Dampier Bunbury Pipeline

Five year plan for the Dampier to Bunbury Natural Gas Pipeline

2021-2025
Draft Plan

Contents

We are Australian Gas Infrastructure Group. We provide natural gas transportation and other pipeline services for customers in Western Australia via the Dampier to Bunbury Natural Gas Pipeline (DBNGP).

Our services play a critical role in the Western Australian economy. Through the DBNGP we transport gas directly to mining, industrial, commercial and power generation customers. We also transport gas to distribution networks in Perth and other towns to provide energy to homes and businesses.

We understand that the safety, reliability and security of the pipeline are important for our customers, and to support economic prosperity in Western Australia.

With this in mind, our future plans are developed by ensuring we listen, understand and respond in the long term interests of our customers and stakeholders.

Foreword from the CEO

I am delighted to present our Draft Plan for the Dampier to Bunbury Natural Gas Pipeline (DBNGP) Access Arrangement (AA).

Our Draft Plan sets out our proposals for the AA period commencing 1 January 2021 (AA5). Our plans are designed to maintain the reliability, safety and sustainability of the pipeline.

Australian Gas Infrastructure Group (AGIG) is one of Australia's largest energy infrastructure businesses. In Western Australia the DBNGP is our key asset, delivering the majority of the gas used in the state. Our customers – gas shippers – play a fundamental role in the state's economy by generating electricity, producing and processing minerals, and providing natural gas to homes and businesses.

Over the current period (2016-2020, or AA4), we have maintained 100% reliability on the DBNGP – in fact we have required no curtailments of capacity for over 10 years. We have also maintained our strong safety record, and in 2018 sustained no recordable injuries on the DBNGP.

For the AA5 period (2021-2025) reliability and safety remain our focus, alongside managing our costs to produce a reasonable price.

Our Draft Plan includes a reduction in total expenditure (totex), from $671 million allowed in AA4 to $597 million in AA5. Revenue will also drop from $1,914 million determined for AA4 to $1,784 million for AA5.

Our plans also consider the future of the Western Australian energy system in which we play a critical role.

In the near term, increasing penetration of renewable energy into the South West Interconnected System (SWIS) is changing the way the DBNGP is used. We expect more volatility as we respond to the demands of gas-fired generation in the SWIS being used to match the peaks and troughs of renewable electricity production. For AA5, this leads in part to a forecast decrease in demand for capacity, but an increase in capacity utilisation.

In the long term, natural gas and the DBNGP have a strong future as part of a low carbon energy system. We provide reliable, low emissions energy to customers today. Our Draft Plan will ensure we continue this role into the future.

Our Draft Plan proposes a price of $1.40 per GJ. This represents a 6% price cut for many of our customers on negotiated prices and a 5% increase compared to the current reference price. This increase is the outcome of lower demand and lower costs. Nonetheless, the price of gas transportation on the DBNGP remains only 3% of the average residential gas bill for Western Australian consumers.

> **"We will deliver at or near 100% reliability for 11% lower costs and 7% lower revenues compared to those set for the current period."**

Our objectives are to develop a plan that delivers for current and future customers, is underpinned by effective stakeholder engagement, and is capable of being accepted by our customers and stakeholders.

This Draft Plan is a key part of our no surprises approach. I encourage customers and stakeholders to provide feedback so that it can be reflected in our Final Plan, which we will submit to the ERA by 1 January 2021.

Ben Wilson

Chief Executive Officer, AGIG

Delivering for Western Australia.

Lower revenue, lower costs, maintaining our strong safety, reliability and service performance.

7% ↓

$130 million cut in revenue means savings for our customers

11% ↓

Lower total expenditure

Delivering for customers

100%

reliability of the DBNGP

0

loss of containment of an energy source

>8 out of 10

customer satisfaction

A good employer

top quartile employee engagement

>98%

mandatory training compliance

further process safety improvements and a continued focus on achieving zero harm

Sustainably cost efficient

$74 m ↓

cut in expenditure

0.4 % ↓

finance costs down from 5.83% to 5.39%

supports the long term competitive position of DBNGP

Full Haul reference price of $1.40 per GJ (before inflation)

Glossary			
AA	Access Arrangement	GJ	Gigajoule/s
AA4	DBNGP Fourth Access Arrangement (for the period 2016-2020)	LTI	Lost Time Injury
AA5	DBNGP Fifth Access Arrangement (for the period 2021-2025)	MLV	Mainline Valve
ABS	Australian Bureau of Statistics	MRP	Market Risk Premium
AER	Australian Energy Regulator	NGL	National Gas Law
AGIG	Australian Gas Infrastructure Group	NGR	National Gas Rules
ALARP	As low as reasonably practicable	opex	Operating Expenditure
AMP	Asset Management Plan	PJ	Petajoule/s
BEP	Burrup Extension Pipeline	PMM	Project Management Methodology
capex	Capital Expenditure	PMO	Project Management Office
CESS	Capital Expenditure Sharing Scheme	PRC	Project Review Committee
CRS	Customer Reporting System	SCADA	Supervisory Control and Data Acquisition
DBNGP	Dampier to Bunbury Natural Gas Pipeline (used in reference to the pipeline)	SSC	Standard Shipper Contract
DBP	Dampier to Bunbury Pipeline (used in reference to the companies which own and operate the pipeline)	SUG	System Use Gas
DRP	Debt Risk Premium	SWIS	South West Interconnected System
EBSS	Efficiency Benefit Sharing Scheme	TAB	Tax Asset Base
ECI	Electrical Control and Instrumentation	TJ	Terajoule/s
ERA	Economic Regulation Authority	TRIFR	Total Recordable Injury Frequency Rate (the number of total recordable injuries per million hours worked)
FFO	Funds from operations	WPI	Wage Price Index
GEA	Gas Engine Alternator		

1 Plan highlights

Our Draft Plan outlines the activities and investments we propose to undertake for the AA5 period and the resulting price change for our customers.

IN THIS CHAPTER

We have a strong track record of safety, reliability and cost performance in AA4

Our investments in AA5 are designed to ensure we maintain this strong performance

We are proposing a $74 million cut in totex and $130 million lower revenue compared to AA4

Our Draft Plan is an important part of our stakeholder engagement program and will inform the Final Plan that we will submit to the ERA by 1 January 2020.

The following sections highlight how we have developed our plan, our achievements during AA4 and the key elements of our proposal for AA5.

1.1 Developing this plan

We have engaged directly with our customers and stakeholders to guide the development of this plan. Our process involved:

- talking to our customers and stakeholders about how they would like to be engaged and what topics were most important to them;
- holding a number of workshops with our customers, called Shipper Roundtables, to enable their direct input into all aspects of our plan; and
- keeping all other customers and stakeholders informed.

Our open and transparent approach is integral to making sure there are 'no surprises' for our customers and stakeholders and to achieve our objective of developing a plan capable of being accepted.

1.2 Our track record

Over the AA4 period we have met the high expectations of our customers and stakeholders, including meeting key safety and reliability standards set for our business.

Our vision is to continue to deliver quality services that our customers value, be recognised as a good employer and to remain sustainably cost efficient. During the AA4 period we have gone a long way to achieving that vision, and we aim to continue our progress during AA5.

Our key achievements during AA4 so far are summarised below.

Delivering for customers

- Consistent and strong reliability, with 100% system reliability, 99% compressor station availability and no curtailments.
- Zero tier 1 and tier 2 safety events, which means there have been no incidents of primary loss of containment of an energy source.
- Intelligent pigging (and in line inspections of unpiggable portions) of the entire DBNGP.
- Built standalone communications infrastructure for the southern section of the DBNGP.
- Significant renewals of metering equipment including installation of remote controls on shutdown valves at nine sites, over pressure protection at 21 sites, upgrades of a further eight odorant facilities to conform with new standards, and replacing 28 end-of-life flow computers.

A good employer

- Strong safety performance with only two lost time injuries in our workforce (at the time of publishing we have not had a lost time injury in over a year).

- Employee engagement in the top quartile for our industry.
- 98% of mandatory training delivered.
- Minor refurbishments of our offices and depot.
- Began our program to renovate/refurbish original compressor station accommodation (rather than building new accommodation as originally considered).

Sustainably cost efficient

- Totex of $597 million, $74 million below our allowances in AA4.
- Implemented robust and efficient cyber security systems.

1.3 What we will deliver

Our Draft Plan for AA5 builds on our strong performance over AA4. The activities and expenditure we propose to undertake in the next five years are summarised below.

Delivering for customers

- Maintaining our strong reliability while being more responsive to the peaks and troughs of renewable electricity generation.
- Deliver standalone communications infrastructure for the northern section of the DBNGP.
- Replace 25 obsolete control systems on compressor units and gas engines.
- Modernise the customer experience by improving customer IT interfaces.

A good employer

- Maintain strong health and safety performance.
- Maintain top quartile employee engagement.
- Redevelop our Jandakot depot to provide fit-for-purpose office and training spaces, weatherproof warehousing for critical equipment and spares, and improve site ingress/egress.

Sustainably cost efficient

- Deliver a $130 million reduction in revenue.
- Reduce totex by $74 million (11%) compared to allowed totex in AA4, while delivering prudent and efficient asset and risk management.
- Investing in our IT systems, data management, digital capabilities and cyber resilience.

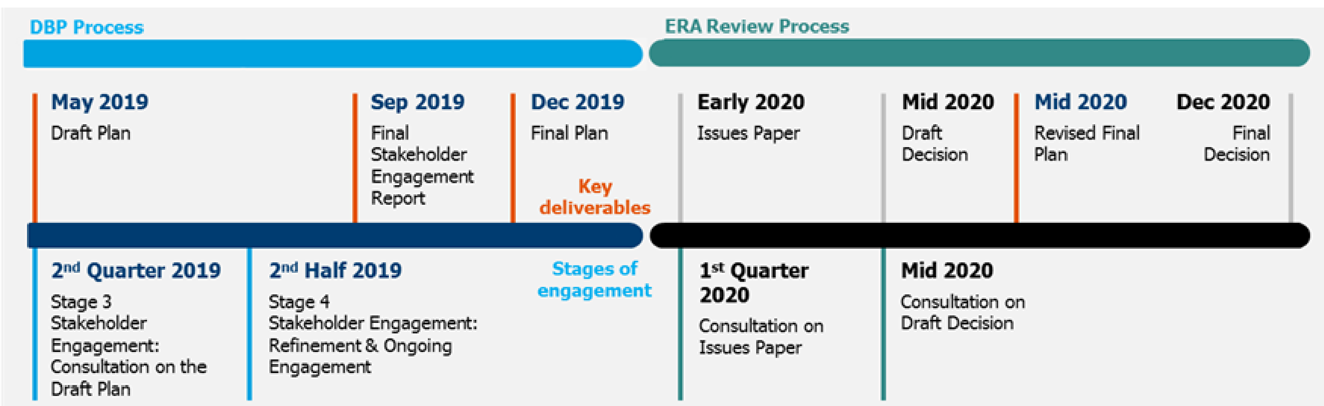
Our Draft Plan puts in place the measures necessary to minimise our prices. We will reduce totex by $74 million (11%) compared to that allowed in AA4, and revenue by $130 million (7%). Nonetheless, we expect demand for Full Haul capacity to decline, putting upward pressure on prices.

Our proposed price of $1.40 per GJ (before inflation) reflects our ability to lower costs while managing changes to demand and still delivering the safe and reliable service our customers value.

1.4 Our review timeline

Figure 1.1 sets out the AA review timeline. It includes our process and an estimated timeline for the ERA's review process, and highlights dates for key deliverables and stages of engagement.

Figure 1.1: The AA review timeline



Purpose of this plan

Regulatory framework

The National Gas Law (NGL) and National Gas Rules (NGR) provide the framework for the regulation of certain gas pipelines in Australia.

In Western Australia, the Economic Regulation Authority (ERA) is responsible for regulation under the NGL and NGR framework, including the approval of AA proposals and revisions every five years.

The AA contains our reference services and the terms and conditions under which a third party can gain access to the DBNGP.

This includes:

- the price paid for services; and
- the non-price terms under which access will be provided.

The terms and conditions approved through an AA set a framework around which pipeline operators like AGIG and shippers can negotiate access to meet customers' needs. We often work with our customers to reach agreements that provide more tailored access and services on the pipeline outside the regulated process.

Our review objectives

Our aim is to develop a plan that:

✓ delivers for current and future customers;

✓ is underpinned by effective stakeholder engagement; and

✓ is capable of being accepted by our customers and stakeholders.

This Draft Plan sets out our plans for the DBNGP for the five-year period commencing 1 January 2021. Our Draft Plan is a new initiative for DBP and is an important part of our stakeholder engagement program. It will inform our Final Plan, which we are required to submit to the ERA by 1 January 2020.

This Draft Plan provides our preliminary views on the activities and expenditure we propose to undertake during AA5, incorporating feedback received to date from our customers and stakeholders. We also provide an indication of the likely change in prices for our customers.

After the opportunity to comment on the Draft Plan, our customers and stakeholders will also have further opportunity to engage with us leading up to the development of our Final Plan. The ERA will also engage with stakeholders through its own engagement process.

How to read this plan

The first six chapters of this document provide an overview of our plans, our business, our stakeholders, our pipeline services and the process we are working through to develop a plan that meets our vision.

We then step through each of the building blocks that form our required revenue and prices. These are:

- *Operating expenditure* – the expenditure we require to run our business day to day (Chapter 7);
- *Capital expenditure* – the amount of investment in our asset required to deliver services to our customers (Chapter 8);
- *Our capital base* – the total depreciated value of our investment in our asset which we need to finance (Chapter 9);
- *Financing costs* – the cost of financing our capital base and meeting our tax obligations (Chapter 10);
- *Demand forecasts* – the total amount of services we forecast our customers will demand over the period (Chapter 11); and
- *Incentive arrangements* – additional rewards and penalties that we consider should be applied to strengthen our efficiency and performance, while promoting the long-term interests of our customers (Chapter 12).

In the last two chapters, we outline how we have calculated the total revenue required, the resulting prices for our services and the next steps in the process as we look to finalise our plans and submit our Final Plan to the ERA before 1 January 2020.

All numbers quoted are dollars of December 2020, unless otherwise labelled.

Next steps

We encourage our customers and stakeholders to provide feedback on this Draft Plan. Feedback is welcome on any and all topics relating to our prices and the services that we intend to provide over AA5. Your feedback is a key part in achieving our objective of submitting a Final Plan that delivers for our customers and is capable of being accepted.

To guide you, at the end of each section we have highlighted key questions/issues on which we are seeking your feedback. A full list of the questions posed is also provided at the end of this document.

We are seeking your feedback by 28 June 2019.

There are a number of ways you can provide your feedback.

online at www.dbp.net.au

by emailing haveyoursay@agig.com.au

by mail

in person

Contact information is provided on the back cover of this document.


MAINLINE GAS

2 Our business

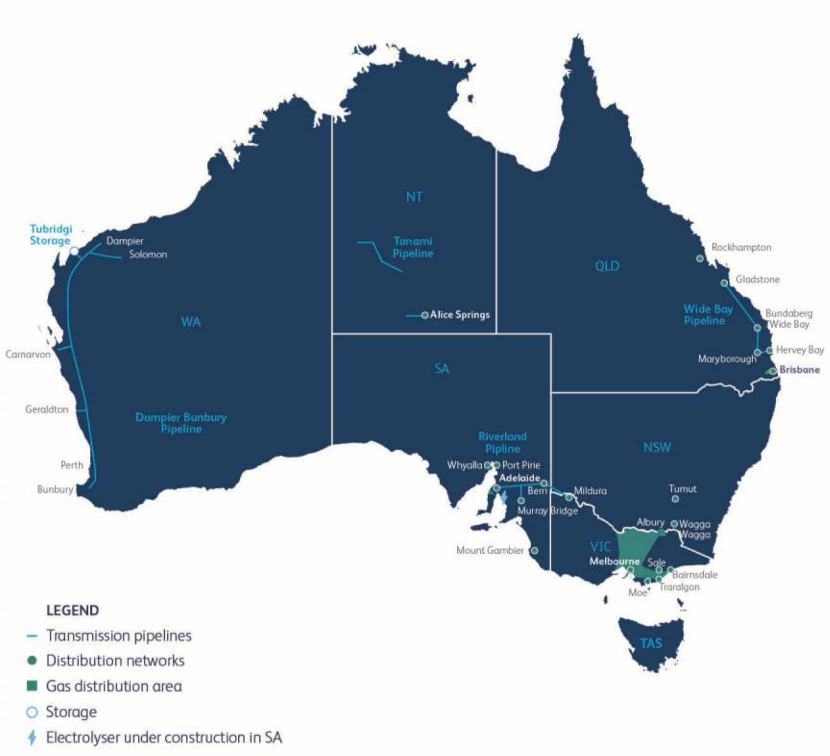
More than 90% of the gas used in Western Australia is transported via the DBNGP. [1]

IN THIS CHAPTER

- **We are one of Australia's largest gas infrastructure businesses**
- **Our vision and values drive what we do and the way we do it**
- **The way customers have used the DBNGP has changed over time and will continue to develop as part of a low carbon future**

DBP, the owner and operator of the DBNGP, is part of the Australian Gas Infrastructure Group (AGIG), one of the largest gas infrastructure businesses in Australia.

Figure 2.1: AGIG assets and operations



2.1 About AGIG

AGIG serves over two million customers across every mainland state and the Northern Territory. Our assets include around 34,000km of distribution networks, over 4,000km of transmission pipelines and 42PJ of storage capacity.

In Western Australia, we own and operate critical assets that deliver and store the gas that supports the state's economy. This includes the DBNGP, which transports natural gas from production facilities in the state's north west to industries, businesses and customers all along the west coast. The DBNGP supplies gas-fired electricity generators, which provide around 33% of electricity in the SWIS,[2] Western Australia's primary power system.

[1] AGIG calculation, based on Department of the Environment and Energy 2018, *Australian Energy Update 2018.* Excludes gas consumed in Western Australia to produce gas for export.
[2] AEMO data and Public Utilities Office modelling, March 2019.

2.2 Our vision

Our vision is to be the leading gas infrastructure business in Australia. Our definition of leading is to achieve top quartile performance compared to other Australian gas infrastructure businesses across all our key targets.

To help achieve this vision, we have set ourselves the following objectives, which we believe are consistent with being the leading natural gas infrastructure business in Australia.

- *Delivering for customers* – this means ensuring public safety and the provision of high levels of reliability and customer service.
- *A good employer* – this means ensuring the health and safety of our employees and contractors, and having an engaged and skilled workforce.
- *Sustainably cost efficient* – this means getting the work done within benchmark levels by continually looking for ways to improve cost of service, pursuing growth, and ensuring we are environmentally and socially responsible in the way we provide services.

The activities and investments in this Draft Plan are designed to achieve these objectives and we discuss our plans in the context of these objectives in the chapters that follow.

2.3 Our values

Our values of respect, trust, perform and one team drive our culture, how we behave and how we make decisions. As owners and operators of critical infrastructure providing essential services to Australians, we must ensure we act with integrity and do the right thing for current and future generations.

2.4 Our customer aspirations

As part of our review of future plans for the DBNGP, we worked with our shippers to develop customer experience aspirations, which outline ideals for our customer engagement. These are listed in Figure 2.2, and will continue to be an important part of the customer experience we provide.

2.5 Zero Harm

Maintaining the safety of our workforce and the public is always front and centre in all of our activities. When developing our Draft Plan and the work programs that underpin it, our aim is to do everything we can to meet the requirements of our safety case and asset management strategies.

We are continually striving to achieve Zero Harm and have comprehensive health and safety policies, procedures and training that support this.

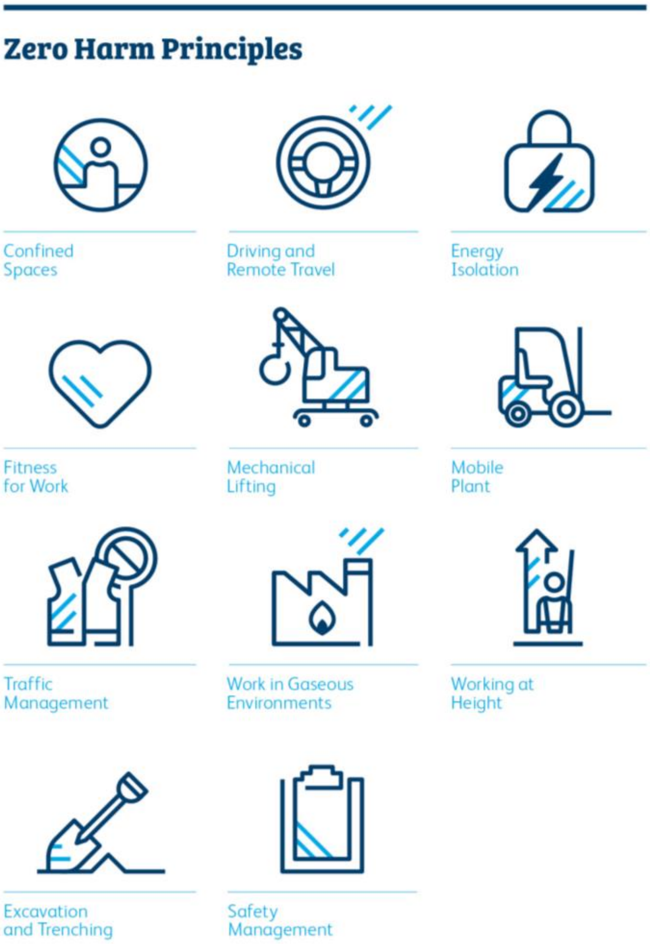
Our Zero Harm Principles (shown in Figure 2.3) highlight areas of risk in our operations where we have 'non-negotiable' rules for our staff and contractors to follow. These are essential to keep our workforce and the public safe. They also help us create a strong safety culture where every employee is personally committed to managing health and safety.

Figure 2.2: Our customer aspirations

Our Customer Aspirations

- We are trusted
- We are professional in our commercial negotiations
- We provide highly reliable services at a sustainable cost
- We work together in partnership with businesses
- We are quick to respond
- We are innovative and drive a future focus in our offerings
- We are open for business 24/7

Figure 2.3: Our Zero Harm Principles

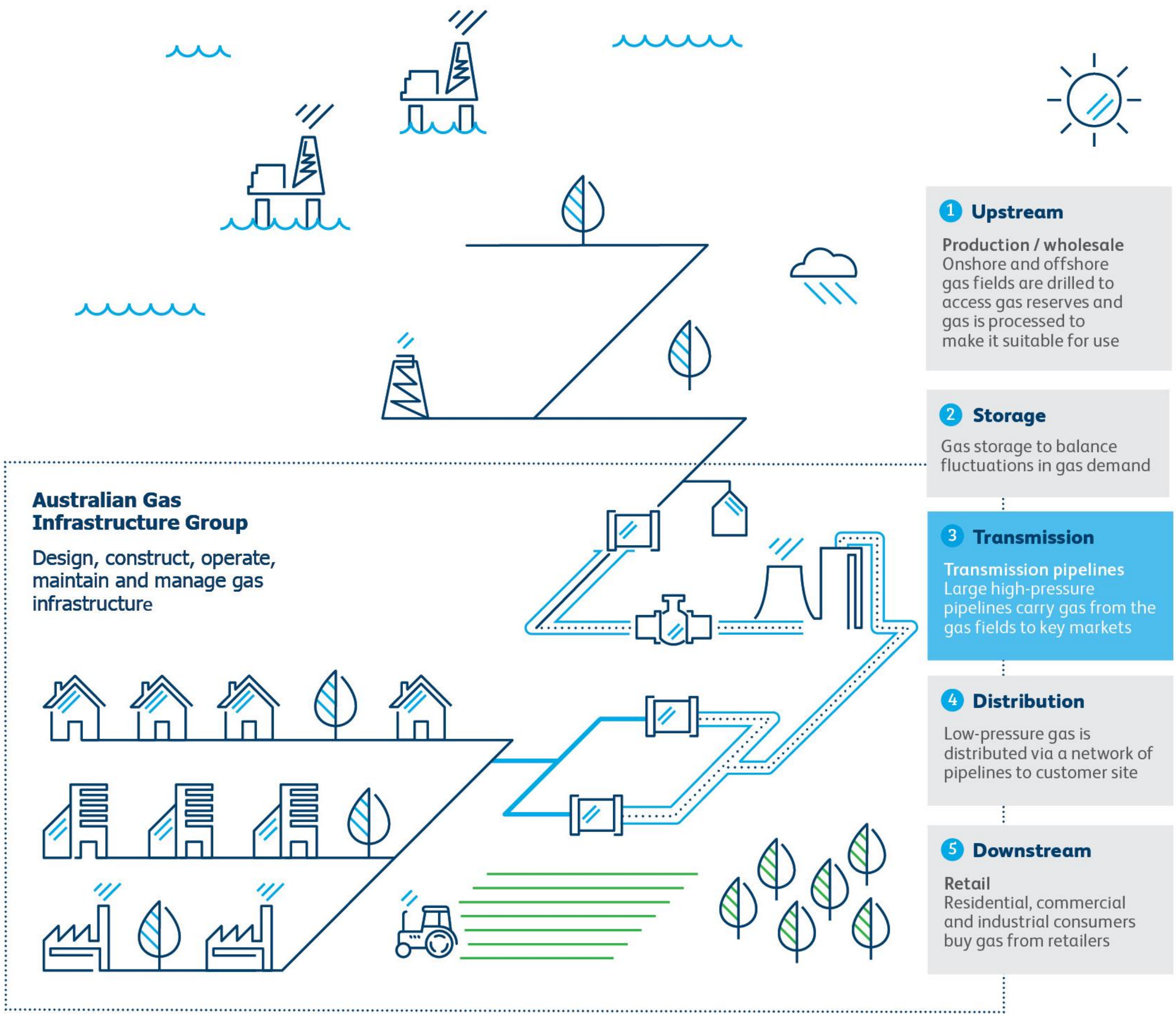


2.6 The gas supply chain

AGIG owns and operates gas infrastructure, including transmission pipelines, distribution networks and gas storage facilities across Australia. Our assets play an important role in the safe and reliable supply of gas to customers at various parts of the gas supply chain. Key components of the gas supply chain are illustrated in Figure 2.4 and include upstream, transmission, distribution, storage and downstream.

The DBNGP transmission pipeline carries gas for our customers (shippers) from production facilities in the north-west of Western Australia to the major load centres in the south of the state and around Perth. Over 90% of gas transported through the DBNGP is delivered to large customers connected to the pipeline. The remainder is delivered to Perth's gas distribution network owned by ATCO Gas Australia, which in turn delivers the gas to homes and business. Their customers are billed by a retailer of their choice. For small businesses and householders in Perth, only 3% of the total retail gas bill is a result of our transmission costs.

Figure 2.4: The gas supply chain



2.7 Our role in Western Australia

Western Australia is the most energy and gas dependent economy in Australia with natural gas contributing up to 50% of primary energy usage, and natural gas fuelling approximately 50% of the state's electricity generation.

Our customers receive gas transportation and other services from us. It is our job to transport large quantities of gas safely and reliably every day.

The DBNGP transports the vast majority of Western Australia's gas and is therefore critical to the state's economy.

One of the largest capacity natural gas pipelines in Australia, the pipeline stretches almost 1,600km, linking the gas fields located in the state's north-west directly to mining, industrial, and commercial customers, and ultimately via distribution networks (not owned by AGIG) to residential customers in Perth.

Figure 2.5: The Dampier to Bunbury Natural Gas Pipeline

2.8 About the DBNGP

Since 1985, the DBNGP has transported large quantities of gas safely and reliably to provide energy for industry, power generation, homes and businesses in Western Australia. Figure 2.6 shows the gas transported by industry in 2018.

We deliver leading operational performance with 100% system reliability and 99% compressor station availability in 2018, and no curtailments in the past ten years.

Figure 2.7 outlines the development of the DBNGP since its construction in 1984. From 2006 to 2010 the pipeline underwent significant expansion. Since 2011 a number of new sources of supply have come online and energy markets have begun a significant transition. Over AA5 we will see further changes in demand for natural gas, and the way the DBNGP is used, as more wind and solar generation enters the market, becoming a viable and commercial competitor to natural gas supply.

Figure 2.6: Industries receiving gas via the DBNGP in 2018 (total 370PJ)

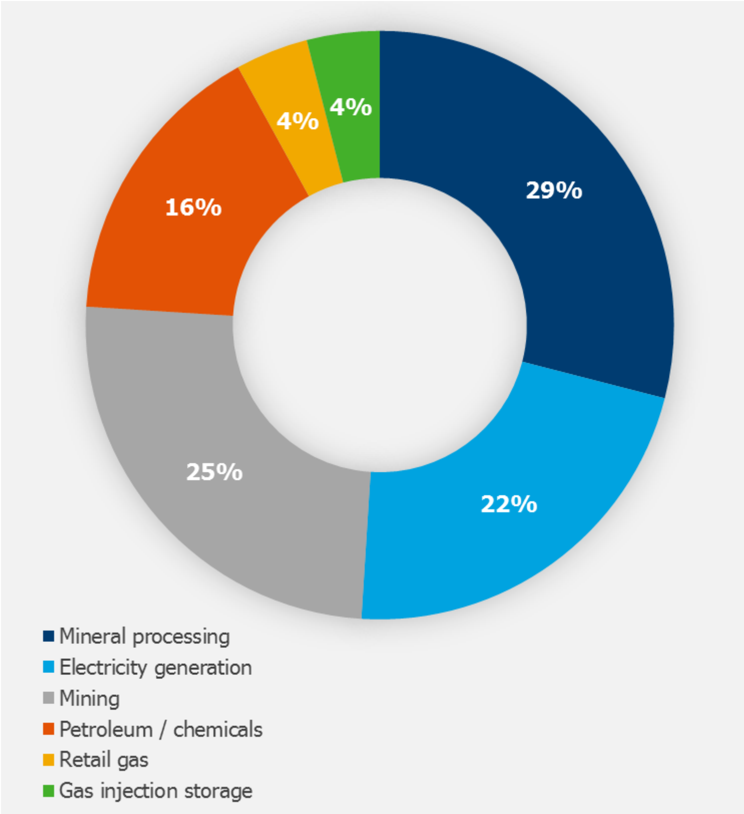
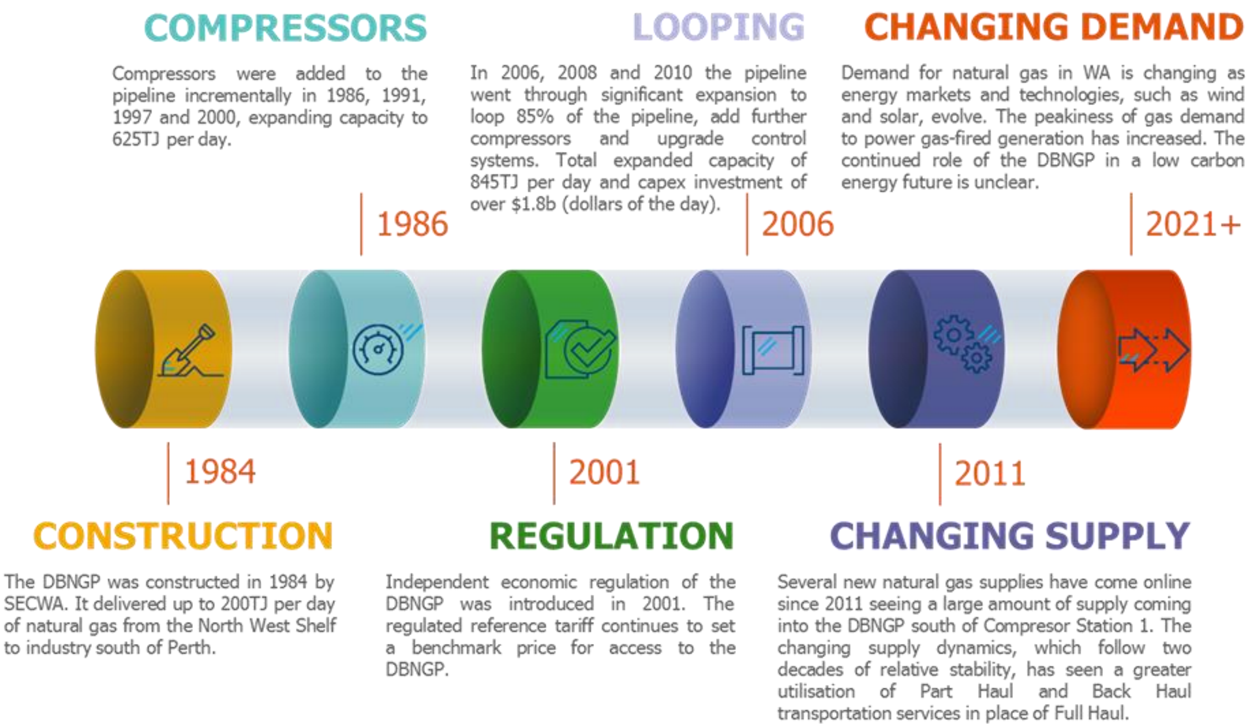


Figure 2.7: History of the DBNGP



3 Our track record

IN THIS CHAPTER

Safety – strong public and workforce safety performance, with a continued focus on our Zero Harm Principles

Reliability – 100% system reliability, 98% service availability and no curtailments

Efficiency – below forecast totex

During AA4 (2016-2020) we have maintained the reliability of the DBNGP and the safety of our assets and our workforce. We have done this with lower totex compared to the approved forecasts.

Throughout AA4 we have been working towards achieving our vision of being the leading gas infrastructure business in Australia.

We have done this by reducing our opex, investing in our asset prudently and maintaining our strong safety and reliability performance.

Our activities throughout AA4 have been guided by our key objectives of delivering for customers, being a good employer and remaining sustainably cost efficient. Figure 3.1 below summarises our performance in AA4 to date against our vision.

Figure 3.1: Our performance against our vision in AA4 (2016 to date, with forecast performance to the end of the period)

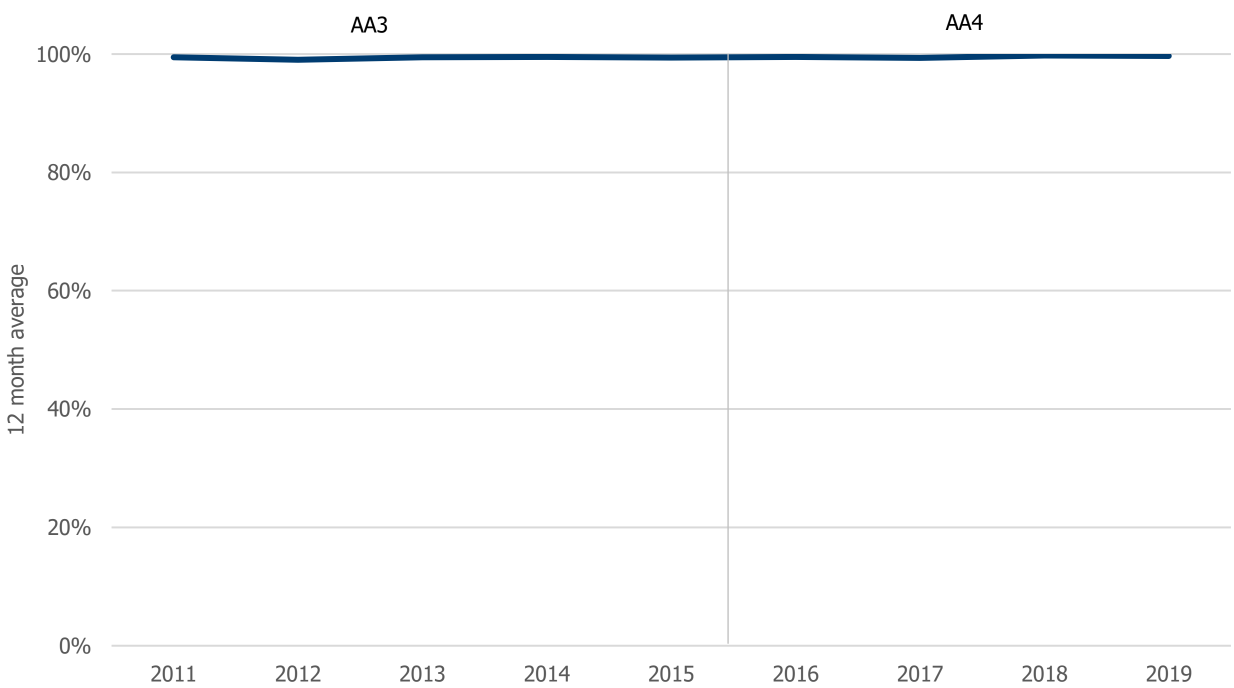
Vision	Which means	Our performance 2016 to date
Delivering for customers	• Public safety • Reliability • Customer service	• We have had no primary losses of containment and have introduced a new index for monitoring process safety • We have maintained system reliability at 100% and no curtailments of supply to our customers • For the first time we are undertaking a robust customer engagement program, led by our Shipper Roundtables • We launched our annual customer survey in 2018 with all respondents satisfied to very satisfied our services meet their needs
A good employer	• Health & Safety • Employee engagement • Skills development	• Our annual average Total Recordable Injury Frequency Rate (TRIFR) is 5.3 • We undertook our first employee engagement survey in 2017 with a score of 65% and improved our score to 70% in 2018, which sits in the top quartile of our comparison organisations
Sustainably cost efficient	• Working within industry benchmarks • Delivering profitable growth • Environmentally and socially responsible	• We forecast totex (opex and capex combined) of $597 million across AA4, which is $74 million below the approved forecasts • We have remained within our established emissions benchmark • We had zero reportable environmental incidents

3.1 Delivering for customers

During the AA4 period we have maintained the strong safety, reliability and service performance our customers value. To date, we have:

- maintained public safety with zero incidents of primary loss of containment of an energy source;
- achieved 100% system reliability, maintaining an exceptionally high standard throughout the period (Figure 3.2);
- launched our annual customer survey and have set ourselves a target score of >8 out of 10, which we will report against from 2019; and
- invested $88 million in capex projects (forecast by the end of the period) to maintain services to customers including:
  - building standalone communications infrastructure for the southern section of the pipeline;
  - intelligent pigging (and in line inspections for unpiggable portions) of the entire length of the DBNGP; and
  - significant renewals of metering equipment including installation of remote controls on shutdown valves at nine sites, over pressure protection at 21 sites, upgrades of a further eight odorant facilities to conform with new standards and replacing 28 end-of-life flow computers.

Figure 3.2: DBNGP average reliability of all ten compressor stations 2011 to April 2019



3.2 A good employer

During the AA4 period we have continued to be a good employer. To date we have:

- maintained our strong safety performance with an average total recordable injury frequency rate (TRIFR) of 5.3 per annum and just one lost time injury (LTI) up to March 2019 – we are working towards a target of zero, in line with our Zero Harm Principles (Figure 3.3);
- improved employee engagement results, and are now in the top quartile amongst our comparison group of organisations; and
- invested $23 million on capex projects (forecast by the end of the period) to help improve our employee safety and wellbeing including:
    - upgrades to ladders, platforms, fall protection, gates and railing to improve the safety of employees and contractors working at heights;
    - commencing refurbishment of our compressor station accommodation for our remote field staff; and
    - minor refurbishments of our Esplanade office and Jandakot depot.

New index for process safety

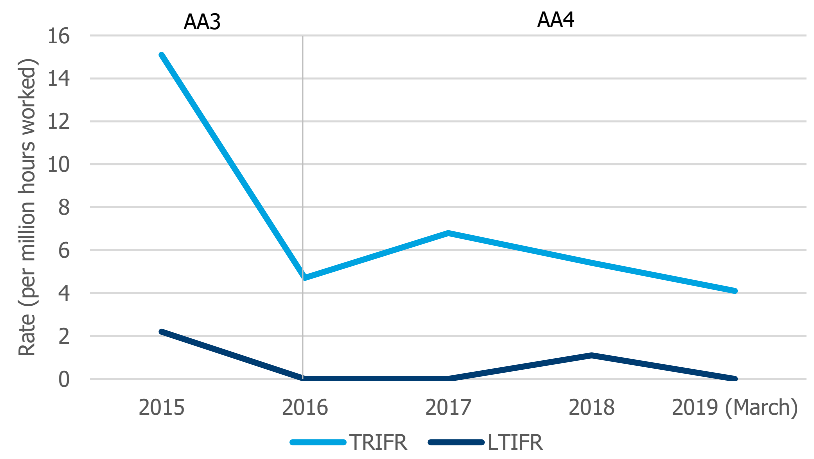
During AA4 we have introduced a new index for monitoring process safety.

In the first stage the index has tracked tier 1 and tier 2 safety events. These are events which include a primary loss of containment of an energy source. We have had no tier 1 or tier 2 events.

In 2019, as part of a second stage, we have begun tracking tier 3 and tier 4 events. These are leading indicators that help to pre-empt any tier 1 and 2 events, enabling action to prevent more serious incidents.

This new index further improves our ability to maintain public safety and the safety of our workforce.

Figure 3.3: DBNGP safety performance



3.3 Sustainably cost efficient

We have focussed on being sustainably cost efficient. By the end of the AA4 period we forecast we will have:

- incurred $475 million in opex which is below our allowance of $557 million, and includes ongoing annual savings of around $7 million reflecting changes in our business structure as a result of coming together as AGIG in 2017 (Figure 3.4); and
- invested $122 million of stay-in-business capex, which is $14 million above our allowance in AA4, partly offset by lower expansion capex which is $5 million below our allowance (Figure 3.5). We have invested prudently to ensure the integrity of our assets. Specifically, we have:
  - invested in cyber security to protect our systems against the increasing threat levels and built a strong cyber security culture to ensure we remain resilient; and
  - extended, improved, replaced and retired assets in line with our asset management plans and Safety Case.

Figure 3.4: Total opex in AA4

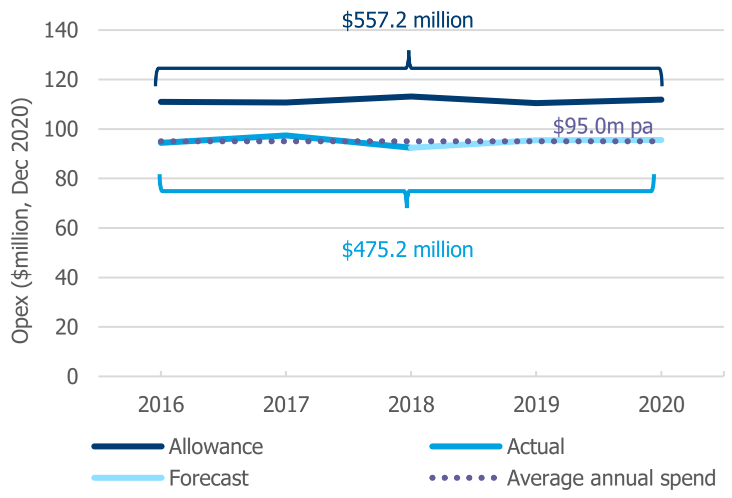
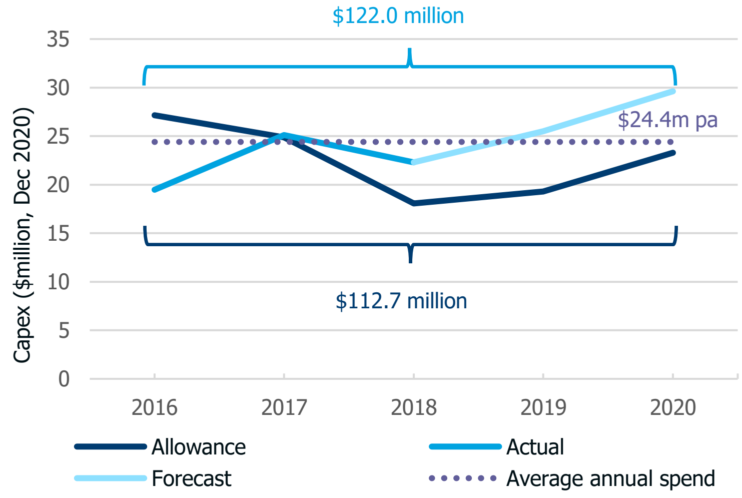


Figure 3.5: Total capex in AA4



4 What we will deliver

IN THIS CHAPTER

We will continue to deliver services that customers value

We will maintain our strong safety and reliability performance, while incurring less totex than in AA4

We will recover $130 million (7%) less revenue than in AA4

We will continue to deliver a safe and reliable natural gas supply for Western Australia. We will be a good employer and seek opportunities to remain cost efficient and to play an important role in a low carbon economy.

During AA5 our investments and activities will continue to be guided by our vision and the objectives that underpin that vision.

Figure 4.1 below outlines our performance targets for the AA5 period.

Figure 4.1: Our performance targets in AA5

Vision	Which means	2021 to 2025 Target
Delivering for customers	• Public safety • Reliability • Customer service	• Maintain leading public safety performance through zero primary loss of containment on the DBNGP • Maintain system reliability at or near 100% meaning no curtailments of supply to our customers • Improve our customer survey results over the period • Inform our plans through ongoing engagement with our customers
A good employer	• Health & Safety • Employee engagement • Skills development	• Continued focus on achieving zero harm by driving Lost Time Injuries (LTIs) and our Total Recordable Injury Frequency Rate (TRIFR) toward zero • Maintain top quartile employee engagement to ensure our workforce remains customer and safety focused • Maintain compliance with mandatory training requirements above 98%
Sustainably cost efficient	• Working within industry benchmarks • Delivering profitable growth • Environmentally and socially responsible	• Maintaining our service levels while reducing our costs • Deliver our expenditure programs within allowances • Improve and strengthen our incentives for efficiency and innovation • Operate within our established emissions benchmarks and position the DBNGP to serve customers into the future as the emissions intensity of the Western Australian energy supply decreases • Continue to deliver zero reportable environmental incidents

4.1 Overview

Our Draft Plan proposes to maintain the strong performance we have delivered in AA4, even with a proposed $130 million (7%) drop in the revenue we will recover in AA5.

Our plans support our vision to be the leading gas infrastructure business in Australia by achieving top quartile performance on our targets.

We are also responding to changes in the energy sector by planning for the long-term use of our assets in a carbon-constrained economy.

Engagement insights

- ✓ Our stakeholders place a high value on current levels of reliability.
- ✓ Reliability and price are two of the most important considerations for customers.
- ✓ Maintaining a strong focus on operational issues is important for reliability and emergency management.

4.2 Delivering for customers

Delivering for customers means maintaining our record of public safety and continuing to provide reliable and high-quality services that our customers value.

Our customers expect strong reliability from our services, which is more challenging as the energy sector changes. Increasing penetration of renewable electricity into the SWIS is changing the way the DBNGP is used. We expect more volatility as we respond to the demands of gas-fired generation in the SWIS being used to match the peaks and troughs of renewable electricity production. This makes achieving 100% reliability more challenging than it has been in the past. Our plans respond to these developments to ensure we continue to meet customer expectations for reliability.

As per the activities and investments proposed in our Draft Plan, during the AA5 period we will deliver for our customers by:

- reducing revenue by 7% compared to AA4 helping to minimise our prices;
- offering a Full Haul reference price of $1.40 per GJ (before inflation), a 5% increase compared to the current reference price and 6% below our negotiated prices;
- maintaining our public safety performance with no loss of primary containment of an energy source;
- maintaining the reliability of the DBNGP at or near 100%;
- continuing to offer Full Haul, Part Haul and Back Haul reference services consistent with feedback from our shippers;
- continuing to agree bespoke non-reference services that best suit our customers' needs;
- continuing to provide responsive and efficient field works, asset maintenance and customer service; and
- investing $121 million in capex projects, which will include safety and reliability initiatives such as:
  - replacement of the obsolete northern communications network;
  - replacement of a number of obsolete control systems; and
  - undertaking continuing programs of work such as dry gas seal and valve replacements, hardware and software upgrades and cathodic protection.

4.3 A good employer

To be a good employer we focus on the health and safety of our employees, employee engagement and the skills of our workforce. In AA4 we demonstrated strong performance in all three areas and our Draft Plan maintains this performance.

We will be a good employer by:

- targeting zero harm;
- continuing ongoing health and safety initiatives such as undertaking audits, reporting and investigating incidents, and providing employee training;
- maintaining employee engagement scores in the top quartile of our industry;
- investing $22 million on capex projects including:
  - redevelopment of our Jandakot depot; and
  - renovations to remote accommodation.

4.4 Sustainably cost efficient

To be sustainably cost efficient our Draft Plan focuses on meeting industry benchmarks, delivering profitable growth, and being environmentally and socially responsible.

Figure 4.2 summarises the regulatory building blocks, demand and price in AA4 and AA5. We will deliver lower costs compared to AA4, even while facing a number of upward cost pressures such as IT support and field expenses.

Our Draft Plan is sustainably cost efficient as it:

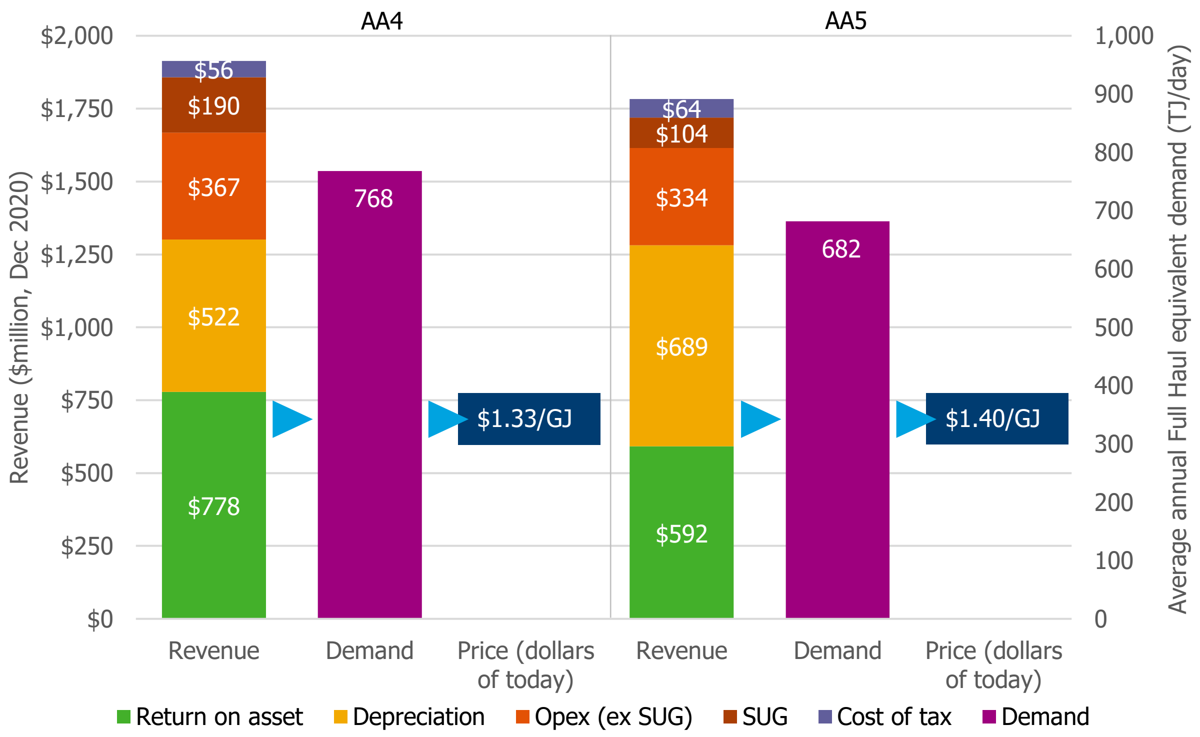
- proposes an opex reduction of $37 million (8%) compared to our actual opex in AA4, while maintaining at or near 100% system reliability of the pipeline;
- delivers a capex program which is prudent, efficient, in line with good industry practice and appropriately balances our costs and risks over time;
- proposes $16 million in capex projects including increased investment in cyber security, data management, digital capabilities and modernising our IT systems;
- sets current asset lives consistent with industry practice;
- aligns the recovery profile of the loop line to ensure it is consistent with the economic life of the DBNGP;
- calculates financing costs consistent with the ERA's Final Rate of Return Guidelines;
- is based on a robust analysis of the forecast demand for our reference services as informed through engagement with our shippers;
- strengthens our incentives to incur efficient opex by proposing the introduction of an efficiency benefit sharing scheme (EBSS) and considers stronger incentives to invest in innovation through an innovation scheme;
- proposes total revenue in AA5 that is $130 million (7%) lower than total revenue in AA4; and
- proposes to recover revenues from our Full, Part and Back Haul reference services consistent with the current approach supported by our customers.

To aid the engagement process, we would welcome your response to the following question:

Question for consideration

Do you have any feedback on our targets for AA5, including whether our targets are consistent with feedback received through our stakeholder engagement program so far?

Figure 4.2: Summary of regulatory building blocks, demand and price in AA4 and AA5



Our engagement program has been well received by customers and stakeholders. Participation and attendance at Shipper Roundtable meetings was excellent with at least 80% of customers represented at meetings.

5 Customer and stakeholder engagement

We actively engaged with our customers and stakeholders to inform and shape our Draft Plan, adopting a no surprises approach.

IN THIS CHAPTER

- **We engaged with our customers and stakeholders to understand how they wanted to be involved in the development of our plans**
- **A series of Shipper Roundtable meetings provided a two-way dialogue with our customers on the development of our plans**

We have adopted a staged approach to our engagement program. A key aspect was a series of Shipper Roundtable meetings to explain and receive feedback from our customers on our plans.

This section explains our stakeholder engagement program and how it has influenced our plans for AA5.

5.1 Overview

Stakeholder engagement is embedded in our everyday planning processes.

We are open and transparent, and we encourage customers and stakeholders to be involved in shaping the future of the DBNGP.

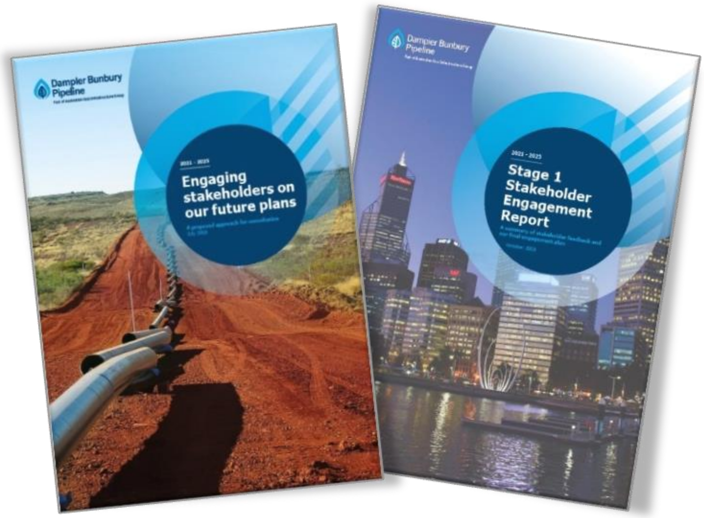
The engagement that informs this Draft Plan began in July 2018, when we published *Engaging stakeholders on our future plans*. The paper outlined our proposed approach to engaging with customers and stakeholders when developing our plans. In this document we asked for feedback on the most important aspects of our service, and issues we should be considering in our future planning for the pipeline.

Our customers told us they place value on reliability and price, noting that for many customers gas is a critical input into their business operations.

Other topics of interest included opportunities to improve the customer experience, transparency of products and services, and flexibility of solutions for customers in the future. Many stakeholders noted the rapid changes taking place in the energy industry, particularly the focus on renewable electricity to decarbonise energy supplies. With increased diversity of energy sources, some stakeholders were uncertain about the future role of gas in a low emission energy future.

Key insights from this early engagement enabled us to focus on the topics of interest to customers in subsequent engagement activities.

We also sought feedback on our proposed engagement strategy, including our proposed approach to stakeholder engagement, identification of key stakeholders, proposed engagement activities and timeline.



Feedback was used to inform our final engagement strategy – ensuring our activities were appropriate and allowed meaningful engagement.

In September 2018 we published our Stage 1 Report, which summarised key insights from our early engagement and documented our final engagement plan.

In October 2018 we continued to the next stage of our engagement program, namely a series of Shipper Roundtable meetings.

The Shipper Roundtable was established to consider and advise on key topics and issues of interest. The Shipper Roundtable meetings were facilitated by an independent third party (KPMG). Through a series of meetings, we consulted with customers on topics including:

- our pipeline services;
- customer experience and flexible solutions;
- our price structure;
- our capex and opex proposals;
- demand forecast;
- rate of return;
- incentives;
- setting our capital base; and
- our role in future energy models.

Feedback has been captured and used to shape and refine our Draft Plan. A summary of feedback and how it has informed our plan is included in this chapter.

We will consult further on our Draft Plan with customers and stakeholders in May and June 2019. This Draft Plan is published on the DBP website and open for submissions and feedback. Visit www.dbp.net.au/the-pipeline/stakeholder-engagement.

5.2 Our stakeholders

There are a variety of stakeholders who have an interest in our transmission business. Our key stakeholder groups represent our customers, other pipelines connected to the DBNGP and other businesses in the gas supply chain. Government departments and agencies are also key stakeholders, recognising the DBNGP's importance to Western Australia's energy security.

We initially identified gas consumers (residents and small businesses) as a stakeholder group. However, consumer representative groups indicated low interest given the minimal direct impact of our activities on consumer bills. For residential gas consumers in Western Australia, transmission costs make up around 3% of the gas bill.

It was also noted that the gas distributor, ATCO Gas, had recently conducted a stakeholder engagement program focussed on residential and small businesses.

Our key stakeholder groups are illustrated in Figure 5.1.

Figure 5.1: Our stakeholders

5.3 Our approach to stakeholder engagement

We have adopted a four-stage approach to engage and involve customers in our planning process, as illustrated below in Figure 5.1.

Stage 1: Strategy and Research

The aim of Stage 1 was to better understand customer and stakeholder needs and expectations. It included consultation on our proposed engagement strategy. This was important to ensure we engaged in a way that customers and stakeholders were comfortable with, and that allowed meaningful participation.

We sought to understand what is important to our customers and stakeholders – and what topics they wanted to be engaged on. Upon concluding Stage 1 we released a report summarising customer and stakeholder feedback, and our final engagement strategy.

Stage 2: Developing our Draft Plan

In Stage 2 we used the insights from Stage 1 to inform the drafting of our plans. Stage 2 included targeted engagement activities on our investment proposals and regulatory modelling. In this stage we ran a series of Shipper Roundtable meetings, consulting on key topics to guide our thinking and shape this Draft Plan.

Stage 3: Consultation on our Draft Plan

Stage 3 commences with the release of this Draft Plan. In Stage 3 we will consult on this Draft Plan and engage with customers and stakeholders through a series of workshops and meetings to ensure our plans reflect what they have told us. Most importantly, we aim to test that the activities and investments in our Draft Plan will deliver services our current and future customers value, and that our proposal for the AA5 period is capable of being accepted.

Stage 4: Refinement and Ongoing Engagement

Feedback from Stage 3 will be used to inform our Final Plan that we will provide to the ERA by 1 January 2020. We will continue our engagement efforts after we submit, to ensure we keep our customers and stakeholders informed as we adjust our plans. As part of our Final Plan we will include a final engagement report summarising all customer and stakeholder engagement feedback and input across all four stages of our engagement program.

The following sections summarise insights from Stage 1 and 2 of our engagement program to date.

5.4 Stage 1 – Strategy and research

Between July and September 2018 we undertook a number of engagement activities to better understand our stakeholders' preferences for engagement and to identify key issues.

5.4.1 Activities

We sent our draft engagement strategy to all key stakeholders and made the document publicly available on the DBP website in July.

We contacted 23 shippers, gas marketers and producers, nine Government agencies and departments, seven consumer representative groups, two gas trading agents and one gas distributor.

In August and September 2018, we met stakeholders to discuss our proposed approach and explore key issues. We held one-on-one consultation meetings with 17 customers and stakeholders.

All meetings were documented, summarised and used to guide our final engagement strategy, including topics for engagement.

Figure 5.1: Our four staged approach to engagement

At the completion of Stage 1 we released our final engagement strategy; *Stage 1 Stakeholder Engagement Report*.

5.4.2 Capturing key insights

During stakeholder meetings we facilitated discussion around three consultation questions.

- What are the most important aspects of our services?
- What issues should we be considering in our future planning for the pipeline?
- What aspects of our future plans would you like to engage on?

A summary of key insights is captured in Table 5.1.

We also tested our proposed engagement approach with stakeholders, covering key topics such as:

- our engagement approach and stakeholder engagement principles;
- our identification of key stakeholder groups;
- our proposed engagement activities; and
- our timeline of engagement activities and reporting.

Table 5.1: Summary of Stage 1 key insights

Delivering for customers today	Delivering for customers in the future
Reliable services	Future energy models
• **Reliability** - Our stakeholders place a high value on the current levels of reliability • **Price** - Reliability and price are two of the most important considerations for customers and are often raised together • **Critical for business operations** - Some businesses receiving gas via the pipeline are highly reliant on gas as an input into their business operations • **Operational maintenance** - It was noted that maintaining a strong focus on operational issues is important for both reliability and emergency management	• **Uncertainty** - Many stakeholders noted the rapid changes to the energy industry with a focus on renewables to decarbonise energy supply, in particular that they were uncertain about the future role of gas and the DBNGP more specifically • **Changes to the energy mix** - It was noted the diversity of energy sources and an increase in renewables is creating change for energy models which is impacting on infrastructure operation and planning (e.g. peakiness of the system) • **Renewables** - The future of renewables was a topic of interest, including the potential role hydrogen and biogas may play in the future
Customer experience	Flexible solutions
• **Relationship management** - Our customers value the relationship they have with us and how it is managed by our staff • **Transparency around types of services available** - Customers would like more transparency of products and services that are available • **Pro-active service offerings** - Some customers indicated that we could be more pro-active in offering service improvements as opposed to responding to requests • **Enhanced service experience** - Feedback from customers highlighted there are opportunities to improve customer facing processes such as billing, invoicing, and digital services (e.g. ability to make CRS mobile technology friendly for nomination process)	• **Innovation** - Customers supported our focus on innovation to ensure the products and services we offer are responsive to the needs of our customers, and the changing dynamics of gas supply • **Gas trading market** - The future of gas trading in Western Australia was commonly raised by customers as an issue for consideration • **Flexible products and services** - Customers expressed an interest in greater flexibility in commercial terms of transportation contracts and a broadening in services offered

Table 5.2: Summary of Stage 1 customer and stakeholder feedback

Topic	Customer and stakeholder feedback	Our response
Key insights	• Customers highly value current reliability levels. • Customers value our current relationship but also noted ways their customer experience could be improved. • Customers highlighted the importance of flexibility to ensure we are responsive to their needs. • Customers noted uncertainty in the ongoing role of the DBNGP as energy supply becomes less carbon intensive (and the related focus on renewable electricity).	• We have explored these key insights with our customers as we developed our Draft Plan. We will continue to explore these as we refine our plans. • We launched our annual customer survey in 2018, and we have set a target score of >8 out of 10, which we will report against from 2019.
Our engagement approach and principles	• Customers and stakeholders noted Stage 1 engagement activities were important to clearly define our stakeholders, the broad areas for engagement and timing. • Customers and stakeholders supported our staged approach to developing our proposal for the AA5 period, particularly the release and engagement on a Draft Plan. • Customers and stakeholders supported an open, transparent and timely process, with strong support for our no surprises approach and objective of submitting a plan capable of being accepted.	• We will execute our four-stage approach to develop our Final Plan. • We reiterate our commitment to our engagement principles, 'no surprises' approach and objective of submitting a plan capable of being accepted. • We committed to continuing engagement as part of everyday activities, outside of the access arrangement process.
Our stakeholders	• Customers directly connected to the DBNGP strongly supported being involved in our engagement activities. • Some customers questioned whether we should be engaging with household and small business end-users who are not directly connected to the DBNGP. They considered this relationship should be managed by retailers and/or ATCO Gas. • Consumer representative groups did not want to be directly involved in our stakeholder engagement program. This reflects the low cost impact of our services on the total retail gas bill (on average DBNGP costs account for 3% of a household gas bill). • For similar reasons, other stakeholder representative groups indicated they did not want to be directly involved in our engagement program.	• We will focus our engagement program on customers directly connected to the DBNGP (and their representatives). We have revised our stakeholder map accordingly. • We will keep all other stakeholders updated on our progress, including through the release of our Draft Plan. • We will consider the outcomes of other engagement programs where relevant, particularly the recent engagement undertaken by ATCO Gas.
Our engagement activities	• Customers were keen to be involved in our stakeholder engagement program. • Customers supported establishing a Shipper Roundtable and considered this was an efficient way for us to receive input into the development of our plans. • Customers also value regular one-on-one meetings and expect these to continue through the development of our plans. • Consumer and stakeholder representative groups indicated they would like to be kept informed of our progress and plans. • Digital updates and fact sheets were considered an efficient way to keep stakeholders informed. • The ERA indicated it may participate in our engagement activities as an observer, but it could also be kept informed of our progress through ongoing meetings and there may be opportunities to engage with its Consumer Consultative Committee.	• We will establish a Shipper Roundtable as a key part of our engagement program. We will invite all customers to be a part of the roundtable. • We will continue to engage with our customers through a series of one-on-one meetings. • We will provide regular stakeholder updates, which will provide an opportunity for any stakeholder to become involved.
Our timeline	• Customers and stakeholders supported our timeline.	• We have confirmed the timeline for developing our plans.

5.5 Stage 2 – Developing our Draft Plan

In Stage 2 we delivered engagement activities based on customer and stakeholder preferences in Stage 1.

Many stakeholders expressed an interest in being informed throughout the process – as opposed to active engagement in meetings or workshops. However, many of our customers supported engagement through a series of Shipper Roundtable meetings to inform and shape the development of our plans.

5.5.1 Activities

In September 2018 we invited all direct customers and gas trading agents to be involved in a series of Shipper Roundtable meetings. Five meetings were held between October 2018 and March 2019.

Meetings were facilitated by an independent third party (KPMG) to ensure independence in the documentation of feedback. Meeting topics and materials were presented based on issues of importance raised in Stage 1, and key components of this Draft Plan. A summary of key topics and information presented is summarised in Table 5.3 below, and all materials presented at the Roundtables can be made available on request.

Table 5.3: Our Shipper Roundtable meetings

Meeting #	Key Topics	Summary of information presented
Meeting #1	• Our engagement approach • Pipeline services	• Our stakeholder engagement approach – including explaining our no surprises approach, our key objective for a plan capable of being accepted and timelines. • Clarify the role of the Shipper Roundtable (including the role of KPMG). • Key insights from Stage 1 engagement. • Pipeline services – overview of pipeline services we offer on the DBNGP and which of those services should be proposed as reference services.
Meeting #2	• Customer experience/ Flexible solutions	• Confirmation of our proposed reference services proposal. • An overview of our current prices and price structure. • Opportunities to improve customer experience. • Our customer satisfaction survey and recent results. • AGIG's customer experience aspirations.
Meeting #3	• Our capital and operating expenditure proposals	• Follow up information on customer experience actions. • Regulatory process overview. • Early price modelling. • Regulatory building block model. • Governance framework for our expenditure proposals. • Proposed capex and opex proposals for AA5.
Meeting #4	• Rate of return • Demand forecast • Incentives	• Additional information relating to proposed capex and opex proposals for AA5 following feedback from Meeting #3. • Demand forecast. • Our proposed approach to rate of return. • The incentive framework and potential incentives.
Meeting #5	• Future focus	• Regulatory modelling – price and demand update. • Additional information on demand including SUG following feedback from Meeting #4. • Incentives – our AA5 proposal. • Future focus – including the role of the DBNGP in supplying customers into the future. • Asset categorisation. • Regulated asset base – recovery profile. • Regulatory building blocks for AA5. • Customer and stakeholder engagement on our Draft Plan.

All meetings were documented by KPMG and notes circulated to attendees.

5.5.2 Key insights for our Draft Plan

A summary of feedback captured during Shipper Roundtable meetings is provided in the remainder of this chapter.

In this summary we illustrate how we have responded to customer feedback to inform the development of this Draft Plan across the key topics discussed at Shipper Roundtable meetings.

Figure 5.2: Shipper Roundtable Meeting #5, March 2019

Table 5.4: Summary of Stage 2 customer feedback

Topic	Customer and stakeholder feedback	Our response
Our approach to the Shipper Roundtable meetings	• Customers agreed in principle to the topics, dates and timing of future stakeholder engagement sessions. • Customers acknowledged satisfaction with the topics, format, logistics and length of stakeholder engagement sessions. • Customers requested that meeting materials be distributed prior to the meetings to allow consideration of the matters to be presented, and to allow for internal engagement. • Customers requested that presentation material and meeting discussions recognise that individual customer commercial information be kept in confidence. • Customers requested the opportunity to invite additional business representatives to meetings where appropriate. • Customers acknowledged AGIG's 'no surprises' approach to engagement. • Customers requested the opportunity for future Shipper Roundtable meeting(s) once the current series of Roundtables has been completed with an opportunity to discuss the Draft Plan.	• Information presented at meetings did not reveal information pertaining to individual Shipper arrangements. • Meeting materials were distributed in the week prior to the meeting. • Shippers were encouraged to invite additional business representatives to meetings. • One-on-one follow up meetings were offered by KPMG for any participant wishing to provide additional feedback outside the meeting. • We sought feedback and responded to requests for any additional information at every meeting. • A Shipper Roundtable meeting(s) will be held following publication of this Draft Plan.
Pipeline services	• Customers agreed that the current list of pipeline services is appropriate. • Customers agreed it appropriate that reference services for the AA5 proposal would be consistent with the Full Haul, Part Haul and Back Haul services offered in AA4. • Customers requested that summary and additional detail related to services should be included on the DBP website. • The potential for Inlet Sales and the Pilbara Service to be included as reference services was queried, however it was recognised that these services would likely not match the requirements of the National Gas Rules for classification of a reference service.	• We aim to provide pipeline services to meet the needs of our customers and therefore those we offer will evolve over time. • Our proposal is to offer reference services in AA5 consistent with the Full Haul, Part Haul and Back Haul reference services offered in AA4. • Additional information was made publicly available on DBP's website summarising the available services on the DBNGP in March 2019.
Customer experience & flexible solutions	• Customers acknowledged the recent customer satisfaction survey results and agreed that the survey should be ongoing. • We presented our customer experience aspirations and customers agreed they are reflective of their current expectations, with some minor revisions around the wording of responsiveness. • Customers provided feedback that the current format of invoices is complex and would welcome simplification. • Customers were keen to understand the business case associated with any investments in technology which could improve the customer experience or provide more flexible solutions.	• We will continue to monitor customer satisfaction as part of business as usual activities. • We have updated our customer experience aspirations to reflect customer feedback. • We will look for opportunities to improve the billing practices as part of business as usual activities. • Our capex proposal relating to technology and how it delivers for customers is included in Chapter 8 of this Draft Plan.

Table 5.5: Summary of Stage 2 customer feedback continued

Topic	Customer and stakeholder feedback	Our response
Our capital and operating expenditure proposals	• Customers requested additional information on the changes between opex and capex from AA4 to our forecast for AA5. • Customers requested additional information relating to the proposed 94/6 split between fixed and variable opex costs. • Customers asked for clarification on the potential for cost duplication of turbine overhauls (eg, being expensed in both capex and opex). • Clarification was sought on an increase in capex as opposed to a decrease over the next five years per expectations from some Shipper representatives. • A customer asked for clarification as to how we actually incurred expenditure on the pipeline, including tender and contracting process. • Shippers questioned the increase in costs being attributed to turbines and GEA overhauls and the • scheduling of overhauls. • In relation to the capex and opex proposals for AA5, no customer feedback was received regarding increasing or decreasing the proposed investment levels.	• We provided additional information to customers as requested and have included this information in Chapter 4 of this Draft Plan. • We have ensured this Draft Plan outlines where there are changes in spend compared to the previous AA. This is included in Chapters 7 and 8 of this Draft Plan. • We provided clarification to customers that overhauls are expensed through opex in the period (as per the regulatory guideline) and that there is no cost duplication. • We have provided additional information regarding the scheduling of overhauls and costs in Chapter 7 of this Draft Plan. • An overview of our tender and contracting process was provided to customers and is summarised in Chapters 7 and 8 of this Draft Plan.
Rate of return	• Customers acknowledged AGIG's intention to adopt the ERA's Rate of Return Guidelines in formulating its plans, consistent with the approach taken for other AGIG assets. This is consistent with submitting a plan that is capable of being accepted.	• We have accepted the ERA's Rate of Return Guidelines, as described in Chapter 10 of this Draft Plan.
Demand forecast	• Customers requested information on the sources of generation in the SWIS used for the demand forecast. Information was also requested on the historical use and future forecasts relating to SUG.	• We provided additional information in Shipper Roundtable meetings as requested regarding demand. Our demand forecast assumptions and modelling is outlined in Chapter 11 of this Draft Plan.
Incentives	• Customers discussed the opportunities that incentives may deliver in terms of innovation and noted that there was no price impact in AA5. • Customers supported AGIG's proposal to introduce an opex incentive in AA5 but were less clear in their support for an innovation incentive in AA5.	• In response to feedback, we are proposing an opex incentive scheme in AA5. We are also proposing an innovation scheme and will further test customer support for this as we engage on our Draft Plan. The incentive schemes we have proposed are outlined in Chapter 12 of this Draft Plan.
Future focus and the capital base	• Customers acknowledged the increasing mix of renewable electricity in the energy sector and the uncertainty around future energy models. • Customers noted the impact of changing energy models to their gas requirements. In particular, gas-fired electricity generators noted an increase in instances where renewable energy sources were unavailable requiring them to ramp up production quickly (e.g. no wind and overcast days).	• We have developed our proposals within this Draft Plan with regard to the long-term interests of customers. • Our proposed depreciation profile in Chapter 9 responds to the uncertainty around future energy models. • Our demand forecast in Chapter 11 takes into account increasing renewable energy supplies in the market.

5.6 How we will engage on our Draft Plan

This Draft Plan is open for consultation for a six-week period from publication and available on the DBP website.

We are inviting submissions in writing, or via a facilitated one-on-one meeting.

To support consultation we will be:

- holding a Shipper Roundtable meeting in May to capture initial feedback from the group; and
- offering briefings or one-on-one meetings with customers and stakeholders.

We will summarise feedback received on our Draft Plan and use it to inform our Final Plan, which will be submitted to the ERA by 1 January 2020.

5.7 Summary

Our key objective is to deliver a plan which is underpinned by effective stakeholder engagement and is capable of being accepted by our customers and stakeholders.

Our aim is to be open and transparent in our approach and we have sought feedback throughout the process of developing our plans. We have documented our process and demonstrated how feedback has been used across stages one and two of our engagement plan.

This Draft Plan has been shaped by our engagement activities and delivers in the long-term interests of customers and stakeholders.

We will continue engaging with customers and stakeholders on our proposals within this Draft Plan.

To aid the engagement process, we would welcome your responses to the following questions:

Questions for consideration
Do you have any feedback on our customer and stakeholder engagement program?
Have we considered customer and stakeholder feedback and responded appropriately in this Draft Plan?

6 Pipeline and reference services

The proposed pipeline and reference services for AA5 are consistent with those currently provided on the DBNGP.

IN THIS CHAPTER

- **We have followed new requirements in the NGR for outlining pipeline and references services**
- **We have proposed pipeline and reference services consistent with those in AA4**
- **Full Haul, Part Haul and Back Haul services will be complemented by a suite of non-reference services**

We offer various pipeline services to meet the needs of our customers.

Reference services are determined based on factors defined in the NGR which include demand, substitutability and the usefulness of the service in supporting access negotiations.

The reference services we propose for AA5 are consistent with those applied previously; Full Haul, Part Haul and Back Haul services. The reference services form the basis for this Draft Plan.

The following sections outline the pipeline and reference services we offer. Details of the terms and conditions of our reference services will form part of our Final Plan to be submitted to the ERA by 1 January 2020. We will consult with customers in detail on terms and conditions as we develop our Final Plan.

6.1 Regulatory framework

Under recent changes to the NGR (specifically section 47A), published 21 March 2019, we are required to include a list of all pipeline services we can reasonably offer in our AA proposal, and specify those which are reference services.

Under the new rules, the ERA is to have regard to reference service factors and the feedback of stakeholders in considering which services should be specified as reference services.

The reference service factors are:

- actual and forecast demand for the pipeline service and the number of prospective users of the service;
- the extent to which the pipeline service is substitutable with another pipeline service specified as a reference service;
- the feasibility of allocating costs to the pipeline service;
- the usefulness of specifying the pipeline service as a reference service in supporting access negotiations and dispute resolution for other pipeline services; and
- the likely regulatory cost.

6.2 Stakeholder engagement

We discussed references services and pipeline services with customers at our Shipper Roundtables. Our shippers agreed it was appropriate to continue with the current three reference services in AA5. Shippers also requested a summary of the services we currently offer be made available on our website.

This information is reflected below, and also on our website.

Engagement insights

- ✓ Customers value transparency around the products and services that are available.
- ✓ Customers support continuation of our existing pipeline and reference services.

6.3 Pipeline services

Table 6.1 shows the pipeline services to be offered in AA5 to current and prospective users on the DBNGP. These include services subject to the availability of capacity (i.e. gas transportation services) and those subject to operational availability and includes services offered under Standard Shipper Contracts (SSCs).

Table 6.1: Summary of pipeline services

Pipeline services	General description
Pipeline services (subject to available capacity)	
Full Haul T1 Service	Firm gas transport without interruption except as expressly permitted under contract to an outlet point south of Compressor Station 9 on the DBNGP from any inlet point
Part Haul P1 Service	Firm gas transport without interruption except as expressly permitted under contract to an outlet point where a distance-based price would apply
Back Haul B1 Service	A gas transportation service where the inlet point is downstream of the outlet point
Pilbara service	The Pilbara Service is an interruptible transportation service on the DBNGP where deliveries are within the Pilbara Zone (between I1-01 and MLV31 includes I1-01 and MLV31)
Spot capacity service	Allows access to gas transmission capacity on a day ahead basis where available. See Governing Rules for market for spot capacity.
Seasonal service	A gas transportation service where the profile of reserved capacity can be customised to suit the monthly requirement of the Shipper
Pipeline services (subject to operational availability)	
Metering and temperature service	A pipeline service where particular metering and temperature specifications can be set
Odorisation service	A pipeline service where particular odorant requirement can be specified
Peaking service	A pipeline service where a shipper can obtain additional peaking limits to those set in standard terms
Pipeline impact agreement	An agreement specified under the Gas Supply (Gas Quality Specifications) Act 2009 developed to allow gas producers to supply broader quality gas in Western Australia
Interconnection service	A pipeline service that outlines the operation matters facilitating the connection of two pipelines
Operational balancing agreement	An agreement between a gas producer and DBP that sets out how operational imbalances on the DBNGP will be managed
Inlet sales agreement	A pipeline service that facilitates the trading of inlet capacity between shipper at a single inlet point on the DBNGP
Data services	A service developed to assist gas producers in providing gas allocations to Shippers on the DBNGP

6.4 Reference services

We are proposing to offer three reference services in the AA5 period, consistent with those in AA4. These are outlined in Table 6.2.

Table 6.2: Reference services

Reference services
Full Haul T1 Service
Part Haul P1 Service
Back Haul B1 Service

The three reference services proposed reflect the reference service factors as they:

- are in high demand;
- are substitutable with other, similar pipeline services;
- form the foundation of our demand forecasts and cost allocation;
- provide prospective users with an aid for use in access negotiations; and
- minimise the cost and regulatory burden.

6.5 Summary

We propose the Reference Services for the DBNGP in the AA5 period remain consistent with those applied in AA4. Our shippers supported this approach.

We also continue to offer other pipeline services and invite any current and prospective customers to discuss their specific requirements with our Commercial Division.

In response to shipper requests for more information on all of the services we offer, we have provided a full list of our services (as shown in Table 6.1) on our website.

To aid the engagement process, we would welcome your response to the following question:

Question for consideration
Do you think the Pipeline and Reference Services we have proposed are appropriate?

Our opex proposal is designed to allow us to undertake asset maintenance as required by our asset management plans, and other activities to maintain our strong safety, reliability and customer service performance.

7 Operating expenditure

Since coming together as AGIG, we have been able to embed opex savings that will be passed on to our customers in AA5, along with lower system use gas costs.

IN THIS CHAPTER

- **Real opex reduction of 8% compared to actual opex incurred in AA4**
- **Maintaining the safe, reliable and high-quality service our customers value**
- **Lower system use gas costs**

We incur opex to undertake activities that allow us to operate and maintain the DBNGP safely, reliably and efficiently. Opex also underpins our customer service performance and our ability to keep our workforce healthy, safe and engaged.

We have adopted a hybrid top-down and bottom-up approach to forecasting opex for AA5, which is consistent with the ERA's approach applied in AA4.

The following sections outline this approach, key drivers of expenditure and the outcomes we will deliver in AA5. In addition, this chapter outlines how we ensure the opex we incur is efficient, and how we have performed in AA4. All numbers quoted are dollars of December 2020, unless otherwise labelled.

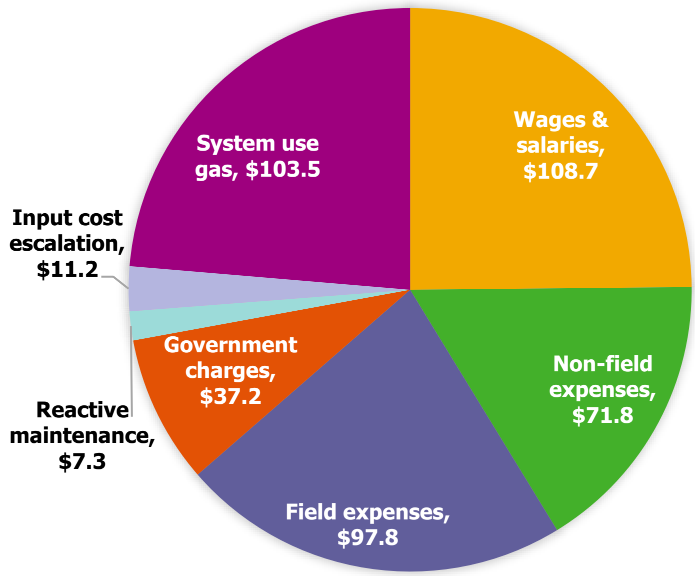
7.1 Regulatory framework

Our forecast opex, as required by NGR 91, must reflect that incurred by a prudent gas pipeline business, acting efficiently and in accordance with good industry practice to achieve the lowest sustainable cost of providing reference services to our customers.

7.2 Overview

Our forecast opex for AA5 is $438 million over the five years. This is a reduction of $37 million (8%) compared to our actual performance over the AA4 period of $475 million (forecast to December 2020). This

Figure 7.1: Total AA5 opex by category ($million, Dec 2020)



reduction is largely driven by lower SUG costs and our ability to keep other opex at similar levels to those achieved in the current period. It also builds on our outperformance of our allowances in AA4.

The incentives inherent in the regulatory framework are consistent with promoting efficient levels of opex and the DBNGP has been subject to these incentives for close to 20 years.

Engagement insights

- ✓ Customers highly value current levels of reliability.
- ✓ Customers are keen to ensure operational expenditure is cost efficient.
- ✓ Maintaining a strong focus on operational issues is important for reliability and emergency management.

7.3 Stakeholder engagement

During the Shipper Roundtables we discussed our proposed opex and forecasting approach. Shippers were broadly comfortable with our approach, the level of opex and key focus areas in AA5. However, they were keen to understand the drivers for particular costs increasing, to understand how we ensure the costs we incur are efficient and how our demand forecasts are reflected in our forecast costs.

They also told us they highly value current levels of reliability and would be concerned if these were to change.

We have reflected the feedback and insights gathered during our stakeholder engagement program so far and in this Draft Plan have:

- focussed on maintaining current levels of system reliability;
- provided additional information on the cost categories that are increasing in AA5; and
- provided additional information on our governance frameworks and procurement approach.

7.4 How we develop our opex forecast

There are two different methods we use to forecast our opex over AA5. For most opex categories, we apply a top-down base year roll-forward approach. For SUG, turbine and gas engine alternator (GEA) overhauls, asset inspections, other minor pipeline works, and small health and process safety initiatives, we use a bottom-up approach which considers the quantity and cost of activities required over the five years. This hybrid top-down and bottom-up methodology is consistent with the ERA's preferred forecasting method applied in AA4, and as such, is consistent with achieving our objective of submitting a plan that is capable of being accepted.

Under the top-down component of our approach, the latest actual cost is used as a base for future costs. The latest actual costs by the time prices are set for AA5, and therefore our base year, is 2019.

As we do not have actual costs for 2019 yet, we must estimate our 2019 opex. In doing so, we adjust for any costs to be incurred in 2019 that are not expected to be incurred in AA5, and likewise for any costs that are not incurred in the 2019 base year, but would usually be incurred in a normal year. We call these one-off or non-recurring costs.

We will update our base year as actual opex information becomes available. Therefore, the forecast to be included in our Final Plan will comprise nine months of actual opex and three months of budget opex.

The next step in the base year roll-forward approach is to consider any cost increases or decreases that are applicable in AA5 due to changes in legislation, regulatory obligations or new activities, referred to as step changes.

Finally, real cost escalation is applied to those cost categories which grow at a faster rate than inflation. Consistent with the approach in AA4, we apply real cost escalation to labour costs.

We then add our forecast of:

- SUG, which is a function of quantity required and forecast price;
- turbine and GEA overhauls, which is a function of unit run hours and costs per unit; and
- the value of asset inspections, other minor pipeline works and small health and process safety initiatives, which are a function of the number of activities/initiatives and cost per activity/initiative.

7.5 Key drivers in AA5

We will maintain our strong safety, reliability and customer service performance, within our lower opex forecasts in AA5.

7.5.1 Delivering for customers

Our opex proposal is designed to allow us to undertake asset maintenance as required by our asset management plans, and activities to maintain our strong safety, reliability and customer service performance.

7.5.2 A good employer

Our opex proposal will help us provide a healthy, safe, engaged and skilled workforce. Our non-field expenses include workplace health and safety programs, while field expenses include employee and contractor training and development initiatives.

7.5.3 Sustainably cost efficient

Our opex proposal shows we are sustainably cost efficient as we have:

- delivered real opex savings of around $7 million per annum compared to our approved allowances for AA4; and
- kept our opex excluding SUG in AA5 at similar levels to that incurred in AA4, even while facing a number of upward cost pressures in IT support and field expenses.

7.6 Our AA5 opex forecast

The following steps through each of the elements of our AA5 opex forecast.

7.6.1 2019 base year

We are proposing calendar year 2019 as our Base Year for forecasting our AA5 opex. This year is the penultimate year of the current AA period. This is consistent with regulatory practice across Australia.

Our Draft Plan includes a forecast for 2019 opex. We will update this with nine months of actuals and three months of forecasts when we submit our Final Plan to the ERA by 1 January 2020.

By the time the ERA makes its Draft Decision, we will be able to provide a full year of actuals for our 2019 Base Year.

We are proposing the same opex categories as AA4, these are:

- wages and salaries;
- non-field expenses;
- field expenses;
- government charges;
- SUG; and
- reactive maintenance.

We are confident our 2019 base year opex is prudent and efficient because it has been forecast based on verified records of actual opex over 2016-2018 and variances compared to 2018 have been tested through our internal budgeting processes.

We note that our approach will deliver lower opex (excluding SUG, reactive maintenance and overhauls) per TJ of energy delivered compared with previous years.

7.6.2 Adjustments to base year opex

We make adjustments to our base year opex where it is not reflective of recurrent costs likely to be incurred in a typical year.

We take a five-year average of our consulting costs, rather than the 2019 base year, due to some volatility that can be experienced in this cost category. This is consistent with the approach approved by the ERA in AA4.

We have taken a rolling six-year average of our insurance costs, rather than the 2019 base year, due to the cyclical nature of insurance markets. This is also consistent with the approach approved by the ERA in AA4.

As stated earlier, adopting approaches that align with those previously approved by the ERA is consistent with achieving our objective of submitting a plan that is capable of being accepted.

7.6.3 Opex step changes

We make adjustments to our AA5 opex for any step changes in our costs resulting from changes in legislation, regulatory obligations or new activities.

We have increased our opex in AA5 by $10,000 per annum to cover the increased cost of purchasing the data required to calculate our annual cost of debt updates in line with the ERA's 2018 Final Rate of Return Guidelines.

We have decided not to increase our IT opex in AA5, despite estimating a step change requirement of around $8 million (mainly in increased managed services costs) resulting from the increased IT investment we are proposing in AA5 to improve our business intelligence, data management and digital capabilities. We have taken this approach because we believe these higher IT operating costs will be offset by reduced opex in other areas of the business, driven specifically by our IT enabling initiatives.

7.6.4 Input cost escalation

We make adjustments to our AA5 opex to account for costs that are increasing at a faster rate than inflation (real cost escalation).

For this Draft Plan we have applied real cost escalation of 1.92% per annum to our labour costs based on the latest data available at the end of February 2019.

Consistent with the approach approved by the ERA in AA4, the appropriate labour cost escalation is calculated by:

- taking the Western Australian Treasury Wage Price Index (WPI) forecasts for the upcoming period; *plus*

- the five-year average premium of the Australian WPI for the Electricity, Gas, Water and Wastewater Services (EGWWS) Industry over the WPI for all industries, calculated by the Australian Bureau of Statistics (ABS); *less*
- the ERA's benchmark inflation estimate for the upcoming period (as explained in Chapter 10 of this Draft Plan).

Table 7.1 below provides the values used in this calculation.

Table 7.1: Annual labour cost escalation estimate for AA5

Measure	Value
WA Treasury WPI forecast	3.23%
plus EGWWS WPI premium	0.26%
less Inflation	1.57%
Annual labour cost escalation	**1.92%**

7.6.5 Output growth

We are not proposing to apply an output growth factor to our base year roll-forward opex. Two of our key costs, SUG and overhauls, vary with throughput and are already forecast using a unit cost and volume methodology. Therefore, these costs are already linked to the level of forecast throughput.

7.6.6 Productivity growth

In applying the base year roll-forward approach, it is common to consider whether there should be an adjustment to capture the benefits of any potential future efficiency gains made by the business during the AA period.

As noted in 7.6.3 above, we are proposing to absorb estimated IT opex step changes of around $8 million in AA5 resulting from increased managed services costs associated with delivering our IT capex program (see Chapter 8). This is because we expect benefits to flow from our IT enabling capex initiatives, ultimately reducing non-IT opex. Absorbing this step change implies annual productivity of around 0.6% per annum in AA5.

The necessary dataset for measuring historical industry productivity performance through econometric modelling is not available for gas service providers. Further, we note productivity adjustments have not been applied by the ERA or the AER in their recent decisions for gas service providers and that positive productivity growth in the industry is unlikely in an environment of falling average demand.

7.6.7 System use gas

We are forecasting $104 million in SUG costs in AA5. This is a significant reduction compared to the SUG costs we are incurring in AA4. The reduction is mainly driven by lower gas prices compared to when we last tendered for our SUG requirements in 2014.

As mentioned above at 7.4, our SUG costs are a function of forecast quantity and forecast price.

The forecast quantity of SUG is driven by expected gas quality, the quantity required as compressor fuel to transport forecast throughput and the quantity required for all other operational activities including in GEAs and heaters and vented during normal operation and maintenance activities.

We have adopted the same quantity calculation that was approved in AA4. The ERA and its expert consultant considered this was reasonable as:

- the gas quantity calculation was based on an industry standard model;
- the model was calibrated using actual pipeline operation information;
- adjustment factors in the model were derived from operating experience around average heating values and pressure at receipt points; and
- the modelled relationship between fuel, throughput and other operating conditions was almost identical to the actual relationship, which indicated a valid model and valid input assumptions.

Our forecast throughput for AA5 is outlined in Chapter 11. Our forecast price is based on current market indications for securing firm gas to meet our forecast SUG quantity requirements in AA5. This is consistent with the ERA's approach in AA4 to adopt the weighted average price of our two SUG contracts.

Our SUG performance in AA4 is discussed at 7.8.

7.6.8 Turbine and GEA overhauls

We are forecasting $39 million in turbine and GEA overhauls in AA5.

As mentioned at 7.4 above, our turbine and GEA overhaul costs are a function of unit run hours and estimated cost per unit.

Turbine overhauls

Our replacement strategy for our turbine units is to overhaul them after 30,000 run hours in line with manufacturer specifications. After 30,000 run hours, the likelihood and cost of failure of turbine units increases significantly (by around 1.5 times). As our turbines are integral to the safe and reliable delivery of our services, and because there can be long lead times in ordering parts, our turbine overhauls must be carefully planned.

Based on current run hours and utilisation rates for turbine units we are forecasting to overhaul eight units in AA5. We have also allowed for one additional overhaul for a premature failure of one of our turbine units during AA5. We estimate overhauls will be spread relatively evenly over AA5, averaging $7 million per annum.

This compares to six turbine overhauls in AA4 at a total cost of $20 million (forecast by 31 December 2020). The lower expenditure in the current period is a result of managing both turbines at each compressor station to spread run hours and keep units below the operational hour level of 30,000 that acts as the key criteria in identifying an asset for overhaul (replacement) for longer.

This approach cannot be adopted indefinitely, as more turbines approach the operational hours ceiling, hence the increase in this period.

GEA overhauls

GEAs are the primary power source at many of our remote facilities, including all compressor stations north of Perth.

Our GEAs are serviced regularly, with major services (overhauls) required at 12,000, 24,000, 48,000 and 52,000 hours.

Based on current run hours and utilisation we are forecasting 25 GEA overhauls in AA5, spread relatively evenly across the period, at an average cost of $1 million per annum.

Figure 7.7.2: Turbine exchange, Compressor Station 2, Unit 3, September 2018

This compares to a similar number of GEA overhauls in AA4 at a total cost of $5 million (forecast by 31 December 2020).

7.6.9 Change in capitalisation

We will include $7 million of asset inspections, other minor pipeline works and small health and process safety initiatives as opex from AA5. While these activities have previously been treated as capex, we propose they are better aligned to opex. Similar activities undertaken across our distribution networks are treated as opex. This change has no impact on totex (the sum of opex and capex) in AA5.

7.7 How we ensure the opex we incur is prudent and efficient

We operate within a framework of external and internal controls which govern the way we fund the day to day operations in our business. This framework ensures we are making sound decisions for our customers, our stakeholders and our business.

7.7.1 Our Safety Case, Asset Management Plan and maintenance regime

The *Petroleum Pipelines Act 1969* (WA) requires us to submit our Safety Case to the Department of Mines, Industry Regulation and Safety every five years for approval. Our Safety Case is the primary document outlining how we operate the DBNGP in compliance with our obligations under the Act, Regulations and our operating licences. It demonstrates the adequacy of the systems, processes and procedures in place to support the safe operation of the DBNGP.

It also describes the hazards associated with operation, and controls in place to manage the hazards to a level that is as low as reasonably practical (ALARP). The maintenance requirements set out in our Asset Management Plan (AMP) ensure these controls remain available, reliable and effective. Therefore, our AMP is a key part of our demonstration in the Safety Case of our ability to control the risks of our operations to ALARP.

Our overarching AMP considers the relationships between asset life/performance, economic returns, operating costs, safety and reliability all within the context of our short, medium and long-term business strategy. With regard to operational activities, it sets out the asset maintenance regime applied to the DBNGP.

The maintenance regime has been developed over time incorporating regulatory requirements, risk assessment outcomes, substantial operating experience, good industry practice and lessons learned from others.

More specifically, the maintenance regime for identified maintenance tasks outlines the purpose, failure impact, priority, frequency or condition, required tools, spares and consumables, estimated duration and required labour hours by skill, as well as any preconditions such as isolation or availability of alternate equipment. This drives planning for the execution of maintenance tasks to minimise the impact of maintenance activities on the safe, efficient and reliable delivery of gas.

We periodically review and update our AMPs to ensure our maintenance strategies evolve or are amended in response to investigations of equipment failures.

Work instructions for each maintenance activity and asset type ensure the required work is carried out in line with our AMP requirements and safe work practices.

We also have several procedures, guidelines, plans and performance targets which govern the way we operate the DBNGP day to day. These ensure we undertake all operating activities in a prudent and efficient manner, consistent with good industry practice and in line with our vision of being the leading gas infrastructure business in Australia.

7.7.2 Financial governance

We regularly report our forecast and actual opex through our internal financial performance reporting. Our performance against prior year spend and approved regulatory allowances is heavily scrutinised, particularly where there are variances or costs are increasing.

Furthermore, our corporate KPIs track our safety, reliability, customer service and financial performance. These performance measures incentivise us to continually seek out ways to meet or exceed our targets, without favouring one area over another (i.e. reporting against all of these measures means we cannot make financial savings to the detriment of safety, reliability or customer service).

We also have strict procurement processes, which apply to both opex and capex. Our procurement process is described in section 8.7.3.

7.8 Our performance in AA4

We are forecasting to incur $475 million in opex in AA4. Our opex excluding SUG is $333 million, which is $35 million (9%) below our approved allowance for AA4.

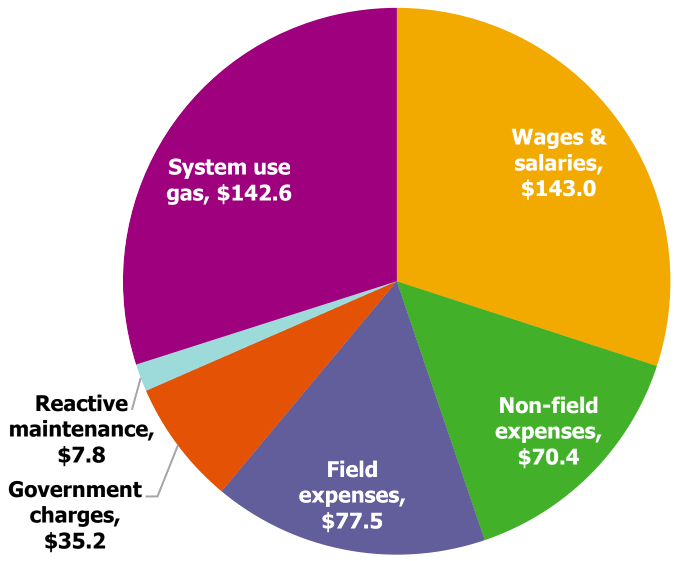
Our total SUG costs are $47 million (25%) below our allowance of $190 million. As already described, our SUG costs are a function of quantity required and price. The drivers for lower SUG costs than expected in AA4 have been:

- lower Full Haul throughput than forecast (which reduces the quantity of SUG required as well as the revenue we receive from commodity, or throughput, charges); and
- the average price of SUG incurred (which is mostly related to timing differences in the way we expense SUG compared to what is assumed in our SUG forecast).

Our turbine and GEA overhauls (which make up a component of our field expenses) are $8 million (25%) below our allowance of $33 million as a result of lower Full Haul throughput than forecast (which reduces the run hours required across our fleet of turbines and gas engines, and therefore extends the time taken to reach the defined run hour parameters for overhaul).

Our wages and salaries are forecast to be $19 million (12%) below our allowance and our non-field expenses are $9 million (11%) below our allowance, reflecting efficiencies made in coming together as AGIG. Our Government charges are $4 million (11%) below our allowance, and our reactive maintenance is $1 million (13%) above our allowance.

Figure 7.3: Total AA4 opex by category ($million, Dec 2020)



7.9 Key opex drivers in AA4

Our opex in AA4 is supporting our vision of:

- delivering for customers;
- being a good employer; and
- being sustainably cost efficient.

7.9.1 Delivering for customers

We have undertaken field works, asset maintenance and customer service activities in AA4 to ensure we maintain the strong safety, reliability and service performance our customers have told us they value.

7.9.2 A good employer

In AA4 we have undertaken health and safety programs and employee and contractor training to ensure we have a healthy, safe, engaged and skilled workforce.

7.9.3 Sustainably cost efficient

In AA4 we have delivered around $7 million of annual opex savings, which we will pass on to our customers through lower prices in AA5. Our average opex (excluding SUG, reactive maintenance and overhauls) per GJ of total energy delivered in AA4 to date is lower than the previous three years. This reduction is due to a combination of lower opex costs and an increase in total energy delivered between AA3 and AA4.

7.10 Our opex over time

Figure 7.4 below shows our opex performance, excluding SUG, over AA4 and AA5. It shows we have been able to reduce our opex compared to our approved allowances in AA4 and will pass this on to our customers in AA5. This is a result of our efforts to reduce our costs while continuing to provide the same levels of safety, reliability and service performance in increasingly challenging operating conditions.

Figure 7.5 below shows our SUG costs over AA4 and AA5. We are expecting lower SUG costs in AA5 as a result of lower forecast gas prices.

7.11 Summary

The key aspects of our opex forecasting methodology are outlined below.

- We have adopted the same opex categories as used in AA4.
- We have applied a base year roll-forward approach for most categories of opex.
- Our 2019 budget forms the base year and will be updated for actuals as they become available (our Final Plan forecast will comprise nine months of actuals and three months of forecasts).

Figure 7.4: Opex ex SUG in AA4 and AA5

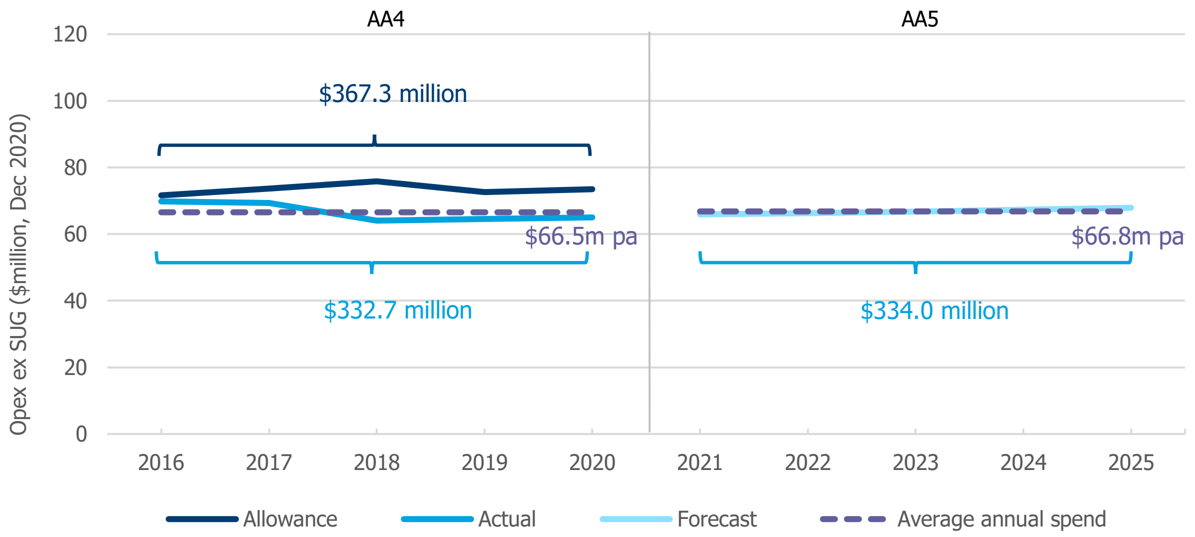
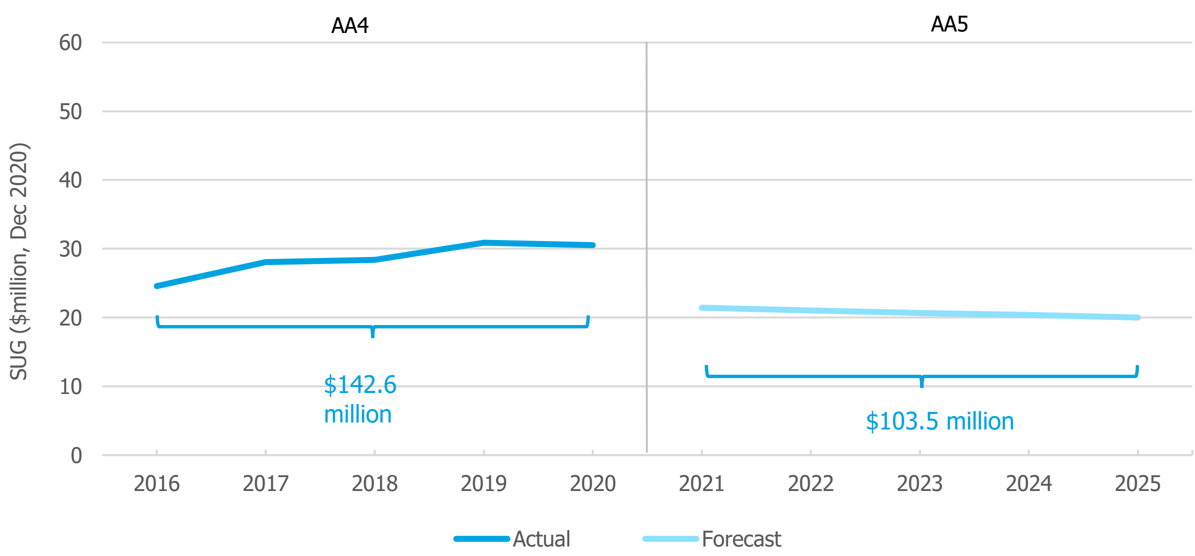


Figure 7.5: SUG in AA4 and AA5



- We have adjusted our base year for average consulting and insurance costs given the potential for volatility or cyclical movements in these costs year to year, consistent with the approved approach in AA4.
- A minor step change of $10,000 per annum have been added in AA5 for additional costs for rate of return data.
- We have not included a step change for increases in IT opex resulting from our IT capex program.
- Real cost escalation of 1.92% per annum has been applied to labour costs using our average actual proportion of labour costs over the last two years, and the real cost escalation methodology approved by the ERA in AA4.
- We forecast significantly lower SUG cost mainly as a result of the lower weighted average price we expect to achieve across our SUG supply contracts compared to AA4.
- Turbine and GEA overhauls averaging $8 million per annum based on unit run hours and estimated unit costs per overhaul.
- A transfer of $7 million from capex to opex which is the value of asset inspections, other minor pipeline works and small health and process safety initiatives which we propose are more aligned to opex than capex.
- We note our proposal to absorb expected increases in IT opex implies annual productivity of around 0.6% per annum in AA5.

To aid the engagement process, we would welcome your response to the following question:

Question for consideration
Do you support our approach to forecasting opex? Is there sufficient information to understand our proposals and the basis of the costs included?

8 Capital expenditure

Our proposed capex will ensure we maintain our strong safety, reliability and service performance.

IN THIS CHAPTER

Installing standalone communications infrastructure for the northern section of the DBNGP

Replacing obsolete control systems to maintain strong reliability performance

Investing in our IT systems, data management and digital capabilities

We incur capex to ensure the ongoing safe and reliable supply of natural gas to WA industry, businesses and homes every day.

Our bottom-up approach to forecasting capex for AA5 is consistent with our approach in previous periods, with an emphasis on the requirements of our Safety Case, AMPs and risk management framework.

The following sections outline our approach to forecasting capex and the key drivers and outcomes we will deliver over 2021-25. We also outline how we ensure we deliver our capex efficiently and how we have performed in AA4. All numbers quoted are dollars of December 2020, unless otherwise labelled.

8.1 Regulatory framework

Our forecast capex must reflect that required by a prudent transmission pipeline business, acting efficiently and in accordance with good industry practice to achieve the lowest sustainable cost of providing Reference Services to our customers.

Forecast capex must also satisfy at least one of several criteria under rule 79 of the NGR, which include to maintain or improve safety, maintain integrity, comply with our obligations, meet demand on the pipeline or where additional revenue generated exceeds the associated costs.

8.2 Overview

We categorise our capex as either:

- stay-in-business capex – where it maintains or improves our ability to deliver the current quantity of services our customers demand; or
- expansion capex – where it is required to increase the quantity of services we can deliver to our customers.

Our forecast capex during AA5 is $159 million, which is all stay-in-business capex, driven by the need to:

- replace our obsolete northern communications system ($23 million);
- replace a number of obsolete control systems, including for compressor units ($19 million) and gas engines ($9 million);
- replace end-of-life turbine exhausts ($8 million);
- redevelop our Jandakot site ($8 million);
- increase our investment in cyber security, data management and digital capabilities, as well as manage and modernise our existing IT systems ($14 million); and
- undertake continuing programs of work such as dry gas seal and valve replacements, hardware and software upgrades and cathodic protection.

In AA4 we have spent $122 million on capex (including forecasts for the remainder of the period), which is $14 million above our approved allowance. This has been driven by the need to:

- replace, repair and undertake preventative works on our compressor stations ($33 million);
- replace a large number of end-of-life metering assets ($24 million);
- replace our obsolete southern communications system ($7 million);
- undertake in line inspections and pigging of the entire length of the pipeline ($6 million);
- refurbish/renovate original compressor station accommodation ($3 million); and
- invest in IT security ($1 million).

8.3 Stakeholder engagement

At the Shipper Roundtables we engaged on key areas of our planning, including our proposed capex.

Our Shippers were broadly comfortable with our approach and high-level program in AA5, but were keen to understand more on a number of areas including:

- the key areas of increased spend;
- how we ensure we deliver our capex efficiently;
- how our demand forecasts have been factored into our capex program; and
- how we deal with changing business needs during an AA period.

They also told us they highly value current levels of reliability and would be concerned if this were to change, and they were keen to understand the costs of providing modernised billing and a more seamless customer interface.

The feedback and insights gathered through our Shipper Roundtables is reflected throughout our forecast capex, particularly in the information we have provided on key areas of increased spend, project governance and procurement, and our performance in AA4.

Engagement insights

- ✓ Customers highly value current levels of reliability.
- ✓ Maintaining a strong focus on operational issues is important for reliability and emergency management.
- ✓ Customers support an improved customer experience (IT investment) where there is a business case demonstrating customer benefits.

8.4 How we develop our capex plans

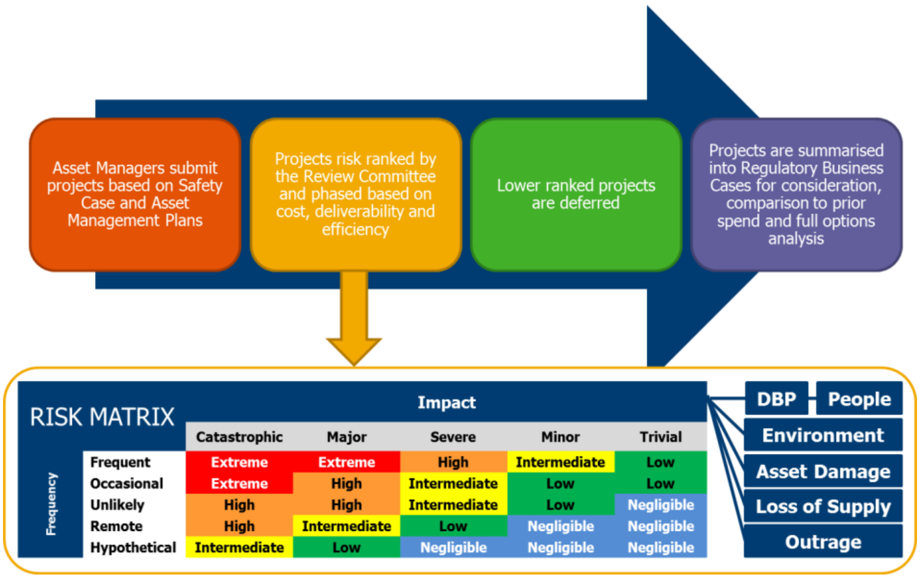
This section describes how we develop the key elements of our capex forecast in more detail.

The programs and projects in our capex plan are built up from our Safety Case and AMPs. Some of our capex reflects continuing programs of work such as dry gas seal and valve replacements, hardware and software upgrades and cathodic protection. Others are key projects such as the northern communications replacement project, replacing gas engine and compressor unit control systems, and turbine exhaust replacement.

Proposed projects and programs are considered by our Project Review Committee (PRC), who undertake risk ranking, consider options analysis and determine optimal phasing based on risk (to the business, people, environment, asset damage, loss of supply and reputation), cost, deliverability and efficiency. Highly ranked projects and programs are summarised into Regulatory Business Case categories for consideration, comparison to prior spend and full options analysis. Lower ranked projects are deferred.

More information about our project governance is provided in section 8.7.

Figure 8.1: Summary of our capex planning process and operational risk matrix



8.5 Key drivers

Our capex in AA5 aligns with our vision of:

- delivering for customers;
- being a good employer; and
- being sustainably cost efficient.

As Figure 8.2 shows, over 75% of our total capex in AA5 is focussed on delivering for customers.

Figure 8.2: Total AA5 capex by driver ($million, Dec 2020)

8.5.1 Delivering for customers

We will invest $121 million on projects and programs that will deliver for customers through maintaining our strong public safety and reliability performance, and providing a modernised customer experience.

8.5.2 A good employer

We will invest $22 million on projects and programs to maintain our objective of being a good employer. We will maintain strong health and safety performance, continue our refurbishment of existing compressor station accommodation and redevelop our Jandakot facility.

8.5.3 Sustainably cost efficient

We will invest $16 million on projects and programs that will ensure we are sustainably cost efficient into the future. We will invest in our IT systems, data management and digital capabilities.

Figure 8.3: Aerial view of Compressor Station 10

8.6 Key projects and programs in AA5

The following sections provide further detail on some of the key projects and programs we will deliver in AA5.

Together these key projects and programs represent 64% of our total capex requirements in AA5.

Each of the key capex projects and programs is supported by a business case that considers an assessment of options, the estimated efficient cost of each option and a risk and objectives assessment.

The remaining 36% of capex in AA5 is made up of ongoing programs of work required to ensure the safe and reliable operation of the DBNGP.

8.6.1 Compressor stations

Compressor stations are integral to the safe and reliable delivery of gas. There are ten compressor stations along the DBNGP, each with multiple compressor units. Compressor units are run based on the requirements of our customers and must be ramped up or down quickly to meet these needs.

Over AA5 we are forecasting to spend $39 million on compressor stations. The key driver of the compressor stations program is public safety and reliability. The program has two elements:

- the renewal of end-of-life rotating plant (dry gas seal replacement, vibration monitoring and air inlet filters totalling $8 million), instrumentation (controls and fire and gas systems totalling $9 million), power supply ($1 million) and other mechanical equipment ($8 million); and
- repair, rectification and preventative works that protect from corrosion ($10 million) and safety hazards ($2 million) or improve performance ($0.6 million).

The program has been identified based on an assessment of options to do more or less during AA5 in comparison to AA4.

The proposed solution is to proactively renew and repair compressor station assets in line with our AMPs, consistent with current practice. This program achieves the objectives of ensuring vendor support for relevant compressor station assets and reduces the risk of failure at the lowest cost.

Communications outages in July 2017

A recent loss of communications underpins the importance of our northern communications project.

At 10pm 7 July 2017 SCADA communications failed to MLV45 and MLV46 (located south of CS3). This was caused by a failure of the multiplexer (a key component in the communications network). Backup communications kicked in restoring communications to all sites north of MLV45 and south of MLV46.

At around 7am 8 July 2017 SCADA communications to MLV7 failed, again due to a failure of the multiplexer. As MLV7 supports multiple communications connections, SCADA visibility was now lost between MLV1 and MLV46 (480km of pipeline including three compressor stations).

Later that day metering field officers attended MLV7 but could not restart the multiplexer. They were able to provide a temporary bypass to restore communications between MLV7 and MLV45 (MLV1-7 and MLV45-46 were still black). An electrical control and instrumentation field officer also attended MLV45 and restored both primary and backup SCADA communications paths, however there was still no visibility of MLV1-7 or MLV45 and 46.

On 9 July a communications field officer attended the MLV and restored the failed multiplexer – SCADA visibility was restored to all sites except MLV45 and 46. Two further sites (Karratha and MLV8) had stopped communicating with the Network Management Server (NMS) in Perth. These sites were also attended. Although the multiplexers were functioning it was feared this could lead to similar outages as MLV7 and MLV45.

At 11am 10 July the multiplexer at MLV45 (and all visibility) was restored.

Investigations show that all issues were caused by multiplexer units with no warning presented on the NMS. The supplier of the multiplexers no longer operates in the telecommunications industry worldwide.

8.6.2 Northern communications

Communications infrastructure is critical to ensure safe operations of the DBNGP at all times and all locations. Current equipment in the northern network is no longer supported, repaired or replaced by the supplier. This has led to failure at repeater sites and loss of Supervisory Control and Data Acquisition (SCADA) and operations visibility of sections of the pipeline. High rental cost and access restrictions imposed on shared infrastructure are also posing a risk to operability and reliability.

In AA5 we plan to spend $23 million to deliver independent communications infrastructure for the northern section of the DBNGP (a total of 50 sites). The key drivers for this work are delivering for customers in terms of public safety and reliability, and health and safety of our employees and contractors working along the pipeline. The work includes replacement of original towers and dishes, obsolete analogue radio equipment, power systems and cabling at compressor stations and rectifiers. We will also increase point-to-point capabilities.

At the end of 2018 we completed a front-end engineering design study to better understand the costs of continuing with microwave technology or delivering a different technology solution such as fibre optic or satellite. We are now working through our preferred option and staging, with an intention to tender for the work in 2019 and begin project delivery in 2020.

The preferred option of full microwave replacement addresses all the issues associated with the northern communications system, provides the capacity required for the future and achieves the target risk rating. There are other options to replace only some components that may cost less but would not address all the issues (particularly capacity) or achieve the same risk outcome. Additional functionality and improved risk could be achieved by spending more, for example to install a fibre optic solution, however, the benefits of these improved outcomes were not considered to outweigh the additional cost.

8.6.3 Compressor unit control systems

Compressor unit control systems provide critical safety and control functions at all compressor stations. Compressor units are operated remotely from our control room located in Perth. It is important to have a reliable control system that can control processes accurately as well as protect equipment in case of abnormal conditions such as fire, vibration or over pressure.

Much of the existing unit control system was installed in 2006 and has now reached its end-of-life. Vendor support for the obsolete system is limited and the cost of procuring spares has increased due to technology advancement.

We have implemented a staged replacement approach for compressor unit control systems to ensure obsolete hardware is changed in a timely manner without impacting on the safe operation of compressor units.

In AA5 we will replace eight units at a total cost of $19 million. The key driver for this work is delivering for customers in terms of public safety and reliability.

A further benefit of the control system replacement is that we will be able to utilise the newest version of Solar Turbines' (our key supplier) control optimisation package. The control algorithms for these systems are continually being improved to drive safer, more reliable and more efficient turbomachinery control.

The proposed program to proactively replace unit control systems is in line with our AMPs, manufacturer's guidelines and current practice. This program reduces the risk associated with relying on unsupported or obsolete equipment.

8.6.4 Jandakot redevelopment

Our operational facility at Jandakot is nearing 40 years of age and cannot continue to meet the needs of the business in its current state. There is insufficient secure and weatherproof warehousing for materials and spares, office space is limited and more akin to a warehouse than an office environment. The staff amenities and training facilities are inadequate to promote a healthy, engaged and skilled workforce, and there is poor traffic ingress and egress to site and insufficient parking.

During AA5 we are planning to redevelop the site at a cost of $8 million. This will provide additional warehouse storage; a redesigned office building which meets current building standards; purpose-built training and meeting facilities; separation of ingress and egress for staff and logistics; and additional long-term parking for remote staff.

We considered options that included leasing or purchasing an alternative site, however, this would not provide enough savings to warrant the increased disruption and market risk arising from selling and purchasing a new property and building or fitting out a new facility.

8.6.5 IT

Our information and technology systems are integral to delivering safe, reliable and efficient services. We have developed our digital strategy for AA5 based on our current state, emerging industry trends and drivers, and a fit-for-purpose future state. Our analysis has made it clear to us that an uplift in IT investment (which has had minor focus and investment in the past) is required.

Some key areas for improvement we identified were the accessibility, long-term dependency and supportability of Customer Reporting System (CRS); potential lost productivity due to manual processing and lack of collaboration; unlocked potential of existing data and information; and a growing cyber threat to industrial control systems worldwide.

Our digital strategy and roadmap of initiatives for AA5 is driven by our objective to be sustainably cost efficient. It also delivers for customers by securing against threats, modernising systems and increasing digital capabilities, and helps us to be a good employer by modernising systems and investing in data management and business intelligence.

Our AA5 IT initiatives fall into three main areas:

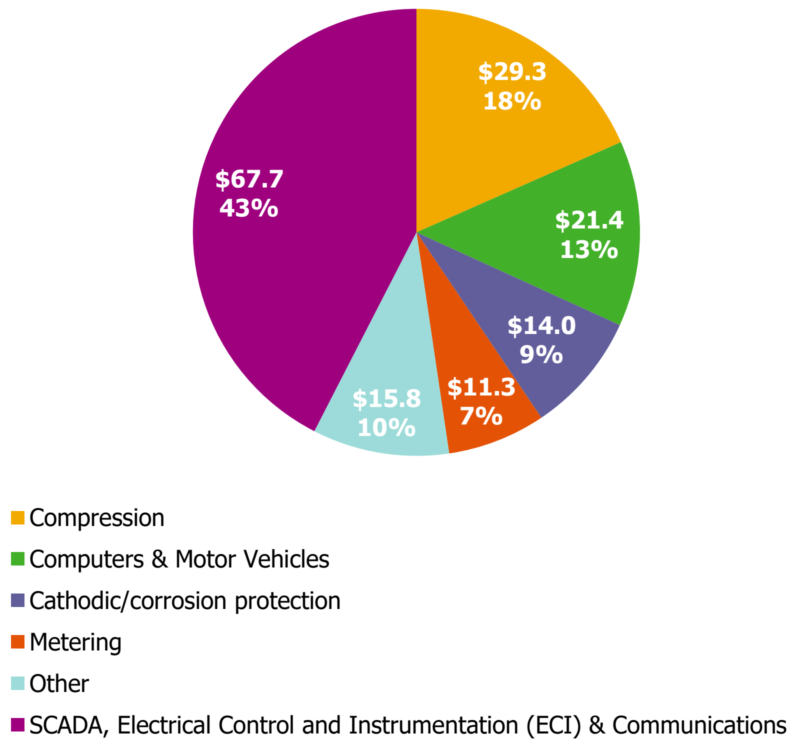
- IT enabling ($6 million) – this is an improvement and uplift to the delivery of DBP IT services to standard industry practice, enabling effective and efficient services to the customer and ensuring compliance with regulatory obligations;
- IT sustaining ($6 million) – this will maintain the current levels of IT services and mitigates risks associated with our core business systems through a prudent cycle of system upgrades and replacements; and
- IT security ($2 million) – this ensures all IT services are delivered safely and securely, are resilient to external threats and comply with our security obligations.

The levels of investment proposed are considered the minimum required to achieve our objectives and provide robust and resilient technology systems to support our business needs over the AA5 period.

8.6.6 Summary of our AA5 capex by asset category

Figure 8.4 shows our AA5 capex by asset category. As already described above, our expenditure in AA5 is largely driven by the replacement of obsolete and end-of-life communications and control systems, as well as renewal of compressor station equipment to ensure we can continue to deliver gas safely and reliably.

Figure 8.4: AA5 capex by asset category ($million, Dec 2020)



8.7 How we deliver our capex efficiently

We operate within a framework of external and internal controls which govern the way we plan, assess, procure and deliver capital works. This framework ensures we are making sound investment decisions for our customers, our stakeholders and our business.

8.7.1 Our Safety Case and Asset Management Plans

As discussed in section 7.7.1, our Safety Case is the primary document outlining how we operate the DBNGP in compliance with our obligations under the *Petroleum Pipelines Act 1969 (WA)*, regulations and our operating licences.

The Safety Case provides assurance the systems, processes and procedures we have in place will support us in systematically and continually identifying and assessing threats to asset integrity, and therefore, the safe and reliable operations of the DBNGP.

Our AMPs guide the way we invest in our assets and help to ensure the capex activities we undertake are clearly aligned to our vision. An overarching AMP sets the framework, while specific AMPs outline key risks and controls for each asset type. These AMPs demonstrate the logical development of asset improvement and replacement plans, and complete the feedback loop by monitoring asset performance.

The AMPs also outline how we continually monitor, evaluate, plan and undertake asset integrity assessments to extend the remaining life, improve, replace, or where necessary, retire assets. This ensures efficient, reliable and safe operations of the DBNGP are maintained.

8.7.2 Financial governance

Our business planning doesn't stop with each AA period. We continually update our capex plans to respond to changing business needs.

In the annual planning process, proposed capex projects are risk ranked and then submitted to our Project Review Committee (PRC) where funding requirements, resource availability and optimised delivery of the plan are considered. Risk ranking is refreshed to ensure projects identified as required in the medium term are accelerated or deferred where prudent, and to allow us to respond to significant unplanned events.

The approved capex projects are presented to the Board for approval. Once approved, projects are then managed and monitored in line with our Project Management Methodology (PMM) which we outline below.

As discussed at 7.7.2, we regularly report our expenditure performance against prior year spend and approved regulatory allowances.

8.7.3 Project governance

Our PMM outlines our approach to deliver projects. It outlines a process to ensure projects are executed consistently and in a manner that represents industry best practice.

The PMM sets out the monitoring and control required throughout the project lifecycle. It also includes key requirements in relation to planning, risk, quality, communication, schedule, environment and reporting, close out, procurement, cost, audit and regulatory obligations. It is based on the principles outlined in the Project Management Institute's Project Management Body of Knowledge.

Figure 8.5: Our project lifecycle

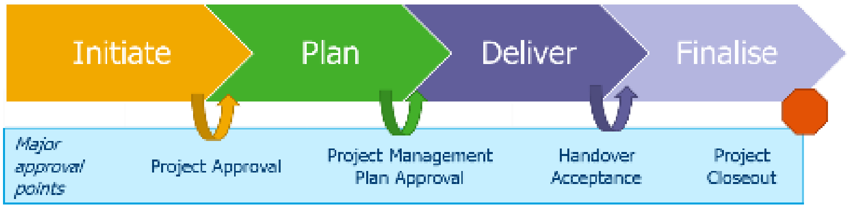
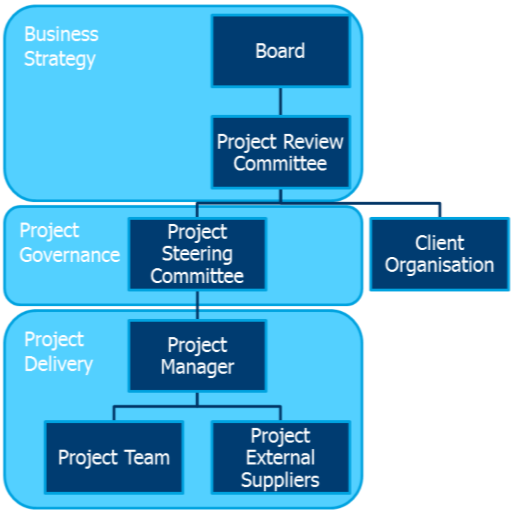


Figure 8.6: Our project governance structure



As the owner of the PMM, the Project Management Office (PMO) is responsible for the quality and fitness for purpose of the PMM as well as ensuring the PMM is appropriately applied in the business.

The PMM outlines the approval process and major project milestones at each stage of the project lifecycle. Our project lifecycle is depicted in Figure 8.5.

The project governance structure that supports approvals at each stage, depending on the size, cost and nature of the project, is depicted in Figure 8.6.

Any changes that occur during project execution are managed through the PMM project change request process. This process ensures there is governance around changes in scope and cost at all stages of the project lifecycle, including execution.

8.7.4 Procurement

All procurement activities – both opex and capex related – are subject to our Purchasing Policy. This ensures we carry out these activities in an efficient, cost effective, confidential and ethical manner to:

- maximise cost savings;
- mitigate risks associated with the provision of goods and services; and
- achieve excellence in both operational and financial performance.

The Procurement Group is the owner of the Purchasing Policy and is responsible for ensuring it is up to date and appropriately applied in the business.

Table 8.1 outlines the minimum information requirements that must be met, depending on the value being procured. All procurement activities exceeding a value of $100,000, must be competitively tendered to at least three vendors, and exceeding $1 million to at least four vendors.

Contractual or pricing agreements for ongoing supply of goods or services are reviewed annually.

Our Delegation of Financial Authority covers all financial transactions within our organisation. It outlines the level of financial authority at each level within our organisation. Only the CEO has financial delegation to approve funds for unbudgeted initiatives, and only where it fits within the overall approved budget. This provides strong financial controls and governance in the delivery of capex.

Table 8.1: Minimum purchasing requirements

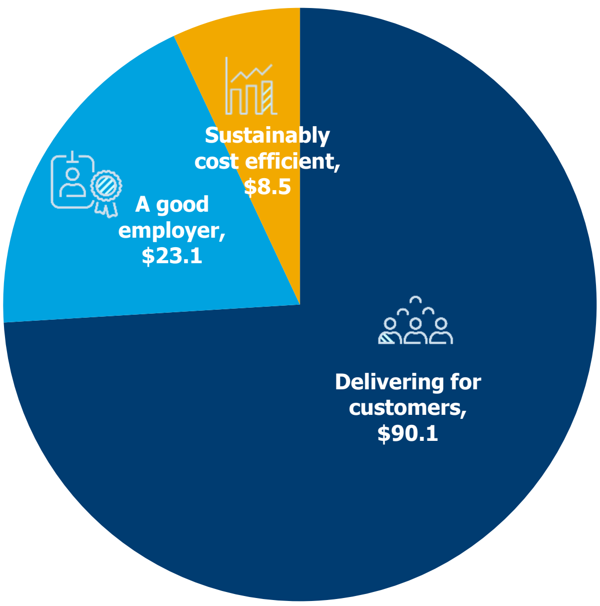
Value	Minimum requirement
<$20k	One written quote, prices and info emailed
$20k-<$100k	Two written quotes
>$100k-<$1,000k	Tender from three vendors
>$1,000k	Tender from four vendors

8.8 Our performance in AA4

We have invested $67 million of capex during AA4 up to December 2018 and are forecasting to invest a further $55 million, totaling $122 million by the end of the period. Our AA4 capex is designed to achieve our objectives of:

- delivering for customers;
- being a good employer; and
- being sustainably cost efficient.

Figure 8.7: AA4 capex by driver ($million, Dec 2020)



During the AA4 period, 74% of our capex is focussed on delivering for our customers.

8.8.1 Delivering for customers

We have invested $49 million (forecast $90 million by the end of the period) on projects and programs that enable us to provide the services customers require and value. To date, we have delivered 100% system reliability, have required zero curtailments, built standalone communications infrastructure for the southern section of the pipeline, completed in-line inspection, including intelligent pigging, along the entire length of the pipeline (around 3,000km), and replaced end-of-life metering.

8.8.2 A good employer

We have invested $11 million (forecast $23 million by the end of the period) on projects and programs to support our vision objective to be a good employer. We have delivered strong safety performance, completed working at heights upgrades, and achieved leading employee engagement. We also commenced minor refurbishments of our Perth Esplanade office and Jandakot depot, and began refurbishing original compressor station accommodation, with one of nine to be completed by the end of AA4.

8.8.3 Sustainably cost efficient

We have invested $6 million (forecast $8 million by the end of the period) on projects and programs to ensure we are sustainably cost efficient. We have increased our investment in cyber security in response to threats and external obligations, which was not forecast in our AA4 approved allowance.

8.9 Key projects and programs we have delivered in AA4

The following sections provide some further detail on some of the key projects and programs have delivered (and will continue to deliver) during the AA4 period. Together these key projects and programs represent 62% of total capex invested in AA4.

8.9.1 Compressor stations

As outlined in 8.6.1, compressor stations are integral to the safe and reliable delivery of gas. We undertake regular works at our compressor stations to ensure the integrity of our compression assets.

By the end of AA4 we will have invested $32 million on compressor stations. This is $1 million (3%) above the allowance approved in our AA4 decision. The key driver of the compressor stations program is maintaining public safety and reliability. During the AA4 period we have:

- renewed end-of-life rotating plant (valves, seals, hot gas path, fuel gas pressure control, air compressors, aftercoolers and air inlet filters totalling $11 million), instrumentation (controls and fire and gas systems totalling $6 million), power supply ($4 million) and other mechanical equipment ($4 million); and
- repaired compressor stations, and undertaken preventative works that protect from corrosion ($3 million) and safety hazards ($4 million).

8.9.2 Meter stations

Meter stations ensure accurate billing and supply to all customers. Metering equipment at inlet and outlet stations must enable remote operation and accurately monitor and record quantity, quality and specification data for gas delivered. It also needs to be maintained in line with Australian Standards.

By the end of AA4 we will have invested $24 million in our meter stations. This is $2 million (9%) above the allowance approved in our AA4 decision. The key driver of our meter stations program is maintaining public safety, reliability and customer service.

During the AA4 period we have:

- replaced and refurbished flow measurement ($3 million), quality measurement ($0.4 million), heating equipment ($0.2 million), odorisation ($2 million), pressure, temperature and flow equipment ($11 million), and control instrumentation ($6 million); and
- repaired meter stations, and undertaken preventative works that protect from corrosion ($1 million) and safety hazards ($0.2 million).

8.9.3 Southern communications

As highlighted at 8.6.2, communications infrastructure is critical to ensure safe operations of the DBNGP at all times and all locations.

We have invested $7 million to deliver standalone communications infrastructure for the southern section of the DBNGP which comprises seven sites between Perth

Figure 8.8: Alcoa Wagerup meter station, a telecommunications tower and pigging of the pipeline in 2018

and Bunbury. This is $5 million above the allowance approved in AA4.

The AA4 forecast developed in 2015 was based on upgrading existing shared infrastructure with another utility. However, further investigations and analysis of the relative cost, conditions and risk of various options determined the most prudent and efficient option would be new standalone infrastructure.

Standalone infrastructure has the further benefits of:

- longer asset life;
- no annual rent costs;
- quicker delivery; and
- reduced administration in terms of contractor and employee training and site induction.

The key drivers for this work are maintaining public safety and reliability, and the health and safety of our employees and contractors working along the pipeline. The work includes building communications towers and installing site security, microwave dishes, new digital radio equipment, power systems and cabling. We have also increased our point-to-point capabilities making the system more resilient.

8.9.4 Pipeline and mainline valve inspections

Our pipeline and mainline valves (MLVs) are integral to the safe and reliable delivery of services. We undertake regular and routine condition monitoring, including intelligent pigging, in line inspections (where the pipeline cannot be pigged), stress concentration tomography, long range ultrasonic and dig ups to ensure the integrity of these assets. These inspections highlight anomalies so we can monitor any deterioration in asset condition and take action to repair any defects.

By the end of AA4 we will have invested $10 million to undertake Pipeline and MLV inspections. This is $1 million below the allowance approved in our AA4 decision, as we are forecasting to be able to deliver our intelligent pigging program of the DBNGP and laterals in 2018-20 at a slightly reduced cost than originally forecast. However, as the program is still underway, this may change. For example, we have found naturally occurring radioactive materials in some of our samples, which may increase our inspection and cleaning costs.

The key driver for this work is maintaining public safety and reliability. Faults in the pipeline can cause rupture affecting public safety and service delivery. Faults in interfaces and valves can see gas lost and pressure issues, which decreases the efficiency of the pipeline and adds unnecessary costs to operation. It can also lead to fire where exposed to an ignition source. It is prudent and efficient to address anomalies and defects in pipeline and MLV assets before they escalate resulting in cracks or ruptures. This is particularly important in transmission where large volumes of gas are transported at very high pressure.

8.9.5 Accommodation

We have accommodation facilities at nine of our compressor stations along the DBNGP to support our field staff who work and stay for multiple nights at our remote compressor stations. By the end of AA4, all compressor station accommodation facilities will be over 30 years old.

We originally forecast $9 million would be required to build new accommodation facilities at our compressor stations, and $0.8 million to continue minor refurbishments at existing compressor station accommodation facilities.

Approval was given on a preliminary concept and high-level cost estimate with further work to be done to develop the scope of work and proceed to competitive tender in late 2016.

We have now completed those preliminary activities, and have decided not to progress with building new accommodation facilities at this time. Further analysis of options has shown:

- it is difficult and much more costly than we had thought to secure land outside of our existing compressor station sites to build new accommodation facilities;
- newer technologies, silencing material such as mufflers, centralised air conditioning and other heat mitigation initiatives at our compressor stations have enabled us to reduce noise and heat at the source, at a cost-effective price;
- process safety initiatives for inspection of below ground pipework and interface corrosion inspections within our compressor stations have been introduced as additional controls to reduce the risk of catastrophic failure to ALARP;
- engagement with staff has indicated the provision of additional amenities would greatly improve the health and wellbeing of our remote field staff; and
- given all of the above, reinforcement works to facilities in cyclone prone environments would be more cost-effective than building new accommodation units.

Therefore, rather than the $9 million originally forecast, we are investing $3 million in our compressor station accommodation. This includes minor refurbishment ($1 million) and adding additional amenities to all compressor station accommodation facilities ($1 million), and also to start our program to renovate all accommodation facilities to improve noise and heat control and reinforce facilities in cyclone prone areas ($1 million).

8.9.6 IT security

IT security has become an increasingly important area for utilities in recent years. In AA4 we are investing $1 million in IT security. There was no capex allowance for IT Security in our AA4 decision.

The key driver for this work is being sustainably cost efficient. It also delivers for customers and employees by ensuring:

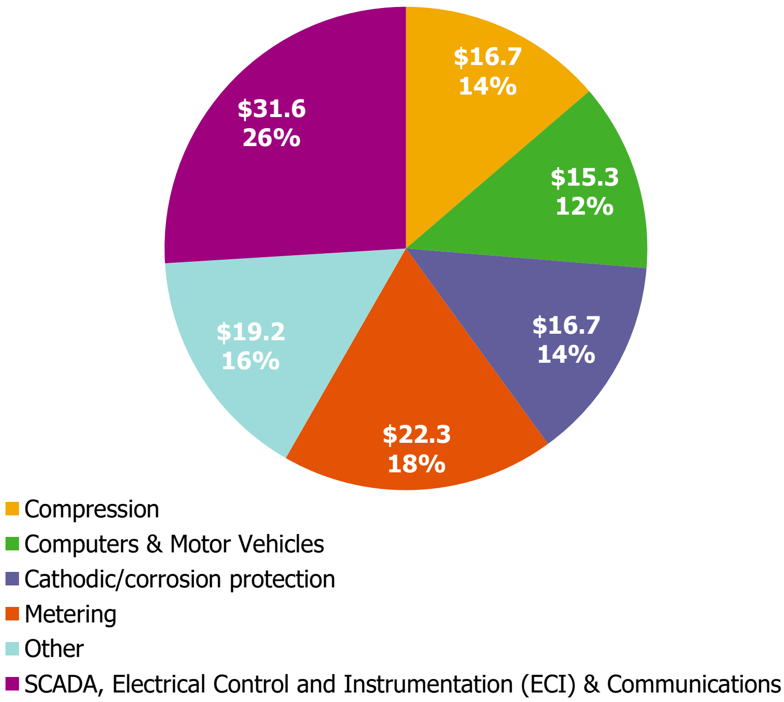
- we meet our obligations under the *Security of Critical Infrastructure Act 2018,* which was introduced during the AA4 period;
- we have a strong cyber security policy and culture;
- we have robust systems; and
- we are able to respond to threats.

The work includes establishing a cyber security framework ($0.1 million), introducing multifactor authentication ($0.4 million), standardising rights and role-based access across the business ($0.1 million) and upgrading our cyber security ($0.4 million).

8.9.7 Summary of our AA4 capex by asset category

Figure 8.9 shows our AA4 capex by asset category. As already described above our expenditure in AA4 has been driven by renewal of compressor station and metering equipment, the replacement of obsolete and end-of-life communications, cathodic protection (including intelligent pigging and in line inspection of the entire DBNGP) and other ongoing activities to ensure the ongoing safety and reliability of the DBNGP.

Figure 8.9: AA4 capex by asset category ($million, Dec 2020)



8.10 Comparison of AA4 and AA5 capex by asset category

Table 8.2 provides a comparison of capex in AA4 and AA5 by asset category. It shows we are expecting a large increase in compression, computers and motor vehicles and SCADA, ECI and communications, partly offset by decreases in cathodic/corrosion protection, metering and other. We explain our capex over time further below.

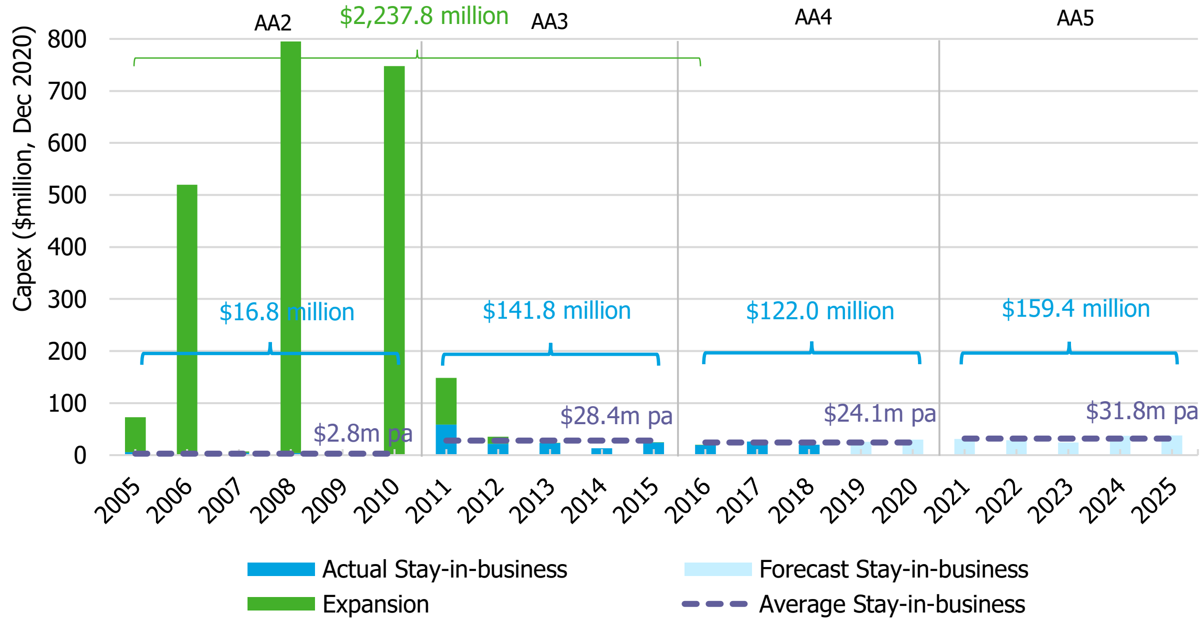
8.11 Our capex investment over time

Our capex is driven by our safety and environmental obligations, the requirements of our customers and the age, performance and wear and tear of our assets. This can result in a lumpy capex profile as Figure 8.10 shows.

Table 8.2: AA4 and AA5 capex by category ($million, December 2020)

Asset category	AA4 capex	AA5 capex	Key projects and programs
Compression	16.7	29.3	• Compressor stations • Accommodation
Computers & Motor Vehicles	15.3	21.4	• IT sustaining, enabling and security
Cathodic/corrosion protection	16.7	14.0	• Compressor stations • Pipeline and MLV inspections
Metering	22.3	11.3	• Meter stations
Other	19.2	15.8	• Jandakot
SCADA, ECI & Communications	31.6	67.7	• Compressor unit control systems • Northern communications • Southern communications
Total	**121.8**	**159.4**	

Figure 8.10: Capex since 2005



In the mid-2000s we undertook a large expansion capex program at a cost of $2 billion to loop 85% of the pipeline and provide associated compression. Communications equipment and control systems installed in this large expansion capex program are now 15-20 years of age. They are obsolete and out of support. Replacing this equipment is essential and drives an increase in our stay-in-business capex program for AA5. In fact, as the DBNGP approaches 40 years of operations, and 20 years since its expansion, the capex requirements to maintain its strong safety and reliability performance have increased. We have therefore stepped up our annual investment from 2019 onwards.

As Figure 8.10 shows, capex in AA4 and AA5 has been driven by stay-in-business requirements which focus on maintaining or improving our ability to deliver current Reference Services. The type of work delivered, of which examples are provided in sections 8.6 and 8.9, do not extend the overall economic life of the DBNGP.

8.12 Summary

Our capex in AA5 will ensure we:

- maintain our strong safety, reliability and service performance we are delivering in AA4;
- have a healthy, engaged and skilled workforce; and
- are sustainably cost efficient into the future.

Key projects and programs we will deliver are:

- standalone communications infrastructure for the northern section of the DBNGP;
- replacement of obsolete control systems to maintain strong reliability performance; and
- greater investment in our IT systems, data management, digital capabilities and cyber resilience.

Together with the rest of our AA5 capex program, these will deliver the strong safety and reliability valued by our customers and a modernised customer service.

As demonstrated by our performance in AA4, we will deliver our capex program prudently and efficiently by applying our established financial, project and procurement governance frameworks and reassessing our plans where our business needs change.

To aid the engagement process, we would welcome your responses to the following question:

Question for consideration
Do you support our approach to forecasting capex? Have we provided sufficient information to understand our proposals and the basis of the costs included?

9 Capital base

Our capital base is set to fall from $3.4 billion to $2.8 billion in AA5 reflecting that new investment is lower than the depreciation of existing assets over the period. This builds in lower costs for financing in AA6 and beyond.

IN THIS CHAPTER

Our approach to rolling forward our capital base positions the DBNGP to serve customers now and into the future

We have proposed additional asset categories to align with other transmission pipelines

Our capital base reflects the value of past investments made in the DBNGP, but not yet recovered from customers.

The current value of our capital base (at the end of 2018) is around $3.5 billion (forecast to reduce further to $3.4 billion at the beginning of the AA5 period).

The following sections discuss our approach to adjusting our capital base over AA4 and AA5.

9.1 Overview

Our approach to adjusting our capital base is consistent with regulatory practice. We have updated for actual capex in AA4, forecast capex in AA5, asset disposals (which are zero in both AA4 and AA5), depreciation and inflation.

Engagement insights

- ✓ Many stakeholders noted the rapid changes occurring in the energy industry as it decarbonises, with uncertainty over the future role of gas and the DBNGP.
- ✓ Customers noted that the increasing diversity of energy sources including renewables is creating change for the energy system and affecting infrastructure operations and planning.

9.2 Regulatory framework

We are required to adjust our opening capital base for the next period to reflect the difference between estimated and actual capex in the current AA period (net of any amounts contributed by our customers), inflation and depreciation. We are also required to make certain other adjustments to our capital base, such as to remove the value of any assets that we have sold or to reflect the reuse of redundant assets in AA4.

Our capital base over AA5 is then adjusted for forecast capex, depreciation and inflation.

Our forecast of depreciation is required to be set:

- so that our prices vary over time in a way that promotes the efficient growth in the market for reference services provided by our business;
- so that our assets are depreciated once over their economic life;
- to allow for changes in the expected economic life of specific assets; and
- to allow for our reasonable needs for cash flow to meet our costs.

9.3 Stakeholder engagement

During the Shipper Roundtables, we engaged on key areas of our planning, including our proposed approach to adjusting our capital base.

Specifically, we discussed the uncertainty in the future energy market due to the potential impacts of a low carbon energy system. We also discussed the need to consider current and future customers and what the right assumptions are to address this uncertainty over the next five years.

9.4 Capital base as at 1 January 2021

We have adjusted (or rolled forward) our capital base as at 1 January 2021 for actual capex and inflation, and for forecast depreciation over the remainder of the current AA4 period. Table 9.1 shows the adjustments we have made to our capital base over AA4, however, as it is shown in dollars of December 2020, it does not show the impact of inflation.

9.5 Capital base as at 31 December 2025

This section discusses the forecast adjustments we propose to make to the capital base over the next AA5 period in terms of capex, depreciation and inflation.

9.5.1 Capital expenditure

Our forecast capex is discussed in Chapter 8 of this Draft Plan. AA5 capex by asset category for each year of the period is reproduced in Table 9.2. The asset categories are used to adjust our capital base and have been set in line with industry practice. We discuss this in more detail below.

Table 9.1: Roll forward of the capital base 2016 to 2020 ($million, Dec 2020)

	2016	2017	2018	2019	2020
Total asset base (excluding shipper funded works)					
Capital base at 1 January	3,763.6	3,676.5	3,592.5	3,505.1	3,427.2
Plus Conforming Capex	19.3	25.1	22.4	25.5	29.6
Less					
Disposals and redundant assets	0.0	0.0	0.0	0.0	0.0
Depreciation	106.4	109.1	109.8	103.4	93.5
Capital base at 31 December	**3,676.5**	**3,592.5**	**3,505.1**	**3,427.2**	**3,363.3**

Table 9.2: Forecast capex by regulatory asset category in AA5 ($million, Dec 2020)

	2021	2022	2023	2024	2025
Pipeline	0.0	0.0	0.0	0.0	0.0
Compression	6.3	4.0	7.5	5.6	5.9
Metering	2.6	2.0	2.6	2.1	2.1
BEP Lease	0.0	0.0	0.0	0.0	0.0
Computers & Motor Vehicles	4.4	5.7	4.1	3.8	3.4
SCADA, ECI & Communications	12.6	14.0	5.2	17.6	18.2
Cathodic/corrosion protection	2.7	2.7	3.1	3.0	2.3
Other	2.2	1.6	1.6	5.3	5.1
Total capex	**30.9**	**30.0**	**24.1**	**37.4**	**37.0**

9.5.2 Forecast depreciation

We use a straight-line approach for forecast depreciation. This is consistent with the approach adopted for previous AA periods and looks to align the economic benefits, and the recovery of asset costs, smoothly over the service life of the assets.

To do this, we have:

- set our asset lives and asset categories in line with accepted industry practice for other regulated transmission pipelines; and
- considered the long-term economic life of the DBNGP in a low carbon economy in light of changes in renewable electricity technology.

We have proposed eight regulatory asset classes with asset lives ranging from five years for computers and motor vehicles up to 70 years for pipeline assets.

The asset categories and asset lives we are proposing, and comparison to the asset categories and asset lives for other transmission pipelines, is outlined in Table 9.3.

In addition to setting the proposed asset categorisation and lives for new capex in AA5, our proposal also adjusts the asset categorisation and lives for existing assets to determine the capital base as at 1 January 2021. This ensures like assets are treated consistently in our asset base.

Table 9.3: Comparison of asset categories and standard lives

DBNGP 2021-25		Goldfields Gas Pipeline		Roma to Brisbane Pipeline		Victorian Transmission System		DBNGP 2016-20	
Category	Years	Category	Years	Category	Years	Category	Years	Category	Years
Pipeline	70	Pipeline and laterals	70	Pipelines	80	General buildings	60	Pipeline	70
Burrup Extension Pipeline (BEP) Lease	57	Maintenance bases and depots	50	Original pipeline (DN250)	60	Pipelines	55	BEP lease	57
Metering	50	Mainline valve and scraper stations	50	Regulators and meters	40	Compressors	30	Metering	50
Compression	30	Receipt and delivery point facilities	30	Compressor	35	City gates and field regulators	30	Compression	30
Other depreciable	10	Compressor stations	30	Communication	15	Odorant plants	30	Other depreciable	30
Cathodic/ corrosion protection	15	Cathodic protection	15	Other	5	Gas quality	10		
SCADA, ECI and communications	10	SCADA and communications	10	Capitalised AA costs	5	Other	5		
Computers and Motor Vehicles	5	Other depreciable assets	10	Group IT	5				
				SIB capex	5				

We also considered the recovery profile of the DBNGP to ensure it is consistent with its economic life. We propose to bring forward the end life of the loop line by around 30 years to match the economic life of the DBNGP main line of 2055. The loop line is not continuous, and therefore cannot physically be operated without the main line.

This approach is also consistent with the economic life of the DBNGP in light of the uncertainty around future energy models and the falling prices of renewable electricity providing alternative energy options for our customers.

The need to decarbonise energy supplies is recognised globally and in Australia. While the future energy system that will eventuate is uncertain, our prices need to remain competitive with other energy options. Our approach enables the DBNGP to continue to deliver for customers now and into the future.

Table 9.4 summarises our forecast depreciation over AA5.

Table 9.4: Forecast straight-line depreciation 2021 to 2025 ($million, Dec 2020)

	2021	2022	2023	2024	2025
Pipeline	83.2	83.2	83.3	83.3	83.4
Compression	18.2	18.6	18.9	19.3	20.2
Metering	1.7	1.8	1.9	1.9	2.0
BEP Lease	0.6	0.6	0.6	0.6	0.6
Computers & Motor Vehicles	4.8	4.8	4.8	4.8	4.8
SCADA, ECI & Communications	11.8	11.8	11.8	11.8	11.8
Cathodic/corrosion protection	3.5	3.5	3.5	3.5	3.5
Other	10.1	11.7	13.6	14.3	15.3
Total straight-line depreciation	**134.0**	**136.1**	**138.4**	**139.7**	**141.7**

9.5.3 Inflation

Forecast inflation is used to adjust the capital base over the next AA period (in this case, AA5). It is later updated for actual inflation when adjusting the capital base for the previous AA period (consistent with the adjustment for actual inflation explained for the capital base as at 1 January 2021).

Forecast inflation is also used to determine the total revenue we can recover (and hence the prices we can charge). Under the methodology the ERA uses to determine our total revenue, forecast inflation applies to the following two costs:

- return on capital – which is calculated by multiplying a nominal rate of return (see Chapter 10) by the nominal capital base determined in this section (where a nominal value includes the impact of inflation); and
- regulatory depreciation – which is calculated by deducting the forecast inflation adjustment applied to the capital base from forecast straight-line depreciation as shown in Table 9.5.

The ERA removes inflation from the regulatory depreciation allowance used to determine total revenue to remove the additional compensation that arises from multiplying a nominal rate of return by a nominal capital base (referred to as a double count of inflation).

The ERA requires the application of the break-even approach to forecast inflation, which is detailed in its Rate of Return Guidelines. This approach uses the difference between nominal and inflation-indexed Commonwealth Government bonds to derive a forecast of inflation.

This forecast is an annual inflation rate, for the five years of the AA period. The forecast is made at the same time the cost of debt and return on equity are finalised, just before the Final Decision. Applying the ERA's approach to estimate inflation today provides an estimate of 1.57% per annum over AA5.

9.5.4 Forecast regulatory depreciation

Finally, forecast regulatory depreciation is used as one input to determine the total revenue we can recover over the next AA period. Table 9.5 shows the forecast regulatory depreciation we have used to determine the total revenue for AA5.

9.5.5 Forecast closing capital base

The forecast roll forward of our capital base over AA5, taking into account forecast depreciation, capex and inflation, is set out in Table 9.6. Our capital base declines over the period, from $3,360 million as at 1 January 2021 to $2,830 million as at 31 December 2025.

9.6 Summary

We have adjusted our capital base over the current and next AA periods to reflect actual/forecast capex, depreciation and inflation.

Our proposed asset categories and associated asset lives are consistent with those applying to other transmission pipelines in Australia (including those also regulated by the ERA).

We have brought the recovery profile of the loop line forward to match the recovery profile of the main line.

The lower value of the asset base to start AA6 will deliver future savings in financing costs for our customers and support the DBNGP to continue to deliver valued services to our customers.

Table 9.5: Forecast regulatory depreciation over AA5 ($million, Dec 2020)

	2021	2022	2023	2024	2025
Straight-line depreciation	136.1	140.4	145.0	148.7	153.1
Less inflation	52.8	52.0	51.1	50.0	49.1
Regulatory depreciation	**83.3**	**88.5**	**93.9**	**98.7**	**104.1**

Table 9.6: Forecast capital base 2021 to 2025 ($million, Dec 2020)

	2021	2022	2023	2024	2025
Capital base at 1 Jan	3,363.3	3,260.2	3,154.0	3,039.7	2,937.4
Plus Conforming capex	30.9	30.0	24.1	37.4	37.0
Less					
Disposals and redundant assets	0.0	0.0	0.0	0.0	0.0
Depreciation	134.0	136.1	138.4	139.7	141.7
Capital base at 31 December	**3,260.2**	**3,154.0**	**3,039.7**	**2,937.4**	**2,832.8**

To aid the engagement process, we would welcome your response to the following question:

Question for consideration

Is our approach to adjusting the capital base (including our assumed asset categories, asset lives and aligning the economic life of the main and loop lines) appropriate?

10 Financing costs

We have set our financing costs in line with the ERA's Rate of Return Guidelines, resulting in a rate of return of 5.39%.

IN THIS CHAPTER

We have followed the ERA's Rate of Return Guidelines

Based on forward market estimates, the rate of return is 5.39% (compared to ~5.83% in AA4)

We are expecting lower financing costs in AA5 compared to AA4, with the return on our investment falling $187 million

Financing the $3.2 billion investment in the DBNGP is our largest cost.

Achieving a reasonable rate of return is essential in order to service the necessary funding costs from shareholders and debt providers so that we can continue to invest in our pipeline. We also estimate a regulatory tax allowance to cover the cost of tax over AA5.

The following sections outline how we have calculated our efficient financing costs in AA5. Our approaches are in line with the ERA's Rate of Return Guidelines (the Guidelines), set in December 2018. All numbers quoted are dollars of December 2020, unless otherwise labelled.

10.1 Regulatory framework

We have applied the Guidelines in order to calculate our allowed financing costs.

We also estimate the cost of tax using a methodology specified by the ERA which considers our forecast taxable income, the applicable corporate tax rate and the value of imputation credits (gamma) to equity holders.

10.2 Overview

Our financing costs account for 38% of the building blocks that form our required revenue and prices. Financing costs represent the cost of financing our capital base and meeting our tax obligations.

Our forecast of total financing costs for AA5 is:

- $592 million in return on asset; and
- $64 million in cost of tax.

Both have been calculated in accordance with the Guidelines.

10.3 Stakeholder engagement

During the Shipper Roundtables we discussed our financing costs.

Customers were comfortable with our approach to apply the Guidelines and agreed this was key to achieving our objective of submitting a plan that is capable of being accepted by customers and stakeholders.

10.4 Return on asset

Our return on asset is determined based on an estimate of the return on equity and the return on debt to be incurred over AA5.

10.4.1 Return on equity

The return on equity reflects the return required by shareholders to invest in the pipeline. Unlike the return on debt, it is not straight-forward to observe directly the return on equity required by shareholders in the market. This means we are required to use financial models and other market evidence to inform the estimate of the return on equity required by shareholders.

The ERA estimates the return on equity using the capital asset pricing model, which requires the following three parameters to be estimated:

- the risk free rate - which measures the return an investor would expect from an asset with no risk. It is estimated based on the interest rate on Australian Commonwealth government bonds with a five-year term;

- the market risk premium (MRP)—which reflects the expected return over the risk-free rate that investors require to invest in a well-diversified portfolio of risky assets; and
- equity beta—which measures the sensitivity of an asset's returns relative to movements in the overall market returns.

In the ERA's Guidelines, the MRP and equity beta are fixed. The risk-free rate is estimated based on a 20-day window close to the time of the ERA's Final Decision. For the purposes of this Draft Plan, we have chosen a window during February.

The indicative return on equity is 6.18%, as shown at Table 10.1.

Table 10.1: Indicative return on equity

Parameters	Value
Equity risk-free rate	1.98%
Beta	0.7
Market Risk Premium	6.00%
Return on equity	**6.18%**

10.4.2 Cost of debt

The cost of debt reflects the interest rate required by debt holders on debt. Much like the return on equity, the cost of debt can be thought to comprise a base interest rate and a risk premium, in this case referred to as the debt risk premium (DRP). The approach for estimating the return on debt is also prescribed in the Guidelines.

The cost of debt is observable in the marketplace, and the ERA makes use of market data. It forms its cost of debt estimate by summing:

- the five-year swap rate chosen just prior to the Final Decision;
- an allowance for swapping and hedging (fixed at 0.214%); and
- an estimate of the premium above the ten-year swap rate of ten-year, BBB+ corporate debt, formed as a ten-year trailing average and estimated using the ERA's bespoke index methodology.

As with the return on equity, the cost of debt allowance is finalised just prior to the ERA's Final Decision. Unlike the return on equity, it is updated annually for the trailing average DRP during the AA period.

Based upon data from February, the indicative cost of debt for this Draft Plan is 4.75%, as shown at Table 10.2.

Table 10.2: Indicative cost of debt

Parameters	Value
Debt risk-free rate	2.28%
Debt risk premium	2.25%
Debt raising costs	0.10%
Hedging costs	0.11%
Cost of debt	**4.75%**

10.4.3 Rate of return

The ERA assumes gearing of 55%. This means it is assumed 55% of our total capital base is financed by debt, with the remaining 45% being equity. Applying these percentages to the return on equity (6.18%) and cost of debt (4.75%) results in an overall rate of return of 5.39% over AA5, as shown in Table 10.3.

Table 10.3: Indicative rate of return

Parameters	Value
Return on equity	6.18%
Cost of debt	4.75%
Gearing	55%
Rate of return	**5.39%**

10.5 Cost of tax

Our tax costs are based on an assessment of our taxable income, the applicable corporate tax rate and the value of imputation credits (gamma) to equity holders.

10.5.1 Calculating the tax allowance

We have determined the taxable profit as total revenue (excluding the cost of tax) less opex, tax depreciation and interest expense; where:

- total revenue - which is the sum of all of our costs (or building blocks) aside from the cost of tax (see Chapter 13);
- opex - which is a specific building block that is used to determine total revenue (see Chapter 7);
- tax depreciation - which is based on the calculation of the tax asset base in any particular year (refer Section 10.5.4); and
- interest expense - which is determined by multiplying the cost of debt (of 4.75%) by 55% of our capital base in each year, reflecting the debt funded proportion of the total capital base (see Chapter 9).

The corporate income tax rate is set at 30% consistent with the prevailing corporate tax rate applying in Australia, as per the ERA's requirements. This is then applied to taxable income to obtain a cost of tax.

This cost of tax is then multiplied by gamma, which represents the value of imputation credits. This gives the value of the tax allowance which we are able to recover.

In the ERA's Guidelines, gamma is set at 0.5. This has the effect of halving our tax allowance.

10.5.2 Tax depreciation

Tax depreciation is used to determine the estimate of taxable income and to update the value of our Tax Asset Base (TAB), as discussed in Section 10.5.3. Our approach to determining tax depreciation in this Draft Plan is consistent with that applied in our previous AAs.

10.5.3 Tax asset base

The opening TAB of $943 million as at 1 January 2021 has been adjusted for the same forecast of capex used to determine the capital base (see Chapter 9) plus capital contributions received, and a forecast of tax depreciation over AA5 (see Table 10.5).

Table 10.5: Roll forward of the tax asset base ($million, nominal)

	2021	2022	2023	2024	2025
Opening tax asset base	945.7	874.9	802.1	722.1	655.4
Plus gross capex	31.4	30.9	25.2	39.8	40.0
Less tax depreciation	102.2	103.7	105.2	106.5	108.4
Closing tax asset base	**874.9**	**802.1**	**722.1**	**655.4**	**587.1**

10.5.4 Tax allowance

Using the above information, the tax allowance to be recovered in AA5 is summarised in Table 10.6 above. The gross tax allowance is the corporate tax rate multiplied by taxable profits, and taxable profits are formed as revenues minus operating costs, tax depreciation and interest costs.

Table 10.6: Total tax allowance ($million, Dec 2020)

	2021	2022	2023	2024	2025
Gross estimated tax cost	21.3	26.9	27.8	29.2	29.7
Less imputation credits	10.6	13.4	13.9	14.6	14.9
Tax allowance	**10.6**	**13.4**	**13.9**	**14.6**	**14.9**

10.5.5 Summary

A summary of our key financing cost parameters, developed in accordance with the ERA's Rate of Return Guidelines, is provided in Table 10.4.

Table 10.4: Summary of financing cost parameters

Parameters	Value
Return on equity	6.18%
Return on debt	4.75%
Overall rate of return	5.39%
Gamma	0.5

To aid the engagement process, we would welcome your response to the following question:

Question for consideration
Do you have any comments on our approach to setting the financing and tax costs in this Draft Plan?

11 Demand

We forecast average daily contracted capacity in AA5 to be 682TJ per day on a Full Haul equivalent basis. We are forecasting a decrease in contracted capacity in both Full Haul and Part Haul, and an increase in Back Haul compared to levels in AA4.

IN THIS CHAPTER

Our demand forecast considers the contracts and activities of our shippers (bottom-up) as well as overall changes in the WA gas market (top-down)

Full Haul demand on the DBNGP is decreasing in AA5 and we are seeing an increase in demand for Back Haul services

Demand for our services drives our operations and is also a key determinant in calculating reference prices.

The following sections outline our approach to forecasting demand, comprised of contracted capacity (or reserved capacity) and throughput (volume of gas transported, and therefore, utilisation of the pipeline).

11.1 Regulatory framework

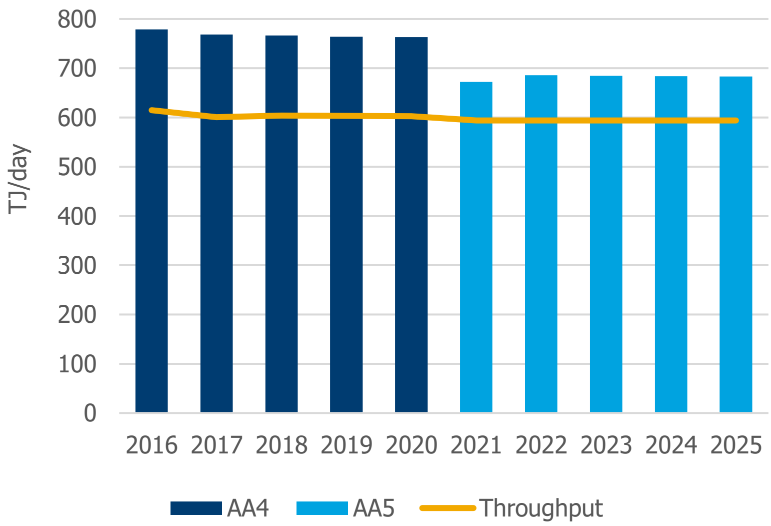
Our AA proposal should include a forecast of pipeline capacity and utilisation over the AA5 period. This is a key input in determining our prices. Our forecast must:

- be arrived at on a reasonable basis; and
- represent the best forecast or estimate possible in the circumstances.

11.2 Overview

Our forecast average Full Haul equivalent contracted capacity over 2021-25 is 682TJ/day. This is an 11% reduction compared to the current 2016-2020 period, driven by both realised and expected relinquishments (Figure 11.1).

Figure 11.1: Average Full Haul equivalent contracted capacity and throughput forecast to 2025



Our forecast average Full Haul equivalent throughput over the AA5 period is 594TJ/day. This is a reduction compared to the AA4 period, driven by a change in shipper requirements on the pipeline (section 11.4).

The forecast average daily demand for capacity and throughput on the DBNGP is shown in Figure 11.2.

Engagement insights

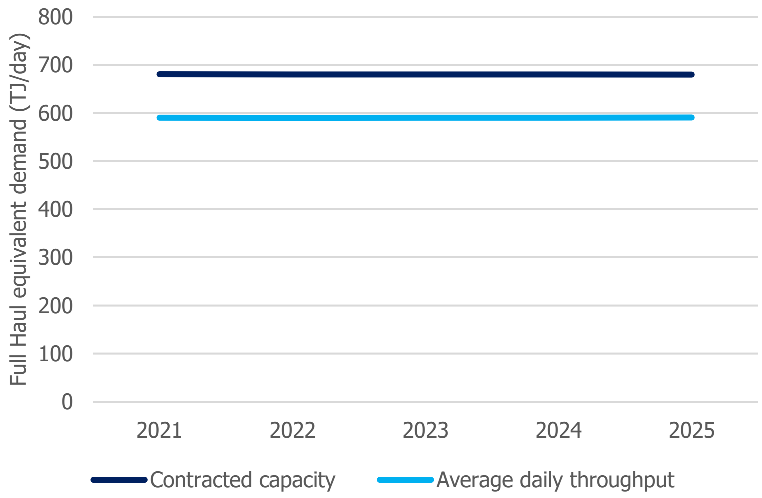
- ✓ Customers and stakeholders are seeing an increase in renewables in the energy market.
- ✓ Customers noted uncertainty about the ongoing role of the DBNGP as the energy system decarbonises, and the related focus on renewable electricity.

11.3 Stakeholder engagement

We discussed our proposed demand forecasts with our shippers during the Shipper Roundtables.

Shippers were relatively comfortable with our approach to forecasting demand in AA5, but did ask for some further information on the assumptions we had made around the fuel mix for electricity generation over AA5, particularly how we had used publicly available information to estimate the impact of wind. They were also keen to understand how the demand forecast was factored into our opex and capex forecasts for AA5. The feedback and insights gathered through these sessions is reflected in the demand forecast (and expenditure forecasts) put forward, in this Draft Plan.

Figure 11.2: Forecast Full Haul equivalent demand in AA5



Record flows through CS9, August 2018

The demand profile of the DBNGP is changing over time. Further exploration of one day in August 2018 helps to demonstrate the changes and the effects on our operations.

The day began with Full Haul nominations of 684TJ at 7am, increasing to 754TJ at midday, with only one peaking electricity generation unit expected to operate.

On the day, south of Perth, four peaking gas-fired electricity generation units were online. Actual Full Haul throughput for the day was 793TJ, total deliveries (including Full, Part and Back Haul) was 1,128TJ. The peak instantaneous flows through CS9 were the highest ever at 1,045TJ, a new record.

To respond to these events we were required to operate additional compressor units (at each of CS8, CS9 and CS10) to respond to demand and prevent a pressure drop. Demand was well excess of contracted capacity and available peaking rights for many shippers (in some cases as much as three times contracted capacity).

11.4 Changing demand on the DBNGP

One of the key drivers of our demand forecast is the changing nature of demand on the DBNGP.

The SWIS in undergoing significant changes as more renewable energy capacity creates more demand for gas peaking electricity generation units.

In the near term, increasing penetration of renewable energy into the South West Interconnected System (SWIS) is changing the way the DBNGP is used, we expect more volatility as we respond to the demands of gas-fired generation in the SWIS being used to match the peaks and troughs of renewable electricity production. For AA5, this leads in part to a forecast decrease in demand for capacity, but an increase in capacity utilisation.

AGIG has invested time in its operational and technical business units to improve its visibility to hourly flow data at its outlet points and to understand how we can better operate the pipeline for system stability.

The case study also highlights that while on a daily average basis the utilisation of the DBNGP is less than nameplate capacity, there are increasingly frequent instances where peaks intra-day flows are well over 845TJ/day (nameplate T1 Firm Full Haul capacity).

11.5 How we develop our throughput forecast

Our throughput forecast is a forecast of energy delivered (in TJ) under a particular service on an average daily basis.

There are a number of sources of information that have been relied on to derive the forecast. Firstly, we maintain records for each of our customers throughput within our CRS database. We use the CRS database to calculate average annual throughput levels and historical annual changes in throughput for each of our current customers and end-user industry groups. This data analysis is a key input to the throughput forecast.

Secondly, we use a range of external data sources in developing forecasts of average annual throughput. We use a comprehensive range of external sources, including:

- confidential information received directly from customers;
- the AEMO's Gas Statement Of Opportunities (GSOO);
- the AEMO's Electricity Statement of Opportunities;
- Department of State Development reports;
- submissions made to the ERA;
- local news articles about investment plans;
- the ABS; and
- Chamber of Minerals and Energy annual resources and economics reports.

Finally, we compare the forecast of annual average throughput for each customer against historical intra-year throughput profiles to determine forecasted maximum and minimum throughput for each forecast year. In general, intra-year trends are relatively stable due to the operating environment of the underlying end-user.

11.6 How we develop our forecast of contracted capacity

Contracted capacity is generally very predictable and stable. Our T1, P1 and B1 negotiated pipeline services each require a 15-year commitment to an agreed amount of capacity, expressed as an amount of TJ per day. We examine the termination dates, relinquishment rights and contracted capacity for each customer to develop an initial index of existing customer contracted capacity.

Secondly, for each of our current customers, we compare the throughput forecast to the capacity forecast developed for the customer. For example, it is unlikely that throughput will substantially exceed contracted capacity for an extended period of time because there are mechanisms within the Standard Shipper Contract (SSC) to incentivise against this behaviour. Similarly, the fixed capacity charge for the T1 service implies that customers have an economic incentive not to over contract (or underutilise contracted capacity) for extended periods. The capacity utilisation or throughput of each customer is considered against capacity contracted to identify whether capacity is over or under contracted.

Thirdly, we adjust the initial capacity forecast to reflect any expected relinquishment, termination or additional capacity (that is either allowable within the SSC or is currently being negotiated with the customer).

We then reach a view on the amount of capacity forecast to be relinquished, terminated or added during the AA period by reference to a number of sources of information:

- access requests that have been received; and
- direct confidential discussions with customers which may also indicate a likelihood of relinquishment or terminate its capacity.

11.6.1 Full Haul

Figure 11.3 shows our forecast of contracted capacity and throughput for the T1 Full Haul service for the AA5 period on average TJ/day basis.

11.6.2 Part and Back Haul

Figure 11.5 shows our forecast of contracted capacity and throughput for the P1 Part Haul service for the AA5 period on average TJ/day basis.

Figure 11.4 shows our forecast of contracted capacity and throughput for the B1 Back Haul service for the AA5 period on average TJ/day basis.

11.7 Summary

We have forecast average daily contracted capacity in AA5 to be 682TJ/day on a full haul equivalent basis. This represents a decrease in contracted capacity in both Full Haul and Part Haul and an increase in Back Haul compared to levels in AA4.

Contracted capacity is generally very predictable as DBNGP customers have SSCs for T1, P1 and B1 services each requiring a 15-year commitment to an agreed amount of T1, P1 or B1 capacity.

Figure 11.3: Forecast Full Haul demand in AA5

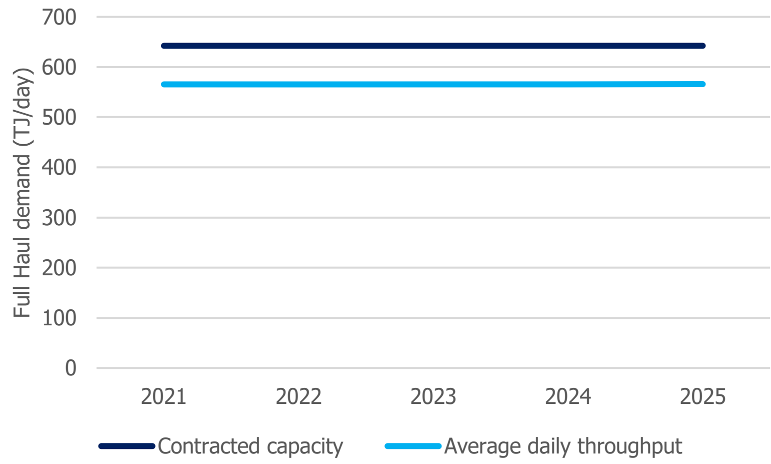
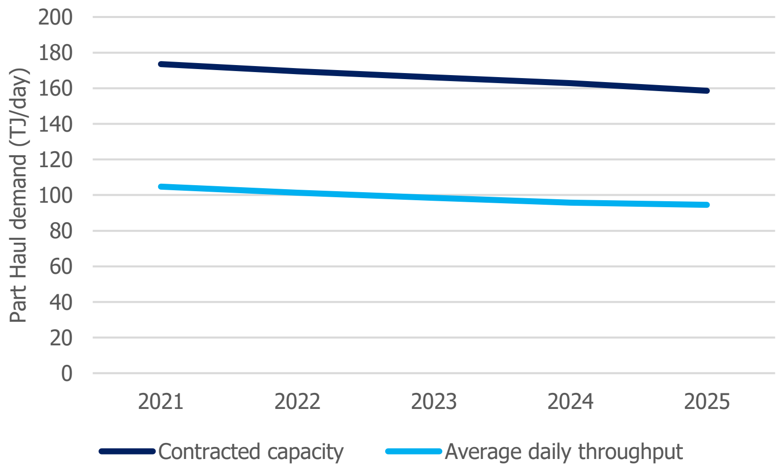


Figure 11.4: Forecast Part Haul demand in AA5

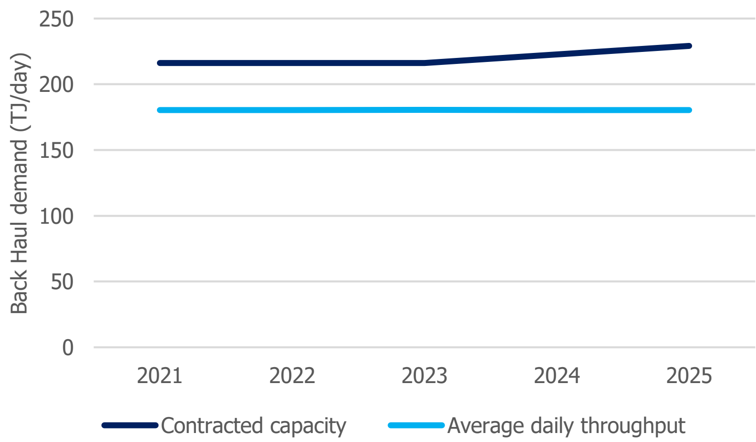


To aid the engagement process, we would welcome your response to the following question:

Question for consideration

Do you support our approach to forecasting demand? Are there any other factors, including any of your own plans, you think we should consider?

Figure 11.5: Forecast Back Haul demand in AA5



12 Incentives

We are proposing the introduction of an opex incentive scheme in AA5. We may propose an innovation scheme. These will strengthen our incentives to incur efficient opex and invest in innovation where there are clear future benefits.

IN THIS CHAPTER

We propose an opex EBSS in AA5 to strengthen and smooth our incentives to incur efficient opex

We may propose an innovation scheme in AA5 to support our investment in new initiatives that deliver long-term benefits for our customers

We support effective, outcome-based incentive arrangements as a way of promoting the long-term interests of our customers.

In AA5 we are proposing to introduce an opex efficiency benefit sharing scheme (EBSS) and we may propose an innovation scheme. We also considered the potential application of a capex efficiency sharing scheme (CESS) and a customer service or output incentive scheme, but have decided against introducing these schemes in AA5 based on customer feedback.

12.1 Regulatory framework

Under the NGR, an access arrangement may include one or more incentive mechanisms to encourage the efficient provision of services.

Incentive mechanisms provide additional rewards and penalties which can be financial, reputational or administrative (i.e. fast-tracked reviews).

12.2 Overview

Regulators use incentive mechanisms to:

- strengthen efficiency and performance incentives;
- smooth incentives across the years of a regulatory period;
- balance incentives between different types of expenditure; and
- allow greater innovation where it can provide long-term benefits.

The ERA does not currently apply any incentive mechanisms to the DBNGP.

Our proposal for an opex EBSS compliments the base year approach we use to forecast opex and will align our incentives with gas transmission businesses regulated by the AER. It is also similar to the gain sharing mechanism the ERA applies to Western Power.

Our customers have told us they expect us to play a role in responding to renewable electricity technologies, meeting renewable energy and emissions targets, and decarbonising energy supply. However, it is not clear that they would support the introduction of an innovation scheme to help us to invest in innovation, particularly where the payback period is longer than the regulatory period. Therefore, we will continue to explore this with our customers and stakeholders as we engage on our Draft Plan.

12.3 Stakeholder engagement

During the Shipper Roundtables we discussed potential incentive schemes we might propose in AA5.

Shippers told us they were broadly comfortable that the current framework appropriately incentivises us to incur only efficient costs.

However, price is important to them and they could see potential benefits of strengthening our incentives for efficient opex.

Shippers also noted they expect our business to play a role in supporting renewable electricity technologies, meeting renewable energy and emissions targets, and decarbonising energy supply. They recognised greater support for innovation could facilitate better outcomes for them over the long term, but also noted there is a great deal of uncertainty in this space.

It was not clear that customers supported the introduction of an innovation scheme for the DBNGP in AA5 and many felt there would likely be greater benefits under a whole of industry approach to innovation.

We also discussed the potential application of a CESS and a customer service or output incentive scheme. These discussions did not support the introduction of either of these schemes in AA5.

Therefore, taking this feedback into account, we are proposing:

- an EBSS to apply in AA5;
- an innovation scheme may apply in AA5;
- not to apply a CESS in AA5; and
- not to apply a customer service or output incentive scheme in AA5.

Noting the uncertainty that exists in the innovation space, and the need for a whole of industry approach, we will continue to engage with our customers and stakeholders on the structure and application of an innovation scheme, and whether or not it should apply, as we develop our Final Plan.

Engagement insights

- ✓ Customers supported our focus on innovation to ensure the products and services we offer are responsive to the needs of our customers, and the changing dynamics of gas supply.
- ✓ Customers highlighted the importance of flexibility to ensure we are responsive to their needs.

12.4 Opex EBSS

12.4.1 How it works

An opex EBSS carries forward incremental efficiency gains (or losses) for five years. This results in a business to customer share of gains/losses being approximately 30% to 70%.

The opex EBSS balances incentives to make efficiencies in all years of the regulatory period. This is because the business retains a greater benefit from efficiency gains made earlier in the period. Likewise, the business retains a lesser penalty for efficiency losses made later in the period as opex allowances for the future period are rebased in line with actual opex.

An opex EBSS operating alone can incentivise cost reductions to the detriment of service levels, network health or higher capex. However, there are strict conditions in our shipper contracts and operating licence that require us to deliver on public safety, reliability and customer service. Our actual capex is also tested for prudence and efficiency before it can be rolled into our capital base.

12.4.2 Where does an EBSS currently apply?

The opex EBSS currently applies to electricity distribution and transmission networks across Australia and to gas distribution and transmission businesses regulated by the AER. It is similar to the gain sharing mechanism the ERA applies to Western Power.

12.4.3 Impact on revenues

The proposed opex EBSS in AA5 will have no impact on revenues in AA5 as any gains or losses resulting from the mechanism are applied in the following AA period (AA6).

12.5 Innovation scheme

12.5.1 How it works

An innovation scheme provides an allowance to invest in innovation initiatives that have the potential to reduce long-term costs. It is applied to correct the lower incentive to invest in innovation for regulated networks compared with businesses in competitive markets. This is particularly the case where the payback period for an investment in innovation is longer than the regulatory period.

Innovation means new or original concepts or a technology or technique not previously implemented in the relevant market. Projects or initiatives funded through the innovation scheme must have the ability to reduce long-term pipeline costs.

We propose we would match any funding from the innovation scheme and that the scheme could also include an obligation to share findings, to help the socialisation of benefits.

12.5.2 Where does an innovation scheme currently apply?

A Demand Management Innovation Allowance and Incentive Scheme applies for electricity distribution networks regulated by the AER. A network innovation scheme applies to electricity, gas and water business in the UK.

12.5.3 Impact on revenues

Our customers expect us to play a role in supporting renewable electricity technologies, meeting renewable energy and emissions targets, and decarbonising energy supply. The current framework makes it difficult to invest in innovation, particularly where the payback period is longer than the regulatory period. The innovation scheme would allow up to $2 million (less than $0.002/GJ) to be dedicated in AA5 to explore innovations in our business that will help meet customer expectations.

Noting there is uncertainty, and a need for a whole of industry approach to innovation, we will continue to work through the structure and application of the innovation scheme, including if it should apply at all, with our customers and stakeholders as we develop our Final Plan.

12.6 CESS

12.6.1 How it works

A CESS smooths capex incentives throughout the AA period to reduce inefficient asset base growth and capex bias (favouring capex compared to opex as it has a lower immediate impact on profit).

The CESS adjusts for any financing benefits or costs accrued during the period so that the business to customer share of gains or losses is approximately 30% to 70%.

A CESS can be contingent on network health to ensure savings are achieved through efficiency, not reduced service levels or inefficient deferrals.

12.6.2 Where does a CESS currently apply?

A form of CESS applies to electricity distribution and transmission networks and gas distribution networks in Victoria, regulated by the AER. The CESS applied to gas distribution networks in Victoria is a Contingent CESS, where any CESS rewards or penalties are contingent on maintaining network health.

12.6.3 Impact on revenues

Our annual stay-in-business capex is relatively small, around 1% of the total value of our capital base. Therefore, any CESS gain or loss would be minimal and unlikely to significantly increase incentives.

We are therefore not proposing to include a CESS.

12.7 Customer service or output incentive scheme

12.7.1 How it works

A customer service or output incentive scheme provides financial incentives (or penalties) for achieving (or failing to achieve) specified customer service outcomes.

Examples of such schemes are guaranteed service level payments (payments to customers who experience a service outcome that is below the set target for that service) and a service target incentive payment scheme (where financial rewards or penalties are applied for performance across a scoresheet of service level targets).

Customer service or output incentive schemes have more commonly been applied by regulators to lift poor service outcomes.

12.7.2 Where does a customer service or output incentive scheme currently apply?

Customer service incentive schemes apply to electricity distribution and transmission networks across Australia and to Victorian gas distribution networks (with various levels and forms of reward or penalties attached).

12.7.3 Impact on revenues

We are not proposing a customer service or output incentive apply in AA5. We have a strong record of delivering high reliability, safety and service levels. Our contracts and operating licence provide appropriate incentives to ensure we maintain this strong performance.

Furthermore, our customers have a strong ability to influence our service levels and performance compared to general household and business users associated with distribution networks. Therefore, we do not consider additional incentives are required.

12.8 Summary

We engaged with our customers about incentives and they noted they were broadly comfortable that the current framework appropriately incentivises efficient costs. However, customers noted price is important to them and supported strengthening our incentives to incur efficient opex.

Our customers recognised greater support for innovation could facilitate better outcomes for them over the long term, however, it was not clear that they supported the introduction of a dedicated innovation scheme for our business in AA5.

In summary, we are proposing an opex EBSS and we may propose an innovation scheme apply in AA5.

To aid the engagement process, we would welcome your responses to the following questions:

Questions for consideration
Do you support our proposal to introduce an opex efficiency benefit sharing scheme (EBSS)? Are there any additional considerations that should be incorporated into an opex EBSS?
Do you support our proposal to introduce an innovation scheme? Are there any additional considerations that should be incorporated into an innovation scheme? What level of allowance should be allowed under any proposed innovation scheme, and what type of innovation projects should be in scope?

13 Revenue and prices

Our proposed revenues are $130 million (7%) lower than revenues set in AA4. Changes in demand and pipeline use drives a 5% increase in reference prices, but overall customers are paying less.

IN THIS CHAPTER

- **Revenue reduction of $130 million (7%) compared to AA4**
- **11% reduction in demand and therefore 5% increase in reference service prices**
- **The capacity component of our prices has increased slightly, and the commodity component decreased as a result of lower forecast system use gas costs**

Our Draft Plan delivers a revenue reduction, and therefore overall savings to our customers in AA5.

Our costs are referred to as building blocks and are summed to determine total revenue in each year of the AA period (referred to as building block total revenue). We recover this revenue through the prices that we charge customers for providing services.

This section sets out the total revenue we require over AA5 and how we will recover this through our reference service prices.

13.1 Regulatory framework

We are required to determine total revenue for each year of the next AA period as the sum of our forecast opex (Chapter 7), return on our capital base (Chapters 8, 9 and 10), depreciation of the capital base (Chapter 9) and a forecast of the tax allowance (Chapter 10).

Our prices are required to reflect the efficient cost of providing reference services to our customers, and this underpins the ERA's assessment of all aspects of our proposal.

13.2 Stakeholder engagement

At our first Shipper Roundtable we discussed our reference services and how our costs are currently allocated across these services. We explained that Part and Back Haul prices are calculated using a distance factor of the Full Haul price, whereas alternative options include zone based or postage stamp pricing. Customers were comfortable with our approach to maintain the current cost allocation between Full, Part and Back Haul reference services based on distance factors.

In our last Shipper Roundtable we provided a summary of the building blocks total revenue in AA5, along with a comparison to the building blocks total revenue in AA4. Our customers appreciated that the overall revenue was $130 million lower than in AA4 driven by lower totex and a lower return on assets.

13.3 Revenue

This Draft Plan sets out the derivation of all the relevant building blocks that are used to determine building block total revenue.

We recover the building block revenue through our prices. We are required to set our prices such that the total revenue we recover through prices is the same as the building block total revenue.

The building block total revenue is set out in Table 13.1.

13.4 Prices

As already noted, we recover our revenue through the prices that we charge customers for providing reference services. This section outlines our proposed prices.

There are two components to our prices:

- a capacity (or reservation) component; and
- a commodity (or throughput) component.

The capacity (or reservation) price is set to cover the fixed costs of delivering reference services and is determined by dividing the sum of the fixed cost elements of our building blocks total revenue by the forecast capacity demand.

The commodity (or throughput) price is set to cover the variable costs, SUG, of delivering reference services and is determined by dividing the variable cost components of our building block total revenue by the forecast capacity demand.

As a result of reductions in our SUG costs, the proportion of fixed and variable costs has shifted in comparison to AA4. To reflect this, we have proposed a ratio of the capacity and commodity components of our reference prices in AA5 of 94:6 (compared to 90:10 in AA4).

In line with stakeholder feedback, we have not proposed any changes to the way our costs are allocated between Full Haul (T1), Part Haul (P1) and Back Haul (B1) prices.

In order to calculate T1, P1 and B1 prices, all demand is converted into T1 Full Haul equivalent demand. For example, a 10TJ load halfway down the pipeline would have a full-haul equivalent of 5TJ. The sum of all Full Haul and Full Haul equivalent loads is used to determine the T1 price, which is then converted to a per km price for P1 and B1 services. This is consistent with the approach adopted by the ERA in previous AAs.

Our proposed prices for AA5 are shown in Table 13.2.

Table 13.1: Building block total revenue 2021-25 ($million, Dec 2020)

	2021	2022	2023	2024	2025
Return on capital	126.5	122.7	118.7	114.4	110.5
Return of capital (depreciation)	134.0	136.1	138.4	139.7	141.7
Estimated cost of tax	10.5	13.0	13.3	13.7	13.8
Operating costs	87.4	87.3	87.4	87.7	87.9
Total revenue	**352.1**	**358.8**	**358.2**	**358.9**	**357.4**

Table 13.2: Draft Plan proposed prices ($, Dec 2020)*

	T1 service ($/GJ)	P1 & B1 services ($/GJ/km)
Capacity reservation charge	1.360	0.000972
Commodity charge	0.085	0.000061
Total price	**1.445**	**0.001033**

Note: These are the prices that will apply on 1 January 2021 (i.e. they include two years of inflation)

13.5 Summary

Our Draft Plan delivers building block total revenue of $1,784 million over AA5, a reduction of $130 million (7%) compared to AA4.

Our proposed 1 January 2021 reference price of $1.40 (before inflation) is a 5% increase on current reference prices.

The capacity and commodity ratio in AA5 is 94:6, compared to 90:10 in AA4, reflecting significant reductions in our forecast SUG costs driven by lower gas prices.

Our Part and Back Haul prices will continue to reflect a distance factor of the Full Haul price.

To aid the engagement process, we would welcome your responses to the following questions:

Questions for consideration
Have we provided enough information to understand the basis of our proposed price, including how it is split between the capacity and commodity components?
Is there anything that our Draft Plan hasn't considered that is important to you?

Delivering for Western Australia.

Lower revenue, lower costs, maintaining our strong safety, reliability and service performance.

7% ↓

$130 million cut in revenue means savings for our customers

11% ↓

Lower total expenditure

Delivering for customers

100%

reliability of the DBNGP

0

loss of containment of an energy source

>8 out of 10

customer satisfaction

A good employer

top quartile employee engagement

>98%

mandatory training compliance

further process safety improvements and a continued focus on achieving zero harm

Sustainably cost efficient

$74m ↓

cut in expenditure

0.4% ↓

finance costs down from 5.83% to 5.39%

supports the long term competitive position of DBNGP

Full Haul reference price of $1.40 per GJ (before inflation)

Summary of Stakeholder Questions

We have highlighted a number of stakeholder questions throughout this document on which we are seeking feedback. Your feedback will help us refine our plans, and ultimately put forward a Final Plan that is capable of acceptance by regulators and stakeholders.

What we will deliver	1	Do you have any feedback on our targets for AA5, including whether our targets are consistent with feedback received through our stakeholder engagement program so far?
Customer and stakeholder engagement	2	Do you have any feedback on our customer and stakeholder engagement program?
	3	Have we considered customer and stakeholder feedback and responded appropriately in this Draft Plan?
Pipeline and Reference Services	4	Do you think the Pipeline and Reference Services we have proposed are appropriate?
Operating and Capital Expenditure	5	Do you support our approach to forecasting opex and capex? Have we provided sufficient information to understand our proposals and the basis of the costs included?
Capital Base	6	Is our approach to adjusting the capital base, including our assumed asset categories, asset lives and aligning the economic life of the main and loop lines, appropriate?
Financing Costs	7	Do you have any comments on our approach to setting the financing and tax costs in this Draft Plan?
Demand	8	Do you support our approach to forecasting demand? Are there any other factors, including any of your own plans, you think we should consider?
Incentives	9	Do you support our proposal to introduce an opex efficiency benefit sharing scheme (EBSS)? Are there any additional considerations that should be incorporated into an opex EBSS?
	10	Do you support our proposal to introduce an innovation scheme? Are there any additional considerations that should be incorporated into an innovation scheme? What level of allowance should be allowed under any proposed innovation scheme?
Revenue and Prices	11	Have we provided enough information to understand the basis of our proposed price, including how it is split between the capacity and commodity components?
Other	12	Is there anything that our Draft Plan hasn't considered that is important to you?

Feedback

The consultation period for this document closes 28 June 2019.

For more information, or to set up a stakeholder meeting, please contact:

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