DRAFT DECISION
Roma to Brisbane Gas Pipeline
Access Arrangement
2017–22

Overview

June 2017

AUSTRALIAN ENERGY REGULATOR

Inquiries about this publication should be addressed to:

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Invitation for submissions

This is our draft decision on APTPPL's access arrangement for the Roma to Brisbane Pipeline. APTPPL will submit a revised proposal in response to this draft decision by 14 August 2017. Interested parties are invited to make submissions on both our draft decision and APTPPL's revised proposal by 15 September 2017.

We will consider and respond to all submissions received by that date in our final decision.

Submissions should be sent to: RBP2017@aer.gov.au.

Alternatively, submissions can be sent to:

Mr Warwick Anderson
General Manager
Australian Energy Regulator
GPO Box 3131
Canberra ACT 2601

Submissions should be in Microsoft Word or another text readable document format.

We prefer that all submissions be publicly available to facilitate an informed and transparent consultative process. Submissions will be treated as public documents unless otherwise requested. Parties wishing to submit confidential information should:

(1) clearly identify the information that is the subject of the confidentiality claim

(2) provide a non-confidential version of the submission in a form suitable for publication.

All non-confidential submissions will be placed on our website. For further information regarding our use and disclosure of information provided to us, see the ACCC/AER Information Policy (October 2008), which is available on our website.

We will hold a discussion with interested stakeholders after receiving APTPPL's revised access arrangement proposal in August 2017. If you are interested in attending this discussion, have any queries about this draft decision or about lodging submissions, please send an email to: RBP2017@aer.gov.au.

Note

This Overview forms part of the AER's draft decision on the access arrangement for the Roma to Brisbane Gas Pipeline for 2017–22. It should be read with all other parts of the draft decision.

The draft decision includes the following documents:

Overview

Attachment 1 - Services covered by the access arrangement

Attachment 2 - Capital base

Attachment 3 - Rate of return

Attachment 4 - Value of imputation credits

Attachment 5 - Regulatory depreciation

Attachment 6 - Capital expenditure

Attachment 7 - Operating expenditure

Attachment 8 - Corporate income tax

Attachment 9 - Efficiency carryover mechanism

Attachment 10 - Reference tariff setting

Attachment 11 - Reference tariff variation mechanism

Attachment 12 - Non-tariff components

Attachment 13 - Demand

Contents

Shortened forms

Shortened form	Extended form
AER	Australian Energy Regulator
ATO	Australian Tax Office
capex	capital expenditure
CAPM	capital asset pricing model
CPI	consumer price index
DRP	debt risk premium
ECM	(Opex) Efficiency Carryover Mechanism
ERP	equity risk premium
Expenditure Guideline	Expenditure Forecast Assessment Guideline
gamma	Value of Imputation Credits
MRP	market risk premium
NGL	National Gas Law
NGO	national gas objective
NGR	National Gas Rules
NPV	net present value
opex	operating expenditure
PTRM	post-tax revenue model
RBA	Reserve Bank of Australia
RFM	roll forward model
RIN	regulatory information notice
RPP	revenue and pricing principles
SLCAPM	Sharpe-Lintner capital asset pricing model
STTM	Short Term Trading Market
TAB	Tax asset base
UAFG	Unaccounted for gas
WACC	weighted average cost of capital
WPI	Wage Price Index

Background to our draft decision

Underlying our draft decision for the RBP is an increasingly dynamic market for natural gas. While the RBP traditionally provided long haul and mostly long term services from west to east, RBP users are increasingly demanding bidirectional services to also send gas west to the Wallumbilla gas trading hub. APTPPL responded to this by proposing new bidirectional and short term reference services to complement the existing eastbound long term reference service.

We agree a bidirectional long term firm reference service is appropriate. With respect to short term services however, RBP users are already successfully negotiating terms and conditions with APTPPL. Intervening in the emerging market for short term services may not be in users' best interests. Therefore, our draft decision is to approve only a bidirectional long term firm service and allow RBP short term services to continue to evolve.

We propose to retain the existing postage stamp pricing for the long term firm reference service in this draft decision.[1] This approach minimises upwards pressure on the reference tariff for the long term firm service. An alternative approach would be to establish multiple pricing zones which would advantage users seeking part-haul services, but lead to higher prices for full-haul services. We note that full-haul services are expected to remain the predominant type of service demanded by users. Having said that, this decision is finely balanced and we seek further views from interested parties on this matter.

Demand for other types of services is also growing, but demand is uncertain. For that reason our draft decision is to make the following services rebateable services; in–pipe trading, capacity trading, and park and loan services. Part of the revenue earned by APTPPL from these services will be rebated to users.

We seek stakeholder submissions on our draft decision, particularly in respect of RBP services and tariff structures. These issues involve a range of efficiency and equity considerations. Stakeholder feedback will be an important factor in our final decision.

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[1] Postage stamp pricing means uniform pricing regardless of the distance that gas is transported. A user wishing to transport gas for only a portion of the RBP's total length will pay the same per unit price as if gas were transported the full length of the RBP.

1 Introduction

The Australian Energy Regulator (AER) regulates energy markets and networks under national energy market legislation and rules. We determine the amount of revenue that monopoly network businesses can recover from customers for using networks (electricity poles and wires and gas pipelines) that transport energy. Our network regulatory functions cover all Australian states and territories except Western Australia.

The NGL and National Gas Rules (NGR) provide the regulatory framework governing gas networks. Our work under this framework is guided by the National Gas Objective (NGO):[2]

> …to promote efficient investment in, and efficient operation and use of, natural gas services for the long term interests of consumers of natural gas with respect to price, quality, safety, reliability and security of supply of natural gas.

Australian Petroleum Pipelines Pty Ltd (APTPPL) owns and operates the Roma to Brisbane Pipeline (RBP). We regulate gas pipelines that are subject to full regulation—like the RBP—under an approved access arrangement.[3] An access arrangement identifies certain pipeline services (reference services) and the price and non-price terms and conditions on which those services will be offered over the next five years (2017-22). This forms the foundation for negotiations between pipeline operators and users.

To approve an access arrangement we make regulatory decisions on the revenue that APTPPL can recover from users of its reference services. For this draft decision our assessment is based on the access arrangement revision proposal submitted by APTPPL for the RBP on 1 September 2016. APTPPL's proposal sets out its view of its expected costs, demand and required revenues for the period 1 July 2017 to 30 June 2022.

This Overview, together with its attachments, constitutes our draft decision on APTPPL's access arrangement proposal. This draft decision is one of the key steps in reaching our final decision. APTPPL will have the opportunity to submit a revised proposal in response to this draft decision. Stakeholders will then have the opportunity to make submissions to us on both our draft decision and APTPPL's revised proposal. Subject to stakeholder interest, we will also consider holding a public forum following submission of APTPPL's revised proposal.

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2 NGL, s. 23.

3 The NGL provides for different types of regulation to apply to gas pipelines, based on competition and significance criteria. A 'full regulation' pipeline must periodically submit an access arrangement to the AER, setting out pricing for a reference service sought by a significant part of the market (see section **Error! Reference source not found.** of this Overview). 'Light regulation' pipelines are not subject to upfront price regulation. The light regulation model is more a negotiate-arbitrate approach, placing greater emphasis on commercial negotiation and information disclosure. The AER plays a role only if dispute resolution mechanisms are triggered.

Following receipt of the revised proposal and submissions, we will then make our final decision taking into account the revised proposal, submissions and any other relevant information. Table 1-1 lists key dates and consultation deadlines for the remainder of this review.

Table 1-1 Indicative key dates and consultation

Task	Date
Access arrangement proposal submitted to the AER	1 September 2016
AER held public forum	5 October 2016
Submissions on access arrangement proposal closed	18 October 2016
AER draft decision published	29 June 2017
Revised access arrangement proposal due to AER	14 August 2017
Further submissions, including on revised access arrangement proposal	15 September 2017
AER final decision published	30 November 2017

1.1 Structure of this overview

This Overview provides a summary of our draft decision and its individual components. It is structured as follows:

- Section 2 provides a high level summary of our draft decision.
- Section 3 sets out our draft decision on demand forecasts, APTPPL's reference service, reference tariff setting and the reference tariff variation mechanism that will apply to APTPPL.
- Section 4 sets out our draft decision on APTPPL's total revenue requirement.
- Section 5 provides a break-down of our revenue decision into its key components.
- Section 6 sets out our draft decision on the efficiency carryover mechanism to apply during the 2017–22 access arrangement period.
- Section 7 sets out our draft decision on the non-tariff components of APTPPL's access arrangement proposal.
- Section 8 explains our views on the regulatory framework and the NGO.
- Section 9 outlines the consultation process we undertook in reaching our draft decision.
- Appendix A sets out our considerations in respect of the interval of delay which will arise between the date on which revisions were intended to commence under the access arrangement and the date the revisions will actually take effect.
- Appendix B lists the stakeholder submissions received on APTPPL's access arrangement proposal.

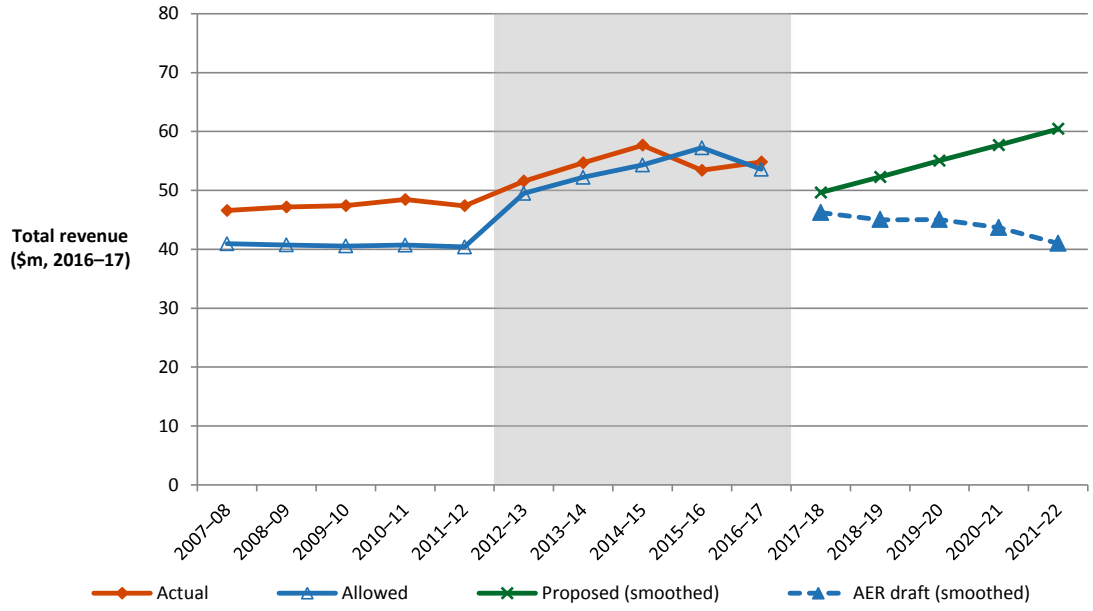
In our attachments to this Overview we set out detailed analysis of the constituent components that make up our draft decision.

2 Summary of draft decision

Our draft decision is to approve a forecast revenue requirement of $237.4 million ($ nominal, smoothed) for APTPPL over the 2017–22 access arrangement period. This is a reduction of $56.5 million (or 19.2 per cent) from APTPPL's proposed forecast revenue requirement of $293.9 million ($ nominal). If implemented, the forecast revenue requirement approved in this draft decision would allow APTPPL to recover 9.6 per cent less revenue than its 2012–17 allowance of $262.7 million ($ nominal, smoothed).

Figure 2.1 compares our draft decision on APTPPL's total revenue requirement for 2017–22 to its proposed revenue requirement, and to the revenue allowed and recovered during the two previous access arrangement periods of 2012–17 and 2006–11.

Figure 2.1 APTPPL's past total revenue, proposed total revenue and AER's total revenue allowance ($million, 2016–17)



Source: AER analysis.

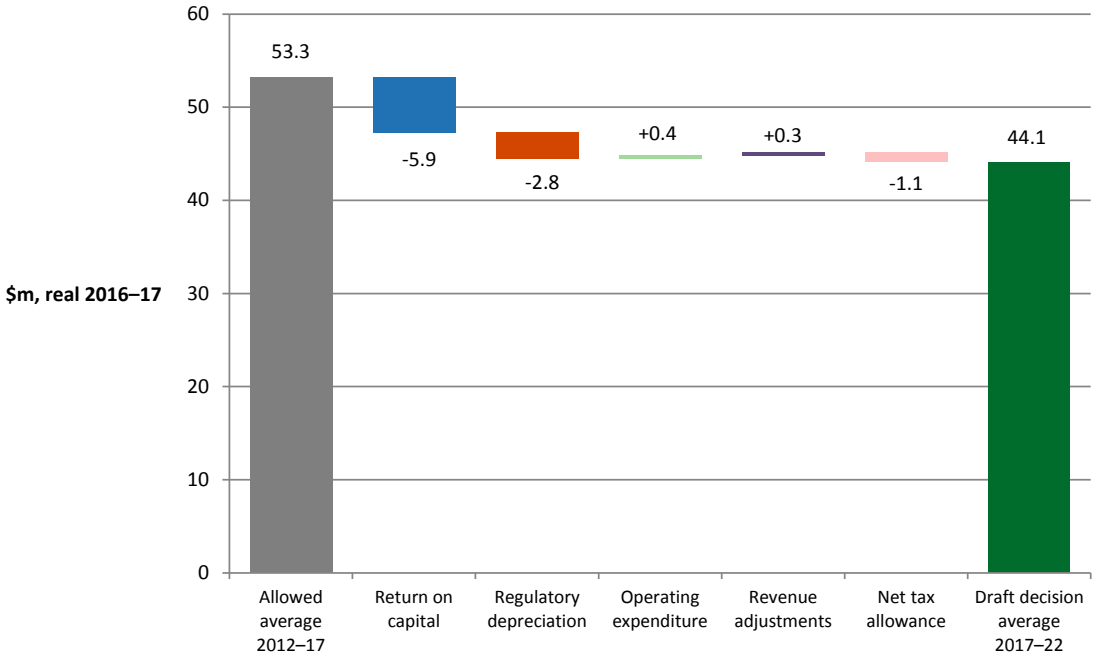
2.1 What is driving proposed revenue?

The impact of inflation makes it difficult to compare revenue across different time periods on a like-for-like basis. We therefore use real values based on a common year, which have been adjusted for the impact of inflation, to compare revenue from one access arrangement period to the next. In real dollar terms, our draft decision approves

average annual revenues for the 2017–22 access arrangement period that are $9.2 million ($2016–17)–or 17.2 per cent–lower than was approved in our decision for the 2012–17 access arrangement period.[4]

Figure 2.2 compares our draft decision for the 2017–22 access arrangement period to APTPPL's allowed revenue for the 2012–17 access arrangement period, broken down by the various building block components that make up the forecast revenue allowance. These are annual amounts based on average unsmoothed building block costs over the two access arrangement periods.

Figure 2.2 AER's draft decision (2017–22) and APTPPL's allowed (2012–17) annual average building block costs ($million, 2016–17)



Source: AER analysis.

These figures highlights that the return on capital is the key difference between our draft decision for the 2017–22 access arrangement period and APTPPL's allowed revenue for the 2012–17 access arrangement period. Our draft decision on the allowed nominal post-tax rate of return largely drives the difference in the return on capital amounts.

Our draft decision on the opening capital base and remaining asset lives results in some asset classes becoming fully depreciated during the 2017–22 period. That drives

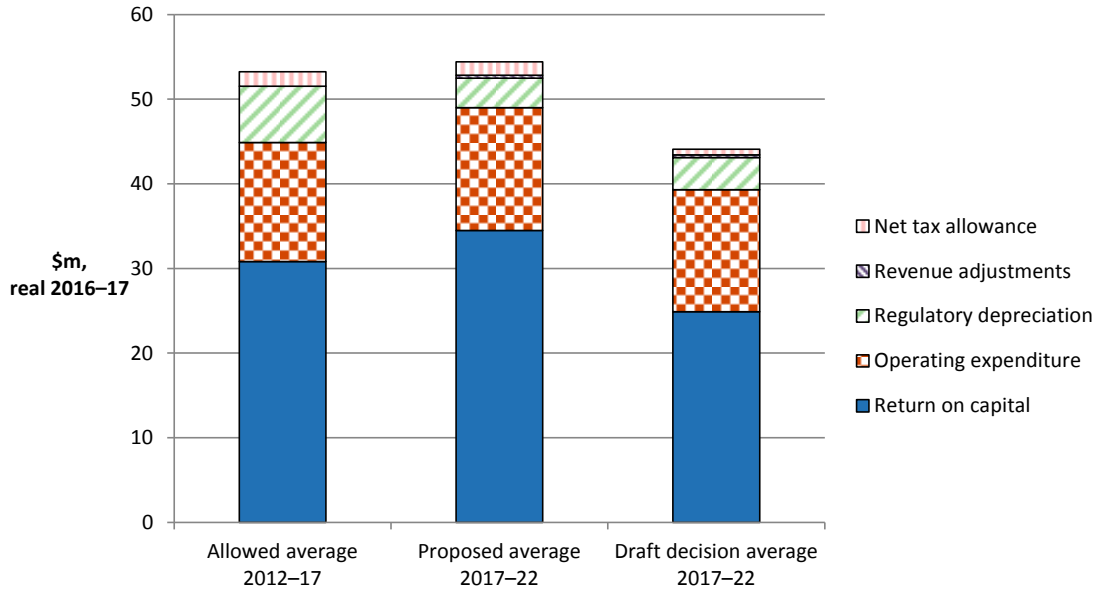
[4] The comparison of average annual revenues between the 2017–22 and 2012–17 access arrangement periods is based on smoothed revenues. In nominal dollar terms, our draft decision average annual revenues for the 2017–22 access arrangement period is about $5.1 million (or 9.6 per cent) lower than the average annual revenues approved for the 2012–17 access arrangement period.

a proportion of the reduction in the return of capital (regulatory depreciation) building block. The lower revenue attributable to the difference in the return on capital reduces the level of estimated taxable income that would be earned by a benchmark efficient entity. Our draft decision on gamma also drives a proportion of the difference relating to corporate income tax.

2.2 Key differences between our draft decision and APTPPL's proposal

Our draft decision allows APTPPL to recover $56.5 million (or 19.2 per cent) less revenue that its proposed forecast revenue requirement of $293.9 million ($ nominal). Figure 2.3 compares the average annual building block revenue from our draft decision to that proposed by APTPPL for the 2017–22 access arrangement period, and to the allowed average amount for the 2012–17 access arrangement period.

Figure 2.3 AER's draft decision average annual revenue (unsmoothed) compared with APTPPL's proposed average annual revenue and approved average annual revenue for 2012–17 ($million, 2016–17)



Source: AER analysis.

The return on capital is the key difference between our draft decision and APTPPL's proposal. Our draft decision on the allowed rate of return largely drives the difference in the return on capital amounts. The reduction in revenue attributable to the differences in the return on capital reduces the estimated taxable income that would be earned by the benchmark efficient entity. This drives a high proportion of the difference relating to corporate income tax.

2.3 Impact of our draft decision on gas bills

The annual gas bill for customers in Queensland will reflect the combined cost of all the gas supply chain components. These components are the:

- cost of producing gas (the wholesale gas generation cost);
- cost of the pipelines used to transport the gas (the transmission and distribution networks) and other infrastructure such as metering costs; and
- retailers' costs and profit margin.

The annual gas bill will therefore change to reflect movements in one or more of the components of the bill. Our draft decision for APTPPL relates to transmission tariffs which represent approximately 3 per cent on average of a Queensland retail customer's annual gas bill.[5] This small percentage largely explains the relatively modest impact that this draft decision is likely to have on average annual gas bills.

We estimate the expected bill impact by varying the transmission tariffs in accordance with our draft decision, while holding other components of the bill constant. Our estimates are in nominal terms (taking into account expected future inflation to determine what the nominal price levels will be in future periods) because it will be nominal amounts that consumers will be paying. Based on this approach, we expect that our draft decision will result in no material change to the transmission component of the average annual gas bills for residential customers in Queensland over the 2017–22 access arrangement period.

The small movement in tariffs, despite a larger reduction in total revenue between the two periods, is due to an expected lower demand for RBP services over the 2017–22 access arrangement period. Our decision on demand is discussed further in section 3.2.

Table 2-1 shows the estimated impact of our draft decision on average residential and small business customers' annual gas bills in Queensland over the 2017–22 access arrangement period, compared with APTPPL's proposal. As explained above, these bill impacts are indicative only, and so individual customers' actual bills will depend on their usage patterns and the structure of their chosen retail tariff offering.

While our approach isolates the effect of our decision on gas prices, it does not imply that other components of the bill will remain unchanged across the access arrangement period. AEMO has forecast that retail prices will rise in the short term as wholesale prices increase due to rises in the cost of gas production.[6] However, we do not expect transmission tariffs flowing from this draft decision will be a contributor to overall increases in gas bills.

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5 Oakley Greenwood, *Gas price trends review*, February 2016, p.137.

6 AEMO, *National Gas Forecasting report for Eastern and South-Eastern Australia*, December 2016, pp. 26–28.

Table 2-1 Estimated impact of draft decision on average Queensland residential and small business customers' gas bills for 2017–22 access arrangement period ($nominal)

	2016–17	2017–18	2018–19	2019–20	2020–21	2021–22
AER draft decision						
Residential annual gas bill[a]	775	775	776	776	776	775
Annual change		0 (0%)	1 (0.1%)	1 (0.1%)	–0 (–0%)	–1 (–0.1%)
Small business annual gas bill[b]	7035	7035	7040	7045	7044	7034
Annual change		0 (0%)	5 (0.1%)	5 (0.1%)	–1 (–0%)	–10 (–0.1%)
APTPPL proposal						
Residential annual gas bill	775	773	775	777	779	781
Annual change		–2 (–0.2%)	2 (0.2%)	2 (0.2%)	2 (0.2%)	2 (0.3%)
Small business annual gas bill	7035	7021	7035	7050	7068	7086
Annual change		–14 (–0.2%)	14 (0.2%)	15 (0.2%)	17 (0.2%)	19 (0.3%)

Source: AER analysis.

Notes: (a) The residential estimated bill is calculated on typical average residential annual gas consumption of 10GJ per annum.[7]

(b) The estimated small business annual gas bill is calculated on the assumption of typical average consumption of 200GJ per annum.

Bill impacts for customers connected directly to the RBP, including gas fired power stations and large industrial manufacturers, will be different to impacts for retail customers. Directly connected customers don't pay distribution network charges, so the transmission component of their gas bill is a larger proportion of their total bill. In this case, bill impacts for directly connected customers will be minimal because our draft decision is for relatively flat transmission tariffs. More generally, bill impacts for directly connected customers are a magnified version of bill impacts estimated for retail customers.

[7] AER, *Annual report on the performance of the retail energy market 2015–16*, 2016, p.54.

3 Reference tariffs and demand

3.1 Services covered by the access arrangement

Gas transmission pipelines that are subject to full regulation are regulated by establishing reference services and price and non-price terms and conditions on which those services will be offered on an ex ante basis. This forms the foundation for negotiations between pipeline operators and users.

Users may, or may not, use the reference services exactly as they are specified. While users must be able to access reference services at the reference prices, they may also negotiate alternative terms and conditions at alternative prices. Although these commercial or negotiated services ('non-reference' services) are not subject to ex ante regulation, we may still be called upon to determine the tariff and other conditions of access to these services if an access dispute arises.[8]

The distinction between reference and non-reference services is reflected in the requirements for an access arrangement, which must:[9]

- describe the pipeline services the service provider proposes to offer to provide by means of the pipeline, and
- specify the reference services and for each service, specify the reference tariff and the other terms and conditions on which the reference service will be provided.

The access arrangement must specify as a reference service at least one pipeline service that is likely to be sought by a significant part of the market. It also provides for the AER to specify other pipeline services that meet the criteria in rule 101.[10]

The NGR also provides for the regulation of certain non-reference services called 'rebateable services', if there is substantial uncertainty about demand for, or the revenue to be generated from, the service and the market for the service is substantially different from the market for the reference service.[11] The costs associated with a rebateable service can, in whole or in part, be included in the calculation of the reference tariff, if an appropriate portion of the revenue derived from sales of this service is returned to reference service users through a rebate or refund.[12]

Further detail on the relationship between reference services, rebateable services and other non-references services is set out in Figure 3.1.

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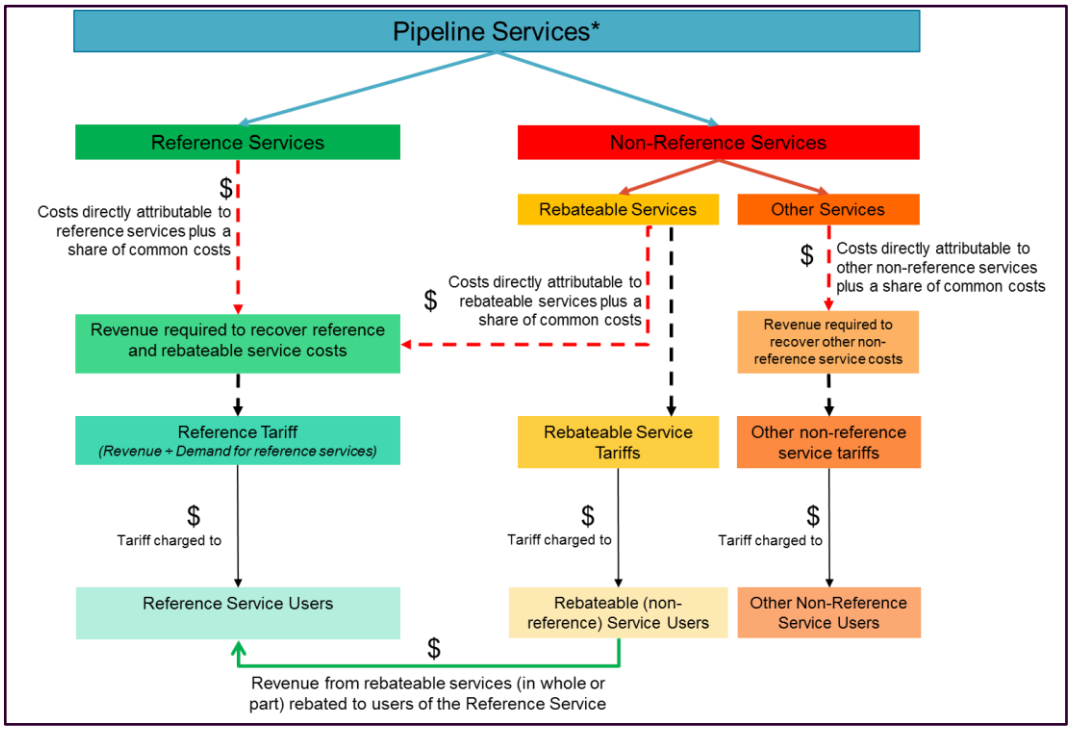
8 NGL, Chapter 6.
9 NGR, r. 48.
10 NGR, r. 101.
11 NGR, r. 93(4).
12 NGR, r. 93(2).

Figure 3.1 Interaction between reference, rebateable and other non-reference services



* The term 'pipeline service' is defined in the NGL as (a) a service provided by means of a pipeline, including (i) a haulage service (such as firm haulage, interruptible haulage, spot haulage and backhaul); and (ii) a service providing for, or facilitating, the interconnection of pipelines; and (b) a service ancillary to the provision of a service referred to in paragraph (a), but does not include the production, sale or purchase of natural gas or processable gas.

We approve APTPPL's proposal to define the bidirectional Long Term Firm Service (LTFS) as a reference service. We are satisfied that this reference service is likely to be sought by a significant part of the market and that its inclusion in the access arrangement is consistent with the Revenue and Pricing Principles (RPPs) and will promote the NGO.[13]

However we are not satisfied that defining a Short Term Firm Service (STFS) as a reference service as proposed by APTPPL is consistent with the Revenue and Pricing Principles (RPPs) or will promote the NGO. The specification of this service as a reference service also appears unnecessary given reforms underway to facilitate more trade and competition between pipeline operators and users for provision of short-term transportation services. We have therefore exercised our discretion not to define this service as a reference service and require a range of amendments to be made to the proposed access arrangement to reflect this change.

[13] NGL, s. 23.

In addition, we require the proposed access arrangement to be amended to define the following services as rebateable services and provide for the allocation of the costs of these services to the reference services:

- park and loan services (provided on either a firm or interruptible basis)
- in-pipe trading services, and
- capacity trading services.

We are satisfied that there is a substantial degree of uncertainty around the demand for, or revenue to be generated from, these services and that the markets for these services are substantially different from the markets for the reference services.[14] We are also satisfied that the classification of these services as rebateable services is consistent with the RPPs and will promote the NGO.

Our draft decision is to accept APTPPL's proposal to retain the current postage stamp tariff structure. This means all users face the same reference tariffs regardless of how far they wish to transport gas, whether the full length of the pipeline or only a part-haul service. While we can see merit in moving to a more cost reflective service, we are concerned that this may place additional financial pressure on some users of the RBP and exacerbate what is already a financially challenging environment for many gas users. This could have longer term consequences for consumers of natural gas and the efficient use of the pipeline, contrary to the NGO.

Further detail on our draft decision in regards to the services covered by APTPPL's access arrangement is set out in attachment 1. Further detail on our draft decision in regards to APTPPL's reference tariff setting is set out in attachment 10.

3.2 Demand

We are satisfied that APTPPL's proposed demand forecasts comply with rule 74(2) of the National Gas Rules (NGR), taking into account the RPP.

APTPPL has proposed two separate demand forecasts for its eastbound and westbound services over the 2017-22 access arrangement period. It proposes to offer these services on a long term and short term firm basis. For both eastbound and westbound services, it forecasts an average 200 TJMDQ /day long term firm equivalent demand over the 2017-22 access arrangement period. APTPPL engaged ACIL Allen to assist it to come to its position on demand forecasts.

APTPPL forecasts that the eastbound service will be sought by retail and industrial users on a long term firm basis, and that gas powered generation (GPG) users will acquire the eastbound service on a short term firm basis. APTPPL forecasts that its westbound services will be sought only on a short term firm basis by a range of different users; including LNG producers, and spot market traders.

[14] NGR, rr. 93(3) and 93(4).

Based on all the information before us, our conclusion is that APTPPL's forecast of an average of 200 TJMDQ/day long term firm equivalent demand is the best estimate in the circumstances.[15] Further detail on our draft decision in regards to APTPPL's demand forecasts is set out in attachment 13.

3.3 Reference tariff variation mechanism

The reference tariff variation mechanism includes:

- an annual reference tariff variation mechanism, and
- a cost pass through mechanism.

Our draft decision is to apply a price cap tariff variation mechanism for each of APTPPL's reference services in respect of the Roma to Brisbane Pipeline for the 2017–22 access arrangement. This is the same price control mechanism as applied in the current access arrangement. The form of the price control is set out in attachment 11.

Our draft decision sets out that APTPPL will provide the AER with a tariff variation proposal at least a 50 business days prior to each 1 July. Furthermore, the AER will provide APTPPL with written notification no later than 30 business days of receiving the tariff variation whether it has approved or not approved the variation.

This time can be extended by the AER for a period of up to 90 business days if further information is required from APTPPL or other relevant parties. The AER will provide APTPPL with written notification of any time extensions.

We approve APTPPL's proposed cost pass through mechanism and seven of its eight pass through event categories, with amendments to six of the definitions to achieve consistency with our recent pass through decisions. We also require amendments to identify certain factors which we will have regard to when determining a pass through application.

We require amendments to the Natural Disaster Event to remove the words 'materially' and 'major' to avoid confusion with the materiality threshold of one per cent of forecast revenue that an event must cause before a pass through will be allowed. We also require an amendment to the effect that a natural disaster caused by the service provider is not covered.

We require amendments to limit the Regulatory Change Event and the Service Standard Event to regulatory and service standard changes which substantially affect the manner in which a service provider provides the reference service. This aligns the access arrangement with the corresponding provisions of the NER

[15] Reconciling the draft decision smoothed revenue (section 4.2) against the reference service tariffs and approved demand (section 3.2) requires the use of a revenue reconciliation factor (RRF) in each year of the access arrangement period discussed in attachment 10.

Our draft decision does not approve APTPPL's proposed carbon cost event. To the extent that these costs may appropriately be passed through, we consider they are covered by other categories of pass through event.

Further detail on our draft decision in regards to APTPPL's reference tariff variation mechanism is set out in attachment 11.

4 Total revenue requirement

The total revenue requirement is a forecast of the efficient cost of providing gas transmission services over the access arrangement period. We determine annual revenue—and the total revenue requirement—in nominal terms because it will be in nominal amounts that consumers will be paying. To do this, we take into account expected future inflation to determine what the nominal price levels will be in future periods. Our draft decision uses 10 year inflation expectations on average to convert revenues to nominal values.

Tariffs are derived from the total revenue requirement *after* consideration of demand for each tariff category. APTPPL operates under a simple individual price cap. This means the tariffs we determine (including the means of varying the tariffs from year to year) are the binding constraint across the 2017–22 access arrangement period, rather than the total revenue requirement set in our decision.[16] Tariffs are adjusted each year using the 'X factors'. X factors are percentage changes in real weighted average tariffs from year to year. The process of determining X factors is discussed in section 4.3.

4.1 The building block approach

We have employed the building block approach to determine APTPPL's total revenue requirement—that is, we based the total revenue requirement on our estimate of the efficient costs that APTPPL is likely to incur in providing gas transmission network services. The building block costs, as shown in Figure 4.1, include:[17]

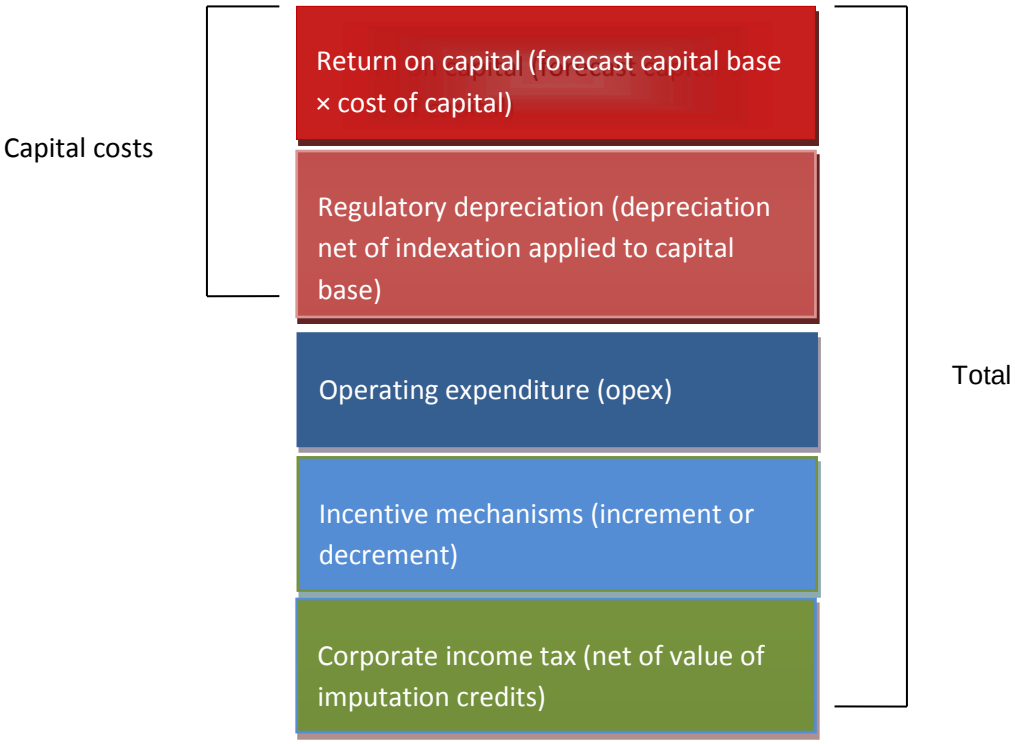
- return on the projected capital base (return on capital)
- depreciation of the projected capital base (return of capital)
- the estimated cost of corporate income tax
- revenue increments or decrements resulting from incentive schemes such as the efficiency carryover mechanism
- forecast opex.

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

[16] Where actual demand across the 2017–22 access arrangement period varies from the demand forecast in the access arrangement, APTPPL's actual revenue will vary from the revenue allowance determined in our decision. In general, if actual demand is above forecast demand, APTPPL's actual revenue will be above forecast revenue, and vice versa.

[17] NGR, r. 76.

Figure 4.1 The building block approach for determining total revenue



4.2 Draft decision

We accept that some aspects of APTPPL's proposal are consistent with the requirements of the NGR. However, we have not approved all elements, and as such, have not approved APTPPL's access arrangement proposal as a whole.[18]

We do not approve APTPPL's proposed total revenue requirement (smoothed) of $293.9 million ($nominal) for reference services over the 2017–22 access arrangement period.[19] Based on our assessment of the building block costs, we determine a total revenue requirement (smoothed) of $237.4 million ($nominal) for APTPPL over the 2017–22 access arrangement period.[20] Our draft decision on the total revenue requirement has been determined using the building block approach set out in rule 76 of the NGR. This total smoothed revenue requirement is $56.5 million (or 19.2 per cent) lower than APTPPL's proposal.

We do not approve APTPPL's proposed 2017–18 tariffs, which imply a weighted average decrease in real tariffs of 8.5 per cent. We also do not approve APTPPL's proposed 2018–22 tariff path, which implied a weighted average increase in real tariffs of 5.0 per cent per year.[21] As a result of our lower total revenue requirement and

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18 NGR, r. 41(2).

19 APTPPL, *Proposed PTRM,* September 2016.

20 This is calculated by smoothing the unsmoothed building block revenue for the 2017–22 access arrangement period as set in this draft decision.

21 APTPPL, *Proposed PTRM,* September 2016.

acceptance of APTPPL's demand forecast, our draft decision is for average real decreases in weighted average tariffs of 2.59 per cent over the 2017–22 access arrangement period. Our decision aims to balance APTPPL's ability to recover revenues and recognises the potential for lower prices in the later years of the access arrangement period. Approved building block revenues (unsmoothed) are expected to decline in 2020–21 and 2021–22. In combination with the approved constant forecast demand for services across the 2017–22 access arrangement period, this would generally result in a decline in tariffs. Section 4.3 discusses our approach to revenue equalisation and tariffs further below.

Table 4-1 sets out our draft decision on APTPPL's revenue requirement, by building block, for each year of the 2017–22 access arrangement period, the total revenue after equalisation (smoothing) and the X factors for use in the tariff variation mechanism.

Table 4-1 AER's draft decision on APTPPL's smoothed total revenue and X factors for the 2017–22 access arrangement period ($million, nominal)

Building block	2017–18	2018–19	2019–20	2020–21	2021–22	Total
Return on capital	25.5	26.6	27.1	27.1	27.5	133.9
Regulatory depreciation	5.7	6.6	7.1	1.3	–0.8	19.9
Operating expenditure	14.9	15.2	15.5	15.8	16.2	77.6
Revenue adjustments	1.7	0.0	0.0	0.0	0.0	1.7
Corporate income tax	1.2	1.1	1.1	0.0	0.0	3.4
Building block revenue – unsmoothed	49.0	49.6	50.8	44.2	42.9	236.5
Building block revenue – smoothed[a]	**47.2**	**47.3**	**48.5**	**48.2**	**46.3**	**237.4**
X factor	n/a[b]	0.05%[c]	0.05%	3.00%	7.00%	n/a
Inflation forecast	2.45%	2.45%	2.45%	2.45%	2.45%	n/a
Nominal price change	0.00%	2.40%	2.40%	–0.62%	–4.72%	n/a

Source: AER analysis.

n/a: not applicable.

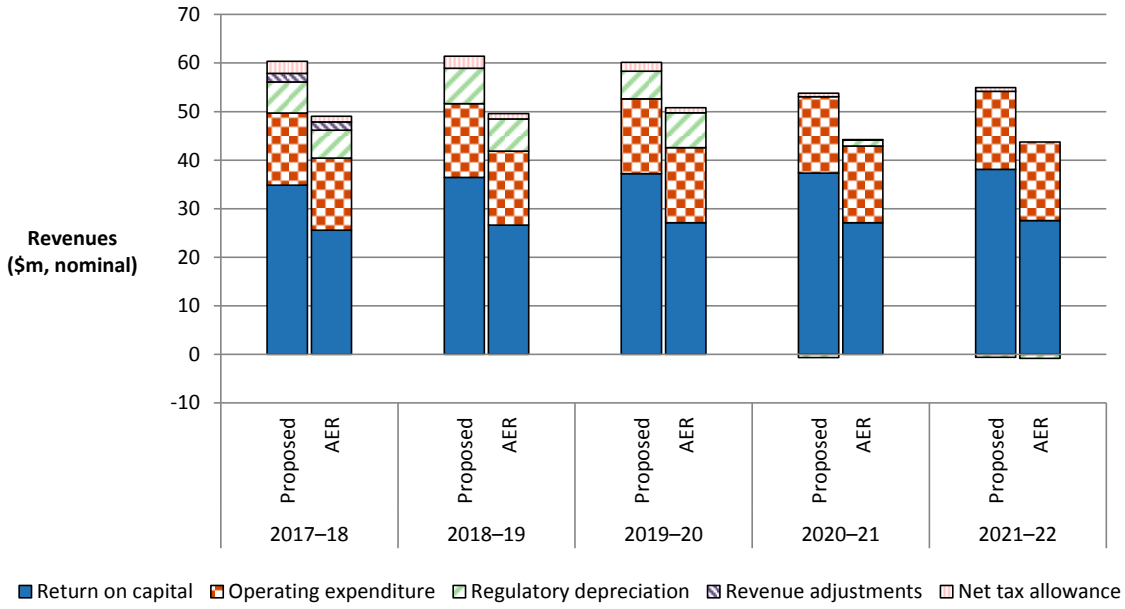
(a) Reconciling the draft decision smoothed revenue against the reference service tariffs (section 3.1) and approved demand (section 3.2) requires the use of a revenue reconciliation factor (RRF) in each year of the access arrangement period discussed in attachment 10.

(b) APTPPL is not required to apply an X factor for 2017–18 because we set the tariff for 2017–18 in this decision. The tariff for 2017–18 is $0.6843GJ/day. This is around 2.39 per cent lower than the estimated tariff for 2016–17 in real terms, or flat in nominal terms. The estimated tariff for 2016–17 is about $0.6843GJ/day which is calculated to reflect the approved capacity and throughput tariffs for 2016–17.

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

Figure 4.2 shows the effect of our draft decision adjustments on APTPPL's proposed building blocks for the 2017–22 access arrangement period. It shows the reductions to APTPPL's proposed return on capital, depreciation and tax building blocks.

Figure 4.2 AER's draft decision and APTPPL's proposed building block revenue (unsmoothed) ($million, nominal)



Source: AER analysis.

4.3 Revenue equalisation (smoothing) and tariffs

After our assessment of APTPPL's total building block revenue (unsmoothed revenue), we need to determine the smoothed revenue profile across the 2017–22 access arrangement period.[22] APTPPL operates under a simple individual price cap as its tariff variation mechanism. This means we determine the weighted average tariff change each year. This weighted average tariff change is labelled the 'X factor'. The X factors that we determine must ensure that the sum of the smoothed revenues across the period equals the unsmoothed building block revenue in net present value (NPV) terms. The mechanics of the tariff variation mechanism are addressed in attachment 11.

The X factors represent the weighted average real change in tariffs. As part of the annual reference tariff variation process, we combine the X factors we have determined in our decision with actual inflation to create reference tariffs for the coming year. This means that the prices paid by consumers, and therefore the revenues

[22] This process of smoothing revenues is described in the NGR as 'revenue equalisation'. NGR, r. 92.

received by the networks, change with actual inflation, but (ignoring other non-inflation factors) are constant in real terms.

Table 4-2 presents our draft decision X factors, and compares them to APTPPL's proposal.

Table 4-2 Weighted average tariff change across the access arrangement period (X factors) — comparison of APTPPL's proposal and AER's draft decision (per cent)

	2017–18	2018–19	2019–20	2020–21	2021–22
AER draft decision					
X factor[a]	2.39%	0.05%	0.05%	3.0%	7.00%
Nominal price change	0.00%	2.40%	2.40%	–0.62%	–4.72%
APTPPL proposal					
X factor[c]	8.49%	–5.00%	–5.00%	–5.00%	–5.00%
Nominal price change	–6.24%	7.57%	7.57%	7.57%	7.57%

Source: APTPPL, *Proposed PTRM*, September 2016; AER analysis.

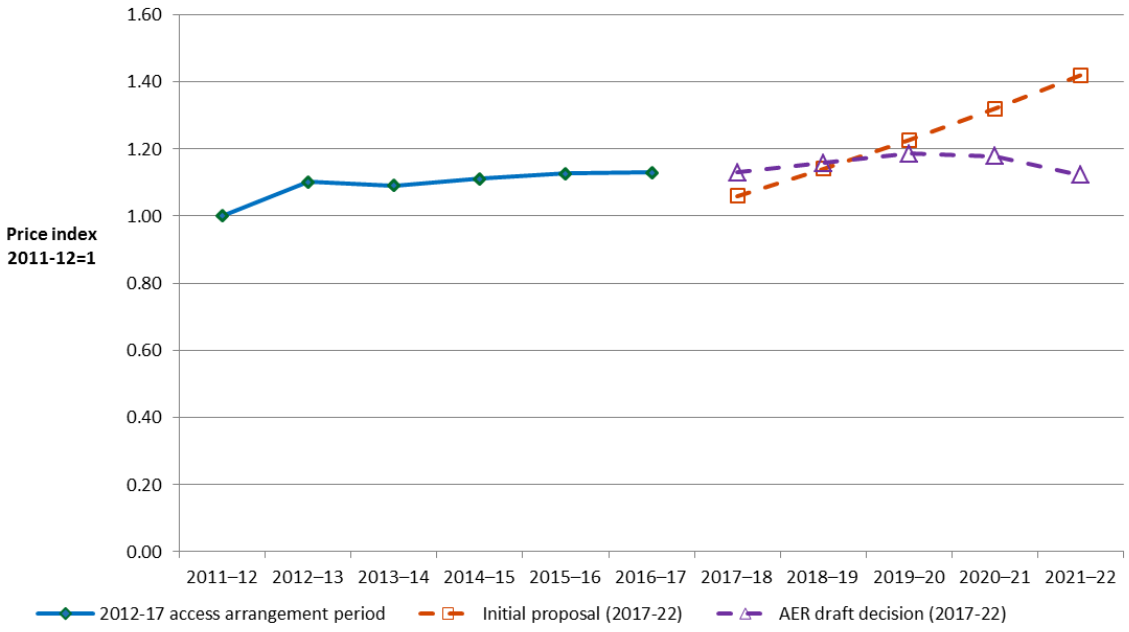
(a) Under the CPI–X form of control, a positive X factor is a decrease in price (and therefore in revenue). For example, an X factor of 8.49 per cent in 2017–18 means a real price decrease of 8.49 per cent that year. After consideration of inflation (assumed at 2.45 per cent) this becomes a nominal price decrease of 6.24 per cent.

(c) For comparison purposes the nominal price changes are derived from the real price changes for APTPPL adjusted by AER's draft decision forecast inflation of 2.45 per cent.

Figure 4.3 shows indicative tariff paths for APTPPL's reference services. It compares APTPPL's proposed tariff path with that approved in the 2012–17 access arrangement, and with this draft decision.[23] This provides a broad overall indication of the average movement across multiple access arrangement periods.

[23] The tariff path for 2012–22 uses actual inflation outcomes for the 2012–16 period, and forecast inflation for 2016–22.

Figure 4.3 Indicative reference tariff paths for APTPPL's reference services from 2011 to 2022 (nominal index)



Source: AER analysis; APTPPL, *Proposed PTRM*, September 2016.

Our draft decision provides for lower total smoothed revenue than APTPPL's proposal, in line with our reductions to total unsmoothed revenue. As such, a decrease to the tariff path is required over the 2017–22 access arrangement period to reflect the lower smoothed revenue than provided for in the 2012–17 access arrangement period.[24] Our draft decision tariff path shows an average decrease of 0.1 per cent in tariffs (in nominal terms) over the 2017–22 access arrangement period.

In choosing the smoothing profile for this draft decision we have balanced a number of competing objectives:

- equalising (in NPV terms) unsmoothed and smoothed revenue
- providing price signals that reflect the underlying efficient costs
- minimising tariff variability from 2016–17 and within the 2017–22 access arrangement period
- minimising the likelihood of variability in tariffs at the start of the 2022–27 access arrangement period.

Each of these points is discussed below in turn.

[24] Reconciling the draft decision smoothed revenue (section 4.2) against the reference service tariffs (section 3.1) and approved demand (section 3.2) requires the use of a revenue reconciliation factor (RRF) in each year of the access arrangement period discussed in attachment 10.

First, we are satisfied that our draft decision tariff path for APTPPL's 2017–22 access arrangement period achieves revenue equalisation as required by rule 92(2) of the NGR.[25] As set out above, we have made substantial reductions to the unsmoothed revenue proposed by APTPPL. We set the tariff path so that it adjusts the smoothed revenue downward to better reflect the unsmoothed building block costs.

Second, but closely related to the first point, our smoothing allows closer alignment of tariffs and costs. This aids the achievement of the NGO and the revenue and pricing principles, including providing a price signal that facilitates efficient use of natural gas services.[26] Our draft decision tariff path shows a downward trend across the 2017–22 access arrangement period. This reflects the lower unsmoothed building block costs and lower demand relative to the previous access arrangement period. The unsmoothed building block costs increase slightly over for the first three years of the access arrangement period and decrease in the remaining two years.

To the extent the draft decision forecast building block costs reflect APTPPL's underlying efficient cost structure, the decline in unsmoothed revenue in 2020–21 and 2021–22 is largely a result of certain asset classes being fully depreciated or near full depreciation at the end of 2019–20. The depreciation of these asset classes are associated with previously approved sunk costs that have already been or will not be replaced.[27] Therefore, the decline in building block costs in these later years of the access arrangement period would generally result in lower tariffs, all things being equal.

Third, in setting the tariff path, we aim to minimise tariff volatility from 2016–17 and within the 2017–22 access arrangement period. Our chosen tariff path reflects this objective, but also reflects the consideration we must give to other competing objectives. For instance, setting a flat tariff path from 2016–17 would better minimise within-period volatility, but would not achieve revenue equalisation between tariffs and costs.

Fourth, in setting the tariff path, we also aim to minimise the likelihood of tariff volatility between this access arrangement period and the next. We do not know with certainty what APTPPL's efficient costs will be in 2022–23, or across the next 2022–27 access arrangement period more generally. The unsmoothed building block costs for 2021–22 (the last year of APTPPL's 2017–22 access arrangement period) are the best available proxy. Hence, this objective requires minimising the divergence between the smoothed and unsmoothed revenues for the last year of the access arrangement period. If there were no significant changes in forecast costs from 2021–22 to 2022–23, this final year

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[25] The revenue equalisation occurs in NPV terms, discounting the yearly cash flows at the rate of return to reflect the time value of money.

[26] NGL, rr. 23, 24.

[27] The asset classes relate to the 'PMA' (Pipeline Management Agreement buyout) and 'Redundant compressors'. The PMA asset class was approved a remaining asset life of eight years in our final decision of August 2012 and will be fully depreciated by the end of 2019–20. The redundant compressors asset class refers to compressors nearing the end of their standard asset life and/or have been replaced and are no longer in use.

divergence gives us an estimate of the size of the tariff change at the start of the 2022–27 access arrangement period.

For this draft decision, this final year divergence is 7.9 per cent. The divergence is outside our usual target of 3 per cent. However, the profile of unsmoothed building block revenues and lower forecast demand relative to the previous period constrain our ability to smooth the revenues without causing significant tariff volatility. For example, limiting the divergence target to 3 per cent would result in more revenue to be recovered earlier in the access arrangement period. This would provide for tariff increases at the beginning of the period followed by tariff decreases. Working with these constraints, our draft decision is to give primary weight for smoothing tariffs within the 2017–22 access arrangement period, while minimising the final year divergence of smoothed revenue and unsmoothed revenues to the extent possible.

Our draft decision provides for increases to the reference tariff in nominal terms over the first three years before falling for the final two years of the period. That is, by 2021–22 the tariff is expected to be 0.1 per cent lower than that at the start of the access arrangement period.

We note that if there are significant changes in costs at the start of the 2022–27 access arrangement period, this might increase or decrease the required tariff change at that time.

We are satisfied that our draft decision tariff path reflects our balanced consideration of these competing objectives. We will review this smoothing profile for the final decision if necessary.

4.4 Accounting for the interval of delay

APTPPL submitted its proposed access arrangement revisions on 1 September 2016, as permitted under the current iteration of the RBP access arrangement. Given the stakeholder consultation and analysis required in this instance, we will not publish our final decision before 1 July 2017, the date on which revisions to the access arrangement were due to commence. Consistent with the NGR, reference tariffs for 2016–17 will continue to apply until we release our final decision and new reference tariffs take effect.

This means there will be an interval of delay between 1 July 2017 and the date revisions actually commence following our final determination. Under rule 92(3) of the NGR, we may take any interval of delay into account when determining reference tariffs in the new period. This provision potentially allows a reconciliation or 'true up' in the determination of new reference tariffs.

Our draft decision is to reduce APTPPL's building block revenues in the forthcoming access arrangement period compared to the current period. However, the combination of lower expected demand in 2017–18 and an adjustment for a tariff error in 2016–17, mean that reference tariffs in 2017–18 would be higher than in the current year. Our draft decision sets the 2017–18 reference tariff path so that the 2017–18 reference

tariff is the same nominally as the current approved reference tariff for 2016–17 in accounting for the expected interval of delay.

Our draft decision tariff path is contingent on any changes in our final decision such as movements in parameter estimates of the rate of return, amongst other things. Therefore, we will revisit the tariff setting and interval of delay for the final decision.

5 Key elements of decision on revenue

The components of our draft decision include the building blocks we use to determine the revenue that APTPPL may recover from its users.

To determine the overall total revenue requirement of $236.5 million ($nominal, unsmoothed) for the 2017–22 access arrangement period, we:

- applied relevant tests under the NGR, the assessment methods and tools developed as part of our Better Regulation guidelines[28]
- considered information provided by APTPPL, our consultants, and stakeholder submissions
- considered our overall revenue decision against section 23 of the NGL, including the components of our decision and their interrelationships.

The following sections summarise our revenue decision by building block. The attachments to this draft decision provide a more detailed explanation of our analysis and findings.

5.1 Capital base

The capital base roll forward accounts for the value of APTPPL's regulated assets over the access arrangement period. The opening capital base value for a regulatory year within the access arrangement period is rolled forward by indexing it for inflation, adding any conforming capex, and subtracting depreciation and other possible factors (for example, disposals or customer contributions).[29] Following this process, we arrive at a closing value of the capital base at the end of the relevant year. The opening value of the capital base is used to determine the return of capital (regulatory depreciation) and return on capital building block allowances.

This section sets out our decision on APTPPL's opening capital base as at 1 July 2017 for the 2017–22 access arrangement period. It also sets out our decision on APTPPL's projected capital base for the 2017–22 access arrangement period.

We do not approve APTPPL's proposed opening capital base of $451.5 million ($nominal) as at 1 July 2017. This is because we have made amendments to several inputs in APTPPL's proposed roll forward model (RFM). We also updated the actual conforming capex for 2011–12 to 2015–16 and estimate for 2016–17, as discussed in attachment 6.

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[28] http://www.aer.gov.au/networks-pipelines/better-regulation

[29] The term 'rolled forward' means the process of carrying over the value of the capital base from one regulatory year to the next.

We determine an opening capital base of $444.0 million ($nominal) as at 1 July 2017, which is $7.5 million ($nominal) lower than that proposed by APTPPL, a reduction of 1.7 per cent.

Table 5.1 summarises our draft decision on the roll forward of APTPPL's capital base during the 2012–17 access arrangement period.

Table 5-1 AER draft decision on APTPPL's capital base roll forward for the 2012–17 access arrangement period ($million, nominal)

	2012–13	2013–14	2014–15	2015–16	2016–17
Opening capital base	417.1	420.6	425.4	430.9	429.1
Net capex	5.8	8.9	17.8	10.2	18.8
Indexation of capital base	10.4	12.3	5.7	5.6	9.1
Less: straight-line depreciation	12.7	16.5	17.9	17.6	16.8
Closing capital base	420.6	425.4	430.9	429.1	440.3
Difference between estimated and actual capital expenditure in 2011–12					2.7
Return on difference for 2011–12 capex					1.0
Opening capital base as at 1 July 2017					**444.0**

Source: AER analysis.

We do not approve APTPPL's proposed roll forward of its projected capital base across the 2017–22 access arrangement period, and do not approve its closing capital base at 30 June 2022 of $505.4 million ($nominal). This is because we have not approved APTPPL's proposed inputs to the projected capital base roll forward, specifically the opening capital base (attachment 2), depreciation (attachment 5) and forecast capex (attachment 6). Based on our revised amounts for these inputs, we determine a projected closing capital base of $488.1 million ($nominal) as at 30 June 2022. This is $17.3 million ($nominal) less than that proposed by APTPPL, a reduction of 3.4 per cent.

Table 5-2 sets out the projected roll forward of the capital base during the 2017–22 access arrangement period.

Table 5-2 AER's draft decision on APTPPL's projected capital base roll forward for the 2017–22 access arrangement period ($million, nominal)

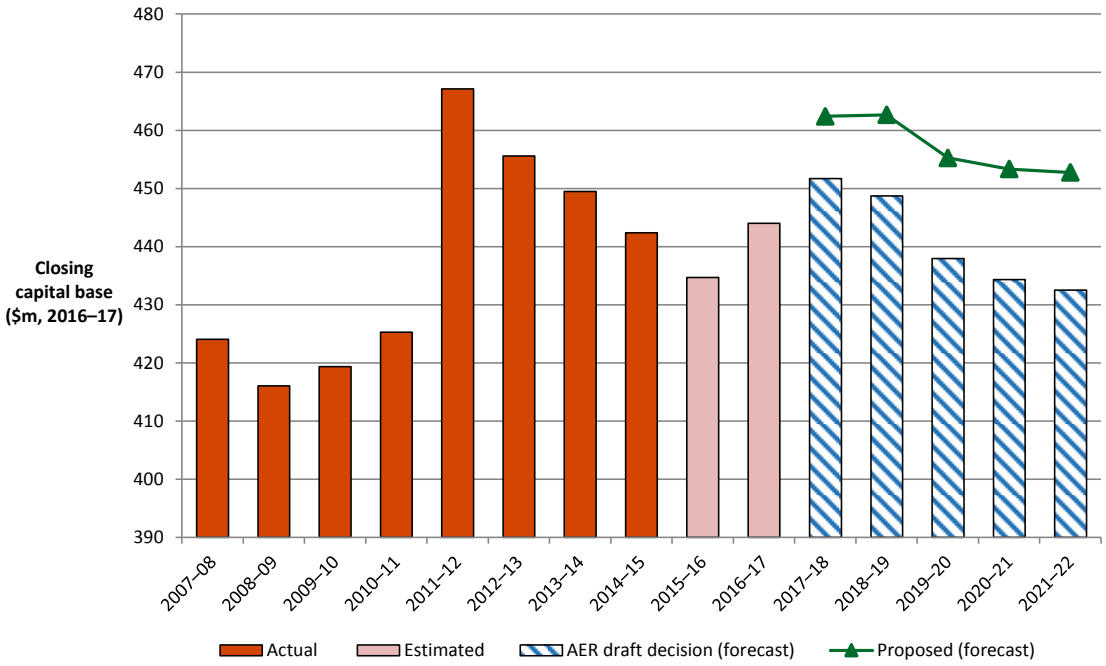
	2017–18	2018–19	2019–20	2020–21	2021–22
Opening capital base	444.0	462.8	470.9	470.9	478.5
Net capex	24.5	14.8	7.1	8.8	8.9
Indexation of capital base	10.9	11.3	11.5	11.5	11.7
Less: straight-line depreciation	16.6	17.9	18.7	12.8	10.9
Closing capital base	462.8	470.9	470.9	478.5	488.1

Source: AER analysis.

Further detail on our draft decision in regards to APTPPL's capital base is set out in attachment 2.

Figure 5.1 compares our draft decision on APTPPL's forecast capital base to APTPPL's proposed and actual capital base in real dollar terms.

Figure 5.1 APTPPL"s actual, proposed forecast, and AER draft decision forecast capital base ($ million, 2016–17)



Source: AER analysis.

5.2 Rate of return (return on capital)

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

We are satisfied that the allowed rate of return of 5.75 per cent (nominal vanilla) we determined contributes to the achievement of the NGO, and achieves the allowed rate of return objective (ARORO) set out in the NGR.[30] That is, we are satisfied that this allowed rate of return is commensurate with the efficient financing costs of a benchmark efficient entity with a similar degree of risk as that which applies to APTPPL in providing reference services.[31] We are not satisfied that APTPPL proposed (indicative) 7.7 per cent rate of return for 2018 will achieve the ARORO.[32]

Table 5-3 sets out our rate of return and APTPPL's proposed rate of return.

Table 5-3 Draft decision on APTPPL's rate of return (% nominal)

	Previous allowed return (2012-17)	APTPPL's proposal (2017-22)	AER draft decision (2018)	Allowed return over 2018 regulatory control period
Return on equity (nominal post–tax)	7.75	8.39	7.2	Constant (7.2%
Return on debt (nominal pre–tax)	7.01	7.26	4.79	Updated annually
Gearing	60	60	60	Constant (60%)
Nominal vanilla WACC	7.31	7.7	5.75	Updated annually for return on debt
Forecast inflation	2.55	2.3	2.45	Constant (%)

Source: AER analysis; APTPPL, *2017 - 2022 RBP Access Arrangement revision submission*, 16 September, 2016, p. 130, 157, 163, 171.

Our return on equity estimate for this draft decision is 7.2 per cent. We derived this estimate by applying the foundation model approach (as set out in the Guideline) used to determine the allowed return on equity in our most recent decisions.[33] This is a six step process, where we have regard to a considerable amount of relevant information, including various equity models.

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30 NGR, cl. 87(2).

31 NGR r. 87(3).

32 APTPPL, *2017 - 2022 RBP Access Arrangement revision submission*, 16 September, 2016, p. 130, 133, 157, 163, 171.

33 For example, see AER, *Final decision: AusNet Services determination 2015 -16 to 2019–20, Attachment 3—Rate of return*, May 2016.

Our return on equity point estimate and the parameter inputs are set out in the table below. APTPPL proposed departing from the approach in the Guideline for the market risk premium and equity beta parameters. We are not satisfied that APTPPL's proposal would result in an outcome that better achieves the ARORO. Further detail on our draft decision in regards to APTPPL's allowed rate of return is set out in attachment 3.

Table 5-4 Draft decision on APTPPL's return on equity (% nominal)

	AER previous decision (2012–17)	APTPPL's proposal (2017–22)	AER draft decision (2017-18)
Nominal risk free rate (return on equity only)	2.95%	1.94%[a]	2.6%[b]
Equity risk premium	4.8%	6.45%	4.55%
Market risk premium	6%	8.06%	6.5%
Equity beta	0.8	0.8	0.7
Nominal post–tax return on equity	7.75%	8.39%	7.2%

Source: AER analysis; APTPPL, *2017 - 2022 RBP Access Arrangement revision submission*, 16 September, 2016, p. 130, 133, 157, 163, 171.

[a] Based on APTPPL's indicative averaging period adopted for its proposal of 20 business days to 29 July 2016

[b] Calculated with a placeholder averaging period of 20 business days up to 28 April 2017.

Our return on debt estimate is based on a gradual transition from the 'on-the-day' approach we used in the past to the 'trailing average' approach we proposed in the Guideline. The trailing average approach reflects the return on debt that a network business would face if it raised debt annually in equal parcels. Our return on debt approach incorporates a transition to the new approach.

Our decision is also to update the return on debt annually. Therefore, our estimate in this decision is for the first year of the regulatory period. Due to this, we update our rate of return annually.

We commence the trailing average with an initial estimation of the return on debt that is then progressively updated over the regulatory period. In practice, this means that for new debt that is issued (10 per cent of the initial estimate each year) we apply an estimate of the observed return on debt immediately. For existing debt issued before the commencement of the trailing average approach, we will continue to apply the on-the-day approach for the portion that has not been updated. Consequently, at the end of 10 years the total debt portfolio will have been updated and incorporated into the trailing average.

Our return on debt estimate is developed on the basis that a benchmark efficient entity issues debt with a 10 year term and has a BBB+ credit rating. To estimate the yield on this debt, we use an independent third party data service provider. We have reviewed

the recent draft proposals and decided to adopt a simple average of the data series provided by the Reserve Bank of Australia and Bloomberg.

Our estimation procedure allows the service provider to propose a period between 10 business days and 12 months in length before the start of each regulatory year, over which the observed rates are averaged to estimate the return on debt. This results in service providers proposing an averaging period consistent with its debt practices and therefore, our return on debt estimate is different for different service providers.

Our return on debt estimate for the first year of APTPPL's access arrangement period in this draft decision is 4.79 per cent. This return on debt number will be updated annually during the regulatory period to partially reflect prevailing interest rates. Our approach and estimation procedures are consistent with the Guideline. We note that APTPPL in its current draft proposal proposed to depart from our return on debt approach as set out in the Guideline and adopted an immediate transition to the trailing average approach. It proposed a return on debt of 7.26 per cent.

Our estimate of expected inflation is estimated as the geometric average of 10 annual expected inflation rates. We use the RBA's forecasts of inflation for the first two annual rates and the mid-point of the RBA's inflation target band for the remaining eight annual rates.

Regulated revenue and assets values are adjusted for the effect of our expected inflation rate through the calculations in our revenue model and asset base roll-forward model.

APTPPL proposed a revenue model based initially on an estimated expected inflation rate, and then updated annually to replace (in part) the expected inflation rate with lagged actual inflation rates. APTPPL submitted that its proposed revenue model will address 'mismatch' between the adjustments to asset values for inflation made in the post-tax revenue model compared to those made in the asset base roll-forward model.

We do not accept APTPPL's estimates of expected inflation and we do not accept APTPPL's proposed treatment of inflation in its revenue model, for the following reasons:

- APTPPL's proposed revenue model includes two separate and inconsistent estimates of expected inflation. We do not consider that this approach reflects the best forecast or estimate available in the circumstances.
- The end result of APTPPL's proposed revenue model and asset base roll forward model appears to be that the real value of the aggregate revenue determined in our access arrangement determination and annual tariff variations is not set but will vary as actual inflation outcomes vary. This may materially alter the risk profile of APTPPL and allocation of risk between APTPPL and consumers, with consequences for determining a rate of return that is commensurate with these risks.

We consider that, based on the information before us in this determination process, that the RBA forecasts and target band approach is likely to result in the best estimate of expected inflation possible in the circumstances.

It is important to note that we are currently conducting a broader industry-wide review of our method for estimating expected inflation and the treatment of inflation in our revenue models. That review is yet to be finalised and so findings from the review cannot therefore be included in this decision. That said, for the purposes of this determination, on the basis of the information currently available to us, we consider the treatment of inflation in our revenue models will contribute to the achievement of the National Gas Objective and allowed rate of return objective.

Further detail on our draft decision in regards to APTPPL's rate of return is set out in attachment 3.

5.3 Value of imputation credits (gamma)

Under the Australian imputation tax system, investors can receive an imputation credit for income tax paid at the company level.[34] These are received after company income tax is paid, but before personal income tax is paid. For eligible investors, this credit offsets their Australian income tax liabilities. If the amount of imputation credits received exceeds an investor's tax liability, that investor can receive a cash refund for the balance. Imputation credits are therefore valuable to investors and are a benefit to investors in addition to any cash dividend or capital gains they receive from owning shares.

However, the estimation of the return on equity does not take imputation credits into account. Therefore, an adjustment for the value of imputation credits is required. This adjustment could take the form of a decrease in the estimated return on equity itself. An alternative but equivalent form of adjustment, which is employed under the NER, is via the revenue granted to a service provider to cover its expected tax liability. Specifically, the NER requires that the estimated cost of corporate income tax be determined in accordance with a formula that reduces the estimated cost of corporate tax by the 'value of imputation credits' (represented by the Greek letter, γ, 'gamma'). This form of adjustment recognises that it is the payment of corporate tax which is the source of the imputation credit return to investors.

Our draft decision adopts a value of imputation credits of 0.4. We do not accept APTPPL's proposed value of imputation credits (or gamma) of 0.25. We consider that a value for imputation credits of 0.4 will result in equity investors in the benchmark efficient entity receiving an ex ante total return (inclusive of the value of imputation credits) commensurate with the efficient equity financing costs of a benchmark efficient entity.

In coming to a value of imputation credits of 0.4:

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[34] *Income Tax Assessment Act 1997,* parts 3–6.

- We adopt a conceptual approach consistent with the Officer framework, which we consider best promotes the objectives and requirements of the NER/NGR. This approach considers the value of imputation credits is a post-tax value before the impact of personal taxes and transaction costs.[35] As such, we view the value of imputation credits as the proportion of company tax returned to investors through the utilisation of imputation credits.[36]
- We consider our conceptual approach allows for the value of imputation credits to be estimated on a consistent basis with the allowed rate of return and allowed revenues under the post-tax framework in the NER/NGR.[37]
- We use the widely accepted approach of estimating the value of imputation credits as the product of two sub-parameters: the 'distribution rate' and the 'utilisation rate'. Our definition of, and estimation approach for, these sub-parameters is set out in Table 5-5.

Table 5-5 Gamma sub-parameters: definition and estimation approach

Sub-parameter	Definition	Estimation approach
Distribution rate (or payout ratio)	The proportion of imputation credits generated that is distributed to investors.	Primary reliance placed on the widely accepted cumulative payout ratio approach. Some regard is also given to Lally's estimate for listed equity from financial reports of the 20 largest listed firms.
Utilisation rate (or theta)	The utilisation value to investors in the market per dollar of imputation credits distributed.[38]	A range of approaches, with due regard to the merit of each approach: equity ownership approach tax statistics implied market value studies.

Source: AER analysis.

Overall, the evidence suggests a range of estimates for the value of imputation credits might be reasonable. With regard to the merits of the evidence before us, we choose a value of imputation credits of 0.4 from within a range of 0.3 to 0.5.

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35 Post-tax refers to after company tax and before personal tax.

36 This means one dollar of claimed imputation credits has a post (company) tax value of one dollar to investors before personal taxes and personal transaction costs.

37 In finance, the consistency principle requires that the definition of the cash flows in the numerator of a net present value (NPV) calculation must match the definition of the discount rate (or rate of return / cost of capital) in the denominator of the calculation (see Peirson, Brown, Easton, Howard, Pinder, Business Finance, McGraw-Hill, Ed. 10, 2009, p. 427). By maintaining this consistency principle, we provide a benchmark efficient entity with an ex ante total return (inclusive of the value of imputation credits) commensurate with the efficient financing costs of a benchmark efficient entity.

38 In this decision we use the terms theta, utilisation value and utilisation rate interchangeably to mean the same thing.

In considering the evidence on the distribution and utilisation rates, we have broadly maintained the approach set out in the Rate of Return Guideline (the Guideline), but have re-examined the relevant evidence and estimates. This re-examination, and new evidence and advice considered since the Guideline, led us to depart from the 0.5 value of imputation credits we proposed in the Guideline.

Further detail on our draft decision in regards to the value of APTPPL's imputation credits is set out in attachment 4.

5.4 Regulatory depreciation (return of capital)

We approve APTPPL's proposal to use the real straight-line method to calculate the regulatory depreciation allowance. However, we do not approve APTPPL's proposed regulatory depreciation allowance of $18.1 million ($nominal) for the 2017–22 access arrangement period. This is mainly because of our decision to update APTPPL's calculation of the remaining asset lives as at 1 July 2017 (attachment 5) and due to the effect of our determinations on other components of APTPPL's proposal. Discussed in other attachments, these determinations include the opening capital base (attachment 2) and the forecast capex (attachment 6).

We approve APTPPL's proposed asset classes and the standard asset lives assigned to each of its asset classes for the 2017–22 access arrangement period. This is because they are consistent with the approved standard asset lives for the 2012–17 access arrangement period. They are also broadly comparable with the standard asset lives approved in our recent determinations for other gas transmission service providers.[39]

We accept APTPPL's proposed weighted average method to calculate the remaining asset lives as at 1 July 2017.[40] In accepting the weighted average method, we have updated the proposed remaining asset lives as at 1 July 2017 due to the input changes we made to APTPPL's proposed roll forward model (RFM). These input changes affect the remaining asset lives calculation and are discussed in attachment 5.

Our draft decision on APTPPL's regulatory depreciation allowance is $19.9 million ($nominal) in total for the 2017–22 access arrangement period as set out in table 5-6.

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[39] For example, *AER: Access arrangement final decision APA GasNet Australia (Operations) Pty Ltd 2013–17 Part 2: Attachments,* March 2013, p. 149*;* AER: *Final decision Amadeus Gas Pipeline access arrangement attachment 5 — Regulatory depreciation,* May 2016, p. 9.

[40] We note that the capex determined in this draft decision for 2015–16 and 2016–17 are estimates. As part of the final decision, we expect the estimate of capex for 2015–16 to be replaced by actuals and the estimate of capex for 2016–17 may be revised based on more up to date information by RBP in its revised proposal. The capex values are used to calculate the weighted average remaining asset lives. Therefore, we may recalculate RBP's remaining asset lives using the method approved in this draft decision to reflect revisions to the 2015–16 and 2016–17 capex values for the final decision.

Table 5-6 AER's draft decision on APTPPL's regulatory depreciation allowance for the 2017–22 access arrangement period ($million, nominal)

	2017–18	2018–19	2019–20	2020–21	2021–22	Total
Straight-line depreciation	16.6	17.9	18.7	12.8	10.9	76.9
Less: indexation on capital base	10.9	11.3	11.5	11.5	11.7	57.0
Regulatory depreciation	**5.7**	**6.6**	**7.1**	**1.3**	**–0.8**	**19.9**

Source: AER analysis.

Further detail on our draft decision in regards to APTPPL's regulatory depreciation is set out in attachment 5.

5.5 Capital expenditure

5.5.1 Conforming capex for 2011–17

We approve $61.1 million ($2016–17) of APTPPL's proposed total net capex of $69.0 million ($2016–17) for the 2012–17 access arrangement period as conforming capex.[41] We also approve APTPPL's actual capex of $57.9 million ($2016–17) in the 2011–12 year as conforming capex.[42]

Table 6.1 shows approved capex for the 2011–17 period by category.

Table 6.1 Approved capex, 2011–12 to 2016–17 ($million, 2016–17)

Category	2011–12[(a)]	2012–13	2013–14	2014–15	2015–16	2016–17	Total (2012–17)
Expansion	50.3	3.2	2.5	0.0	–	–	5.7
Replacement	–	0.7	2.3	4.0	4.5	6.3	17.7
Stay in business	7.6	2.4	4.4	13.8	5.5	12.0	38.1
GROSS TOTAL CAPEX	57.9	6.3	9.2	17.8	10.00	18.2	61.5
Contributions	–	–	0.1	–	–	–	0.1
Asset disposals	–	0.1	0.1	0.0	–	–	0.2
NET TOTAL CAPEX	57.9	6.1	9.0	17.7	10.00	18.2	61.1

Source: AER analysis. Totals may not add due to rounding.

Notes: (a) We have made a decision on conforming capex for the 2011-12 year for the purposes of establishing the opening capital base for the 2012–17 access arrangement period.

41 NGR, r. 79(1).

42 NGR, r. 77(2).

We have reduced APTTPPL's proposed capex because we consider that $7.8 million of the estimated capex for emergency works (flood recovery) should be classified as operating expenditure.

5.5.2 Conforming capex for the 2017–22 access arrangement period

We approve $59.5 million ($2016–17) of APTPPL's proposed $66.7 million ($2016–17) total net capex for the 2017–22 access arrangement period as conforming capex.[43]

Figure 5.2 shows the difference between APTPPL's past and proposed forecast capex, and the forecasts we have approved in our previous decision for 2012–17 and this draft decision for 2017–22.

Figure 5.2 AER draft decision compared to APTPPL's past and proposed capex ($million, 2016–17)

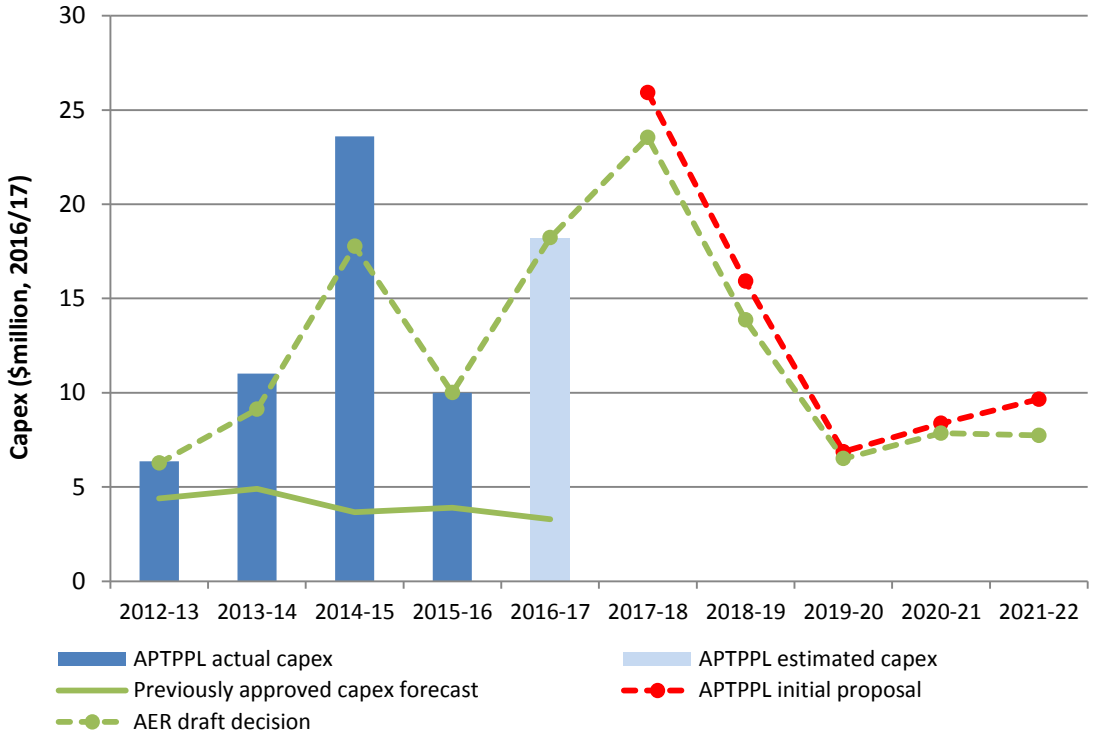

Table 5-7 shows approved capex for the 2017–22 access arrangement period by category.

[43] NGR, r. 79(1).

Table 5-7 AER approved capex by category over the 2017–22 access arrangement period ($million, 2016–17)

Category	2017–18	2018–19	2019–20	2020–21	2021–22	Total
Expansion	–	–	–	–	–	–
Replacement	6.3	8.2	5.1	6.3	5.8	31.7
Stay in business	17.2	5.7	1.4	1.6	1.9	27.8
GROSS TOTAL CAPEX	23.5	13.9	6.5	7.9	7.7	59.5
Contributions	–	–	–	–	–	–
Asset disposals	–	–	–	–	–	–
NET TOTAL CAPEX	23.5	13.9	6.5	7.9	7.7	59.5

Source: AER analysis. Totals may not add due to rounding.

The reasons for the difference between APTPPL's proposal and our draft decision are that:

- the forecast capex for the Pipeline Integrity Management Upgrade does not reflect the efficient cost of undertaking the necessary pipeline excavations and coating activities.[44] We consider that forecast capex of $31.7 million rather than the proposed $37.6 million is a reasonable estimate of conforming capex for this project, as discussed in section 6.4.2.
- the forecast capex for the Dalby Turbine Overhaul is not necessary in the forecast access arrangement period.[45] We consider that the forecast capex of $1.3 million is not necessary in the 2017–22 access arrangement period, as discussed in section 6.4.2.

Further detail on our draft decision in regards to APTPPL's capex is set out in attachment 6.

5.6 Operating expenditure

Our draft decision is to accept APTPPL's opex forecast of $72.1 million ($2016–17) over the 2017–22 access arrangement period.[46] This is because APTPPL's opex forecast is consistent with our own forecast and we consider it complies with the opex criteria and satisfies the criteria for forecasts and estimates.[47]

APTPPL's proposed total opex and our draft decision on opex are outlined in Table 5-8.

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44 ibid.
45 ibid.
46 Including debt raising costs.
47 NGR, r. 74.

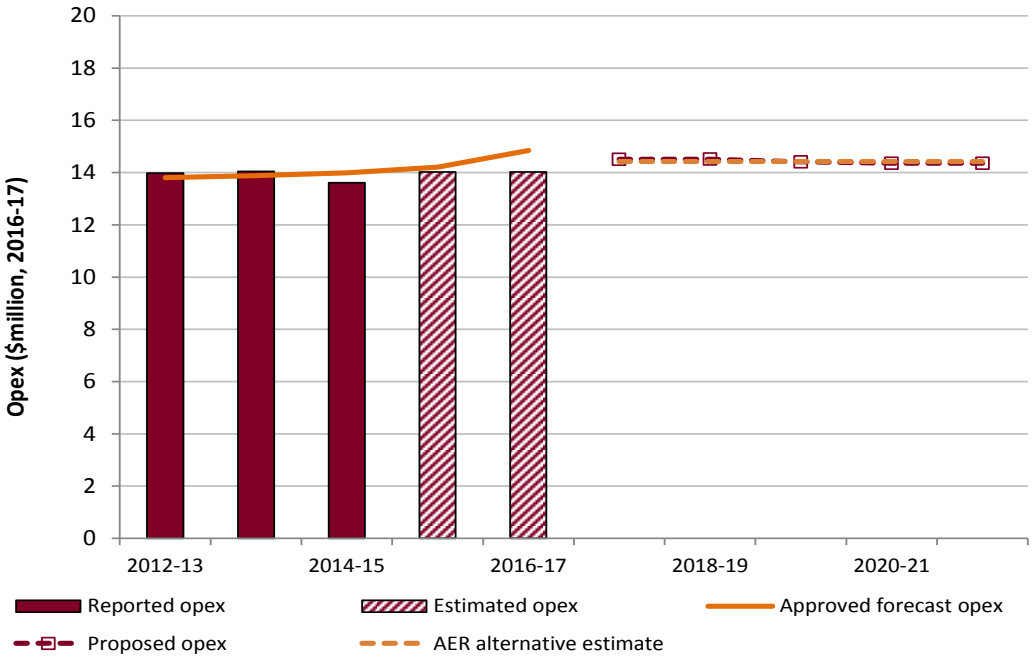
Table 5-8 Our draft decision on total opex ($million, 2016–17)

	2017-18	2018-19	2019-20	2020-21	2012-22	Total
APTPP's initial proposal	14.5	14.5	14.4	14.3	14.3	72.1
AER draft decision	14.5	14.5	14.4	14.3	14.3	72.1
Difference	–	–	–	–	–	–

Source: APTPPL, *RBP Access arrangement proposal 2017–22, Post tax revenue model (PTRM),* September 2016.
Note: Includes debt raising costs. Numbers may not add up due to rounding.

Figure 5.3 shows our draft decision compared to APTPPL's proposal, its past allowances and past actual expenditure.

Figure 5.3 Our draft decision compared to APTPPL's past and proposed opex ($ million, 2016–17)



Source: APTPPL, *Final RIN - RBP response*, September 2016; AER analysis.
Note: Includes debt raising costs.

Further detail on our draft decision in regard to APTPPL's opex is set out in attachment 7.

5.7 Corporate income tax

We approve APTPPL's proposed approach to calculate its forecast corporate income tax allowance. APTPPL's proposed approach is consistent with the AER's post-tax revenue model (PTRM) for electricity service providers and the approach previously

approved in gas access arrangement decisions. However, we do not approve APTPPL's proposed corporate income tax allowance of $8.3 million ($nominal) for the 2017–22 access arrangement period. Our draft decision on APTPPL's corporate income tax allowance over the 2017–22 access arrangement period is $3.4 million ($nominal), as set out in table 5-9. This represents a reduction of $4.9 million ($nominal) or 59.2 per cent of APTPPL's proposed forecast corporate income tax allowance.

The reduction reflects our amendments to APTPPL's proposed inputs for forecasting the cost of corporate income tax, including:

- the opening tax asset base (TAB) (section 8.4.1, attachment 8)
- remaining tax asset lives (section 8.4.3, attachment 8)
- the value of imputation credits (gamma) (attachment 4).

Our adjustments to the return on capital (attachments 2 and 3), regulatory depreciation (attachment 5), forecast capex (attachment 6) and forecast opex (attachment 7) building block costs affect revenues, which in turn impacts the tax calculation.[48]

We do not approve the proposed opening TAB of $134.6 million ($nominal) as at 1 July 2017. We instead determined an opening TAB of $126.4 million ($nominal). This is because we do not approve APTPPL's proposal to apply forecast tax depreciation when rolling forward the TAB for the 2012–17 access arrangement period. The proposed approach is inconsistent with:

- the AER's roll forward model (RFM) for electricity service providers and the approach previously approved in gas access arrangement decisions
- the Australian Taxation Office (ATO)'s guide on depreciating assets which requires that tax depreciation reflects the cost paid for obtaining or improving the asset.

We approve APTPPL's proposed standard tax asset lives for the 2017–22 access arrangement period. They are consistent with the provisions of the Income Tax Assessment Act (ITAA) 1997 and the standard tax asset lives prescribed in the Tax Ruling 2016/1.[49] They are also consistent with the approved standard tax asset lives in the 2012–17 access arrangement.

We accept APTPPL's proposed weighted average method to calculate the remaining tax asset lives as at 1 July 2017. In accepting the weighted average method, we have updated APTPPL's proposed remaining tax asset lives as at 1 July 2017. This is due to changes we have made to the roll forward of the opening TAB for the 2012–17 access arrangement period (section 8.4.1, attachment 8) and other inputs that affect the calculation of the remaining tax asset lives in APTPPL's proposed RFM (section 8.4.3, attachment 8).

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[48] The changes affecting revenues are discussed in the overview.

[49] *ITAA 1997*, s. 40.102(5); Australian Taxation Office, *Taxation Ruling (TR 2016/1) Income Tax: effective life of depreciating assets (applicable from 1 July 2016)*.

In assessing APTPPL's proposal, we have had regard to the requirement of the NGO and the revenue and pricing principles.[50]

Table 5-9 AER's draft decision on corporate income tax allowance for APTPPL ($million, nominal)

	2017–18	2018–19	2019–20	2020–21	2021–22	Total
Tax payable	1.9	1.8	1.8	0.1	0.0	5.6
Less: value of imputation credits	0.8	0.7	0.7	0.0	0.0	2.3
Net corporate income tax allowance	1.2	1.1	1.1	0.0	0.0	3.4

Source: AER analysis. Note, due to rounding the numbers displayed in this table may not sum perfectly.

Further detail on our draft decision in regards to APTPPL's corporate income tax is set out in attachment 8.

[50] NGL, s. 28; NGR r. 100(1). The NGO is set out in NGL, s. 23. The revenue and pricing principles are set out in NGL, s. 24.

6 Efficiency carryover mechanism

An efficiency carryover mechanism provides an additional incentive for service providers to pursue efficiency improvements in operating expenditure (opex). It is often used in incentive regulation.

To encourage a service provider to become more efficient, it is allowed to keep any difference between its approved opex forecast and its actual opex in an access arrangement period. This is supplemented by the efficiency carryover mechanism, which allows the service provider to retain efficiency savings and efficiency losses for a longer period of time. In total these rewards and penalties work together to provide a continuous incentive for a service provider to pursue efficiency gains over the access arrangement period. The efficiency carryover mechanism also discourages a service provider from inflating its opex in the expected base year in order to receive a higher opex allowance in the following access arrangement period.

Consumers benefit from any efficiency gains made by the service provider as we base our next opex forecast (for the next access arrangement period) on the service provider's lower revealed opex. This is how efficiency improvements are shared between consumers and the business.

An efficiency carryover mechanism did not apply to APTPPL during the 2012–17 access arrangement period. APTPPL did not propose to apply an efficiency carryover mechanism to its opex in the 2017–22 access arrangement period. Our draft decision however is to apply an efficiency carryover mechanism to APTPPL in the 2017–22 access arrangement period.

Our decision to apply an efficiency carryover mechanism to APTPPL is consistent with our approach for other regulated service providers.[51] The efficiency carryover mechanism is an important component of our top-down, revealed cost forecasting approach for opex.

Further detail on our draft decision in regards to APTPPL's efficiency carryover mechanism is set out in attachment 9.

[51] For example, Amadeus Gas Pipeline—access arrangement 2016-21.

7 Non-tariff components

APTPPL's access arrangement proposal sets out terms and conditions on which APTPPL offers to supply services. The non-tariff components are as follows:

- queuing requirements—a process or mechanism for establishing an order of priority between prospective users of spare or developable capacity
- extension and expansion requirements—the method for determining whether an extension or expansion is a part of the covered pipeline and the effect this will have on tariffs
- capacity trading requirements—the arrangements for users to assign contracted capacity
- provisions for changing receipt and delivery points
- a review submission date and a revision commencement date, and
- the terms and conditions for the supply of reference services.

Our draft decision is to approve APTPPL's proposed capacity trading requirements, changing receipt and delivery points, and its proposed extension and expansion requirements. APTPPL's proposal in regards to these items remains unchanged from its current access arrangement.

We are also satisfied that APTPPL's proposed terms and conditions applying to the reference services are consistent with the NGO and NGR. However our draft decision requires a number of changes to the terms and conditions arising from our decisions on reference and rebateable services, as well as correction of some minor typographical errors.

Our draft decision does not approve APTPPL's proposed queuing requirements. APTPPL proposes to replace the existing "first-come-first-served" queuing policy with a new process. Our draft decision requires APTPPL to amend its access arrangement proposal to restore the queuing requirements in clauses 6.1 to 6.6 of the 2012–17 RBP Access Arrangement.[52]

Our draft decision also requires APTPPL to amend the proposed review submission date and revision commencement date to each specify a single fixed date. Our draft decision nominates a review submission date of 1 July 2021 and a revision commencement date of 1 July 2022.

Further detail on our draft decision in regards to APTPPL's non-tariff components is set out in attachment 12.

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[52] Clause 6.7 of the 2012-17 RBP access arrangement deals with the transition from the previous RBP access arrangement and is not required for the 2017-22 RBP access arrangement.

8 Understanding the NGO

The NGO is the central feature of the regulatory framework. The NGO is

> to promote efficient investment in, and efficient operation and use of, natural gas services for the long term interests of consumers of natural gas with respect to price, quality, safety, reliability and security of supply of natural gas.[53]

Energy Ministers have provided us with a substantial body of explanatory material that guides our understanding of the NGO.[54] The long term interests of consumers are not delivered by any one of the NGO's factors in isolation, but rather by balancing them in reaching a regulatory decision.[55]

In general, we consider that we will achieve this balance and, therefore, contribute to the achievement of the NGO, where consumers are provided a reasonable level of safe and reliable service that they value at least cost in the long run.[56] We have also considered the quality and reliability of services provided to consumers. For example, the opex allowance and pass through mechanism approved in this draft decision has been set so that APTPPL can meet existing and new regulatory requirements. Our approved capex forecast includes expenditure to replace assets that are aged or in unacceptable condition.

The nature of decisions under the NGR is such that there may be a range of economically efficient decisions, with different implications for the long term interests of consumers.[57] At the same time, however, there are a range of outcomes that are unlikely to advance the NGO, or not advance the NGO to the degree that others would.

For example, we do not consider that the NGO would be advanced if allowed revenues encourage overinvestment and result in prices so high that consumers are unwilling or unable to efficiently use the network.[58] This could have significant longer term pricing implications for those consumers who continue to use network services.

Equally, we do not consider the NGO would be advanced if allowed revenues result in prices so low that investors are unwilling to invest as required to adequately maintain the appropriate quality and level of service, and where customers are making more use of the network than is sustainable. This could create longer term problems in the

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53 NGL, s. 23.

54 Hansard, *SA House of Assembly*, 9 February 2005, pp. 1451–1460.
Hansard, *SA House of Assembly*, 27 September 2007, pp. 963–972.
Hansard, *SA House of Assembly*, 26 September 2013, pp. 7171–7176.

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

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

57 *Re Michael: Ex parte Epic Energy* [2002] WASCA 231 at [143].
Energy Ministers also accept this view – see Hansard, SA House of Assembly, 26 September 2013 p. 7172.
AEMC, *Rule Determination National Electricity Amendment (Economic Regulation of Transmission Services) Rule 2006 No. 18,* p. 50.

58 NGL, s. 24(7).

network[59] and could have adverse consequences for safety, security and reliability of the network.

The NGL also includes the revenue and pricing principles (RPP), which support the NGO.[60] As the NGL requires,[61] we have taken the RPPs into account throughout our analysis under the NGR. The RPPs are:

> A service provider should be provided with a reasonable opportunity to recover at least the efficient costs the service provider incurs in—
>
> - providing reference services; and
> - complying with a regulatory obligation or requirement or making a regulatory payment.
>
> A service provider should be provided with effective incentives in order to promote economic efficiency with respect to reference services the service provider provides. The economic efficiency that should be promoted includes—
>
> - efficient investment in, or in connection with, a pipeline with which the service provider provides reference services; and
> - the efficient provision of pipeline services; and
> - the efficient use of the pipeline.
>
> Regard should be had to the capital base with respect to a pipeline adopted—
>
> - in any previous—
> - full access arrangement; or
> - decision of a relevant regulator under section 2 of the Gas Code; or
> - in the Rules.
>
> A reference tariff should allow for a return commensurate with the regulatory and commercial risks involved in providing the reference service to which that tariff relates.
>
> Regard should be had to the economic costs and risks of the potential for under and over investment by a service provider in a pipeline with which the service provider provides pipeline services.
>
> Regard should be had to the economic costs and risks of the potential for under and over utilisation of a pipeline with which a service provider provides pipeline services.

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59 NGL, s. 24(6).
60 NGL, s. 24.
61 NGL, s. 28(2).

Consistent with Energy Ministers' views, we set the amount of revenue that service providers can recover from customers to balance all of the elements of the NGO and consider each of the RPPs.[62] For example:

- In determining forecast opex and capex that reasonably reflects the opex and capex criteria, we take into account the revenue and pricing principle that we should provide APTPPL with a reasonable opportunity to recover at least efficient costs (refer to capex attachment 6 and opex attachment 7).
- We take into account the economic costs and risks of the potential for under and over investment by a service provider in our assessment of APTPPL's forecast capex and opex proposals (refer to capex attachment 6 and opex attachment 7).
- We consider the economic costs and risks of the potential for under and over utilisation of APTPPL's network in our decisions on demand forecasting and forecast augmentation capex (refer to capex attachment 6 and demand attachment 13).
- The opex efficiency carryover mechanism in this decision provides APTPPL with effective incentives which we consider will promote economic efficiency with respect to the reference service that APTPPL provides throughout the access arrangement period (refer to efficiency carryover mechanism attachment 9).
- We have determined APTPPL's opening capital base taking into account the capital adopted in the previous access arrangement (refer to capital base attachment 2).
- The allowed rate of return objective reflects the revenue and pricing principle in s. 24(5). We have determined a rate of return that we consider will provide APTPPL with a return commensurate with the regulatory and commercial risks involved in providing pipeline services (refer to rate of return attachment 3).
- Our financing determinations provide APTPPL with a reasonable opportunity to recover at least the efficient costs of accessing debt and capital (refer to rate of return attachment 3).

In some cases, our approach to a particular component (or part thereof) results in an outcome towards the end of the range of options that may be favourable to the businesses. Some of these decisions include:

- selecting at the top of the range for the equity beta
- setting the return on debt by reference to data for a BBB broad band credit rating, when the benchmark is BBB+
- the cash flow timing assumptions in the post-tax revenue model.

We take into account the RPPs when exercising discretion about an appropriate estimate. The legislative framework recognises the complexity of this task by providing

[62] Hansard, SA House of Assembly, 27 September 2007 pp. 965, Hansard, SA House of Assembly, 9 April 2008 p. 2886, Hansard, SA House of Assembly, 26 September 2013, p. 7173.

us with significant discretion in many aspects of the decision-making process to make judgements on these matters.

Part 9 of the NGR provides specifically for the economic regulation of covered pipelines. It includes detailed rules about the individual components of our decisions. These are intended to contribute to the achievement of the NGO.

8.1 Achieving the NGO to the greatest degree

An access arrangement decision is complex. In most instances, the provisions of the NGR do not point to a single answer, either for our decision as a whole or in respect of particular components. They require us to exercise our regulatory judgment. For example, Part 9 of the NGR requires us to prepare forecasts, which are predictions about unknown future circumstances. There will likely always be more than one plausible forecast supported by expert opinion. As a result, for certain components of our decision there may be several plausible answers or several plausible point estimates.

We approach this from a practical perspective, accepting that it is not possible to consider every permutation specifically. Where there are choices to be made among several plausible alternatives each of which would result in an overall decision that contributes to the achievement of the NGO, we have selected what we are satisfied would result in an overall decision that contributes to the achievement of the NGO to the greatest degree. [63]

In reaching this draft decision we have considered APTPPL's proposal and examined each of the building block components of the forecast revenue requirement, and the incentive mechanisms that should apply across the next access arrangement period. We have considered submissions we received in regard to APTPPL's proposal. We have conducted our own analysis and engaged expert consultants to help us better understand if and how APTPPL's proposal contributes to the achievement of the NGO. We have also considered how the individual components of our decision relate to each other, the impact that particular components of our decision have on others, and have described these interrelationships in this draft decision. We have had regard to and weighed up all of the information assembled before us in making this draft decision, and have made as much of this information publicly available as practicable for the purposes of consultation.

Therefore, we are satisfied that among the options before us, our draft decision on APTPPL's access arrangement for the 2016–21 access arrangement period contributes to achieving the NGO to the greatest degree.

[63] NGL, s. 28(1)(b)(iii).

8.1.1 Interrelationships between individual components

Considering individual components in isolation ignores the importance of interrelationships between components of the overall decision, and would not contribute to the achievement of the NGO. As outlined by Energy Ministers, considering the elements in isolation has resulted in regulatory failures in the past.[64] Interrelationships can take various forms, including:

- underlying drivers and context which are likely to affect many constituent components of our decision. For example, forecast demand affects the forecasts of efficient levels of capex and opex in the access arrangement period (see attachments 6, 7 and 13).
- direct mathematical links between different components of a decision. For example, the value of imputation credits (gamma) has an impact on the appropriate tax allowance; the benchmark efficient entity's debt to equity ratio has a direct effect on the cost of equity, the cost of debt, and the overall vanilla rate of return (see attachments 3, 4 and 8).
- trade-offs between different components of revenue. For example, undertaking a particular capex project may affect the need for opex and vice versa (see attachments 6 and 7).
- trade-offs between forecast and actual regulatory measures. The reasons supporting one part of a proposal may have impacts on other parts of a proposal. For example, completion of forecast augmentation (capex) to the network will mean the service provider has more assets to maintain, leading to higher opex requirements (see attachments 6 and 7).
- the service provider's approach to managing its network. The service provider's governance arrangements and its approach to risk management will influence most aspects of the proposal, including capex/opex trade-offs (see attachments 6 and 7).

We have considered interrelationships, including those above, in our analysis of the individual components of our draft decision. These considerations are explored in the relevant attachments.

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[64] SCER, *Regulation Impact Statement: Limited Merits Review of Decision-Making in the Electricity and Gas Regulatory Frameworks – Decision Paper*, 6 June 2013 p. 6.

9 Consultation

Stakeholder participation is important to informed decision making under the NGL and NGR. It allows us to take a range of views into account when considering how a proposal or decision contributes to the NGO. Effective consultation and engagement provide confidence in our processes and are good regulatory practice. This is reflected in the consultation process set out in the NGR, under which we have:

- published APTPPL's access arrangement revision proposal and the material APTPPL provided in support of that proposal
- invited and had regard to submissions on APTPPL's proposal
- held a public forum on APTPPL's proposal
- published this draft decision and reasoning
- invited written submissions on this draft decision.

We have also consulted on our approaches to these reviews: our 2013 Better Regulation Program brought a wide range of views to our development of assessment tools and techniques and our approaches to decision making. More recently, we have commenced consultation on approaches to forecasting inflation for the purposes of modelling regulated revenues. Our continued engagement on these processes enables us to identify and reflect stakeholder priorities and will result in decisions that will or are likely to contribute to the achievement of the NGO to the greatest degree.

9.1 APTPPL's engagement with customers

APTPPL has not provided evidence that it undertook engagement with its users in developing its access arrangement proposal. We consider that consumer engagement is important in regulatory processes as it assists in regulatory outcomes that better align with consumers' long term interests.[65]

The AER's Consumer Engagement Guideline for Network Service Providers (guideline) sets out how we expect service providers to engage with their consumers. As noted in our guideline, stronger consumer engagement can help us test service providers' expenditure proposals, and can raise alternative views on matters such as service priorities, capex proposals, and price structures. We expect all service providers to adopt the guideline and demonstrate a commitment to ongoing and genuine consumer engagement.[66]

Consultation we have undertaken has shown that there is considerable consumer interest in APTPPL's proposed non-tariff terms and conditions, and rate of return. These issues were raised by consumers at the public forum held by the AER in

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[65] NGO

[66] Consumer engagement guideline p. 5. The guideline is not binding on Network Service Providers.

October 2016 and in submissions received on APTPPL's access arrangement proposal. We consider that APTPPL's access arrangement proposal would have benefited from consumer engagement on these matters at an early stage. We recommend that APTPPL undertake more rigorous consumer engagement from this point, including in the development of its revised proposal.

Our detailed assessment of APTPPL's access arrangement proposal is set out in the attachments to this draft decision. We have taken APTPPL's lack of consumer engagement into account as part of our assessment.

A Revision commencement date and the interval of delay

This appendix sets out our considerations in respect of the interval of delay which will arise between the date on which revisions were intended to commence under the current access arrangement and the date the revisions will actually take effect.

A.1 Background

APTPPL's access arrangement must include:

- a review submission date—a date on or before which an access arrangement revision proposal is required to be submitted;[67] and
- a revision commencement date—a date fixed in the access arrangement as the date on which revisions resulting from a review of an access arrangement are intended to take effect.[68]

As a general rule, the revision commencement date will fall 5 years after the access arrangement took effect or the last revision commencement date.[69] If APTPPL proposes to fix a revision commencement date in accordance with the general rule then the AER must accept that part of the proposal.[70] However, the AER may approve dates that do not conform to the general rule if satisfied that they are consistent with the national gas objective and the revenue and pricing principles.[71]

APTPPL's current access arrangement includes a review submission date and revision commencement date in the following terms:[72]

> Service Provider will submit revisions to this Access Arrangement to the AER on or before 1 July 2016, or four years from the commencement date of this Access Arrangement, whichever is the later (Revisions Submission Date).
>
> The revisions to this Access Arrangement will commence on the later of 1 July 2017 and the date on which the approval by the AER of the revisions to the Access Arrangement takes effect under the NGR (Revisions Commencement Date).

The last revision to the access arrangement was made in August 2012 and, in accordance with r 64(6) of the NGR, did not take effect until 1 September 2012.[73] Accordingly, when APTPPL submitted its proposal on 1 September 2016, this was

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67 NGR, r. 3 (definition of 'review submission date'), 49(1)(a).

68 NGR, r. 3 (definition of 'revision commencement date for an applicable access arrangement'), 49(2)(b).

69 NGR, r. 50(1)(b).

70 NGR, r. 50(2),(3).

71 NGR, r. 50(4).

72 APTPPL, *Access Arrangement, Effective 1 September 2012 - 30 June 2017*, August 2012, cl 1.6.

73 AER, *Access Arrangement Decision for the Roma to Brisbane Pipeline*, August 2012, p 6

consistent with the review submission date specified in the current access arrangement.

A.2 APTPPL's proposal

APTPPL has proposed to retain the wording of the current review submission date and revision commencement date in cl 1.6 of the access arrangement but update the specified dates to 1 July 2021 and 1 July 2022 respectively.

If accepted, the new review submission date and revision commencement date would be in the following terms:

> Service Provider will submit revisions to this Access Arrangement to the AER on or before 1 July 2021, or four years from the commencement date of this Access Arrangement, whichever is the later (Revisions Submission Date).
>
> The revisions to this Access Arrangement will commence on the later of 1 July 2022 and the date on which the approval by the AER of the revisions to the Access Arrangement takes effect under the NGR (Revisions Commencement Date).

The clauses are problematic as currently worded. This is discussed in more detail below.

A.3 Revision commencement date

The form of drafting used in the current access arrangement and in APTPPL's proposal was regularly used in access arrangements made under the Gas Code.[74] The Gas Code required an access arrangement to include "a date upon which the next revisions to the Access Arrangement are intended to commence (a Revisions Commencement Date)".[75] The NGR also requires an access arrangement to include a 'revision commencement date'; however, the definition of this term has changed. Instead of requiring an access arrangement to include 'a date' as the date on which revisions are intended to commence, the NGR requires an access arrangement to specify a 'date fixed'.

Although not required to conclusively decide this issue, the Australian Competition Tribunal noted that this change between the Gas Code and the NGR may require 'the imposition of a precise revision commencement date' and that 'the AER may as a matter of practice … require specification of a precise "revision commencement date" to best achieve' the objective behind r 92.[76] The Tribunal goes on to note that:

> [U]nder the NGR, it is assumed that the revision commencement date is a fixed future date. That would be consistent with the general purpose of rule 92(2)

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74 See, *Application by APA GasNet Australia (Operations) Pty Ltd (No 2)* [2013] ACompT 8 at [56].

75 *National Third Party Access Code for Natural Gas pipeline Systems* r 3.17(b).

76 *Application by APA GasNet Australia (Operations) Pty Limited (No 2)* [2013] ACompT 8 at [79].

> and would give appropriate scope for rule 92(3) to operate. It would facilitate the regulatory task of the AER if the previous access arrangement period does not have an uncertain duration.[77]

In addition, the NGR contemplates that the revision commencement date approved in an access arrangement is distinct from and may differ from the actual date on which revisions commence. For example, the note to rule 3 explains that:

> [o]ne should bear in mind that the actual date on which a revision takes effect may differ from a revision commencement date stated in the access arrangement (which is a date fixed some time in advance as the intended date for the revision to take effect). The revision commencement date is relevant to the definition of the access arrangement period only until the revision actually takes effect and the date thus crystallises.

Accordingly, we consider that the NGR requires an access arrangement to fix a date on which revisions are intended to commence.[78] It is not sufficient to specify a date by reference to the occurrence of a particular event which is to occur at an uncertain time in the future.

This conclusion is also supported by the centrality of the revision commencement date in the NGR. The revision commencement date is incorporated into the definition of an 'access arrangement period' as one of the dates by which such a period may be marked.[79] This period, and in turn the revision commencement date, is integral to the building block approach to the determination of total revenue for each regulatory year of the access arrangement period.[80] A fixed revision commence date enables a future access arrangement period to have a notional end date and the access arrangement period to have a fixed meaning with an identifiable term prior to the actual commencement of any revisions.

Where there is a delay between the intended commencement of the revisions and the actual commencement, r 92 operates to continue the application of the reference tariffs without interruption and to allow the automatic extension of those same tariffs to be revisited in the process of setting tariffs for the next access arrangement period. To allow the revision commencement date to be "the date on which the approval by the AER of the revisions to the Access Arrangement takes effect under the NGR" would render r 92(3) redundant and undermine the building block approach to setting reference tariffs.

Clause 1.6 of the proposed access arrangement purports to fix the revision commencement date by reference to the later of:

- a specific date (1 July 2022); and

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77 *Application by APA GasNet Australia (Operations) Pty Limited (No 2)* [2013] ACompT 8 at [82].

78 NGR, r. 3 (definition of 'revision commencement date for an applicable access arrangement'), 49(2)(b).

79 NGR, r. 3 (definition of 'access arrangement period').

80 NGR, r. 76.

- the occurrence of a particular event, which will occur on a date which is not specified and is unknowable at the time the next set of revisions are made (the date on which the approval by the AER of the revisions to the access arrangement take effect).

We consider that only the specific date meets the requirement under the NGR to fix a date. We therefore require APTPPL to revise their proposed access arrangement so that the revision commencement date in cl 1.6 clearly fixes a date on which the next set of revisions are intended to commence. We consider that 1 July 2022 is an appropriate revision commencement date.

In order to allow us to adequately consider and consult on the next set of revisions before the next revision commencement date, we also require APTPPL to revise the review submission date so that it specifies a date one year prior to the revision commencement date. This is consistent with the general rule in the NGR.[81] We consider that 1 July 2021 is an appropriate review submission date.

A.4 Interpreting the current revision commencement date

Notwithstanding the above revisions that we require APA to make to the revision commencement date and review submission date, we consider the revision commencement date as currently drafted in cl 1.6 of the access arrangement specifies 1 July 2017 as the date on which the revisions are intended to commence. The remainder of the clause simply acknowledges that the revisions may not actually commence on that date.

We consider that a number of factors support this interpretation:

- Clause 1.6 of the current access arrangement nominates 1 July 2017 as a date on which the revisions may commence.
- The details in relation to the tariffs or “charges” that are set out in sch 1 of the Access Arrangement concern only the period between 1 September 2012 and 30 June 2017.
- Clause 4.7 of the current access arrangement has the effect that the reference tariff in effect at 30 June 2017 shall "continue to apply" between 30 June 2017 and the date the revisions take effect. In its proposal for the current access arrangement, APTPPL described this approach as "consistent" with r 92(3).[82]
- Rule 92(3) would be redundant if the revision commencement date was interpreted as the date on which the approval by the AER of the revisions to the Access Arrangement take effect under the NGR.

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81 NGR, r. 50(1).

82 APTPPL, *RBP access arrangement submission,* October 2011, p. 107.

This construction is also consistent with interpreting the access arrangement in its relevant context, including the NGR under which it was made. The statutory context will be the first point of reference in interpreting the purpose or object underlying the access arrangement.[83] As outlined above, the revision commencement date is a key concept under the NGR which requires an access arrangement to fix a date on which revisions are intended to commence. In this context, we consider that the date fixed by clause 1.6 of the current access arrangement as the date on which revisions were intended to commence is 1 July 2017.

We consider that this interpretation will best achieve the purpose or object of the law and should therefore be preferred to any other interpretation consistent with the principle of interpretation set out in cl 7 of pt 2 of sch 2 of the NGL.

This construction is also consistent with the position we took in the ActewAGL (ACT, Queanbeyan and Palerang) access arrangement 2016-21.[84]

If cl 1.6 of the current access arrangement is found not to be capable of the above construction, we consider that the clause must be read down so as to bring it within the power conferred by the NGR. This would involve removing the uncertain limb of the revision commencement date with the result that it fixes 1 July 2017 as the date on which revisions are intended to commence.

Provisions of an access arrangement may be "read down" to exclude an invalid application. That is, an invalid provision is to be interpreted as operating so as not to exceed the power conferred by the NGR. While this may be difficult in the case of general words and expressions, it is less problematic in the case of separable words and expressions.[85] Clause 1.6 of the proposed access arrangement purports to fix the revision commencement date by reference to the later of a specific date or the occurrence or a particular even at an uncertain time in the future. We consider that these alternatives are separable expressions with one being within power and one beyond power.

Accordingly, if clause 1.6 of the access arrangement is not capable of a construction fixing 1 July 2017 as the date on which revisions are intended to commence, then the clause must be read down to have that effect. The uncertain limb of the definition is severed while the specified date is retained. The result of this is that the revision commencement date in cl 1.6 is fixed at 1 July 2017.

A.5 Interval of delay

APTPPL submitted its proposed access arrangement revisions on 1 September 2016, as permitted under the current iteration of the RBP access arrangement. Given the

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83 *Owners of Strata Plan No 3397 v Tate* (2007) 70 NSWLR 344, 353.

84 See, especially: AER. *Draft decision ActewAGL Distribution access arrangement*, Overview, November 2015, appendix B.

85 See, eg, *Pidoto v State of Victoria* (1943) 68 CLR 87, 110-111 (Latham CJ).

stakeholder consultation and analysis required in this instance, we will not publish our final decision before 1 July 2017, the date on which revisions to the access arrangement were intended to commence. Consistent with the NGR, reference tariffs for 2016–17 will continue to apply until we release our final decision and new reference tariffs take effect.

This means there will be an interval of delay between 1 July 2017 and the date on which revisions to the access arrangement actually commence.[86] This enlivens rule 92(3) which provides that if there is an interval of delay between a revision commencement date in an access arrangement and the day on which revisions to the access arrangement actually commence:

- reference tariffs, as in force at the end of the previous access arrangement period, continue without variation for the interval of delay; but
- the interval of delay may be taken into account in fixing reference tariffs for the new access arrangement period.

We consider that it is appropriate to take the interval of delay into account by effecting a reconciliation or 'true-up' between the revenue recovered during the period and the amount that would have been recovered had this decision commenced on 1 July 2017. This will ensure the interval of delay does not result in APTPPL incurring a windfall loss or gain as a result of the delay. We consider this supports the achievement of the NGO and is consistent with RPP.

This is again consistent with the approach we took in the ActewAGL (ACT, Queanbeyan and Palerang) access arrangement 2016-21.[87] In the final decision for ActewAGL, we identified a difference of $16.8 million ($nominal) between the estimated amount recovered during the interval of delay and the amount that would have been recovered had the new reference tariff been in place on the intended revision commencement date of 1 July 2015.[88] This over recovery is being returned to customers over the 2016-21 access arrangement period. If, at the time of the final decision, there is an interval of delay that results in an under-recovery or an over-recovery, we intend to take this into account in fixing reference tariffs for the new access arrangement period.

We therefore intend that our final decision will use a net present value neutral mechanism to account for the difference between:

- revenue APTPPL recovers during any interval of delay; and
- building block revenue we will determine for this period in our final decision.

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[86] NGR, r. 92.3.

[87] See, especially: AER, *Draft decision ActewAGL Distribution access arrangement*, Overview, November 2015, appendix B.

[88] AER, *Final decision ActewAGL Distribution Access Arrangement*, Overview, May 2016, p. 13.

B List of submissions

Submission from	Date received
Australian Energy Council	20 October 2016
Australia Pacific LNG	4 November 2016
Origin Energy Limited	21 October 2016
QGC Pty Limited (Shell Group)	27 October 2016