agreeing that energy distribution monopolies can just continue to increase their charges on the basis that consumers have no alternatives. Gas supply for those consumers using it is an essential service and it is simply insufficient to continually allow increases in the costs of essential services until parts of the community (including businesses that become uncompetitive as a result) can no longer afford to pay. At one end of the scale, economically disadvantaged consumers will either suffer or have to be directly assisted by government. At the other end of the scale, businesses will no longer be able to afford the charges and will either close or move inter-state or offshore. Either way, the costs will still remain and have to be carried by fewer consumers, further increasing unit prices.

1.5 Consumer engagement

ECCSA notes that AGN has entered into considerable stakeholder engagement as part of its reset process and plans to maintain these practices as a continuing program. The ECCSA supports AGN in this.

Despite this support, the ECCSA comments that the stakeholder engagement program is not **consumer** engagement as it seeks input from many other impacted parties as well as consumers. The reason for increased **consumer** engagement is that it is consumers that pay for the networks rather than the larger cohort of AGN stakeholders and it is consumers' willingness to pay that is a core driver rather than for another party to assert a need but for which consumers pay. The ECCSA considers that unless there is unequivocal **consumer** support for a proposed action coupled with an informed willingness to pay, then the views from other parties (such as retailers, councils, government, facilitators, etc) have much less standing than those of consumers themselves.

ECCSA is concerned that AGN has drawn conclusions from its stakeholder engagement undertaken so far, without fully appreciating that **consumer** engagement, as distinct from stakeholder engagement, is what is specifically required.

1.5.1 A general view of consumer engagement

ECCSA read with interest the Consumer Challenge Panel report on consumer engagement it had observed during the Victorian electricity distribution revenue reset process. The ECCSA experience with consumer engagement is well reflected in the report[5]. In particular, ECCSA agrees with the conclusion reached by the Challenge Panel which states;

> "The considered view of CCP3 is that consumer engagement can provide some guidance to a DNSP, but cannot be deterministic, due to the many issues that surround the various approaches that are being used." (page 9)

ECCSA also notes the concerns raised by the Challenge Panel about consumer "willingness to pay" assertions made by networks and also considers that the Challenge Panel observations are consistent with ECCSA experiences.

1.5.2 Conclusions drawn by AGN

AGN has highlighted a number of projects that they are implementing on the basis that customers desire these enhancements and are willing to pay the cost for their availability.

To support these assertions, AGN makes reference to its stakeholder consultation processes. However and over-riding concern ECCSA has with the stakeholder engagement is that it is just that - stakeholder engagement rather than consumer engagement. What AGN seems to have missed is that it is consumers that pay the increased costs associated with enhanced services and not the other stakeholders that AGN consulted with. It is easy for non-paying stakeholders to agree to increased costs because they don't have to pay for them!

So, for AGN to state that stakeholders are willing to pay for service enhancements does not provide support for the assertion there is a willingness of consumers to pay. The only basis on which ECCSA would even contemplate there is a willingness to pay is if there was strong support just from consumers. As noted below, even if AGN could point to their **consumer engagement** as supportive of these enhancements, the ECCSA is concerned about the methodology used to gain such support.

1.5.3 ECCSA conclusions

ECCSA sees there is considerable merit in AGN engaging with the consumers that utilise the network services it provides. Equally, ECCSA considers that the engagement carried out so far does not provide AGN

[5] Available at http://www.aer.gov.au/sites/default/files/Consumer%20challenge%20panel%20-%20Sub%20panel%203-%20Response%20to%20proposals%20from%20Victorian%20electricity%20distribution%20network%20service%20providers%20-%205%20August%202015_3.pdf

with substantiation, at this stage, for AGN to claim that consumers are willing to pay for additional services. This view is clearly supported by the observations of AGN that it is "stakeholders" (eg as stated in sections 7.3 and 8.3) that concur with the AGN views rather than consumers providing support.

As a general observation, ECCSA comments that consumers are under so much financial pressure for the costs of accessing electricity and gas, that there is little appetite for incurring any additional costs above the provision of the basic service needed. In the case of gas networks, ECCSA considers that the increased prices for gas that are already being seen and will increase further in the coming years, will impose such cost pressures on consumers that they will seek to reduce these costs in anyway they can, and will not entertain unnecessary cost increases, especially for "it would be nice to have" features proposed by the networks.

ECCSA is also concerned that there are ever increasing numbers of consumers that are exhibiting an inability to pay for even their current energy supplies, that assertions of consumer willingness to pay have to be treated with great caution.

1.6 The ECCSA general view

The ECCSA is supportive of the requirement for reliable, long term security and high quality for the supply of gas and is not opposed to network augmentations and additions, provided the investments are **efficient** and they are implemented by a **prudent** network business. The overwhelming challenge for AGN is to ensure that the investments (in capex) it proposes are **efficient** (i.e. “in the long run at least cost”) and that they are being undertaken by a **prudent** network business. Generally, the arguments for specific elements of the proposal from AGN do not clearly demonstrate that the proposals are efficient and prudent.

Businesses in a competitive environment make judgments on investment based on such requirements as the potential to recover the planned return on the costs of the investment, ability to deliver a project on time and to budget, cost (including short term supply pressures), ability of their customers to absorb cost increases, the ability to defer the investment and the risks associated with deferral. In the case of a regulated business, prima facie, it only has to convince the regulator it needs to expend the funds and effectively does not take responsibility for whether the investment will generate the required revenue, or even whether it over-runs on costs, as the Rules allow actual costs to be rolled into the RAB, regardless as to whether the costs are demonstrably prudent.

Unfortunately, gaining regulatory approvals in the past for capital expenditure has been observed to be quite easily obtained, with greater emphasis given to the stated wants of the business rather than the imposition of strong development of capital controls.

The new Rules clearly require that gas distribution businesses must provide economically efficient investment. The AER must require networks to demonstrate why there is a need to provide a large capital expenditure program and to provide a risk analysis which balances the risks of deferral against the risks of unnecessarily early investment.

The ECCSA accepts that the Gas Rules reduce the risks to the regulated entity of inappropriate investment, as future regulators are not permitted to reopen costs previously incurred; this is in contrast to earlier rules where regulators were allowed to optimise previous decisions. It was this ability to optimise at some time in the future, that applied some pressure on the regulated businesses to only implement investment when it was absolutely necessary.

In the absence of this discipline, it is now a requirement on the AER to apply robust analysis and ensure that economically inefficient investment is not undertaken. There is now only one opportunity to ensure investments approved are efficient. The AER can achieve this by limiting capex allowances, and by ensuring that only needed capex is permitted, and deferring capex that can be deferred with minimal impact on the reliability of the system.

1.7 Summary

It is essential that regulatory price reviews do not lose sight of the basic fact that if the regulator keeps on allowing increases in capex and opex, the prices the networks will charge for providing an essential service will take the cost of gas beyond the ability of competitive industry and many consumers (especially disadvantaged consumers) to pay.

The rules for regulating networks have been changed significantly since the last AER review of AGN (then Envestra) and these give the AER much more discretion in the exercise of its role. The new rules also place much more weight on benchmarking of performance and use of the benchmarks to inform what are efficient costs.

In the following chapters, the ECCSA has attempted to provide sufficient information and thoughts on the approach the AER should take in this current revenue reset process.

2. Capital Expenditure Allowance

In its proposal, AGN has sought approval for a number of significant capex claims. As part of its proposed capex program it asserts that its stakeholder engagement program gives support for the proposals. ECCSA comments on the use of the stakeholder engagement program are detailed in section1.

AGN comments that the capex proposals are (page 131)

> "…based on actual cost information wherever possible, which reflects revealed efficient expenditure incurred over the current AA period."

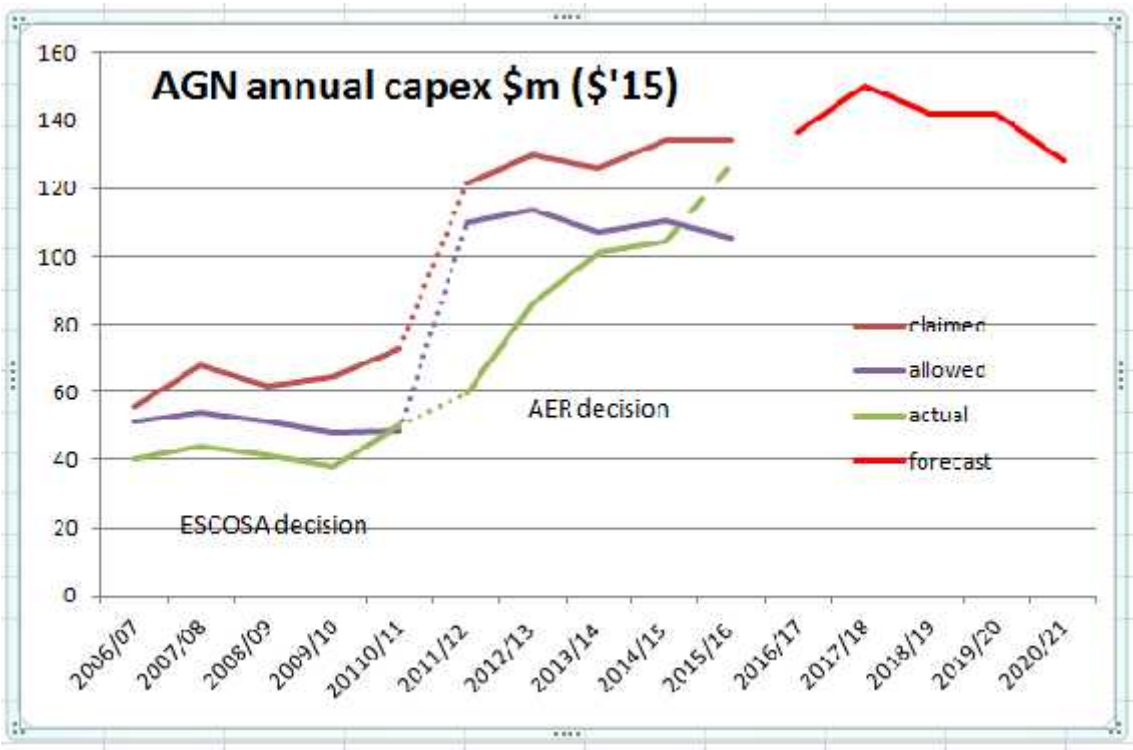
The ECCSA questions whether this approach will really deliver efficient costs. AGN states that because they were subject to incentives, that the costs are efficient. This is not correct. During the current period, there has been no incentive on capex to drive costs to the efficient level. Even if there were, ECCSA considers that the category analysis work as part of the benchmarking processes should identify the most efficient practices for each capex activity. ECCSA considers that asset benchmarking has revealed that AGN is not the most efficient in asset provision and this, in turn, provides a view that AGN capex practices are probably not at the efficient frontier. This high level assessment implies that AGN current practices are not the most efficient.

The bulk of the capex program proposed changes are as follows:

- Continuing the replacement of cast iron and unprotected steel mains approved in previous regulatory decisions ($224m)
- Replacement of medium pressure HDPE mains and replacement of high pressure HDPE mains ($131m)
- IT Capex upgrade ($59.7m)
- Growth assets ($101.1m)
- Meter replacement ($17.1m)
- Augmentation ($17.9m)
- Regulators and valves ($13.6m)
- Other distribution capex ($37m)
- Other non-distribution capex ($5m)
- Capitalised overheads ($61.5m)

The ECCSA notes that many of these activities are effectively recurrent activities and so the costs can be set using trend analysis, whereas others are once off projects and need to be assessed on their own merit.

The following chart shows the impact of the capex program proposed by AGN



Source: AGN RIN, AER decisions, AGN/Envestra proposals

The average amount of capex in AA2006 was $43m pa, during AA2011 it was $96m pa (a 125% increase, more than doubling the previous capex), and proposed for AA2016 is $140m pa, a further increase of 46%. Against this backdrop of capex increases is a falling consumption of gas, reducing the utilisation of the AGN network.

What is also important is that AGN significantly under-ran the allowed capex in both AA2006 and AA2011 and that its claims for capex for each period were between 35% and 50% overstated compared to the actual capex used.

At a high level, whilst the program for the CI and UPS mains was seen as an essential program due to the large amount of gas leakage and the costs for this are embedded in the AA2011 actual costs.

The ECCSA considers that the AER needs to address recurrent activities and use historic needs for capex to inform on what is reasonable to carry forward into the new period.

The following table comes from the information provided in the AGN proposal and summarises the different elements of the capex proposal compared to actual expenditure in the current period. What is concerning is that AGN considers there is a need for a major increase in mains replacement capex, an increase in regulator replacement and massive increases in IT and "other distribution assets".

$2014/15 million (incl cost esc and o/h)	AA2011 AER	AA2011 actual	AA2016 f/c	ECCSA Comments
Mains Replacement	235.9	247.7	416.7	68% increase
Meter Replacement	22.8	17.1	19	Refects recurrent activities
Augmentation	29.2	43.5	20.1	Reflects declining consumption
Telemetry	2.5	1.7	1.2	Reflects recurrent activities
Regulators	4.4	7.8	15.1	94% increase
Information Technology	12.1	24	66.7	180% increase
Growth Assets	180.2	118.6	113.7	Reflects recurrent trend but omits reflection of declining consumption
Other Distribution System	52	10.8	41.1	280% increase
Other Non-Distribution System	7.6	7.4	5.5	Reflects recurrent activities
Total Capex	546.9	478.6	699.1	46% increase

Source: AGN proposal

ECCSA provides its views on specific elements of the capex program in following sections.

2.1 Expansions and augmentations

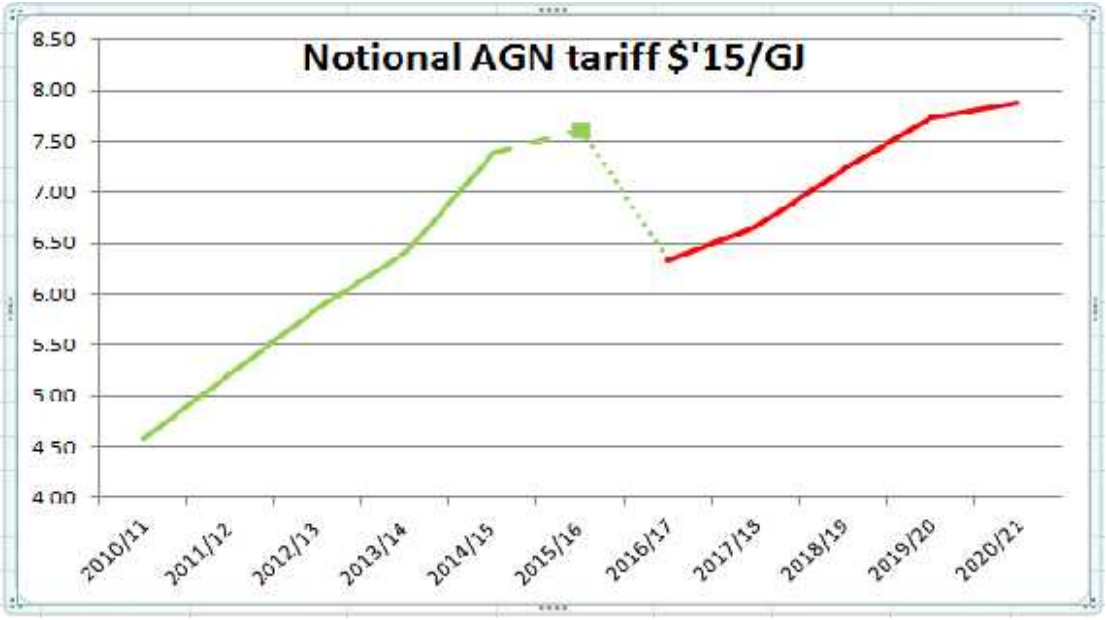
The need for such investments needs to be more deeply investigated because the higher cost of gas (commodity) is already being seen to increase dramatically and this price increase will place significant downward pressure on whether future consumers will want (or can afford) to use gas. In this regard, the Alternative Technology Association (ATA) released a report[6] in 2014 "Are we still cooking with gas". This provides a view that it is not prudent to further expand gas distribution networks as efficient electric appliances are more cost effective when considering the total costs for gas network expansions and augmentations needed to deliver gas to new customers.

The ECCSA is aware that the ATA has carried further work (although it has not been released publicly) on this relativity between future gas and electricity usage and this newer work confirms the conclusions reached in the 2014 study.

The ECCSA considers in light of the ATA work, the AER needs to investigate in much more depth, the AGN assertions that the network needs to be both augmented and expanded. The ATA research provides prima facie evidence that such expansions and augmentations will not be prudent and the benefits that existing consumers will gain from the gas sales generated from the expansions and augmentations will be at best marginal and more likely to impose a long term cost on existing and future consumers.

[6] Available at http://www.ata.org.au/wp-content/projects/CAP_Gas_Research_Final_Report_251114_v2.0.pdf

That this is the case is already evident from the forecast prices that AGN is proposing to apply as a result of the AA2016 proposals. Tariff increases over AA2016 are shown in section 1.4 above (and in the chart following).



Source: AGN RIN, AGN/Envestra proposals, ESCoSA, AER decisions

This provides a view that tariffs are not falling as a result of the expansions and augmentations carried out in earlier years but are continuing to rise. This rise is despite low costs of capital that currently apply. When the costs of capital rise to longer term averages, the cost to consumers will be much higher than shown in the chart above. With both network charges and commodity prices increasing into the future, the ECCSA is of the clear view that gas network utilisation will fall further. This will result in even higher prices as the fixed costs of the network will be spread over even lower volumes of gas.

AGN does not provide any evidence that the costs to existing consumers and future consumers will fall as a result of the expansions and augmentations or at worst, return a zero benefit. AGN merely makes the assertion that any expansion of the network will benefit existing consumers and state that the new customers want these expansions. The only evidence provided by AGN about the benefits of connecting new customers is (page 142):

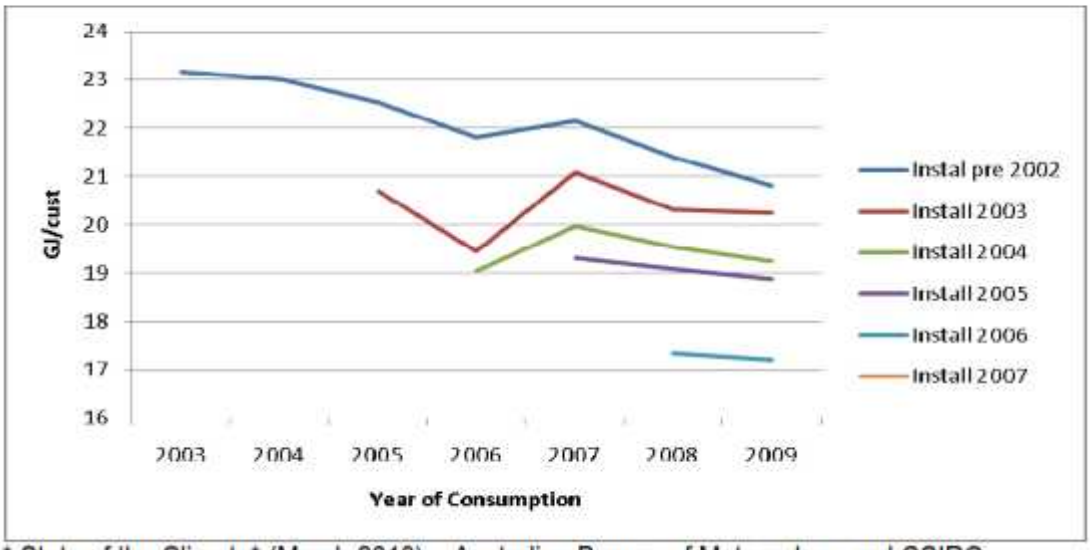
> "[The] extension will lower costs to existing customers by spreading the largely fixed costs of operating the Network across a larger customer base, thereby lowering the costs per customer."

What is absent from the assertion is any calculations to support that this is the case when all of the costs are included. Whilst ECCSA supports the connection of new customers, the connection should only be carried out when the connection provides a net benefit to all customers. It is inappropriate that

existing customers should fund new connections that increase costs to existing customers. If such new connections result in increased cost to existing customers, then the connection of new customers should be financed by government, such as occurred in Victoria where government made up the shortfall between net cost recovery and actual cost of connection

This concern is exacerbated when considering the information AGN (as Envestra) provided in its proposal for AA2011. In the proposal AGN provided the following chart which shows a view of the changing needs of new residential consumption related to when houses are built. This shows that newer houses (like those that will be built as part of the expansions proposed) are using ever decreasing amounts of gas per residence.

Graph 13.4 Actual Average Consumption for Domestic Consumption by Year of Installation (2003 to 2009)



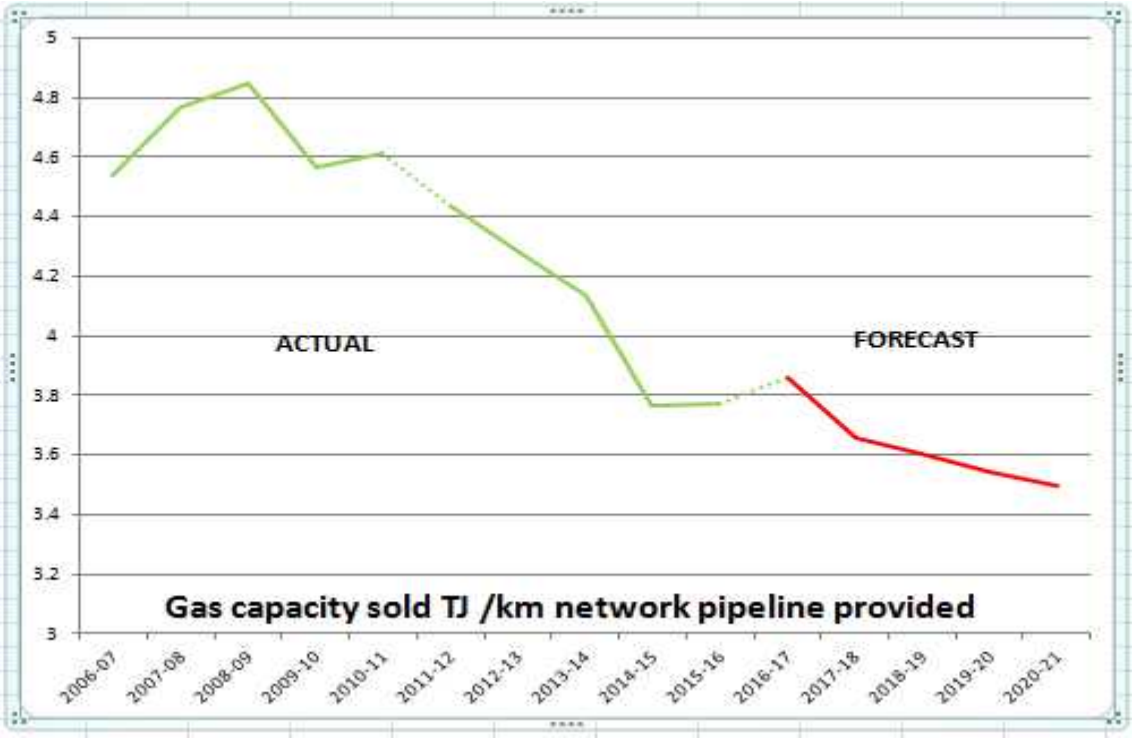
* State of the Climate* (March 2010) – Australian Bureau of Meteorology and CSIRO.

This means the new connections will provide less gas consumption than that which was the basis for connecting houses in the past.

The ECCSA has a view that the expansions and augmentations are unlikely to provide a net positive benefit to existing and future consumers when all of the costs are included and when consumers are aware of the cost for gas is rising and the equivalent cost for electricity appliances is lower than the overall cost for reticulating gas further.

Unless AGN can provide a clear business case showing that the new connections and augmentations deliver a net positive benefit to consumers through the increased gas sales, then the AER should not allow the new connections to be included in the capex.

Further, AGN asserts that it needs to augment the network to increase capacities. Firstly, ECCSA points out that the replacement program of the CI and UPS mains would increase capacity. Secondly, the utilisation of the networks is falling dramatically as the following chart shows



Source: AGN RIN

The declining amount of gas capacity sold relative to network length highlights that augmentations are not necessary. It also provides a view that expansions might not be commercially viable too.

2.2 Mains replacement.

Th mains replacement program has two elements. The first is the continuing replacement of CI and UPS mains which has been on going for over a decade. The second is a new program to replace medium and high pressure HDPE mains.

2.2.1 The current program

In its response to the AGN proposal for AA2011, the ECCSA provided its views on this program. Equally, ECCSA considers that the program now well underway should be completed, even though it has concerns that the net benefits could well be overstated. AGN cites the benefits of the replacement program to be

- a reduction in UAFG

- improved safety from less leakage
- increased network capacity
- improved reliability due to fewer unplanned outages
- reduce opex due to fewer unplanned outages.

AGN quantifies the benefits in its attachment 8.2 (page 6 of 54):

"This replacement program has been effective in improving the integrity and reliability of the network as summarised by the following key performance indicators:

1. 50% reduction (1055) in CI and UPS mains and service leaks since 2010;
2. 36% reduction (136) in CI mains breaks since 2010;
3. 34% reduction (730 TJ) in the Adelaide network UAFG since 2010; and
4. 60% reduction in customer reported supply complaints related to water in mains."

The ECCSA agrees that these are benefits to consumers but considers that the actual reduction in UAFG seen as a result of the program is not as large as was forecast by AGN (as Envestra) when it sought ESCoSA and AER approvals for the program. This concern is detailed in greater depth in section 3.7 below.

ECCSA notes that there are capacity increases yet the falling amounts of gas transported highlight that no additional capacity has been needed so this is hardly a benefit. Despite the increases in capacity, AGN is still seeking increases in capex for other augmentation projects, reinforcing a view that the increased capacity is not a benefit, or alternatively, there should be no increase in augmentation as sought under another capex project.

ECCSA also notes that AGN has stated there will be increased reliability. In figure 4.1 AGN does provide evidence of reducing SAIDI in 2012/13 and 2013/14 but this is only marginally below the SAIDI recorded in 2010/11 so the improvement in reliability is not commensurate with the amount of capex involved

ECCSA also notes the assertion of lower opex, yet this is no borne out by the forecasts. While the benefit to date in lower opex might be considered to be included in the base year opex, ECCCSA notes that AGN is being rewarded with an EBSS benefit due to under-running the opex allowance. So the benefit of lower opex as a result of consumers paying for the capex has not resulted in a benefit to consumers - indeed, consumer have paid for the capex **and** paid AGN for the EBSS benefit that has resulted. AGN has not introduced an opex reduction into its forecast as a result of the benefits of the capex program to reduce the number of unplanned outages (see section 3.5 below).

For AA2011, the AER imposed a requirement that AGN had to carry out a fixed length of replacement and identified the cost for the replacement. The ECCSA considers that the AER needs to impose similar requirements on AGN as it completes the mains replacement program.

The minimisation of the fugitive gas provides a considerable greenhouse gas abatement benefit. The ECCSA is aware that there is a program from the Federal government (Emissions Reduction Fund - ERF) which pays for greenhouse gas reductions. It would appear that AGN has not availed itself of this program yet ECCSA would have expected that an efficient and prudent network operator would have accessed funds on behalf of consumers to reduce the cost impost from reducing UAFG.

AGN should seek funding from the ERF to pay for the reduction in gas emissions that will result from the forecast capex program to reduce losses from the gas mains. This is the most efficient approach and a failure to do so by AGN will result in unnecessary higher costs for consumers

2.2.2 The new HDPE mains replacement program

AGN seeks additional capex to implement a new mains replacement program - that of replacement of medium pressure and high pressure HDPE mains. AGN provides a more detailed assessment for the need to replace the medium and high pressure HDPE mains in attachment 8.2. However, the extensive redaction of information prevents ECCSA from making any but a superficial qualitative assessment for the need for replacement of these mains.

Firstly, the ECCSA considers that these mains are still within their expected asset life and, on that basis, replacement should not be undertaken unless there is a clear business case for such to occur. What is not available to ECCSA is the opex savings that might accrue from the replacement compared to the cost of the replacement. A firm in a competitive environment would examine the opex costs involved with maintaining the existing assets compared to capital cost and unless the simple payback was less than four years, the early replacement would not occur. There is no opex saving provided in the redacted version of the attachment so the ECCSA cannot provide an informed view on the business case.

A review of the amounts of UAFG that are occurring, and are forecast to be avoided by the replacement of the HDPE mains, is not provided but it would appear based on the forecasts of UAFG forecast to be saved by the replacement of the CI and UPS mains imply that the amounts of UAFG to be saved by the HDPE mains replacement is relatively insignificant.

If the opex savings are significant, then they should be included in the opex forecast, yet there is no opex reduction proposed.

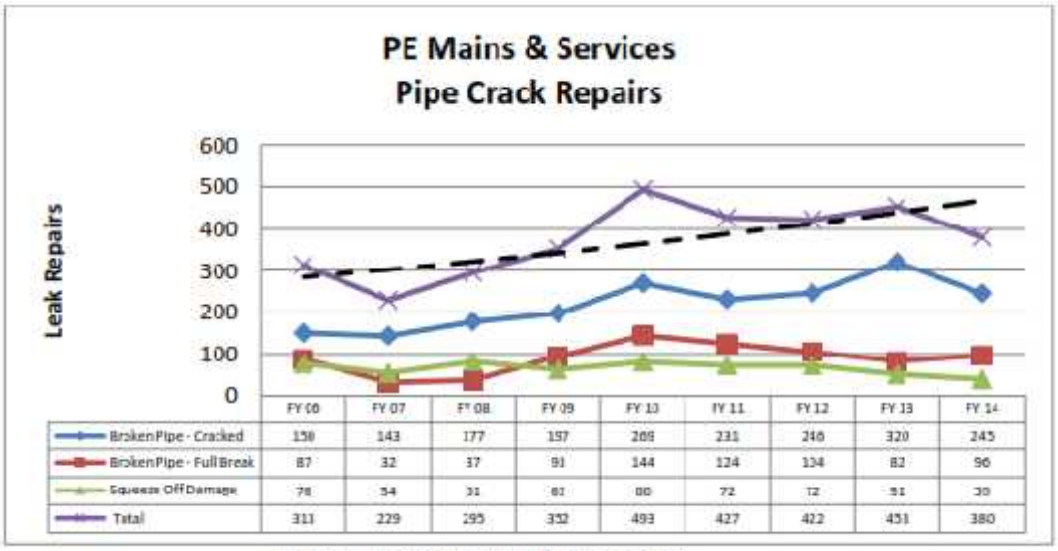
Secondly, AGN comments that the HDPE used in the mains is (attachment 8.2 page 43 of 54):

> "…susceptible to premature brittle-like cracking under conditions of stress intensification. The phenomenon of brittle-like cracking was characterised by the initiation of cracks on the inner wall of the pipe typically at a stress point, followed by slow crack growth (SCG) that progressed under normal pipeline operating pressures (much lower than the pressure required to rupture the pipe). The process culminated with the crack reaching the outside wall of the pipe, showing up as slit-like opening on the surface resulting in a sudden release of gas.
>
> Stress intensification on PE pipe systems can be caused by:
>
> 1. Squeeze-off procedures;
> 2. Rock impingement;
> 3. Improperly installed fittings;
> 4. Dents or gouges to the pipe surface; and
> 5. Poor jointing procedures."

All of the reasons for the failure of the HDPE support a view that it the failures are a result of poor installation of the pipe rather than an innate feature of the material such as occurs with cast iron and unprotected steel mains. In theory, the HDPE mains would be still suitable for service if they had been installed correctly.

ECCSA is not convinced that consumers should pay for poor installation practices that have resulted in some premature failures of the HDPE mains.

Thirdly, AGN provides a view that the amount of repairs on the HDPE mains is an increasing problem. The following chart from attachment 8.2 is supposed to support this view



	FY 06	FY 07	FY 08	FY 09	FY 10	FY 11	FY 12	FY 13	FY 14
Broken Pipe - Cracked	150	143	177	197	269	231	246	320	245
Broken Pipe - Full Break	87	32	37	91	144	124	134	82	96
Squeeze Off Damage	76	54	81	61	80	72	72	51	39
Total	311	229	295	352	493	427	422	451	380

Graph 14 – PE Mains & Services Pipe Crack Repairs

However, whilst AGN points to the trendline as justifying the need for replacement, it is worth pointing out that the numbers of annual failures 10 years ago (313) is not much different to the numbers of annual failures in the last year of the data (380). This tends to support the ECCSA view that there is perhaps not the business case to support the need for a mass replacement program as is proposed.

Fourthly, AGN significantly under-ran its capex program in both current period and the previous period. If the issue of HDPE Mains replacement was as critical as AGN asserts, then it would have used the unused capex to complete the task and carried out the works immediately rather than leaving the bulk of the program to be carried out in the future.

Overall, the ECCSA is not convinced that

- Consumers should have to pay for the works in the first place
- There is a business case for replacement rather than continuing with the current practice of repair as problems arise
- The fact that AGN has not used its available capex to address the problem and preferred to keep the benefits from under-running the allowed capex for the last two periods, indicates that the problem is not one requiring urgency and could be managed with the current approach of repair as needed.

2.3 IT program

AGN proposes to complete its upgrade of the state based systems into a nationally based IT system. While there is a business case for AGN to carry out such a task, it is not clear how SA consumers will benefit from this

nationalisation when from a consumer viewpoint, continuation of the previous arrangements "worked" for them.

But AGN wants more. The AER allowed AGN some $12.1m for its IT upgrade work but AGN spent twice this in the current period. The AER has to assess whether the overspend on IT is prudent and efficient, but AGN provides little to substantiate its over spend.

AGN proposes that it should be allowed to spend $66.7m for IT upgrades in the next period and identifies a number of projects that it considers will enable AGN to do its tasks better.

What is absent from the proposals is how these will translate into value for consumers. It is all very well for AGN to build a wonderful IT system with all of the "bells and whistles". But unless there is a business case where consumers clearly benefit, the ECCSA cannot accept that AGN should implement these projects at consumers' expense.

Consumers have indicated that they are relatively content with the quality of the current service, although refinements might be of interest. Most importantly consumers have stated unequivocally that they do not want to pay more for the service and would, providing reliability was not reduced, prefer to pay less.

The ECCSA cannot see any sound business case, **from a consumer viewpoint**, for the massive increase in spending on IT projects. ECCSA members advise that such discretionary projects would have to provide a simple payback return measured in four years of less before they could even contemplate such expenditure.

It is also important to note that AGN offers no reduction in opex that might accrue from the implementation of these projects. Whilst improvements in reliability might result from some of the projects, consumers have stated that the current levels of reliability are acceptable.

Unless AGN can provide support that there will be a net benefit from opex reductions, measured at less than a four year payback, as a result of any of the IT programs proposed, then the ECCSA does not consider the AER should include these projects as prudent or efficient. If AGN gets a benefit from them, as is clear from the reasons provided for the projects, then AGN should pay for these from its own resources.

2.4 Regulators and valves

For the current period, the AER considered $4.4m was efficient and prudent, yet AGN overspent this allowance by nearly 100%. It proposes yet another near 100% increase for the next period.

ECCSA considers that replacement of regulators and valves is a recurrent cost issue and not subject to specific unforecasted needs which would support a specific short term need for investment. For example,

- program SA 33 makes reference to application of current standards as initiating the need, yet there is no evidence provided that the standards have changed causing the need
- program SA08 refers to the need to prevent the spread of corrosion yet why is corrosion more of a problem in the next period than in the current period?
- program SA45 states that 3000 regulators were replaced during the current period but 9600 are to be replaced in the next. What is the reason for the massive increase in expected failures?

The ECCSA is concerned that AGN is providing an ambit claim for many activities that it would like to do but which would normally proceed on a recurrent basis rather than a once-off massive step up in capex.

2.5 Other distribution system capex

For AA2011, the AER allowed some $52m for this element of capex yet AGN used only about 20% of this allowance. The new forecast returns the amount of capex to a similar level claimed for AA2011 and as allowed by the AER for the current period.

The clear import of this work not being undertaken in the current period is that the work was not really required then even though AGN (then Envestra claimed such a large increase in capex for the current period. It is also interesting to note that a number of the projects identified for AA2011 as needed (and where the AER allowed funds) are again being introduced as new projects (but with similar reasons and outcomes proposed) as those used to substantiate the increased allowance sought (and granted) for AA2011.

Even though AGN had unused capex allowance in AA2011, it still decided not to carry out the works it had advised the AER were necessary for AA2011, but appeared to have deferred or decided they were not needed in the timeframe that they used to get approval.

"Other distribution capex" is really a recurrent expenditure process and the ECCSA considers that AGN has identified that the amount of capex used in AA2011 is sufficient for the needs of the network. On this basis the ECCSA considers that the allowance for this category should reflect what AGN actually used in the current period.

2.6 Asset lives used

In the development of its asset base in the first regulatory period, AGN advised SAIPAR that the assets it provides in its networks have the following expected lives[7]

"Key assumptions used in generating the DORC valuation include:

- the replacement cost of mains and inlets has been assessed in the context of brownfield conditions;
- small diameter medium density polyethylene pipe has been adopted as the Modern
- Engineering Equivalent (MEE) for cast iron pipe, as well as for most high pressure applications;
- the following effective asset lives have been adopted for pipeline assets:

Asset	Adopted Useful Life
MAINS	
Polyetheylene	70
Unprotected steel	65
Protected steel	130
Cast iron	85
Transmission Mains	130
INLETS	
Polyethylene	70
Unprotected steel	65
Protected steel	125

Table 3: Useful Lives of Mains and Inlets

In its revised access arrangement information in 2003, AGN advised that to generate the revised DORC value for the assets, the asset lives had been reduced to reflect a SAIPAR requirement that asset lives should be:

[7] Page 15, ***Revised*** **Access Arrangement Information** for the South Australian Distribution System, 21 July 1999

Asset	Adopted Useful Life
MAINS	
Polyetheylene	60
Unprotected steel	60
Protected steel	120
Cast iron	85
INLETS	
Polyethylene	60
Unprotected steel	60
Protected steel	120

Table 3: Useful Lives of Mains and Inlets

In its final decision on the AGN application in 2005, ESCoSA confirmed that same asset lives were used by it in reaching its conclusions.

In the 2011 review, Envestra cited the asset expected lives were, shown in its revised proposal in table 8.11, as follows

Table 8.11 Summary of lives used to calculate depreciation.

Asset Category	Original Useful Life	Revised Useful Life	Remaining Life
Mains	83	60	54.0
Inlets	83	60	50.3
Meters	29	15	13.9
Telemetry	50	20	14.8
IT Systems	5	5	0.9
Other Distribution Equipment	50	40	34.9
Other	10	10	3.4

This revision was accepted by the AER in its final decision for AA2011, yet there was little discussion on whether these reduced asset lives were reflective of independent engineering assessments or just lives asserted by Envestra and accepted untested by the AER. Nor is there any evidence that the asset lives proposed are reflective of the general view amongst other gas networks.

Of particular note are the 25% reduction in the lives of mains and inlets, the 50% reduction on the lives of meters and 60% reduction in the lives of telemetry assets. In its final decision for AA2011, the AER commented that the asset life reductions were acceptable because (page 33):

- "the standard asset lives used by ESCOSA were relatively long compared with other networks in Australia
- Envestra's business cases for reduced standard lives demonstrated that the new standard lives are comparable to standard lives approved in other AER decisions
- the impact of the step increase in prices of 1.5 per cent per annum attributable to the revised remaining lives was not considered to risk the efficient growth of the market for reference services.
- the change to remaining asset lives is unlikely to encourage the early replacement of assets, provided that most asset classes still have relatively lengthy remaining lives."

The ECCSA considers that the AER erred in its decision. Firstly, it was not just ESCoSA that determined what the AER considered were long asset lives, but also SAIPAR, the regulator before ESCoSA, had reached similar conclusions implying consistency and support for the ESCoSA decision. Secondly, the AER did not carry out its own assessment of what asset lives were used by other gas networks, but relied on Envestra assertions. Thirdly, the view of the faster depreciation would only increase prices by 1.5% is immaterial - that a cost increase can be absorbed has no bearing of the correctness of the decision and fourthly, that changing asset lives is unlikely to encourage early replacement is probably wrong, as AGN is proposing early replacement of HDPE gas mains in the current proposal.

ECCSA considers the AER needs to review the asset lives proposed by AGN to ensure that asset lives are reflective of a general view from existing gas networks and independent assessments. Once established, the AER should use a standard approach on asset lives to reflect the benchmark entity and not leave to individual networks an ability to set depreciation rates to suit their own desires. The increasing use of the repex model for assessing replacement capex is dependent on using asset lives that are consistent and not subject to the vagaries of individual network desires.

In the current proposal, AGN provides the following table for expected asset lives and while the expected lives are as used for AA2011, the there is an intriguing issue with regard to remaining life. The following table is extracted from the AGN proposal

TABLE 9.6: SUMMARY OF LIVES USED TO CALCULATE DEPRECIATION

Asset Category	Standard Useful Life (years)	Remaining Life
Mains	60.0	49.1
Inlets	60.0	51.1
Meters	15.0	7.4
Telemetry	20.0	12.7
Information Technology Systems	5.0	3.7
Other Distribution Equipment	40.0	23.7
Other	10.0	7.2

The issue with remaining life needs deeper investigation. If there was no new investment, at most, the remaining asset lives would show a deterioration of 5 years between the AA2011 forecast remaining lives (table 8.11) and the remaining lives for AA2016 (table 9.6). However, there has been significant investment, especially in relation to the CI and UPS mains where there was approved a major investment program but the remaining lives show a loss of the full 5 years. Further, the extensive remaining life for gas mains and inlets shown in table 9.6 from the AGN proposal for AA2016 then raises the question as to why there is a proposal a replacement of the HDPE gas mains. This is discussed in more detail below.

What these tables show is that AGN has consistently reduced its asset life expectations significantly over the years. The implications of the expected asset lives have a number of direct issues that have to be assessed because the lower the asset life:

- the sooner the asset has to be assessed for replacement,
- the higher the cost of the service due to faster recovery of capital and the higher the cost of the service provided
- the higher the cost of augmentations and expansions (due to the higher cost of capital recovery), this impacts on the assessment of prudency of investments as there is a higher cost for the investment which has to be recovered from the revenue generated by the investment. It is not clear that the proposed expansions of the network will be prudent when assessed on the shorter lives of the assets.

2.8 Overhead allocation and capitalisation policies

The ECCSA had difficulties in addressing where capex claims and costs were or were not inclusive of overheads. As the AER is examining benchmarking process to help it inform on what is efficient capex (and opex) the ECCSA considers that there is a need to establish a standard approach for allocating overheads and capitalisation of overheads and opex.

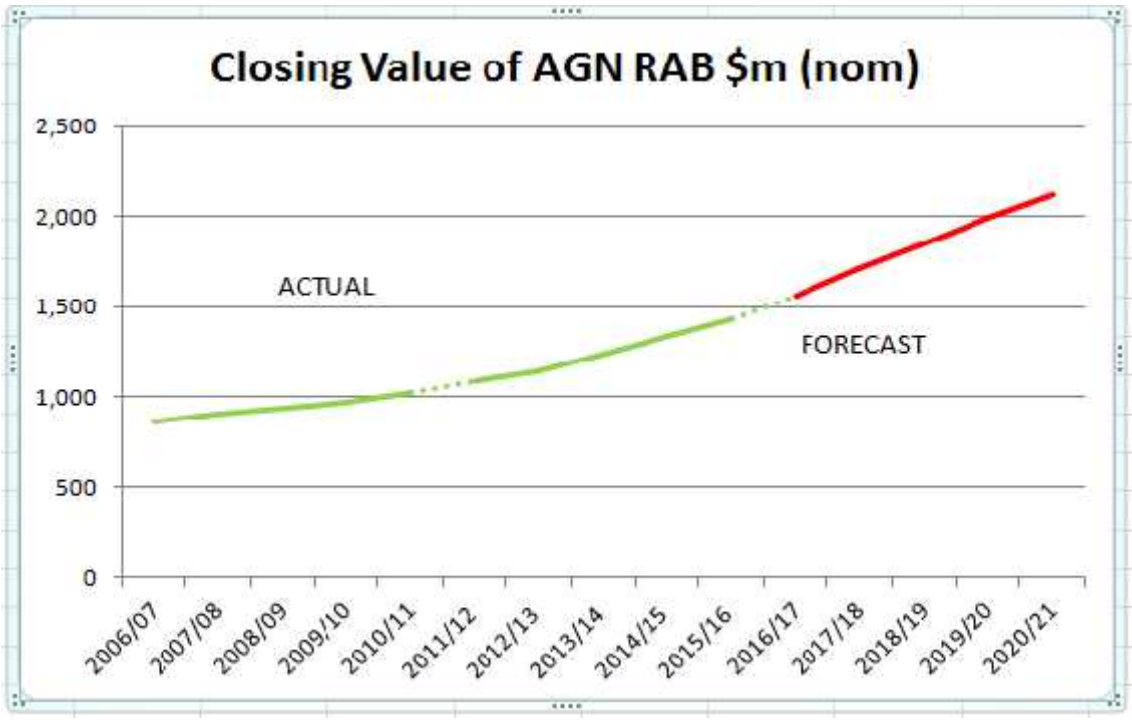
The AER can do this on the basis that they are basing their decisions on what the efficient and prudent benchmark entity would do to ensure its costs are efficient. If networks want to have different policies for overhead recovery and capitalisation that is their right but as consumers are effectively paying directly for what are efficient costs, networks should comply with what consumers want and need to ensure themselves that the costs they pay are efficient.

Imposition of a standard approach does not prevent the networks from having their own unique approaches to managing their business, but the costs for having a different approach would be a business expense and not one that consumers should have to pay.

2.9 Summary

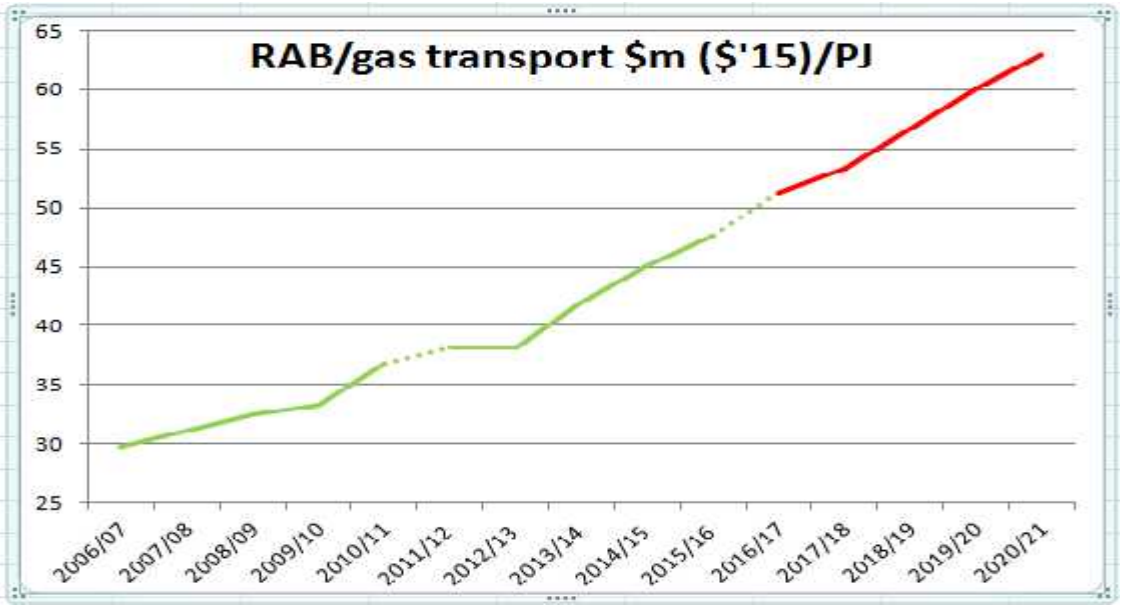
AGN has made a claim for a further massive increase in its capex for the next period after being granted a massive increase in the current period. That AGN did not use the increase granted for the current period raises concerns about the AGN approach to making what appear to be ambit claims and to the prior AER approaches to assessing capex needs. Based on the recent AER decisions relating to network regulation, the ECCSA considers that the AER has used new tools to assess ambit capex claims much more forensically.

The ECCSA is also very concerned that the amount of capex being claimed for AA2016 combined with the large investment program seen in AA2011, has the impact of driving the regulatory asset base (RAB) to more than double over a ten year period as the following chart shows



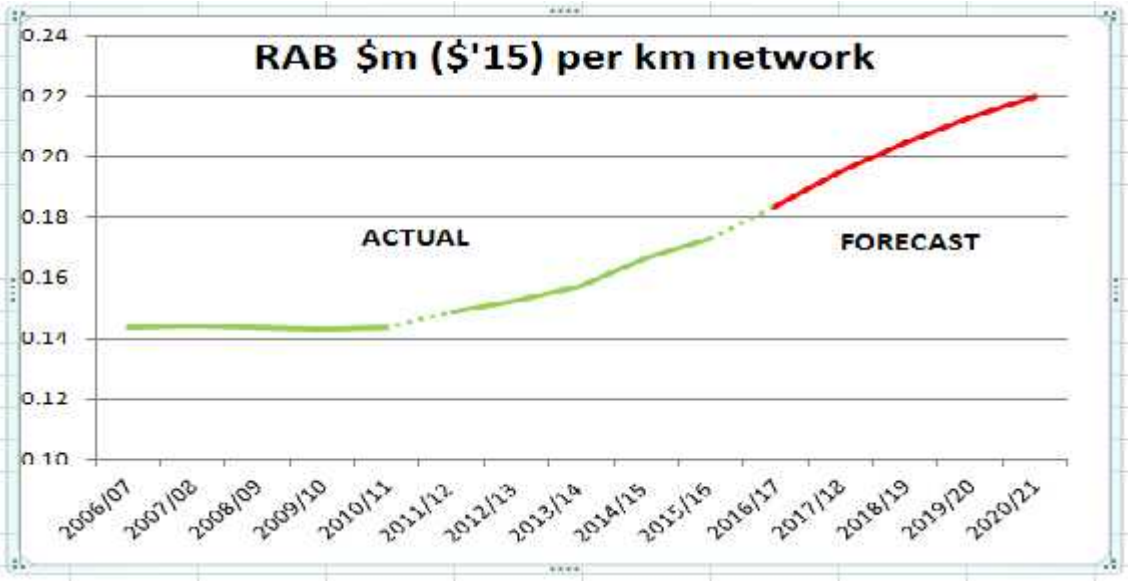
Source: AGN RIN

At the same period the amount of gas transported (volume of gas for residential and commercial plus the annualised MDQ for industrial consumers) has fallen considerably and the length of the network has only increased by only 13%. When the two issues are related (RAB and falling transport volumes) the difference becomes even more stark



Source: AGN RIN

The rate of increase in the RAB/transport capacity accelerated during the current period and is forecast to increase even faster in the next period. The overall impact of the amount of gas transport and the accelerating capex programs are leading to an outcome that is unsustainable. This view is also supported by a review of the RAB compared to the length of the network



Source: AGN RIN

The RAB in constant $ terms should reflect a relatively stable pricing yet what is seen is that the last five years has seen a step average increase of 15% and the forecast will see a further increase of nearly 35%, and an increase of nearly 50% over a decade. This increase in asset value when compared to the most relevant comparators shows an unsustainable capex program and one which is not in the long term interests of consumers..

The overall impact of the capex program in the current period and that forecast for the next period when seen in context clearly does not support the capex program proposed by AGN for the next period.

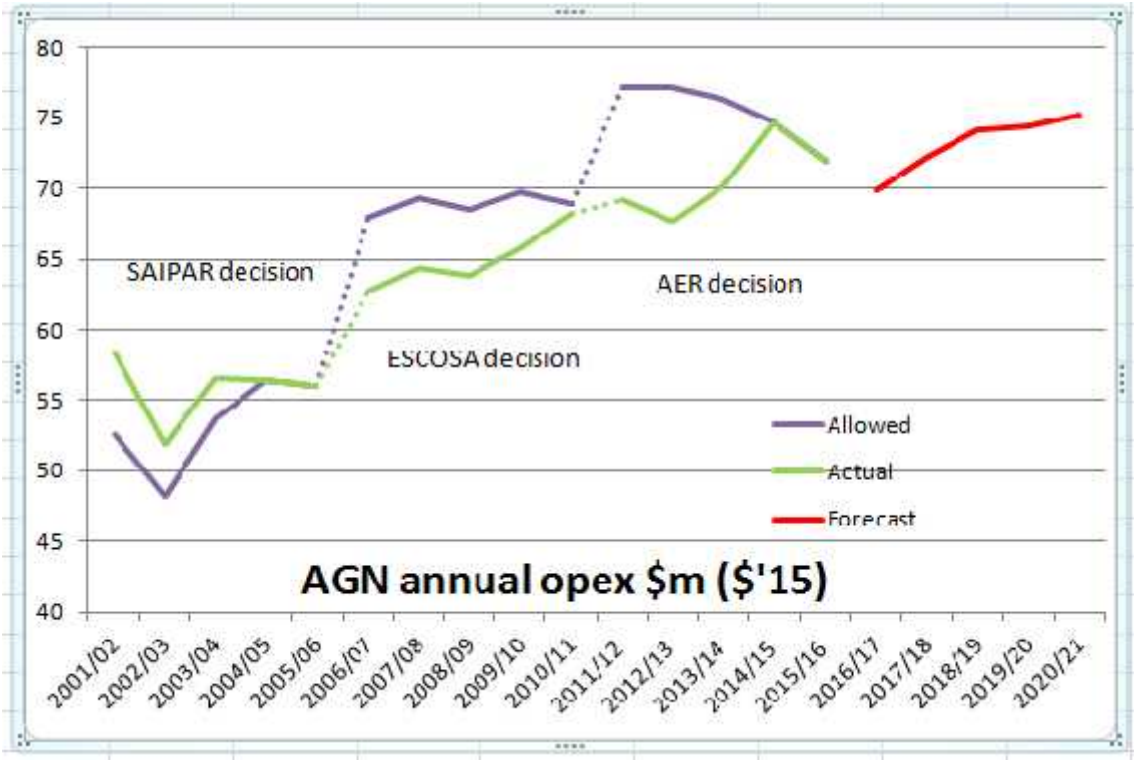
3. Forecast Operating Expenditure

The Gas Rules require opex to be prudent and efficient. Opex incentive programs, such as that applied to AGN by ESCoSA in the previous period and the AER in the current period, are intended to incentivise AGN to deliver prudent and efficient opex. However it is not all that clear whether the aims of the incentives are supported by the outcomes.

3.1 Overview of past and future opex

AGN has indicated that it is seeking much the same in average opex used in the current period for next period. What is important to note is that opex in the current period (in real terms) has increased much faster than the size of the network and does not reflect the benefits of the significant capex investments over the current period - such capex should have reduced UAFG and maintenance costs through replacement of mains, yet this is not apparent in the actual opex incurred.

The trend of AGN opex over the past three regulatory periods and as forecast is shown in the following chart.

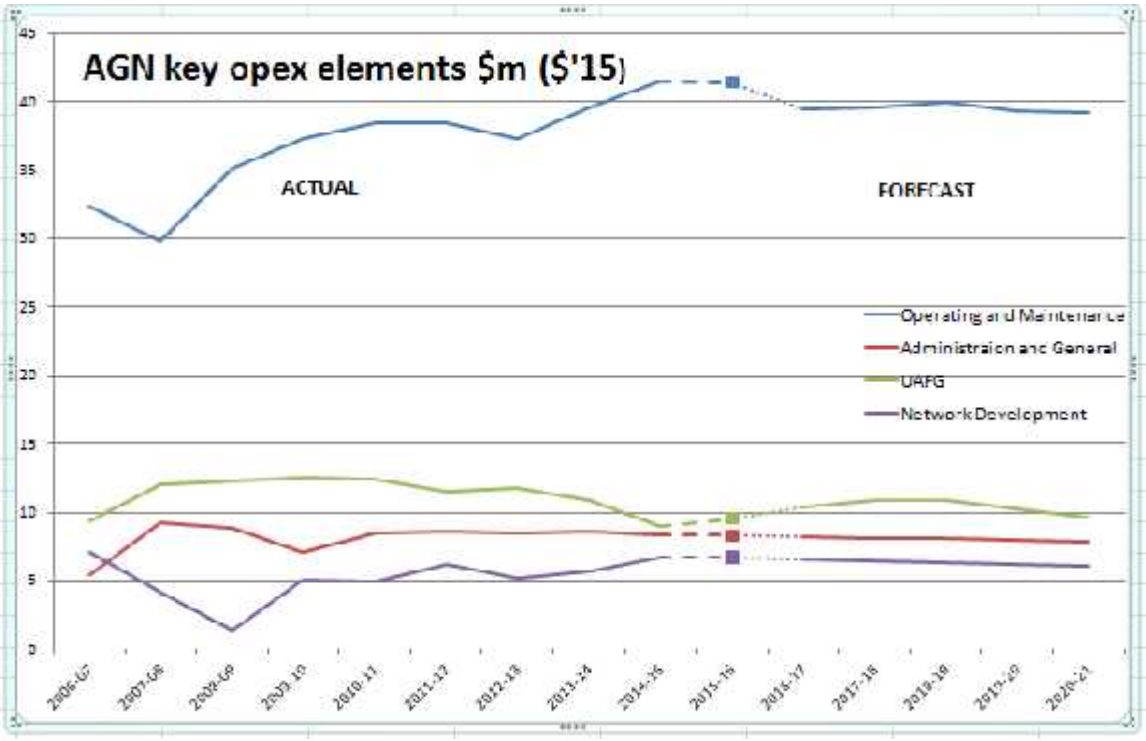


Source: AGN RIN, AGN proposal, ESCOSA decision, Envestra proposals

This chart shows that clearly SAIPAR was probably incorrect in its assessments for opex for the first regulatory period, although some of the mismatch was attributable to a need for increased opex due to management of

FRC. Overall, actual opex exceeded the allowances up to 2003/04 but since then, AGN/Envestra has consistently under run the opex allowance. Also important is that the past history of AGN/Envestra forecasts of opex have been much higher than the allowances granted, indicating that AGN/Envestra has a serial trend to over-forecast its opex needs. Regulatory decisions have provided much less opex than were claimed by AGN/Envestra as each regulator has reduced the claimed amounts but which AGN/Envestra even then was able to under-run. ECCSA highlighted this concern in the reset process for the current period (AA2011) but the AER decision was to increase the allowance from its draft decision to the final decision.

The breakdown of key cost elements is shown on the following chart



Source: AGN RIN

There is an overall increasing trend in operating and maintenance (O&M) costs. This shows that the main increase in the AGN opex lies with O&M costs because, in the current period and the forecast period, the ancillary services costs have been transferred out of the costs but were included in the period prior to the current period, as are the full retail contestability costs. Clearly there is a significant increase in costs from prior periods to the current period and this increase is not supported by the increased length of the network. This raises the concern that the current costs are not efficient.

However, it would seem that the O&M costs for the forecast period are in keeping with the revealed costs of the current period

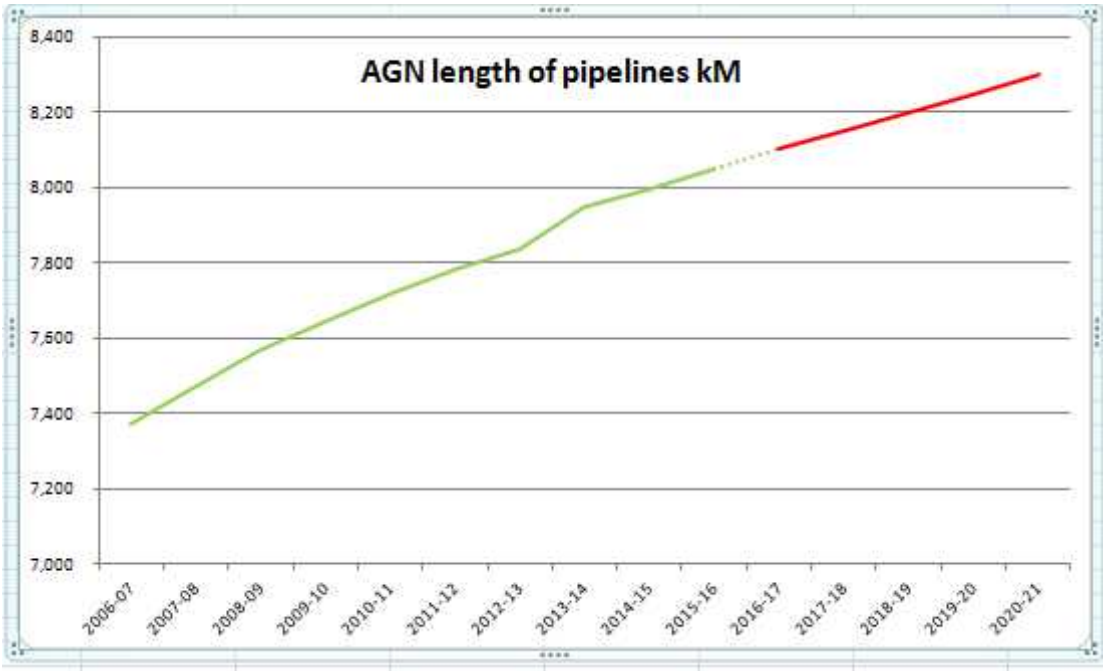
Overhead costs have been relatively constant but network development shows a small but consistent trend upward. UAFG costs are trending downwards in the current period but show an increase in the forecast period.

There is a further underlying concern in that AGN has a consistent bias to over-claiming its opex allowance and then under-running it. On past performance, it is a reasonable assumption that the claimed opex for the next period is overstated.

3.3 Benchmarking

What is also concerning is that AGN overall opex has increased (in constant terms) in the current and two previous periods. From AA2001 to AA206, opex increased by 16%, from AA2006 to AA2011 by 9% and AGN proposes a further 3% increase to AA2016.

Yet the length of pipelines has not increased at the same rate as can be seen from the following chart which shows that network length over the time since 2006/07 to the end of the next period will increase by about 13% whereas opex over the same period has grown by over 30%, despite significant capex to reduce opex.

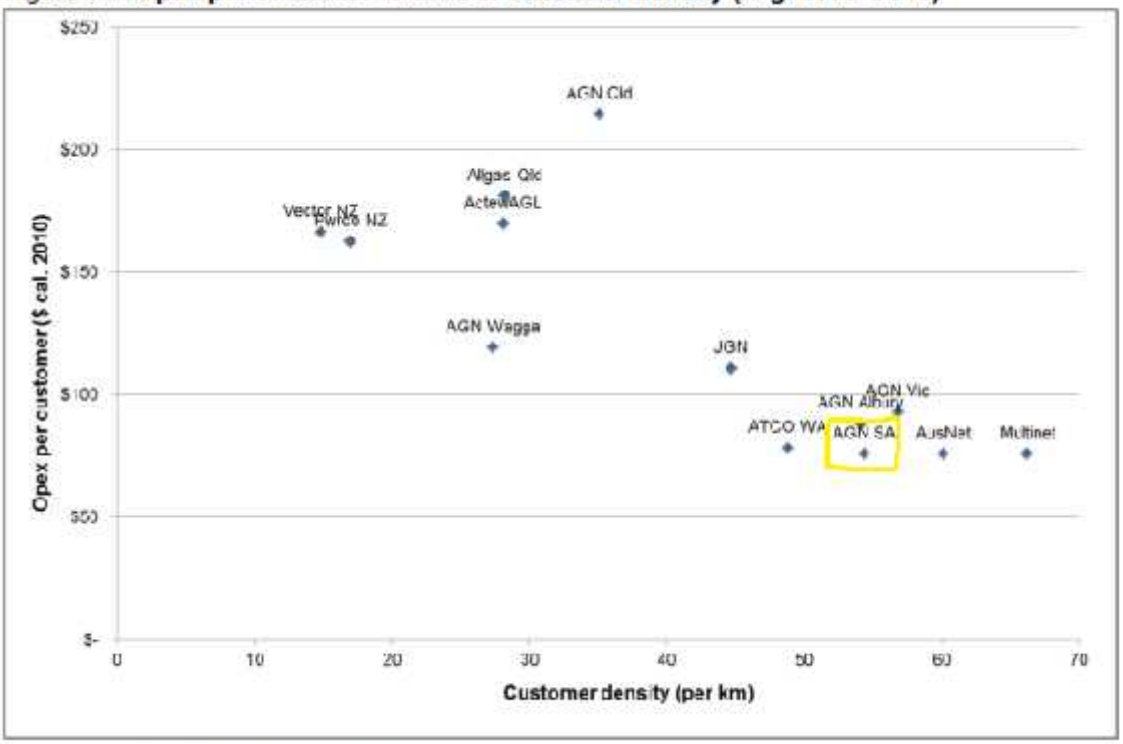


Source: AGN RIN

The length of the pipeline system increased from AA2006 to AA2011 by 5% (compared to opex increase of 9%). At least the claimed opex increase in AA2016 is much the same as the increase in pipeline length, implying that the claimed opex increase might be efficient.

Economics Insights has benchmarked AGN opex and provides the following chart to support a view that the current AGN opex might be efficient.

Figure 3.1: **Opex per customer relative to customer density (avg. 2009–2013)**



Source: Economic Insights gas utility database.

On a comparative basis, it would seem that the AGN opex is close to the efficient frontier and that the current costs (at least up to 2013) are efficient but what is concerning is that there is a significant increase in opex between 2009 and 2013 and the impact of the earlier lower costs would have influenced the average opex. Whilst the average opex for 2009-2013 would indicate that the AGN opex is efficient, this does not mean that the base year is efficient as the base year costs are set at $75m yet the average of the 2009-2013 years is $66m pa. This implies that the base year costs are high by some 14%.

3.4 Base year opex

ECCSA notes that the base year opex is adjusted by AGN to remove the management fee, the ancillary service costs, insurance and UAFG costs. These costs are added back in after the assessment of the expected costs for the next period (ie are assessed on a bottom up basis). Added back are the management fee ($5.5m pa down from $7m), ARS ($2.2m pa up from $2m), insurance $0.7m pa up from $0.5m) and UAFG ($11m pa up from $9m). In addition are added cost escalation and growth escalation. Also added is an allowance for some additional costs including step changes totalling $2m pa.

As noted above, the ECCSA is concerned that the upward trend in opex is not identified by AGN which would imply that the base year opex is not as efficient as is implied by the benchmarking. On this basis, the ECCSA considers that the base year costs derived from 2014/15 are not efficient and that perhaps a better base year is the costs incurred in 2013/14, which is the last year of the benchmarking work carried out by Economic Insights.

The ECCSA is also concerned that there has not been the significant reduction in the O&M costs during AA2011 that should have occurred as a result of the extensive capital investment into the cast iron mains replacement program. Not only should this program have reduced the amount of UAFG, it should have caused a significant reduction in the opex that would have been needed for attending the many gas leaks that AGN had postulated were occurring and was a reason for the program being implemented.

The ECCSA considers that the AER needs to investigate these issues in more depth.

3.5 Base year cost adjustments

The ECCSA has a number of concerns relating to the adjustments made to the base year costs to extrapolate this into the forecasts. These concerns are:

- The CI and UPS replacement program is scheduled to be finished during the next period and so there is expected a significant and further reduction in opex as leakage problems should further reduce. But there is no indication that AGN has reflected this lesser need for leakage/pipeline breakage attendance in its O&M forecast. The ECCSA considers that this is a major flaw in the forecast.
- There is no opex saving provided to reflect the benefit of replacement of the medium and high pressure HDPE mains or for the forecast IT programs and other capex projects stated as reducing costs as a benefit.
- UAFG. This is discussed in more detail below.
- Capex related opex
    - AGN has identified three projects that it wishes to implement, two of which are predicated on stakeholder engagement. As noted in section 1.5, ECCSA does not accept that the consumer engagement undertaken by AGN provides support for these projects.
    - AGN considers that its geo-spatial information system and mobility program will result in savings. Firstly, the ECCSA is not convinced that there are savings to consumers to outweigh the costs of the program (as there are opex and capex elements involved) and secondly, whether the benefits of the programs have in reality been embedded in the forecasts. ECCSA doubts this as the basis for the forecast is on the base year costs and the step changes do not include the savings, yet the costs for the

programs are added. At best, consumers might benefit from these programs in the period after the next, but equally, any savings in the next period will accrue to AGN through lower opex and the EBSS benefit. So, at best consumers would be paying three time for any benefit they might get - once now in AA2016, through paying for opex not needed in AA2016, in a bonus to AGN through the EBSS and from the capex needed to generate the savings. If AGN considers there is a benefit from these programs then it should pay for them out of the rewards it gets from lower opex and the EBSS benefit.

- One off projects
    - ECCSA makes its comments on the HDPE gas vents in section 2 above.
    - ECCSA does not consider that existing consumers should fund a FEED study which will benefit potential new consumers; the future consumers (if anyone) should pay for this as the beneficiaries of the study. AGN asserts that there is the potential for existing consumers to benefit if the work proceeds but ECCSA has concerns about this and discusses these in section 2 above. In practice, networks carry out their own studies for expansions and the costs are then rolled into the cost of the expansion. ECCSA comments about its views on stakeholder support for the work in section 1.5 above.
- Step changes
    - Risk management of the HDPE pipelines. ECCSA comments on this issue more in section 2 above, but is concerned that not only has AGN proposed a replacement program for the HDPE piping but also wants more opex as well to investigate the need. These two issues appear to be in conflict - why carry out monitoring and inspection if the decision has been made to replace? Further, ECCSA considers that this work is already embedded in the base year opex (ECCSA notes that AGN sought opex in the last review to carry out this task). AGN has highlighted an issue and proposed replacement so this means that the basis for the decision to replace reflects work has already been carried out to establish this fact. Therefore the work is not a step change but already in the base year opex
    - Inlet data capture and stakeholder education and advocacy. ECCSA considers that this is not a step change and the costs are already embedded in the base year opex. Further, ECCSA does not consider that stakeholder education and advocacy should be funded by consumers. At most, consumers should only fund activities that are of benefit to the consumers paying for the service. However, ECCSA considers that AGN good industry practice is where the service provider is active in engaging with consumers and that the rewards of this will accrue to AGN the better it carries out the task. ECCSA also questions why additional inlet data capture is a step change, as this information is already

collected. To implement better mapping is in the interests of AGN rather than to consumers.

ECCSA notes that the AER has recently developed a sound basis for implementing cost and growth escalation and the ECCSA accepts that the AER processes are sound and should be used in preference to the AGN approach.

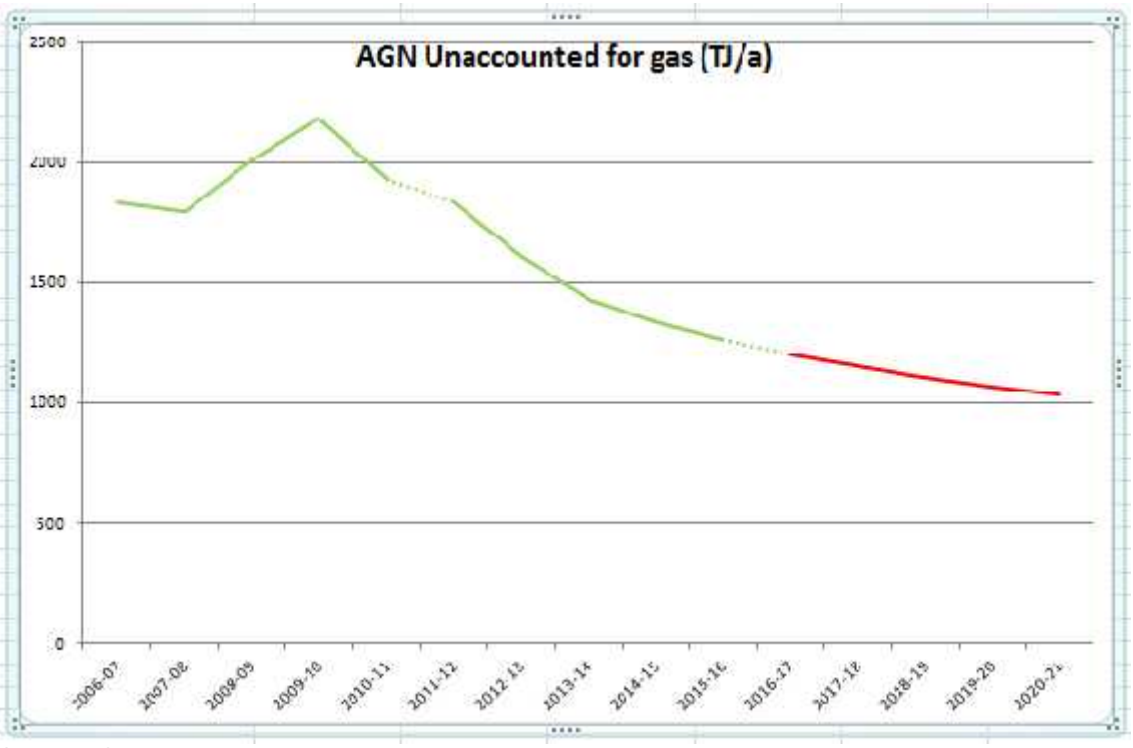
3.6 Network management fee

ECCSA accepts that APA is no longer a related party as it has sold its shareholding in AGN. This should have resulted in AGN seeking competitive quotations for the provision of the management services. However there is no indication that AGN has sought competitive pricing for the network services but has retained APA on the same basis as it did when APA was a shareholder.

ECCSA considers that AGN should have sought competitive prices for the network services (including the management fee) rather than continue with a negotiated service arrangement.

3.7 UAFG

AGN provides the following view of its unaccounted for gas and the projections for its size in the next period as a result of the capex programs it has in place. What is startling about the forecast is the relatively small amount of UAFG reduction in proportion to the amount of capex proposed to reduce it - effectively the ECCSA sees the UAFG reduction following the path of diminishing returns. ECCSA comments on the capex proposals are addressed in section 2.



Source: AGN RIN

The detailed analysis of the UAFG (attachment 7.3) is striking because of the amount of information not made publicly available and redacted. ECCSA finds it very difficult to comment on UAFG in the absence of useful information.

Notwithstanding the amount of data considered confidential, ECCSA notes that only 15% of the UAFG is attributed to losses from low pressure gas mains, although AGN increases this to 20% through the allocation of unknown UAFG. The implication of this correction is that 25% of the UAFG is from unknown causes and the allocation to mains leakage is arbitrary.

AGN asserts that the low pressure gas mains replacement program will result in a reduction of less than 280 TJ pa

> "…in theory, if the low pressure network is eliminated, UAFG should reduce by around 280TJ (but offset to some degree by high pressure leakage when the low pressure assets are replaced by high pressure assets)." [page 11 of attachment 7.3]

AGN comments also (attachment 7.3 pp 11 and 12) that there will be leakage from the high pressure mains as well but declines to state how much. But AGN also comments that the bulk of the leakage identified is from gas meters and not from the mains. Overall, AGN considers that by the end of the next period, UAFG will have plateaued.

AGN has asserted that the large capex program that it has undertaken is directly related to the amount of leakage reduction from gas mains, yet it is

apparent that much of the UAFG is not from gas mains but from other sources such as[8]

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

As AGN redacted the actual breakdown of the different sources from the report from its consultant, ECCSA cannot carry out any analysis yet it remains concerned that the many causes for UAFG (other than mains leakage) are within the control of AGN. The AER should undertake analysis to identify if the gas from the other sources is typical across all gas networks - effectively benchmarking the UAFG from sources other than gas main leakage.

Utilising the data in the AGN RIN and the proposed costs for UAFG implies that AGN considers that the price for gas needed for UAFG will range from $8.71/GJ in 2016/17 to $10.43/GJ in 2020/21 (in $'15). Based on gas prices received by ECCSA members, these costs seem to be significantly inflated. Further, assuming that the price for gas on the east coast is supposed to reflect international prices, the net back price for gas based on northern Asia spot prices and forecasts, supports the ECCSA view that AGN has overstated the price for UAFG.

As the amounts required for UAFG are so high, ECCSA considers the AER needs to carry out an in-depth investigation of both the amount of UAFG, the approaches to mitigate the losses and the price.

ECCSA notes that AGN recommends that the cost of UAFG should be removed from the network and be allocated to retailers as occurs in Victoria, with AGN providing advice as to the amount of gas that has been "lost" to the retailers. The ECCSA is not convinced of this approach as it removes from AGN the incentive to minimise the amount of UAFG. If the AER is inclined to consider the approach in more depth, ECCSA considers that there needs to be wide consumer consultation before implementing any change.

[8] AGN attachment 7.3 page 7

3.8 Summary of the ECCSA view on AGN opex

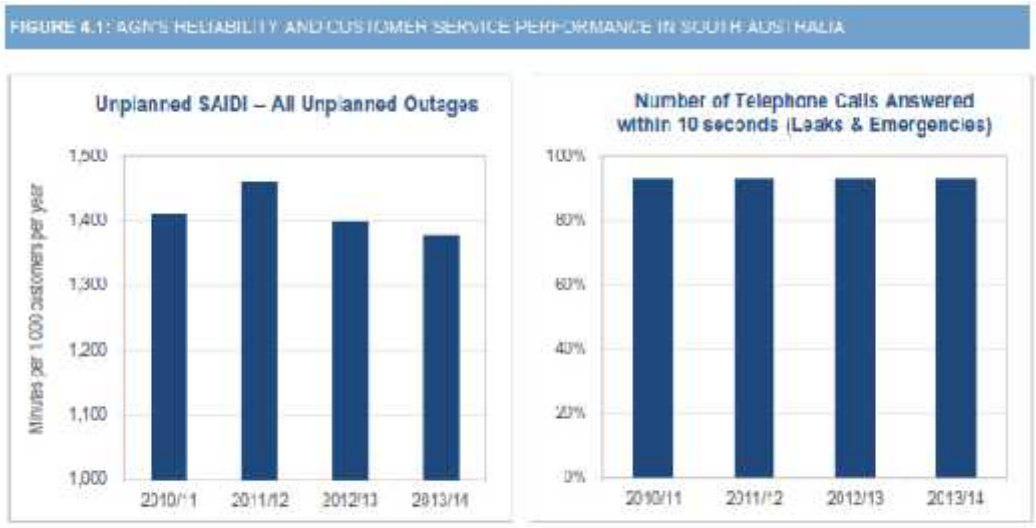
The ECCSA considers that the base year opex should be applied using 2013/14 as the base year and opex only increased for actual step changes such as real changes to the operating environment that affect AGN post the base year.

The ECCSA has provided its views as to what step changes should be to increase the base opex level, and suggests that a close examination of the UAFG claims and costs is needed.

4. Service Performance Targets and incentives

AGN advises that the service performance for its network is a high standard. It advises:

> "AGN's strong network reliability and customer service performance is shown in Figure 4.1. The System Average Interruption Duration Index (SAIDI), which measures average minutes lost per 1,000 customers, has been declining over the past four years. Our SAIDI performance is consistent with good industry practice. The number of telephone calls relating to leaks and emergencies responded to within 10 seconds has been maintained at high levels.



Note: The System Average Interruption Duration Index (SAIDI) is calculated as (Total customer hours interrupted multiplied by 60) divided by (Total number of customers per 1,000) and in Figure 4.1 includes all unplanned outages.

Despite these high level assurances, AGN does not provide (and seems to oppose) the application of set targets of network performance combined with a bonus/penalty arrangement such as a STPIS used in other energy transport operations. A STPIS is intended to ensure that the regulatory bargain between service providers and consumers is maintained and improved.

The ECCSA considers that it is insufficient that there be no defined service performance standards explicitly set so that consumers can see what service performance is provided for the price set by the regulation of the monopoly service provider.

As with the electricity networks, AGN and the AER should establish and maintain certain technical service standards for the funds provided.

The ECCSA is aware that the NGR does not specifically stipulate service target performance scheme but ECCSA does note that there is an implicit requirement to provide a service that balances the regulatory bargain. AGN advises that it already provides certain service performance indicators and

these should be made clear to all consumers so they can see what they get for the regulatory bargain they, essentially, have entered into. Whilst a STPIS cannot be established without AGN proposing such a scheme, the AER can require AGN to measure its service performance and to make such information publicly available on a continuing basis. Then, at each regulatory review, the annual performance as demonstrated by these measurements provided by AGN can be used to advise, and perhaps influence, the decision processes at the next regulatory review.

AGN does however propose an incentive to address customer service which it asserts has support from customers identified through its customer engagement process. It proposes that 1% of its revenue should be "at risk" addressing telephone responsiveness (leaks and emergency), telephone responsiveness (general enquiries) and numbers of complaints, The ECCSA notes that these are usually a subsection of a STPIS related to guaranteed services levels (GSL). AGN proposes to introduce such a GSL scheme commencing 1 July 2017.

ECCSA does not consider that 1% of revenue be at risk for a GSL scheme alone but that a full STPIS addressing SAIDI, SAIFI and GSL could well address such a large element of revenue at risk.

ECCSA notes that AGN accepts an opex efficiency scheme (continuing the current Efficient Benefit Sharing Scheme (EBSS) and the introduction of a Capital Efficiency Sharing Scheme (CESS). The ECCSA supports such incentive schemes.

However, ECCSA also notes that AGN desires to moderate both the EBSS and CESS. The ECCSA does not support this. ECCSA sees that the EBSS, CESS and STPIS are all designed to provide a suite of balancing incentives and any changes to these schemes will lead to an "out-of-balancing" of the complementary nature of the schemes and their essential inter-relationships. The ECCSA considers that any variation to the schemes away from the guidelines developed by the AER during the Better Regulation program would be a retrograde step. If AGN can demonstrate that its proposals provide a better outcomes for consumers (recognising that the National Gas Objective (NGO) is crafted in terms of the long term interests of consumers) then this benefit needs top be clearly identified and how the change in balance of each scheme will be maintained by proposing countervailing adjustments to the other schemes.

In the absence of such clarity and re-balancing, the ECCSA does not support any deviation from the incentives as detailed in the AER guidelines.

5. Cost of capital, allowed revenue and tariffs

5.1 Policy Background

While the NEO and the NGO require the regulator to make its determinations in accordance with the long-term interests of consumers, the view at the time of the last reset was that the priority in achieving this objective was by promoting investment to meet the expected growth in electricity and gas demand.

The earlier regulatory decisions achieved this aim to promote investment in the electricity and gas networks. What they did not do, however, was to promote efficient and prudent investment. Energy network companies (including AGN) were allowed very large increases in capex and opex to fund excessive growth plans that were, in many cases, beyond the capability of the network to deliver. In effect, consumers funded many programs that were never delivered and, in many cases never required as the forecast growth never eventuated.

Moreover these expenditures were approved just around the peak of the GFC, which meant that they were approved at a time when the cost of capital was at its peak, and when many other businesses were placing strict controls on their capital programs.

Under the regulatory regime set out in the NER and NGR, these costs of capital were held constant over the 5-year regulatory period, despite the rapid decline in funding costs. Any network with a reasonably capable capital management program has been able to make profits well in excess of those expected and irrespective of any improvements in the efficiency of the business itself.

For example, for AA2011, AGN was allowed a cost of capital (that applied for the whole 5 year period) of 9.77%. This represented the weighted average of the cost of equity of 10.36%, and cost of debt of 9.37%.

However, by 2012-13, Envestra (now AGN) reported an **average interest rate** of 6.2% for all its businesses. The figures for 2013-14 were lower again at 5.7%[9]

That suggests that by 2013-14 there was a difference of over 400 basis points between the allowed cost of debt and the actual cost of debt for the AGN distribution businesses

Any network with a reasonably capable capital management program, such as AGN, has been able to make profits well in excess of those expected just from the changes in the capital market and irrespective of any improvements in the efficiency of the business itself.

[9] Envestra annual reports - cost of borrowings over borrowings

It is frustrating to consumers, that the decisions of the Australian Competition Tribunal (the Tribunal) have exacerbated this outcome through the overturning of the AER decisions on the basis of analysis of different fair value curves for commercial bonds.

More generally, the rate of return parameters have been a common theme of the many appeals to the Tribunal. It has been estimated that between 2006 and 2013, the regulated electricity and gas networks received some $3.3billion dollars of additional revenue as a result of their appeals to the Tribunal of which 85 per cent related to the elements of the WACC or the value of imputation credits.

Consumers bore not only the revenue increases of $3.3B resulting from the successful appeals of various NSPs, but also (indirectly) the costs of the appeals themselves, whether successful or unsuccessful - a 'double whammy' for consumers and a 'no risk' strategy for networks[10].

The emphasis on efficiency and prudency in investment is particularly important in the context of declining demand for and consumption of gas and electricity. There is no scope in an environment of declining demand and excess capacity for a need of an 'incentive' level rate of return to apply. The only outcome of the 'conservative' approach (i.e. consistently selecting the higher points in a range of possible approaches/outcomes) is an acceleration of price rises as demand declines more rapidly and fewer users pay more and more for the excess capacity and services they don't need or use.

5.2 Regulatory requirements & the RoR Guidelines

The most immediate requirement for the regulator in implementing the changes to the NGL (and NEL) is to set an allowed rate of return that achieves the rate of return objective (RoR objective). The RoR objective states) that:[11]

> "The allowed rate of return objective is that rate of return for a service provider is to be commensurate with the **efficient financing costs** of a **benchmark efficient entity** with a **similar degree of risk** as that which applies to the service provider in respect of the provision of reference services." [ECCSA emphasis].

[10] The ECCSA hopes that the December 2013 amendments to the NEL and NGL go some way to addressing the issues with the Tribunal's approach by limiting the grounds for appeal and introducing the concept of a 'preferable decision', that takes into account the overall impact of a decision on the long-term interests of consumers. The focus on a preferable decision means the Tribunal should be better placed to judge whether the AER's rate of return determination as a whole finds a better balance between the interests of consumers and investors, encouraging prudent and efficient capital management and investment rather than excessive profits and over-investment.

[11] NGR, Rule 87 (3). There is an equivalent definition in the NER.

Importantly, while focused on the efficient financing of the efficient benchmark entity, the rate of return objective sits within a hierarchy of objectives, with the NGO at the apex. It also reinforces the principle that the assessment of relative risk is central to the analysis.

Fortunately, the amendments to the NER and NGR, which are principle based rather than determinative, reinforce this. That is, the amendments give the AER clear direction to use its discretion to select the best approach (within certain 'givens' such as the use of the weighted average cost of capital) that best achieves the rate of return objective.

The AER's RoR Guideline[12] was developed following an extensive consultation program with all stakeholders and various economic and financing experts. It establishes a coherent framework for the AER to apply when determining the rate of return that best achieves the objectives.

Importantly, in the process of developing the RoR Guideline, the AER was able to consider many different "estimation methods, financial models, market data and other evidence". In this way, the Guideline development process satisfied the requirement under the NER and NGR to consider various methodologies.[13]

The rules do not, however, require the AER to include any and all options in the final RoR Guideline, although this seems to be suggested by AGN and other NSPs. The RoR Guideline represents the final reasoning and conclusions of the AER about the best way to determine the RoR, taking into account the information available.

In particular, the NGR states that the RoR Guideline:

> "…must to set out the estimation methods, financial models, market data and other evidence the **AER proposes to take into account**…" [ECCSA emphasis].

The clear implication of the wording is that the AER has complete discretion to include in the final RoR Guideline only those approaches that it believes are relevant to achieving the rate of return objective. While it may include other approaches at some point, having developed the RoR Guideline, the AER is not obliged to consider all and every approach that sits outside the Guideline that a network might include in their proposal. Indeed if the AER did so, it would need to explain to stakeholders its reasons for departing from the RoR Guideline.

The ECCSA is, therefore, most concerned that the AER stays consistent with their RoR Guidelines whatever variations on the theme of assessing the return

---

[12] AER, *Better Regulation, Rate of Return Guideline*, December, 2013 and accompanying document, AER, *Better Regulation, Rate of Return Guideline Explanatory Statement*, December, 2013.

[13] NGR, Rule 87, (5) (a). Under this Rule, the AER in determining the allowed rate of return, regard must be had to: (a) relevant estimation methods, financial models, market data and other evidence…".

on equity or return on debt is put to them,. To the extent the AER does not apply its Guideline, consumers expect a very clear explanation of why it does not and why the change better reflects the intent of the Rules.

In saying this, the ECCSA would not wish to detract from the AER's exercise of its discretion. The RoR Guidelines, for instance, provide scope for the exercise of its discretion in selecting the market risk premium or in selecting a point within a range of outcomes for a particular determination. Similarly, the Rules allow the AER to make a decision that is not in accordance with the RoR Guideline, providing it provides reasons for this.

However, the ECCSA contends there is little value in having the open, transparent consultation process to develop the RoR Guideline, if changes to the RoR Guideline approach are adopted by the AER (including changes arising from the NSPs' proposals) without a similarly open and transparent consultation with consumers and a demonstration of how this change better achieves the rate of return objective and the NGO.

In the ECCSA's view, the RoR Guideline is not perfect; for instance, it does not go far enough to ensure that the current excess profits of the networks are reduced to a level that is commensurate businesses of similar level of risk. Nevertheless, there is great value in the certainty that the RoR Guidelines will provide over the next two or so years.[14]

This is why the ECCSA places such a strong emphasis on all stakeholders accepting the framework and criteria set out by the AER in the Rate of Return Guidelines (RoR Guideline).

And, this is why the ECCSA is utterly opposed to networks cherry picking parts of the RoR Guideline that appear to suit their interests while proposing alternatives in other parts that result in a higher rate of return. This will lead to asymmetric outcomes that are in favour of the network interests rather than a proper balance between investor and consumer interests.

Indeed, in the NGL the Revenue and Pricing Principles (RPP) specifically emphasise the importance of this balance, rather than asymmetric outcomes. The RPP states, for instance, that:[15]

- "regard should be had to the economic costs and risks of the potential for under or over investment; and

- regard should be had to the economic costs and risks of the potential for under and over utilisation of a pipeline."

[14] The RoR Guideline must be reviewed every three years, implying that a new RoR Guideline must be published by December 2016.
[15] NGL, Part 3, Division 2, 24 (6) and (7).

In other words, in addition to the NGO and the rate of return objective, the RPP direct the AER to make a balanced assessment of the costs and risks. A cherry picking approach will not result in that outcome.

The RoR Guideline provides an integrated set of parameters that cannot be looked at and selected in isolation from the other parameters. However, as noted above, this is not to deny the right of the AER to use its discretion to select values within the Guideline framework on the basis of current market data (for instance). Indeed, the ECCSA would encourage the AER to do so, as models alone will not provide the final point estimate for the AER's determination.

5.3 AGN's proposal for the RoR.

AGN has provided a detailed submission on the assessment of the rate of return. In some instances, it has adopted the RoR Guideline approaches and parameters. In others, it has not. On some occasions it has proposed detailed alternative methodologies which it claims better achieve the letter of the rules (as distinct from the intent of the rules[16]).

However, the ECCSA considers that the role of the AER is a proactive one under the new rules. Its role is to implement its Guidelines unless the network service provider (NSP) can demonstrate that the Guideline does not allow the NSP, operating prudently and efficiently, and with an efficient financing strategy, to reasonably achieve the RoR objective and the NGO.

If alternatives have merit, then they may become part of the debate for the review of the RoR Guideline in 2016. However, in the main, AGN proposed alternatives should be put aside as they are either:

- options that have been reasonably canvassed during the development of the RoR Guideline (albeit there may be additional arguments attached to them) in which case they should be put aside; or

- new approaches (or substantially new), in which case they should be put aside for the current round of determinations as they have not been subject to the required levels of consultation with other stakeholders.

AGN's proposal demonstrates both these features, while also selectively adopting the RoR parameters.

[16] ECCSA notes that where discretion is allowed, it is the intent of the rules that drives the approach to fulfilling the rule

AGN proposes an overall nominal vanilla WACC of 7.23%. AGN claims this is required to achieve the pricing principles and promotes the NGO. What AGN does not explain why its proposal to vary from the AER guideline is in the long term interests of consumers.

The 7.23% is derived using the overall rate of return structure set out in Rule 87 (4)(a) and 4(b). In particular, AGN varies from the AER guideline by using:

- Credit rating of BBB rather than BBB+
- Market risk premium of 8.23 rather than 6.50[17]
- Equity beta of 0.82 rather than 0.70[18]
- Gamma of 0.25 rather than 0.5[19]
- The debt risk premium being increased by 27 bp to allow for a "new issue premium"
- Varying the transition process for debt conversion to incorporate high interests rates that applied in the 2008-2009 period

The ECCSA has issues with the following aspects of AGN's proposal, and these issues are largely independent of the RoR Guideline approach:

- the proposal by AGN to adopt a BBB credit rating for the benchmark gas distribution business;
- the inclusion of the Fama-French model in the assessment;
- overall methodology used to calculate the return on equity;
- the calculation of the equity beta;
- the methodology used to calculate the return on debt and the annual updating of debt; and
- the assessment of gamma.

These issues will be examined in further detail in sections 5.4 to 5.6 below.

However, it is most important to note that some of AGN's proposed methodologies are quite detailed and complex. It is not possible to provide a detailed response to these in the time available for submissions.

The ECCSA therefore wants to state quite clearly, that the lack of commentary on some aspects of AGN's proposal does **not imply agreement** with them. In

[17] ECCSA considers this should 6.25 to eliminate AER conservatism
[18] ECCSA considers that this should be 0.55 to eliminate AER conservatism
[19] ECCSA notes that the AER has subsequently moved to gamma being 0.40

fact, as a matter of principle, ECCSA does not support a change from the AER guideline unless it expressly states this. Further analysis is required by the AER and much greater consultation with consumers on the proposal is also essential.

Given the departures from the RoR Guideline that are identified, the AER must decide whether it accepts the proposed variation (and if so, why) or rejects the proposals. Its principal criterion is to assess whether the proposals better achieve the rate of return objective, and more generally, the NGO.

Whilst ECCSA does not agree with the AER RoR guideline in all facets (such as market risk premium, equity beta, gearing, etc) it is prepared to accept the guideline as it is based on a sound approach to addressing the discretion the rules it has to work with.

AGN states that its proposed methodology better achieves the rate of return objective than the AER's RoR Guideline.

AGN's central argument for this statement appears to be that the RoR Guideline will not allow AGN to recover its efficient costs of capital. If it cannot recover its efficient costs of capital then it cannot provide the investment needed to achieve the NGO. Therefore, the AER is obliged to adopt AGN's proposal in order to ensure the rate of return objective and the NGO are achieved.

AGN also argues their approach is more consistent with the NGL revenue and pricing principles (RPP) which state that a network must be provided with a "reasonable opportunity to recover at least the efficient costs incurred in providing the reference services and complying with any regulatory obligations"[20] and "allow a return commensurate with the regulatory and commercial risks involved in providing the service…."[21]

The answer to AGN's claim that the AER's RoR Guideline will not allow them to recover efficient costs is both theoretical and empirical. From a theoretical perspective, the ECCSA would argue the following:

- AGN is selective in its approach, especially in the weightings applied to each of the models its proposes should be used.

- When arguing for other parameters, such as the equity beta and overall return on equity, AGN proposes using selected international data to establish the best parameters for a gas utility operating in Australia. Such an approach and weighting of data is quite arbitrary when there is adequate data to draw conclusions just from the Australian data. If international data is to be used, then it should reflect a wider church of

[20] NGL, Part 3, Division 2, 24 (2)
[21] Ibid, 24 (5).

data sources than is used by AGN and a detailed explanation provided on why it has selected the weightings for the data it uses.

- The AER's approach to selecting some parameters or point estimates under the RoR Guideline is already conservative when compared to the reality of the network businesses. For instance, the AER has adopted the following positions:

    - the beta value of 0.7 is selected at the top of the range of the empirically observed range of 0.4 – 0.7 ;
    - the market risk premium of 6.5 is at the higher end of the observed range (being 5.5 to 7.0);
    - the credit rating of BBB+, however, the reference bonds are in the range of BBB+ to BBB-
    - the assumed debt tenor is 10-years, when in fact the observed debt tenor is closer to 7-8 years;
    - the assumption that the debt is raised in the Australian bond market when in fact the networks raise much of their debt from overseas (or through parent companies) at lower rates;
    - the assumption of a 'stand-alone' gas network for a specific region, even though that is never the case.

From an empirical perspective, the facts on the ground do not support a case that AGN will not recover its actual costs of capital under the RoR Guideline. This can be identified from the Annual Reports released by Envestra in previous years. Further, even after the AER guideline was released, the recent sale of Envestra resulted in a premium of some 1.5 times the regulated assets base, implying that the purchaser was confident that the rate of return guideline provided an adequate rate of return.

In citing this type of data, the ECCSA is not saying it is determinative. The ECCSA understands that the NGR requires the AER to consider a 'benchmark firm' not a specific firm. However, the ECCSA would strongly argue that market data such as that provided above (but not limited to) is relevant to the following aspects of the AER's decision-making:

- the exercise of regulatory discretion; and

- challenging the DNSPs with respect to their claims about recovery of efficient costs and a return commensurate with the risks faced.

The AGN approach is a mix of addressing the RoR in terms of the benchmark network firm (such as when using the AER guideline parameters) and its specific desires. When compounding AGN's arguments with its specific cost of capital outcomes, there is a clear mismatch in the AGN approach to this issue.

The discussion above is focused on some of the general issues with the rate of return assessment. The following sections discuss particular aspects of AGN's proposal.

As noted previously, however, AGN has included some detailed proposals about the calculation of some of the parameters. It is not possible within the resource constraints of this submission to provide a detailed response to all of these[22]. The ECCSA's position is that they all represent a departure from the RoR Guideline. To the extent the AER believes they are worth further consideration, then it is appropriate that the AER and/or AGN conduct a much wider consultation process on them.

5.4 Assessment of AGN's proposal for the Cost of Equity

There are three areas of concern the ECCSA specifically raises although all are interrelated. They are AGN's credit rating, the overall approach to assessing the cost of equity and the assessment of the equity beta.

5.4.1: The overall approach to assessing the cost of equity

> The NGR requires that the return on equity must be estimated such that it contributes to the *allowed rate of return objective* and that, in estimating the return on equity, regard must be had to the *prevailing conditions in the market for equity funds*.[23] The emphasis in the return on equity under the rules is, therefore, on establishing a forward-looking estimate of the return on equity
>
> After extensive consultation with all stakeholders during the Better Regulation program, the AER concluded that the return on equity objectives were best met in the manner set out in the RoR Guidelines, namely:
>
> - Use the Sharpe-Lintner CAPM model (S-L CAPM) as the "foundation" model on the basis that it best met the ex ante criteria.
>
> - Take into account other modelling outputs and data sources, with weightings attached according to how each scores on the initial criteria.

[22] However, ECCSA is aware of the comprehensive response to the AER from its Consumer Challenge Panel advice addressing the same issues with regard to the Victorian electricity DNSPs proposals on rate of return which have many features in common with the AGN proposal

[23] NGR, rule 87 (6) & (7).

- These other modelling outputs that were selected to form part of the final point estimate decision by the AER included:

    - Dividend growth model (DGM);
    - Wright CAPM;
    - Black CAPM;
    - Market data/valuation reports and the like

The ECCSA agrees with the general approach set out in the RoR Guideline. However, the ECCSA would also note that given many NSPs, including AGN, have responded by proposing significant variations from the Guideline, it is appropriate for the AER to put somewhat more weight on actual market data and business outcomes.

This perhaps provides a better check on the AER's approach than the endless debates about the finer details of which models, which assumptions, which period of analysis and so on. There is distinct merit in a common sense check using real world market data.

The ECCSA also agrees with the AER rejecting in its RoR Guideline the use of the Fama–French model and the associated proposal by the networks to use multiple models to assess the outcomes then weighting these models to arrive at a point estimate. These issues are discussed below.

5.4.1.1 Use of the Fama-French model

In addition to the AER's very extensive arguments for these positions,[24] the ECCSA would add the following:

- The Fama-French approach may have some additional explanatory power (compared to the S-L CAPM) when assessing particular stocks or investments. However, there is still little precedent in its use in regulatory settings.

    The ECCSA rejects the option that consumers should be 'experimented on' by the introduction of a new (from a regulatory perspective) approach. This is particularly the case when the model is still subject to dispute with respect to its most appropriate formulation (e.g. three factors versus four or five factors, include momentum or not, whether to decompose and value weight etc).

    The proponents of Fama-French need to establish that it satisfies the criteria set out in the RoR Guideline. It needs to be transparent, produce reliable and repeatable results and be validated against historical outcomes for regulated entities.

[24] See AER, Explanatory statement to rate of return guideline, Appendix A.4, pp 18-23.

- In contrast, the ECCSA understands that there are still disputes about the appropriate variant of the Fama-French model to apply and when, the relevant coefficients in the Fama-French model are unstable, the outcomes of the model are dependent on a suite of input assumptions and there are many other arbitrary decisions in terms of size, value and momentum (if that is included as a 4 factor model).

- Moreover, the research into its application outside of the US is limited. Although Fama-French provides coefficients for non-US regions (although not Australia specifically), there is a lack of independent testing of these coefficients.

  For example, in order to provide coefficients for the Fama-French parameters to AGN's modelling, SFG appears to have combined Australian and US data, using the same set of data as they assessed the equity beta under the CAPM. The ECCSA does not consider this is a valid approach to defining model parameters for a regulated Australian business (see also section 5.4.2).

  In addition, in a 2012 paper in the UK, having reviewed the literature on the application of the Fama-French model in the UK, the paper states that:

  > "Their [Fama & French (2011)] results provide evidence that asset pricing is not integrated across regions"[25].

  It also notes that Fama and French (2011) observe that:

  > "…smaller stocks are particularly challenging to price".[26]

  The authors then note "the absence of evidence that there exists a reliable and robust model for the UK, therefore leaves researchers and managers in a difficult position".[27]

  While the authors then go on to develop a more robust construction of the Fama- French model, the constructions of the model become increasingly complex with increasing number of assumptions, including the exclusion of small firms (the additional analysis is restricted to the top 350 listed firms in the UK).

[25] Alan Gregory, Rajesh Tharyan and Angela Christidis, *Constructing and Testing Alternative Versions of the Fama-French and Carhart Models in the UK*, Journal of Business Finance & Accounting, 40(1) & (2), January/February 2013, p 172.
[26] Ibid, 207.
[27] Ibid, p 173.

AGN's submission has drawn from results of an SFG study which provided coefficients for two additional factors, namely size and value. It is notable, however, that the SFG study appears to derive these factors from an averaging of results that are dominated by a US sample of firms, with a much smaller sample of Australian regulated firms.[28]

This is the same sample that SFG used in assessing the equity beta under the CAPM model, and a number of the limitations of this are discussed in section 5.4.2.

It is, therefore, not clear the extent to which this model is applicable to Australia. As noted in the UK study referred to above, it can be concluded from the Fama and French 2011 study that:

> "Their results [of the Fama and French study] provide evidence that asset pricing is not integrated across regions" and conclude that country-level models will perform better".[29]

If this is the case, or even a possibility, there is no validity in merging Australian and US results to form a larger sample, with better statistical characteristics but less validity in the coefficients.

The growing complexity needed to try and make the Fama-French model deliver consistency and reliable outcomes is in stark contrast to the level of reliance given it by AGN and its consultant.

- The networks, including AGN, have much derided the AER applying the criterion of "simplicity", despite parsimony being a well-established principle in scientific research (Occam's Razor). The complexity of the Fama-French model, particularly in its evolutionary stages, in fact supports the importance of the AER's criterion for simplicity as this also allows the wider stakeholder cohort to understand what is being proposed and why.

- Using US data to support the case is not satisfactory to the ECCSA. Consumers have the right to object to prices being set by reference to this model until and unless, its foundations and application in the Australian context are much better understood.

[28] See SFG Consulting, Regression-based estimates of risk parameters for the benchmark firm, May 2014.
[29] Alan Gregory et al, op cit, p 172-173.

5.4.1.2: The Multi-Model model of cost of equity

AGN, along with other networks, is proposing a multi-model approach to the assessment of the cost of equity as a whole.

Variations of this approach were put forward during the Better Regulation process and were rejected by the AER and consumer representatives. The question that was often put, but was never satisfactorily addressed by the networks, related to how and on what basis the results of the different models (and they do produce quite different outcomes) can be combined to a point estimate. Who makes this determination and how will it be carried forward over time were also key questions that were posed during the Better Regulation process and were not satisfactorily addressed.

The very same questions can be posed to AGN, and again are not satisfactorily answered.

AGN has proposed the weighting of modelled outcomes as set out in the table below included in its proposal.

TABLE 10.1: ESTIMATES OF THE REQUIRED RETURN ON EQUITY FOR A BENCHMARK EFFICIENT ENTITY

Method	Required Return on Equity	Weighting
Sharpe-Lintner Capital Asset Pricing Mode	9.28%	12.50%
Black Capital Asset Pricing Model	9.69%	25.00%
Fama-French Model	9.88%	37.50%
Dividend Discount Model	10.29%	25.00%
Weighted Average	**9.91%**	**100.00%**

AGN claims that this is a better approach than the AER's foundation model because it has regard to all relevant models and evidence, it recognizes and gives weight to the strengths and weaknesses of each model, and estimates model parameters the reflect the best and most recent market evidence.

The ECCSA notes that the Fama-French 3 factor model receives a weighting of 37.5%, versus the AER's S-L CAPM of 12.5%. Significant weighting of 25% is also given to the dividend discount model. The AGN proposed weightings are different to those proposed by other NSPs highlighting that the weighting approach itself is flawed as it is even subject to debate amongst its proponents. This issue was discussed at length during the Better Regulation program.

The AER consultant Associate Professor Partington commented that the risk of incorrect outcomes expands with the number of models used and at least three opportunities for cherry picking

1. with multiple models there are multiple unobservable parameters and betas to estimate and **there is considerable latitude in how the parameters and betas can be estimated** and the choice of data to be used for this task
2. when it then comes to combining the results from multiple models **there is no agreed optimal weighting scheme between models** and the desired results can be obtained by judicious choice of weights
3. **it becomes possible to raise arguments about abnormal conditions**, either requiring the revision of parameters, or the exclusion of certain data in estimating inputs to the models (emphasis added)

The previous section has already identified the ECCSA's concerns with the Fama-French and believes it should not be part of the weighting process at all as suggested in the AER's Guideline.

Similarly, the ECCSA would have considerable difficulty with the weighting of the dividend discount model as this also includes many arbitrary assumptions, model variants and unstable parameters. The AER, noting the strengths and weaknesses of this model,[30] uses this model as 'directional' and the ECCSA believes that is the most it should be considered for at this stage.

The ECCSA is also very concerned that this multi-model approach will result in a repeat of the same arguments from year to year and determination to determination. Each of the models will come to different conclusions at different times. At this point in time, AGN's proposal suggests that the Fama-French model should receive the most weighting.

Consumers are naturally sceptical when it turns out that the Fama-French model, and the dividend discount model (with a total weighting of 62.5% or nearly two thirds of the total) also generate the highest value outcomes. Perhaps next time, when the dividend discount model provides a figure of closer to 7%, the networks will weight it 5%[31] claiming, for instance, that it is not a 'normal result' just as they claim the S-L CAPM is not providing a 'normal result' at this time.[32]

[30] See for example, AER, Explanatory statement, rate of return guideline, Appendix A.2, pp 14 – 15.
[31] The Tribunal has previously noted this issue in its decision on the AER's use of 6% for the market risk premium. The appellant network proposed a higher MRP using the dividend growth model, however, the Tribunal queried whether it would still argue for the DGM if it identified a MRP of 2%, which it had done in the past.
[32] More specifically, the S-L relies on the risk free rate which is currently lower than it has been for some years, although arguably, within the long-term range of risk free interest rates.

The ECCSA cannot accept that the requirements of the NGO, the NGR and the RRP are best met if AGN, or other network proposers, are free to pick and choose which weightings would apply to which of the models they have chosen to use at any particular time. If risks are to be shared as set out in the RRP, then such one-sided arbitrariness must be avoided.

5.4.2 Equity Beta

5.4.2.1 Background to the current assessment

This is yet another parameter of the cost of equity calculation that has been the subject of dispute between the networks and the AER and consumers.

The equity beta analysis was subject to extensive consultation processes during the Better Regulation program, and the value of 0.7 set out in the RoR Guideline is a conservative estimate as a result of all the consultation.

However, AGN, like other networks, is proposing an equity beta of 0.82. It is basing this figure largely on the work undertaken by SFG Consulting during the Better Regulation program and updated in 2014.

Consumers have argued that the AER's figure of 0.7 is high because the empirical data provided to the AER by its consultant indicated a range of 0.4 to 0.7 with a median value of around 0.5 – 0.6.

Following the completion of the Guideline, the AER received an updated study from its expert consultant, Professor Henry[33] that reinforced the results of his original 2009 study. The updated study included multiple analyses of Australian public network companies using different combinations of companies, time periods and regression formulations. Professor Henry concludes as follows in his 'summary of advice to the AER': [34]

> "In the opinion of the consultant, the majority of the evidence presented in this report, across all estimators, firms and portfolios, and all sample periods considered, suggests that the point estimate of β lies in the range of 0.3 to 0.8. …within the range of 0.3 to 0.8 the average OLS [ordinary least squares) estimates for the individual firms reported in Table 2 is 0.5223 **while the median estimate is 0.3285**." [ECCSA emphasis]

[33] Olan T. Henry, *Estimating Beta: An Update,* April 2014.
[34] Ibid, p 63.

The ECCSA also notes, as an aside, that by selecting a value of 0.7 for equity beta in the face of the empirical evidence, the AER has effectively adjusted the equity beta for the theoretical arguments of the Black CAPM (i.e. that the S-L CAPM under-estimates beta for firms with beta less than 1). There is, therefore no basis for the AER to further adjust the outputs of the S-L CAPM to take account of the Black CAPM hypothesis, even if that hypothesis was accepted.

It should also be noted that the publicly listed networks consistently state to investors that one of benefits of investing in the networks are that they are offer stable long-term positive cash flows and are subject to a stable regulatory environment. They were certainly seen as counter-cyclical investments during the crises of the GFC and the years that followed. There are strong practical arguments for a lower equity beta.

5.4.2.2 The SFG Consulting analysis of equity beta[35]

AGN has applied an equity beta of 0.82 based on the two studies by SFG Consulting. SFG concluded (May 2014) for the CAPM beta values. The SFG analyses were based on a total of 9 Australian-listed firms and 56 US firms.

The final "parameter estimate" of 0.82 represents an arbitrary reweighting of the Australian-listed firms to effectively mitigate the overwhelming of the Australian input by the multitude of US firms.

These are very similar results to the 2013 SFG study. The ECCSA notes that at that time the AER did not consider it reasonable to include international benchmarks in the study of the equity beta for Australian firms. The AER concluded:[36]

> "…we consider CEG [who provided the initial list of US firms for the study] did not provide satisfactory evidence to demonstrate that vertically-integrated US energy businesses and businesses that engage in other activities [beside energy networks] present close comparators to 'a pure play, regulated energy network business operating in Australia'."

The ECCSA agrees with this conclusion, In addition, we note the AER's subsequent analysis using data from a report from Allen Consulting Group that included only a sub-set of "almost exclusively electricity

[35] For example, SFG Consulting, Regression-based estimates of risk parameters, June 2013. This study was updated for the ENA and networks in May 2014. See SFG Consulting, Regression-based estimates of risk parameters for the benchmark firm, May 2014.
[36] AER, *Explanatory statement – rate of return guidelines, appendices,* December 2013, Appendix C3.1, p 62.

and/or gas distribution and transmission businesses"[37], produced an average equity beta of 0.76.

The ECCSA would also note the following:

- The SFG study only included Australian and US firms. Why were firms from other countries such as the UK or NZ not included to give a broader international context with countries with more similar regulatory environment, industry structure and ownership arrangements.

- The results of the SFG study reinforce the view that SFG has averaged two different populations.

- The doubling of the weighting for Australian firms is arbitrary and appears to have been done to make the results more acceptable. It does not do that, but rather creates the perception of weighting to achieve the outcome target. There is no reason why the Australian firms should not be weighted 2.5 or 3.0 or 0.5 (or even for the equity beta to be assessed just from Australian data as this reflects the operating environment of the firms in question).

The last point raises again the whole issues with the approach adopted by the AGN and other networks. The AER has been criticised for the arbitrary nature of some of its RoR Guideline decisions yet the networks (including AGN) are being just as arbitrary or even more so.

However, the ECCSA considers that the proposals by AGN (and others) are even more open to such criticisms, particularly in the application of 'weightings' to the various models (see above) and the weighting of the international data to achieve parameters for the Fama-French model (see 5.4.1.1), and for the CAPM equity beta as set out in this section.

5.4.3 Conclusions on the Cost of Equity

The ECCSA believes the AER should reject AGN's proposal for a cost of equity of 9.91%. The proposed return on equity is only marginally below the return on equity of 10.36% allowed in AA2011. It fails to reflect the very dramatic decline in the cost of capital and the more favourable environment in Australia for investment.

As such, it does not meet the rate of return objective in the NGR, nor does it satisfy the NGO. It also fails the test set out in the RRP in the NGL, in that it does not represent a balance of risks of over and under investment, and over and under utilisation.

[37] Ibid.

Specific areas of concern relate first to the equity modelling framework which is arbitrary and includes weighting for models that have not met the tests of transparency, repeatability and validity in the Australian context. The ECCSA also rejects the proposed equity beta as this is derived from a sample that is not representative of an Australian benchmark firm.

The analysis provided in the proposal reinforces the ECCSA's primary concern that the proposal is based on cherry-picking from the AER Guideline, with the result that risk allocation between consumers and networks is distorted.

The ECCSA also rejects the suggestion that a lower cost of equity (as would be derived under the RoR Guideline) would result in an inability of AGN to invest in the network in the future as it could not recover its costs. If AGN applies prudent capital management principles, there is no reason to believe that it would not recover its costs, although it may not achieve the same above normal profits as it currently enjoys.

A very similar conclusion applies to the assessment of the cost of debt as discussed in Section 5.5 below.

5.5 Assessment of AGN's proposal for the Cost of Debt

At the outset, the ECCSA notes that the AER's Guideline does not provide all the details of its proposal to calculate the cost of debt. In particular, while it states that the debt tenor should be 10 years, and the information provided by an independent third party, the AER has not decided on which third party it should use and what adaptations (if any) it should make to these independent assessments.

AGN is proposing a cost of debt of 5.44%. This is significantly below the cost of debt approved in AA2011 of 9.37%. AGN identifies the key difference between its proposal and the AER guideline relates to the transition from "on-the-day" to a full 10 year trailing average approach. AGN comments in attachment 10.1 (page 59)

> "The fundamental difference between the AER's Option 2 and AGN's proposed approach relates to the way in which the AER transitions the return on debt to the trailing average. Rather than starting from the hybrid approach, the AER starts its transition with an "on" the day" approach. This is notwithstanding it is not actually a replicable debt management strategy, and that the AER accepts an efficient approach in previous periods was the hybrid approach and that on any view, the benchmark efficient entity's DRP already reflects a trailing average."

Effectively, AGN wants to incorporate into its trailing average approach, the impact of the high cost of debt during the 2008-2009 period. The ECCSA finds this unacceptable on two counts

1. The cost of debt during the current and the previous periods has already been incorporated into the revenues allowed by ESCoSA and the AER. A review of the Annual Reports issued by Envestra (now AGN) clearly shows that the cost of debt incurred by Envestra was less than the allowances provided. On this basis consumers have already paid for the high cost of debt that applied as a result if the GFC
2. By applying the trailing average approach as sought by AGN, it would garner a considerable benefit by the application as it incurred costs for debt well below the rates that applied at the time.

It is clear that the AER transition approach is to prevent the networks from "double dipping" by being paid once for the costs of debt that applied in the past and then getting a bonus in this reset from the same cause. The ECCSA considers that the AER approach is correct and that the AER approach meets the basic RoR principle that the networks should be able to recover their efficient costs, recognising that the cost of debt is a cost to the network and not to be confused with the principle that it should be allowed a return commensurate with the risks (ie return on equity)

Finally, the ECCSA has identified data from AGN annual reports which suggest that AGN's actual average debt costs, are below the regulated allowances and within the bounds that the application of the RoR Guideline would set.

The ECCSA therefore, does not consider that the RoR Guideline will prevent AGN recovering its reasonable, prudent and efficient costs. It will, however, provide for a better allocation of risks than has occurred hitherto, and as such is aligned with the NGO, the NGR and the RPP in the NGL.

5.5.1 AGN's Credit Rating

AGN implicitly proposes that the standard credit rating for a gas distribution company should be BBB (rather than BBB+).

This is clearly a theoretical argument based on the AGN's view that a gas distribution company has a lower credit rating than an electricity distribution company because (in large part) gas is an optional fuel subject to greater risks.

The AER investigated this issue at some length during the development of the RoR Guideline, and the ECCSA supports the AER's conclusions that there was no strong reason to adopt a different credit rating for the gas distribution businesses.

In addition to the AER's arguments, the ECCSA would highlight that AGN as Envestra has had in the past, a lower credit rating than BBB but this was associated with Envestra having a much higher gearing (exceeding 80%) than the benchmark gearing of 60%. Rather than citing a lower credit rating is applicable, ECCSA considers that a higher credit rating is probably applicable but the AER has maintained the conservative position of BBB+ for gearing at 60%.

In section 5.7 below, ECCSA highlights that, even now, AGN has a credit rating of BBB+ despite its gearing being 75%. So applying a gearing of 60% and a credit rating of BBB+ in its guideline, the AER is providing a clear benefit to AGN

5.6 The value of Imputation Credits

AGN has chosen to propose a gamma value of 0.25 based on a payout ratio of 0.7 (as per the RoR Guideline) and a theta value of 0.35 compared to the AER's value of 0.7.

In adopting this value, AGN has relied on the studies provided largely by SFG on the value of gamma using a dividend drop-off approach.[38]

The ECCSA does not agree with AGN's proposal. The ECCSA believes the AER has conducted a very comprehensive analysis of the issue in 2013, and in so doing has put the assessment of theta on a sounder conceptual and empirical footing. As part of this the AER investigated a variety of approaches including the type of study proposed by SFG.

In so doing, the ECCSA believes the AER has addressed the primary concern of the Tribunal as expressed in its 2010 decision to allow Energex to apply the SFG dividend drop-off approach. That is, in its decision the Tribunal stated that it "found some deficiencies in its understanding of the foundations of the task facing it, and the AER, in determining the appropriate value of gamma."[39]

Even though the Tribunal ordered the AER to adopt a theta value of 0.35, the Tribunal's decision was by no means determinative. The Tribunal's statements were heavily qualified throughout its analysis, by its concern about the lack of a sound conceptual basis for gamma and its constituent elements in the regulatory context (as indicated in the quote above).

In particular, the Tribunal encouraged the AER to investigate a wider range of approaches and, importantly, to better establish the conceptual framework in the regulatory context.

---

[38] See SFG Consulting, 2014, *An appropriate regulatory estimate of gamma.*
[39] Australian Competition Tribunal, *Application by Energex Limited (No 2) ACompT*, October 2010 @ 149-150.

As noted above, the ECCSA believes the AER has undertaken this task with due diligence, and is no longer bound by the Tribunal's qualified direction to adopt a value of 0.25 in the absence of an adequate analysis. Having carried out the additional analysis, the AER is entitled, having done that, to exercise its discretion in a way that it believes will best achieve the NGO and the long-term interests of consumers.

Although ECCSA considers that the AER should maintain gamma at 0.5, it notes that in recent decision, the AER has implemented a value for gamma of 0.4. ECCSA is aware that the value for gamma has been appealed and the ECCSA awaits the Tribunal decision on this matter.

5.7 Depreciation

In its proposal AGN has advised that it will continue with the current practice of straight line depreciation although it notes that there is an argument for it to seek accelerated depreciation on the basis that its asset base is suffering increasing levels of low utilisation. It seems to consider that accelerated depreciation is an appropriate solution to under-utilised assets. In practice, the approach would reduce AGN exposure to asset write downs in the event that assets become stranded.

The ECCSA does not consider that accelerated depreciation should be implemented, but makes the observation that accelerated depreciation of network assets (gas and electricity) is a new topic for networks to seek increased revenues and reduced risk.

However, AGN does countenance an increased depreciation rate be applied should the AER persist with the application of its rate of return guideline as AGN asserts that the AER rate of return would not provide sufficient cash flow for its operations. AGN also asserts that increased cash flow is needed to maintain its current cost of debt and comments that if the cash flow requirement is not met, AGN credit rating would fall to less that the benchmark credit rating of BBB+. ECCSA points out that it is not the credit rating of AGN that is of interest to setting of the cost of debt - the credit rating is one that the AER considers is efficient for the benchmark entity. A review of AGN most recent balance sheet (issued 28 October 2014) reveals that AGN has a gearing (debt to assets) of nearly 75%. In contrast, the benchmark efficient entity has a gearing of 60%. It is indeed fortunate that AGN asserts that it has a credit rating of BBB+ at such a high rate of gearing. ECCSA considers that if AGN credit rating was to fall because of a perceived low cash flow (which ECCSA does not consider would result from the application of the AER rate of return guideline) then this would be consistent with the very high gearing that AGN has.

ECCSA also notes that the AER has treated each revenue reset process based on the depreciation schedules proposed by each network. ECCSA has noted

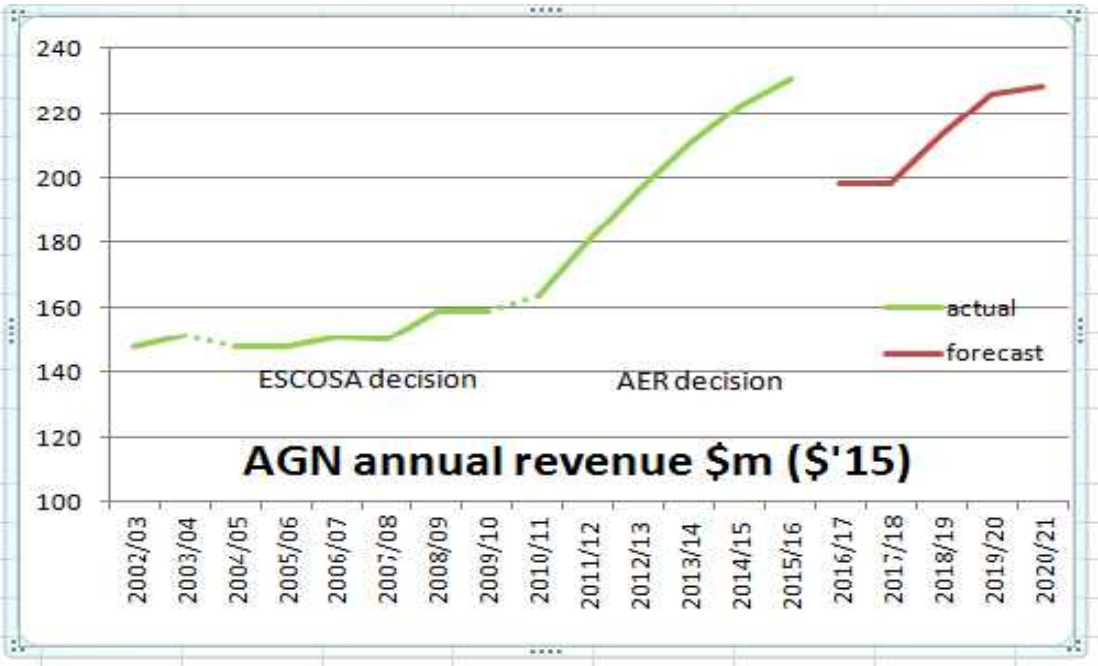
that the Consumer Challenge Panel looking at the Victorian electricity distribution networks has identified that depreciation schedules proposed by networks are not consistent across all networks and that some networks have different lives for the same assets. This variation has two core side effects

1. The same assets are depreciated at different rates. This has a significant impact of the roll forward of the asset base and impacts the allowed revenue. ECCSA considers that for the sake of benchmarking of opex and capex (as well as equity between consumers), there needs to be a standardised approach to setting depreciation rates and to setting asset lives.

2. Asset lives are a key determinant in the decision to replace assets. In theory, when an asset reaches the end of its design life, a decision is made to replace the asset on the basis that the likelihood of failure becomes too great and the risk to reward equation changes to a decision to replace rather than repair after a failure. Standard asset lives would again assist in benchmarking performance between networks.

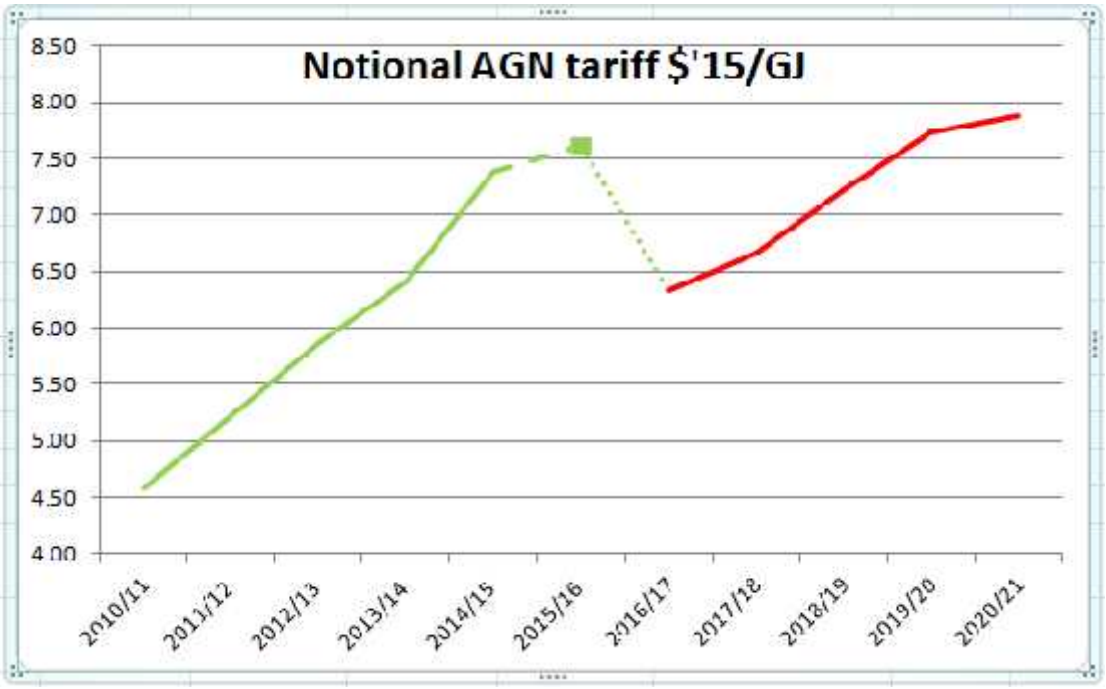
5.8 Revenue allowed and the impact on consumers

The AGN revenue is increasing at a very high rate, but this is offset by the lower than forecast gas sales which result in slightly lower than forecast revenues. Despite this, AGN has made good this under-run by using less opex and capex than was allowed which allowed AGN to maintain or even improve on its profitability. The impact of the current period revenue and the forecast is shown in the following chart.



Source: AGN/Envestra proposals, ESCoSA, SAIPAR, AER decisions

The chart shows that whilst AGN is forecasting a lower revenue for the next 3 years than in the last two years for the current period, its forecast is that revenues will reach before the end of the next period the same heady heights that are currently being achieved, but delivered by much lower gas sales basis. The outcome is a return to very high tariffs by the end of the next period, despite the much lower costs of capital that currently apply.



Source: AGN RIN, AGN/Envestra proposals, ESCoSA, AER decisions

What is concerning is that the tariffs that applied in the period prior to the current period, were (in real terms) about 50% lower than what currently apply, yet the customer numbers have only increased by 15% over the last decade and sales of gas have fallen by over 20% over the same period with both these trends forecast to continue for the next period.

It is clear there is an essential inconsistency with continually increasing of the asset base when faced by such a negative market outlook. Despite this, AGN considers that there is a need to devote considerably more capex to replace faulty assets and to extend the network even further in search of modest sales.

The ECCSA is very concerned that the increased costs will fall most heavily on those households least able to absorb the continued high tariffs Distribution network charges comprise over a third of the total cost of delivered gas so maintenance of the high network charges of the magnitude sought by AGN will continue this financial pressure and burden.

Equally, small and large businesses, already under financial stress due to the global economic downturn followed closely by the very high exchange rates will

be facing these high prices. One solution for these businesses is to close down, and the loss of revenue for the network will be to increase charges on fewer consumers, further increasing costs - the "death spiral".

The AER has previously advised that it is required to assess an application from a regulated entity “on its merits” with due care for ensuring the business has sufficient funds to provide the service required. The AER also has a responsibility to ensure the long term viability of the regulated entity and allowing it to increase its charges by too great an amount has the potential to result in a network business which is not commercially viable in the long term because its customers cannot afford its services.

Gas supply is an essential service and in a first world country for a regulator to allow the monopoly provider of an essential service to price its product at a level where it either causes financial hardship to a large element of the service users or to ultimately cause users to cease using the service due to the cost being too high, is clearly not in the long term interests of consumers.

The ECCSA has the view that the AER must balance the ability to pay for the service against the aspirations of a monopoly to maximise the cost of the service it provides.

5.9 Pass through events

AGN proposes to retain the currently allowed cost pass through events from AA2011 but seeks a modification to one and the addition of two others.

AGN seeks for the natural disaster event to be changed to effectively indemnify AGN if anything occurs that is beyond its control and materially increases its costs for providing the services. AGN excludes from this any amounts that it recovers through reasonable levels of insurance.

The ECCSA does not support the change as it removes from AGN any responsibility for damage limitation and ensuring its insurance is adequate. ECCSA also notes that its members are not indemnified from events such as these and questions why gas consumers should be asked to indemnify the gas network from this risk.

AGN also seeks the increase the scope of pass through events where its Board of directors can determine that increased expenditure is required (in their opinion) to enhance the security of supplies. The ECCSA finds this concept absolutely amazing on a number of accounts. Firstly, that the discretion lies with AGN exclusively and secondly that these are risks that AGN has taken through being a services provider with obligations to ensure there is security of supply. The ECCSA considers that this proposal is not acceptable to consumers.

AGN seeks for its Board to decide that existing consumers should underwrite the extensions of the network that the AGN Board consider is needed. The ECCSA considers that any expansion of the network needs to be prudent and efficient. If it is prudent and efficient, the regulator will "roll in" the capital to the regulatory asset base. If it is not prudent and efficient, then it should not occur. To seek a pass through which would over-ride the need for assessment for prudency and efficiency is unacceptable.

5.10 Tariff development

AGN cites (figure 14.1) that since the commencement of regulation the actual forecasts of consumption has only once resulted in an under-forecast. In all other cases, forecasts were too high for residential and commercial consumption, with the average of all forecasts being ~5% too high.

Equally, the ECCSA notes that the actual revenues achieved by AGN do not replicate this over forecasting of demand to the same extent[40]. If tariffs were cost reflective, then the revenue should track actual consumption. As revenues are close to the revenue forecasts, this implies that the cost reflectivity of tariffs has not been applied and that tariffs where the risk of forecasting reflects a greater potential for sales, have been increased so that overall revenues are maintained.

The ECCSA notes that AGN has decided that it prefers to have a price cap form of regulation rather than have a revenue cap applied. The ECCSA is intrigued by this proposal as a revenue cap form of regulation would insulate AGN from being exposed to the vagaries of changes in consumption. The ECCSA notes that AGN has already identified that it secured fewer new customers than forecast and the amount of gas used by each customer is declining.

The ECCSA is aware that forecast gas prices are more likely to increase than fall and this will put more downward pressure on future gas consumption.

The fact that AGN has decided to continue with the price cap approach is of concern to ECCSA as it implies that AGN sees there is a greater avenue to enhance its revenue stream through maintaining price caps rather than use a revenue cap. There are a number of ways that AGN could bias its tariff development to make such an outcome feasible and the ECCSA considers the AER should ensure that AGN applies strict cost reflective approaches to developing the tariffs and their bands.

[40] It is acknowledged that actual revenue has in most cases not reached the allowed revenue in a regulatory decision

6. Forecasts and escalation

6.1 Demand and consumption

AGN has used Core Energy forecasts as the basis for its expected growth in consumption of gas, and it must be accepted that actual consumption of gas has fallen over the past few years – certainly regulatory assessments of expected consumption have been demonstrably overstated.

The ECCSA considers that the AER needs to get an independent assessment (such as by AEMO) to ensure that the forecasts for gas usage are validated. In this regard, the ECCSA comments that there is an incentive for AGN to overestimate the new connections and under-estimate the consumption. Equally, ECCSA does not have access to better information than the forecasts prepared by AEMO or Core Energy.

The ECCSA is aware that AEMO National Gas Forecasting Report (NGFR) released in December 2014 indicates:

- Residential and commercial growth of 0.5% increase to 2019 followed by essentially flat growth for the following 5 years
- Industrial growth to be essentially flat for the AA period

As the bulk of the gas usage in SA is for industrial use[41], the import of the AEMO forecast is that there will be essentially little change in the forecast amounts of gas transported on the AGN network. This is in contrast to the AGN assertions that there will be the significant reductions in gas consumption implied in figure 14.5 which implies an average reduction of some 2.2% per annum, mainly driven by the reduction of contracted MDQ for industrial users.

TABLE 14.5: FINAL DEMAND AND CUSTOMER NUMBER FORECASTS, 2016/17 TO 2020/21

	2016/17	2017/18	2018/19	2019/20	2020/21
Residential Tariff R					
Customer Numbers	424,321	429,376	434,603	440,208	446,004
Demand (terajoules)	6,259	6,072	5,898	5,374	5,584
Commercial Tariff C					
Customer Numbers	9,781	9,913	10,086	10,261	10,439
Demand (terajoules)	2,639	2,620	2,700	2,700	2,742
Tariff D					
Customer Numbers	125	118	115	113	110
Demand (terajoules MDQ)	61	57	57	56	56

[41] AGN Table 14.5 highlights that industrial use is nearly 90% of all consumption assuming that the contracted MDQ is actually used.

The ECCSA is aware that summing actual gas volume usages for residential and commercial with the amount of MDQ contracted for by industrial users[42] does not result in a total amount of gas used each year, but it is the basis of the revenue that AGN acquires, so the concept is valid for this purpose.

The AEMO forecast is based on actual volumes of gas consumed whereas the AGN forecast is based on the amount of gas that can be transported on the network. However, unless industrial consumers significantly vary their utilisation rate (ie their actual daily usage changes significantly for the same contracted MDQ) the AEMO forecast is an acceptable surrogate for assessing the expectation of forecast MDQ to be contracted.

AGN is forecasting a fall in residential and commercial gas usage whereas AEMO is forecasting small increases. These small increases would be consistent with an expectation of new connections (as forecast by AGN) coupled to a fall in the per connection point usage.

AEMO is forecasting a minimal fall in industrial consumption of gas (at less than 0.1% pa) which is not replicated in the AGN forecasts of >2% pa.

The lower the forecasts, the higher the tariffs so AGN is incentivised to under estimate expected usage. AGN does point to the fact that historically there has been an over-estimation of forecast usage in the past. Equally, the ECCSA is aware that AEMO forecasts have had to become much more reliable in recent times as a counter to their less reliable forecasts in the past.

ECCSA notes that AGN highlights that the AER made, for the current period, its assessments of increases in customer numbers and forecasts of gas consumption too high compared to the actuals. This is true. Equally, the ECCSA points out that the AER too over-estimated the costs of the capex, opex and the cost of debt it allowed AGN at the last reset. If the AER had used the AGN numbers for customer numbers and consumption as well as for opex, capex and cost of debt, AGN tariffs would be even higher than they are now, which might have been good for AGN in the short term, but would certainly have made AGN a less viable network in the longer term.

6.2 Cost escalators

In recent regulatory resets, the AER has used wage price movement indicators (WPI) unadjusted for productivity as the basis for forecast wage movements. The ECCSA supports this and so does AGN.

[42] When an industrial consumer pays for MDQ, there is an assumption that the consumer will use the amount of gas consistently. This doesn't occur as most users pay for MDQ but seldom reach the allowance because penalties apply for over-runs. Nevertheless, AGN gets paid as if the full MDQ is a consistent usage throughout the day,

AGN has noted that WPI forecasts between Deloitte Access Economics (DAE) and BIS Shrapnel (BIS) are markedly different and proposes averaging these. The ECCSA is concerned that there are such variations between the two forecasters as are shown in table 7.7 and these amount of a variation of about 100 basis points. The ECCSA affiliates have observed that the historical accuracy of the two forecasters has not been good, with BIS tending to overestimate movements and DAE under estimating movements.

AGN proposal is that the two forecasts should be averaged to cancel out the biases, but the ECCSA is not convinced that this is a sensible approach. The ECCSA considers that the AER needs to identify if the historical biases are still valid when compared to more recent movements in labour costs, as the most recent actual movements have labour costs moving slower than inflation as measured by the CPI.

In its most recent release (4 August 2015) the RBA comments

> "Recent information confirms that domestic inflationary pressures have been contained. That should remain the case for some time, given the very slow growth in labour costs. Inflation is thus forecast to remain consistent with the target over the next one to two years, even with a lower exchange rate."

This implies that the RBA considers that labour cost growth will be similar to the recent movements. This independent assessment of future wage growth tends to support the DAE assessments rather than those of BIS.

AGN proposes to follow the same practice for setting capex labour escalation as a mix of direct labour and construction labour. AGN has proposed that construction labour should be an average of DAE and BIS forecasts. As with direct labour, the ECCSA is concerned that the BIS estimates are too high for the current and expected labour cost movements based on the RBA observations, especially as construction labour is also impacted by a declining engineering construction forecast (following the completion of the works in the export gas industry and the ship building industry).

It is also not clear how AGN has allocated the proportions of direct labour, construction labour and materials in the development of the overall cost escalation process.

AGN proposes to use material cost escalation to be the same as the CPI. While ECCSA supports this and the AER has recently used this concept in other decisions, the ECCSA is of the view that recent material price movements are probably less than CPI so the ECCSA considers that the AER needs to implement this approach over the long term so that the "swings and roundabouts" will average at CPI over the long term. A reversion to past practices where material price movements above CPI are allowed would result in harm to consumers as consumers would have not benefited from lower prices but incurred costs for higher prices.

6.3 Growth escalation and productivity

AGN has applied a cost growth of $20 per new connection as a factor to replicate the increased costs faced by AGN resulting from growth of the network. It asserts that this is what the AER has previously approved.

The ECCSA is not convinced that the proposed approach is legitimate. While ECCSA does accept that new connections will result in additional opex, the ECCSA also points out that there are other factors that apply to opex growth as well as new connections. In particular the ECCSA considers that opex would reduce with the amount of capex that has gone into replacing the cast iron and steel mains both in the current period and as the replacement program continues in the next periods. If there has not been an opex saving because of these expensive capex programs, then it raises the question as to why the program was considered to be so important. The proposed replacement of HDPE piping should also reduce opex

The ECCSA highlights that its members are required through the pressures of competition to continually improve productivity. There is no proposal from AGN to cost into the allowances the outcomes of improved productivity, yet this is what is expected of the competitive sector. The ECCSA considers that there must be a requirement to improve productivity as this is the only way that AGN will be driven to the efficient frontier of efficiency.