Overview

Access Arrangement Information for the 2016-21 ACT, Queanbeyan and Palerang Access Arrangement

Submission to the Australian Energy Regulator

June 2015

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Overview

Key points

- ActewAGL Distribution's access arrangement information explains the background and basis for the proposed revisions to the access arrangement for the ACT, Queanbeyan and Palerang gas distribution network.
- The revised access arrangement, to apply from 1 July 2016 to 30 June 2021, incorporates several changes to the services offered, tariff structures and terms and conditions in the 2010-15 access arrangement. ActewAGL Distribution has engaged extensively with consumers, stakeholders and the community in developing the proposed revisions, and has responded to the feedback provided.
- The revised access arrangement includes a set of initial reference tariffs to apply from 1 July 2016 to 30 June 2017, and a price path and reference tariff variation mechanism to apply for the 2016-21 access arrangement period.
- The proposed reference tariffs are underpinned by detailed revenue and pricing proposals which have been developed in accordance with all the relevant regulatory requirements and in consultation with consumers and stakeholders.
- ActewAGL Distribution's forecast revenue requirement for 2016-21 is $332.9 million ($2015/16), which is around one per cent higher (in real terms) than the revenue approved by the Australian Energy Regulator (AER) for 2010-15. This is the forecast revenue required for ActewAGL Distribution to continue to deliver the safe and reliable services that consumers want, to meet expected growth in connections, to manage the network in a sustainable way, and to meet all relevant regulatory obligations and requirements.
- The proposed average price path is a reduction (CPI – 2.23 per cent) in 2016/17 followed by CPI increases for each of the remaining four years of the 2016-21 period. This is the lowest sustainable price path, and takes account of feedback from consumers, via the Energy Consumer Reference Council (ECRC) and community engagement, on their preference for a stable price path with minimal price shocks.

Consumer benefits

- The revenue and pricing proposals aim to ensure that ActewAGL Distribution is able to recover its efficient costs and continue to offer safe, reliable and affordable gas supply and manage the network for the long-term interests of consumers. The proposed revisions will therefore promote the National Gas Objective (NGO).
- Overall the proposed revisions will deliver long-term benefits to customers by encouraging efficient supply and use of gas in the 2016-21 access arrangement period and beyond. Details on how each element of the proposal will benefit consumers are provided in the attachments to this access arrangement information

Part 1 Background and context

1.1 Purpose of this access arrangement information

ActewAGL Distribution is required to submit to the Australian Energy Regulator (AER), by 30 June 2015, proposed revisions to the access arrangement applying to its natural gas distribution network in Australian Capital Territory (ACT), Queanbeyan City and the Palerang Shire (access arrangement revisions proposal). [1]

The National Gas Rules (Rules) require ActewAGL Distribution to submit access arrangement information with its access arrangement revisions proposal.[2] Access arrangement information is the information that is reasonably necessary for users and prospective users of the network:[3]

a) to understand the background to the access arrangement revisions proposal; and

b) to understand the basis and derivation of the various elements of the access arrangement revisions proposal.

Rule 72(1) specifies the information that must be included in the access arrangement information. This document contains the required information.

1.2 Structure of the access arrangement information

This *Overview* of the access arrangement information comprises:

- Part 1 – background and context for the access arrangement revisions proposal; and,
- Part 2 – a summary of the key elements of the access arrangement revisions proposal.

Details on each element of the proposal are provided in the following 14 access arrangement information attachments:

- Attachment 1 – Consumer engagement
- Attachment 2 – Services policy
- Attachment 3 – Demand, throughput and customer numbers
- Attachment 4 – Efficient delivery of services
- Attachment 5 – Operating expenditure
- Attachment 6 – Capital expenditure
- Attachment 7 – Capital base

[1] National Gas Law, section 132(1); Rule 52 and clauses 34 and 35(3) of Part 5 of Schedule 1 to the Rules.

[2] Rule 43(1).

[3] Rule 42(1).

- Attachment 8 – Rate of return and forecast inflation
- Attachment 9 – Corporate income tax
- Attachment 10 – Incentive mechanisms
- Attachment 11 – Revenue requirement and price path
- Attachment 12 – Reference tariffs
- Attachment 13 – Reference tariff variation mechanism
- Attachment 14 – Non-tariff elements of the access arrangement

Supporting material for each attachment is provided in the appendices to the access arrangement information.

1.3 Background to the access arrangement revisions proposal

The access arrangement sets out the terms and conditions of access to pipeline services provided by ActewAGL Distribution's ACT, Queanbeyan and Palerang gas distribution network. ActewAGL Distribution's 2010-15 access arrangement was approved by the AER in April 2010, and subsequently amended by order of the Australian Competition Tribunal (Tribunal) in October 2010. The access arrangement was among the first to be approved by the AER under the new national energy regulatory framework.

The Rules require service providers to submit proposed revisions to the access arrangement by the review submission date specified in the access arrangement.[4] The review submission date in the 2010-15 access arrangement is 30 June 2014.

However, in accordance with transitional provisions for the amendments to the Rules, released by the Australian Energy Market Commission (AEMC) in November 2012, the AER exercised its power to extend the review submission date by 12 months to 30 June 2015.[5] The AER confirmed, by letter to ActewAGL Distribution, that the current access arrangement period would be treated as a six-year period, and the next access arrangement period would commence on 1 July 2016 and end on 30 June 2021.[6] Consistent with this, the Regulatory Information Notice (RIN), served by the AER on ActewAGL Distribution on 17 April 2015, defines the current access arrangement period as starting on 1 July 2010 and ending on 30 June 2016.[7]

[4] Rule 52(1).

[5] Letter from the AER dated 4 July 2014. The transitional Rules gave the AER discretion to extend the period for submitting the access arrangement revision proposal under Rule 52 by up to 18 months (clause 34 of schedule 1 to the Rules) and required it to exercise its power under Rule 52(3) (as modified by clause 34 of Schedule 1 to the Rules) to extend that period to 30 June 2015 (clause 35(3) of Schedule 1 to the Rules). ActewAGL Distribution did not seek the additional 6 months extension.

[6] Letter from the AER dated 24 November 2014.

[7] AER 2015, RIN, Definitions, p. 50.

As the 2010-15 access arrangement contemplates that the revision commencement date may occur after 1 July 2015, it provides for the reference tariffs to apply in the period 30 June 2015 to the commencement of revisions to the 2010-15 access arrangement.[8] It provides that reference tariffs in place at 30 June 2015 will continue to apply without variation during the extension year (2015/16). Consistent with this, the AER has stated on its website that reference tariffs in place at 30 June 2015 would continue without variation for the 12-month extension period.[9] Reference tariffs for 2015/16 have not been adjusted in accordance with the reference tariff variation mechanism. There has been no CPI adjustment, and no adjustments for cost pass throughs, no application of carryover amounts arising from the operation of the operating expenditure (opex) incentive mechanism during the 2010-15 period, and no adjustments to reflect changes in costs and throughput in the reference tariffs for 2015/16.

In contrast to the National Electricity Rules which include explicit provisions for a true-up of revenues following the transitional year (2014/15),[10] the Rules for gas do not include any specific requirement for an adjustment of revenues following the extension year. While Rule 92(3) provides for reference tariffs, as in force at the end of an access arrangement period, to continue without variation for an 'interval of delay'[11] and confers on the AER a discretion to take this into account in fixing reference tariffs for the new access arrangement period, the extension year (2015/16) does not constitute an 'interval of delay' because the revisions commencement date specified in its 2010-15 access arrangement is 'the later of 1 July 2015 and the date on which the approval by the Relevant Regulator of the revisions to the Access Arrangement takes effect under the National Gas Rules'.[12]

1.4 Overview of the regulatory framework

1.4.1 The National Gas Law

The National Gas Law (NGL) provides the foundation objective and principles for the regulation of gas network access arrangements. The NGL requires the AER, in performing a function or power that relates to the making of an access arrangement decision, to:

[8] Clause 5.4 of the 2010-15 access arrangement provides: '''If the Revisions Commencement Date is later than 1 July 2015, the Reference Tariffs and terms for a Reference Service as at 30 June 2014 will continue to apply until the Revisions Commencement Date.''' ActewAGL Distribution observes that the reference to '''30 June 2014''' is affected by a manifest printing or drafting error and, accordingly, should be read as a reference to ''30 June 2015'''.

[9] http://www.aer.gov.au/node/26561.

[10] NER Rule 11.56.4(h) - (j).

[11] That is, any interval between a revision commencement date stated in an access arrangement and the date on which the revisions to the access arrangement commence.

[12] ActewAGL Distribution's 2010-15 access arrangement, clause 1.17 and Attachment 1 definition of 'revisions commencement date'.

… perform or exercise that function or power in a manner that will or is likely to contribute to the achievement of the national gas objective.[13]

The National Gas Objective (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 price, quality, safety, reliability and security of supply of natural gas.[14]

Further, in making an access arrangement decision, the AER is required to:

- *determine the manner in which constituent components of the decision relate to each other and take those interrelationships into account in the making of the decision; and*
- *if there are 2 or more decisions that will or are likely to contribute to the achievement of the NGO, the AER must make the decision that it is satisfied will or is likely to contribute to the achievement of the NGO to the greatest degree.*[15]

When exercising a discretion in approving or making those parts of an access arrangement that relate to reference tariffs, the AER must also take into account the revenue and pricing principles set out in section 24 of the NGL.[16] The revenue and pricing principles are:

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

a) providing reference services; and

b) complying with a regulatory obligation or requirement or making a regulatory payment.

(3) 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—

a) efficient investment in, or in connection with, a pipeline with which the service provider provides reference services; and

b) the efficient provision of pipeline services; and

c) the efficient use of the pipeline.

(4) Regard should be had to the capital base with respect to a pipeline adopted in any previous—

a) full access arrangement decision; or

b) decision of a relevant Regulator under section 2 of the Gas Code; or

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[13] NGL section 28(1)(a).

[14] NGL section 23.

[15] NGL section 28(1)(b)(ii) and (iii) and section 2(1) definitions of 'designated reviewable regulatory decision', 'applicable access arrangement decision' and 'full access arrangement decision'.

[16] NGL section 28(2)(a)(i).

c) *in the Rules.*

(5) 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.

(6) 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.

(7) 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.[17]

In section 1.8 of this Overview, ActewAGL Distribution explains how its overall access arrangement revisions proposal contributes to the NGO to the greatest degree and is consistent with the revenue and pricing principles. The interdependencies between the elements of the proposal are summarised in Table 8. Further details on how each element of the proposal contributes to the NGO and takes account of the revenue and pricing principles (where relevant) are provided in the attachments to this access arrangement information.

1.4.2 The National Gas Rules

The Rules contain detailed access arrangement and access arrangement information requirements:

- Part 8 (Access arrangements) sets out the requirements for access arrangements, including the matters that must be included in those arrangements, the access arrangement information that must accompany those arrangements, and the decisions the AER must make and the processes it must follow;
- Part 9 (Price and revenue regulation) contains detailed requirements for the access arrangement information and the methods to be used in determining the price and revenue components of access arrangements and specifies, in some cases, the factors the AER must consider and limits on the AER's discretion; and
- Part 10 (Other provisions of and concerning access arrangement) contains requirements for other elements of the access arrangement—for example the capacity trading policy and queuing policy.

The Rules' requirements for specific elements of the access arrangement and access arrangement information are addressed in the relevant attachments to this access arrangement information. A checklist of the relevant Rules requirements applicable to ActewAGL Distribution and where they are addressed in this access arrangement information and the 2016-21 access arrangement is provided at appendix O.01 to this Overview.

[17] NGL section 24(2)-(7).

1.4.3 The Regulatory Information Notice

The RIN sets out the information that the AER considers it needs to make its determination on the access arrangement revisions proposal. ActewAGL Distribution initiated consultation on a potential RIN in August 2014. However, the AER did not serve the final RIN on ActewAGL Distribution until 17 April 2015, just 10 weeks before the 30 June 2015 submission date. The late issuance by the AER of the final RIN and the complexity and scope of the requirements (covering multiple tables in 34 Excel spreadsheets and 270 questions in Schedule 1) have placed an unreasonable burden on ActewAGL Distribution. While ActewAGL Distribution has made every practicable effort to achieve compliance with the final RIN in the limited time available, any deficiencies in its response are attributable to the unreasonable timeframe provided by the RIN for compliance.

ActewAGL Distribution must, under the NGL, comply with all the requirements set out in the RIN served by the AER.[18] ActewAGL Distribution has submitted its response to the RIN with the access arrangement revisions proposal.

1.4.4 Basis for information provided in this access arrangement information

Rule 73 requires ActewAGL Distribution to provide all financial information consistently on the same basis and to state the basis on which that information is provided in the access arrangement information.

Unless otherwise stated, the financial information in this access arrangement information is provided in 2015/16 real dollars. Past values are brought to this basis using the Consumer Price Index (CPI) calculated using the all groups index for the weighted average of eight capital cities average of the four quarters to December over the four quarters to December the previous year, published by the Australian Bureau of Statistics and the Reserve Bank of Australia (RBA) forecast for the individual years 2013/14 and 2014/15. Estimated inflation for the access arrangement period for use in the financial modelling is forecast as discussed in attachment 8 of this access arrangement information.

1.5 ActewAGL Distribution's gas network and services

1.5.1 Ownership and operation of the network

ActewAGL Distribution is licenced under the *Utilities Act 2000* (ACT) to provide gas distribution and connection services in the ACT, and holds a Reticulator's Authorisation under the *Gas Supply Act 1996* (NSW) for its gas distribution system in the Queanbeyan City Local Government Area (LGA) and in the adjoining Palerang LGA, and a pipeline licence for the Eastern Gas Pipeline (EGP) interconnect from Hoskinstown in New South Wales (NSW) to the ACT border.

[18] NGL section 56.

The NGL defines a service provider as a person who owns, controls or operates a pipeline or intends to own, control or operate a pipeline.[19] In respect of the ACT, Queanbeyan and Palerang gas distribution network, the parties that satisfy the definition under the NGL are:

- Icon Distribution Investments Limited (ACN 83 073 025 224); and
- Jemena Networks (ACT) Pty Ltd (ACN 24 008 552 663).

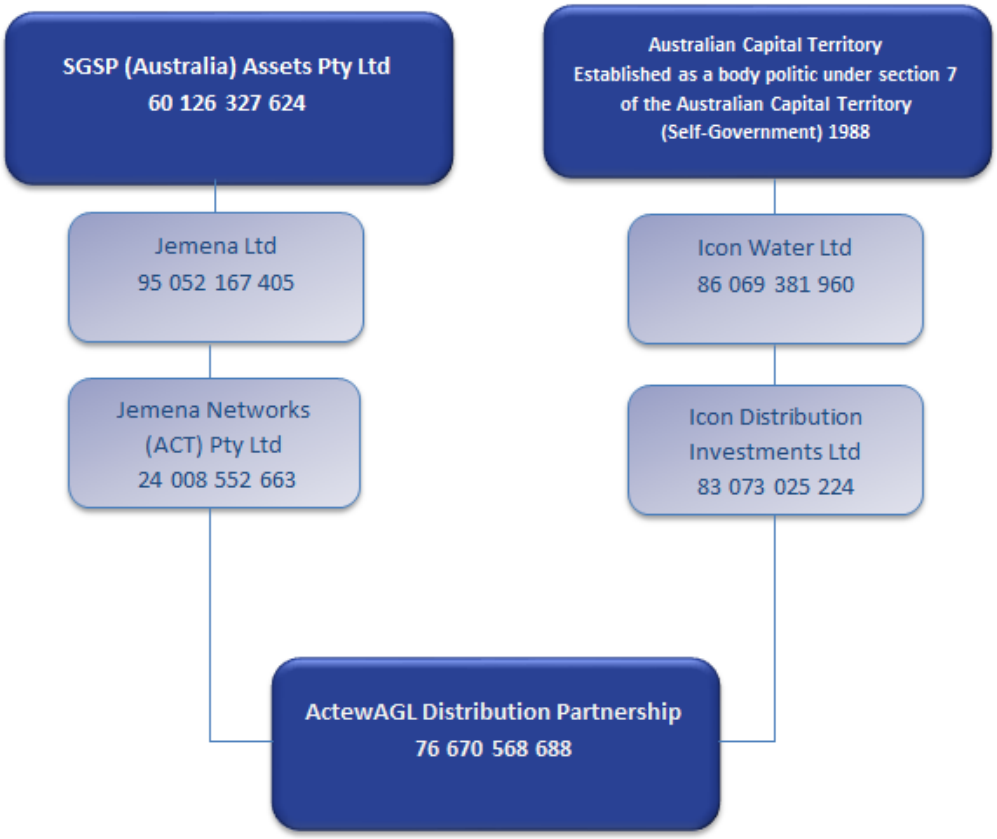
The two service providers, the ActewAGL Distribution partner companies, jointly own, control and operate the network. The partner companies each hold a 50 per cent interest in the ActewAGL Distribution partnership. The ActewAGL Distribution partnership meets the regulatory and other obligations that rest at law upon the partner companies given that the latter are formal legal entities and a partnership in the ACT is not a legal entity. The NGL also includes provisions relating to a 'service provider acting on behalf of other service providers' and a 'local agent of a service provider'. ActewAGL Distribution is not a local agent of a service provider of the pipeline as defined by the NGL, nor does it act on behalf of another service provider of the pipeline as defined by the NGL.

ActewAGL Distribution and ActewAGL Retail together comprise the ActewAGL joint venture.

A representation of the ownership structure of ActewAGL Distribution is provided in Figure O.1.

[19] *National Gas (South Australia) Act 2008*, Section 8 (1).

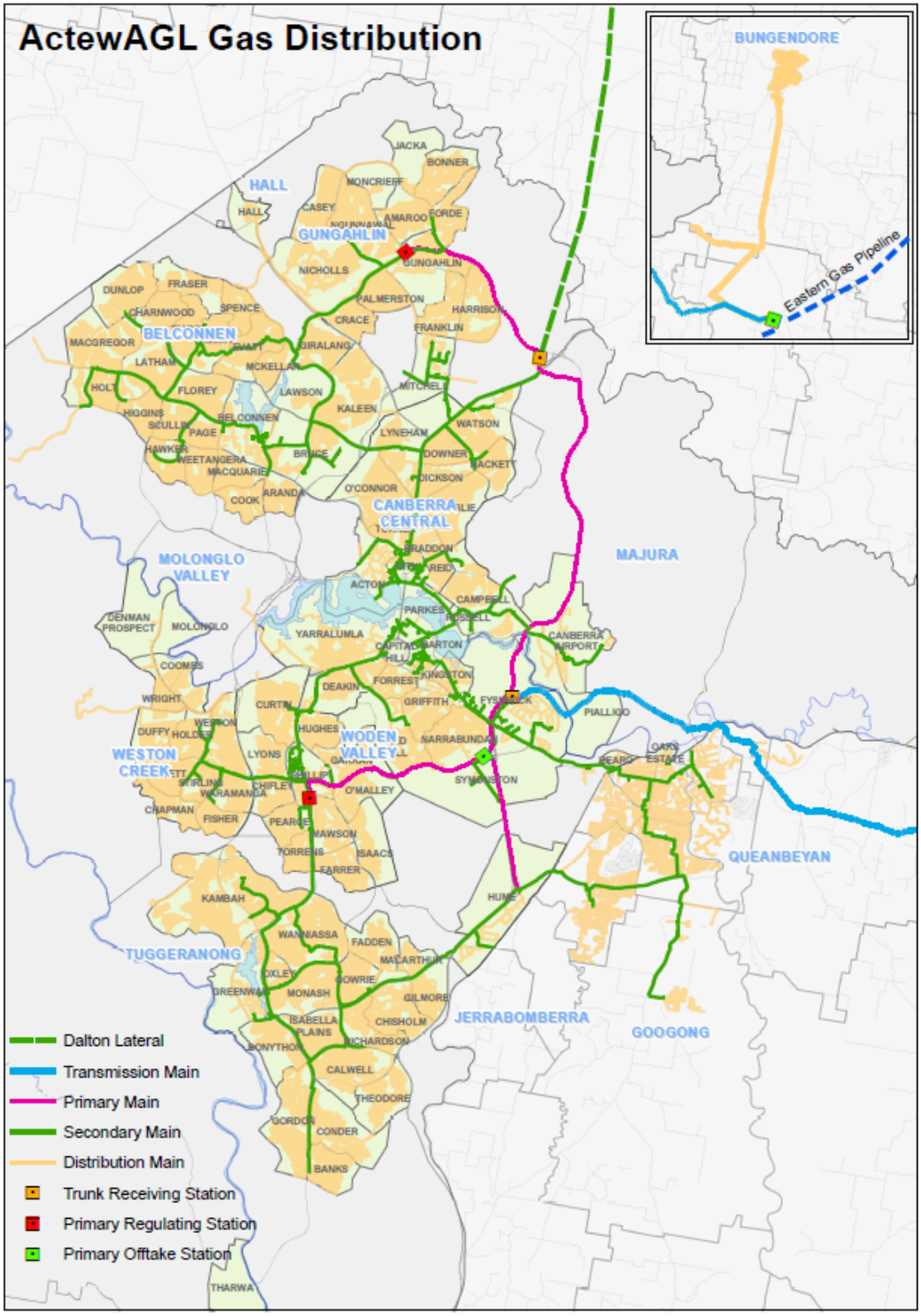
Figure O.1 Ownership structure of ActewAGL Distribution



1.5.2 ActewAGL Distribution's gas network

ActewAGL Distribution's ACT, Queanbeyan and Palerang network comprises around 4,500 kilometres of natural gas distribution pipelines, delivering natural gas to approximately 138,000 homes and businesses. Two high-pressure transmission pipelines supply natural gas to ActewAGL's distribution system in the ACT and Queanbeyan: the Dalton to Watson pipeline spur from the Moomba–Sydney Pipeline through the northern Watson trunk receiving station (TRS) and the EGP from Longford in Victoria through the eastern Hoskinstown TRS. ActewAGL Distribution owns the Hoskinstown to ACT pipeline. A map of the network is provided in Figure O.2.

Figure O.2 ActewAGL gas distribution network



A description of the assets that comprise the network is provided in Table O.1.

Table O.1 ActewAGL Distribution's gas network assets

Asset class	Volume (km or number)	Description
Transmission mains	30.3 km	The single asset in this class, the Hoskinstown–Fyshwick pipeline, was built in 2000/01 to supply gas to the primary network via the Fyshwick TRS. This asset class comprises pipelines, cathodic protection systems and easements. The pipeline has a diameter of 250 mm and a maximum allowable operating pressure (MAOP) of 14 900 kPa.
Primary mains	45 km	Primary mains provide natural gas to the secondary distribution systems of the ACT and Queanbeyan. They are constructed of high-strength steel pipe of 250 mm diameter and have an effective MAOP of 6,895 kPa. They are internally and externally protected against corrosion by a physical coating and via cathodic protection.
Secondary mains	245 km	Secondary mains provide gas to the District Regulator Sets within the ACT and Queanbeyan networks. They also directly supply a number of large contract customers. The secondary mains network is constructed from steel pipe externally coated to protect against corrosion. Mitigation of corrosion risk is also achieved via cathodic protection. Secondary mains have an MAOP of 1,050 kPa.
Medium pressure mains	4,300 km	Medium pressure mains supply natural gas to domestic and industrial and commercial (I&C) users. They are predominately plastic (polyethylene and nylon) and operate at an MAOP of 210 kPa.
Trunk receiving and custody transfer station	1	The TRS at Watson provides the step down from transmission pressure in the Dalton–Watson lateral pipeline to the lower network pressures.
Trunk receiving stations (TRS)	1	The TRS at Fyshwick provides the step down from transmission pressure in ActewAGL's Hoskinstown–Fyshwick pipeline to the lower network pressures.
Primary regulating stations (PRS)	5	Primary regulating stations are pressure reduction facilities located at each off-take on the primary main and at the end of the Hume Primary Main extension. The ACT/Queanbeyan PRSs reduce pressure from an MAOP of 6,895 kPa to supply the secondary network at 1,050 kPa.
Package offtake stations (POTS)	1	Bungendore POTS is located in the Hoskinstown TRS compound. The Bungendore POTS reduces the pressure of the gas from 14,900 kPa to 400 kPa.
Secondary district regulator sets	90	Secondary district regulator sets are required at each off-take from the secondary system to supply medium pressure systems. They reduce the pressure from 1,050 kPa inlet to 210 kPa outlet pressures.
Residential meter sets	117,368 gas 8,834 hot water 170 cold water	ActewAGL Distribution provides energy transportation services for energy retailers and their customers. The financial transactions between the networks, energy retailers and the end users are largely determined by the metering equipment provided by ActewAGL Distribution to measure delivered quantities.
Industrial and commercial (I&C) meter sets	5,237	I&C meter sets have the same purpose and functionality as residential meter sets. However, equipment complexity, unit cost and maintenance requirements increase with load size and as the network delivery pressures increase.

Source: Asset Management Plan, table 1.1.

Approximately 138,000 residential and business customers and around 40 major customers (each consuming more than 10 terajoules (TJ) of gas per year) are connected to ActewAGL

Distribution's gas network. The residential and business consumers account for around 95 per cent of revenue and 88 per cent of the total load. The 40 major customers account for around five per cent of the revenue and 12 per cent of the load.

1.5.3 Gas network regulatory obligations

In addition to legislation and regulations generally applicable to business, ActewAGL Distribution is subject to a range of industry specific regulations. These regulatory obligations are a substantial driver of ActewAGL Distribution's costs of constructing, operating and maintaining its gas network. The obligations are addressed in ActewAGL Distribution's plans and procedures, and reflected in the day-to-day operation of the network.

Compliance with applicable regulatory obligations and requirements is one of the four possible justifications for new capital expenditure (capex) listed in Rule 79(2)(c). Details on the relevant regulatory obligations are therefore provided in attachment 6 to this access arrangement information, where the obligations are specific drivers of capex. New and changing regulatory obligations are also a key driver of operating expenditure (opex) step changes. These obligations are addressed in attachment 5 and appendix 5.04 to this access arrangement information. This section provides a high-level overview of the key regulatory obligations and requirements.

1.5.3.1 Industry, technical and safety requirements

The key instruments that give ActewAGL Distribution the authority to operate the ACT, Queanbeyan and Palerang gas distribution network in the ACT and NSW are the *Utilities Act 2000* (ACT) *and the Utilities (Technical Regulation) 2014 Act* (ACT) and the *Gas Supply Act 1996* (NSW). These Acts require a gas distribution network operator to hold a licence or authorisation, to which detailed conditions, including reporting requirements, are attached. Annual licence or authorisation fees or levies also apply under both instruments. In the ACT, a Utilities (Network Facilities) Tax (UNFT) also applies to ActewAGL Distribution.

Under the powers of the *Utilities Act*, the Independent Competition and Regulatory Commission (ICRC) has developed a number of Industry Codes that apply to ActewAGL Distribution. These include:

- Consumer Protection Code;
- Gas Network Boundary Code; and
- Gas Network Capital Contributions Code.

Under the *Utilities (Technical Regulation) 2014 Act* a number of Technical Codes are also in place, regulated by the ACT Environment and Planning Directorate. These include:

- Gas General Metering Code;
- Gas Safety and Operating Plan Code; and
- Gas Safety and Installation Code.

In NSW, regulation is largely undertaken through regulations rather than codes. Principle safety regulation is under the Gas Supply (Safety and Network Management) Regulation 2008. This Regulation, as well as the Safety and Operating Plan Code currently in place in the ACT, requires

gas distributors to develop and comply with relevant Safety and Operating Plans (SAOPs), and comply with Australian Standards (AS), in particular AS4645 and AS2885. Regulation of metering in the ACT is effected through the Gas General Metering Code while in NSW it is affected through the Gas Safety (Consumer Safety) Regulation 2012.

Cross country pipelines in NSW are regulated under the *Pipelines Act 1967* (NSW) and the *Pipelines Regulation 2013* (NSW*)* which require any person who wishes to construct and operate a pipeline to hold a licence and comply with AS2885. ActewAGL Distribution holds licence for the Trunk Main from Hoskinstown to the ACT border (Licence No. 29). The Act, Regulation and licence include obligations for safe management of the pipeline and the easement it runs through.

In accordance with the Gas Safety and Operating Plan Code 2000 (ACT), the distribution network SAOP must be reviewed on a regular basis. Under the Gas Supply (Safety and Network Management) Regulation 2008 (NSW) the licenced network must review and revise its SAOP every two years or if significant incremental change has occurred. The SAOP is to be consistent with relevant Australian Standards, in this case AS4645. Under the Pipeline Regulation 2013 (NSW) and AS2885.3, the licensed must have a Pipeline Management System (PMS) in place and lodge and implement a Pipeline Management Plan (PMP) which forms part of the PMS. It must also have the PMS reviewed at least every five years in accordance with AS 2885.3. The relevant instruments require both the SAOP and PMP to be audited by a nominated auditor who is accepted by the relevant technical regulator.

1.5.3.2 The ACT Consumer Protection Code

The ACT Consumer Protection Code applies to both retail and distribution businesses in the electricity and gas sectors, and contains both common and specific obligations. Schedule 1 of the Consumer Protection Code sets out minimum service standards applying to the gas distribution network, as well as rebates to be paid in the event of noncompliance.

ActewAGL Distribution reports on its performance against these minimum service standards, as well as rebate amounts paid to customers, in its annual compliance report to the ICRC. Over the 2010-15 access arrangement period, ActewAGL Distribution has achieved 100 per cent compliance with the Code (see key performance indicators in Table 6 below) and has paid no rebates for failing to meet service standards. The costs of any rebates that are paid are passed directly through to Jemena Asset Management (JAM) as part of its incentives under the Distribution Asset Management Services (DAMS) Agreement to ensure appropriate service delivery to customers. The DAMS Agreement is explained in attachment 4 to this access arrangement information, and summarised in section 1.12 of this Overview.

1.5.3.3 National Energy Customer Framework

Significant new regulatory obligations are contained in the National Energy Customer Framework (NECF), which was introduced during the 2010-15 access arrangement. A transitional NECF has been in force in the ACT from 1 July 2012 to 30 June 2016, and the full NECF will commence on 1 July 2016.

From ActewAGL Distribution's perspective, the key high-level change introduced through NECF is the creation of direct rights and obligations between the distributor and the customers that

connect and take gas from the distributor's network. Before NECF, a 'linear' relationship existed with customers buying energy from retailers and retailers then engaging ActewAGL Distribution to transport gas through its network to the customers. Under that model, ActewAGL Distribution had a primary relationship with the retailer and the contracting arrangements between ActewAGL Distribution and retailers reflected that.

NECF establishes a 'triangular' relationship so that customers now have rights and obligations with ActewAGL Distribution in addition to the previous relationship between customers and retailers, and retailers and ActewAGL Distribution.

NECF has significant implications for the terms and conditions in the access arrangement and the Reference Service Agreement (RSA). This is discussed in attachment 14 to this access arrangement information. New requirements under NECF will also increase capex and opex. For example, the forecast capex for market expansion includes a step change due to new requirements for energisation of new connections under NECF. This is discussed in attachment 6 to this access arrangement information.

1.6 Outcomes in the current access arrangement period

Key points

During the current access arrangement period:

- ActewAGL Distribution has continued to deliver safe and reliable gas distribution services to its growing customer base, while remaining within the capex and opex allowances set by the AER in its 2010 final decision.
- Customer numbers have grown steadily over the period, at an average rate of three per cent per year. Average consumption per connection has declined over the period, for both residential and business customers. As a result, total annual consumption has been declining since 2011/12, following a long period of steady growth.
- Actual and estimated opex over the 2010-15 period is $133.9 million ($2015/16), compared with the AER approved opex of $129.9 million. Controllable opex has been below the AER approved amount over the period. Actual and estimated capex over the 2010-15 period is $90.8 million ($2015/16), below the AER approved capex of $98.7 million.
- ActewAGL Distribution has continued its strong reliability and service standard performance, relative to other gas distribution businesses and relative to all of the key performance indicators (KPIs) specified in the 2010-15 access arrangement information.

In this section ActewAGL Distribution provides an overview of key outcomes in the 2010-16 access arrangement period. The purpose is to provide context for the access arrangement revisions proposal. Further details on current period performance are provided in the relevant

attachments. For example, current period capex is examined in detail in attachment 6, where the current period capex is shown to be conforming capex (under Rule 79) which should be rolled into the opening regulatory asset base (RAB).

In the RIN, the AER defines the current regulatory period as:

> *The six year period that commenced on 1 July 2010 and is intended to conclude on 30 June 2016.*[20]

ActewAGL Distribution adopts the six-year definition in this access arrangement information. However, comparisons with the AER's regulatory allowances are generally made over the five-year period 2010-15 because the AER only set allowances for that period, not for 2015/16.

Over the 2010-16 access arrangement period, ActewAGL Distribution has operated the gas network in line with the long-term interests of consumers. The capex and opex proposals for 2010-15 and the service performance priorities and targets were informed by ActewAGL Distribution's understanding of the services consumers want and are willing to pay for. A clear message from the willingness to pay studies that informed the 2010-15 access arrangement proposal was that customers did not want service levels to be reduced.[21] ActewAGL Distribution has been able to achieve this, while remaining within the capex and opex allowances set by the AER for the period.

1.6.1 Historical demand, throughput and customer numbers

Customer numbers increased steadily over the 2010-15 access arrangement period. The volume customer group (known under the 2010-15 access arrangement as the 'tariff customer tariff class') customer numbers are estimated to have increased by 14.6 per cent over the four years 2010/11 to 2014/15, while the demand customer group (known under the 2010-15 access arrangement as the 'contract customer tariff class') increased slightly, from 38 to 40 (see Table O.2). For the volume customer group, actual customer numbers have been consistently higher than the forecast adopted by the AER in the 2010-15 access arrangement final decision.

Table O.2 Forecast and actual customer numbers

	2010/11	2011/12	2012/13	2013/14	2014/15
Volume customers					
AER approved forecast	119,711	123,429	127,030	130,284	133,420
Actual	120,438	124,411	129,394	134,234	138,017[e]
Variance (%)	0.6	0.8	1.9	3.0	3.4
Demand customers					
AER approved forecast	41	41	41	41	42

[20] Final RIN issued by the AER to ActewAGL Distribution 17 April 2015, p. 50.

[21] ActewAGL Distribution 2009, *Access Arrangement Information for the ACT, Queanbeyan and Palerang gas distribution network,* June, p. 66.

	2010/11	2011/12	2012/13	2013/14	2014/15
Actual	38	39	40	40	40[e]

Sources: ActewAGL Distribution 2009, *Access Arrangement Information*; Core Energy 2015, *Gas Demand Forecast* (Appendices 3.01-3.03).
[e] Estimate from Core Energy's model.

While total customer numbers increased over the 2010-15 period, total throughput is estimated to have declined by 9.2 per cent, from 8.5 TJ to 7.7 TJ, over the four years 2010/11 to 2014/15. The declining trend observed in the past three years is forecast to continue in the 2016-21 period.

For the first three years of the 2010-15 period, actual throughput was above the forecast adopted by the AER in its 2010 final decision. However in the past two years actual throughput has fallen below the forecast (see Table O.3). Weather-normalised throughput for volume tariff customers is closer to the 2010 forecast than actual throughput, indicating that some of the variance between forecast and actual throughput can be explained by the weather deviating from the historical average.

Table O.3 Historical energy throughput (TJ) approved by the AER and actual

	2010/11	2011/12	2012/13	2013/14	2014/15
Volume customers					
AER approved forecast	6,545	6,525	6,565	6,642	6,736
Actual	7,344	7,346	7,384	6,636	6,476[e]
Variance (%)	12.2	12.6	12.5	-0.1	-3.9
Weather normalised actual[e]	7,105	7,060	7,165	6,677	6,476
Variance (%)	8.6	8.2	9.1	0.5	-3.9
Demand customers (ACQ)					
AER approved forecast	1,166	1,171	1,179	1,192	1,210
Actual	1,139	1,224	1,166	1,155	1,224[e]
Variance (%)	-2.3	4.6	-1.1	-3.1	1.2
All customers					
AER approved forecast	7,711	7,696	7,744	7,834	7,946
Actual	8,483	8,571	8,550	7,791	7,700[e]
Variance (%)	10.0	11.4	10.4	-0.6	-3.1

Sources: ActewAGL Distribution 2009, Access Arrangement Information; Core Energy 2015, Gas Demand Forecast (Appendices 3.01-3.03). [e] Estimate from Core Energy's model.

1.6.2 Capital expenditure

Over the 2010-16 access arrangement period, ActewAGL Distribution continued to prudently and efficiently connect new customers to its gas network, provide infrastructure to ensure reliability for existing customers and renewed infrastructure to meet regulatory requirements and ensure

the integrity and safety of the gas network. Specifically, ActewAGL Distribution has carried out the following works.

- *Market expansion* – connected new customers, including large numbers from residential developments in Gungahlin (Casey, Bonner and Forde), Belconnen (Lawson), Molonglo (Coombs and Wright and North Western) and Googong.
- *Capacity development* – strengthened supply to the Hume and Tuggeranong regions to ensure continuity of supply and expanded the secondary main network in Gungahlin and Molonglo.
- *Stay in business* – upgraded network infrastructure to enable an increase in supply from the Eastern Gas Pipeline (EGP) driven by changes in the east coast gas market and increases in demand across the ActewAGL Distribution gas network, installed new pigging facilities to check the integrity of the network and replaced meters that were defective or had reached the end of their economic lives. In 2015/16 work will begin to rectify inlet piping required to be undertaken following a change to regulations.
- *Non-system capex* – upgraded data completeness and accuracy of the Geographic Information System resulting in greater visibility and understanding of the network.

Total capex over the 2010-15 period was eight per cent below[22] the amount approved by the AER, as shown in Table O.4. Relative to the AER approved capex actual (including estimate for 2014/15):

- Market expansion costs were similar to the amount approved by the AER once customer contributions towards connection costs (capital contributions) are taken into account.
- Capacity development costs were in line with the amount approved by the AER.
- Stay-in-business capex was lower than the amount approved by the AER. The variance is primarily driven by statistical sampling of meters (which revealed that their life can be extended from 20 to 25 years) and savings in other projects, including pigging receiver/launcher installation, replacement of secondary regulator sets and Project MIMI (Multi-utility Integrated Meter Infrastructure, a multi utility smart meter trial). These reductions were offset by an enlarged scope to facilitate supply from the EGP following changes to the east coast gas market.

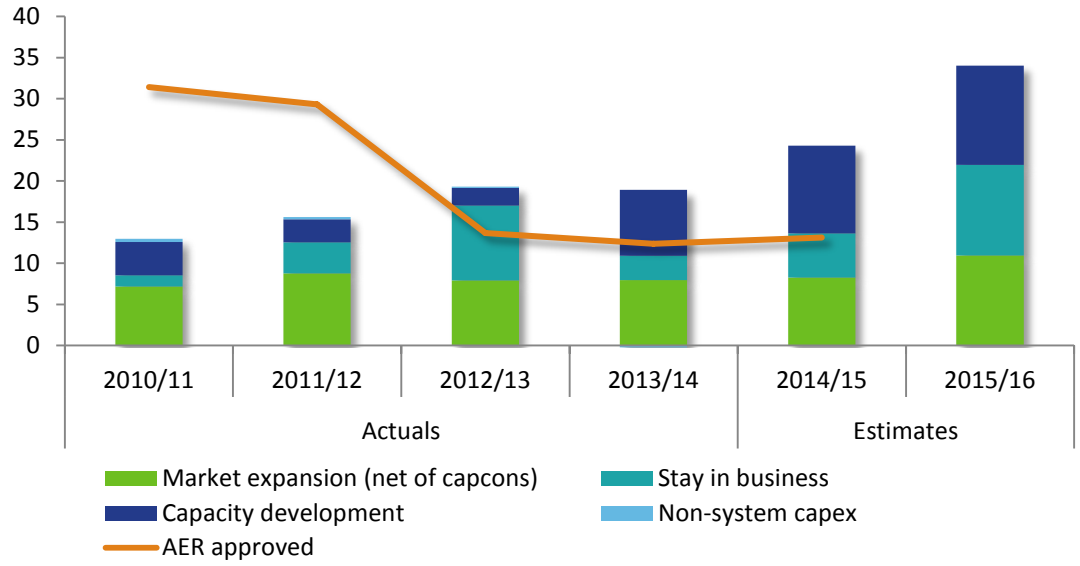
[22] Includes a combination of actual/estimate for 2014/15.

Table O.4 AER approved and actual capex over the 2010-15 period ($million, 2015/16)

	AER approved	Actual/estimate	$ variance	% variance
Market expansion	40.87	43.31	2.44	6
Capital contributions	0.35	3.31	2.96	834
Net market expansion	40.51	40.00	-0.51	-1
Capacity development	28.21	27.67	-0.55	-2
Stay in business	28.60	22.61	-5.99	-21
Non-system capex	1.36	0.52	-1.84	-62
Total capex (net of capital contributions)	**98.69**	**90.80**	**-7.90**	**-8**

Although actual capex was lower than the AER approved amount, the expenditure schedule was different, as shown in Figure O.4. Scheduling differences were largely driven by delays in the project for the strengthening of supply to the Hume and Tuggeranong region and the delays in several projects caused by the introduction of new regulatory requirements related to the need for development applications for construction of gas mains. The Hume and Tuggeranong suite of projects was delayed following an evaluation as part of the governance process which identified an alternative solution which more prudently met changes in the customer forecasts, leading to a delayed project establishment and delivery schedule.

Figure O.3 Capex over the 2010-16, composition of actuals and estimates ($million, 2015/16)



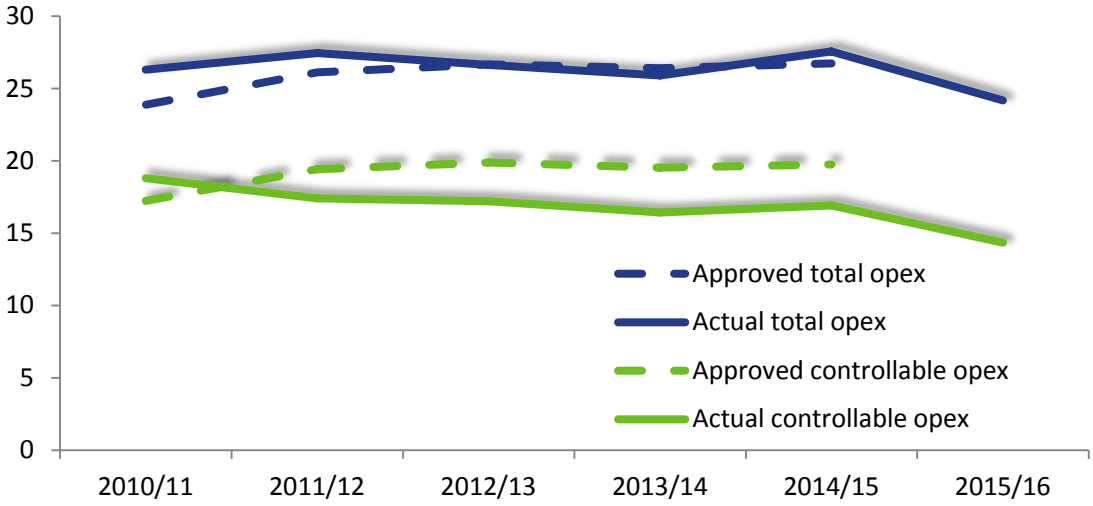
Capital expenditure for 2015/16 is based on the same principles as the 2010-15 period and will be planned and managed within the three-layer governance framework outlined in attachment 4. Although the AER did not approve a capex amount for 2015/16, capex in 2015/16 will be higher than in the preceding years. The increase is due to steady growth in customer connections (market expansion), new mains in Gungahlin and Molonglo areas (capacity development); the commencement of inlet piping rectification and the continued growth in meter replacement (stay in business).

1.6.3 Operating expenditure

ActewAGL Distribution's actual and estimated operating expenditure (opex) over the 2010-15 access arrangement period is $133.9 million ($2015/16). Total opex, which includes controllable plus other (non-controllable) costs, has been in line with the total approved forecast. Controllable opex has been consistently below the AER's approved amount since the second year of the 2010-15 access arrangement period. Other (non-controllable) opex has been above the amount approved by the AER. This category accounts for just over one-third of ActewAGL Distribution's total opex. The largest single non-controllable opex item is the Utilities Network Facilities Tax (UNFT).

Actual and estimated opex and approved opex are shown in Figure O.4 below.

Figure O.4 Total and controllable opex actual/estimate and approved amounts ($million, 2015/16)



A detailed breakdown and explanation of the differences between forecast and actual opex is provided in attachment 5 to this access arrangement information.

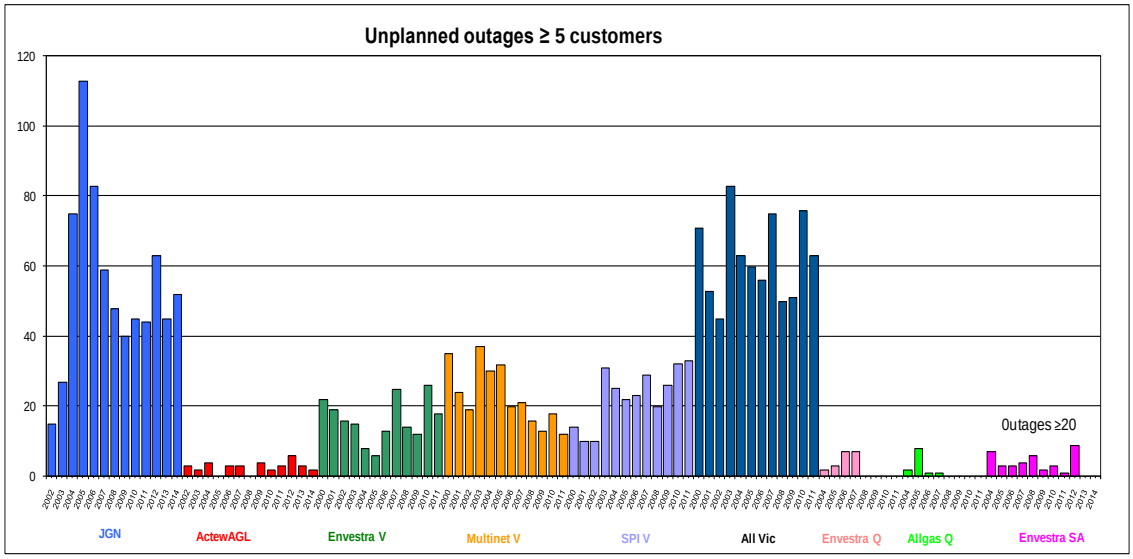
The opex outcomes demonstrate that ActewAGL Distribution has adopted prudent asset management and network planning policies and processes. This is discussed further in attachment 4. ActewAGL Distribution has also responded to the opex incentives created by the rolling carryover mechanism in the 2010-15 access arrangement.

1.6.4 Reliability and safety performance

During the current access arrangement period, ActewAGL Distribution has continued to provide the reliable and safe services that consumers demand. As noted above in the regulatory obligations section, ActewAGL Distribution has met (or outperformed) the minimum standards set out in the Consumer Engagement Code and has not been required to pay any rebates to customers. Performance against a range of key performance indicators (KPI), including several relating to reliability and safety (see section below) has also been good.

ActewAGL Distribution has continued to perform well in terms of unplanned outages affecting more than five customers. Figure O.5 shows ActewAGL Distribution's performance over time and relative to other gas distribution networks.

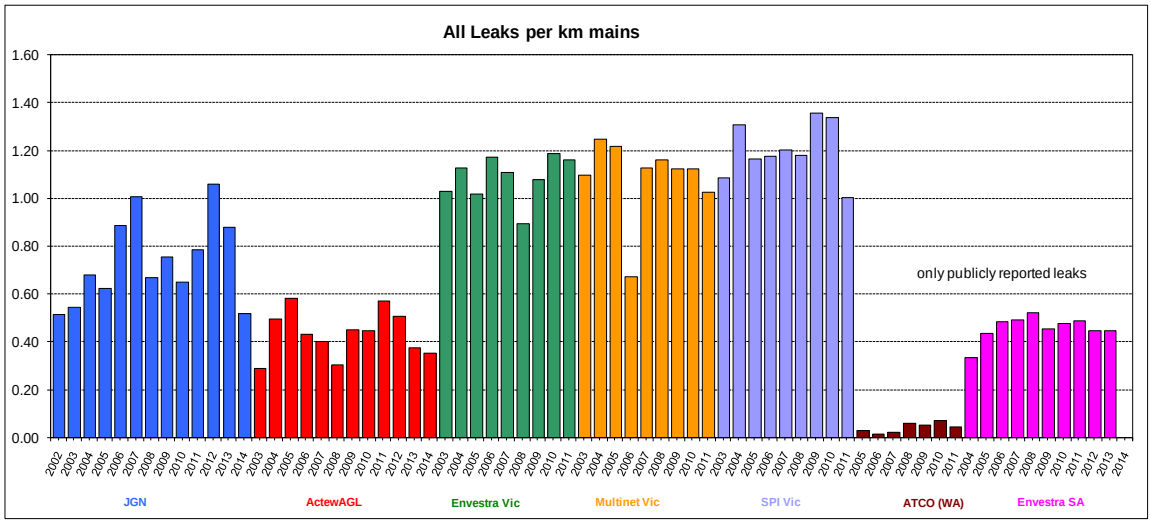
FigureO.5 Unplanned outages affecting five or more customers



Source: ActewAGL Distribution analysis based on publicly available data

ActewAGL Distribution has also performed well in terms of reported leaks per kilometre of mains, as shown in Figure O.6.

Figure O.6 Leaks per km of mains



Source: ActewAGL Distribution analysis based on publicly available data

1.6.5 Key performance indicators

Rule 72(1)(f) requires the access arrangement information to include 'the key performance indicators to be used by the service provider to support expenditure to be incurred over the access arrangement period'.

In the 2009 access arrangement information ActewAGL Distribution proposed 21 KPI. Descriptions of the KPI and the reasons for adopting them are provided in Table 5 below.

ActewAGL Distribution's Asset Management Plan also includes a set of KPI which relate specifically to asset management:

- network incidents notified to technical regulator;
- public reported escapes;
- System Average Interruption Duration Index (SAIDI);
- System Average Interruption Frequency Index (SAIFI);
- poor gas supply incidents report by the public;
- emergency response less than 60 minutes;
- pipeline patrol compliance;
- leakage surveys; and,
- unaccounted for gas (UAG).

The KPI in the 2009 access arrangement information, shown in Table 5, are broader in scope and include, for example, measures relating to customer service and back office/market interface.

Table O.5 ActewAGL Distribution Key Performance Indicators

Indicator	Definition
Supply reliability	
Major unplanned outages ≥5 customers	The number of unplanned supply outage incidents that impact five or more customers. Performance under this indicator reflects the adequacy of the design of the network. Performance under this measure is mostly driven by third party hits to the network, and so is linked to performance under the 'hits to network' indicator.
Asset integrity	
Third Party Reported Gas Leaks per 10 kilometre of main	The frequency of gas leaks reports by parties external to the distributor per 10 kilometre of main. These are usually very minor reports such as the smell of gas. Performance under this indicator is mostly driven by leaks at customer metering equipment and drives metering equipment replacement capital expenditure and maintenance expenditure.
Hits to Network per 10 kilometre of main	The number of mechanical damage incidents per 10 kilometre of main. These incidents may have serious consequences in regard to supply reliability, safety and the environment. Minimising this measure has a direct impact on unplanned maintenance and it therefore a significant driver of operating costs, for example UAG and gas losses.
% Unaccounted for Gas	The proportion of gas measured as being received into the network that is not measured as being delivered. This is direct driver of network operating expenditure.

Emergency management	
% Emergency Response within 60 minutes	The annual percentage of times that responses to emergency incidents have been inside 60 minutes. This is an important indicator of responsiveness to emergency incidents. ACTPLA uses this measure to determine emergency responsiveness in accordance with regulatory obligations. This indicator also provides a measure to assist understanding of factors that influence response times and the ability to deliver outcomes that exceed regulatory compliance and mitigate network and community risks.
Preventative Maintenance (PM) Completion	The level of PM work completed within the 12-month period, as a percentage of all PM of scheduled for completion with the year. PM extends the life of assets and ensures operational effectiveness and efficiency, thereby influencing stay-in-business capex and network reliability. It also contributes to safety outcomes as PM can identify asset integrity issues that may lead to safety issues before they occur.
PM/CM Ratio	The number of PM service orders completed during the year, compared with the number of Corrective Maintenance (CM) service orders as a percentage. A high level of CM may highlight specific problems within a system that may be used to identify poorly performing assets, or a change in asset risk profiles, driving the need for capital improvements.
Pipeline Patrol Compliance	Tracks whether the several types of pipeline patrol with different frequencies are being completed on schedule. This can be used to determine the adequacy of current resource levels, particularly with regard to standby resources and third party contractor management.
Simulations Conducted	Number of emergency simulations conducted each year. Simulations of incidents and emergency exercises are conducted at regular intervals to confirm the adequacy of resources and robustness of emergency response management systems. Rotating simulations across regions and asset classes ensures that staff emergency training is maintained.
Utilisation	
Customers per kilometre Mains	The customers connected per kilometre of the mains laid. This indicator shows the utilisation of infrastructure as a lead indicator for load and capacity planning for capacity development and stay-in-business capex, together with network marketing strategies.
Network Performance	
Cathodic Protection Reliability	The percentage the level of cathodic protection in the network. Cathodic protection is an important indicator for the protection of key high-pressure assets to ensure maintenance (and extension) to asset lives.
SAIFI per 1000 customers	System average interruption frequency index (SAIFI) is the ratio of total number of events to the total number of customers, expressed per 1000 customers. This is an important indicator of network performance and system reliability.

Back Office/ Market interface	
Contract Billing	The timeliness of monthly read of daily read sites as a percentage. This shows customer billing management performance, allowing network revenue management and customer service levels to be maintained.
Quarterly and Monthly Tariff Reading	The percentage of quarterly and monthly meter reading completed within ±2 days of the scheduled date. This shows customer billing management performance, allowing network revenue management and customer service levels to be maintained.
Service Order Delivery	The provision of the requested service within the specified timeframe for the activity. This shows that customer and retailer service level obligations are met in line with regulatory requirements.
Health and safety	
Lost Time Injury: JAM	Lost Time Injury (LTI) to JAM employees. ActewAGL Distribution has obligations under the *Work Safety Act 2008* (ACT) to ensure the safety of its employees, including contractors. This indicator assists in monitoring the safety performance of JAM. Lost time injuries are also a driver of costs.
LTI: Contractors	This keeps account of LTI of contractors to JAM. ActewAGL Distribution has obligations to sub-contractors as well as direct employees under the Work Safety Act.
Environment	
Reportable Environment Incidents	The number of times ActewAGL Distribution is directly involved in an environmental incident with requires external reporting to the Environment Protection Authority of NSW or Environment ACT. Environmental incidents are costly and damage ActewAGL Distribution's reputation. Minimisation of this measure, through appropriate environment management plans, practices and procedures is a key driver of expenditure.
Safety and Operating Plan (SAOP)	
Non-Conformance Report not actioned	Percentage of SAOP non-conformance reports (NCRs) that are followed up within the required timeframe. This is a measure of compliance with the SAOP. This includes application and compliance with relevant Australian Standards, which are called up in the SAOP and management of distribution authorisation and licence obligations.
Customer service	
New Customer Connections on time	Percentage of new customer connections made on time. This is a measure of customer service, as well as relating to a Consumer Protection Code (CPC) Minimum Service Standard rebate. This is also a key driver of ActewAGL Distribution revenue, as late connections lead to foregone revenue.
Consumer Protection Code (CPC) Compliance	The CPC outlines the basic rights of customers and consumers and utilities with respect to access to, and provision of, utility services. Compliance with the CPC is a key obligation on ActewAGL Distribution.

ActewAGL Distribution has performed well against these KPI in the current period, as shown in Table 6 below.

Table O.6 ActewAGL Distribution KPI targets and performance

Indicator	2010/11	2011/12	2012/13	2013/14	2010-15 target
Major Unplanned Outages ≥ 5 customers	3	6	3	3	2
Third party reported gas leaks per 10 km mains	3.3	3.6	4.2	4.2	3
Hits to Network per 10 km mains	0.76	0.64	0.60	0.46	0.7
Unaccounted For Gas (%)	2	1.8	2.1	1.9	1.80
Emergency Response within 60 minutes (%)	99	100	100	100	100
PM Completion	100	98	98	99	100
PM / CM Ratio (%)	45	47	44	46	50
Pipeline Patrol Compliance (%)	99.8	99.6	99.8	99.8	100
Simulations conducted	1	1	1	1	2
Utilisation: customers per km mains	30.7	31.2	32	32.7	25
Carthodic protection reliability	100	99	100	100	100
SAIFI per 1000 customers	0.6	0.47	0.4	0.31	<10
Contract Billing – Monthly read of the Daily Read Sites (%)	100	100	100	100	98
Tariff Reading Quarterly/ Monthly/MDL within ±2 of the scheduled read date (%)	83	100	99	99	95
Service Order delivery within the specified timeframe of the activity (%)	91	96	100	100	100
LTI:AAM	0	1	0	0	<5
LTI: Contractors	0	0	0	0	<5
Reportable environmental incidents	0	0	0	0	0
NCR not actioned	4	0	0	0	0
New Customer Connections on time (%)	97	99	100	100	100
Consumer Protection Code Compliance (%)	100	100	100	100	100

^ All values are for performance on the ACT, Queanbeyan and Palerang network, with the exception of pipeline patrol compliance and utilisation, which are values and targets for the ACT network only.

ActewAGL Distribution proposes to adopt the same KPI and the same targets for the 2016-21 access arrangement period. The proposal to maintain the targets recognises that consumers have told ActewAGL Distribution, via the ECRC, community workshops and the willingness to pay studies, that they do not want a reduction in service standards.

1.7 Consumer engagement

Key points

Through its Gas Consumer Engagement Program, ActewAGL Distribution has engaged extensively with consumers, stakeholders and the community on the proposed revisions to the access arrangement. Consumers have told ActewAGL Distribution they:

- value reliability and safety;
- want price stability and certainty;
- want vulnerable customers to be supported;
- are interested in the long-term sustainability of energy infrastructure in the ACT; and
- appreciate the opportunities to engage and are keen to be involved in future energy discussions.

The feedback and comments from consumers, stakeholders and the community have influenced ActewAGL Distribution's proposal in several ways:

- the expenditure proposals are designed to allow ActewAGL Distribution to continue to provide safe and reliable services;
- the proposed price path minimises price shocks and aims to provide stability in average prices;
- the new tariff structure will allow ActewAGL Distribution to promote the efficient use and growth of the network, for the long-term benefit of all consumers; and,
- the capex and opex proposals recognise the need to take a long-term perspective in managing the network, optimising the use of existing assets and investing to accommodate efficient growth in connections.

Retailers were also supportive of the proposed changes to the services and tariff structure and the move to a new reference service agreement (RSA), and their feedback has influenced the proposal.

ActewAGL Distribution has a long-standing and ongoing commitment to understanding its consumers and meeting their needs, and has engaged with consumers, stakeholders and the community through a range of mechanisms including:

- *Studies of willingness to pay (WTP) for changes in service levels*. These studies use targeted focus groups and representative surveys to obtain meaningful information on customer preferences in relation to striking a balance between cost and levels of service. The results from these surveys indicated that customers generally dislike all types of gas supply interruptions and the amount they are willing to pay to avoid them depends on the nature of the interruption. The cost of an interruption increases with its duration and interruptions are considered more costly when they occur in winter as opposed to other times of the year. Households prefer supply interruptions occurring late at night to those occurring in the evening or on the weekend and customers prefer to have some advance warning of a supply interruption. The value that residential customers place on avoiding supply interruptions increased between the studies undertaken in 2003 and 2011, despite gas prices increasing over that period. These surveys also found that very few customers have concerns about the maintenance of the network, ActewAGL Distribution's responsiveness in the event of a supply interruption, or the safety of the network.
- *Customer satisfaction surveys*. These annual surveys cover matters such as overall satisfaction, products and services, performance and reliability, customer contact and communication. ActewAGL consistently performs well in its customer satisfaction surveys.
- *Major project consultations* such as those undertaken for the Hume Primary Main extension and Primary Reduction Station and Gungahlin to Amaroo pipeline upgrade where engagement with residents affected during construction and commissioning was part of routine project activities.
- *Major customer consultations* were undertaken both during project feasibility studies and during design and construction stages for a number of commercial entities in the ACT.

Recognising that broader consumer engagement is a growing priority in the energy sector, as reflected in the AER's development of consumer engagement guidelines,[23] ActewAGL Distribution has developed the *Consumer Engagement Strategy (2014/15 to 2016/17)*. A Gas Consumer Engagement Program has been developed and implemented within this overarching strategy.

1.7.1 ActewAGL Distribution's Consumer Engagement Strategy

ActewAGL Distribution's *Consumer Engagement Strategy (2014/15 – 2016/17)* outlines a plan to better understand the organisation's consumers and develop proactive initiatives to more effectively engage with consumers into the future. The Strategy is based on the International Association of Public Participation (IAP2) engagement framework and acknowledges that engagement requires two-way communication providing an opportunity to listen more carefully

[23] AER 2013, *Consumer engagement guideline for network service providers,* November.

to stakeholders and work with them to ensure ActewAGL Distribution is able to respond effectively to the needs and expectations of the households, businesses, governments and communities to whom it provides services.

A copy of ActewAGL Distribution's Consumer Engagement Strategy can be found on the website at www.actewagl.com.au/consumerengagement.

1.7.2 Gas Consumer Engagement Program

The Gas Consumer Engagement Program was developed and delivered within the overarching Consumer Engagement Strategy framework. The objectives of the Gas Consumer Engagement Program were to:

- inform, consult and involve gas consumers and other members of the community in developing the 2016-21 gas access arrangement proposal; and
- collaborate with the ActewAGL Distribution Energy Consumer Reference Council (ECRC) in the development of the proposal.

The Gas Consumer Engagement Program has included several initiatives:

- briefing, discussion and collaboration with the ActewAGL Distribution ECRC;
- release of a public consultation paper titled '*The Gas Network – Our 5 year Plan*' and subsequent update addendum;
- one-on-one interviews with ActewAGL Distribution's top 10 major customers;
- hosting of two business and two community workshops;
- publication of information and presentations on the ActewAGL website; and,
- conduct of a survey through the ActewAGL Power Panel.

The ECRC provided the main forum for engagement. Established by ActewAGL Distribution in late 2014, the ECRC comprises representatives from a cross-section of residential and non-residential consumers including the North Canberra and Tuggeranong Community Councils, SEE-Change, ACT Council of Social Services, Master Builders Association, Property Council of Australia, Canberra Business Chamber and Engineers Australia. Following initial sessions which covered background and context for the access arrangement proposal, the ECRC discussed the following specific aspects of the gas access arrangement revisions proposal:

- cost and service trade-offs;
- capex and opex priorities and programs;
- revenue requirement drivers;
- cost of capital;
- services and tariff structures; and,
- price paths and customer billing impacts.

Similar topics were covered in the consultation paper, the workshops and the other publications.

Five key themes are reflected in feedback received during the consultation program. Consumers told ActewAGL Distribution they:

- value reliability and safety;
- want price stability and certainty;
- want vulnerable customers to be supported;
- are interested in the long-term sustainability of energy infrastructure in the ACT; and,
- appreciate the opportunities to engage and are keen to be involved in future energy discussions.

The feedback and comments received from consumers have influenced ActewAGL Distribution's access arrangement revisions proposal in several ways:

- the expenditure proposals are designed to allow ActewAGL Distribution to continue to provide safe and reliable services;
- the proposed price path minimises price shocks and aims to provide stability in average prices;
- the new tariff structure will allow ActewAGL Distribution to promote the efficient use and growth of the network, for the long-term benefit of all consumers; and
- the capex and opex proposals recognise the need to take a long-term perspective in managing the network, optimising the use of existing assets and investing to accommodate efficient growth in connections.

ActewAGL Distribution has also responded to feedback the ECRC has provided on how ActewAGL Distribution can most effectively engage with consumers. For example, ActewAGL Distribution has released fact sheets on aspects of the submission and an addendum to the initial consultation paper which provides further information and an update on progress in the review.

The Gas Consumer Engagement Program will continue beyond the lodgement of this access arrangement revisions proposal with the AER. A summary of the submitted proposal will be released to the community during July 2015 as part of providing feedback to the ECRC, business sector and the community about what ActewAGL Distribution heard and how consumer feedback has been reflected in the submission.

Further details on the Gas Consumer Engagement Program are provided in attachment 1 (and supporting appendices) to this access arrangement information

1.7.3 Engagement with major customers and retailers

In addition to engaging with consumers, as outlined above, ActewAGL Distribution has engaged with major customers and retailers on the gas access arrangement revisions proposal.

Individual engagement sessions were held with the top 10 major customers over December 2014 to February 2015 to discuss their forecast demand and any forecast changes in their gas requirements over the 2016-21 period. These customers told ActewAGL Distribution that there is a shift towards more energy efficient buildings and gas appliances or applications to reduce their energy requirements and they are considering large scale generation facilities such as co-generation and tri-generation facilities as an alternative option to meet their overall energy needs.

In February 2015, the major customers were invited to participate in the business workshops and were provided with a copy of *The Gas Network – Our 5 Year Plan Consultation Paper*. Key areas explored with major customers include:

- ActewAGL Distribution's rationale for changing its services and tariff structure;
- the proposed changes to the services and tariff structure, in particular, for business and major customers;
- the new tariffs for large-scale generation facilities powered by gas (co-generation and tri-generation facilities); and,
- the proposed process for providing information on tariffs including any variations to the tariffs

In January and February 2015, ActewAGL Distribution had individual engagement sessions with each gas retailer on its network to discuss:

- the proposed changes to the 2016-21 access arrangement, in particular, the new services and tariff structure, ActewAGL Distribution's rationale for these proposed changes and its intention to adopt a form of RSA similar to Jemena Gas Networks (JGN) in the NSW access arrangement;
- how these proposed changes to the 2016-21 access arrangement could impact the retailers; and
- how these proposed changes to the 2016-21 access arrangement can be adopted by the retailers in their retail offers to keep gas competitive.

The retailers were generally supportive of the proposed changes, in particular, harmonising with JGNs' form of RSA and including it as part of the access arrangement, and simplifying and streamlining the process for major customers to seek additional gas capacity on the network.

In May 2015, ActewAGL Distribution held an engagement session with all the gas retailers on its network to discuss:

- the transitional process to move customers from the 2010-15 access arrangements (and associated agreements) to the 2016-21 access arrangement, including the bulk transfer option;
- the proposed new tariff assignment process and the initial tariff assignment process;
- the key differences between ActewAGL Distribution's proposed reference service agreement and JGNs' proposed RSA; and

- the proposed tariffs for 2016/17 and how these tariffs can be adopted by the retailers in their retail offers to keep gas competitive.

Retailers were generally supportive of the proposed changes to the access arrangement and the proposed process to transition from the 2010-15 access arrangement to the 2016-21 access arrangement. ActewAGL Distribution plans to arrange a further engagement session following the release of the AER's draft decision to discuss the impacts on all the parties.

Part 2 Summary

Key points

ActewAGL Distribution proposes to revise the access arrangement to incorporate a simplified services structure and a new tariff structure which will allow ActewAGL Distribution to better tailor its offers to the needs and preferences of its customers and to respond to changing market conditions and regulatory requirements. The new mechanism for annual variation of reference tariffs will streamline the process and help to ensure that ActewAGL Distribution is able to recover its efficient costs and encourage efficient use and growth of the network.

ActewAGL Distribution's forecast revenue requirement for 2016-21 is $332.9 million ($2015/16), which is about one per cent higher (in real terms) than the AER allowance for 2010-15. This is the forecast revenue required for ActewAGL Distribution to continue to deliver the safe and reliable services that consumers have said they want, to meet expected growth in connections, to manage the network in a sustainable way, and to meet all relevant regulatory obligations and requirements.

The proposed average price path is a reduction of CPI - 2.23 per cent in 2016/17 followed by CPI increases for each of the remaining four years of the period. This is the lowest sustainable price path, and takes account of feedback from consumers on the importance of a stable price path with no price shocks.

The key drivers of the 2016-21 revenue and pricing proposals are:

- a weighted average cost of capital (WACC) of 7.15 per cent (nominal vanilla), significantly lower than the 10.08 per cent adopted for the 2010-15 access arrangement;
- the forecast continuing decline in throughput over the 2016-21 period, from 7.58 petajoules (PJ) to 7.12 PJ.
- forecast opex (excluding debt raising costs) of $143.8 million, 11 per cent higher (in real terms) than the approved amount and seven per cent higher than actual opex for 2010-15; and
- forecast capex of $115.7 million, which is only six per cent higher than the allowance for 2010-15 (after adjusting for the change in capitalisation of overheads and input price growth), despite the forecast increase in connections (an average annual increase 2.5 of per cent over 2016-21).

1.8 Overview of the access arrangement revisions proposal

1.8.1 Promoting the long-term interests of consumers

ActewAGL Distribution's overarching objective in developing its access arrangement revisions proposal is to promote the long-term interests of consumers. Economic efficiency is fundamental to achieving this objective. This is confirmed by the second reading speech of the NGL:

> *The long term interests of consumers of gas requires the economic welfare of consumers, over the long term, to be maximised. If gas markets and access to pipeline services are efficient in an economic sense, the long term interests of consumers in respect of price, quality, reliability, safety and security of natural gas services will be maximised'*[24]

The concept of economic efficiency encompasses three dimensions: productive (or technical) efficiency, allocative efficiency and dynamic efficiency. In the context of gas pipeline services this means:

- delivering services at the lowest sustainable cost (productive efficiency);
- providing the services that consumers value highest, and setting prices to reflect the underlying costs of supplying each service (allocative efficiency); and,
- responding to changing market conditions, opportunities, technology and consumer preferences over time (dynamic efficiency).

While the focus in this access arrangement revisions proposal is on the 2016-21 period, a long-term perspective is critical. ActewAGL Distribution is managing assets with long lives, well beyond the usual five-year regulatory period. Equally, consumers must make decisions that have long-term implications, such as whether to install gas heating in a new house or switch from electricity to gas appliances. As discussed in the consumer engagement section above (and in attachment 1), consumers have confirmed that they expect ActewAGL Distribution to take a long-term perspective in managing the gas network and providing gas network services.

Achieving the NGO requires sustainable prices and the maintenance or enhancement of quality, safety, reliability and security over the long term. Short-term price reductions that cannot be sustained may result in outcomes that are contrary to consumers' long-term interests. This has been recognised by the Australian Competition Tribunal (Tribunal):[25]

> *As noted at the outset, customers will benefit in the long run if resources are used efficiently, ie if investors receive a return on efficient investment which covers the opportunity cost of the capital required to deliver the services. While consumers might benefit today from the lowest possible prices which do not provide an adequate return on investment, such prices are not in their long term interests … If those prices were sustained, they would not generally support the allocation of sufficient resources including capital, to maintain and increase the supply of the affected*

[24] National Gas (South Australia) Bill 2008, second reading speech, the Hon. P. F. Conlon.

[25] *Re Application by ElectraNet Pty Limited (No 3)* [2008] ACompT 3, p. 251.

service in accordance with the value the consumers place on it. This would be contrary to the promotion of efficient investment and the long term interests of consumers.

Recent expert reports which have examined in detail the interpretation of the NGO, confirm and support ActewAGL Distribution's understanding of the importance of economic efficiency and the correct construction and significance of the term 'long term' where it appears in the NGO. Reports by experts Greg Houston and Geoff Swier are provided as appendices O.02 and O.03 to this access arrangement information.

1.8.2 How the proposed revisions promote the long term interests of consumers

Table 7 contains a summary of the key elements of ActewAGL Distribution's access arrangement revisions proposal and how they contribute to the long-term interests of consumers.

The table is split into two parts:

- Part 1 summarises the key revisions to the terms and conditions in the access arrangement. The full set of proposed revisions to the 2010-15 access arrangement is set out in appendix O.04 to this access arrangement information.
- Part 2 summarises the key elements of the revenue and pricing proposals that underpin the schedule of initial reference tariffs and the X factors (or average real price increases) in the 2016-21 access arrangement. The revenue and price proposals have been developed in accordance with the provisions in Part 9 of the Rules and the revenue and pricing principles in the NGL. Each element of the revenue and pricing proposal is described in detail in the relevant attachments to this access arrangement information, and summarised in this Overview.

To identify potential consumer benefits, ActewAGL Distribution has been guided by the feedback received through the consumer engagement program on what is important to consumers and what changes they want and support.

Table O.7 Key proposed revisions and consumer benefits

Revision	Section	Consumer benefits
Part 1: Revisions to the access arrangement		
Simplified services structure One reference service (haulage reference service) to replace the seven reference services in the 2010-15 AA.	AA Section 2 AAI attachment 2	This will streamline ActewAGL Distribution's (AAD's) business-to-business processes with network users (such as retailers) and make it easier for consumers to compare the fixed and variable charges in their retail offers with AAD's single fixed charge and variable charges.
New RSA to replace current Transport Service Agreements. Users will enter into the AER approved RSA (which is schedule 3 to the access arrangement), instead of individually negotiated Gas Transportation Agreements (GTAs).	AA schedule 5 AAI attachment 14	This will improve transparency for users and prospective users of the network on the terms and conditions for access to the network, and harmonises with JGN's approach given the similarities between JGN's and AAD's gas distribution network business. Consumers will benefit from the reduced costs for network users and AAD to administer their

Revision	Section	Consumer benefits
		commercial arrangements which can be passed onto consumers as cost savings.
New tariff classes and tariffs Tariff customers (those consuming <10 TJ of gas per year) will be split into two tariff classes—residential and business—instead of a single tariff class in the 2010-15 AA. Contract customers (those consuming >10 TJ of gas per year) will be in the business tariff class. The residential tariff class will have four tariff categories and the business tariff class will have five tariff categories.	AA Section 8 and schedule 3 AAI attachment 12	The tariff changes will give AAD greater flexibility to tailor tariffs to meet specific customer needs and gas usage characteristics and better respond to regulatory and market changes. The tariff changes will encourage the efficient use and growth of the network through price incentives, which is in the long term interests of consumers.
New reference tariff variation mechanism Weighted average price cap (WAPC) to replace the schedule of fixed tariffs in the 2010-15 AA. New arrangements for cost pass though and annual tariff variation process.	AA Section 7 AAI attachment 13	The WAPC aligns AAD and consumer interests as it provides incentives to increase volumes and improve utilisation, which reduces AAD's cost per customer and ultimately the prices consumers face. Adopting a WAPC will also align AAD with all other gas distribution networks regulated by the AER. The new arrangements for annual tariff variations will improve transparency and certainty, and reduce administration costs for both the AER and ActewAGL Distribution.
New schedule of initial reference tariffs and price path Derived using the revenue building blocks and forecast demand (summarised below in Part 2 of this table).	AA schedule 3 AAI attachment 11	The schedule of initial reference tariffs and the price path for the remainder of the access arrangement period are designed to allow AAD to recover the efficient costs of providing safe and reliable gas supply to current and future users, and to provide ongoing incentives for efficient investment in, and the provision and use of, pipeline services.
Drafting improvements The proposed changes will simplify the access arrangement and align it with the AER approved access arrangements for other gas distribution networks, and update it for changes in regulatory requirements since 2010.		Consumers will benefit from a simplified, clearer and more transparent access arrangement.
Part 2: Revenue and price elements of the revisions proposal		
Forecast opex	AAI attachments 4 and 5	Consumers will benefit from the proposed opex program because it allows AAD to continue to provide a safe, reliable and secure gas supply through integrated long-term asset management planning, supported by robust data and information management processes, and investment in maintenance programs that manage risk and meet customer service requirements.

Revision	Section	Consumer benefits
Forecast capex	AAI attachments 4 and 6	Consumers will benefit from the proposed capex program as it allows for the continued safe, reliable, environmentally sustainable and efficient delivery of gas to existing customers, and the extension of the network to new users. New consumers will benefit from access to gas supply as an option to meet their energy needs. Existing customers will also benefit, because adding new customers enables AAD to capture the economies of scale and reduce the average cost of supply. These economies of scale will be passed on to customers through tariff reductions.
Cost of capital	AAI attachment 8	The proposed rate of return achieves the rate of return objective (set out in Rule 87(3)) and is in the long-term interests of its consumers as it will provide a rate of return that is sufficient to attract funds to invest in the development and maintenance of AAD's gas network.
Forecast demand and connections	AAI attachment 3	Accurate demand and connection forecasts benefits consumers by ensuring prices are sufficient to fund the services that consumers want and no higher than necessary.
Revenue requirement and price path	AAI attachment 11	The proposed revenue requirement has been developed in accordance with the revenue and pricing principles in the NGL. The proposed X factors set the lowest sustainable price path, taking account of feedback from consumers on the importance of a stable price path with no price shocks.
Reference tariffs	AAI attachment 12	The proposed reference tariffs will benefit consumers as they take account of different customer and market characteristics. By reflecting the underlying costs of providing different services to different types of customers, the proposed reference tariffs encourage the efficient supply and use of gas, which is in the long-term interests of consumers.
Incentive mechanism	AAI attachment 10	The proposed incentive mechanism for opex is in the long-term interests of customers because it provides continuous incentives, over time, for AAD to seek efficiencies. Consumers will benefit through lower costs which are reflected in lower tariffs.

1.8.3 Interrelationships between components of the decision

The NGL requires the AER, in making its determination on access arrangement revisions proposals, to take account of the interrelationships between the components of its decision.[26] A decision on one aspect of the proposal can have implications for one or more other elements and the overall decision. These interrelationships must be taken into account to ensure that the NGO preferable decision is made.

The interdependencies in ActewAGL Distribution's access arrangement revisions proposal are summarised in Table O.8.

Table O.8 Interrelationships between elements of the revisions proposal

Elements of the proposal	AA/AAI reference	Interdependencies
Proposed services structure	AA Section 2 AAI attachment 2	The proposed services structure underpins the new tariff structure. If the AER does not accept the services structure, this has implications for the tariffs that AAD can offer.
Proposed RSA	AA schedule 5 AAI attachment 14	The proposal involves a transparent statement of terms and conditions for access and a reasonable allocation of responsibilities and liabilities. A decision by the AER to reject the proposed approach will result in additional costs and risks for AAD, which would need to be compensated for in the allowed rate of return and the opex allowance.
Proposed tariff classes and tariffs	AA Section 7 and schedule 3 AAI attachment 12	The proposals are an integral part of AAD's plan to meet the needs of consumers while recovering efficient costs. A decision by the AER not to accept the proposed tariff structure will have implications for AAD's ability to recover its efficient costs and meet the needs of consumers.
New reference tariff variation mechanism	AA Section 7 AAI attachment 13	A decision by the AER not to accept the proposed reference tariff variation mechanism, or any element of it, will mean that AAD may not be able to recover its efficient costs, and/or not tailor tariffs to the needs of particular customers or market segments.
Forecast opex	AAI attachments 4 and 5	Efficient management of the network involves trade-offs between capex and opex, and these must be taken into account when the capex and opex allowances are set. For example, if the AER rejects AAD's proposed maintenance expenditure, this will have implications for the required asset replacement expenditure in the 2016-21 access arrangement period and future periods.
Forecast capex	AAI attachments 4 and 6	As noted above, forecast capex and opex are closely linked. A decision by the AER to reject the proposed capex allowance will also have implications for the ability of AAD to expand its market and achieve the connections forecast. Deferring capex in the 2016-21 period will also result in higher costs and higher prices in future periods.

[26] NGL section 28(1)(b)(ii).

Cost of capital	AAI attachment 8	The WACC has implications for the ability of AAD to fund its proposed expenditure programs. Changes to any component of the WACC proposal will have implications for other WACC components and the revenue building blocks. For example, a change in the cost of equity will impact the return on capital, depreciation and tax payable revenue building blocks. A change in the cost of debt assumption will have similar effects due to the interrelations between the WACC and the capital base.
Forecast demand and connections	AAI attachment 3	Forecast throughput and connections influence the price path under the WAPC. If the AER rejects AAD's forecasts, AAD will be forced to bear additional revenue risk. Forecast connections and maximum demand are drivers of the capex program. If the AER rejects the forecasts and the associated capex, AAD may not be able to deliver the services consumers demand.
Revenue requirement and price path	AAI attachment 11	Changes to any of the proposed building block elements or the throughput and connections forecasts will have implications for the price path (X factors), which AAD has developed in consultation with its customers.
Incentive mechanism	AAI attachment 10	Changes to the proposed incentive mechanism may undermine the incentives AAD has to make efficiency improvements and share the benefits with customers. Failing to make the proposed adjustments and exclusions will mean that the carryover amounts are not based on an accurate measure of efficiency gains/losses.

Interdependencies across access arrangement periods must also be taken into account if the long-term interests of consumers are to be properly addressed. Modelling undertaken by ActewAGL Distribution as part of its preparation of the 20-year asset strategy illustrates the potential trade-offs involved.

For example, a reduction in the opex allowance (to below the level proposed by ActewAGL Distribution) for 2016-21 is likely to result in:

- a need for higher opex in subsequent periods, as postponed maintenance activities must be undertaken in the future;
- higher capex in subsequent periods as poorly maintained assets must be replaced sooner;
- lower customer connections in future periods, in response to declining service standards in the constrained opex environment in 2016-21; and
- higher than average prices in future periods, which will further discourage connections.

The *ActewAGL Distribution 20 year asset class strategy*, provided as appendix 6.02 to this access arrangement information, contains results for a range of scenarios.

The key elements of the access arrangement revisions proposal are discussed in sections 1.9 to 1.21 below. Further details on each element of the access arrangement revisions proposal are provided in the relevant attachments to this access arrangement information.

1.9 Services policy

Key points

- ActewAGL Distribution proposes to simplify its services, replacing the seven reference services in the 2010-15 access arrangement with a single reference service. The proposed services are consistent with those in AER approved access arrangements for other gas distribution businesses.
- ActewAGL Distribution has engaged with consumers, stakeholders and the community on the proposed changes to the services offered and they are generally supportive.

Consumer benefits

- Simplifying the reference services will benefit consumers as it will allow the three fixed charges to be consolidated into a single fixed charge for each customer class, making it easier for retailers to prepare retail market offers and for customers to compare them.

1.9.1 Services policy in the 2010-15 access arrangement

Part 2 of the 2010-15 access arrangement contains the Services policy. ActewAGL Distribution has offered the following pipeline services:

- seven reference services; and
- two non-reference services.

The seven reference services are:

- tariff service – a service for the transportation of gas by ActewAGL Distribution from a receipt point to one or more delivery points for a customer who is reasonably expected to take delivery of less than or equal to 10 TJ of gas per year;
- capacity reservation service, managed capacity service and throughput service – each of these services is for the transportation of gas by ActewAGL Distribution from a receipt point to a single delivery point for a customer who is reasonably expected to take delivery of more than 10 TJ of gas per year;
- multiple delivery point service – a service for the transportation of gas by ActewAGL Distribution from a receipt point to a number of delivery points for a customer who is reasonably expected to take delivery of more than 10 TJ of gas per year;
- meter data service – a service for the provision of meter reading and on-site data and communication equipment at a delivery point; and,

- ancillary service – a service requested by a network user or customer which is subordinate to or secondary to the transportation of gas by ActewAGL Distribution from a receipt point to a number of delivery points.

The ancillary services comprise:

- request for service – network users wishing to obtain a transport service for a delivery point must submit a request for service in accordance with the request for service procedure set out in the access arrangement;
- special meter reads – meter reading for a delivery point that is in addition to the scheduled meter reading;
- disconnections – disconnection to prevent the withdrawal of gas at the delivery point; and
- reconnections – reconnection to allow the withdrawal of gas at the delivery point but only where the equipment to allow the withdrawal of gas is still present at the delivery point.

The two non-reference services for 2010-15 are:

- interconnection of embedded network service – a service to provide for the establishment of a single delivery point from the network to an embedded network; and
- negotiated services – a service negotiated to meet the needs of a network user which are not met by the reference services or interconnection of embedded network service.

1.9.2 Proposed services policy in the 2016-21 access arrangement

Section 2 of the 2016-21 access arrangement contains the *Services policy*. ActewAGL Distribution is proposing to simplify the services structure, replacing the seven current reference services with a single haulage reference service, and retaining the two current non-reference services.

The proposed haulage reference service for the 2016-21 access arrangement includes:

- receiving gas injected from a different gas pipeline or other gas facility (the point of injection is referred to as the receipt point);
- transportation of gas from a receipt point to an eligible delivery point;
- allowing the withdrawal of gas at an eligible delivery point;
- meter reading and associated data services, and the provision and maintenance of a standard metering installation;
- other network user-requested ancillary activities, being:
    - special meter reads – meter reading for a delivery point that is in addition to the scheduled meter reading;
    - disconnections – disconnection to prevent the withdrawal of gas at the delivery point;

- reconnections – reconnection to allow the withdrawal of gas at the delivery point but only where the equipment to allow the withdrawal of gas is still present at the delivery point;
- decommissioning and meter removals (new) – removal of a meter and the permanent decommissioning of a network connection; and
- request for service – network users wishing to obtain a transport service for a delivery point must submit a request for service in accordance with the request for service procedure set out in the access arrangement.

ActewAGL Distribution is proposing to include a new ancillary service – decommissioning and meter removals to distinguish network user requests to:

a) temporarily stop the flow of gas at a delivery point; and

b) permanently remove gas equipment which will allow the withdrawal of gas at a delivery point.

As the cost for a decommissioning and meter removal activity (item (b)) is more than the cost for a temporary disconnection activity, ActewAGL Distribution is proposing to introduce a new ancillary activity for decommissioning and meter removals to ensure it recovers its efficient costs from the customers requesting this service.

ActewAGL Distribution proposes to include ancillary activities and meter data services within the haulage reference service, in line with the services proposed by Envestra (Victoria) and approved by the AER,[27] and the services proposed by JGN and approved by the AER in its June 2015 final decision.[28]

ActewAGL Distribution is also proposing to include the detailed terms and conditions for the reference service in a RSA which forms part of the access arrangement. This is consistent with the approach proposed by the other gas distribution businesses.[29] Details on the RSA can be found in attachment 14 of this access arrangement information and an overview is provided in section 1.20 below.

[27] AER 2013, *Access Arrangement final decision – Envestra Limited 2013-17,* March.

[28] AER 2015, *Access Arrangement final decision – Jemena Gas Networks (NSW) Ltd*, June.

[29] AER 2013, *Access Arrangement final decision – Envestra Limited 2013-17,* March; AER 2013, *Access Arrangement final decision – Multinet Gas (DB No. 1) Pty Ltd Multinet Gas (DB No. 2) 2013-17,* March; AER 2013, *Access Arrangement final decision – SP Ausnet (Gas) Pty Ltd 2013-17,* March; AER 2014, *Access Arrangement draft decision – Jemena Gas Networks (NSW) Ltd*, December.

1.10 Forecast demand, throughput and customer numbers

Key points

- Throughput for the volume customer group is forecast to reduce by 1.59 per cent per annum on average over the 2016-21 access arrangement period. This decline in throughput is greater than the 0.51 per cent average annual decline in weather-normalised throughput observed over the past four years.
- The increased rate of decline reflects independent third-party projections of slowing growth in new housing starts and the economy in the ACT, which are expected to ease the growth in new gas connections from 3.7 per cent per annum over the past four years to 2.5 per cent in the 2016-21 period.
- The decline in throughput despite growth in connections over the past four years is a product of falling throughput per connection. Throughput per connection is forecast to continue to decline at a similar rate due to:
    - the greater availability and affordability of energy efficient appliances;
    - stronger competition from alternative energy sources;
    - the changing housing density mix; and
    - changing customer preferences and incentives to adopt renewable energy.
- The demand customer group is expected to stabilise, with no new customer connections anticipated in the 2016-21 access arrangement period. Forecast growth rates in annual contract quantity and maximum daily demand are 0.52 per cent and 0.47 per cent per annum, respectively, over the 2016-21 period.

Consumer benefits

Accurate and reasonable forecasts of connections, throughput and demand are in the long-term interests of consumers as they ensure that the average price path is set at the appropriate level – no higher or lower than necessary to allow ActewAGL Distribution to recover its efficient costs of providing the services consumers want.

Forecast throughput, connections and maximum demand are key elements of ActewAGL Distribution's access arrangement revisions proposal. Under the proposed WAPC, the price path for the access arrangement period depends on forecast throughput and connections. The connections and maximum demand forecasts are also drivers of forecast capex and, to a lesser extent, opex.

ActewAGL Distribution's throughput, connections and maximum demand forecasts have been prepared by an independent expert, Core Energy. The methodology and assumptions used to develop the forecasts are described in detail in attachment 3 to this access arrangement information. Core Energy's final report and models are provided as appendices 3.01, 3.02 and

3.03 to the access arrangement information. The forecasts are arrived at on reasonable basis and represent the best forecasts possible in the circumstances, as required under Rule 74.

1.10.1 Forecast methodology

ActewAGL Distribution engaged Core Energy to provide forecasts of gas throughput, maximum demand and customer numbers for the 2016-21 access arrangement period. Core Energy also developed the gas consumption forecast for JGN's 2015-20 access arrangement, the Envestra (SA) 2011-2016 access arrangement, the Envestra (Victoria) 2013-17 access arrangement and the Envestra (QLD) 2011-16 access arrangement. ActewAGL Distribution has addressed the forecast methodology issues raised by the AER as part of those reviews.

Core Energy developed ActewAGL Distribution forecasts for two customer groups: the volume customer group and demand customer group. The volume customer group was further segmented into residential and business customers. A bottom-up approach was adopted for both the residential and business forecasts, but there were some differences in the drivers of connections and average consumption per connection. For the demand customer group, Core Energy reviewed the list of contract customers, allocated each to industry sectors, adjusted for any known changes (for example, closures), and adjusted the remaining volumes based on the economic outlook for each industry sector.

1.10.2 Forecasts for the volume customer group

Forecast connections and throughput for the volume customer group are shown in Table O.9.

Table O.9 Forecast throughput and connections for the volume customer group

	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21
Connections (no.)	141,528	144,998	148,739	152,463	156,476	160,166
Throughput (GJ)	6,378,363	6,296,219	6,160,131	6,039,643	5,956,158	5,886,757

Over the past four years there has been a sustained increase in connections but a decrease in total throughput (section 1.6.1) and these trends are forecast to continue in the 2016-21 period. Table O.10 shows a disaggregation of the residential throughput forecast into connection numbers and throughput per connection. Growth in connections is driven primarily by the construction of new dwellings, with conversion from electricity to gas in existing dwellings approximately offset by disconnections. The forecast decline in throughput per connection is primarily driven by a continuation of the factors that led to reductions in throughput over the past four years, with changes in trends in retail gas and electricity prices taken into account. The increase in connection numbers does not fully offset the decrease in throughput per connection, resulting in a decrease in total throughput for the residential customers.

Table O.10 Total throughput, connections and throughput per connection for residential customers

	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21
Throughput (GJ)	**4,867,580**	**4,769,776**	**4,638,499**	**4,531,286**	**4,447,063**	**4,367,126**
Connections (no.)	**137,974**	**141,337**	**144,966**	**148,575**	**152,471**	**156,039**
Existing connections (including disconnections)	129,355	128,288	127,202	126,097	125,278	124,437
Cumulative E-to-G	1,562	2,343	3,124	3,905	4,686	5,467
Cumulative new estate dwellings	3,586	5,692	7,772	9,853	11,933	13,810
Cumulative new medium/ high density dwellings	3,471	5,014	6,867	8,721	10,574	12,325
Throughput per connection (GJ)	**35.3**	**33.7**	**32.0**	**30.5**	**29.2**	**28.0**
Existing connections	*36.1*	*34.8*	*33.4*	*32.2*	*31.1*	*30.1*
Growth	-1.02	-0.99	-0.97	-0.94	-0.92	-0.89
Own-price elasticity	-0.16	-0.30	-0.48	-0.29	-0.19	-0.10
Cross-price elasticity	-0.23	0.07	0.00	0.00	0.00	0.00
New estate dwellings	*32.3*	*31.2*	*29.9*	*28.8*	*27.8*	*26.9*
Growth	-0.92	-0.89	-0.87	-0.84	-0.82	-0.80
Own-price elasticity	-0.14	-0.27	-0.43	-0.26	-0.17	-0.09
Cross-price elasticity	-0.21	0.06	0.00	0.00	0.00	0.00
New medium/high density dwellings	*13.8*	*13.4*	*12.8*	*12.3*	*11.9*	*11.5*
Growth	-0.39	-0.38	-0.37	-0.36	-0.35	-0.34
Own-price elasticity	-0.06	-0.11	-0.19	-0.11	-0.07	-0.04
Cross-price elasticity	-0.09	0.03	0.00	0.00	0.00	0.00
New E-to-G	*24.5*	*23.7*	*22.7*	*21.9*	*21.1*	*20.5*
Growth	-0.70	-0.68	-0.66	-0.64	-0.62	-0.61
Own-price elasticity	-0.11	-0.20	-0.33	-0.20	-0.13	-0.07
Cross-price elasticity	-0.16	0.04	0.00	0.00	0.00	0.00

Table O.11 provides the disaggregation for business volume customers. Consistent with the forecast for residential customers, the number of connections is forecast to increase and the throughput per connection is forecast to decrease. However, in contrast to residential customers, the growth in connections outweighs the decrease in throughput per connection, leading to an overall increase in throughput.

Table O.11 Total throughput, connections and throughput per connection for business customers within the volume customer group

	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21
Throughput (GJ)	**1,510,783**	**1,526,442**	**1,521,632**	**1,508,357**	**1,509,095**	**1,519,631**
Connections (no.)	**3,554**	**3,661**	**3,773**	**3,887**	**4,005**	**4,127**
Existing connections (including disconnections)	3,381	3,364	3,347	3,330	3,312	3,295
Cumulative new connections	173	298	427	559	694	833
Movement: tariff to non-tariff	-4	-4	-4	-4	-4	-4
Movement: non-tariff to tariff	3	3	3	3	3	3
Throughput per connection (GJ)	**425.2**	**416.9**	**403.3**	**388.0**	**376.8**	**368.2**
Existing connections	*426.5*	*414.5*	*397.7*	*379.6*	*365.7*	*354.7*
Growth	-11.0	-10.7	-10.4	-10.2	-9.9	-9.7
Own-price elasticity	-1.5	-1.7	-6.4	-7.9	-3.9	-1.3
Cross-price elasticity	0.2	0.3	0.0	0.0	0.0	0.0
New connections	*543.2*	*527.9*	*506.5*	*483.4*	*465.8*	*451.8*
Growth	-13.9	-13.6	-13.3	-12.9	-12.6	-12.3
Own-price elasticity	-1.9	-2.1	-8.1	-10.1	-5.0	-1.6
Cross-price elasticity	0.3	0.4	0.0	0.0	0.0	0.0

Overall, throughput for the volume customer group is forecast to decrease, with the decline in residential throughput outweighing the increase in business volume throughput.

1.10.3 Forecasts for the demand customer group

The key forecast variables for the demand customer group are maximum daily quantity (MDQ), annual contract quantity (ACQ) and customer numbers. These three variables are disaggregated in Table O.12 to show the major factors driving each forecast.

Both MDQ and ACQ are forecast to decline in the first half of the 2016-21 access arrangement period and then increase in the second half of the period. This movement is driven by changes in requirements by existing customers, with the number of demand customers forecast to remain constant at 40 across the forecast period.

Table O.12. MDQ, ACQ and connection numbers for demand customers

	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21
MDQ (GJ)	*8,024.8*	*7,951.3*	*7,956.1*	*8,200.9*	*8,205.9*	*8,211.0*
Historical MDQ baseline	8,242.0	8,242.0	8,242.0	8,242.0	8,242.0	8,242.0
Cumulative change in existing connections MDQ	-190.0	-268.2	-268.2	-28.2	-28.2	-28.2
Cumulative economic adjustments	9.0	13.7	18.4	23.3	28.2	33.3
Cumulative volume tariff to contract movement	193.8	193.8	193.8	193.8	193.8	193.8
Cumulative contract to volume tariff movement	-230.0	-230.0	-230.0	-230.0	-230.0	-230.0
ACQ (GJ)	*1,201,836*	*1,185,399*	*1,185,769*	*1,231,356*	*1,231,764*	*1,232,191*
Historical ACQ baseline	1,155,040	1,155,040	1,155,040	1,155,040	1,155,040	1,155,040
Cumulative change in existing connections ACQ	19,695	2,403	1,899	46,594	46,090	45,586
Cumulative economic adjustments	1,657	2,512	3,385	4,278	5,189	6,120
Cumulative volume tariff to contract movement	49,517	49,517	49,517	49,517	49,517	49,517
Cumulative contract to volume tariff movement	-24,073	-24,073	-24,073	-24,073	-24,073	-24,073
Connections (no.)	*40*	*40*	*40*	*40*	*40*	*40*
Existing connections	36	36	36	36	36	36
Volume tariff to contract movement	4	4	4	4	4	4

1.11 Key elements of the revenue and price proposals

The key elements of ActewAGL Distribution's proposed revenue building blocks and the other key drivers of the revenue and price proposals are shown in Table O.13.

The proposed unsmoothed revenue requirement for the 2016-21 access arrangement period is $332.9 million ($2015/16). This is around one per cent higher (in $2015/16) than the AER determined revenue requirement for the 2010-15 access arrangement period.[30] The proposed price path is an initial reduction of CPI – 2.23 per cent in 2016/17, followed by CPI increases for each of the remaining four years of the 2016-21 period.

[30] 2015/16 revenue is not included in this comparison as this is the extension year.

Table O.13 Building block proposal and other key elements of the AAI

$m nominal	2016/17	2017/18	2018/19	2019/20	2020/21	Total
Building blocks						
Return on capital	26.3	27.7	29.4	30.9	32.4	146.6
Regulatory depreciation	4.1	4.7	5.5	6.5	7.4	28.2
Opex	28.4	29.2	30.8	34.7	34.8	158.0
EBSS carryover amounts	6.2	3.2	2.3	-	-	11.7
Tax allowance	2.6	2.8	3.0	3.2	3.4	15.0
Revenue requirement (unsmoothed)	**67.6**	**67.5**	**71.0**	**75.4**	**77.9**	**359.4**
X factors (smoothed)	**2.23%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**NA**
Other AAI elements						
Capex (net, Real $m 2015/16)	22.4	26.6	24.5	24.1	18.10	115.6
Throughput (% growth)	-1.28%	-2.15%	-1.94%	-1.37%	-1.16%	NA
WACC (nominal vanilla)	7.15%	7.15%	7.15%	7.15%	7.15%	NA

A breakdown of the changes in the revenue requirement from 2010-15 to 2016-21 is shown in Figure O.8.

Figure O.7 Revenue requirements 2010-15 and 2016-21 ($million 2015/16)

1.12 Efficient service delivery

Key points

- ActewAGL Distribution's founding principle of synergy flows through its corporate structure and service delivery model ensuring the efficient delivery of services to consumers. The benefits of this approach are twofold. Firstly, ActewAGL Distribution provides economies of scope through the multi-utility nature of its operations and its focus on and understanding of the ACT and surrounding regions. Secondly, service delivery and management services are provided by Jemena Asset Management (JAM) who provide economies of scale and gas specific expertise.

ActewAGL Distribution's founding principle of synergy flows through its corporate structure and service model ensuring the efficient delivery of services to consumers. A fundamental element of the approach to service delivery is that consumers of ActewAGL Distribution's gas pipeline services benefit from its owners—Icon Water (formerly ACTEW Corporation) and Jemena — bringing over 250 years of combined experience and expertise in the ownership and management of essential infrastructure across Australia.

ActewAGL Distribution accesses the economies of scale provided by Jemena Asset Management (JAM) who provides gas network service delivery and management services to ActewAGL Distribution. This arrangement has and will continue to allow ActewAGL Distribution to pass on the benefits of JAM's expertise and economies of scale in service provision to its consumers.

The Distribution Asset Management Services (DAMS) Agreement outlines the interface between JAM and ActewAGL Distribution. The agreement sets out the manner in which services are provided, the roles and responsibilities of various parties and the fees payable by ActewAGL Distribution. Importantly, the agreement ensures the prudent and efficient management of the gas network to the benefit of ActewAGL Distribution's consumers. In many ways, these arrangements are the same as those Jemena Gas Networks (JGN) has established for the management of its gas network.

Within the 2010-16 access arrangement period, the initial DAMS Agreement was refreshed to maintain the synergies and achieve efficiencies by consolidating a set of agreements; improving transparency; applying new service standards and key performance indicators (KPI); and resetting the unit rates for capital works which had diverged from costs over 10 years.

Given the nature of the service delivery model, ActewAGL Distribution's governance of the gas network comprises three layers (ActewAGL Distribution governance, the DAMS Agreement and JAM governance systems) dovetailing together to provide a reinforced and robust governance process.

Attachment 4 provides further details on the ActewAGL Distribution partnership, how the DAMS agreement works and on ActewAGL Distribution’s governance framework for the gas network.

1.13 Forecast operating expenditure

Key points

Forecast opex for the 2016-21 access arrangement period is $143.8 million ($2015/16). This represents a seven per cent increase (in real terms) over the actual/estimated opex for the 2010-15 period. The main drivers of the opex forecast are:

- forecast rate of change contributing approximately $4.5 million to the increase;
- proposed step changes totalling $12.1 million across the period, partly offset by a negative step change of $6.6 million to account for a change in the capitalisation policy;
- UNFT liability forecast to increase by approximately $8.4 million;
- efficiency improvements between the periods in base opex, offsetting some of the impact of cost pressures in other expenditure areas; and
- other minor differences in expenditure between the two periods such as the removal of carbon tax liabilities.

ActewAGL Distribution's opex forecast represents the costs of a prudent service provider acting efficiently, in accordance with accepted good industry practice, to achieve the lowest sustainable cost of delivering pipeline services.

Consumer benefits

ActewAGL Distribution's gas network opex program enables the provision of a safe, reliable and secure gas supply through integrated long-term asset management planning and investment in maintenance programs that manage risk and meet customer service requirements. Consumers will have enhanced opportunities to engage with ActewAGL Distribution to ensure alignment with the needs of consumers and ongoing developments in the gas markets and broader energy market to best serve their long-term interests.

1.13.1 Forecast opex 2016-21

The components of ActewAGL Distribution's total forecast opex are summarised in Table O.14.

Table O.14 Summary of total forecast opex ($million, 2015/16)

	FY17	FY18	FY19	FY20	FY21	Total
Base opex	16.9	16.9	16.9	16.9	16.9	**84.4**
Real price growth	0.2	0.3	0.5	0.7	0.9	**2.5**
Output growth	0.2	0.3	0.4	0.5	0.6	**2.0**
Step changes	0.7	0.1	0.4	2.8	1.5	**5.6**
Category specific forecast costs	9.3	9.7	10.0	10.1	10.3	**49.4**
Total	**27.3**	**27.3**	**28.1**	**30.9**	**30.2**	**143.8**

ActewAGL Distribution's forecast opex for the 2016-21 access arrangement period is $28.8 million per year on average, approximately one third of which is for costs outside ActewAGL Distribution's control, such as government taxes and levies.

ActewAGL Distribution has adopted 2014/15 as the efficient base year for forecasting controllable opex for the period, adjusted to remove non-recurrent costs in that year. This is detailed in section 5.6.2 of attachment 5.

Having operated under the opex incentive mechanism in place for the 2010-15 period, ActewAGL Distribution has faced a constant incentive to seek efficiencies and has revealed its efficient level of opex. This is demonstrated by ActewAGL Distribution's performance against the controllable opex allowance during the 2010-15 access arrangement period. ActewAGL Distribution consistently spent below this allowance and therefore has earned an efficiency gain that it will carry into the 2016-21 period. The revealed efficiency of opex during the 2010-15 period, including its base opex, has been tested through econometric analysis, which supports the efficiency of ActewAGL Distribution's expenditure. This is detailed in section 5.6.3 of attachment 5.

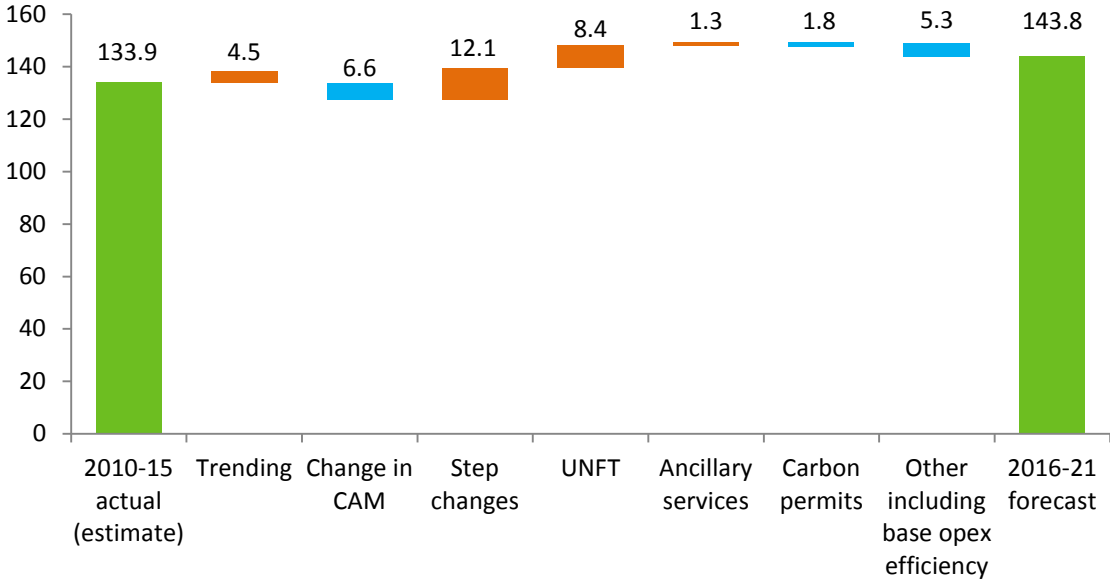
For the forecast, ActewAGL Distribution has adjusted the annual controllable base year opex to account for real price and output growth over the period, as well as efficient step changes required to meet regulatory obligations and operate in accordance with good industry practice to achieve lowest sustainable costs of delivering pipeline services. ActewAGL Distribution's proposed step changes include a negative amount for the change in its corporate overheads capitalisation policy. This is offset by a corresponding increase in forecast capex. These components of the forecast are discussed in sections 5.7 and 5.8 of attachment 5.

For other allowable costs beyond ActewAGL Distribution's control, annual category specific forecasts have been adopted as ActewAGL Distribution considers these reflect a more accurate basis for estimating these costs. Government taxes and levies are the largest contributors to these costs, accounting for $36.1 million of the $49.4 million forecast.

Despite the 12 per cent increase in opex compared to the previous period, opex per customer has decreased from $208 per year on average during the 2010-15 access arrangement period to $188 during the 2016-21 period.

Figure O.9 provides a bridge between ActewAGL Distribution's actual total opex during the 2010-15 access arrangement period and total forecast opex for the 2016-21 access arrangement period.

Figure O.8 Opex bridge between 2010-15 actual and 2016-21 forecast ($ million 2015/16)



ActewAGL Distribution's forecast includes $12.1 million for efficient step changes required to meet regulatory obligations and operate in accordance with good industry practice to achieve the lowest sustainable costs of delivering pipeline services. This includes such costs as those required to meet new NECF and anticipated regulatory reporting obligations, as well as prudent expenditure to leverage IT replacement investment through its agreement with JAM. These step changes are offset by a negative step change of $6.6 million to account for a change in ActewAGL Distribution's capitalisation policy to achieve consistency with the cost allocation method for ActewAGL Distribution's electricity network business.

1.14 Forecast capital expenditure

Key points

- Over the 2016-21 access arrangement period ActewAGL Distribution plans to continue to prudently and efficiently connect new customers to its gas network, provide infrastructure to ensure reliability for existing customers and renewed infrastructure to meet regulatory requirements and ensure the integrity and safety of the gas network.
- Two-thirds of forecast capex is based on program estimates built up using a combination of forecast volumes and unit costs. The unit costs were forecast using an approach analogous to the base step trend method used in opex. The remaining capex program was forecast upon a project by project basis.
- Average annual capex over the 2016-21 period is within one per cent of actual/estimated capex incurred over the 2010-16 period once real price escalation and a change in the allocation of corporate costs is taken into account.
- While the aggregate average annual capex amount is stable across the access arrangement periods, the composition will change. There is expected to be an increase in market expansion capex to connect an increase in medium-density housing and an increase in meter renewal costs as a large number of meters that were installed during the rapid expansion of the gas network in the 1990s (25 years ago) reach end of life. Other categories such as capacity development and network renewal and upgrade are expected to decrease due to the natural variation in these categories.

Consumer benefits

- ActewAGL Distribution's capex program will enable new customers to be connected to the network, which lowers the average costs for all customers, ensure that the network can provide the capacity required to meet foreseeable variations in peak consumption, and allow ActewAGL Distribution to maintain safety and reliability by replacing and renewing assets.

1.14.1 Forecast capex 2016-21

ActewAGL Distribution's forecast capex program is summarised in **Table O.15**.

Table O.15 Forecast capex 2016-21 ($million, 2015/16)

	2016/17	2017/18	2018/19	2019/20	2020/21	Total
Market expansion (net cap-cons)	11.72	12.70	12.80	12.51	12.05	**61.78**
Capacity development	3.21	5.56	2.91	6.99	1.22	**19.89**
Stay in business	7.23	8.18	8.60	4.59	4.83	**33.43**
Non-system	0.21	0.11	0.22	0.00	0.00	**0.55**
Total	**22.38**	**26.55**	**24.53**	**24.09**	**18.10**	**115.65**

Over the 2016-21 access arrangement period, ActewAGL Distribution will continue to prudently and efficiently connect new customers to its gas network, provide infrastructure to ensure reliability for existing customers and renew infrastructure to meet regulatory requirements and ensure the integrity and safety of the gas network. Specifically, ActewAGL Distribution will carry out activities in the following areas.

- *Market expansion* – Connect new customers, including increasing numbers of medium-density connections. Market expansion capex lowers costs for all consumers by spreading fixed costs across a larger number of consumers.[31]
- *Capacity developmen*t – Strengthen the gas network in the Molonglo region to ensure continuity of supply. These projects improve the integrity of services provided to consumers. The projects will also form, in the longer term, a loop around Canberra, providing additional security of supply to all consumers.
- *Stay in business* – Upgrade network infrastructure including the replacement of inlet piping to improve safety of services and replace meters as they reach the end of their economic life, to ensure that metering is accurate and within regulatory requirements.
- *Non-system capex* – Develop the Geographic Information System (GIS) through connection of data to mobile devices (including use of GPS integration at the point of data capture). This technology facilitates ActewAGL Distribution delivery of services.

Average annual capex over the 2016-21 access arrangement period is about 11 per cent higher than expenditure over the 2010-16 access arrangement period. The difference is less than one per cent when two factors are taken into account:

1. a change in ActewAGL Distribution's cost allocation methodology from 1 July 2015 allocating corporate costs to the capex program; and
2. real price escalation over the 2016-21 access arrangement period.

[31] ActewAGL Distribution tests each connection to determine whether expected revenue exceeds costs. If costs are higher than revenue, a customer contribution (capcon) towards to connection cost is charged.

Although the aggregate annual capex amount is not forecast to change, the composition is expected to differ as shown by Table O.16.

Table O.16 Annual average capex in each access arrangement period ($million, 2015/16)

	2010-16	2016-21	% variance
Market expansion (net of capital contributions)	8.49	12.36	46
Capacity development	6.63	3.98	-40
Stay in business	5.61	6.69	19
Non system assets	0.09	0.11	26
Total	**20.81**	**23.13**	**11**

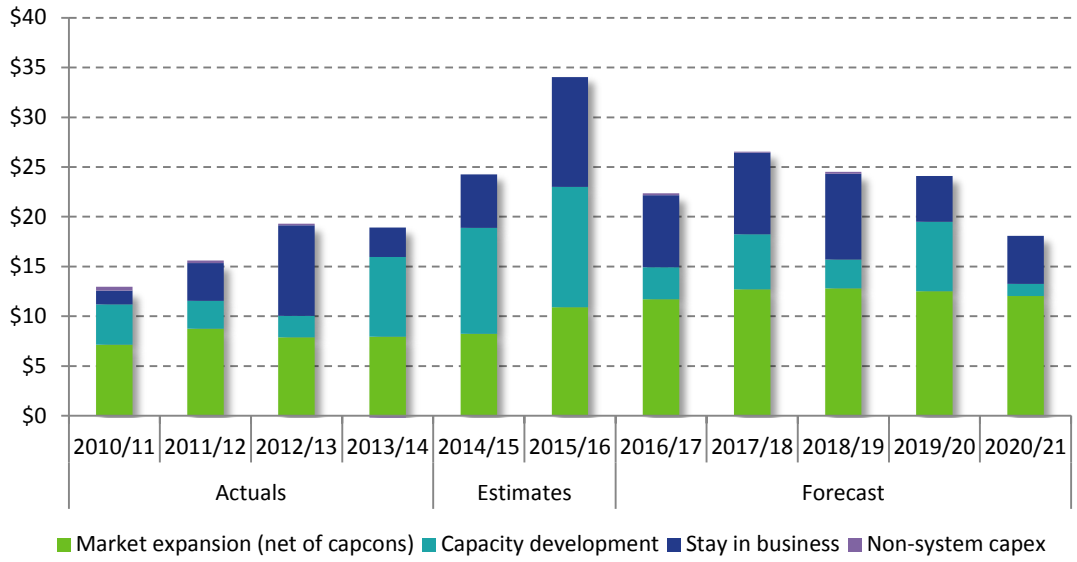
* Includes a combination of actuals and estimates

The variation in annual capex between the two periods is due to the following factors:

- *Market expansion* – The increase in capex is largely a result of the 52 per cent increase in the number of connections of medium density residential connections based on forecasts of growth in medium density housing in the ACT over the 2016-21 access arrangement period.
- *Capacity development* – The reduction in capex results from the variability in requirements for major capacity development projects from one access arrangement period to the next. In the current access arrangement period there were five major projects over $1 million compared with three major projects for the 2016-21 access arrangement period.
- *Stay in business* – The overall increase in capex reflects changes in two subcategories:
    - An increase in meter renewal capex as a result of residential meters reaching the end of their economic life at 25 years of age. ActewAGL Distribution also intends to replace a large proportion of its hot water meters due to a significant increase in failure rates for these meters.
    - A decrease in network renewal and replacement capex as a result of the variability of major projects in this category. For instance, while there are four projects costing over $1 million in the 2016-21 access arrangement period, ActewAGL Distribution's engineering review has only identified two projects required for the first five years. This category now also includes integrity related work, namely in line inspections and integrity digs that have previously been included as opex.

These trends can be seen in Figure O.10.

Figure O.9 Capex over the two access arrangement periods, composition of actuals, estimates and forecasts ($million, 2015/16)



1.15 Capital base

Using the AER's post tax revenue model (PTRM) and roll-forward model (RFM), and in accordance with Rule 77(2) and the AER's 2010 final decision on the 2010-15 access arrangement, ActewAGL Distribution has calculated the value of the opening capital base at 1 July 2016 as $367.5 million (nominal).

ActewAGL Distribution has rolled forward the opening capital base for 2016-21 by:

- adding forecast efficient prudent capital expenditure (exclusive of contributed assets); the basis for this forecast is explained in detail in attachment 6 to this access arrangement information;
- deducting depreciation calculated as per the AER's PTRM and consistent with Rule 77(1)(c)(ii); and
- indexing the annual closing capital base with forecast inflation, as per the AER's PTRM.

ActewAGL Distribution does not forecast any cash disposals during the 2016-21 access arrangement period.

Before calculating depreciation, ActewAGL Distribution reviewed the standard lives and remaining lives for the access arrangement commencing 1 July 2016 which underpin the

calculation of depreciation. ActewAGL Distribution has adopted the AER's approach, included in its RFM, to estimate remaining lives.[32]

For establishing the opening capital base for the access arrangement commencing on 1 July 2021, ActewAGL Distribution proposes to adopt a depreciation schedule that has been calculated using *forecast* capital expenditure for rolling forward the capital base from 1 July 2016 to 30 June 2021. This is consistent with the way in which the capital base has been rolled forward during the 2010-16 period. ActewAGL Distribution also notes that this is consistent with the AER's June 2015 final decision for JGNs' access arrangement.

1.16 Rate of return

Key points

ActewAGL Distribution has adopted a rate of return of 7.15 per cent for the 2016-21 access arrangement period. The proposal adopts some elements of the AER's *Rate of Return Guideline*, and departs from the AER's approach where this is necessary to achieve the rate of return objective, as set out in Rule 87(3).

ActewAGL Distribution considers that its proposal better achieves the rate of return objective, than the AER's Rate of Return Guideline and the AER's recent final decisions for electricity and gas networks in April and June 2015.

ActewAGL Distribution has engaged with consumers, via the ECRC, on the basis for the rate of return proposal.

Consumer benefits

ActewAGL Distribution's proposed rate of return is in the long-term interest of consumers as it will facilitate ActewAGL Distribution's access to the capital necessary to undertake the efficient investments required to allow it to continue to provide safe and reliable services to current and future consumers.

1.16.1 Overview

ActewAGL Distribution adopts a rate of return of 7.15 per cent for the 2016-21 access arrangement revisions proposal. Consistent with the AER's *Rate of Return Guideline*[33] and Rule 87(4), ActewAGL Distribution estimates this return as a nominal vanilla weighted average cost of capital (WACC).

The proposed return on debt is based on:

[32] Apart from the asset class 'Regulatory costs' that have been assigned a remaining life of one year which is further discussed in attachment 7.

[33] AER 2013, *Better Regulation: Rate of Return Guideline*, December.

- a hybrid approach which is consistent with the AER's assumptions on how the benchmark entity would have structured its debt portfolio before the new Rules were implemented in 2012;[34]
- providing to the AER, throughout the access arrangement period, the proposed averaging periods used to estimate the return on debt;
- an objective process to establish which data source providers estimate the return on debt most accurately as well as extrapolating the data.[35]

The proposed return on equity is based on:

- the simple average of four return on equity models, a method which recognises that no model is superior; and
- expert advice in relation to the different input parameters for each model.

ActewAGL Distribution also proposes:

- that the value of imputation credits be set at 25 per cent, consistent with expert advice;
- debt raising costs of 24.3 bps; and
- credit rating of BBB.

ActewAGL Distribution has also used a forecast inflation rate of 2.55 per cent for the 2016-21 period. This has been calculated in accordance with the method used by the AER, but will be updated as part of ActewAGL Distribution's response to the AER's draft decision on the access arrangement revisions proposal.

The elements of ActewAGL Distribution's rate of return proposal are shown in Table O.17.

[34] This is subject to the outcomes regarding the current applications for merits review in the Tribunal and judicial review in the Federal Court of Australia of recent AER decisions regarding the estimation of the return on debt.

[35] However, if the AER considers (contrary to the views expressed by ActewAGL Distribution in attachment 11) that it has power under the NGR to take into account revenue for the 2015/16 financial year in determining total revenue for the 2016/17 to 2020/21 AA period, given a bias in the Bloomberg identified by CEG in appendix 8.29, ActewAGL Distribution considers that the return on debt for the 2015/16 financial year should be estimated by reference to the extrapolated RBA curve only.

Table O.17 Summary of ActewAGL Distribution's proposed rate of return, 2016-21

Component	Value
Return on equity	9.87%
Return on debt	5.34%
Gearing	60%
Gamma	0.25
Nominal vanilla WACC	**7.15%**
Inflation	2.55%

The proposal meets the rate of return objective in Rule 87(3):

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

ActewAGL Distribution notes that the matters discussed within the rate of return and gamma appendices are subject to the outcome regarding the current applications for merits review in the Australian Competition Tribunal and judicial review in the Federal Court of Australia of recent AER decisions. ActewAGL Distribution notes that those decisions may affect positions raised in this proposal.

Although this proposal is based on a significantly lower rate of return than that determined in 2010 by the AER, ActewAGL Distribution considers that this proposal satisfies the overall financeability of ActewAGL Distribution. ActewAGL Distribution notes that if its proposed rate of return methodology is not accepted by the AER and it is replaced with a method consistent or similar with the recent electricity and gas determinations in the April and June 2015 final decisions, it will have implications for ActewAGL Distribution's key financeability ratios which are relied upon by agencies such Standard and Poors' to determine credit ratings. In particular, ActewAGL Distribution considers that the fund from operations to debt ratio, which Standard and Poor's uses as an input into determining a credit ratio, is consistent with a BBB to BBB+ rating. ActewAGL Distribution would not accept any rate of return outcome that does not result in an overall financial position consistent with the assumptions underpinning the benchmark efficient entity and this proposal.

ActewAGL Distribution notes that a number of regulators in Australia (e.g IPART) and overseas, apply financeability tests to ensure that their decisions provide sufficient revenues/cash flows to maintain the pre-determined credit rating. For example, the Office of Gas and Electricity Markets (Ofgem) in the United Kingdom considers a number of credit metrics to ensure its decisions are consistent with the credit rating of the benchmark efficient entity assumed in the United Kingdom. This has led Ofgem to accelerate depreciation in a number of its decisions. ActewAGL Distribution has not varied the depreciation on the basis that ActewAGL Distribution considers

that this proposal allows the business a BBB to BBB+ credit rating over the access arrangement period. ActewAGL Distribution reserves its rights, however, to amend the depreciation schedule should the methodology to estimate the rate of return be changed by the AER.

The key elements of ActewAGL Distribution's rate of return proposal are summarised in the sections below. Details are provided in attachment 8 and supporting appendices to this access arrangement information.

1.16.2 Cost of debt

ActewAGL Distribution proposes to calculate its return on debt in accordance with the approach proposed by the AER in its Rate of Return Guideline, with the exception that ActewAGL Distribution proposes:

- the use of a credit rating of BBB rather than BBB+ as proposed by the AER; and
- that it be compensated for the 'hybrid' debt management strategy that the AER considers that businesses would have implemented under the previous Rules, including the costs for the trailing average debt risk premium plus the five-year swap rate at the beginning of each regulatory period plus the transaction costs of swaps (that the AER does not propose to compensate businesses for in its April and June 2015 final decisions for gas and electricity businesses).[36]

ActewAGL Distribution notes that the AER's description of how the relevant efficient entity under the 'on-the-day' approach would be:

- *borrow long term (10 year) debt and stagger the borrowing so that only a small proportion (around 10 per cent) of the debt matured each year.*
- *borrow using floating rate debt (or to borrow fixed rate debt and convert this to floating rate debt using fixed-to-floating interest rate swaps at the time of issuing the debt and which extended for the term of the debt, being 10 years);*
- *enter into floating-to-fixed interest rate swaps at, or around, the time of the service provider's averaging period and which extended for the term of the regulatory control period, being typically 5 years).* [37]

In line with this, ActewAGL Distribution has calculated a return on debt estimate being:

- the historical trailing average DRP for 10 years prior to 2015-16 (2.35 per cent);
- the average of one to 10 year swap rates during the period 2-30 January 2015 (2.69 per cent); and
- swap transaction costs (23 basis points).

After annualisation, this results in a return on debt estimate of 5.34 per cent.

[36] Subject to the outcome regarding the current applications for merits review in the Tribunal and judicial review in the Federal Court of Australia of recent AER decisions regarding the estimation of the return on debt.

[37] AER 2015, *ActewAGL final decision 2015-19, Attachment 3 Rate of return, April, pp 492-493*.

In addition, ActewAGL Distribution proposes:

- the use of averaging periods as follows:
    - an averaging period for 2016/17 as specified in confidential attachment 8 to this access arrangement information;
    - for the 2017/18 and subsequent regulatory years, an averaging period occurring in that regulatory year as nominated by ActewAGL Distribution by 30 April each year before the commencement of respective regulatory years (this departs from the AER's Rate of Return Guideline);
- a method of extrapolation should the data source providers indicate a material departure compared to market data available; and
- a method to select which data source provider to use during the annual return on debt updates should there be a material (60 bps) difference between RBA and Bloomberg.

To support its return on debt proposal, ActewAGL Distribution has relied on independent experts. Appendices 8.23 to 8.29 provide details on the hybrid return on debt, the credit rating, the data source providers and how the mechanism would work to propose the averaging period by 30 April each year before the commencement of respective regulatory year. Overall ActewAGL Distribution considers that this proposal better achieves the rate of return objective than the AER's Rate of Return Guideline and its recent final decisions for electricity and gas networks in April and June 2015.[38]

1.16.3 Cost of equity

ActewAGL Distribution's proposal for estimating the return on equity is based on a simple average of four return on equity models, a method which recognizes that no model is superior.

This approach departs from the AER's Rate of Return Guideline approach. ActewAGL Distribution does not consider that the Rate of Return Guideline method that the AER has adopted in its recent final decisions in April/June 2015 for the ACT/NSW electricity and gas networks will deliver a return on equity estimate that reflects prevailing market conditions and which contributes to the achievement of the rate of return objective and the NGO. Some specific issues with the AER's approach are:

- the AER's foundation model approach appears to proceed on the incorrect assumption that one return on equity model will be superior to others (despite that, even the AER acknowledges that the SL-CAPM has weaknesses[39]) and that the SL-CAPM is superior to other relevant return on equity models;

[38] These decisions relate to the electricity networks for ActewAGL Distribution, Endeavour, Essential Energy and Ausgrid and the JGN gas network in NSW.

[39] AER 2015, *ActewAGL final decision, Attachment 3, Rate of Return*, April, p. 240.

- no role is provided for the Fama French model, despite substantial evidence that this model is used widely by market practitioners and that the HML factor in the Fama French model represents a priced risk that the AER's SL-CAPM does not capture (see appendices 8.06 and 8.07);
- the Dividend Growth Model and 'Black CAPM' are not used to inform the overall return on equity estimate notwithstanding that these models also capture risks that the AER's SL-CAPM is not able to measure (see appendices 8.09 and 8.11);

- the equity beta of 0.4 to 0.7 with a point estimate of 0.7 places too much weight on unreliable Australian regression data and omits relevant international evidence and evidence from other models, thus resulting in a return on equity estimate which does not reflect the full range of evidence available, as shown in appendices 8.11 and 8.12;
- the AER's current 6.5 per cent estimate of market risk premium is too low and does not take into account the prevailing market conditions and evidence provided by other relevant models; and
- the ranges that the AER has derived are from a small subset of all the relevant evidence. This means that other relevant evidence has little or no influence on the outcome. This leads to the allowed return on equity estimate being less than the prevailing cost of funds and it is therefore counter to the rate of return objective.

The AER's return on equity point estimate is not informed by all relevant information in the market. In contrast, ActewAGL Distribution's estimate of the return on equity is informed by relevant information and is calculated using models that have a sound theoretical basis, and together are robust and superior to utilising the AER's SL-CAPM alone.

ActewAGL Distribution's approach to determining a return of equity point estimate addresses the deficiencies in the AER's approach and so represents the return on equity for the benchmark efficient firm better than the AER's approach and, accordingly, better meets the Rules requirements, including the allowed rate of return objective.

Further, the AER's approach to return on equity fails to take into account the relevant revenue and pricing principles. Using the AER's foundation model approach results in significant risk of underestimating the return on equity going forward, which would hinder, not contribute, to the achievement of the allowed rate of return objective and fails to provide ActewAGL Distribution with a reasonable opportunity to recover at least the efficient costs it will incur in providing direct control network services. This would not be in the long-term interest of the customers as it is likely to result in underinvestment of the network. Accordingly, the AER should instead adopt SFG Consulting's multi-model approach.

Overall, ActewAGL Distribution considers that its proposal better meets the Rules requirements and the NGO than the approach proposed by the AER in estimating the return on equity under prevailing conditions in the market for funds (as required by rule 87(7)). Attachment 8 and appendices 8.02 and 8.06 to 8.22 provide further details of ActewAGL Distribution's return on equity proposal and specifically address issues raised by the AER in recent decisions.

1.16.4 Gamma

Under the Australian taxation system, tax credits (imputation credits) created by an Australian company may be redeemed by domestic shareholders. An imputation credit is created for each dollar of eligible tax paid by companies. Imputation credits are distributed to shareholders through the payment of franked dividends. Imputation credits therefore represent a benefit to domestic shareholders for their investment in the company in addition to dividends (and capital gains). The utilisation of imputation credits is represented by the Greek character γ (gamma). Gamma is defined in the National Electricity Rules as 'the value of imputation credits'.

It is important to establish an accurate estimate of gamma, since it affects the overall level of return received by investors, and therefore their willingness to invest necessary capital. If gamma is set too high (i.e. if the value of imputation credits to investors is over-estimated), the overall return to investors will be reduced, thus potentially affecting the ability of the efficient benchmark entity to attract capital and invest in the network.

ActewAGL Distribution considers that the Rules require an estimate of the value of imputation credits to investors in the business. This interpretation is consistent with the broader regulatory framework and the task set by the Rules to determine total revenue, as well as past regulatory practice, and previous decisions of the Tribunal.

This is also the interpretation that best achieves the NGO, as it ensures that the adjustment for imputation credits in the taxation building block properly reflects the actual value of imputation credits to investors, not merely their notional face value or potential value. Accounting for gamma in this way ensures that the overall return received by investors (including the value they ascribe to imputation credits) is sufficient to promote efficient investment in, and use of, infrastructure, for the long-term interests of consumers.

ActewAGL Distribution proposes to calculate gamma in the orthodox manner, as the product of:

- the distribution rate (that is, the extent to which imputation credits that are created when companies pay tax, are distributed to investors); and
- the value of distributed imputation credits to investors who receive them (referred to as theta or θ).

ActewAGL Distribution proposes a distribution rate of 0.7, consistent with the AER's Rate of Return Guideline and notes that evidence submitted as part of this proposal continues to support a distribution rate of 0.7.

ActewAGL Distribution proposes a value for theta of 0.35. This is different to the theta proposed in the AER's Rate of Return Guideline of 0.7 and also a departure from the AER's revised theta in its final decision for the ACT and NSW DNSPs in April 2015.

ActewAGL Distribution considers that the method adopted by the AER will not result in an estimate of gamma which reflects the value that equity-holders place on imputation credits. The AER's method involves several errors. These are discussed in detail in attachment 8 of this access arrangement information.

ActewAGL Distribution considers that the correct approach to estimating gamma is:

- the distribution rate – the extent to which imputation credits that are created when companies pay tax, are distributed to investors, using ATO data; and
- the value of distributed imputation credits to investors who receive them (theta) based on the value of imputation credits reflected in share price movements, using dividend drop-off analysis.

Adopting this approach leads to a conclusion that the best estimate of gamma is 0.25.

In support of this position, ActewAGL Distribution provides appendices 8.03, 8.30 to 8.34.

1.16.5 Forecast inflation

For this proposal, ActewAGL Distribution has calculated forecast inflation of 2.55 per cent, using the AER's approach. Forecast inflation is the geometric average of the forecast annual inflation for each of the ten years from 2017 to 2026 as set out in Table O.18.

Table O.18 Forecast inflation (per cent)

	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24	24/25
Forecast CPI	2.75	2.75	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5

The annual inflation forecasts:

- for the first two years are the expected inflation outcomes stated in the RBA's most recent Statement on Monetary Policy from February 2015; and
- for the subsequent eight years are the midpoint of the RBA's long-term inflation target range. The range is two per cent to three per cent, so the midpoint is 2.50 per cent.

ActewAGL Distribution recognises that the inflation forecast will be updated before the AER's draft and final decisions. ActewAGL Distribution notes that recently in Australia and globally, expectations concerning inflation appear to be volatile and it may be that the best method for estimating inflation may evolve during the period that this revenue proposal is being considered. ActewAGL Distribution therefore signals its intention to revisit the method for inflation estimation that is applied in its final modelling. ActewAGL Distribution also notes that, to the extent that the access arrangement is deemed by the AER to begin on 1 July 2015,[40] by the time that the AER makes its final decision there will be several quarters of actual inflation published by the Australian Bureau of Statistics that will ultimately be used to roll-forward ActewAGL Distribution's capital base which represent the inflation that the forecast should correspond to. ActewAGL Distribution notes that the AER should have regard to that published data.

[40] ActewAGL Distribution does not agree that this is appropriate.

1.16.6 Debt raising costs

Consistent with its revised regulatory proposal in relation to its electricity network submitted to the AER on 20 January 2015, ActewAGL Distribution proposes debt raising costs that include:

- debt raising transaction costs;
- costs associated with the maintenance of a liquidity level consistent with Standard & Poors' criteria; and
- costs associated with the refinancing of debt three months before it matures – also consistent with Standard & Poors' criteria.

ActewAGL Distribution has engaged Incenta to update its debt raising cost estimate using the same methodology as in ActewAGL Distribution's electricity distribution network revised regulatory proposal, submitted to the AER in January 2015, as discussed in its expert reports in May 2014 and January 2015 (included in appendices 8.35 and 8.36). Applying Incenta's methodology to ActewAGL Distribution's gas network results in total debt raising costs of 23.4 basis points (bps).

1.16.7 Equity raising costs

ActewAGL Distribution used the AER's latest version of the PTRM to calculate equity raising costs and found that, based on its submitted expenditure programs for the 2016-21 access arrangement period, it would not incur any equity raising costs.

1.17 Incentive mechanisms

Key points

- ActewAGL Distribution has been subject to an opex incentive mechanism in the 2010-15 access arrangement period. A total carryover amount of $11.7 million ($2015/16) from 2010-15 has been added to the revenue building blocks for 2016-21.
- ActewAGL Distribution proposes to retain an incentive mechanism for opex for the 2016-21 access arrangement period. The proposed efficiency benefits sharing scheme (EBSS) will provide a continuous incentive for ActewAGL Distribution to seek opex efficiencies and will ensure that the benefits are shared with customers.
- The mechanism provides incentives for ActewAGL Distribution to reveal its efficient opex, which can then be used by the AER in determining the opex allowance.

Consumer benefits

The proposed EBSS for opex is in the long-term interests of customers because it provides continuous incentives, over time, for ActewAGL Distribution to seek efficiencies. Consumers benefit through lower costs which are reflected in lower tariffs.

1.17.1 Treatment of carryover amounts from 2010-15

The revenue allowance for 2016-21 will be adjusted for the carryover amounts from the operation of the 2010-15 incentive mechanism (as shown in the revenue building blocks Table 13 in section 1.11 above).

The operation of the 2010-15 mechanism generates a carryover amount of $3.7 million to be added to 2015/16 revenue. However, as a result of the AER's extension of the revisions submission date, reference tariffs in place at 30 June 2015 will continue without variation from 1 July 2015 to 30 June 2016. This means that the carryover adjustment due in 2015/16 cannot be made in 2015/16. Given that the Rules do not require an adjustment of revenues or tariffs following the extension year, ActewAGL Distribution has not added the $3.7 million to the revenue building blocks for 2016-21. This is consistent with ActewAGL Distribution's treatment of other elements of the access arrangement—that is, no true-up of revenues following the extension year. The basis for this position is explained in attachment 11 to this access arrangement information.

1.17.2 The proposed opex incentive mechanism

ActewAGL Distribution proposes to retain the central features of the 2010-15 opex incentive mechanism. Under this mechanism ActewAGL Distribution retains the benefit of efficiency gains derived from actual opex being lower, or incurs efficiency losses derived from actual opex being higher, than forecast opex in each year of the access arrangement period. The mechanism carries forward ActewAGL Distribution's incremental efficiency gains (or losses) for five years from the year those gains (or losses) occur. The carryover amounts will be an additional building block

when ActewAGL Distribution's revenue allowance is determined for the subsequent regulatory period.

ActewAGL Distribution proposes some revisions to the 2010-15 formulae for calculating incremental gains and losses and to the list of exclusions and adjustments. The revisions are designed to:

- update the exclusions and adjustments;
- more closely align the mechanism with the AER's 2013 EBSS guideline;[41] and
- clarify the operation of the mechanism.

ActewAGL Distribution proposes to retain the exclusions and adjustments from the 2010-15 carryover mechanism, with some minor amendments and updates. The adjustments and exclusions represent changes in circumstances and changes in costs which are outside ActewAGL Distribution's control and do not represent true efficiency gains or losses. The adjustments and exclusions are necessary to ensure that ActewAGL Distribution is given a reasonable opportunity to recover at least its efficient costs, as required under the revenue and pricing principles in the NGL.

Under clause 3.8(a) of the 2016-21 access arrangement, the opex benchmarks used to calculate the carryover amount at the end of the regulatory period will be adjusted for:

- a change in the scope of the activities which form the basis of the determination of the original benchmarks; and/or
- a difference between forecast and actual connections; and/or
- any change in the classification of costs as capex or opex during the access arrangement period.

The proposed adjustments to the original benchmarks are consistent with those in ActewAGL Distribution's 2010-15 access arrangement and also the access arrangements approved by the AER for SP AusNet and Envestra in Victoria.[42]

Under clause 3.8(b) of the 2016-21 access arrangement the following opex categories will be excluded from the operation of the incentive mechanism. The amounts in relation to these categories will be deducted from both the forecast opex and actual opex:

- debt raising costs;
- insurance costs (other than self insurance costs);
- superannuation costs;

[41] AER 2013, *Efficiency benefit sharing scheme for electricity distribution network service providers*, November.

[42] AER 2013, *Access Arrangement Final Decision, Envestra Ltd, 2013-17*, Attachment 8, March; and AER 2013, *Access Arrangement Final Decision, SP Ausnet 2013-17, Attachment 8*, March.

- payments made in respect of non-controllable costs including (without limitation) levies, taxes, licences, UAG costs, carbon costs and other non-controllable costs as agreed between ActewAGL Distribution and the relevant regulator; and
- determined cost pass through amounts.

These exclusions are consistent with the exclusions approved by the AER for other gas distribution businesses, and with ActewAGL Distribution's 2010-15 access arrangement.

ActewAGL Distribution notes that in the draft decision for JGN the AER required an additional exclusion:

> *… we consider we need some discretion to exclude costs from the EBSS. We consider this is required where a category of opex is not forecast using a single year revealed cost approach in the access arrangement period commencing in 2020. We will only make such an exclusion when we are satisfied that JGN's consumers would not benefit from applying the efficiency carryover mechanism to that category of costs. This approach is consistent with the discretion we have to adjust the carryover amounts in our electricity network efficiency benefit sharing scheme.*[43]

JGN accepted this in its revised access arrangement revisions proposal. ActewAGL Distribution has included it in the proposed revisions, noting that it is consistent with the EBSS guideline.

Changes to the formulae, to align the mechanism with the AER's EBSS for electricity distribution networks, are explained in attachment 10 to this access arrangement information.

1.17.3 Capex incentive mechanism

ActewAGL Distribution does not propose a new incentive mechanism for capex. This is consistent with the AER's determinations for other gas distribution businesses and recognises that the existing regulatory framework provides appropriate incentives for efficient capex. Further details are provided in attachment 10 to this access arrangement information.

[43] AER 2014, *Draft Decision Jemena Gas Networks (NSW) Ltd Access Arrangement 2015-20, Attachment 9, Efficiency Benefit Sharing Scheme*, November, pp. 9-10.

1.18 Revenue and price path

Using the PTRM developed by the AER, ActewAGL Distribution has calculated proposed X factors, or an average price path, for the 2016-21 access arrangement period. The forecast revenue requirement and the X factors are shown in Table O.20 below.

Table O.19 Revenue requirement and X factors ($million, nominal)

	2016/17	2017/18	2018/19	2019/20	2020/21	Total
Revenue requirement (smoothed)	69.3	70.3	71.4	72.9	74.5	**358.4**
X factors	2.23	0	0	0	0	n/a

ActewAGL Distribution considers that the proposed price path is in the long-term interests of consumers and is consistent with the revenue and pricing principles in the NGL.

ActewAGL Distribution engaged with the ECRC and the broader community (through community forums) on the appropriate matters to be considered when setting price paths. [44] The considerations adopted by ActewAGL Distribution in setting a price path include:

- minimising customer billing impacts;
- creating price stability for consumers;
- minimising significant network price changes from one access arrangement period to the next; and
- recovering efficient costs for providing network services.

ActewAGL Distribution presented a range of price path options to the ECRC and discussed the options over the course of three meetings. The ECRC noted that it could not endorse a particular price path, but it could agree on the following principles, which were included in the Communiqué released after the 18 May 2015 meeting:

- if there is a reduction in gas distribution charges, the reduction should be passed on to customers early in the five year regulatory period; and
- if there is an increase in the gas distribution charges then the impact on customers should be passed on gradually (not 'front loaded' at the beginning of the regulatory period).

ECRC members had also expressed during the meetings a preference for price stability and no price shocks.

ActewAGL Distribution's proposed price path is consistent with these principles. An initial reduction (CPI - 2.23 per cent) is followed by a steady increase in line with the CPI.

[44] See for example the community workshop slides ''Proposed changes to services and tariff structure'' at http://www.actewagl.com.au/About-us/The-ActewAGL-network/Consumer-engagement.aspx.

1.18.1 Adjustment for the extension year 2015/16

As noted in the background section of this Overview, ActewAGL Distribution has not adjusted 2016-21 revenues to take account of the extension year. This is because there is no requirement in the Rules for such an adjustment, or true up, following the extension year. Details on the basis for this position are provided in attachment 11 of this access arrangement information.

Should the AER consider (contrary to ActewAGL Distribution's contentions) that it has discretion, and determines to exercise that discretion, to apply a true up for the 2015/16 extension year, ActewAGL Distribution proposes that that true up be performed using the approach set out in attachment 11 of this access arrangement information.

1.19 Reference tariffs

Key points

ActewAGL Distribution is proposing improvements to its reference tariff structure and tariffs for the 2016-21 access arrangement. The proposed revisions respond to changes in gas consumption behaviour as well as changes in the gas market and regulatory landscape, in a manner that supports the long term interests of consumers by;

- simplifying the charge components in the reference tariffs;
- providing cost-reflective price signals that promote the efficient use and growth of the network over time;
- streamlining the process for major customers to seek additional gas capacity on the network; and
- creating a tariff-assignment process to enable customers to respond to ActewAGL Distribution's reference tariffs.

ActewAGL Distribution has engaged extensively with its consumers, major customers and retailers on the proposed tariff strategy and structure, and has responded to the feedback and comments received.

The proposed reference tariff structure and initial reference tariffs are consistent with the revenue and pricing principles in the NGL and meet the tariff requirements in Rule 94.

Consumer benefits

Consumers will benefit from the proposed reference tariff structure as it will:

- apply downward pressure on ActewAGL Distribution's network charges over time by encouraging new customers to connect to the network and stay connected to the network, and existing customers to use gas in a way that promotes the efficient use of the network (for example by using gas throughout the year rather than only for heating in winter); and

1.19.1 ActewAGL Distribution's approach to tariff setting

ActewAGL Distribution has considered the following objectives in setting the reference tariff structure and tariffs for the 2016-21 access arrangement period and over the longer term.

- **Recover efficient costs** – to continue providing safe and reliable natural gas services into the future ActewAGL Distribution needs to recover at least the revenue requirement set out in this access arrangement revisions proposal.
- **Price efficiently and equitably** – to ensure that prices reflect efficient costs of supplying each customer class to encourage the efficient use and growth of the network, and

similar customers are grouped together and pay prices that reflect the costs they impose on the network.

- **Keep gas competitive** – to maintain and enhance the attractiveness of natural gas as a value for money fuel of choice and promote competition with alternative energy sources.
- **Provide stability in network tariffs** – as far as possible, to minimise sudden and unexpected changes.
- **Provide simplicity and transparency in network tariffs** – to consider customer preferences and the transaction costs of providing customised tariffs, provide information on the tariffs and any tariff variations, and ensure customers and stakeholders value and support proposed changes.

ActewAGL Distribution consulted with consumers, stakeholders and the community on these objectives and had regard to the NGO and revenue and pricing principles in the NGL in setting these objectives. ActewAGL Distribution has applied these objectives to provide for economically efficient tariff classes and tariffs consistent with Rule 94.

1.19.2 Overview of the proposed revisions

The proposed reference tariff structure for the 2016-2021 access arrangement recognises that gas consumption behaviour, the gas market and regulatory landscape are all changing, and residential and business customers have different energy and customer characteristics and ways in which they use gas. To maintain the competitive position of gas relative to other fuels and to continue promoting the efficient use of the network and efficient new connections, ActewAGL Distribution is proposing changes to the tariff structure.

The key proposed changes are as follows.

- **Changing the tariff classes and introducing new tariffs** – ActewAGL Distribution is proposing to change the way it groups customers together by grouping customers into residential and business tariff classes and introducing tariff categories within each tariff class to:
    - recognise that customers have different energy and customer characteristics and ways in which they use gas; and
    - provide more cost reflective tariffs to encourage the efficient use and growth of the network.
- **Simplifying the charge components** – ActewAGL Distribution is proposing to consolidate its three fixed charges into a single fixed charge to make it easier for customers to compare retail offers.
- **Introducing a tariff assignment process** – ActewAGL Distribution is proposing to facilitate access to the new tariffs by introducing a tariff assignment process in the 2016-21 access arrangement.

- **Simplifying the process for major customers to seek additional capacity** – ActewAGL Distribution is proposing to simplify the process for major customers to seek additional gas capacity on the network by moving to a chargeable demand-based charge, consistent with the approach adopted by JGN and approved by the AER.
- **Setting more cost reflective ancillary charges** – ActewAGL Distribution is proposing to set more cost reflective charges for ancillary activities.

1.19.3 Proposed reference tariff structure

ActewAGL Distribution is proposing to offer the following tariff structure and charge components in its 2016-21 access arrangement.

Reference service		
Haulage Reference Service		
Customer groups		
Volume (V)		Demand (D)
Tariff classes		
Residential (R)	Business (B)	
Tariff categories		
• residential individually metered (VRI) • residential individually metered with gas heating and other gas appliances (VRH) • residential boundary metered (VRB) • large scale generation principally for residential end customers (VRG)	• small business individually metered (VBS) • medium business individually metered (VBM)	• major customer capacity (DBC) • major customer throughput (DBT) • large scale generation principally for business end customers (DBG)

Charge Components		
• VRI o one fixed charge o four usage block sizes • VRH o one fixed charge o three usage block sizes • VRB o one fixed charge o three usage block sizes • VRG o one fixed charge o three capacity usage block sizes	• VBS o one fixed charge o three usage block sizes • VBM o one fixed charge o three usage block sizes	• DBC o one fixed charge o three capacity usage block sizes • DBT o one fixed charge o one usage charge • DBG o one fixed charge o three capacity usage block sizes

The proposed tariff categories are explained in Table O.21.

Table O.20 Proposed tariff categories

Tariff category	Abbreviation	Type of customers	Why included
Volume Residential Individually metered	VRI	End customers who have individual gas meters, and are using gas for the first time, or use small quantities of gas at the delivery point.	This tariff category is available for end customers who do not request assignment to another tariff category through their retailer. This tariff category is similar to the tariffs for the Tariff Service under the 2010-15 access arrangement.

Tariff category	Abbreviation	Type of customers	Why included
Volume Residential Individually metered (gas heating combined with other gas appliances)	VRH	End customers who have individual gas meters, and use gas heating and other gas appliances at the delivery point.	This tariff category aims to encourage end customers to install multiple gas appliances at the delivery point to encourage the use of gas throughout the year rather than solely for heating to promote the efficient use of the network.
Volume Residential Boundary metered	VRB	End customers in high-rise dwellings or commercial complexes such as shopping centres that are supplied gas for their gas appliances or applications (other than for gas hot water) by an energy intermediary that sits between the boundary meter and the end customer.	This tariff category aims to provide end customers who are affected by the legislative amendment preventing the internal installation of gas meters for cooking and heating in multi-storey complexes with the option to access gas through a boundary-metered connection. This tariff category is not available for gas hot water boundary-metered arrangements as the legislative amendment does not affect the installation of gas hot water meters. Any requests for a gas hot water boundary-metered arrangement will be considered as a request for a negotiated service under the 2016-21 access arrangement.
Volume Residential Large Scale Generation	VRG	Residential end customers supplied energy by an intermediary using a large scale generation unit in a residential precinct and who is reasonably expected to use equal to or more than 50 TJ of gas per year.	Recent technological, market and policy developments mean residential end customers in large precincts may be supplied electricity, heating or cooling from a gas-fired plant (co-generation or tri-generation). ActewAGL Distribution encourages innovative, efficient and customer focused energy services, and promotes gas usage to lower average prices for all customers.
Volume Small Business individually metered	VBS	Business end customers who have individual gas meters, and use commercial gas appliances and applications at the delivery point.	This tariff category aims to encourage business end customers to install commercial gas appliances and applications (such as gas-powered commercial air-conditioners, washing machines and dryers) at the delivery point to encourage the use of gas throughout the year to promote the efficient use of the network. This tariff category also recognises that business customers are likely to use gas throughout the day, rather than solely during the morning and evening, as observed from the residential customers.
Volume Medium Business individually metered	VBM	Medium business end customers who have individual gas meters and are reasonably expected to use equal to or more than 8 TJ of gas per year.	This tariff category aims to encourage customers to install commercial and industrial gas applications at the delivery point to encourage the use of gas throughout the year to promote the efficient use of the network.

Tariff category	Abbreviation	Type of customers	Why included
Demand Business Capacity	DBC	Major customers who are reasonably expected to use equal to or more than 10 TJ of gas per year.	This tariff category is similar to the tariffs for the Capacity Reservation Service and Managed Capacity Service under the 2010-15 access arrangement.
Demand Business Throughput	DBT	Major customers who are reasonably expected to use equal to or more than 10 TJ of gas per year.	This tariff category is similar to the tariffs for the Throughput Service under the 2010-15 access arrangement.
Demand Business Large Scale Generation	DBG	Major customer or a group of substantially[45] business end customers occupying premises or nearby premises who are supplied electricity and co-generated thermal energy directly from a centralised gas-fired electricity generation plant or system and who is reasonably expected to use equal to or more than 10 TJ of gas per year.	Recent technological, market and policy developments mean a business end customer or a group of substantially non-residential end customers occupying premises or nearby premises may be supplied electricity, heating or cooling from a gas-fired plant (co-generation or tri-generation). ActewAGL Distribution encourages innovative, efficient and customer-focused energy services, and promotes gas usage to lower average prices for all customers.

Details on the charging parameters for each tariff and how they are determined are provided in attachment 12 to this access arrangement information. ActewAGL Distribution has also prepared a Tariff Structures Statement (TSS), to provide a basis for ongoing engagement with consumers on proposed tariffs. The TSS contains a detailed explanation of the basis for the tariff proposals, in non-technical language. The TSS is provided as appendix 12.01 to this access arrangement information.

1.19.4 Assigning customers to tariff categories

For the 2016-21 access arrangement period, ActewAGL Distribution proposes to initially assign:

- all Tariff Service customers onto a VRI tariff category;
- all Capacity Reservation Service customers onto aDBC tariff category; and
- all Throughput Service customers onto a DBT tariff category.

Consumers, through their retailer, will have the option to request assignment to a different tariff category if they are eligible for that tariff category. Section 8 and schedule 3 of the 2016-21

[45] As a guide, ActewAGL Distribution will consider a group of end customers to be substantially business end customers where less than 50% (by number of end customers) of the group use energy principally for personal, domestic or household purposes.

access arrangement contain the tariff assignment (eligibility) criteria and the tariff assignment/re-assignment process. An explanation is provided in attachment 12 to this access arrangement information.

1.19.5 Ancillary charges

ActewAGL Distribution proposes to offer the following ancillary charges for the 2016-21 access arrangement period:

- Reconnection fee ($/request);
- Disconnection fee ($/request);
- Decommissioning and meter removal fee ($/request);
- Special meter read fee ($/request); and
- Request for service ($/hour).

One new ancillary charge is proposed:

- Decommissioning and meter removal fee.

ActewAGL Distribution proposes to introduce a new charge for this network user requested activity to ensure that the costs of providing this activity are fully recovered from the user requesting the activity. A comparable fee has been approved by the AER for other gas distribution businesses.

1.19.6 Allocation of revenue to services

The Rules require ActewAGL Distribution to allocate its total revenues between reference and other services in the ratio in which costs are allocated between these services.[46] For the 2016-21 access arrangement, ActewAGL Distribution proposes a single reference service—the haulage reference service.

ActewAGL Distribution does not have any non-reference services. The required cost of service (building block revenue) is therefore fully allocated to the haulage reference service.

1.19.7 Efficient pricing

ActewAGL Distribution's proposed reference tariff structure and initial reference tariffs are consistent with the revenue and pricing principles in the NGL and meet the tariff requirements in Rule 94, as explained below.

Rule 94(3) requires that the expected revenue recovered for each tariff class should lie on or between the stand-alone cost of providing the reference service and the avoidable cost of not providing the reference service.

[46] Rule 93(1).

ActewAGL Distribution's stand-alone and avoidable cost estimates for each tariff class have been estimated by HoustonKemp, using the methodology set out in the report provided as appendix 12.02 of attachment 12 to this access arrangement information. The results confirm that ActewAGL Distribution's expected revenue for each tariff class lies between the stand alone and avoidable costs.

Rule 94(4) requires the distribution network service provider to take into account the long-run marginal cost (LRMC) in setting tariffs.

ActewAGL Distribution has estimated the LRMC for each tariff class using an approach known as the average incremental approach. Details are provided in the HoustonKemp report at appendix 12.02. The LRMC estimates and ActewAGL Distribution's consideration of LRMC are provided in attachment 12.

Rule 94(2)(b)(i) requires each tariff class to be constituted with regard to the need to avoid unnecessary transaction costs. It also requires that a tariff, and each charging parameter for a tariff class, be determined with regard to the transaction costs associated with the tariff or each charging parameter. Rule 94(4)(b)(ii) requires that where a tariff consists of two or more charging parameters, each parameter for a tariff class must be determined having regard to whether the customers belonging to the relevant tariff class are able or likely to respond to price signals.

ActewAGL Distribution has considered transaction costs such as metering charges and administrative costs when determining its tariff class and charge components. The proposed tariffs and tariff classes for the 2016-21 access arrangement period provide the appropriate balance between minimising transaction costs and ensuring that customers have incentives to respond to pricing signals.

For example, it would be inefficient to charge individually metered customers consuming less than 10 TJ a year a capacity-based charge as this would require costly more sophisticated daily metering and data handling. Such metering costs are avoided by charging these customers on usage using basic metering equipment.

ActewAGL Distribution also believes the one-off administrative cost to change the tariff structure is justified on the basis that it will encourage new connections and consumption decisions which will promote the efficient use and growth of the network and will lead to lower network charges for all customers over the long term. This is because the tariff structure has been designed to encourage, through appropriate price incentives:

- new customers to connect to the network and stay connected to the network, which will lead to lower network charges for all customers over the long term as ActewAGL Distribution's costs (which are mainly fixed costs) can be allocated across a larger customer base;
- existing customers to use gas throughout the year by encouraging these customers to install multiple gas appliances or commercial gas appliances and applications, rather than solely heating at the delivery point, which will lead to lower network charges for all customers over the long term (as ActewAGL Distribution recovers most of its costs

through its usage charges), and will promote the efficient use of the network (as most of the gas on ActewAGL Distribution is currently used during winter); and

- emerging markets, particularly base load gas users to connect to the network, which will lead to lower network charges for all customers over the long term as ActewAGL Distribution's cost can be allocated across a larger customer base, and will promote the efficient use and growth of the network (as these customers generally have a flat consumption profile and will pay for their own connection to the network).

1.20 Reference tariff variation mechanism

Key points

ActewAGL Distribution proposes the following revisions to the reference tariff variation mechanism in the 2010-15 access arrangement:

- A weighted average price cap (WAPC) to replace the current arrangements whereby the initial set of tariffs is set and escalated annually by CPI and adjusted for approved cost pass throughs. The move to a WAPC will provide ActewAGL Distribution with incentives aligned with the long-term interests of customers and the flexibility to respond to changes in the gas market, including changing consumption patterns, during the access arrangement period. The move to a WAPC will also align ActewAGL Distribution with all other gas distribution networks regulated by the AER.
- An update of the cost pass through arrangements, largely to reflect regulatory developments since the 2010-15 access arrangement was approved.
- Streamlining the process for adjusting tariffs through the use of a symmetrical automatic adjustment mechanism to incorporate changes in uncontrollable costs, and aligning the process with other access arrangements and the National Electricity Rules to reduce the administrative burden on the AER and ActewAGL Distribution.

Consumer benefits

- The WAPC aligns ActewAGL Distribution and consumer interests as it provides incentives to set tariffs to increase volumes and improve utilisation, which reduces ActewAGL Distribution's cost per customer and ultimately the prices consumers face.
- The proposed cost pass through arrangements help to ensure that ActewAGL Distribution is able to fully recover its efficient costs (including across regulatory periods), and therefore continue to deliver the services that consumers demand.
- Consumers will also benefit from a more streamlined and consistent approval process. The lower administrative burden will result in lower prices for consumers.

1.20.1 Proposed reference tariff variation mechanism

ActewAGL Distribution is currently the only gas distribution network regulated by the AER under a fixed tariff schedule. Weighted average price caps (WAPCs) currently apply to all other gas distribution networks regulated by the AER.

A WAPC sets a limit on the weighted average increase in prices from one year to the next, with the weights based on the quantities sold at each charging parameter. The network service provider complies with this constraint by setting prices annually so the change in the weighted average price is less than or equal to a CPI-X cap.

ActewAGL Distribution has assessed the WAPC and the other options (as listed in Rule 97(1) and (2)) against the criteria that the AER must consider, under Rule 97(3), when making a decision on the reference tariff variation mechanism. Two additional factors have been considered—revenue recovery and price stability. The AER has included these additional considerations in recent assessments of control mechanisms for electricity and tariff variation mechanisms for gas.[47]

Revenue recovery is relevant in terms of the revenue and pricing principles in the NGL, and particularly principle 2:

> *A service provider should be provided with a reasonable opportunity to recover at least the efficient costs the service provider incurs in—*
>
> *a) providing reference services; and*
>
> *b) complying with a regulatory obligation or requirement or making a regulatory payment.*

Price stability is also an important consideration for consumers. This has been confirmed in feedback provided by the ECRC to ActewAGL Distribution.

Overall ActewAGL Distribution considers that the WAPC best meets consumers' long-term interests. It is superior in terms of the factors that AER must consider under the Rules, and in terms of the revenue and pricing principles in the NGL. In terms of promoting the NGO, the WAPC is superior to the current fixed price schedule as it aligns ActewAGL Distribution's incentives with the long-term interests of consumers. The incentives for ActewAGL Distribution are to:

- increase throughput and network utilisation, given revenues are not constrained—this supports productive and allocative efficiency; and
- price at cost reflective levels to help ensure customers that are susceptible to bypassing the network are retained, again supporting allocative efficiency.

ActewAGL Distribution proposes to adopt a standard formulation of the WAPC (see formulae set out in attachment 13 of this access arrangement information and clause 7.4 of the 2016-21 access arrangement), with the following features.

- ***A side constraint to be applied at the tariff class level***. The Rules do not require a side constraint to be imposed on annual variations for individual tariffs or tariff classes. Recognising that the AER has adopted side constraints in previous gas access arrangements, where a WAPC has applied, ActewAGL Distribution proposes to adopt a side constraint at the tariff class level. Applying a side constraint also recognises consumer concerns about avoiding price shocks.

[47] For example AER 2012, *ActewAGL Framework and Approach, Preliminary Positions, Regulatory control period commencing 1 July 2014*, June, p. 36; and AER 2014, *Final Framework and Approach for the Victorian Electricity Distributors, Regulatory control period commencing 1 July 2016*, October, p. 76.

- ***An annual adjustment factor*** to allow differences between forecast and actual costs for specified uncontrollable costs to be recovered (or returned) in tariffs. The automatic annual adjustment will reduce administrative cost because ActewAGL Distribution will not have to lodge annual cost pass through applications for the specified costs. The adjustment factor includes amounts for UAG costs, licence fees, UNFT costs, carbon costs and relevant taxes. The proposed adjustment factors are set out in schedule 4 of the 2016-21 access arrangement.
- ***An annual adjustment for the cost of debt*** via the X factor. This is required to implement ActewAGL Distribution's proposed approach to the setting of the cost of debt. Details are provided in attachment 8 and appendix 8.01 of this access arrangement information and section 6 of the 2016-21 access arrangement.

The AER has approved essentially the same WAPC formulae, including the side constraint, in its final decision for JGN.[48]

The proposed reference tariff variation mechanism will also allow ActewAGL Distribution, subject to AER approval, to:

- introduce new tariff categories; and
- remove existing tariff categories (with or without grandfathering for existing customers).

This will give ActewAGL Distribution flexibility to respond to changing consumer preferences or new market opportunities and to give better effect to the NGO. In the June 2015 final decision for JGN the AER noted that providing this flexibility is preferred to the alternative of re-opening and amending the access arrangement when tariff changes are proposed.[49]

1.20.2 Cost pass through mechanism

The cost pass through mechanism provides ActewAGL Distribution with an opportunity to recover (and return) unexpected and uncontrollable changes in cost, if a predefined event occurs. The purpose of the mechanism is to ensure that ActewAGL Distribution, when faced with an uncontrollable and unexpected increase in costs, can recover at least its efficient costs and is thereby provided with the incentive to respond in a manner that meets the long term interests of consumers.

ActewAGL Distribution has reviewed the cost pass through arrangements in the 2010-15 access arrangement and proposes a refresh. In particular ActewAGL Distribution proposes to introduce a separate automatic annual adjustment mechanism to update specified costs. This will lower the administrative burden on the AER and ActewAGL Distribution.

[48] AER 2015, *Jemena Gas Networks Approved access arrangement 2015-20*, June, clause 3.2.

[49] AER 2015, *Final decision, Jemena Gas Networks Access Arrangement, Reference tariff setting, Attachment 10*, June, pp. 10-6.

ActewAGL Distribution has reviewed the cost pass through events defined in the 2010-15 access arrangement having regard to the NGO, the revenue and pricing principles and the nominated pass through event considerations specified in the National Electricity Rules. Accordingly, the following revisions are proposed.

- The removal of cost pass through events that are no longer needed (such as the Carbon Pollution Reduction Scheme, National Energy Customer Framework/National Gas Connections Framework Event and Specified Uncontrollable Cost Event), as a result of the introduction of an automatic annual adjustment mechanism or because the events would be captured by the regulatory change event or general pass through event.
- ActewAGL Distribution is proposing changes to the definition of some events to enhance consistency with other access arrangements, and address the AER's previously stated concerns raised as part of other regulatory processes.
- The addition of cost pass through events, which have been largely accepted by the AER in other regulatory decision, including the insurance cap event, insurer credit risk event, terrorism event, natural disaster event and network user failure event.

ActewAGL Distribution also proposes changes to the pass through process specified in the access arrangement to provide for greater consistency with other AER approved access arrangements. These changes will lower the administrative burden for both the AER and ActewAGL Distribution.

Finally, ActewAGL Distribution is proposing to introduce a fixed principle to allow cost pass through amounts incurred in the 2016-21 access arrangement period to be recovered in subsequent access arrangements periods, consistent with the cost pass through provisions in the National Electricity Rules. Under the current access arrangement provisions this cannot occur. As a result, cost pass through amounts are not recovered (or returned) unless an administratively costly mid-year tariff variation is implemented.

1.20.3 Annual reference tariff notification and variation process

Clauses 7.17 to 7.27 of the 2016-21 access arrangement set out the process for ActewAGL Distribution to notify the AER of a tariff variation and for the AER to assess the proposal. The clauses also specify the information that ActewAGL Distribution must provide, in order to give the AER adequate oversight, as required under Rule 97(4).

The proposed changes enhance consistency with other approved access arrangements[50] and improve the timeliness for retailers. The changes relative to the 2010-15 access arrangement are listed and explained in attachment 13 to this access arrangement information.

[50] For example, AER 2015, *Final decision, Jemena Gas Networks Access Arrangement, Reference tariff setting, Attachment 10*, June.

1.21 Non-tariff elements of the access arrangement

Key points

- ActewAGL Distribution's proposed terms and conditions for access to its reference service are set out in the new reference service agreement (RSA), which is a schedule to the 2016-21 access arrangement. Users of the reference service will enter into the AER approved RSA, instead of the individually negotiated gas transport services agreements (GTAs) that applied under the 2010-15 access arrangement.
- ActewAGL Distribution has engaged with the network users on the proposed shift to a RSA, and the network users support the proposal. The proposed approach is consistent with that approved by the AER for other gas distribution businesses.
- The proposed trading policy, queuing policy, and arrangements for changing receipt and delivery points have been amended to align with the approach adopted by JGN and approved by the AER.

Consumer benefits

The proposed RSA will benefit consumers as:

- it will improve transparency for existing and prospective network users on the terms and conditions on which ActewAGL Distribution will provide its reference service;
- it will simplify and consolidate the two GTAs into one RSA, which will be easier for network users to manage;
- by adopting a similar agreement to JGN, there will be a more harmonised approach for the ACT and NSW; and,
- it was less costly to adopt the RSA than amend the current GTAs, given the full implementation of NECF and the proposed changes to the current services and tariffs framework. ActewAGL Distribution can pass these cost savings on to consumers.

1.21.1 Proposed Reference Service Agreement

ActewAGL Distribution is proposing an RSA which sets out the terms and conditions on which ActewAGL Distribution will offer its haulage reference service to network users and prospective network users. Schedule 5 of the 2016-21 access arrangement contains the proposed RSA.

The proposed RSA is modelled on JGN's approved RSA for its 2015-20 access arrangement, with amendments to reflect regulatory and market arrangements specific to ActewAGL Distribution. ActewAGL Distribution has engaged extensively with network users on the proposed RSA and responded to the feedback received. Details are provided in attachment 14 to this access arrangement information.

ActewAGL Distribution considers it is in the long-term interests of consumers to create more transparency for existing and prospective network users on the terms and conditions on which it will provide a reference service to better facilitate access and energy market competition.

At the same time, ActewAGL Distribution agrees with the AER[51] that the agreement between a gas distribution business and its network users should achieve an appropriate allocation of risk between service providers, network users and customers and avoid a prescriptive approach on commercial matters in the access arrangement.

The AER has indicated that risk should be borne by the party best able to control or manage it, and that this promotes the NGO by 'providing the opportunity to minimise the risk, which can lead to greater efficiency and lower prices'.[52] This is an important principle which ActewAGL Distribution seeks to reflect in the RSA.

The key differences between the proposed RSA and the terms and conditions in the 2010-15 access arrangement and the GTAs are as follows:

- **Accommodating NECF** – the proposed RSA includes provisions to accommodate the full implementation of NECF from 1 July 2016. The current GTAs do not include ActewAGL Distribution's full obligations under NECF as transitional arrangements applied during the 2010-2015 access arrangement;
- **New reference services and tariffs** – the proposed RSA includes terms and conditions to reflect and accommodate the changes to the reference services and reference tariff structure;
- **Bulk transfer and initial tariff assignment provisions** – the proposed RSA includes bulk transfer and initial tariff assignment provisions to facilitate the smooth transfer of customers from the two GTAs to the RSA and assignment of customers to the new tariff categories;
- **Meter data services** – the proposed RSA does not include provisions for separate meter data services as these services will be part of the consolidated single reference service for 2016-21;
- **Terms and conditions for volume and demand customers** – the rights and obligations of existing volume customers under the RSA will be similar to the GTA for small customers.

[51] AER, *Access Arrangement draft decision – Envestra Limited 2013*-17, September 2012, Attachment 12, pp 293-294*, AER, Access Arrangement draft decision - Multinet Gas (DB No. 1) Pty Ltd Multinet Gas (DB No 2) 2013-17,* March 2013, Attachment 12, pp 377-378*, AER Access Arrangement draft decision - SPI Networks (Gas) Pty Ltd 2013-17,* September 2012, Attachment 12, pp 375 - 377*,* AER*,* September 2012, p. 433, AER, *Access Arrangement draft decision – Jemena Gas Networks (SW) Ltd 2015-20,* December 2014, Attachment 12 p. 9. In its final decisions for each of these businesses, the AER adopted the same assessment as outlined in the draft (see, for example, AER, *Final decision Jemena Gas Networks (NSW) Ltd Access Arrangement 2015-20,* June 2015, Attachment 12, p. 7).

[52] AER, *Access Arrangement draft decision – Envestra Limited 2013-17,* September 2012, p. 433, and AER, *Access Arrangement draft decision – Jemena Gas Networks (NSW) Ltd 2015-20,* December 2014, Attachment 12, p. 9.

ActewAGL Distribution proposes a different approach in the RSA for demand customers, compared to the GTA for large customers, which is consistent with JGN's approved RSA;

- **Liability and indemnity** – ActewAGL Distribution has reviewed the liability and indemnity provisions in its 2010-15 access arrangement and made a number of changes in incorporating those provisions into its proposed RSA in order to:
  - streamline the drafting;
  - reflect changes in the law (such as the introduction of NECF);
  - focus the provisions on areas where contractual protection is needed having regard to the principle that risk should be allocated to the party best able to control or manage that risk (consistent with the NGO); and
  - achieve consistency with the approach adopted by JGN, and approved by the AER.[53]
- **Changes due to change in law** – a new clause has been inserted into the RSA to enable an RSA between ActewAGL Distribution and its network users to be amended to accommodate a change in law.
- **Changes to reflect the governing law** – a new clause has been inserted into the RSA to specify that the governing law of an agreement is that applicable in the ACT, to provide legal certainty for the parties to the RSA.

1.21.2 Other non-tariff elements of the access arrangement

In accordance with Rule 48(d) the 2016-21 access arrangement includes:

- queuing requirements;
- capacity trading requirements;
- extensions and expansion requirements; and
- terms and conditions for changing receipt and delivery points.

The proposed trading policy, queuing policy, and arrangements for changing receipt and delivery points have been amended to align with the approach adopted by JGN, and approved by the AER

ActewAGL Distribution proposes only minor drafting changes to the extensions and expansions policy in the 2010-15 access arrangement.

Details on the proposed non-tariff elements of the access arrangement are provided in attachment 14 to this access arrangement information.

[53] AER, *Access Arrangement final decision – Jemena Gas Networks (NSW) Ltd 2015-20*, June 2015, Attachment 12.

Abbreviations used in this access arrangement information

Abbreviation	Full term
AA	access arrangement
AAD	ActewAGL
ACQ	annual contract quantity
ACT	Australian Capital Territory
ACTPLA	ACT Planning and Land Authority
AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
Agility	Agility Management Pty Limited
AMP	Asset Management Plan
AS	Australian Standard
ASA	Asset Services Agreement
ASR	Additional Services Request
BAU	business as usual
BOM	Bureau of Meteorology
bps	basis points
CAGR	Compound annual growth rate
CAM	cost allocation method/methodology
capcon	customer contribution
capex	capital expenditure
CAR	Client Acceptance Report
CM	corrective maintenance
CMF	construction management fee
CP	Cathodic protection
CPC	Consumer Protection Code
CPI	Consumer Price Index
Cth	Commonwealth Government
CTS	custody transfer station
CWA	capital works Authorisation
DAMS	Distribution Asset Management Services Agreement
DBC	Demand Business Capacity major customer capacity

Abbreviation	Full term
DBG	Demand Business Large Scale Generation
DBT	Demand Business Throughput
DNSPs	distribution network service provider
DRS	district regulator set
DSCC	deemed standard connection contract
E&I	Electrical and instrumental
E&P	Evans and Peck
EBIT	earnings before interest and tax
EBSS	efficiency benefit sharing scheme
ECRC	Energy Consumer Reference Council
EDD	effective degree days
EGP	Easter Gas Pipeline
EGWWS	Electricity, Gas, Water and Waste Services
EIL	Energy Industry Levy
ELMS	Emergency Load Management Systems
E-to-G	electricity to gas conversions
FA	Feasibility Assessment
FGLS	feasible generalised least square model
FTE	full time equivalent
GIS	Geographic Information System
GJ	gigajoule(s)
GPS	global positioning system
GSP	gross state product
GTA	Gas Transportation Agreement
GVA	gross value added
HDD	heating degree day
HIA	Housing Industry Association
I&C	industrial and commercial
IAP2	International Association of Public Participation
ICRC	Independent Competition and Regulatory Commission
inc.	including
IT	information technology
ITAUF	IT asset utilisation fee

Abbreviation	Full term
JAM	Jemena Asset Management Pty Ltd
JGN	Jemena Gas Networks (NSW) Ltd
km	kilometre(s)
kPa	kilopascal(s)
KPI	key performance indicators
LGA	Local Government Area
LRMC	long-run marginal cost
LTI	Lost Time Injury
m	metre(s) / millions (when relating to financial information)
MAOP	maximum allowable operating pressure
MDL	meter data logger
MDQ	maximum daily quantity
MFX	meter fix service request
MHQ	maximum hourly quantity
MIMI	Multi-utility Integrated Meter Infrastructure project
mm	millimetre(s)
MP	medium pressure
MRP	market risk premium
NCRs	non-conformance reports
NECF	National Energy Customer Framework
NER	National Electricity Rules
NERL	National Energy Retail Law
NERR	National Energy Retail Rules
NGCF	National Gas Connections Framework
NGL	National Gas Law
NGO	National Gas Objective
NPV	net present value
NRCW	Non-routine capital works
NSP	Network Service Provider
NSW	New South Wales
O&M	operations and maintenance
OB	Opportunity Brief
opex	operating and maintenance expenditure

Abbreviation	Full term
p.a.	per annum
PFP	partial factor productivity
PJ	petajoule(s)
PLS	pressure limiting station
PM	preventative maintenance
PME	Primary Mains extension
PMP	Pipeline Management Plan
PMS	Pipeline Management System
POTS	package offtake station
PPI	partial performance indicators
PRS	primary regulating station
PTRM	post-tax revenue model
QA	quality assurance
RAB	regulatory asset base
RBA	Reserve Bank of Australia
RCW	Routine capital works
RE	random effects
RFM	roll-forward model
RIN	Regulatory Information Notice
RPP	revenue and pricing principles
RSA	Reference Services Agreement
Rules, the	National Gas Rules
SAIDI	System Average Interruption Duration Index
SAIFI	System Average Interruption Frequency Index
SAOPs	Safety and Operating Plans
SCADA	supervisory control and data acquisition
SL-CAPM	Sharpe-Linter Capital Asset Pricing Model
SRA	Security Risk Assessment
TAB	tax asset base
TFP	total factor productivity
TJ	terajoule(s)
Tribunal	Australian Competition Tribunal
TRS	trunk-receiving station

Abbreviation	Full term
TSS	Tariff Structures Statement
UAG	unaccounted-for gas
UNFT	Utilities Network Facilities Tax
VBM	Volume Medium Business medium business individually metered
VBS	small business individually metered tariff category
VRB	Volume Residential Boundary residential boundary-metered tariff category
VRG	Volume Residential Large Scale Generation
VRH	Volume Residential Individual (hot water and heating)
VRI	Volume Residential Individual residential individually metered
WACC	weighted-average cost of capital
WAPC	weighted-average price cap
WBH	water bath heater
WPI	Wage Price Index
ZNX(2)	ZNX (2) Pty Ltd