



Draft decision
Jemena Gas Networks (NSW) Ltd
Access Arrangement 2015–20

Overview

November 2014

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Note

This overview forms part of the AER's draft decision on Jemena Gas Networks' 2015–20 access arrangement. It should be read with other parts of the draft decision.

The draft decision includes the following documents:

Overview

Attachment 1 – services covered by the access arrangement

Attachment 2 – capital base

Attachment 3 – rate of return

Attachment 4 – value of imputation credits

Attachment 5 – regulatory depreciation

Attachment 6 – capital expenditure

Attachment 7 – operating expenditure

Attachment 8 – corporate income tax

Attachment 9 – efficiency carryover mechanism

Attachment 10 – reference tariff setting

Attachment 11 – reference tariff variation mechanism

Attachment 12 – non-tariff components

Attachment 13 – demand

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Shortened forms

Shortened form	Extended form
2010–15 access arrangement	Access arrangement for JGN effective from 1 July 2010 to 30 June 2015 inclusive
2010–15 access arrangement period	1 July 2010 to 30 June 2015 inclusive
2015–20 access arrangement	Access arrangement for JGN effective from 1 July 2015 to 30 June 2020 inclusive
2015–20 access arrangement period	1 July 2015 to 30 June 2020 inclusive
Access arrangement information	Jemena Gas Networks (NSW) Ltd, <i>Access Arrangement Information 2015–20</i> , 30 June 2014
Access arrangement proposal	Jemena Gas Networks (NSW) Ltd, <i>Access arrangement, JGN's NSW gas distribution networks, 1 July 2015 – 30 June 2020</i> , 30 June 2014
AER	Australian Energy Regulator
capex	capital expenditure
CAPM	capital asset pricing model
CCP	Consumer Challenge Panel
Code	National Third Party Access Code for Natural Gas Pipeline Systems
CPI	consumer price index
DRP	debt risk premium
ERP	equity risk premium
JGN	Jemena Gas Networks (NSW) Ltd (CAN 003 004 322)
MRP	market risk premium
NGL	national gas law
NGO	national gas objective
NGR	national gas rules

Shortened form	Extended form
opex	operating expenditure
PPI	partial performance indicators
PTRM	post-tax revenue model
RAB	regulatory asset base
RBA	Reserve Bank of Australia
Reference service agreement proposal	Jemena Gas Networks (NSW) Ltd, <i>Reference Service Agreement, JGN's NSW gas distribution networks</i> , 30 June 2014
RFM	roll forward model
RIN	regulatory information notice
RPP	revenue and pricing principles
SLCAPM	Sharpe-Lintner capital asset pricing model
WACC	weighted average cost of capital

1 Our draft decision

Jemena Gas Networks (NSW) Ltd (JGN) provides gas distribution services in NSW. We, the Australian Energy Regulator (AER), regulate covered pipelines in all states and territories, except Western Australia.

This is one of the first draft decisions we have made following changes to the National Gas Rules (NGR) and National Gas Law (NGL) in 2012 and 2013. The amended NGR encourages us to approach decision making more holistically, with a greater emphasis on the efficient costs of providing network services. As part of our Better Regulation program, which we started in 2013, we have also developed more sophisticated tools with which we can assess efficient costs. Our Better Regulation program emphasizes the importance of transparency and consultation.

This is our draft decision on JGN's access arrangement for the 2015–20 access arrangement period. It includes our draft decision on reference tariffs as well as the Reference Services Agreement (RSA) for access to JGN's distribution pipelines.

This draft decision is one of the key steps in reaching our final decision. Our final decision will be released in May 2015. Before that, JGN will have the opportunity to submit a revised proposal in response to this draft decision. Stakeholders will also have the opportunity to make submissions on our draft decision and JGN's revised proposal. While we welcome submissions on any aspect of this draft decision, we have highlighted certain areas where we are particularly interested in hearing stakeholders' views. Following receipt of the revised proposal and submissions, we will then make our final decision taking everything we have heard into account

This document provides the reader with an overview of our draft decision. It offers an insight into the issues we considered, the conclusions we made and how those conclusions were reached. Detailed reasons for each of the elements of our draft decision can be found in attachments and appendices accompanying this decision.

Total revenue

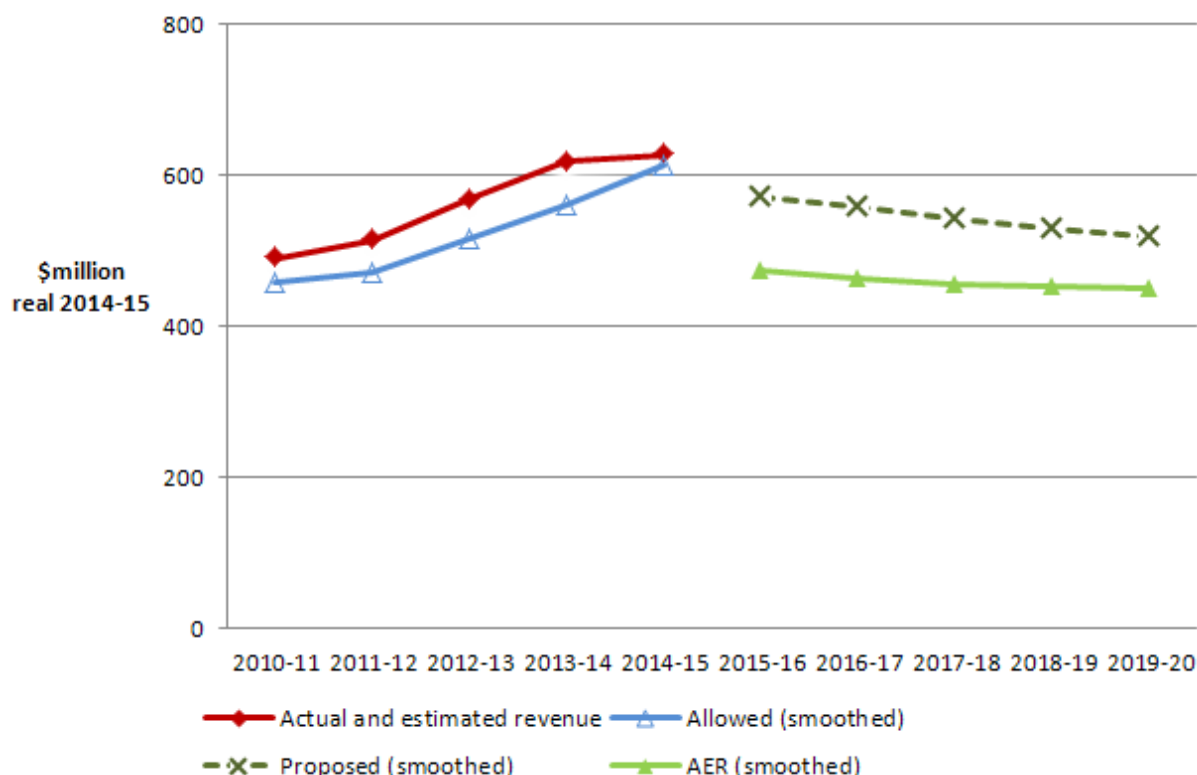
In total, our draft decision provides an allowance of \$2477.3 million (\$nominal) resulting in a real decrease of weighted average tariffs of 23.4 per cent in 2015–16, and then real decreases of 2.1 per cent for each subsequent year of the 2015–20 access arrangement period.¹

Figure 1-1 shows JGN's past total revenue (both allowed and actual),² proposed total revenue and our draft total revenue allowance.

¹ JGN operates under a weighted average price cap, so the tariffs we determine (including the means of varying these tariffs across the period) will apply across the access arrangement period, even where demand varies from forecast.

² The actual revenues for 2013–14 and 2014–15 are estimates provided by the service provider.

Figure 1-1 JGN's past total revenue, proposed total revenue and AER's draft decision revenue allowance (\$million, 2014–15)



Source: AER analysis. JGN, *2015–20 Access arrangement information*, Appendix A, June 2014, JGN, Email response to information request AER JGN 012 info request, Actual revenue and calculation of remaining asset lives, 12 August 2014.

In NSW, distribution charges represent approximately 50 per cent of a typical residential customer's gas bill.³ Given the considerable uncertainty surrounding the future of wholesale gas prices, which make up approximately 20 per cent of a typical residential customer's gas bill, it is too uncertain to provide an indication of whether or not final gas bills will reduce over the 2015–20 access arrangement period.⁴

If we had approved JGN's proposal, it would have been permitted to recover \$2933.3 million (\$nominal) in revenue over the 2015–20 access arrangement period.⁵ We are not satisfied that this proposed revenue would contribute to the achievement of the National Gas Objective (NGO) to the greatest degree, as required by the National Gas Law (NGL).⁶ Consequently, we do not approve JGN's proposed 2015–16 tariffs and 2016–20 tariff path.

JGN's proposal puts forward revenue lower than its current levels. The total revenue we propose to allow in this draft decision reflects the underlying drivers of the costs of providing gas distribution services in JGN's area. Specifically, circumstances have changed since the last access arrangement period such that there has been a material easing in the pressure on costs since we made our last decision in 2010 for JGN. Consequently, we consider JGN's revenue during the 2015–20 access

³ Jemena Gas Networks (NSW) Ltd, Customer Overview of JGN's 5-year plan: 2015/16 – 2019/20, June 2014, page 4.

⁴ Jemena Gas Networks (NSW) Ltd, Customer Overview of JGN's 5-year plan: 2015/16 – 2019/20, June 2014, page 4.

⁵ From this amount, \$10 million relates to negotiated and other services. See JGN, *Access arrangement information*, June 2014, Table 12-2, p. 105.

⁶ NGL, s. 28.

arrangement period should be lower than its current and proposed revenues, and after an initial fall should remain relatively stable over the coming period. Further, we consider JGN's weighted average tariffs should be lower than its current and proposed tariffs. Relative to the fall in overall revenue, there will be an even larger initial decrease in tariffs, which should then stay relatively stable over the period.

Underlying drivers that affect revenue

The underlying drivers that are likely to affect many aspects of revenue, and that are reflected in this draft decision include the following:

- Financial market conditions. Our draft decision reflects current financial market conditions. Our decision in 2010 was made at the height of uncertainty surrounding the global financial crisis. Presently, interest rates and risk premiums are now materially lower than in 2010.
- Forecast demand. We have adopted a forecast that is higher than that proposed by JGN. As JGN is subject to a price cap, expectations of future demand are a key input into the final regulated price, with a higher demand forecast leading to lower prices. Our higher forecast is based on including the likely impact of economic growth on the demand for gas, the removal of the carbon price together with revised assumptions around small business activity.
- Costs of building and maintaining the network to meet that demand. Much of JGN's capex proposal is for connection of new customers to its network. We agree with JGN that there will be growth in the volume of connections, but unlike JGN, we consider that related input costs will remain relatively stable. Another significant capex driver is meter renewals. The age profile of meters requires JGN to step up its replacement program. However JGN has proposed wholesale replacement of some categories of meters, which we do not consider necessary.

Our analysis has taken these underlying drivers into account. In contrast, we have found that JGN's proposal does not adequately incorporate these underlying drivers.

Key elements of this draft decision

Our draft decision on JGN's total revenue and the tariff path reflects adjustments we have made to key aspects of JGN's proposal. Their combined effect is an overall revenue allowance for JGN that is lower than what we approved for the 2010–15 access arrangement period, and a reduction of 15.5 per cent from JGN's proposed total revenue forecast.

The key aspects we have adjusted include:

- Rate of return. We have not accepted JGN's proposal in relation to the rate of return. The rate of return objective requires that the rate of return is commensurate with the efficient financing costs of a benchmark efficient entity with a similar degree of risk as that which applies in respect of the provision of network services. Using our rate of return guideline as our starting point, we have allowed a rate of return of 6.80 per cent (nominal vanilla) that achieves the rate of return objective and will allow JGN to fund its network investment.⁷
- Total forecast capital expenditure (capex).⁸ We are not satisfied that JGN's proposed total forecast net capex of \$1,130.4 million (\$2014–15) is prudent and efficient. Our proposed

⁷ NGR, r.87(2).

⁸ The expenditure amounts in this paragraph include price escalation.

substitute net capex is \$918.6 million (\$2014–15), which is 18.7 per cent less than JGN's proposal.

The principal drivers for our substitute capex are:

- Connections - we have applied a five year historical average of unit rates and adjusted the number of new connections downward consistent with advice from Deloitte Access Economics, which reduces the forecast by 22 per cent from \$384.1 million to 299.6 million (\$2014–15)
- Facilities renewal - we have adjusted the forecast on the basis that some renewal projects can be deferred and some can be reconfigured, reducing the forecast by 20.7 per cent from \$124.1 million down to \$98.4 million (\$2014–15)
- Meter renewals - we have adjusted the meter replacement rate for some categories of meters, reducing the forecast by 22.6 per cent from \$163.9 million to \$126.9 million (\$2014–15)
- Overheads - we have reduced direct overheads to reflect historical costs, resulting in overheads reducing by 24.5 per cent from \$144.4 million to \$109.1 million (\$2014–15).
- Demand forecasts. We have not accepted JGN's demand forecasts prepared by Core Energy. We engaged Deloitte Access Economics to estimate an alternative demand forecast. Our changes to demand result in an increase in annual per customer consumption (8 per cent for residential, 6 per cent for small business customers and around 17 per cent for commercial customers). Our higher forecast is based on including the likely impact of economic growth on the demand for gas, the removal of the carbon price together with revised assumptions around small business activity. This reduces JGN's tariffs by around 8 per cent.
- Total forecast operating expenditure (opex). We have not accepted JGN's forecast opex of \$789.3 million (\$2014–15), and have instead allowed forecast opex of \$779.7 million (\$2014–15), which is 1.2 per cent less than JGN's proposal.

The principal drivers for our substitute opex are:

- Growth in input prices — We forecast lower growth in input prices over the 2015–20 access arrangement period. We consider JGN has over-estimated the likely growth in input prices, and in particular, labour prices.
- Step change for regulatory reporting — JGN's opex forecast included an increase in opex for regulatory reporting. We consider it is not reasonable to assume JGN's regulatory reporting obligations will increase materially in the 2015–20 access arrangement period.

We are satisfied that our draft decision strikes an appropriate balance between the efficient investment, operation and use of natural gas services that contribute to the achievement of the NGO. We are satisfied the overall revenue allowance we propose for JGN provides a return sufficient to promote efficient investment, while also providing JGN incentives to operate its network more efficiently.

2 About our draft decision – context and framework

The NGL anticipates that there may be two or more possible overall outcomes that will or are likely to contribute to the achievement of the NGO. In those cases, we must make the decision we are satisfied will contribute to the achievement of the NGO to the greatest degree.⁹

This overview sets out why we are satisfied that our draft decision will contribute to the achievement of the NGO to the greatest degree. Specifically, we address section 28 of the NGL which sets out how we must exercise our regulatory functions and powers. This overview sets out our holistic analysis. The Australian Energy Market Commission (AEMC) and Ministers considered taking a more holistic approach is essential to our task, under the regulatory and limited merits review regimes.¹⁰ The attachments and appendices that follow include detailed analysis for each constituent component of this draft decision. This overview is based on that detailed analysis; especially in identifying key interrelationships that drive our overall draft decision.¹¹

The NGL and the NGR provide the legal framework under which we operate. The National Gas Objective (NGO) is the central feature of the legal framework. The NGO is to promote efficient investment in, and efficient operation and use of, natural gas services for the long term interests of consumers of natural gas with respect to prices, quality, safety, reliability and security of supply of natural gas.¹²

The NGL also includes the revenue and pricing principles (RPP), which support the NGO.¹³ As the NGL requires¹⁴, we have taken the RPPs into account throughout our analysis. The RPPs are:

A service provider should be provided with a reasonable opportunity to recover at least the efficient costs the service provider incurs in—

- providing reference services; and
- complying with a regulatory obligation or requirement or making a regulatory payment.

A service provider should be provided with effective incentives in order to promote economic efficiency with respect to reference services the service provider provides. The economic efficiency that should be promoted includes—

- efficient investment in, or in connection with, a pipeline with which the service provider provides reference services; and
- the efficient provision of pipeline services; and
- the efficient use of the pipeline.

Regard should be had to the capital base with respect to a pipeline—

- in any previous—
 - full access arrangement decision; or
 - decision of a relevant Regulator under section 2 of the Gas Code; or

⁹ NGL, s. 28(1)(b)(iii).

¹⁰ AEMC, *Rule Determination National Electricity Amendment (Economic Regulation of Network Service Providers) Rule 2012, National Gas Amendment (Price and Revenue Regulation of Gas Services) Rule 2012*, pp. xi, 10, 19, 35, 148.

¹¹ See especially sections 5 and 6 below.

¹² NGL, s. 23

¹³ NGL, s. 24

¹⁴ NGL, s. 24

- in the Rules.

A reference tariff should allow for a return commensurate with the regulatory and commercial risks involved in providing the reference service to which that tariff relates.

Regard should be had to the economic costs and risks of the potential for under and over investment by a service provider in a pipeline with which the service provider provides pipeline services

Regard should be had to the economic costs and risks of the potential for under and over utilisation of a pipeline with which a service provider provides pipeline services.

We regulate covered natural gas distribution and transmission pipeline service providers in all states and territories except Western Australia. The NGL and NGR operate to allow gas distribution service providers a reasonable opportunity to recover at least efficient costs. For those pipelines subject to full regulation we approve revenue allowances that balance all of the elements of the NGO and RPPs, consistent with Ministers' view that all of these principles are equally vital.¹⁵ The revenue allowance determines the amount that service providers can recover from customers through network charges. JGN is subject to full regulation, which requires it to submit an initial access arrangement to the AER for approval, and to revise it periodically (typically every five years).¹⁶ The access arrangement sets out the terms and conditions on which third parties can access the distribution network.¹⁷ This draft decision relates to a revision of JGN's access arrangement to be effective for the period 2015–20.

Parts 8-10 of the NGR provide for price and revenue regulation of service providers. They include detailed rules about the constituent components of our decisions, which are intended to contribute to the achievement of the NGO.¹⁸

2.1 Structure of our draft decision

Our draft decision consists of two parts:

Part A: Overview

This overview sets out why we consider our overall draft decision contributes to the achievement of the NEO to the greatest degree. The overview:

- states our draft decision to reject JGN's proposal and the total revenue allowance we propose to approve
- outlines the context and framework of our decision. It discusses the NGO¹⁹ and section 28 of the NGL, being the manner in which we must perform our economic regulatory functions and powers
- sets out the reasons for our overall decision, including why we consider our approach will, or is likely to, contribute to the achievement of the NGO.

Part B: Attachments

¹⁵ Hansard, SA House of Assembly, 27 September 2007 p. 965
Hansard, SA House of Assembly, 9 April 2008 pp. 2885-6

¹⁶ Under s .8 of the NGL a service provider is a person who owns, controls or operates a gas pipeline.

¹⁷ Providers of gas distribution services typically negotiate contracts to sell pipeline services to customers such as energy retailers. Section 322 of the NGL provides that contracts between service providers and users may differ from those approved by the AER as part of an access arrangement review. In the event of a dispute, however, a user or prospective user may request dispute resolution by the AER under chapter 6, Part 3 of the NGL. In the event that the AER makes an access determination in order to resolve the dispute, it must give effect to the access arrangement: s. 189.

¹⁸ NEL, s. 88. AEMC Rule Determination National Electricity Amendment (Economic Regulation of Network Service Providers) Rule 2012, National Gas Amendment (Price and Revenue Regulation of Gas Services(Rule 2012, p. 8.

¹⁹ NEL, s. 16.

Our attachments support the overview by setting out:

- our detailed analysis of JGN's proposal and our detailed reasons for developing an alternative total revenue allowance, by building block, and why we are satisfied that our decision, as a whole, contributes to the achievement of the NGO
- our demonstrated account of the revenue and pricing principles
- a list of revisions required to make the proposal acceptable.

2.2 What is different about this decision?

This is the first draft decision on an access arrangement we have made following changes to the NGL and NGR in 2012 and 2013. The NGL and NGR were changed to provide additional emphasis on the NGO and greater discretion to us.²⁰ The NGR has always been less prescriptive than the NER. It has allowed and encouraged us to approach decision making more holistically to meet overall objectives consistent with the NGO and Revenue and Pricing Principles (RPPs). The amended NGR furthers this in relation to the rate of return by requiring us to meet an overall objective.

In 2013, the NGL was changed so that the long term interests of consumers should be a key focus in determining our decisions.²¹ The changes also encourage analysis of the decision as a whole in light of the NGO when making decisions on constituent components.²²

These legislative changes have made this decision different from our previous decisions. In particular, for the first time, we have specifically assessed our overall revenue decision and its contribution to the achievement of the NGO.²³ We consider this is an appropriate change as we determine an overall revenue allowance.²⁴ We do not seek to interfere in the decisions a service provider will make about how to spend the total capex and opex allowances to run its network. For example, we do not seek to approve individual capital expenditure (capex) projects that a service provider must then implement. Rather, we determine what costs may reasonably form part of the sum total of revenue that we consider satisfies the requirements of the NGL and NGR.²⁵ Consistent with incentive regulation, it is then for the service provider to determine the particulars of how this allowance is applied in the next access arrangement period. As the overall revenue allowance is the key binding feature of our draft decision, it is important that we specifically assess its contribution to the achievement of the NEO.

2.3 Understanding the NGO

The NGO is to promote three factors for the long term interests of consumers:

- efficient investment in
- efficient operation of
- efficient use of;

²⁰ AEMC, *Rule Determination National Electricity Amendment (Economic Regulation of Network Service Providers) Rule 2012, National Gas Amendment (Price and Revenue Regulation of Gas Services) Rule 2012*, pp. i, iii, iv, 8, 24 32, 36, 38, 45 and 49.

²¹ Hansard, SA House of Assembly, 26 September 2013 p. 7071.

²² Hansard, SA House of Assembly, 26 September 2013 pp. 7071 and 7073; See also NEL, ss. 2, 28 and 244 which focus the AER's decision making and merits review at the overall decision, rather than its constituent components.

²³ See Sections 5 and 6.

²⁴ NEL, ss. 2, 28, 244 and 259.

²⁵ AEMC, *Rule Determination National Electricity Amendment (Economic Regulation of Network Service Providers) Rule 2012, National Gas Amendment (Price and Revenue Regulation of Gas Services) Rule 2012*, esp. p. vii

natural gas services.

Energy Ministers have provided us with a detailed body of analysis and explanation that guides our understanding of the NGO.²⁶ The long term interests of consumers are not delivered by any one of the NGO's factors in isolation, but rather by balancing them.²⁷

In general, we consider that we will achieve this balance and, therefore, contribute to the achievement of the NGO where consumers are provided a reasonable level of service at the lowest sustainable price.²⁸ In most industries, this outcome is achieved through the operation of competition. Competition drives suppliers to refine their offerings to attract customers. Where a supplier's offering is not attractive it risks being displaced by other suppliers.

However, in the energy networks industry the usual competitive disciplines do not operate. The service providers are largely natural monopolies. Many of the products they offer are essential services for most consumers. Consequently, in a non-competitive environment, consumers have little choice but to accept the quality and price service providers offer.

The NGL and NGR aim to remedy the absence of competition by empowering us, as regulator, to make decisions that are in the long term interests of consumers. In particular, we might need to require the service providers to offer their services at a different quality or different price than they would choose themselves. By its nature, this process will involve exercising regulatory discretion to balance the NGO's various factors.

It is important to recognise that there is no unique correct answer that will solely contribute to the achievement of the NGO. The nature of decisions in the energy sector is such that there may be several economically efficient decisions, with different implications for the long term interests of consumers.²⁹ At the same time, however, there are a range of outcomes that are unlikely to advance the NGO. For example, we do not consider that the NGO would be advanced if allowed revenues encourage over-investment and result in prices so high that large numbers of consumers are unwilling or unable to use the network.³⁰ This could have significant longer term pricing implications for those consumers who continue to use network services. Equally, we do not consider the NGO would be advanced if allowed revenues result in prices so low that investors are unwilling to invest as required to adequately maintain the appropriate quality and level of service, creating longer term problems in the network.³¹ This can have adverse consequences for safety, security and reliability of the network.

²⁶ Hansard, SA House of Assembly, 9 February 2005 pp. 1451–1460.
Hansard, SA House of Assembly, 27 September 2007 pp. 963–972.
Hansard, SA House of Assembly, 9 April 2008 pp. 2884–2916.
Hansard, SA House of Assembly, 26 September 2013 pp. 7171–7176

²⁷ Hansard, SA House of Assembly, 26 September 2013 p. 7173.
Hansard, SA House of Assembly, 9 April 2008 p. 2885.

²⁸ Hansard, SA House of Assembly, 9 February 2005 p. 1452.

²⁹ Hansard, SA House of Assembly, 9 April 2008 p. 2885.

²⁹ *Re Michael: Ex parte Epic Energy* [2002] WASCA 231 at [143].
Energy Ministers also accept this view – see Hansard, SA House of Assembly, 26 September 2013 p. 7172
Hansard, SA House of Assembly, 9 April 2008 p. 2885.

³⁰ NGL, s. 24(7).

³¹ NGL, s. 24(6).

3 Our approach to this decision and why it contributes to the NGO to the greatest degree

We must perform our functions in a manner that will or is likely to contribute to the achievement of the NGO.³² This section focuses on the manner in which we have made this draft decision. Section 4 discusses material issues and shows how we take account of stakeholder views. Section 3 and 4 are largely about our process in line with section 28(1)(b) of the NGL.

Sections 5 and 6 focus on the outcome of our decision. Section 5 explains how we have taken into account interrelationships between constituent components of our decision. Section 6 explains why we consider our decision is preferable, in that it contributes to the achievement of the NGO to the greatest degree.

3.1 Better Regulation program

Following the 2012 changes to the National Electricity Rules (NER) and NGR, we spent much of 2013 consulting on and refining our assessment methods and approaches to decision making. We referred to this as our Better Regulation program. The objective of this program was to refine our approaches, with a greater emphasis on incentive regulation.³³ The resulting guidelines support our decision making framework as set out in section 28 of the NGL.

The Better Regulation program was designed to be an inclusive process that provided an opportunity for all stakeholders to be engaged and provide their input.³⁴ We tested our views and heard from the full range of stakeholders. Our consultation and engagement gives us confidence the approaches set out in the guidelines will result in decisions that contribute to the achievement of the National Electricity Objective (NEO) and NGO, and form an important baseline in future decision making. In particular, we directly engaged consumers in the process through our Consumer Reference Group.³⁵ We facilitated direct engagement between network service providers and consumers through participation in forums and almost 140 meetings held with stakeholders over the course of the program.³⁶ Consumers and network service providers also made written submissions on our draft guidelines and explanatory statements, responded to advice from our experts and provided their own consultant reports.

One of the themes that emerged from our consultation was a desire from stakeholders for clarity about the approach we would take in arriving at our decisions. In particular, many stakeholders argued that greater clarity would aid investment in the sector.³⁷

During our consultation processes, there were often differences of opinion, particularly between network businesses and consumers. Where there was no consensus we determined an outcome that we were satisfied would best balance the competing interests and the range of factors in the NGL and NGR that contribute to the NGO. Section 28 of the NGL recognises that the regulatory framework allows for potentially more than one outcome and we consider that the guidelines that resulted from

³² NGL, s. 28(1)(a).

³³ AER, *Overview of the Better Regulation reform package*, April 2014, pp. 4 and 7–13.

³⁴ AER, *Overview of the Better Regulation reform package*, April 2014, pp. 4 and 7–13.

³⁵ AER, *Assessment of the Consumer Reference Group*, March 2014. This document includes information on training provided to CRG members, meetings and CRG member feedback. It can be accessed at www.aer.gov.au/node/19166.

³⁶ AER, *Overview of the Better Regulation reform package*, April 2014, pp. 20–21.

³⁷ See for example – AER, *Rate of Return Guideline*, December 2013 pp. 25 and 66.

this comprehensive engagement with all stakeholders provide a solid foundation for our decision making.

The guidelines we developed include³⁸:

- Expenditure forecast assessment guideline – describes the process, techniques and associated data requirements for our approach to setting efficient expenditure allowances for network businesses
- Expenditure incentives guideline – sets out our capital expenditure incentives and efficiency benefit sharing schemes which are designed to give electricity network businesses incentives to spend efficiently and share the benefits of efficiencies with consumers
- Rate of return guideline – sets out how we determine the return that network businesses can earn on their investments. Applied consistently over time, the guideline provides regulatory stability and increased certainty through greater transparency of the key components of the rate of return and how these are assessed.
- Consumer engagement guideline for network service providers – aims to help network businesses develop strategies to engage systematically, consistently, effectively and strategically with consumers on issues that are significant to both parties
- Shared assets guideline – outlines how consumers will benefit from the other services electricity network businesses may provide using the assets consumers pay for
- Confidentiality guideline – sets out how network businesses must make confidentiality claims over information they submit to us. This guideline balances protecting genuinely confidential information with ensuring that stakeholders can access sufficient information on issues affecting their interests.

Gas businesses, including JGN, were active participants in our consultation on all the guidelines.

The NGR requires us to state in our final decision any reasons for departing from the rate of return guideline.³⁹ While the NGR does not refer to the other AER guidelines, we consider that the approaches set out in the guidelines assist us in generating a decision that contributes to the achievement of the NGO to the greatest degree. We have therefore reviewed and, where appropriate, applied the approaches set out in our guidelines to this review.

Our guidelines are available on our website and are summarised in appendix A.⁴⁰

³⁸ AER, *Expenditure Forecast Assessment Guidelines, Rate of Return Guidelines, Consumer Engagement Guideline for Network Service Providers, Shared Asset Guideline, Confidentiality Guideline*.

³⁹ NGR s. 87

⁴⁰ <http://www.aer.gov.au/networks-pipelines/guidelines-and-schemes>

4 Material issues and opportunity to be heard

The NGL requires us to inform stakeholders of the material issues we are considering and to give them a reasonable opportunity to make submissions in respect of this decision.⁴¹

The starting point for our draft decision was to assess JGN's proposal against the NGL and the NGR. In doing so, we applied our guidelines and assessment tools and gathered a range of information to inform stakeholders of material issues. We also provided stakeholders a reasonable opportunity to be heard. We considered JGN's proposal in light of submissions, its performance to date and its operating environment. A high level overview of these processes follows. Further information on how we informed stakeholders of material issues and provided a reasonable opportunity to make submissions is at appendix B. A summary of Consumer Challenge Panel (CCP) advice and stakeholders' submissions is provided at appendices C and D respectively.

4.1 Our engagement

Effective consultation with stakeholders is essential to the performance of our regulatory functions. We set out our consultation and stakeholder engagement in Appendix B. In summary, throughout the review process, we engaged with stakeholders by:

- considering 15 submissions on JGN's proposal
- having JGN present its proposal to the AER Board in August 2014, so questions could be raised and key issues explained
- having the CCP present its advice in response to JGN's proposal to the AER Board in August 2014
- convening regular meetings between the CCP and AER staff to discuss key issues
- having one-on-one discussions with JGN's retailers and large industrial users regarding JGN's proposal
- attending site visits to view JGN's network, and
- along with the CCP, meeting with JGN's Customer Council in August 2014.

Further, our review team had extensive direct engagement with JGN throughout the review process. As part of this engagement we, and our consultants, met with JGN staff to discuss aspects of its proposal, and sought and considered additional information to help us understand and test its positions.

⁴¹ NGL s. 28(1)(b)(i)

5 Constituent components and interrelationships

We have specified, as part of our draft decision, how the constituent components of our decision relate to each other and how we have taken those interrelationships into account.⁴² Ultimately, our review of JGN's access arrangement will create an overall decision, and considering constituent components in isolation ignores the importance of these interrelationships, and would not contribute to the achievement of the NGO.

Interrelationships can take various forms including:

- underlying drivers and context are likely to affect many constituent components of our decision. For example, forecast demand affects the efficient levels of capex and opex in the access arrangement period and it also affects how overall revenue is translated into individual tariffs.
- direct mathematical links between different components of a decision. For example, the value of imputation credits has an impact on the appropriate tax allowance and the benchmark efficient entity's debt to equity ratio has a direct effect on the cost of equity, the cost of debt and the nominal vanilla rate of return.
- trade-offs between different components of revenue. For example, undertaking a particular capex project may affect the need for opex and vice versa.
- trade-offs between forecast and actual regulatory measures. For example, an increase in augmentation to the network means the service provider has more assets to maintain leading to higher opex requirements.
- the distributor's approach and attitude to managing its network. The distributor's governance arrangements and its approach to risk management will influence most aspects of the proposal, including the capex/opex trade-off.

Interrelationships are also a useful tool when approaching decision making more holistically. This is especially the case for underlying drivers that are likely to affect many aspects of revenue (and resulting tariffs) simultaneously. In these cases, individual drivers may substantially influence the overall efficient revenue allowance and tariff path. As a result, while there is no tool to directly estimate an efficient overall revenue allowance or tariff, underlying drivers can indicate the direction and broad magnitude of changes to the efficient level of overall revenue.

Consumer preferences should also be reflected throughout the proposal. More particularly, if the service provider says investment is needed because consumers want it, the service provider needs to show that it has effectively engaged with consumers. Any deficiency in consumer engagement will mean consumer views will be reflected less in the proposal.

5.1 Key drivers impacting JGN's proposal

Below we summarise the key underlying drivers for this decision and illustrate their impact on the constituent components of our decision. We then examine the cumulative effect of these drivers on the efficient level of overall revenue and tariffs. In our attachments and appendices, we include our analysis of the other interrelationships between constituent components of this decision.

⁴² NGL, s. 28(1)(b)(ii).

There are three key drivers impacting on our draft decision: the prevailing conditions in financial markets, our expectation of future demand and the associated costs of building and maintaining the network to meet that demand.

Most significantly, the investment environment has improved since our previous decision. Our last decision for JGN was made during the height of uncertainty surrounding the global financial crisis (GFC).⁴³ Since then perceptions of risk have subsided and investment risk premiums have fallen as evidenced by falling credit risk premiums. The Reserve Bank of Australia has also lowered its target cash rate. As a consequence, the lower cost of debt and equity translate to lower financing costs necessary to attract efficient investment.

We estimate the returns on equity and debt for a benchmark efficient business in accordance with our rate of return guideline. This approach supports the allowed rate of return objective in the NGR—for the overall rate of return to be commensurate with the efficient financing costs of a benchmark efficient business. Using our rate of return guideline as our starting point, we have assessed a rate of return that achieves the rate of return objective and the NGO and will allow JGN to fund its network investment. This is lower than the cost of capital JGN received for the 2010–15 access arrangement period and is also lower than JGN's proposal which was to include a nominal vanilla WACC of 8.67.

We have adopted a demand forecast that is higher than that proposed by JGN, based on advice from Deloitte Access Economics. As JGN is subject to a price cap, expectations of future demand are a key input into the final regulated price, with a higher demand forecast leading to lower prices. Our higher forecast is based on including the likely impact of economic growth on the demand for gas, the removal of the carbon price together with revised assumptions around small business activity.

Much of JGN's capex proposal is for the connection of new customers to its network. We agree with JGN that there will be growth in the volume of connections, albeit we forecast slower growth for small businesses. We also consider that JGN's method for forecasting unit rates does not produce the best estimate in the circumstances. Applying our forecasting method to estimate unit rates and our adjustment to the volume of connections reduces the connections capex we have included in our capex forecast. This decrease accounts for nearly half of our adjustment to JGN's capex forecast.

Another significant capex driver is meter renewal and upgrades. The age profile of meters requires JGN to step up its replacement program. However JGN has proposed complete replacement of some categories of meters. We have adjusted the meter replacement rate for these categories downwards. The change accounts for around a quarter of our adjustment to JGN's capex forecast.

Individually, each of these key drivers has impacted the constituent components of our decision. Their cumulative impact is that we consider JGN's revenue during the 2015-20 access arrangement period should be lower than its current and proposed revenues, and after an initial fall should remain relatively stable over the coming period. Further, we consider JGN's weighted average tariffs should be lower than its current and proposed tariffs. Relative to the fall in overall revenue, there will be an even larger initial decrease in tariffs, which should then stay relatively stable over the period.

⁴³ Lehman Brothers filed for Chapter 11 bankruptcy protection on September 15, 2008. This is generally considered the date the GFC started. See <http://dm.equip11.com/LBH/Project>.

6 Why our decision, as a whole, is preferable

The NGL anticipates that there may be two or more possible overall decisions that will or are likely to contribute to the achievement of the NGO. In those cases, we must make the decision we are satisfied will contribute to the achievement of the NGO to the greatest degree.⁴⁴

Under the new framework we have turned our mind to the question of what outcome would contribute to the achievement of the NGO to the greatest degree. There is no sole assessment approach that would enable us to determine this question objectively. The NGL recognises this by making our task subjective. It empowers us to determine what we are satisfied contributes to the achievement of the NGO to the greatest degree.⁴⁵ In turn, we must determine how we will satisfy ourselves of this requirement. We consider this inherently involves exercising regulatory judgement.

Consistent with Energy Ministers' views, we consider a decision will contribute to the achievement of the NGO to the greatest degree where we are satisfied that it delivers the best balance between the NGO's factors.⁴⁶ To assess this, we especially consider whether we are satisfied that:

- the overall revenue allowance is consistent with what the key drivers indicate
- the constituent components of a potential decision comply with the NGR's requirements.

This is a relative assessment. Some stakeholders may consider that some potential outcomes do not contribute to the achievement of the NGO. However, we have not sought to determine that issue. Rather, we have considered which potential outcome we are satisfied makes the greatest contribution to the achievement of the NGO.

We acknowledge that there are a range of alternative outcomes that might contribute to the achievement of the NGO. This is particularly the case because, for several components of our decision (e.g. equity beta or the MRP) we could reasonably select several point estimates from within a range. In turn, this could result in different overall revenue allowances.

We do not consider that it is practical or necessary to consider every possible permutation specifically. However, for the reasons in our attachments and appendices we are satisfied that the specific estimates we have selected will or are likely to contribute to the achievement of the NGO to the greatest degree. In particular, we are aware of the consequences of underinvestment for the long term interests of consumers and, therefore, have consistently selected estimates we are satisfied provide JGN with a reasonable opportunity to recover at least efficient costs.⁴⁷ We are satisfied this approach results in an overall decision that contributes to the achievement of the NGO to the greatest degree.

6.1 Our draft decision

We are satisfied that our draft decision contributes to the achievement of the NGO to the greatest degree. Our draft decision sets an overall revenue level and tariff path consistent with the indications from the key drivers discussed in section 5.

⁴⁴ NGL s. 28(1)(b)(iii)

⁴⁵ NGL, s. 28(1)(b)

⁴⁶ Hansard, SA House of Assembly, 26 September 2013 p. 7173.

⁴⁷ NEL, s. 7A(2) and (6).

As set out in section 4 we have undertaken careful assessment of information before us, including JGN's proposal and stakeholder submissions. We have also engaged with all stakeholders on an ongoing basis, in the lead up to this draft decision. We are satisfied this approach has meant we are appropriately informed of stakeholders' views and have taken them into account in our draft decision.

We are also satisfied, for the reasons set out in our attachments and appendices, the constituent components of our draft decision comply with the NGR's requirements.

In addition, we are satisfied that our process for making this draft decision would contribute to the achievement of the NGO to the greatest degree. As discussed in section 3, our decision reflects the approaches set out in our guidelines, which were developed with extensive stakeholder input. We are satisfied they provide a consistent and balanced framework that encourages efficiency in gas pipelines for the long term interests of consumers.

When compared to JGN's proposal, we are satisfied that our draft decision strikes the better balance between the efficient investment operation and use of gas services that contribute to the achievement of the NGO. We are satisfied the overall revenue allowance for JGN provides a return sufficient to promote efficient investment, while incentivising JGN to operate its network efficiently.

Our draft decision sets an overall revenue allowance and tariff path for JGN that are lower than in the 2010–2015 access arrangement period and in its proposal. However, we consider this is appropriate given the key drivers of efficient revenue for the 2015–2020 access arrangement period.

6.2 JGN's proposal

We are not satisfied that JGN's proposal would contribute to the achievement of the NGO to the greatest degree. This is mainly due to our different estimates for WACC, and to a lesser extent for forecast capital expenditure and demand. As a result JGN's proposed overall revenue and tariff path are higher than we consider the drivers indicate are appropriate.

In our attachments and appendices, we have included detailed analysis explaining why we consider several constituent components of JGN's proposal do not comply with the NGR's requirements.

Overall, we consider JGN's proposal would result in a revenue allowance and tariffs that are greater than necessary for the efficient investment in and operation and use of distribution services. In our view this would not contribute to the achievement of the NGO to the greatest degree.

7 Total revenue requirement, tariffs and impact on annual gas bills

The total revenue requirement is a forecast of the efficient cost of providing gas distribution services over the access arrangement period. The total revenue set out in this draft decision has been determined by assessing each building block cost of JGN's access arrangement proposal. We have assessed whether these building block costs are consistent with the costs that would be incurred by an efficient provider of gas distribution services.

Tariffs are derived from the total revenue requirement after consideration of demand for each tariff category. JGN operates under a weighted average price cap.⁴⁸ This means the tariffs we determine (including the means of varying the tariffs from year to year) are the binding constraint across the 2015–20 access arrangement period.⁴⁹

The tariffs set for JGN's distribution network are just one component of customers' annual gas bills. We estimate the likely impact of our draft decision on average annual gas bills for JGN's customers.

7.1 Draft decision

We do not approve JGN's proposed total revenue requirement (smoothed) of \$2933.3 million (\$nominal) for reference services.⁵⁰ Based on our assessment of the building block costs, we determine a total revenue requirement of \$2477.3 million (\$nominal, smoothed) for JGN over the 2015–20 access arrangement period.⁵¹ We are satisfied that this amount meets the requirement of rule 76 of the NGR. This amount includes revenue for reference service of \$2467.3 million (\$nominal) and \$10 million (\$nominal) for negotiated and other services. This total smoothed revenue requirement is 15.5 per cent lower than JGN's proposal over the 2015–20 access arrangement period.

We do not approve JGN's proposed 2015–16 tariffs, which imply a weighted average decrease in real prices of 4.0 per cent, or its 2016–20 tariff path, which is for a real decrease of 2.7 per cent each year. As a result of our lower total revenue requirement and higher demand forecast, our draft decision is for a real decrease in weighted average tariffs of 23.4 per cent in 2015–16, and then real decreases of 2.1 per cent for each subsequent year of the 2015–20 access arrangement period.

We accept that some aspects of JGN's proposal are consistent with the requirements of the NGR. However, we have not approved all elements, and so have not approved JGN's access arrangement proposal as a whole.⁵²

Our draft decision on JGN's revenue requirement by building block costs for each year of the 2015–20 access arrangement period, its total revenue after equalisation (smoothing) and the X factors for use in the tariff variation mechanism are set out in Table 7-1.

⁴⁸ JGN, *Access arrangement information*, June 2014, p. 124.

⁴⁹ Where actual demand across the 2015–20 period varies from the demand forecast in the access arrangement, JGN's actual revenue will vary from the revenue allowance in the access arrangement. In general, if actual demand is above forecast demand, JGN's actual revenue will be above forecast revenue, and vice versa.

⁵⁰ From this amount, \$10 million relates to negotiated and other services. See JGN, *Access arrangement information*, June 2014, Table 12-2, p. 105.

⁵¹ This is calculated by smoothing the total unsmoothed building block revenue requirement of \$2487.9 million (\$nominal).

⁵² NGR, r. 41(2).

Table 7-1 AER's draft decision on JGN's smoothed total revenue and X factors for the 2015–20 access arrangement period (\$million, nominal)

Building block	2015–16	2016–17	2017–18	2018–19	2019–20	Total
Return on capital	213.7	222.9	231.6	239.1	244.5	1151.9
Regulatory depreciation	66.0	77.8	90.8	101.8	88.5	424.9
Operating expenditure	160.0	163.5	168.6	177.6	180.9	850.6
Corporate income tax	9.0	10.5	12.7	15.1	13.2	60.5
Building block revenue – unsmoothed	448.8	474.7	503.7	533.6	527.2	2,487.9
Building block revenue – smoothed	485.0	488.2	492.5	500.0	511.6	2477.3
X factor ^a	23.44% ^b	2.09%	2.09%	2.09%	2.09%	n/a
Inflation forecast	2.55%	2.55%	2.55%	2.55%	2.55%	n/a
Nominal price change	–21.48%	0.40%	0.40%	0.40%	0.40%	n/a

Source: AER analysis.

Notes:

n/a: not applicable.

a Under the CPI–X form of control, a positive X factor is a decrease in price (and therefore revenue).

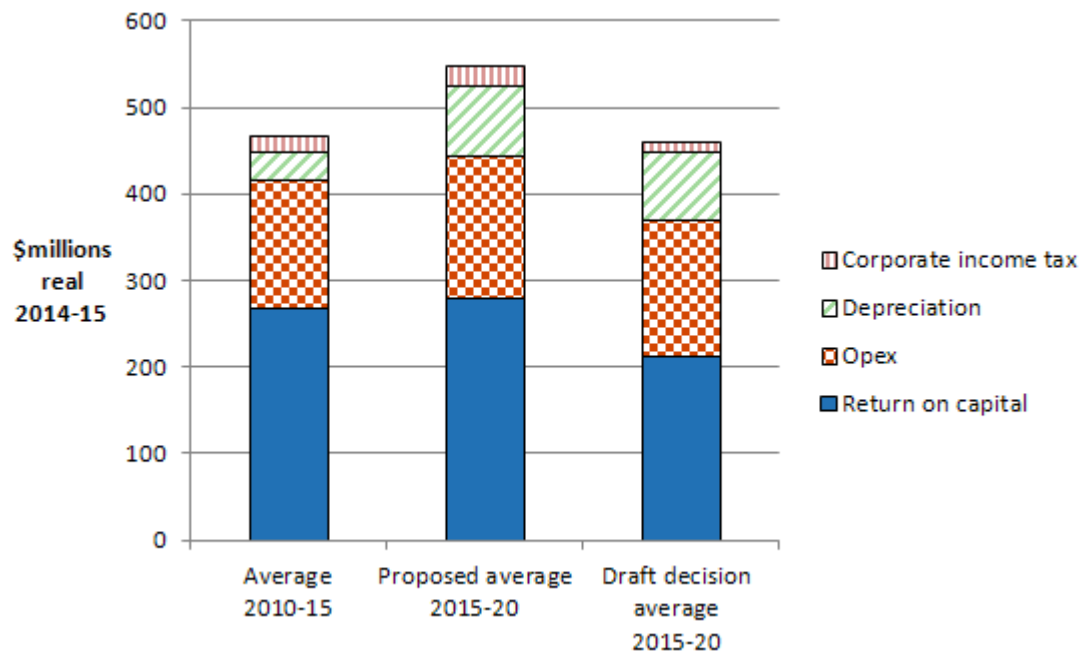
b The X factor for 2015–16 is indicative only; the draft decision establishes 2015–16 tariffs directly, rather than referencing a change from 2014–15 tariffs.

The next two sections focus on the derivation of total revenue from building block components, and then the derivation of tariffs from total revenue.

7.1.1 Total revenue

Figure 7-1 compares the average annual building block revenue from our draft decision against that proposed by JGN for the 2015–20 access arrangement period, as well as the approved average amount for the 2010–15 access arrangement period.

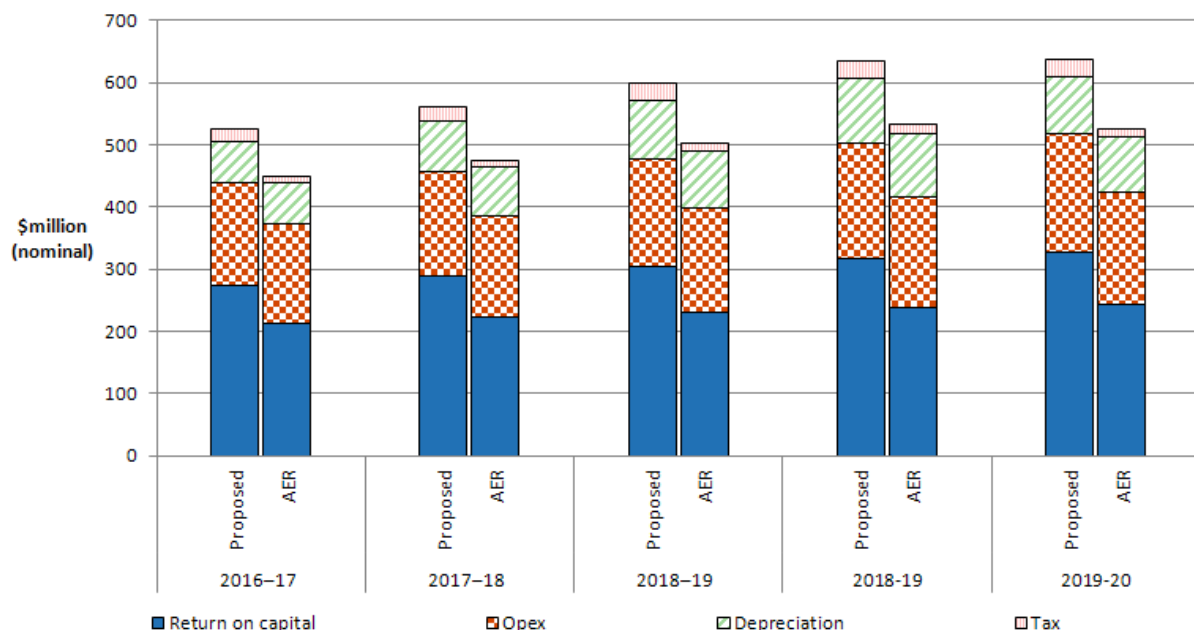
Figure 7-1 AER's draft decision average annual revenue (unsmoothed) compared with JGN's proposed average annual revenue and approved average annual revenue for 2010–15 (\$ million, 2014–15)



Source: AER analysis, JGN, *Access arrangement information*, June 2014, Table 12-2, p. 105.

Figure 7-2 shows the effect of our draft decision adjustments on JGN's proposed building blocks for the 2015–20 access arrangement period. It shows our draft decision will reduce JGN's proposal for the return on capital, opex and tax building blocks.

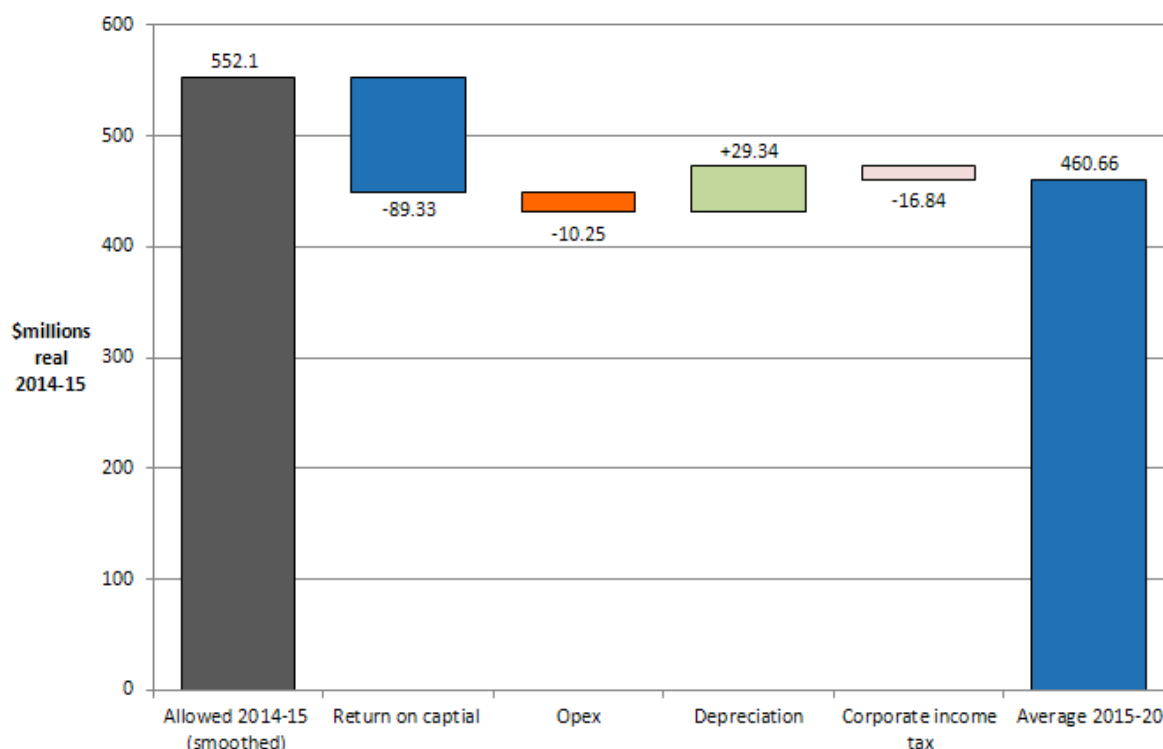
Figure 7-2 AER's draft decision and JGN's proposed building block revenue (unsmoothed) (\$million, nominal)



Source: AER analysis.

Figure 7-3 shows the size of the changes in the building block costs from our draft decision and how these impact on revenues on average. The estimated actual revenue for 2014–15 is used as a base from which the impact of the changes can be shown. For example, the most significant change is to the return on capital allowance that reduces the building block revenue requirement on average by about \$89.3 million.

Figure 7-3 AER’s draft decision annual average revenue (smoothed) compared with the 2014–15 building block revenue (smoothed) (\$million, 2014–15)



Source: AER analysis.

notes: 'Actual 2014–15 is JGN's latest estimate of actual revenue to be recovered for that year. In order to calculate building block changes, this estimate is notionally divided in the same proportion as allowed building block revenue over the 2010–15 access arrangement period.

7.1.2 Smoothed revenue and tariffs

After of our assessment of JGN's total unsmoothed revenue, we need to determine the smoothed revenue profile across the five year access arrangement period. JGN operates under a weighted average price cap as its tariff variation mechanism.⁵³ This means we determine the weighted average price change each year such that the net present value of unsmoothed and smoothed revenue is equal across the entire period.⁵⁴ This weighted average price change is labelled the 'X factor'. The mechanics of the tariff variation mechanism are addressed in attachment 11.

Table 7-3 presents our draft decision X factors, and compares them to JGN's proposal.

⁵³ The access arrangement decision directly sets 2015–16 tariffs; so the first year X factor (often called P^0) is indicative only. It is calculated by comparing the total revenue arising from using 2015–16 quantities and 2014-15 prices against the total revenue arising from using 2015–16 quantities and 2015–16 prices. For years two to five, the X factors are the binding means of adjusting prices (under the weighted average price cap tariff variation mechanism).

⁵⁴ JGN proposed to calculate the net present value using a pre-tax WACC. This differs from the approach in our standard post-tax revenue model, which instead uses a vanilla WACC. For this draft decision we accept JGN's proposed approach. The AER is currently consulting on an update to its standard PTRM, and this issue (the form of the WACC for smoothing purposes) is included in that consultation. For the final decision, we intend to consistently apply to JGN the smoothing form that is included in the updated PTRM. See <http://www.aer.gov.au/node/27616>.

Table 7-2 Weighted average price change across the access arrangement period (X factors) — comparison of JGN proposal and AER draft decision (per cent)

	2015–16	2016–17	2017–18	2018–19	2019–20
JGN proposal					
X factor ^a	4.00 ^b	2.71	2.71	2.71	2.71
Nominal price change	-1.56	-0.23	-0.23	-0.23	-0.23
AER draft decision					
X factor ^a	23.44 ^b	2.09	2.09	2.09	2.09
Nominal price change	-21.48	0.40	0.40	0.40	0.40

Source: JGN, Access arrangement information, June 2014, AER analysis.

Notes:

- a Under the CPI-X form of control, a positive X factor is a decrease in price (and therefore revenue). For example, an X factor of 2.71 per cent in 2016–17 means a real price decrease of 2.71 per cent that year. After consideration of inflation (assumed at 2.55 per cent) this becomes a nominal price decrease of 0.23 per cent.
- b The X factor for 2015–16 is indicative only; the draft decision establishes 2015–16 tariffs directly, rather than referencing a change from 2014–15 tariffs.

In broad terms, JGN proposed a flat tariff path, with a slight decrease in 2015–16, then tariffs that were almost constant in nominal terms each year. Since the unsmoothed building block costs are generally increasing across the period, such a tariff path meant that JGN would over-recover revenue in the earlier years and then under-recover in later years of the 2015–20 access arrangement period.⁵⁵

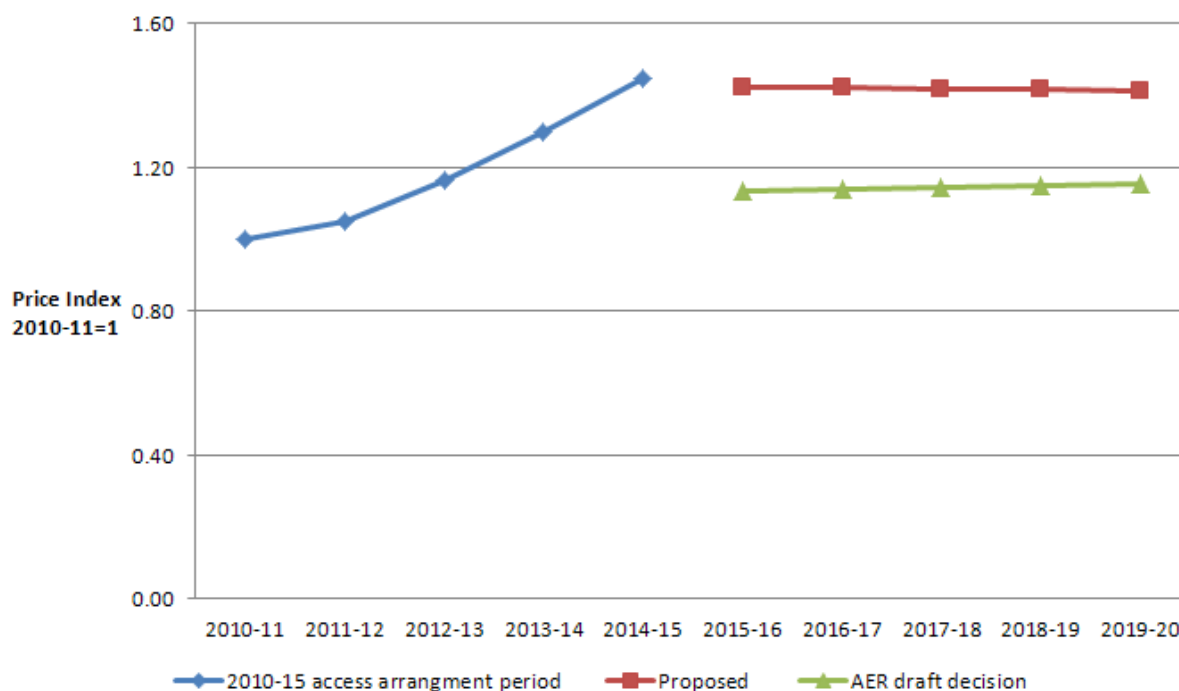
Our draft decision tariff path produces lower total smoothed revenue than JGN's proposal, in line with our reductions to total unsmoothed revenue. This tariff path has a large decrease in 2015–16, followed by tariffs that increase slightly in nominal terms each year.

Figure 7-4 contains a nominal index that shows indicative changes in JGN's distribution charges across the 2010–20 period. This index is calculated using the approved X factors from JGN's 2010–15 access arrangement, and either JGN's proposed X factors for 2015–20 or the AER draft decision.⁵⁶ This provides a broad overall indication of the average movement across this period.

⁵⁵ In JGN's proposal, the difference between unsmoothed and smoothed revenue in 2019–20 was 8 per cent. JGN's consultation in support of its proposed price path did not appear to disclose this figure to customers. JGN, *2015–20 access arrangement information, Appendix 1.5 (JGN community and small business consultation report)*, 30 June 2014, p. 5–6 of section 'Prices and impacts of customers' (page 113–4 of pdf).

⁵⁶ It uses inflation outcomes for the 2010–14 period, and estimated inflation from 2014–20.

Figure 7-4 Indicative reference tariff paths for JGN's reference services from 2010 to 2020 (nominal index)



Source: AER analysis, JGN, *Access arrangement information*, June 2014, p. 105 (table 12–2). AER, *Access arrangement information for JGN's NSW gas distribution networks, 1 July 2010 – 30 June 2015, Further amended with regard to mine subsidence expenditure*, 26 September 2011, p. 26..

We are satisfied that our draft decision tariff path for JGN's 2015–20 access arrangement period:

- achieves revenue equalisation as required by rule 92(2) of the NGR
- adjusts smoothed revenue downward in the first year of the access arrangement period, to better reflect the unsmoothed building block costs. Closer alignment of tariffs and costs aids the achievement of the NGO and the revenue and pricing principles, including through providing a price signal that facilitates efficient use of natural gas services⁵⁷
- aligns final year unsmoothed and smoothed revenue, within 3 per cent. All else equal, this minimises price shocks at the start of the next access arrangement period, in line with JGN's stated objectives and feedback from customers to JGN⁵⁸
- balances these considerations where they conflict; including with regard to the overall minimisation of price changes from year to year within the period.

We derived our tariff path with regard to retaining elements of JGN's proposed price path, in the context of lower unsmoothed total revenue:

- we considered retaining the initial 2015–16 tariff schedule proposed by JGN, which produces an implied P^0 of 4 per cent. Our draft decision reduces the unsmoothed total revenue across the period by 15.5 per cent. Retaining this P^0 and adjusting the X factor for all remaining years (equally) would then require an X factor of 14.35 per cent for years two to five. Expected revenue

⁵⁷ NGL, cl. 23, 24.

⁵⁸ JGN, *2015–20 access arrangement information*, 30 June 2014, p. 2.

in 2019–20 would be \$334 million, approximately \$131 million (or 28 per cent) below the cost of providing reference services that year.

- we considered retaining the implicit principle behind JGN's submission: a one-off reduction in 2015–16, then relatively flat nominal prices across the rest of the period. Retaining the X factors from JGN's proposal (2.71 per cent) for years two to five would mean a tariff reduction of approximately 20 per cent in 2015–16. It would also lead to a moderate discrepancy in 2019–20, with expected revenue approximately \$20 million (or 4.3 per cent) below the cost of providing reference services that year.

We considered that the second option was preferable. We did slightly adjust the X factors for years two to five (2.09 per cent instead of 2.71 per cent) in order to better align unsmoothed and smoothed revenue in 2019–20. This will minimise price shocks at the commencement of the 2020–25 access arrangement period.⁵⁹ However, the end effect (prices that are almost constant in nominal terms across the access arrangement period) is the same.

7.2 Indicative impact of distribution charges on annual gas bills

Distribution charges are just one component of the customer's annual gas bill, which also includes wholesale, transmission and retail costs.

To estimate the effect of our draft decision on annual gas bills, we begin with the weighted average price change (X factors) presented above, which provides the indicative change in distribution charges. For customers on JGN's network, distribution charges account for approximately 50 per cent of the annual gas bill.⁶⁰ To calculate the impact of our draft decision on customers' bills we assume that our changes to distribution charges are passed through to customers, but that other components of the electricity bill are held constant. As a starting point, we estimate that in 2014–15, the average annual gas bill is \$1042 for a residential customer, and \$5021 for a small business customer (both \$nominal).⁶¹

Based on this approach, we estimate our draft decision for JGN's gas distribution network would reduce the annual gas bill for both residential and small business customers:

- For residential customers, we estimate the average annual gas bill should decrease by \$112 (\$ nominal) in 2015–16, a reduction of 11 per cent. This would then increase at around \$2 (or 0.4 per cent) each year from 2016–17 to 2019–20.
- For small business customers, we estimate the average annual gas bill should decrease by \$539 (\$ nominal) in 2015–16, a reduction of 11 per cent. This would then increase at around \$8 (or 0.4 per cent) each year from 2016–17 to 2019–20.

⁵⁹ JGN stated that its flat nominal price path would meet the customer preference to 'avoid price shock' within the access arrangement period. However, to the extent that JGN intends to meet this customer preference, it also needs to consider the price shock from one access arrangement period to the next. JGN, *Access arrangement information*, 30 June 2014, pp. 103, 109.

⁶⁰ IPART, *Changes in regulated retail gas prices from 1 July 2014*, June 2014 p.17

⁶¹ For residential customers, the estimate is calculated based on typical residential customer consumption and indicative annual bills sourced from IPART. For small business customers, the amount is calculated based on IPART's estimate of the annual bill for typical volume business customers from different regions within JGN's network. The information has been checked against data from our website, <http://www.energymadeeasy.gov.au/>, where appropriate. See IPART, *Fact sheet – Removing carbon costs from regulated gas prices*, 15 August 2014; and IPART, *Changes in regulated retail gas prices from 1 July 2014*, June 2014, p. 7, 17. IPART estimated that annual consumption for a typical residential customer ranged from 23GJ to 45 GJ and depends on the location of the customer. Similarly, IPART estimated that annual consumption for a typical volume business customer ranged from 184GJ to 246GJ and depends on location of the customer.

Figure 7-2 summarises the indicative impacts of our draft decision on the typical residential customer and volume business customer's annual gas bill.

Table 7-3 Indicative impact of AER's draft decision for JGN on the typical residential and volume business customer annual gas bill in JGN's distribution area over the 2015–20 access arrangement period (\$nominal)

	2014–15	2015–16	2016–17	2017–18	2018–19	2019–20
JGN proposal						
Residential annual gas bill ^a	1042	1034	1033	1032	1030	1029
Annual change		-8	-1	-1	-1	-1
Small business annual gas bill ^b	5021	4982	4976	4971	4965	4959
Annual change		-39	-6	-6	-6	-6
AER draft decision						
Residential annual gas bill ^a	1042	930	932	933	935	937
Annual change		-112	+2	+2	+2	+2
Small business annual gas bill ^b	5021	4482	4490	4498	4506	4514
Annual change		-539	+8	+8	+8	+8

Source: AER analysis; JGN, *Access arrangement information*, Appendix A, June 2014.

a 2014–15 annual bill based on IPART, *Fact sheet – Removing carbon costs from regulated gas prices*, 15 August 2014. 2015–16 to 2019–20 annual bills reflects changes in distribution charge only while keeping other components of the annual bill constant.

b 2014–15 annual bill based on IPART, *Changes in regulated retail gas prices from 1 July 2014*, June 2014, p. 7. 2015–16 to 2019–20 annual bills reflects changes in distribution charge only while keeping other components of the annual bill constant.

These are high-level indicative estimates only, and the specific impact of our draft decision on annual gas bills for different types of customers will vary depending on the reference tariff structure and customer's consumption level. Changes to other components of the annual gas bill will also affect the actual figures.

In particular, the price of wholesale gas is forecast to increase significantly during the 2015–20 period. Australia's gas market is expected to undergo significant changes over the next 15 years. As producers start exporting liquefied natural gas it is anticipated that the price of gas will rise to international levels. Exactly how high and how fast the price will move is uncertain. JGN stated in its proposal that gas production costs are forecast to double by 2020.⁶² In setting our draft decision price path, we have also considered the potential impact of changes in the wholesale gas price, including:

- JGN's forecast of significant price rises in the wholesale cost of gas in 2016–17 and 2017–18.⁶³
- JGN's customers stating that their key concern was price stability in end-user bills (including wholesale and distribution costs, as well as other components).⁶⁴

⁶² Jemena Gas Networks (NSW) Ltd, *Customer Overview of JGN's 5-year plan: 2015/16 – 2019/20*, June 2014, page 7.

⁶³ JGN forecast a price of \$5/GJ in 2014–15 and 2015–16; \$6/GJ in 2016–17; and then \$8/GJ for 2017–18, 2018–19 and 2019–20. See JGN, *2015–20 Access arrangement information*, Appendix 5.1 (Demand forecasting report), p. 66.

⁶⁴ JGN, *Access arrangement information*, 30 June 2014, p. 2, 103.

JGN endorsed these customer preferences and stated that its proposed price path for the distribution network was designed to offset the forecast increases in wholesale gas costs.⁶⁵

Notwithstanding this JGN statement, it is not apparent to us how JGN's proposed price path would work to offset the forecast price increases. For example, there are no price reductions specifically targeted to 2016–17 and 2017–18.⁶⁶ JGN's flat nominal price path for distribution means wholesale gas price increases would effectively be passed through in full in these years.

Our draft decision includes a large price reduction in 2015–16, which should act as a buffer for later wholesale gas price increases. However, this reduction is not coincident with the expected price increase (end user bills are forecast to decrease in 2015–16, then increase slightly in 2016–17 and 2017–18).

⁶⁵ In making this assessment, it is necessary to account for the different proportions of the average end user bill arising from each sector. On average, wholesale costs account for 20 per cent of end user bills; distribution costs account for 50 per cent of end user bills. See JGN, *Access arrangement information*, 30 June 2014, Appendix 1.5 (JGN community and small business consultation report), p. 25.

⁶⁶ While there are real reductions in 2016–16 and 2017–18, these are the same reductions applied across the access arrangement period.

8 Key elements of the building blocks

There is no one tool that by itself determines an overall revenue allowance. Therefore in setting our alternative overall revenue allowance for JGN of \$2477.3 million (\$ nominal) for the 2015–20 access arrangement period we:

- apply relevant tests under the NGR, the assessment methods and tools developed as part of our Better Regulation guidelines and consider information provided by JGN, the CCP, consultants and stakeholder submissions
- consider our total revenue allowance against section 28 of the NGL, including the constituent decisions and the interrelationships we discussed in section 5.

8.1 The building block approach

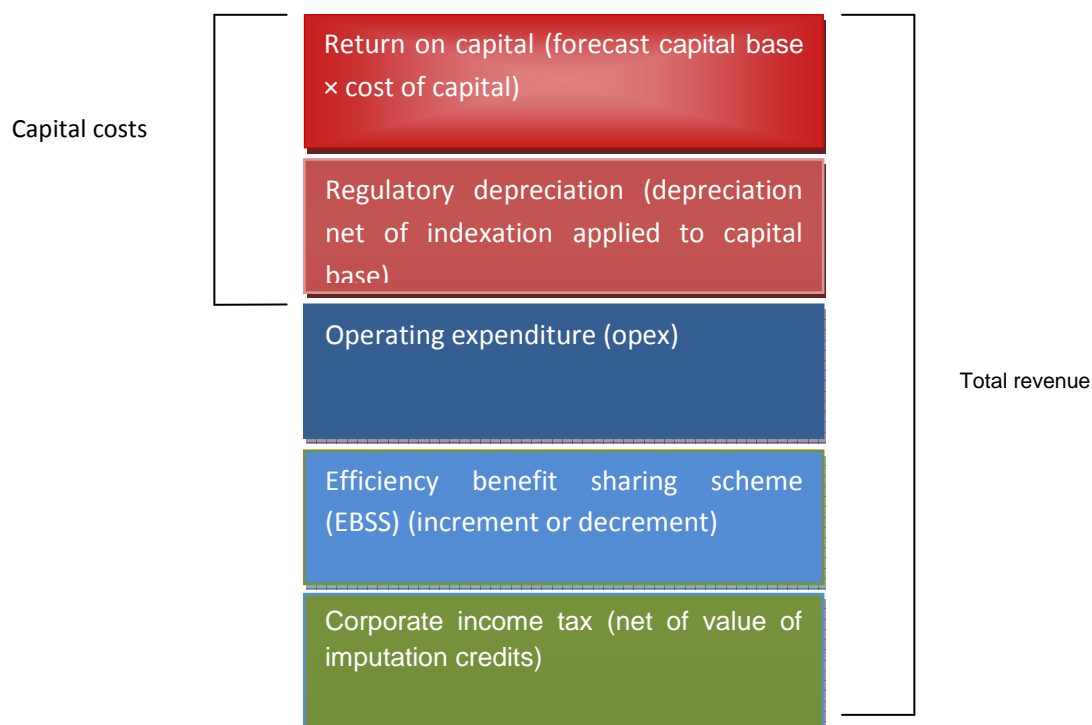
We have employed the building block approach to determine JGN's total revenue—that is, we based the total revenue on our estimate of the efficient costs that JGN is likely to incur in providing gas distribution network services. The building block costs, as shown in Figure 8-1, include:⁶⁷

- return on the projected capital base
- depreciation on the projected capital base
- the estimated cost of corporate income tax
- increments or decrements resulting from the operation of an incentive mechanism to encourage gains in efficiency
- forecast opex.

Our assessment of capex directly affects the size of the capital base and therefore, the revenue generated from the return on capital and depreciation building blocks.

⁶⁷ NGR r. 76.

Figure 8-1 The building block approach for determining total revenue



The following section summarises our decision by building block and provides our high level reasons and analysis.

8.2 Capital base

The capital base roll forward is the value of JGN's assets that are used to provide gas distribution network services. These assets include pipelines, meters, land, buildings, plant and vehicles. The capital base is the value on which JGN earns a return on capital, representing the return on the funds (capital) invested in the business. The capital base is also the basis for calculating depreciation, which represents the return of capital back to investors over time. So, the capital base is an important input to the determination of JGN's total revenue.

We are required to make a decision on JGN's proposed:⁶⁸

- opening capital base as at 1 July 2015, which reflects the capital base roll forward over the 2010–15 access arrangement period⁶⁹
- projected capital base over the 2015–20 access arrangement period.

Attachment 2 sets out the detailed reasons for our draft decision on JGN's capital base.

⁶⁸ NGR, rr. 59, 72, 77, 78 and 90.

⁶⁹ The term 'roll forward' means the process of carrying over the value of the capital base from one regulatory year to the next. The opening capital base value for a regulatory year within the access arrangement period is rolled forward by indexing it for inflation, adding any conforming capex, and subtracting depreciation and other possible factors (for example, disposals or customer contributions). Following this process, the AER arrives at a closing value of the capital base at the end of the relevant year.

8.2.1 Draft decision

We do not approve JGN's proposed opening capital base, and instead determine an opening capital base of \$3044.2 million (\$nominal) as at 1 July 2015. This is because, although we accept JGN's proposal that an adjustment should be made to reflect the difference between estimated and actual capex in 2009–10, we do not consider that this should include a return on capital component.⁷⁰ Table 8-1 sets out our draft decision on the roll forward of JGN's capital base across the 2010–15 access arrangement period, and shows the derivation of the opening capital base.

Table 8-1 AER's draft decision on JGN's capital base roll forward for the 2010–15 access arrangement period (\$million, nominal)

	2010-11	2011-12	2012-13	2013-14	2014-15
Opening capital base	2312.7	2456.6	2611.2	2697.1	2839.3
Net capex at the start of the year	76.2	82.8	63.5	88.1	117.6
Indexation of assets	63.4	78.8	59.0	76.5	88.7
Net capex at end of year	78.3	85.4	64.9	90.5	121.1
Depreciation	-74.1	-92.4	-101.4	-112.7	-125.6
Adjustment for difference between estimated and actual capex in 2009-10					3.1
Closing capital base	2456.6	2611.2	2697.1	2839.3	3041.1
Opening capital base at 1 July 2015					3044.2

Source: AER analysis.

We do not approve JGN's proposed projected capital base across the 2015–20 access arrangement period, and therefore do not approve its proposed closing capital base. This is a consequence of our decision not to approve JGN's proposed inputs to the projected capital base—the opening capital base, forecast net capex, forecast depreciation and forecast inflation.⁷¹ Instead, we determine a closing capital base of \$3595.2 million (\$nominal) as at 30 June 2020. Attachment 2 sets out our draft decision on JGN's projected capital base across the 2015–20 access arrangement period and shows the derivation of the closing capital base.

⁷⁰ We approve other aspects of JGN's proposed 2010–15 roll forward, including the proposed conforming capex, the use of forecast depreciation, the straight line method, and the adjustment for inflation.

⁷¹ We approve JGN's proposal to use forecast depreciation to roll forward the capital base across 2015–20 at the next access arrangement decision.

Table 8-2 AER's draft decision on JGN's projected capital base for the 2015–20 access arrangement period (\$million, nominal)

	2015-16	2016-17	2017-18	2018-19	2019-20
Opening capital base	3044.2	3180.0	3302.9	3423.4	3512.5
Net capex at the start of the year	99.7	99.1	104.3	94.2	84.5
Indexation of assets	80.2	83.6	86.9	89.7	91.7
Net capex at end of year	102.2	101.6	107.0	96.6	86.7
Depreciation	-146.2	-161.4	-177.7	-191.5	-180.2
Closing capital base	3180.0	3302.9	3423.4	3512.5	3595.2

Source: AER analysis.

8.2.2 Summary of analysis and reasons

We do not approve JGN's proposed opening capital base of \$3045.8 million (\$nominal) because we consider one aspect of the proposal does not comply with the NGR.⁷² This aspect relates to the adjustment arising from the difference between estimated and actual capex for 2009–10, the final year of the previous (2005–10) access arrangement period. JGN proposed that this adjustment should include not just the base value of the difference between estimated and actual capex, but also the accumulated return on capital associated with that difference. A recent Australian Competition Tribunal decision found that rule 77(2)(a) of the NGR did not permit the inclusion of the return on capital component when making this adjustment.⁷³ Accordingly, we remove this component and determine an opening capital base of \$3044.2 million as at 1 July 2015 for JGN.⁷⁴ This is \$1.36 million (\$nominal) less than that proposed by JGN.

We also do not approve JGN's projected closing capital base of \$3810.2 million (\$nominal) as at 30 June 2020. This is a consequential decision dependent on our decision not to approve a number of JGN's proposed inputs to the projected capital base:

- the opening capital base as at 1 July 2015 (see attachment 2)
- forecast capex (attachment 6)
- forecast depreciation (attachment 5).

We instead determine a closing capital base of \$3595.2 million (\$nominal) as at 30 June 2020, a reduction of \$215 million (nominal) or 5.6 per cent from the proposed value. Details of our approach in deriving the value of the capital base and relevant interrelationships are set out in attachment 2.

⁷² NGR, r. 77(2)(a).

⁷³ Australian Competition Tribunal, *Application by APA GasNet Australia (Operations) Pty Limited (No 2) [2013] ACompT 8*, September 2013, pp. 19–35.

⁷⁴ This rule was amended on 2 October 2014, but the JGN proposal was assessed under the relevant legislation, which was that in force at 30 June 2014.

8.3 Rate of return (return on capital)

The allowed rate of return provides a service provider a return on capital to service the interest on its loans and give a return on equity to investors. The return on capital building block is calculated as a product of the rate of return and the value of the capital base.⁷⁵

8.3.1 Draft decision

We are satisfied that the allowed rate of return of 6.80 per cent (nominal vanilla⁷⁶) we determine, subject to updating, achieves the rate of return objective.⁷⁷ We are not satisfied that JGN's proposed (indicative) 8.67 per cent return is such that it achieves the allowed rate of return objective. The allowed rate of return of 6.80 per cent will be updated annually. This is because our draft decision is to apply a trailing average portfolio approach to estimating debt which incorporates annual updating of the allowed return on debt.⁷⁸ Our draft decision is set out in Table 8-3.

Table 8-3 AER's draft decision on JGN's rate of return (nominal)

	2010–15 AER decision	2015–20 JGN proposal	2015–20 AER draft decision
Nominal risk free rate (cost of equity)	5.85%	4.12% ^(a)	3.55% ^(b)
Equity risk premium	5.20%	6.59% ^(c)	4.55%
MRP	6.5%	N/A ^(d)	6.5%
Equity bet	0.8	N/A ^(d)	0.7
Gearing ratio	60.0%	60.0%	60.0%
Inflation forecast	2.60%	2.55%	2.55%
Nominal post-tax return on equity	11.05%	10.71%	8.1%
Nominal pre-tax return on debt	10.02%	7.30%	5.93%
Nominal vanilla WACC	10.43%	8.67%	6.80%

Source: AER analysis; Jemena Gas Networks, *Access arrangement information*, June 2014; Jemena Gas Networks, *Access arrangement: JGN's NSW gas distribution networks 1 July 2010–30 June 2015, Amended by order of the Australian Competition Tribunal*, June 2011.

- (a) JGN proposed a multiple model approach as well as an alternative 'foundation model' approach, both of which result in the same return on equity estimate (10.71 per cent). Under the latter approach, JGN adopted a prevailing risk free rate of 4.12 per cent for input in the SLCAPM, based on a 20 business day averaging period ending 12 February 2014. The risk free rate is to be updated for the final decision. See: JGN, *Access arrangement information, appendix 9.3: Return on equity proposal*, June 2014, pp. 29, 41.
- (b) This is a prevailing indicative risk free rate based on a 20 business day averaging period from 17 September to 15 October 2014. The risk free rate is to be updated for the final decision.
- (c) Under its alternative 'foundation model' approach JGN adopted a risk free rate of 4.12 per cent, which implies an equity risk premium of 6.59 per cent (10.71 – 4.12 = 6.59). See: JGN, *Access arrangement information, appendix 9.3: Return on equity proposal*, June 2014, p. 41.
- (d) JGN did not propose specific values for equity beta and MRP under its multiple model approach. However, under its alternative 'foundation model' approach it proposed a composite equity beta of 0.91 and an MRP of 7.21 per cent. See: JGN, *Access arrangement information, appendix 9.3: Return on equity proposal*, June 2014, pp. 40–41.

⁷⁵ NGR, r. 87(1).

⁷⁶ The nominal vanilla WACC combines a post-tax return on equity and a pre-tax return on debt, for consistency with other building blocks.

⁷⁷ NGR, r. 87(2).

⁷⁸ NGR, r. 87(9)(b).

8.3.2 Summary of analysis and reasons

Our approach

We consider that our approach, which includes a process that lends itself to capturing a broad range of material from all stakeholders while founded on the rate of return framework, would result in an estimate of the rate of return that contributes to achieving the allowed rate of return objective. Our approach is based on the rate of return framework in the NGR. Under this framework, our key task is to determine an overall rate of return that we are satisfied achieves the allowed rate of return objective.⁷⁹ An important feature of the rate of return framework is the recognition that there is no one correct answer that achieves the allowed rate of return objective.⁸⁰

Prior to the submission of JGN's proposal, as required by the rate of return framework, in December 2013, we published the Rate of Return Guideline (Guideline).⁸¹ The Guideline was designed through extensive consultation and included effective and inclusive consumer participation.⁸² We agree with stakeholders that certainty and predictability of outcomes in rate of return issues could materially benefit the long term interest of consumers.⁸³

Return on equity

Our return on equity estimate is determined by applying the iterative six step process set out in the Guideline (foundation model approach). We have had regard to a large amount of relevant information, including various equity models. At different stages of the process we have used this material to inform a return on equity estimate that contributes to the allowed rate of return objective.

The evidence indicates that the Sharpe–Lintner capital asset pricing model (SLCAPM) is the superior model in terms of estimating expected equity returns. We have therefore adopted this model as our foundation model. We commissioned expert reports from Professor Michael McKenzie and Associate Professor Graham Partington and Associate Professor John Handley. These confirm that employing our foundation model approach and using the SLCAPM as the foundation model, in the context of the vanilla WACC formula is expected to lead to a rate of return that meets the allowed rate of return objective.⁸⁴

Our SLCAPM input parameters (MRP and equity beta) are determined after considering a range of relevant material and determining a point estimate that is most suited for our task. We evaluated our SLCAPM point estimate against other information. The critical allowance for an equity investor in a benchmark efficient entity is the allowed equity risk premium (ERP) over and above the estimated risk free rate at a given time.⁸⁵ Our estimate of the ERP for the benchmark efficient entity is 4.55 per cent.

⁷⁹ NGR, r. 87(2).

⁸⁰ AEMC, *Rule determination: National electricity amendment (Economic regulation of network service providers) Rule 2012: National gas amendment (Price and revenue regulation of gas services) Rule 2012*, 29 November 2012, p. 67 (AEMC, *Final rule change determination*, November 2012); AEMC, *Final rule change determination*, November 2012, p. iv, AEMC, *Final rule determination*, 29 November 2012, p. 38; The High Court of NZ stated: 'In determining WACC, precision is therefore an elusive and perhaps non-existent quality. Setting WACC is, we suggest, more of an art than a science. The use of WACC, in conjunction with RAB values, to set prices and revenue in price-quality regulation gives significance to WACC estimates that may not exist outside this context.' *Wellington International Airport Ltd & Others v Commerce Commission* [2013] NZHC 3289, para. 1189.

⁸¹ NGR, r. 87(13).

⁸² <http://www.aer.gov.au/node/18859>

⁸³ ENA, *Response to the Draft Rate of Return Guideline of the AER*, 11 October 2013, p. 1; AER, *Better regulation: Explanatory statement rate of return Guideline, Appendices*, December 2013, Appendix I, Table I.4, pp. 185–186.

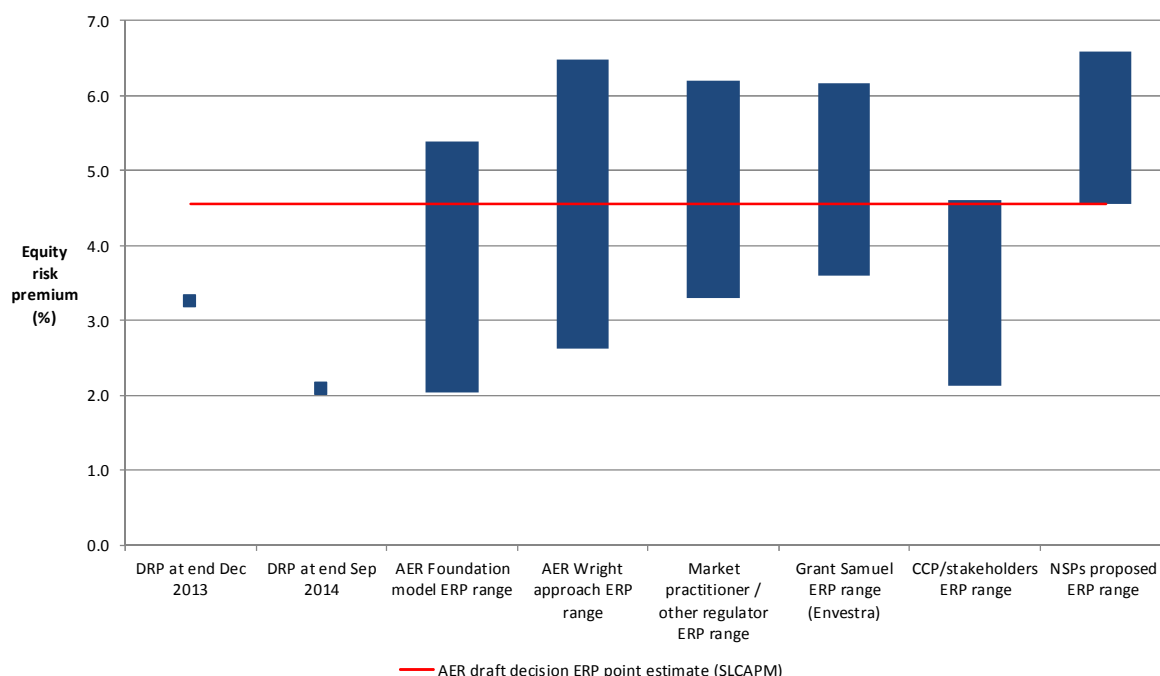
⁸⁴ McKenzie & Partington, *Part A: Return on equity, Report to the AER*, October 2014, p.13; John Handley, *Advice on return on equity, Report prepared for the AER*, October 2014, p. 3.

⁸⁵ Our task is to determine the efficient financing costs commensurate with the risk of providing regulated network service by an efficient benchmark entity (allowed rate of return objective). Risks in this context are those which are compensated via the return on equity (systematic risks).

Applying the standard SLCAPM, this equals the MRP multiplied by the equity beta. Hence, we have compared ERP estimates where relevant (graphically presented in Figure 8-2). We find that our ERP estimate is within the range of other information available to inform the return on equity. Our analysis shows that:

- The Wright approach to specifying the CAPM results in an ERP range of 2.6 to 6.5 per cent. This equates to a return on equity range of 6.2 to 10.1 per cent with a prevailing risk free rate.
- ERP estimates from other market participants (independent valuers, brokers and other regulators) for comparable firms range from 3.3 to 6.2 per cent. This equates to a return on equity range of 6.9 to 9.8 per cent with the prevailing risk free rate.
- Our SLCAPM return on equity estimate is about 2.5 per cent above the prevailing return on debt. This reflects the difference between our ERP of 4.55 per cent and the debt risk premium (DRP) on 10 year BBB bonds of approximately 2.08 per cent.⁸⁶

Figure 8-2 Other information comparisons with the AER allowed ERP



Source: AER analysis and various submissions and reports
 Notes: A detailed explanation of this figure can be found in attachment 3: Rate of return.

Return on debt

Our return on debt estimate is derived using the trailing average approach. This is a change from the current period which applied an on-the-day approach. Our return on debt estimate incorporates a transition from the current on-the-day approach to the new trailing average approach.

We assessed the trailing average approach relative to the other approaches a regulator can apply to estimate the return on debt under the rules.⁸⁷ We conclude that on balance, the trailing average

⁸⁶ To calculate this, we use the RBA's published yields on 10 year BBB non-financial corporate bonds, specifically, the spread to CGS yields (as at 30 September 2014). These are not reflective of our draft decision return on debt estimate which is calculated as an average of the RBA and Bloomberg (BVAL) data series. We have also made an extrapolation adjustment to the RBA data series.

approach is preferable because it may better contribute to the achievement of the allowed rate of return objective.⁸⁸ We are satisfied that a benchmark efficient entity would hold a staggered portfolio of long term (10 year) debt. By this we mean that 10 per cent of the debt is new or refinanced each year. This means that for the 2015–20 period, the benchmark efficient entity will be issuing new debt or refinancing existing debt each year. It also means that at the start of that period, the benchmark efficient entity will have in place a portfolio of debt that is existing debt and was issued in the past. We consider it is reasonable to update 10 per cent of the benchmark efficient entity's return on debt annually going forward. Our application of the trailing average approach is based on a simple average approach that provides for 10 per cent of the benchmark efficient entity's debt portfolio to be refinanced/issued each regulatory year.

There is agreement between service providers (regulatory proposals currently before us) and us on the use of the trailing average approach and that an efficient benchmark entity would hold a staggered portfolio of long term (10 year) debt. However, there is no agreement on how we should move from the current approach to the trailing average. JGN adopted our transitional arrangements.

We adopt a 10 year term for the return on debt with a BBB+ credit rating. Whilst all service providers with current regulatory proposals agree with us on the term; Ausgrid, Endeavour Energy, Essential Energy, ActewAGL and JGN proposed a BBB credit rating.⁸⁹ We are satisfied that our benchmark efficient entity operating within Australia in gas, electricity, distribution or transmission networks face similar degrees of risk, including similar credit risks. Accordingly, we are satisfied that one benchmark credit rating should apply in our decisions for each of these sectors. Adopting a single credit rating is consistent with our adoption of a single definition of the benchmark efficient entity.

We use the debt yields from a third party data provider for estimating the return on debt. All service providers with current regulatory proposals have proposed to use a third party dataset for estimating the return on debt. We reviewed the data from Bloomberg (BVAL curve) and the RBA to be satisfied on the data that is most likely to reflect the efficient financing costs of a benchmark efficient entity at this time. We find that neither the RBA curve nor the BVAL curve is directly implementable in its published form for our purposes. However, we consider that both curves can be implemented in a way that will be sufficiently robust, fit for purpose and replicable, and through the automatic application of a formula, as required by the NGR.⁹⁰ We are satisfied that an average of the two data series will contribute to achieving the allowed rate of return objective.

8.4 Value of imputation credits (gamma)

Under the Australian imputation tax system, investors can receive an imputation credit for income tax paid at the company level.⁹¹ For eligible investors, this credit offsets their Australian income tax liabilities. If the amount of imputation credits received exceeds an investor's tax liability, that investor can receive a cash refund for the balance. Imputation credits are therefore a benefit to investors in addition to any cash dividend or capital gains they receive from owning shares.

In determining a service provider's revenue allowance, the rules require that the estimated cost of corporate income tax be estimated in accordance with a formula that reduces the estimated cost by

⁸⁷ NGR, r. 87(10).

⁸⁸ NGR, r. 87(8).

⁸⁹ Ausgrid, *Regulatory proposal*, May 2014, pp. 70–71; Endeavour Energy, *Regulatory proposal*, May 2014, pp. 104–105; Essential Energy, *Regulatory proposal*, May 2014, pp. 90–92; ActewAGL, *Regulatory proposal*, 2 June 2014 (resubmitted 10 July 2014), p. 255; JGN, *Access arrangement information*, 30 June 2014, p. 9.

⁹⁰ NGR r. 87(12).

⁹¹ *Income Tax Assessment Act 1997*, parts 3–6.

the 'value of imputation credits'.⁹² That is, the revenue allowance granted to a service provider to cover its expected tax liability must be reduced in a manner consistent with the value of imputation credits.

8.4.1 Draft decision

We do not approve JGN's proposed value of imputation credits of 0.25. Instead, we adopt a value of imputation credits of 0.4.

The value we adopt is lower than the value of 0.5 proposed in the rate of return guideline. Although we have broadly maintained the approach to determining the value of imputation credits set out in the guideline, we have re-examined the relevant evidence and estimates. This re-examination, and new evidence and advice considered since the guideline, led us to depart from the value in the guideline.

8.4.2 Summary of analysis and reasons

Estimating the value of imputation credits is a complex and imprecise task. There is no consensus among experts on the appropriate value or estimation techniques to use.

Consistent with the relevant academic literature, we estimate the value of imputation credits as the product of the distribution rate and the utilisation rate. While there is a widely accepted approach to estimating the distribution rate, there is no single accepted approach to estimating the utilisation rate and there is a range of evidence relevant to the utilisation rate. This includes:

- The proportion of Australian equity held by domestic investors (the 'equity ownership approach')—this approach reflects that domestic investors are typically able to use imputation credits to reduce their tax liability or redeem for cash, whereas foreign investors cannot.
- The reported value of credits utilised by investors in Australian Taxation Office (ATO) statistics ('tax statistics')—this approach reflects that the ATO maintains records of the amount of imputation credits claimed by investors in their tax returns.
- Implied market value studies—while there is no separate market in which imputation credits are traded, and therefore there is no observable market price for imputation credits, this approach reflects that the value of imputation credits can be inferred from the change in market prices of financial instruments which trade with and without imputation credits attached.

In estimating the utilisation rate, we place:

- significant reliance upon the equity ownership approach
- some reliance upon tax statistics, and
- less reliance upon implied market value studies.

The relative importance that we assign to each approach is supported by advice received from Associate Professor John Handley of the University of Melbourne and Associate Professor Martin Lally of Victoria University of Wellington.⁹³

⁹² NER, cl. 6.4.3(a)(4), 6.4.3(b)(4), 6.5.3, 6A.5.4(a)(4), 6A.5.4(b)(4) and 6A.6.4; NGR, rr. 76(c) and 87A.

⁹³ J. Handley, *Report prepared for the Australian Energy Regulator: Advice on the value of imputation credits*, 29 September 2014; M. Lally, *The estimation of gamma*, 23 November 2013, p. 4.

Overall, the evidence on the distribution rate and the utilisation rate suggests that a reasonable estimate of the value of imputation credits is within the range 0.3 to 0.5. From within this range, we choose a value of 0.4. This is because:

- The balance of evidence from the equity ownership approach, on which we have placed the most reliance, suggests a value between 0.4 and 0.5.
- The evidence from tax statistics suggests the value could be lower than 0.4. Therefore we choose a value at the lower end of the range suggested by the balance of evidence from the equity ownership approach (that is, 0.4).
- A value of 0.4 is also reasonable in light of the evidence from implied market value studies and the lesser degree of reliance we place upon these studies.

In determining the value of imputation credits, we have considered the wide range of evidence before us with regard to its merits. We consider that a value of imputation credits of 0.4 is reasonable because:

- It is within the range of values indicated by the evidence, and the relevance of the evidence is supported by expert opinion.
- It primarily reflects an estimate of the utilisation rate from the equity ownership approach. Handley considered this the most important approach to estimating the utilisation rate, relative to the alternatives of tax statistics and implied market value studies.⁹⁴ The equity ownership approach was Lally's second preference after his recommendation for a utilisation rate of 1.⁹⁵
- It is within the 'preferred' range for the value of imputation credits in Handley's recent advice.⁹⁶
- Based on the evidence before us at this time, adopting a value of imputation credits that is rounded to one decimal place appropriately reflects the uncertainty and imprecision associated with this parameter. This uncertainty is evident in the range of views and values that have been espoused by experts. The imprecision of determining the value of imputation credits was emphasised by Handley.⁹⁷

8.5 Regulatory depreciation (return of capital)

We use regulatory depreciation to model the nominal asset values over the 2015–20 access arrangement period and set the depreciation building block as part of calculating the total revenue for JGN. The regulatory depreciation allowance is the net total of the real straight-line depreciation (negative) and the annual inflation indexation (positive) on the projected capital base.

We are required to make a decision on JGN's proposed:⁹⁸

- depreciation on the projected capital base

⁹⁴ J. Handley, *Report prepared for the Australian Energy Regulator: Advice on the value of imputation credits*, 29 September 2014, p.31.

⁹⁵ M. Lally, *The estimation of gamma*, 23 November 2013, p. 4. Lally's recommendation of a utilisation rate of 1 is based on his consideration that, because we use a domestic rate of return framework, we should assume that all investors in the market are domestic (and therefore eligible to make full use of imputation credits).

⁹⁶ J. Handley, *Report prepared for the Australian Energy Regulator: Advice on the value of imputation credits*, 29 September 2014, p. 3.

⁹⁷ J. Handley, *Report prepared for the Australian Energy Regulator: Advice on the value of imputation credits*, 29 September 2014, p. 32.

⁹⁸ NGR, rr. 59, 72, 76, 88, 89.

- depreciation schedule, which sets out the basis on which the depreciation is calculated.

Our draft decision on JGN's annual regulatory depreciation allowance and depreciation schedule (including the calculation of standard asset lives and remaining asset lives) is outlined in attachment 5.

8.5.1 Draft decision

We do not approve JGN's proposed regulatory depreciation, and instead determine an amount of \$424.9 million (\$nominal) over the 2015–20 access arrangement period as set out in Table 8-4.⁹⁹ This is \$26.6 million less than JGN's proposal.

Table 8-4 AER's draft decision on JGN's regulatory depreciation allowance for the 2015–20 access arrangement period (\$million, nominal)

	2015–16	2016–17	2017–18	2018–19	2019–20	Total
Straight-line depreciation	146.2	161.4	177.7	191.5	180.2	857.0
Less: indexation on capital base	80.2	83.6	86.9	89.7	91.7	432.1
Regulatory depreciation	66.0	77.8	90.8	101.8	88.5	424.9

Source: AER analysis.

8.5.2 Summary of analysis and reasons

We approve JGN's proposal to use the straight-line method to calculate the regulatory depreciation allowance. With one minor exception, we approve JGN's proposed standard asset lives assigned to each of its asset classes for the 2015–20 access arrangement period.¹⁰⁰ We approve the remaining asset lives calculated using JGN's proposed approach.¹⁰¹

We do not approve the amount of regulatory depreciation allowance proposed by JGN over the 2015–20 access arrangement period. This is a consequence of our decision not to approve other parts of JGN's proposal which affect the regulatory depreciation allowance—for example, the forecast capex (attachment 6) and the opening capital base value (attachment 2).

8.6 Capital expenditure

Capex refers to the capital expenses incurred in the provision of network services. The return on and of forecast capex for standard control services are two of the building blocks we use to determine a service provider's total revenue requirement.

8.6.1 Draft decision

We have not approved JGN's forecast capex of \$1,130.4 million (\$2014–15), and have instead allowed forecast capex of \$918.6 million (\$2014–15), which is 18.7 per cent less than JGN's proposal.

⁹⁹ Regulatory depreciation is real straight-line depreciation less inflation on the capital base.

¹⁰⁰ The exception is the 'Vehicles' asset class, where JGN's proposed standard asset life (four years) would not result in a depreciation schedule reflecting the economic life of the assets, as per NGR r. 89(1)(b). Instead, we require that this be set to six years, reflecting the weighted average life of the assets in this class and JGN's fleet management strategy (including as reflected in its forecast capex).

¹⁰¹ The remaining asset lives approved in our draft decision differ from those in JGN's proposal as a result of input changes reflecting other aspects of our draft decision. For the final decision we will recalculate JGN's remaining asset lives based on JGN's method and any updated inputs (in particular, replacing the 2013–14 capex estimate with actual conforming capex).

Table 8-5 Our draft decision on total net capex^(a) (\$million 2014–15)

	2015–16	2016–17	2017–18	2018–19	2019–20	Total
JGN proposal	234.7	232.2	245.1	222	196.4	1130.4
AER draft decision	199.3	193.2	198.4	174.7	152.9	918.6
Difference	35.4	39	46.7	47.3	43.5	211.9
% reduction	15.1%	16.8%	19.1%	21.3%	22.1%	18.7%

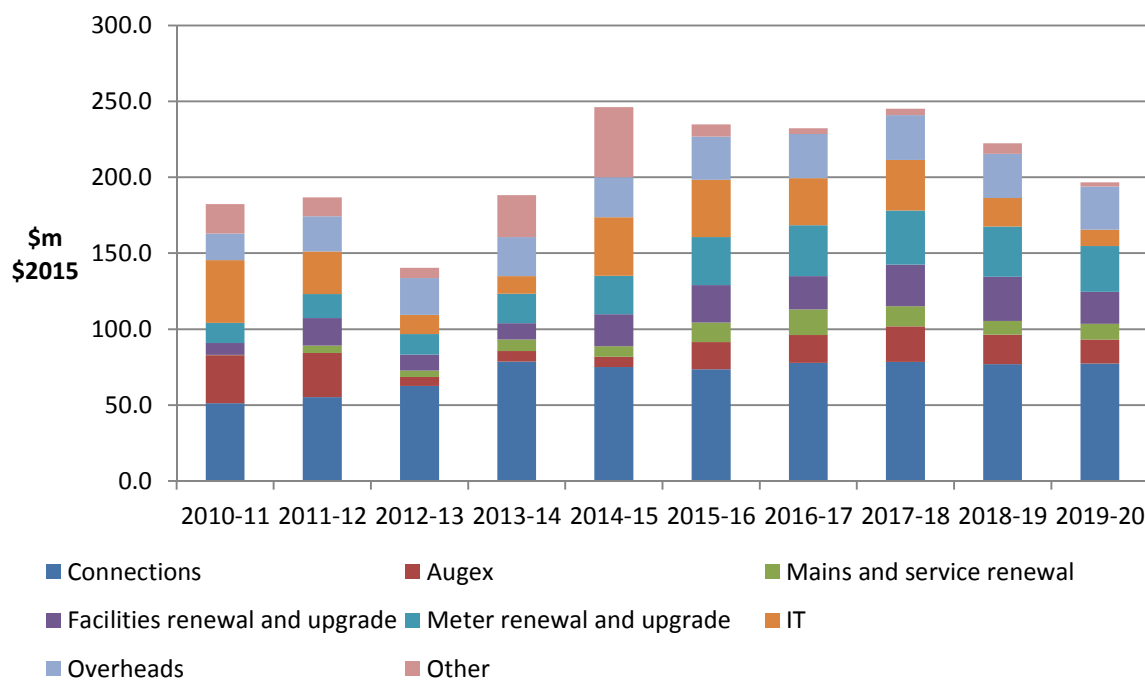
Source: AER analysis

Note: Includes price escalation.

8.6.2 Comparison of historical and forecast capital expenditure

Figure 8-3 shows that JGN has proposed an increase in expenditure from the previous period. The primary driver for this proposed increase is a \$77.1 million (\$2014–15, escalated) step-up in expenditure related to meter renewal and upgrade. There are also significant increases proposed for connections (\$61.2 million, escalated), facilities renewal and upgrade (\$55.7 million, escalated) and mains and service renewal (\$38.3 million, escalated).

Figure 8-3 JGN net capex (escalated) for 2010–15 and 2015–20 (\$2014–15 million)



Source: AER analysis

8.6.3 Summary of analysis and reasons

Meter Renewal

Meter renewal is an ongoing activity which is necessary to ensure that gas meters are replaced when they fail to accurately read data. The NSW Gas Supply Act requires that meters read customers' gas usage accurately within an acceptable error tolerance range. Gas meters are continually sampled and tested for accuracy. Based on sample test results, meter families are allocated a life and a forecast

replacement date. Sample testing is conducted in accordance with the in-service compliance standard.

We have included \$124.5 million (\$2015, unescalated direct costs, excluding overheads) of meter renewal and upgrade expenditure in our alternative capex forecast. We consider that JGN's proposed increase in meter renewal expenditure of 76 per cent to \$150.2 million (\$2015, unescalated direct costs, excluding overheads) is not prudent and efficient because JGN has proposed more meter replacements than necessary. Specifically JGN are proposing to replace all meters in certain meter categories. We have adjusted the replacement rate down in those categories.

Connections

Distribution businesses have a regulatory obligation to connect residential and commercial/industrial customers to the distribution network upon request. The capex associated with connecting customers to the distribution network generally includes the cost of new mains, gas service pipe from the main to the meter, and the meter.

We have included \$292.1 million (\$2015, unescalated direct costs, excluding overheads) of connections capex in our alternative capex estimate. This is lower than JGN's forecast expenditure of \$356.6 million. Our reduction of 18 per cent is driven by a change in the quantity of connections likely to be required and a change in the costs per connection.

While we agree with JGN's approach to estimating the number of connections per customer category, multiplied by the estimated unit cost, we do not consider that JGN's unit rate is arrived at on a reasonable basis and is the best estimate in the circumstances.¹⁰² This is because JGN's unit rates composition is based on one year of data instead of an average over a number of years. We consider that to have confidence that the costs underlying a forecast are efficient, at least three years of data is required to adequately capture differences in regional composition, material types and lay methods across time. We have estimated an alternative forecast using a five year historical average. Based on advice from Deloitte Access Economics we have also slightly reduced the estimated number of new connections.

Facilities renewal

Facilities renewal and upgrade expenditure is required to renew or upgrade facilities that pose integrity, workplace health and safety, capacity, regulatory compliance or similar issues or have reached the end of their economic lives.

We assessed JGN's facilities and renewal upgrade projects by considering the requirement for the proposed works, the scope and timing of the proposed works, and whether the input cost of each project represents the efficient, lowest sustainable cost. Based on the advice of Sleeman Consulting, we accept that 82 of the 90 facilities renewal and upgrade projects, costing \$95.3 million (\$2015, unescalated direct costs, excluding overheads) are prudent and efficient. JGN had proposed a forecast of \$115.0 million.

The majority of the adjustment that we have made to JGN's proposal is to remove expenditure related to the installation of heaters. Sleeman Consulting has advised that the injection of gas from the LNG storage facility will not necessitate the installation of heaters and in any event it is unlikely that CSG project development approval will be granted in time to allow commitment within the period to 2020.

¹⁰² NGL, r. 74(2)(b).

Other expenditure

Augmentation

Network augmentation capex is directed at increasing the capacity of the existing network to meet the demand of existing and future customers. Augmentation capex is required to maintain gas pressure and minimise the risk of gas outages.

We assessed JGN's augmentation projects by considering the timing of the proposed works, the capacity benefit which results from the augmentation solution and whether the input cost of each project represents the efficient, lowest sustainable cost. Based on this analysis and advice from Sleeman Consulting we have accepted that 82 of the 93 augmentation projects, costing \$80.6 million (\$2015, unescalated direct costs, excluding overheads), are prudent and efficient and have included the expenditure in our alternative capex estimate. This compares to JGN's forecast of \$88.7 million (\$2014–15).

Mains and service renewal

Mains and service renewal expenditure is for replacement of low and medium pressure gas mains as they are reaching the end of their economic life. Replacement may be required to maintain safety, levels of reliability, and when the operating and maintenance costs required for the mains or services are greater than the cost of replacement.

We assessed JGN's mains and services renewal projects by considering the timing of the proposed works, the condition indicators set out in the opportunity briefs provided by JGN, the options available for replacement and whether the input cost of each project represents the efficient, lowest sustainable cost. We have included \$57.4 million (\$2015, unescalated direct costs, excluding overheads) in our alternative capex forecast. This is consistent with the JGN's forecast, apart from an adjustment to three projects in the Wollongong area that we consider were based on costs higher than a prudent service provider acting efficiently would incur.

IT

IT capex includes projects to maintain and develop IT capacity and deliver improved IT capabilities to support business operations, including achieving compliance with regulatory obligations. IT capex is required to support the operation of the network and associated business activities, such as billing and accounting. We have included JGN's estimate of \$127.9 million (\$2015, unescalated direct costs, excluding overheads) for IT capex in our alternative capex forecast. We accept that JGN's forecast of this amount has been arrived at on a reasonable basis.

Other - non-distribution expenditure

This category includes expenditure for motor vehicles, property and other non-distribution capital items such as tools, furniture and office equipment. Non-network capex of this nature is required in order for JGN to efficiently manage and operate its network. We have included JGN's estimate of \$26.7 million (\$2015, unescalated direct costs, excluding overheads) for other non-distribution capex in our alternative capex forecast. We accept that JGN's forecast of this amount has been arrived at on a reasonable basis.

Overheads

Overheads are costs which are not directly attributable to the distribution businesses output but are necessary to support the businesses operations. Examples of overhead costs include network planning, procurement and human resources.

We have included \$109.0 million (\$2015, escalated costs) of total overheads expenditure in our alternative capex forecast. We consider that JGN's proposed amount of \$144.4 million (\$2015, escalated costs) is not prudent and efficient. This is because we have applied our forecast opex rate of change in place of JGN's forecast opex rate of change. We also used the average of the 2012-13 and 2013-14 direct overheads in place of JGN's method of rolling forward the direct overhead share of total capex in 2012-13.

Demand and consumption

Demand is an important input into the derivation of JGN's reference tariffs. It also affects opex and capex linked to network growth. We have not accepted JGN's demand forecast as some elements of the method and assumptions produce forecasts of connections and consumption which are not the best estimates possible in the circumstances.

Based on advice from Deloitte Access Economics we have made adjustments to both the volume of connections and consumption forecasts. On connections we have adjusted the rate of new dwellings that are connected to gas (down for new estates and up for medium/high density), reduced the business connections and reduced the forecast rate of disconnections. These changes result in 5,841 connections being reallocated from new estates to medium/high density and a 1,207 reduction in small business connections.

On consumption, we have included an indicator of future economic activity (either gross state product or state final demand) as a variable in the model, reduced the assumed sensitivity of consumers to gas prices and removed the impact of the carbon tax. Making the changes we have described results in an increase in annual per customer consumption for residential customers of up to 8 per cent, for small business customers of up to 6 per cent and for tariff V industrial and commercial customers of up to 17 per cent. There is no change for tariff D industrial and commercial customers.

8.7 Operating expenditure

Forecast opex is the forecast operating, maintenance and other non-capital costs incurred in the provision of distribution network services. It includes labour costs and other non-capital costs that a prudent service provider is likely to require during the 2015–20 access arrangement period for the efficient operation of its network.

8.7.1 Draft decision

We forecast opex of \$779.7 million (\$2014–15). Our forecast is 1.2 per cent less than JGN's forecast. Table 8-6 shows our draft decision compared to JGN's total forecast opex.

Table 8-6 AER's draft decision and JGN's proposed total opex (\$ million, 2014–15)

Year ending 30 June	2015–16	2016–17	2017–18	2018–19	2019–20	Total
JGN proposal ¹⁰³	155.4	155.4	156.6	161.3	160.6	789.3
AER draft decision	154.4	153.8	154.6	159.0	157.8	779.7
Difference	-1.0	-1.5	-2.0	-2.3	-2.8	-9.6

Source: AER analysis; JGN, Access arrangement information, June 2014, pp. 78–79.

¹⁰³ Subsequent to JGN's access arrangement proposal, JGN updated its forecast opex to remove costs associated with the carbon tax, corrected an error in its Unaccounted for Gas forecast and provided an updated productivity growth estimate. This changed its forecast from \$797.5 million (\$2014-15) to \$789.3 million (\$2014–15).

Note: Excludes debt raising costs.

8.7.2 Summary of analysis and reasons

We are mostly satisfied with JGN's opex forecast. The difference between our forecast and JGN's forecast reflects relatively minor differences about the following elements.

- Growth in input prices — We forecast lower growth in input prices over the 2015–20 access arrangement period. We consider JGN has over-estimated the likely growth in input prices, and in particular, labour prices.
- Step change for regulatory reporting — JGN's opex forecast included an increase in opex for regulatory reporting. We consider it is not reasonable to assume JGN's regulatory reporting obligations will increase materially in the 2015–20 access arrangement period.

8.8 Corporate income tax

When determining the total revenue for JGN, we must estimate JGN's cost of corporate income tax.¹⁰⁴ JGN has adopted the post-tax framework to derive its revenue requirement for the 2015–20 access arrangement period.¹⁰⁵ Under the post-tax framework, a separate corporate income tax allowance is calculated as part of the building blocks assessment. Attachment 8 sets out our detailed reasons for our draft decision on JGN's estimated cost of corporate income tax.

8.8.1 Draft decision

We forecast JGN's corporate income tax allowance at \$60.47 million (\$ nominal) as shown in Table 8-7. This is \$65.81 million (\$ nominal) less than proposed by JGN.

Table 8-7 AER's draft decision on JGN's corporate income tax allowance for the 2015–20 access arrangement period (\$million, nominal)

	2015-16	2016-17	2017-18	2018-19	2019-20	Total
Tax payable	15.0	17.5	21.1	25.1	22.1	100.8
Less: value of imputation credits	6.0	7.0	8.5	10.0	8.8	40.3
Net corporate income tax allowance	9.0	10.5	12.7	15.1	13.2	60.5

Source: AER analysis.

8.8.2 Summary of analysis and reasons

Our draft decision on JGN's corporate income tax allowance is \$60.47 million (\$nominal), which is a reduction of \$65.81 million (\$nominal) or 52.1 per cent of JGN's proposal.

We accept JGN's proposed method for calculating the corporate income tax allowance, including the proposed opening tax asset base as at 1 July 2015 and tax depreciation rates. However, we adjusted several inputs proposed by JGN for calculating the corporate income tax allowance. These relate to:

- changing the value of gamma to 0.4 from 0.25 (attachment 4)

¹⁰⁴ NGR, r. 76(c).

¹⁰⁵ JGN, *Access arrangement information*, June 2014, p. 99.

- changes to other building block components including forecast opex (attachment 7) and forecast capex (attachment 6) that impact total revenues, and therefore also impact the forecast corporate income tax allowance.¹⁰⁶

¹⁰⁶ NGR, r. 87A.

9 Efficiency carryover mechanism

An efficiency carryover mechanism provides an additional incentive for service providers to pursue efficiency improvements in opex.

To encourage a service provider to become more efficient it is allowed to keep any difference between its approved forecast and its actual opex during an access arrangement period. Conversely, if it overspends its allowed opex it cannot seek to recover this. This is sometimes supplemented by an efficiency carryover mechanism which provides the service provider with an additional reward for reductions in opex it makes and additional penalties for increases in opex. In total these rewards and penalties work together to provide a constant incentive for a service provider to pursue efficiency gains over the access arrangement period. An efficiency carryover mechanism also discourages a service provider from overspending its opex allowance in what it expects will be the base year of the following access arrangement period in order to receive a higher opex allowance in that period.

9.1.1 Draft decision

JGN was not subject to an efficiency carryover mechanism in the 2010–15 access arrangement period, but is proposing one for the 2015–20 access arrangement period. We propose to apply an efficiency carryover mechanism as proposed by JGN with some modifications. We consider an efficiency carryover mechanism is needed to:

- continue to encourage JGN to pursue efficiency improvements in opex, and
- to discourage JGN from incurring opex to try and influence its opex forecasts in the access arrangement period beginning in 2020.

We have applied the same approach to the efficiency carryover mechanism as JGN, except for the exclusions we allow which are limited to:

- debt raising costs
- costs subject to the tariff variation mechanism, and approved pass through amounts (both discussed in attachment 11).

We also consider it appropriate that the mechanism allow us discretion to exclude costs where we are satisfied that JGN's customers would not benefit from application of the mechanism to those costs. This is consistent with the discretion provided by the electricity network efficiency benefit sharing scheme, and is required to maintain appropriate incentives where a category of opex is forecast using a single year revealed cost approach in JGN's access arrangement period commencing in 2020.

10 Tariffs and other provisions concerning JGN's access arrangement

There are elements of our draft decision that do not directly relate to estimating JGN's total revenue allowance for the 2015–20 access arrangement period. These sit outside the building blocks discussed in section 8, and relate to:

- defining the services to be covered
- reference tariff setting
- a reference tariff variation mechanism, and
- non-tariff components, such as terms and conditions.

This section presents our draft decisions in relation to the items listed above.

Services covered by the access arrangement

The access arrangement is required to identify the pipeline to which the access arrangement relates and the services which JGN propose to provide by means of the pipeline.

JGN proposes to offer the following services on its network in the 2015–20 access arrangement period:

- the reference service, being the haulage reference service, and
- non-reference services.

The proposed haulage reference service combines:

- the transportation of gas by the service provider through the network to a single eligible delivery point for use and consumption within the premises served by that delivery point
- meter reading and associated data activities, and the provision and maintenance of a standard metering installation at the delivery point as appropriate for the required capacity and meter reading frequency
- ancillary activities, as may be requested by a user.¹⁰⁷

We approve JGN's proposal to combine its meter data services into a single reference service for the reasons outlined below.

We received submissions from retailers and the Consumer Challenge Panel requesting careful examination of JGN's proposal to combine its meter data services.¹⁰⁸ AGL and EnergyAustralia submitted that absorbing metering services into haulage reference services would be a step backward

¹⁰⁷ Paragraph 2.2, *JGN 2015 AA proposal - PUBLIC*, 30 June 2014, p. 3.
Delivery Point means a point at which Gas is withdrawn from the Network listed from time to time in the Relevant Customer List

¹⁰⁸ The Consumer Challenge Panel submission did not detail reasons for its concerns and made a general comment stating that we should consider this issue carefully.

for transparency of charges and contrary to electricity charges where they are unbundled.¹⁰⁹ For the reasons discussed in attachment 1, however, we found no compelling reasons not to approve JGN's proposal. We may review our draft decision in our final decision should stakeholder submissions provide compelling reasons not to merge metering data services into a single reference service.

Reference tariff setting

Reference tariff setting involves setting and applying the formula by which JGN can recover its costs through tariffs. The formula is reflected in a set of equations, which we make a decision on whether to approve or require revisions.

We approve JGN's proposed structure of reference tariffs for the 2015–20 access arrangement period. We are satisfied the proposed structure of the reference tariffs complies with the requirements of the NGR.¹¹⁰

However, the quantum of the proposed reference tariffs must be amended as set out in section 7 of this overview.

Reference tariff variation mechanism

The reference tariff variation mechanism:

- permits building block revenues to be recovered smoothly over the access arrangement period, subject to any differences between forecast and actual demand
- accounts for actual inflation
- accommodates other reference tariff adjustments that may be required, such as for an approved cost pass through event
- sets administrative procedures for the approval of any proposed changes to reference tariffs

We do not approve JGN's proposed reference tariff variation mechanism for the 2015–20 access arrangement period. We consider that some elements of JGN's proposed reference tariff variation mechanism are not consistent with the NGL. In particular:

- the proposed initial reference tariffs and X factors must be revised to reflect the changes to the forecast total revenue identified in section 7 of this overview
- we do not approve JGN's proposed business continuity and network user failure pass through events. We do not approve the proposed definitions of, and require revisions to, JGN's proposed regulatory change event, service standard event and materiality threshold for pass through events.

Non-tariff components

JGN's Reference Service Agreement (RSA) forms part of its 2015–20 access arrangement proposal. The RSA sets out terms and conditions upon which JGN offers to supply the Haulage Reference Service. These are not directly related to the nature or level of tariffs that users pay. JGN's access

¹⁰⁹ EnergyAustralia, *2014 Jemena Gas Access Arrangement Review*, 25 August 2014, p. 10, CCP7, *Advice to the AER from Consumer Challenge Panel sub-panel 7 regarding Jemena Gas Networks (NSW) Access Arrangement 2015-2020 Proposal*, September 2014, pp. 16–17.

¹¹⁰ NGR, rr. 93 and 94.

arrangement also contains additional terms and conditions governing the relationship between JGN and users. These are:

- queuing requirements—a process or mechanism for establishing an order of priority between prospective users of spare and / or developable capacity
- extension and expansion requirements—the method for determining whether an extension or expansion is a part of the covered pipeline and the effect this will have on tariffs. These requirements are relevant when identifying the covered pipeline and pipeline services which will be regulated through the access arrangement
- capacity trading requirements—how users may assign contracted capacity and change delivery and receipt points
- change of receipt or delivery point by the user—the process or mechanism for changing a user's receipt or delivery point.

Together we refer to these as the non-tariff components of the access arrangement.

For the reasons discussed in attachment 12, we do not approve certain elements of JGN's proposed Reference Services Agreement, or its proposed extensions and expansions requirements. We require JGN to make the revisions specified in attachment 12 in order for us to accept the proposed Reference Services Agreement.

We do approve its proposed queuing requirements and process for changing receipt of delivery points.

11 Consumer engagement

We consider that JGN has taken genuine steps to effectively engage with its consumers. Many arguments in JGN's proposal have been strengthened by the overall quality of JGN's consumer engagement. JGN has followed the AER's consumer engagement guidelines and has endeavoured to accurately reflect consumer views in its proposal. JGN acknowledges that the depth and breadth of its engagement around services, costs and prices is a new experience.¹¹¹ JGN's techniques for consumer engagement will evolve over several reviews. We consider there are some areas that JGN can advance its engagement techniques, including its engagement with large industrial customers and providing more opportunities for consumers, of all cohorts, to contribute at the 'involve' and 'consult' level rather than at the 'inform' level. We have formed this view by reviewing stakeholder submissions, from the CCP advice and from our own observations of the engagement activities JGN undertook.

11.1 AER consumer engagement guideline for service providers

As part of the Better Regulation program, we developed a guideline for service providers to use when formulating their consumer engagement activities.¹¹² This was in response to the AEMC intent that the AER have regard to the nature of consumer engagement undertaken and the outcomes of that engagement in considering the proposals put to it by network service providers.¹¹³

Our consumer engagement guideline centres on best practice principles which seek to drive consumer engagement and a commitment from service providers to continuously improve engagement across all business operations. Our guideline is not prescriptive but rather places the onus on service providers to develop consumer engagement strategies and activities that best suit their business. Service providers can do this most appropriately because they are in the best position to understand their consumer base and its issues.

Ultimately, we expect JGN to undertake systematic, consistent and strategic engagement with consumers on issues significant to both parties. As set out in our consumer engagement guideline, we have considered how JGN:

- equipped consumers to participate in consultation
- made issues tangible to consumers
- obtained a cross section of views
- considered and responded to consumer views

We have made this assessment drawing on JGN's proposal and stakeholder submissions. We have had regard to the extent to which JGN's proposal addresses consumer concerns.

Our consumer engagement guideline has only been in effect since November 2013. Since the release of the guideline, JGN has made steps to improve and implement a consumer engagement strategy in line with our guideline to support its proposal. We encourage JGN to continue in this positive direction. We also recommend that JGN review stakeholder and Consumer Challenge Panel

¹¹¹ JGN, *2015–20 Access Arrangement Information*, 30 June 2014, appendix 1.4, p. 42.

¹¹² AER, *Consumer engagement guideline for network service providers*, November 2013.

¹¹³ AEMC, *Rule Determination National Electricity Amendment (Economic Regulation of Network Service Providers) Rule 2012, National Gas Amendment (Price and Revenue Regulation of Gas Services) Rule 2012*, p. 36.

submissions and consult with them on how their consumer engagement strategies can be improved to provide ongoing and genuine engagement and demonstrate how stakeholder input has shaped future proposals and broader business decisions.

11.2 Equipped consumers to participate in consultation and made issues tangible to consumers

We consider JGN's approach to consumer engagement is consistent with the AER's consultation guideline. In particular JGN:

- identified and understood the relevant 'end user' or consumer cohorts¹¹⁴
- tailored engagement strategies to meet the needs of differing consumer groups¹¹⁵
- build consumer's ability to participate¹¹⁶
- clearly explained the role of consumers and how their input will influence decisions¹¹⁷
- developed and published a range of key performance indicators¹¹⁸
- provided strong internal engagement by having senior managers present at all meetings¹¹⁹
- clearly articulated the outcomes of their consumer engagement process¹²⁰

Feedback from stakeholders and the CCP on the effectiveness of JGN's consumer engagement is mixed. To a large extent the feedback depends upon the cohort of consumer.

In its advice to us in August 2014, that CCP stated¹²¹

We have found that JGN has demonstrated a genuine commitment to customer engagement as part of the process of developing the 2015 proposal, taking account of the CE [consumer engagement] guidelines and other sources.

The CCP also stated¹²²

We believe that JGN has been effective in informing the Customer Council members and empowering the Customer Council to provide feedback to JGN in some areas, which have influenced JGN's proposal.

The submission from PIAC commended JGN on its consumer engagement and its proposal to reduce typical residential bills by 20 per cent.¹²³ PIAC is a member of JGN's Customer Council.¹²⁴ PIAC also notes that JGN made its own subject matter experts available to Customer Council members who

¹¹⁴ JGN, *Access arrangement information, Appendix 1.4*, 30 June 2014, p. 4-20

¹¹⁵ JGN, *Access arrangement information Appendix 1.4*, 30 June 2014, p. 4-20

¹¹⁶ JGN, *Access arrangement information Appendix 1.4*, 30 June 2014, p. 21-26

¹¹⁷ JGN, *Access arrangement information Appendix 1.4*, 30 June 2014, p. 21-26

¹¹⁸ JGN, *Access arrangement information Appendix 1.4*, 30 June 2014, p. 42-47

¹¹⁹ JGN, *Access arrangement information Appendix 1.4*, 30 June 2014, p. 21-26

¹²⁰ JGN, *Access arrangement information Appendix 1.4*, 30 June 2014, p. 27-41

¹²¹ CCP7, *Advice to the AER from Consumer Challenge Panel sub-panel 7 regarding Jemena Gas Networks (NSW) Access Arrangement 2015-2020 Proposal*, September 2014, p. 2

¹²² CCP7, *Advice to the AER from Consumer Challenge Panel sub-panel 7 regarding Jemena Gas Networks (NSW) Access Arrangement 2015-2020 Proposal*, September 2014, p. 4

¹²³ PIAC, *Things to like, things to check: PIAC submission to the AER's review of prices for Jemena Gas Network from 1 July 2015*, August 2014, p. 2 and 6.

¹²⁴ PIAC, *Things to like, things to check: PIAC submission to the AER's review of prices for Jemena Gas Network from 1 July 2015*, August 2014, p. 6.

wished to learn more about the technical aspects of network regulation.¹²⁵ PIAC also notes that "Jemena has shown itself to be responsive to the concerns of the Customer Council and its members", and "has shown a willingness to invest in consumer engagement at the suggestion of the Customer Council".¹²⁶

Feedback from retailers was mixed. Origin appreciates JGN's new approach to consumer engagement, stating that JGN

...has been more proactive in engaging with retailers in the lead up to this Access Arrangement re-set process than in the past and appreciates these efforts.¹²⁷

AGL also states in its submission that it appreciates JGN's level of engagement, but has some qualifications around this.

Jemena has undertaken a targeted program of customer engagement that has directly informed its proposal. AGL is pleased that network business are consulting with stakeholders prior to submitting Regulatory Proposals but would note that engagement with:

- customers only commenced on 1 April 2014; and
- retailers (or "Users") commenced following that.¹²⁸

In its submission AGL also states that it appreciates that some key information was provided prior to the Regulatory Proposal being submitted,¹²⁹ but states that

...certainly there is no evidence of any feedback or views of retailers being included in the Proposal, however, AGL understands that the late consultation may not have allowed time for significant changes to the Proposal.¹³⁰

Large industrial users did not consider JGN's consumer engagement was effective.

The EMRF stated that

...much of the [consumer engagement] material seemed to be based on sound consumer engagement principles. However, the EMRF is concerned that the consumer engagement process has been used to 'defend' the expenditure proposals.¹³¹

In its submission Orica states

...that it was not appropriately consulted on the Proposal and was genuinely surprised to see the Proposal when it was first made public.¹³²

Delta similarly states that consultation was limited.

In Delta's case that consultation consisted of a single teleconference held on 8 May 2014, the purpose of which was given as being "to engage with you to inform you of the changes we're proposing to the Access Arrangement". That is, apparently not to canvas Delta's views on appropriate responses to the changing gas market but to describe what was already decided...It is concerning although possibly not surprising,

¹²⁵ PIAC, *Things to like, things to check: PIAC submission to the AER's review of prices for Jemena Gas Network from 1 July 2015*, August 2014, p. 6.

¹²⁶ PIAC, *Things to like, things to check: PIAC submission to the AER's review of prices for Jemena Gas Network from 1 July 2015*, August 2014, p. 7.

¹²⁷ Origin, *Submission to Jemena's Access Arrangement Proposal*, 25 August 2014, p. 1

¹²⁸ AGL, *AGL submission to the Australian Energy Regulator*, August 2014, p. 3.

¹²⁹ AGL, *AGL submission to the Australian Energy Regulator*, August 2014, p. 4

¹³⁰ AGL, *AGL submission to the Australian Energy Regulator*, August 2014, p. 4.

¹³¹ The Energy Markets Reform Forum, *Jemena application: A response*, August 2014, p. 11.

¹³² Orica, *2014 Jemena Gas Access Arrangement Review*, August 2014, p. 2.

that the one consumer category reportedly to be faced with tariff increases is the one seemingly least represented in the customer engagement process.¹³³

We consider that JGN would likely benefit from an enhanced engagement process with retailers and large users.

11.3 Obtained, considered and responded to a cross section of stakeholder views

JGN has outlined in appendix 4 of its proposal where it has endeavoured to respond to feedback raised through its consumer engagement.¹³⁴

The CCP commented that, in terms of JGN's engagement through its Customer Council, the areas in which members effectively contributed and influenced JGN's proposal

...may be limited. The challenge for JGN in future will be find ways of extending the areas where the Customer Council can add value and fully participate at the 'Consult' level and beyond.¹³⁵

A submission from PIAC commented positively on areas where JGN has reflected its concerns.¹³⁶

However, submissions from retailers do not consider their views were taken into account.

In its submission on JGN's proposal, EnergyAustralia stated that

...During the JGN engagement sessions the treatment of disconnection services was discussed and clarified. However, we note that the clarification provided during these sessions has not been reflected in the Reference Services Agreement (RSA).¹³⁷

AGL expresses a similar concern in its submission stating

...it is unclear to AGL how much of the feedback from customers actually changed or influenced the Regulatory proposal.

¹³³ Delta electricity, *Jemena Gas Networks - Proposed 2015-20 access arrangement*, August 2014, p. 3 and 4.

¹³⁴ JGN, *Access arrangement information*, Appendix 1.4

¹³⁵ CCP7, *Advice to the AER from Consumer Challenge Panel sub-panel 7 regarding Jemena Gas Networks (NSW) Access Arrangement 2015-2020 Proposal*, September 2014, p. 4

¹³⁶ PIAC, *Things to like, things to check: PIAC submission to the AER's review of prices for Jemena Gas Network from 1 July 2015*, August 2014, p. 7.

¹³⁷ EnergyAustralia, *2014 Jemena Gas Access Arrangement Review*, 25 August 2014, p. 1

12 Next steps

Our draft decision requires JGN to make changes to its access arrangement revision proposal.¹³⁸ We have set a revision period in which to receive JGN's revised proposal, which must be at least 15 business days from the publication of our draft decision.¹³⁹ We must give a copy of the draft decision to JGN, publish a notice specifying the revision period and invite written submissions on the draft decision.¹⁴⁰ The due date for written submissions must not be earlier than 20 business days after the end of the revision period.¹⁴¹

After considering submissions made on the draft decision and any revised proposal, we must make a final decision.¹⁴² Key dates for our assessment process are set out in Table 12-1 below.

Table 12-1 Key dates for our assessment process

Task	Date
JGN's access arrangement revision proposal submitted to AER	30 June 2014
Stakeholder submissions on proposal closed	25 August 2014
AER issues draft decision	27 November 2014
JGN submits revised regulatory proposal	27 February 2015*
Stakeholder submissions on JGN's revised proposal close	27 March 2015
AER issues final decision	May 2015

*Note: This means the revision period is 27 November 2014 to 27 February 2015.

¹³⁸ NGR, cl. 60.

¹³⁹ NGR, cl. 59(3).

¹⁴⁰ NGR, cl. 59(5).

¹⁴¹ NGR, cl. (5)(c)(iii).

¹⁴² NGR, cl. 62(1).

Appendix A – Better Regulation Guidelines

We expressly applied the rate of return guideline, and had consideration to the remaining guidelines in assessing JGN's proposal. All the guidelines are summarised below.

Determining the allowed rate of return

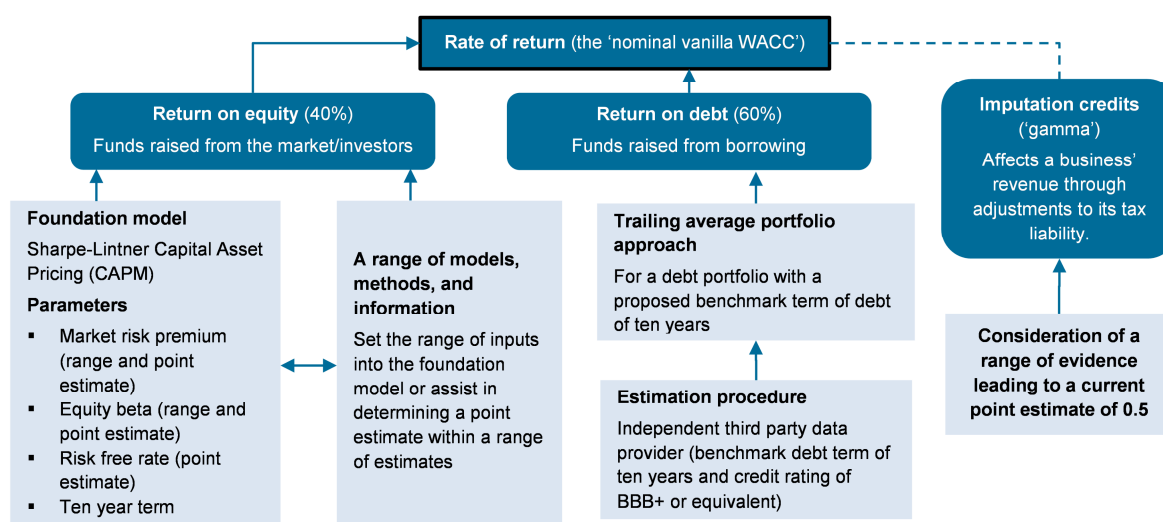
The allowed rate of return is the forecast of the cost of funds a network business requires to attract investment in the network. To estimate this cost, we consider the cost of the two sources of funds for investments—equity and debt. The return on equity is the return shareholders of the business will require for them to continue to invest. The return on debt is the interest rate the network business pays when it borrows money to invest. We consider that efficient network businesses would fund their investments by borrowing 60 per cent of the required funds, while raising the remaining 40 per cent from equity.

A good estimate of the rate of return is necessary to promote efficient prices in the long term interests of consumers. If the rate of return is set too low, the network business may not be able to attract sufficient funds to be able to make the required investments in the network and reliability may decline. On the flip side, if the rate of return of return is set too high, the network business may seek to spend too much and consumers will pay inefficiently high prices.

The return on investment can make up approximately 50 per cent of revenue needs for network businesses. Our aim is to set a rate of return that delivers sufficient but not excessive returns to support investment in safe and reliable energy networks. The value of the business' capex investments in its RAB is multiplied by the allowed rate of return to determine the total return on capital the network business can charge energy consumers. So we also aim to set a rate of return that enables business to make efficient choices between capex and opex.

The estimation method set out in our rate of return guideline is shown in Figure A-1

Figure A-1 Better Regulation rate of return guideline estimation method overview



The benchmark efficient business

We estimate the returns on equity and debt for a benchmark efficient business. This approach supports the rate of return objective in the rules—for the overall rate of return to correspond to the

efficient financing costs of a benchmark efficient business. By setting a rate of return based on a benchmark, rather than the actual costs of individual businesses, network businesses have incentives to finance their business as efficiently as possible.

We define the benchmark efficient business as one who only provides regulated electricity or gas network services, operating within Australia. This applies to both electricity and gas as the risks across both industries are sufficiently similar such that a single benchmark is appropriate.

Return on equity

Our approach to the return on equity balances providing predictability for investors and consumers while incorporating the latest market data. Recognising there is not one perfect model to estimate the return on equity, our approach draws on a variety of models and information.

Our starting point is the standard Capital Asset Pricing model (CAPM)—our ‘foundation model.’ We then use a range of models, methods, and information to inform our return on equity estimate. We use this information to either set the range of inputs into the CAPM foundation model or assist in determining a point estimate within a range of estimates at the overall return on equity level.

Return on debt

Our approach to the return on debt closely aligns with the efficient debt financing practices of regulated businesses. Our approach is to consider the average interest rate that a network business would face if it raised debt annually in ten equal parcels. This is referred to as the trailing average portfolio approach. This approach assumes that every year, one-tenth of the debt of a network business is re-financed. As the return on debt is an average of the interest rates over a period of ten years, this approach leads to a relatively stable estimate over time.

Forecasting efficient expenditure

Our Better Regulation expenditure forecast assessment guideline sets out how we assess a business’ revenue proposal and how we determine a substitute forecast when required. Businesses must provide economic analysis to justify the efficiency and prudence of their expenditure proposals. In the absence of economic justification we are unlikely to accept their forecast expenditure.

Our general approach is to assess the efficiency of a network business and determine whether previous spending is an appropriate starting point. If there is evidence of inefficiency we will use benchmarks that reflect efficient costs.

To assess a business’s revenue proposal, we apply a range of techniques that typically involve comparing the proposal to estimates we develop from relevant information sources. Where these techniques indicate the expenditures are not efficient, we will set our own efficient forecast. These techniques include:

- economic benchmarking—productivity measures used to assess a business's efficiency overall
- category level analysis—comparing how well a business delivers services for a range of individual activities and functions, including over time and with its peers
- predictive modelling—statistical analysis to predict future spending needs, currently used to assess the need for upgrades or replacement as demand changes (augmentation capex, or augex) and expenditure needed to replace aging assets (replacement capex, or repex)

- trend analysis—forecasting future expenditure based on historical information, particularly useful for opex where spending is largely recurrent and predictable
- cost benefit analysis—assessing whether the business has chosen spending options that reflect the best value for money
- project review—a detailed engineering examination of specific proposed projects or programs
- methodology review—examining processes, assumptions, inputs and models that the business used to develop its proposal
- governance and policy review—examining the business’s strategic planning, risk management, asset management and prioritisation.

The expenditure assessment guideline also sets out our principles for guiding our reliance on assessment techniques and a business forecasting approach. These include validity, accuracy and reliability, parsimony, robustness, transparency and fitness for purpose.

In the remainder of this section we explain how as part of our determinations we also calculate the rewards and penalties for past performance under our expenditure incentive schemes. In addition, how we combine our approach to incentives with our forecasting approach to ensure consumers will pay no more than necessary for a safe and reliable energy supply.

Forecasting and reviewing capital expenditure

During a determination we assess the business' past capex spending and future capex needs. We:

- assess the business’ proposed forecast of the total capex it needs to spend over the next period
- update the business' RAB to include the capex it spent in during the period, excluding any inefficient capex overspend
- calculate the rewards and penalties the business will receive under the capital expenditure sharing scheme (CESS) for capex underspends or overspends it incurred during the period.

We assess the business' total capex forecast by considering the efficiency of the proposed expenditure. Our assessment of the total forecast capex can be informed by indicators of overall network performance and risk. We utilise a range of tools to inform that consideration. We have developed a new tool to better forecast the expenditure needed to build, upgrade or replace network assets to address changes in demand (augmentation capex, or augex). This complements our existing tool that examines the expenditure needed to replace aging assets (replacement capex, or repex). We also consider capex forecasts associated with connections and other customer driven work, non-network capex (for example IT equipment) and the capitalisation of overhead costs.

We will use our capex forecasting techniques to review what the business spent on capex during the period. The capital expenditure incentives guideline sets out our staged process for this ex post review. If a business’ capex exceeds what was forecast, we will examine their spending. If we determine all or some of the overspending was inefficient, the business may not be allowed to add the excess spending to its RAB.¹⁴³

¹⁴³ We cannot exclude inefficient capex overspends if a business spent the capex prior to 2014, but this timing differs slightly for different businesses.

The CESS rewards or penalties apply automatically to capex underspends or overspends. However, we may adjust the CESS payments to account for:

- Our ex post review—if the business has overspent and we decide under the ex post review to exclude all or some of the overspend from the RAB we will adjust the CESS payments. Otherwise a business could bear more than 100 per cent of the cost of the excluded capex.
- Capex deferrals—a business may have decided to spend capex at a later time than it had previously planned. We refer to this as capex deferral, and a business may defer capex from one regulatory period into the next. We will adjust the CESS payments where a material proportion of capex is deferred. This means consumers will share in the benefits where material amounts of capex are deferred from one regulatory control period to the next. This also helps deter businesses from deferring capex between regulatory control periods unless it is efficient to do so. When assessing forecast capex we will also consider deferrals and the rewards or penalties under the CESS.

Forecasting and reviewing operating expenditure

During a determination we assess the business' past opex spending and future opex needs. We:

- assess the business' proposed forecast of the total opex it needs to spend over the next period
- where applicable, calculate the rewards and penalties (carryover amounts) the business will receive under the EBSS for opex performance during the period.

We forecast opex using the approach outlined in our Expenditure Forecast Assessment Guideline. Under this approach opex is based on an efficient amount of actual expenditure in a single year (known as 'base opex'), which is multiplied by a forecast rate of change for each year of the forecast period. We then add any step changes for efficient costs that are not captured by the base opex or the rate of change.

We prefer to assess base opex using the service providers revealed expenditure in a single year. If revealed expenditure in the base year reasonably reflects the opex criteria, we will set base opex equal to that revealed expenditure. We use a combination of techniques to assess whether base opex is efficient. If we find base opex to be materially inefficient, we either adjust the base year or substitute an appropriate base year. When determining whether to adjust or substitute base year expenditure, we have regard to whether rewards or penalties accrued under the EBSS will fairly share efficiency gains or losses between the service provider and its customers.

We then apply an annual rate of change to base opex to forecast opex for each year of the forecast regulatory control period. The rate of change captures changes in forecast:

- output
- prices
- productivity.

We then add or subtract step changes for any other expenditure not captured in base opex or the rate of change that is required for forecast opex to meet the opex criteria. Step changes should not double count cost included in other elements of the opex forecast: If it is efficient to substitute capex with opex, a step change may be included for these costs (capex/opex trade-offs).

Consumer engagement guideline for service providers

The consumer engagement guideline for service providers sets out a framework for electricity and gas service providers to better engage with consumers. The guideline aims to help these businesses develop strategies to engage systematically, consistently and strategically with consumers on issues that are significant to both parties.

We expect each service provider to develop consumer engagement approaches and strategies that address the best practice principles and the four components of the guideline that are explained over the page.

Implementing the guideline will help service providers demonstrate how their spending proposals contribute to the objectives contained in the national electricity and gas laws. That is, that their spending proposals promote efficient investment in, and efficient operation and use of, energy services for the long term interests of energy consumers.

Service providers must describe how they have engaged with consumers, and how they have sought to address any relevant concerns identified as a result of that engagement. Service providers present this information in an overview report to their regulatory or revenue proposals.

Underpinning the guideline are four best practice principles. They overarch all aspects of consumer engagement, so service providers should use these principles in undertaking each component of the guideline:

- Clear, accurate and timely communication—we expect service providers to provide information to consumers that is clear, accurate, relevant and timely, recognising the different communication needs and wants of consumers.
- Accessible and inclusive—we expect service providers to recognise, understand and involve consumers early and throughout the business activity or expenditure process.
- Transparent—we expect service providers to clearly identify and explain the role of consumers in the engagement process, and to consult with consumers on information and feedback processes.
- Measurable—we expect service providers to measure the success, or otherwise, of their engagement activities.

The guideline is structured around four components. The components set out a process for service providers to develop and implement new or improved consumer engagement activities to meet the best practice principles:

- Priorities—we expect service providers to identify consumer cohorts, and the current views of those cohorts and their service provider; outline their engagement objectives; and discuss the processes to best achieve those objectives.
- Delivery—we expect service providers to address the identified priorities via robust and thorough consumer engagement.
- Results—we expect service providers to articulate the outcomes of their consumer engagement processes and how they measure the success of those processes reporting back to us, their business and consumers

- Evaluation and review—we expect service providers to periodically evaluate and review the effectiveness of their consumer engagement processes.

Shared asset guideline

The shared asset guideline sets out our approach to sharing the benefits with consumers when a network business is paid for providing unregulated services. We will reduce the amount that business can recover from electricity consumers to reflect the unregulated revenues.

Network businesses have the opportunity to propose alternative approaches. However, we will be unlikely to accept alternatives if they leave consumers worse off than under our approach in the guideline.

The guideline sets out how we reduce consumer costs for shared assets:

- Materiality: we will take action when the unregulated revenues from shared assets are more than 1 per cent of a service provider's total annual revenue
- Method: we will reduce a service provider's regulated revenues by around 10 per cent of the value of unregulated revenues earned from shared assets
- Information reporting: what we'll require from service providers to determine shared asset cost reductions.

Our shared asset mechanism forecasts the annual unregulated revenue that a network business is expected to earn from shared assets.

This forecast is then compared to the revenue that is required to provide regulated services. If the total unregulated revenue is expected to be greater than 1 per cent of the regulated revenue, we'll apply a cost reduction.

This clear and transparent materiality threshold balances administrative effort with potential consumer benefits.

The cost reduction will reduce a network business' regulated revenue by 10 per cent of the value of its expected total unregulated revenues from shared assets in that year. This reduces the amount to be recovered from consumers and consequently electricity prices.

The potential value of the cost reduction is capped by the electricity rules, so that the reduction cannot exceed the regulated revenue from those assets.

Appendix B – Material issues and opportunity to be heard

Engagement, consultation and consultants

In considering JGN's proposal and in reaching our draft decision, we undertook a range of processes to inform interested parties of material issues under consideration and provided reasonable opportunities to be heard.

Consumer Challenge Panel

The newly formed Consumer Challenge Panel (CCP) played a significant role in our processes of assessing the proposal before us. The panel advised us on issues that are important to consumers and provided consumer perspectives, particularly those of residential and small business consumers. Members of the panel bring with them experience in regulation, networks, economics, finance and consumer engagement.¹⁴⁴

The purpose of the CCP is to assist us to make better regulatory determinations by providing input on issues of importance to consumers. Regulatory determinations and reviews are technical and complex processes which can make it difficult for ordinary consumers to participate. The expert members of the CCP bring consumer perspectives to us to better balance the range of views we consider as part of our decisions.

The role of CCP members includes:

- advising us on whether a distributor's proposal is justified in terms of the services to be delivered to customers; whether those services are acceptable to, and valued by, customers; and whether the proposal is in the long term interests of consumers
- advising us on the effectiveness of distributor's engagement with its customers and how this engagement has informed, and been reflected in, the development of its proposal.

The CCP provided advice on JGN's proposal, rate of return and stakeholder engagement which was published on our website.¹⁴⁵ We address the detail of the CCP's submission in conducting our detailed analysis (see attachments).

On balance the CCP finds that the JGN proposal delivers benefits to customers, and is in the long term interests of energy consumers in NSW.¹⁴⁶ A summary of the CCP's advice is at appendix C.

Stakeholder views

In response to JGN's proposal, we received 15 submissions.¹⁴⁷ Appendix D lists all submissions received and includes a list of our key stakeholder engagement. We received submissions across a broad range of stakeholder groups, including:

¹⁴⁴ AER, *Statement of intent 2014–15 to COAG Energy Council*, 2014, p. 5. CCP members involved in the JGN review are Ms Robyn Robinson and Mr David Prins. Member biographies and information on the CCP is available at <http://www.aer.gov.au/node/19305>.

¹⁴⁵ CCP advice is available at <http://www.aer.gov.au/node/11483>.

¹⁴⁶ CCP7, Advice to the AER from Consumer Challenge Panel sub-panel 7 regarding Jemena Gas Networks (NSW) Access Arrangement 2015-2020 Proposal, September 2014, p. 2

¹⁴⁷ All submissions are available at <http://www.aer.gov.au/node/24741>.

- retailers
- major energy users
- local councils
- private individuals
- public interest advocacy groups
- a NSW regulator and Ombudsman
- Consumer Challenge Panel

Engagement with JGN

We regularly engaged with JGN both before and during the review to provide updates and seek information and clarification on issues relevant to this draft decision.

Consultants

We commissioned the following independent consultants for our draft decision:

- Deloitte Access Economics, for advice on demand forecasts
- Roland Sheeman for advice on capital expenditure
- Professor Olan Henry, University of Liverpool, Professor Michael McKenzie, University of Liverpool, Associate professor Graham Partington, University of Sydney, Associate professor John Handley, University of Melbourne and Associate professor Martin Lally, Victoria University of Wellington, for advice on rate of return.

We engaged these consultants to help us determine whether technical aspects of JGN's proposal are reasonable. The consultants' advice also helps us develop our substitute expenditure forecast (if required). While we seek the consultants' advice and expertise to help understand the proposal from a technical perspective, we are not bound to use the consultants' forecast or adjustments as a replacement. We use judgment in adopting their advice and consider a broader array of interconnecting information including engineering, economic and legal matters.

Internal experts

We also boosted our internal expertise by appointing four in-house technical advisors to provide us with greater industry expertise, particularly in power system engineering. The new technical advisor group was established in late October 2013. They bring significant technical knowledge and electricity industry experience to the AER

The technical advisors complement the internal expertise we have already developed. They have improved our use of external consultants and helped implement new regulatory approaches developed under the Better Regulation program. Our staff are also assisted by the ACCC/AER Regulatory Economic Unit (REU). REU comprises seven specialist economists who provide advice to the ACCC's regulatory areas, including the AER whose staffing and support is provided by the ACCC. Six of the seven REU economists have PhDs in economics and related fields.

Appendix C – Consumer Challenge Panel advice

On balance the CCP finds that the JGN proposal delivers benefits to customers, and is in the long term interests of energy consumers in NSW.¹⁴⁸ At a high level the CCP:

- Noted that JGN demonstrated a genuine commitment to customer engagement as part of the process of developing the 2015 proposal.¹⁴⁹ JGN's consumer engagement has been on the 'inform' level - informing customers and customer representatives regarding JGN's plans. There is still potential for JGN to advance its customer engagement, in particular with large industrial customers.¹⁵⁰
- Identified that JGN's AA proposal for 2015-2020 is in an environment that is distinguished by several significant changes to the conditions present when the 2010-2015 AA was reviewed. In particular:
 - The previous proposal was prepared during the global financial crisis when interest rates and perception of risk were much higher than presently.
 - The East coast Australian gas export market opening up in 2014-15 will likely increase domestic gas prices and lower demand levels
 - The full implementation of the NECF in NSW from 1 July 2013
 - The AER's new guidelines as part of the Better Regulation program.¹⁵¹
- Considered JGN's proposed rate of return to be too high, and did not support any departure from the rate of return guideline.¹⁵²
- Do not accept the validity of JGN's claim that its capital plan best meets its customers' preferred long-term outcomes, and that the service level reduction options presented at the customer forums were at such a high level that it is difficult to associate them directly with any elements of the proposed capital plan.¹⁵³ The CCP, does, however consider that customer support has been demonstrated for the option to 'equalise service levels for all existing customers.'¹⁵⁴
- Advised the AER to closely review JGN's capex proposal, in particular the higher delivery costs driven by new contractual arrangements, the credibility of JGN's asset replacement/reinforcement justifications and the justification for forecast IT capex.¹⁵⁵
- Questioned whether it was in consumers long term interests to be incentivised to connect to a service, where prices are predicated to rise substantially over the next 5 to 10 years.¹⁵⁶

¹⁴⁸ CCP7, Advice to the AER from Consumer Challenge Panel sub-panel 7 regarding Jemena Gas Networks (NSW) Access Arrangement 2015-2020 Proposal, September 2014, p. 2

¹⁴⁹ CCP7, Advice to the AER from Consumer Challenge Panel sub-panel 7 regarding Jemena Gas Networks (NSW) Access Arrangement 2015-2020 Proposal, September 2014, p. 2

¹⁵⁰ CCP7, Advice to the AER from Consumer Challenge Panel sub-panel 7 regarding Jemena Gas Networks (NSW) Access Arrangement 2015-2020 Proposal, September 2014, p. 4 and 6.

¹⁵¹ CCP7, Advice to the AER from Consumer Challenge Panel sub-panel 7 regarding Jemena Gas Networks (NSW) Access Arrangement 2015-2020 Proposal, September 2014, pp. 1-2

¹⁵² CCP7, Advice to the AER from Consumer Challenge Panel sub-panel 7 regarding Jemena Gas Networks (NSW) Access Arrangement 2015-2020 Proposal, September 2014, p. 7

¹⁵³ CCP7, Advice to the AER from Consumer Challenge Panel sub-panel 7 regarding Jemena Gas Networks (NSW) Access Arrangement 2015-2020 Proposal, September 2014, p. 8

¹⁵⁴ CCP7, Advice to the AER from Consumer Challenge Panel sub-panel 7 regarding Jemena Gas Networks (NSW) Access Arrangement 2015-2020 Proposal, September 2014, p. 8

¹⁵⁵ CCP7, Advice to the AER from Consumer Challenge Panel sub-panel 7 regarding Jemena Gas Networks (NSW) Access Arrangement 2015-2020 Proposal, September 2014, p. 9

- Noted several issues with JGN's tariff and pricing proposal. In particular the CCP noted:
 - its support for restructuring tariffs that encourage more efficient use of the gas network¹⁵⁷
 - JGN's presentation of price reductions in their proposal documents may be misleading for consumers. JGN present their price implications information based on a 'typical' customer with a usage pattern which presents the largest reduction in charges over the period. This information should be supplemented by showing a range of price outcomes for different customers with different use patterns. In addition, JGN should present price implications in real terms so as to avoid confusing customers with nominal values which may have less meaning to customers.¹⁵⁸
 - JGN's pricing material only includes price projections over the upcoming five year period. In JGN's attempts to stabilise and present price reductions to consumers in the upcoming five years, it may have created a price spike at the beginning of the next regulatory period. JGN have not communicated this to consumers.¹⁵⁹
- Advised the AER that bundling the haulage reference service with the metering service would present a potential barrier to contestability of meter data services in the future. Should the AER determine that it is appropriate to bundle the service, the AER should ensure that any necessary changes can be reversed in future at no cost to consumers.¹⁶⁰
- Advised the AER to ensure that changes to the haulage reference service to include new Volume Boundary (VB) tariff classes for supply of multiple occupancy premises, does not lead to a reduction of rights and protections for energy consumers.¹⁶¹
- Commends JGN for new initiatives including a commitment to assist vulnerable customers, publishing a Tariff Structures Statement and working to bring forward the timing of annual changes to network pricing by one month.¹⁶²

JGN was provided with an opportunity to respond to the CCP's advice.¹⁶³ In its response JGN supports the intent of the CCP, but states its remit is challenging to fulfil, and that a number of process shortcomings has resulted in certain claims and conclusions to be ill-informed or in-correct.¹⁶⁴ Again at a high level, JGN:

- Considers that a number of claims and criticisms made by the CCP in its advice to the AER on the effectiveness of its engagement with its customers are unfounded. In addition, JGN consider it appropriate that any review of its customer engagement activities, recognises that the extent of

¹⁵⁶ CCP7, Advice to the AER from Consumer Challenge Panel sub-panel 7 regarding Jemena Gas Networks (NSW) Access Arrangement 2015-2020 Proposal, September 2014, p. 10

¹⁵⁷ CCP7, Advice to the AER from Consumer Challenge Panel sub-panel 7 regarding Jemena Gas Networks (NSW) Access Arrangement 2015-2020 Proposal, September 2014, p. 12

¹⁵⁸ CCP7, Advice to the AER from Consumer Challenge Panel sub-panel 7 regarding Jemena Gas Networks (NSW) Access Arrangement 2015-2020 Proposal, September 2014, p. 14-15

¹⁵⁹ CCP7, Advice to the AER from Consumer Challenge Panel sub-panel 7 regarding Jemena Gas Networks (NSW) Access Arrangement 2015-2020 Proposal, September 2014, p. 14

¹⁶⁰ CCP7, Advice to the AER from Consumer Challenge Panel sub-panel 7 regarding Jemena Gas Networks (NSW) Access Arrangement 2015-2020 Proposal, September 2014, p. 17

¹⁶¹ CCP7, Advice to the AER from Consumer Challenge Panel sub-panel 7 regarding Jemena Gas Networks (NSW) Access Arrangement 2015-2020 Proposal, September 2014, p. 17

¹⁶² CCP7, Advice to the AER from Consumer Challenge Panel sub-panel 7 regarding Jemena Gas Networks (NSW) Access Arrangement 2015-2020 Proposal, September 2014, p. 18

¹⁶³ Email from AER to JGN on 5 September 2014.

¹⁶⁴ JGN's response to CCP submission - September 2014, p. 2

engagement on our services, costs and prices has been a new experience for JGN, and for many of its stakeholders.¹⁶⁵

- Stated that the CCP advice to the Board on the rate of return does not address JGN's rate of return proposal directly, or the new expert material they have submitted.¹⁶⁶
- Argues that the CCP advice does not engage with the substance of the comprehensive capital expenditure proposal JGN has submitted to the AER. JGN disputed the claim that they did not quantify service implications arising from cost reductions, and argues that it adequately informed stakeholders about the options concerning capex. JGN also argue that its forum results can be relied upon.¹⁶⁷
- Defends its marketing forecasts stating that increasing the number of customers efficiently connecting to its network is in the long term interests of customers of natural gas and required by the National Gas Objective.¹⁶⁸
- Disputes that its presentation of information to customers was misleading, arguing that it needed to be mindful of providing information that is easily understood, the risk of information overload and potential customer disengagement. JGN also stated that it responded to feedback from its Customer Council on preparing its communication material.¹⁶⁹
- Agrees that consideration needs to be given to the protections for customers of gas intermediaries and has reflected this in its terms and conditions of the RSA and discussed facilitating customer participation in energy markets with the NSW Department of Trade and Industry.

¹⁶⁵ JGN's response to CCP submission - September 2014, p. 3

¹⁶⁶ JGN's response to CCP submission - September 2014, p. 11

¹⁶⁷ JGN's response to CCP submission - September 2014, p. 14

¹⁶⁸ JGN's response to CCP submission - September 2014, p. 21

¹⁶⁹ JGN's response to CCP submission - September 2014, pp. 22-23

Appendix D – Submission summary by key issue

We received 15 submissions in response to JGN's proposal. Most of the submissions contained areas for support for JGN's proposal, and also areas of concern.

Some of the key themes coming out of the submissions are summarised below.

JGN's consumer engagement

- PIAC commends JGN on its efforts to engage consumers about its activities and regulatory proposal to the AER.¹⁷⁰ PIAC also states that JGN has shown itself to be responsive to the concerns of the customer council and its members and has shown a willingness to invest in consumer engagement at the suggestion of the Customer Council.¹⁷¹ PIAC continue to say that JGN could present information in a more 'impartial' light and less as a marketing tool.¹⁷²
- The EMRF states that much of the stakeholder engagement material seems to be based on sound consumer engagement principles. However, the EMRF is concerned that the customer engagement process has been used to 'defend' the expenditure proposals.¹⁷³ The EMRF also states that its members do not believe they have been adequately consulted about important changes to the demand tariffs, with some customers particularly negatively impacted.¹⁷⁴
- Delta states that it was consulted only once prior to JGN's proposal being submitted via a teleconference held in May 2014 to inform Delta of JGN's proposal. Delta also noted that it was not only consulted late in the process, but that it was consulted on a subset of topics.¹⁷⁵ Similarly, Orica states it was not appropriately consulted on the proposal and was genuinely surprised to see the proposal when it was first made public.¹⁷⁶
- AGL was a retailer involved in JGN's forums and appreciates that some key information was provided prior to JGN submitting its proposal. However, it also states that it does not believe any concerns raised at the forum have been adequately addressed to date.¹⁷⁷
- Origin Energy appreciates that JGN has been more proactive in engaging with retailers in the lead up to the Access Arrangement review than in the past.¹⁷⁸ However, Origin questions whether JGN's spending plans accurately reflect the outcomes of their engagement.¹⁷⁹

Rate of return

- The EMRF is particularly concerned that JGN has not adopted the AER's approach as set out in the rate of return guideline in its totality.¹⁸⁰ The EMRF also opposes the adoption of a gamma value of 0.25 compared to the AER's Guideline of 0.5.

¹⁷⁰ PIAC, *Things to like, things to check: PIAC submission to the AER's review of prices for Jemena Gas Network from 1 July 2015*, August 2014, p. 6

¹⁷¹ PIAC, *Things to like, things to check: PIAC submission to the AER's review of prices for Jemena Gas Network from 1 July 2015*, August 2014, p. 7

¹⁷² PIAC, *Things to like, things to check: PIAC submission to the AER's review of prices for Jemena Gas Network from 1 July 2015*, August 2014, p. 7

¹⁷³ The Energy Markets Reform Forum, *Jemena application: A response*, August 2014, p. 11

¹⁷⁴ The Energy Markets Reform Forum, *Jemena application: A response*, August 2014, p. 5

¹⁷⁵ Delta electricity, *Jemena Gas Networks - Proposed 2015-20 access arrangement*, August 2014, page 3

¹⁷⁶ Orica, *2014 Jemena Gas Access Arrangement Review*, August 2014, p. 2.

¹⁷⁷ AGL, *AGL submission to the Australian Energy Regulator*, August 2014, p. 4

¹⁷⁸ Origin Energy, *Submission to Jemena's Access Arrangement Proposal*, 25 August 2014, p. 1

¹⁷⁹ Origin Energy, *Submission to Jemena's Access Arrangement Proposal*, 25 August 2014, p. 5

¹⁸⁰ The Energy Markets Reform Forum, *Jemena application: A response*, August 2014, p. 10

- PIAC disagrees with JGN's assertion that its WACC proposal best promotes the long term interests of consumers by balancing the need to attract efficient investment in the network with the risk of overpaying for investment. PIAC instead argues that the long term interests of consumers is best served by granting network businesses a WACC that is consistent with the Guideline both in terms of approach and the value of the parameters used in calculating the WACC.¹⁸¹
- AGL also considers the AER rate of return guideline attempted to provide an equitable balance between the interests of consumers and investors. AGL believe that it would be good regulatory practice if the AER only considers variations to its rate of return guideline in special circumstances.¹⁸²
- Lumo Energy similarly states that the Rate of Return guidelines gives the AER the flexibility to depart from using its guidelines where it considers appropriate. However, Lumo Energy states that there needs to be a strong case for this to occur.¹⁸³

Tariffs

- EMRF welcomes real reductions in residential and small business customer tariffs, but states they should not come at the expense of larger demand tariff customers.¹⁸⁴
- EMRF state that JGN's proposed restructuring of demand tariffs does not appear to represent a desire for more cost reflective pricing. Rather, JGN's approach suggests a desire to push increased revenue segments with lower price elasticity, at least in the short-medium term.¹⁸⁵
- Conversely, EWON welcomes a price path that proposes a reduction of 20 per cent for residential customers, stating that it will assist in balancing further rises in retail rates that are expected because of rising wholesale prices.¹⁸⁶ EWON also states that reducing the cost of special meter reads, JGN's commitment to scale up meter replacement, and assistance to vulnerable customers are all positive initiatives for customers.¹⁸⁷ EWON also welcomes JGN's proposed reduction of fixed charges and greater pricing emphasis on consumption, arguing that this allows greater customer control over energy costs.¹⁸⁸
- PIAC, similarly supports a smooth price path, reduced charges for special meter reads and JGN's decision to unwind the cross-subsidy between classes of consumers. In its submission PIAC highlights that JGN's share of revenue from residential consumers increased from 90 per cent to 94 per cent during the 2010-15 access arrangement. JGN did this to provide some relief to large users who were recovering from the global financial crisis and the impact of the carbon price.
- Delta argues that the gas market during the 2015-2020 access arrangement period will be under more pressure than previously, and the rationale for collecting more revenue from residential and commercial customers is still valid. Delta also questions JGN's estimation of

¹⁸¹ PIAC, *Things to like, things to check: PIAC submission to the AER's review of prices for Jemena Gas Network from 1 July 2015*, August 2014, p. 5

¹⁸² AGL, *AGL submission to the Australian Energy Regulator*, August 2014, p. 8

¹⁸³ Lumo Energy, *Jemena Gas Networks (NSW) Access Arrangement 2015-2020*, 28 August 2014, p. 3

¹⁸⁴ The Energy Markets Reform Forum, *Jemena application: A response*, August 2014, p. 4

¹⁸⁵ The Energy Markets Reform Forum, *Jemena application: A response*, August 2014, p. 5

¹⁸⁶ Energy and Water Ombudsman NSW (EWON), *Submission on Jemena Gas Networks - Access arrangement 2015-20*, p. 1

¹⁸⁷ Energy and Water Ombudsman NSW (EWON), *Submission on Jemena Gas Networks - Access arrangement 2015-20*, p. 2

¹⁸⁸ Energy and Water Ombudsman NSW (EWON), *Submission on Jemena Gas Networks - Access arrangement 2015-20*, p. 1

industrial customer annual increases, and suggests that the actual increases could be much larger.¹⁸⁹

- Qenos similarly argues that the JGN tariff structure on users places an unequal and unsustainable burden on large industrial users. Qenos states that the changes to the tariff rates will result in an 8.6 per cent increase in overall costs which cannot be passed on to customers. Qenos states it will face a price increase of 42 per cent over the five year period.¹⁹⁰
- Orica also questions why a higher capex plan on residential and market expansion translates to a material increase in prices for industrial customers.¹⁹¹
- AGL does not support the mater charge being combined with the fixed haulage charge as it believes the granular information is useful for network bill reconciliations and future market contestability.¹⁹² AGL goes on further to state that it seems incongruous that gas should be moving in the opposite direction to electricity with regards to transparency of charges. And finally, AGL state that it tends to add the current metering charge into one fixed charge so customers are already receiving a simpler bill.¹⁹³

Expenditure

- Origin Energy notes JGN's proposed 20 per cent increase in capital expenditure, and state that JGN has not sufficiently established either the basis on which it expects to maintain growth in new connections, or the actual extent of growth.¹⁹⁴
- Similarly, the EMRF notes that Jemena does not make a case for additional capex to 'expand' and 'upgrade' the network. The EMRF goes on the state that in a negative growth market, investment in expansion must be clearly justified, as should upgrading of long-lived assets whose utilisation may be declining.¹⁹⁵

¹⁸⁹ Delta electricity, *Jemena Gas Networks - Proposed 2015-20 access arrangement*, August 2014, pp. 1-2

¹⁹⁰ Qenos, *Submissions on Jemena Access Arrangement Proposal 2015-2020*, August 2014, p. 1-2

¹⁹¹ Orica, *2014 Jemena Gas Access Arrangement Review*, August 2014, p. 1

¹⁹² AGL, *AGL submission to the Australian Energy Regulator*, August 2014, p. 10

¹⁹³ AGL, *AGL submission to the Australian Energy Regulator*, August 2014, p. 10

¹⁹⁴ Origin Energy, *Submission to Jemena's Access Arrangement Proposal*, 25 August 2014, p. 1

¹⁹⁵ The Energy Markets Reform Forum, *Jemena application: A response*, August 2014, p. 6