FINAL DECISION
APA VTS Australia
Gas access arrangement
2018 to 2022

Overview

November 2017

AUSTRALIAN ENERGY REGULATOR

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Note

This attachment forms part of the AER's final decision on the access arrangement for APA VTS Australia for 2018–22. It should be read with all other parts of the final decision.

The final decision includes this Overview and the following attachments:

Attachment 2 - Capital base

Attachment 3 - Rate of return

Attachment 5 - Regulatory depreciation

Attachment 6 - Capital expenditure

Attachment 8 - Corporate income tax

Attachment 10 - Reference tariff setting

Attachment 14 - Inflation

These have been numbered consistently with the equivalent attachments in our longer, draft decision. In these and other elements of our decision, our draft decision reasons form part of this final decision.

Our revisions are reflected in the *Approved access arrangement for APA VTS 2018-22*, which gives effect to this decision.[1]

[1] Rule 64(2) provides that the AER's proposal for an access arrangement or revisions is to be formulated with regard to (a) the matters the Law requires an access arrangement to include, (b) the service provider's access arrangement proposal, and (c) the AER's reasons for refusing to approve that proposal.

Contents

Shortened forms

Shortened form	Extended form
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
APA	APA VTS Australia (Operations) Pty Ltd and APA VTS Australia (NSW) Pty Ltd
capex	Capital expenditure
CCP	Consumer Challenge Panel, Sub-panel 11
CPI	Consumer Price Index
GPG	Gas powered generation
NGL	National Gas Law
NGO	National Gas Objective
NGR	National Gas Rules
opex	Operating expenditure
PTRM	Post tax revenue model
RBA	Reserve Bank of Australia
SWP	South West Pipeline
VNI/VNIE	Victorian Northern Interconnector / Victorian Northern Interconnector Expansion
VTS	Victorian Transmission System
WACC	Weighted average cost of capital
WORM	Western Outer Ring Main

About this decision

The Australian Energy Regulator (AER) works to make all Australian energy consumers better off, now and in the future. We regulate energy networks in all jurisdictions except Western Australia. We set the amount of revenue that network businesses can recover from customers for using these networks.

The National Gas Law and Rules (NGL and 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.

APA VTS Australia (Operations) Pty Ltd and APA VTS Australia (NSW) Pty Ltd (APA) own the Victorian Transmission System (VTS) [3], which is the primary transmission system for the delivery of gas throughout Victoria. The VTS is regulated by the AER under an approved access arrangement. [4] This is our final decision on the access arrangement that will apply to the VTS from 1 January 2018 to 31 December 2022.

The decisions we make and the actions we take affect a wide range of individuals, businesses and organisations. Effective and meaningful engagement with stakeholders across all our functions is essential to fulfilling our role, and it provides stakeholders with an opportunity to inform and influence what we do. Engaging with those affected by our work helps us make better decisions, provides greater transparency and predictability, and builds trust and confidence in the regulatory regime. This is reflected in our Stakeholder Engagement Framework and in the consultation process set out for our access arrangement reviews in the NGR, which we have followed in this review. Throughout this process we have also had the benefit of advice from our Consumer Challenge Panel (CCP11).

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2 NGL, s. 23.

3 APA VTS, *VTS Revision Proposal submission*, 20170103 - Public, p. 7.

4 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. '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.

1 Our final decision

Our final decision is that APA will be able to recover $561.5 million ($nominal, smoothed) from its customers over the 2018–22 access arrangement period. This is a reduction of 17.9 per cent from APA's revised proposal.

Transmission costs make up only a small part (about 2.1 per cent) of the average annual gas bill for a Victorian residential customer. Based on our estimates, this final decision will hold the transmission component of the average annual gas bill for Victorian consumers fairly constant over the next five years. We discuss these estimates more in section 1.3.

For large customers connected directly to the VTS (including gas fired power stations and large industrial manufacturers) transmission charges make up a larger proportion of the total bill, and the impact of this decision will be more direct. The regulated tariffs that VTS users will pay under this final decision will increase by an average of 3 per cent per year (in nominal terms) over the 2018–22 access arrangement period, which is slightly above inflation. We discuss this price path further in section 2.2.1.

Throughout this review we have taken advice from CCP11 and submissions from the Australian Energy Market Operator (AEMO) and users of the VTS. It is with the benefit of this input and advice that we decided to approve additional capex for the Western Outer Ring Main (WORM) in our draft decision. Views from users have also given us additional confidence that this final decision—which accepts most elements of APA's revised proposal—is consistent with the interests of consumers who are reliant on, and through APA's tariffs paying for, use of the VTS.

APA's revised proposal notes its view "that the AER's (and consumer panel's) expectation of public consultation on gas transmission business proposals is unrealistic and would ultimately be a waste of time and resources".[5] It cites its commercial relationships with its customers, which it describes as "deep", "ongoing" and "continuous"[6] engagement noting that:[7]

> APA VTS intends to continue its direct engagement with users of the VTS so that it can understand shippers' needs, and develop its pipeline network to meet them. This engagement occurs for regulated and unregulated pipelines, and regardless of the regulatory cycle. This type of engagement is the ultimate purpose and aim of the AER's consumer engagement guideline where engagement is embedded within the business, rather than an adjunct process completed as part of the access arrangement revision cycle.

As APA points out, engagement with customers is not something that should be limited to the access arrangement review process and we support the kind of engagement it

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5 APA VTS - *Access Arrangement revision proposal submission* - 20170814 - Public, p. 8.

6 APA VTS - *Access Arrangement revision proposal submission* - 20170814 - Public, p. 7.

7 APA VTS - *Access Arrangement revision proposal submission* - 20170814 - Public, p. 9.

describes. However, our view remains that targeted engagement with consumers—including APA's direct users—can also add value to the development of its regulatory proposals and APA's own engagement throughout an access arrangement review. For example, in its final advice to us CCP11 noted that:[8]

> Some direct customers and shippers have questioned APA's commitment to proceed with major investments once the expenditure allowance has been approved by the AER. This does not point to the existence of a successful stakeholder engagement program with these customers.

CCP11 also contrasted APA's comment that its efforts to engage with small consumer representatives had not met with enthusiastic interest[9] to feedback CCP11 received from one consumer group that "yes it is a small amount on the bill, but we still want transparency", and that that same consumer group considered that "they had been rebuffed by APA".[10]

We see benefits to APA—in clarifying and potentially further narrowing the issues in contention between APA and users before its proposal is submitted—should it reconsider its position in future processes.

1.1 What is driving APA's revenue requirement?

Figure 1-1 uses real revenue to show how this final decision for 2018–22 compares to the revenue forecast for, and recovered during, the current 2013–17 access arrangement period. It also compares the final revenue approved in this decision to APA's initial proposal, our draft decision and its revised proposal.

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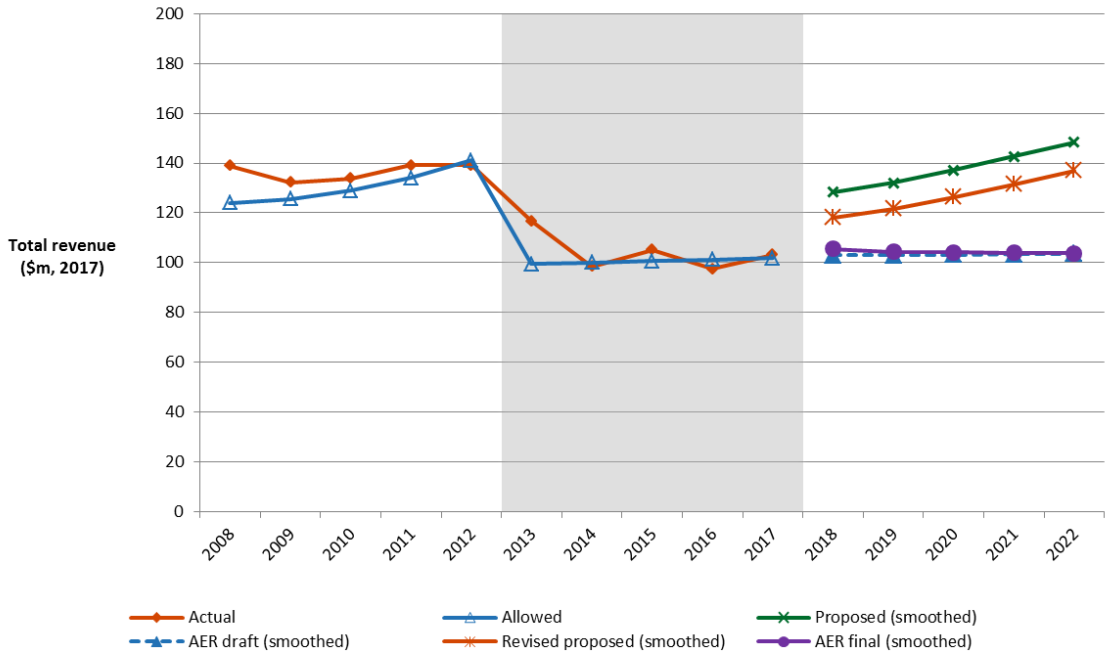
8 CCP11, *Final advice: APA VTS*, September 2017, p. 4.

9 APA VTS - *Access Arrangement revision proposal submission* - 20170814 - Public, p. 8.

10 CCP11, *Final advice: APA VTS*, September 2017, p. 9.

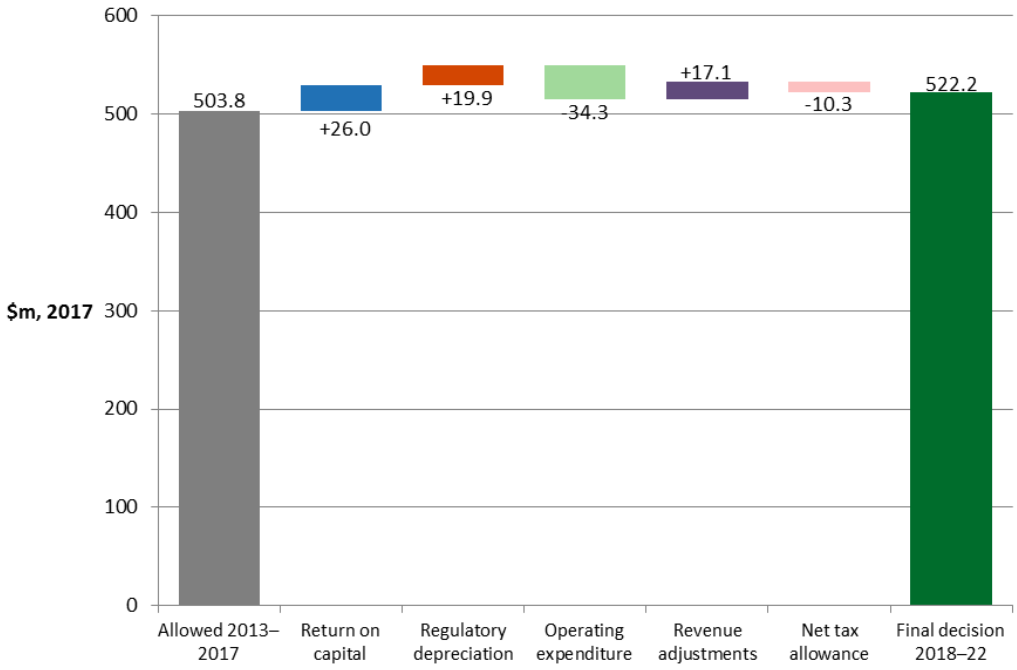
Figure 1-1 APA's past total revenue, proposed total revenue and AER final decision total revenue ($million, 2017)



Source: AER analysis

The forecast of total revenue we have approved in this final decision is $18.4 million ($2017), or 3.7 per cent higher than that used to set APA's reference tariffs for the 2013–17 period. Figure 1-2 highlights some of the key reasons for this by comparing this final decision for 2018–22 to APA's allowed revenue for the current 2013–17 period, and breaking down the various components that make up total revenue.

Figure 1-2 Comparison of forecast revenue requirements for 2013–17 and 2018–22 ($ million, 2017)



Source: AER analysis

In the current, 2013–17 period APA made a number of significant investments in the VTS to meet significant changes in the east coast gas market, including increased demand for the northern flow of gas from Victoria.[11] This investment is reflected in the higher return on capital and regulatory depreciation allowance, both of which increase as the size of APA's capital base increases. While this will impact APA's total revenue requirement, APA's zonal tariff structure means that the cost of much of this investment—in particular the costs of major works augmentation works for the Victorian Northern Interconnector Expansion (VNIE)— will be allocated to the tariffs paid by shippers using the VNIE to ship gas out of Victoria, rather than recovered from all Victorian consumers.

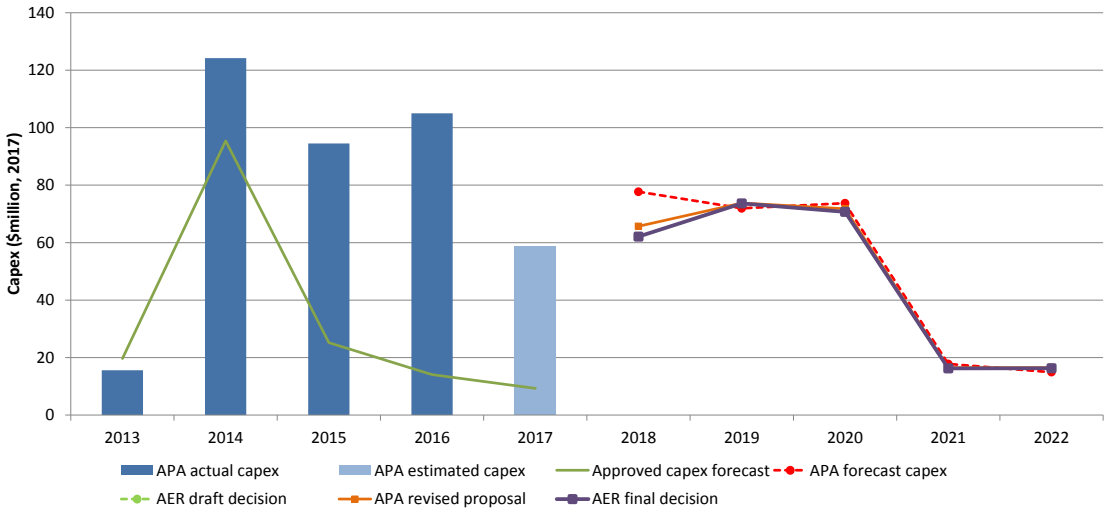
The impact this investment has on APA's total forecast revenue requirement is mitigated to an extent by the lower rate of return that will apply in 2018–22. The nominal vanilla rate of return approved in this decision is 5.75 per cent compared to 7.22 per cent in the current period, reflecting improved market conditions since our last decision in 2013.

Going forward (as Figure 1-3 shows), capex levels in 2018–22 are expected to be lower, and will focus on investment—including the new Western Outer Ring Main—to

[11] APA VTS, *VTS Revision Proposal submission*, 20170103 - Public, p. 63.

address system security concerns identified in AEMO's Victorian Gas Planning Report,[12] Gas Statement of Opportunities,[13] and system security notices.[14]

Figure 1-3 Final decision compared to APA's past capex ($ million, 2017)



Source: AER analysis.

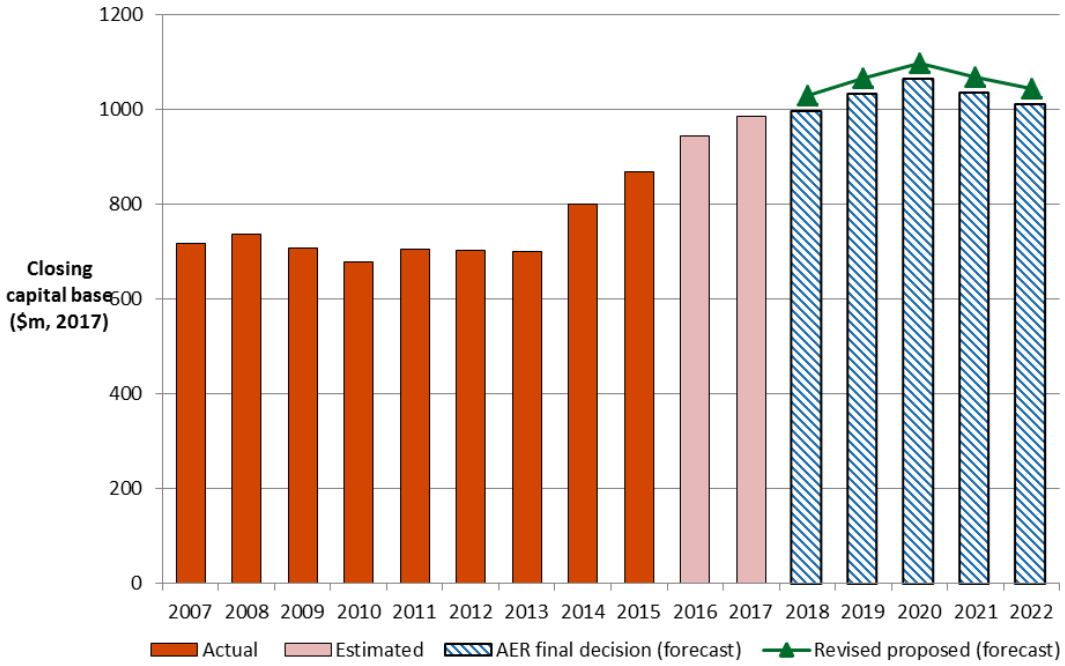
In contrast to the significant growth in APA's capital base over the current period (40 per cent in real terms), this reduction in capex means projected growth in the capital base over 2018–22 is a much lower 2.8 per cent, with the size of the capital base expected to be declining towards the end of the period. (See Figure 1-4)

12 AEMO, *Victorian Gas Planning Report: Declared Transmission System Planning for Victoria*, March 2017.

13 AEMO, *Gas Statement of Opportunities: For Eastern and South-Eastern Australia*, March 2017.

14 AEMO, *Notice of a Threat to System Security – Seeking a Market Response*, 10 March 2017. https://www.aemo.com.au/-/media/Files/Gas/DWGM/2017/Threat-to-System-Security-Notice---SWP-to-Port-Campbell-constraint.pdf>, AEMO, *Notice of a Threat to System Security*, 10 March 2017. https://www.aemo.com.au/-/media/Files/Gas/DWGM/2017/Threat-to-System-Security-Notice---Warragul.pdf.

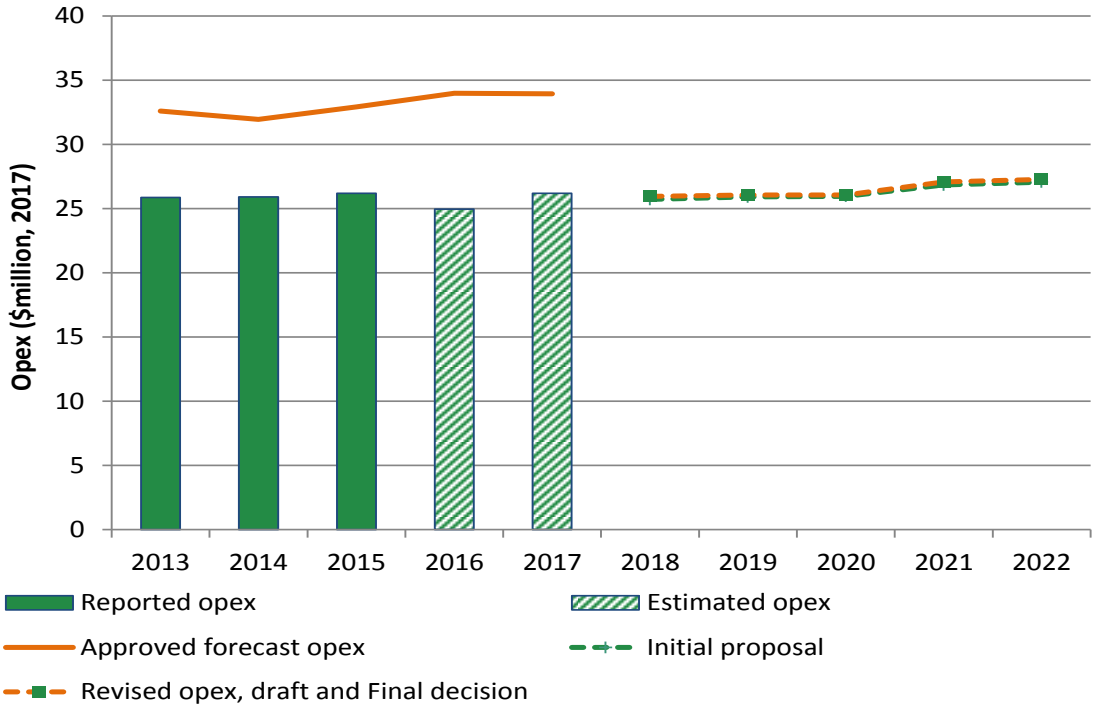
Figure 1-4 Projected growth in APA's capital base ($ million, 2017)



Source: AER analysis.

Operating efficiencies gained by APA in the current period also help to offset the impact of the high levels of investment in 2013–17. These gains will be passed through to customers in the form of an opex forecast for 2018–22 that is 18 per cent lower than approved for the current period, and broadly consistent with APA's expenditure levels in the current period (see Figure 1-5).

Figure 1-5 Final decision compared to APA's past opex ($ million, 2017)



Source: APA, B.1 - RIN templates - Redacted, January 2017; APA, B2 - Operating expenditure model revised with WORM, 15 May 2017; AER analysis.

Note: Includes debt raising costs.

1.2 Key differences between our final decision and APA's revised proposal

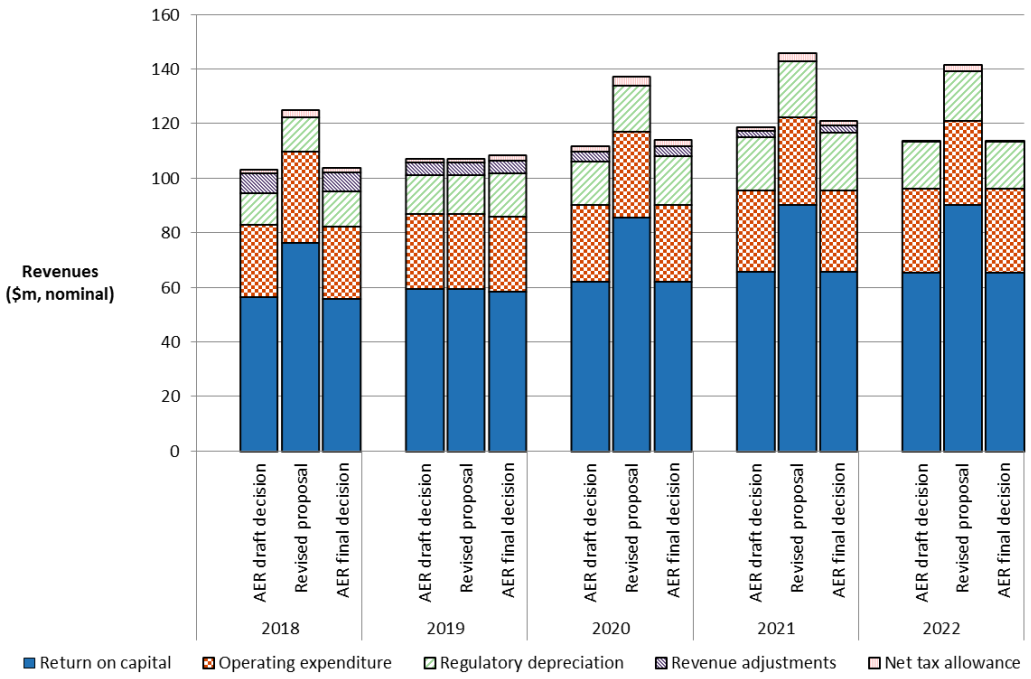
The forecast revenue requirement approved in this final decision is 17.9 per cent less than APA proposed.

In making this decision we have accepted some, but not all, elements of APA's revised proposal. Some of these (including APA's forecast opex) we accepted in our draft decision. APA's revised proposal has also adopted a number of revisions set out in our draft decision, including our higher value of imputation credits and the reduction to benefits accrued under the efficiency carryover mechanism. In other cases, including our acceptance of APA's revised proposal capex forecast, we have had regard to new information provided in APA's revised proposal, advice from CCP11 and submissions from users of the VTS, the impact of which is explained in this final decision.

Figure 1-6 highlights the remaining differences between the total revenue approved in this final decision and the revenue sought in APA's revised proposal. As in our draft decision, the key difference between our forecast of the revenue APA will need to recover from customers in 2018–22 is the rate of return, which affects the return on capital building block. Our final decision approves a rate of return of 5.75 per cent for 2018, compared to APA's proposed 7.67 per cent. This lower rate of return reduces

APA's return on capital. The resultant reduction in revenue also reduces the allowance we have approved for the cost of corporate income tax.

Figure 1-6 AER's final decision and APA's proposed building block revenue (unsmoothed) ($ million, nominal)



Source: AER analysis.

1.3 How will our final decision affect gas bills?

The relatively small change in revenue between the current period and the 2018–22 period will leave gas bills for residential and small business customers largely unchanged as a result of this decision. By the end of the 2018–22 access arrangement, the transmission component of the average annual bill is expected to be about $4 ($ nominal) above the 2017 level for residential customers, and about $38 above the current 2017 level for small business customers.

This is a simple estimate, which we have calculated by varying transmission charges in accordance with this final decision while holding other components of the bill constant.[15] 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 inflation will factor into the amounts that consumers will be paying.

[15] We vary the transmission charges based on the nominal weighted average expected change in tariffs. The weighted average change tariffs is calculated based on smoothed revenues with the assumption that there is no volume forecast error.

Table 1-1 Estimated impact of our final decision and APA's revised proposal on average annual gas bills for 2018–22

	2017	2018	2019	2020	2021	2022
AER final decision						
Residential annual gas bill	1271[a]	1271	1272	1273	1274	1275
Annual change[c]		0 (0%)	1 (0.1%)	1 (0.1%)	1 (0.1%)	1 (0.1%)
Small business annual gas bill	7775[b]	7780	7789	7797	7805	7813
Annual change[c]		5 (0.1%)	9 (0.1%)	8 (0.1%)	8 (0.1%)	8 (0.1%)
APA revised proposal						
Residential annual gas bill	1271[a]	1274	1277	1279	1282	1285
Annual change[c]		3 (0.3%)	3 (0.2%)	2 (0.2%)	3 (0.2%)	3 (0.2%)
Small business annual gas bill	7775[b]	7806	7827	7847	7869	7892
Annual change[c]		31 (0.4%)	21 (0.3%)	20 (0.3%)	22 (0.3%)	23 (0.3%)

Source: AER analysis. *APA, B1 - RIN templates - 20170103*

(a) Based on transmission charges accounting for 2.1 per cent of the average residential gas bill.

(b) Based on transmission charges accounting for 2.8 per cent of the average small business gas bill.

(c) Annual change amounts and percentages are indicative. They are derived by varying the transmission component of 2017 bill amounts by the nominal weighted average expected change in tariffs. Actual bill impacts will vary depending on consumption and tariff class.

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

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

Changes in gas bills over time reflect movements in one or more of the components of the bill. This decision affects transmission charges, which represent approximately 2.1 per cent of an average Victorian customer's annual gas bill. This small percentage helps to explain why the reduction in APA's revenues from the current period to the next will have only a small impact on average annual gas bills.

2 Key components of our final decision

Gas pipelines that are subject to full regulation—like the VTS—are regulated under an approved access arrangement.[16] This forms the foundation for negotiations between pipeline operators and users.

An access arrangement specifies certain pipeline services (reference services) and the price and non-price terms and conditions on which those reference services will be offered over the next five years (2018–2022).

The prices (reference tariffs) that apply to reference services are based on an approved forecast revenue requirement determined in this decision.

In the sections below we summarise the key components of our final decision on APA's access arrangement for the VTS.

2.1 Reference services and tariffs

2.1.1 Services covered by the access arrangement

An access arrangement sets out at least one service likely to be sought by a significant part of the market (reference services). For each reference service, the access arrangement specifies the reference tariff and the other terms and conditions on which the reference service will be provided.[17]

Our draft decision approved APA's proposal to continue to offer the same Tariffed Transmission Service over the 2018–22 access arrangement period as it has in the current period. We also accepted APA's proposal to remove its Authorised Maximum Daily Quantity Credit Certificates (AMDQ CC) reference service, to reflect changes to the NGR that took effect during the current period.

These outcomes are unchanged in APA's revised proposal, and approved in this final decision.

2.1.2 Reference tariff setting and the annual tariff variation mechanism

APA's access arrangement sets out the structure of its reference tariffs and the mechanism by which those tariffs will be determined from year to year (the annual

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16 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. '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.

17 NGR, r. 48.

reference tariff variation mechanism). For the reasons set out in our draft decision, our final decision is to:

- accept the fundamental features of APA's proposed reference tariffs for the VTS, including tariff design, the zonal tariff structure and the basis for charging users
- accept APA's cost allocation methodology, incorporating inclusion of
    - Western outer ring main (WORM) costs, and
    - changes for South West Pipeline (SWP), storage refill and the Victorian Northern Interconnector (VNI).

We remain satisfied that APA's zonal tariff structure is effective in allocating costs so that users pay for the use of the VTS depending on the length of the pipeline they use within certain zones, and for the injection and or withdrawal of gas from the pipeline. Non-system costs, such as the return of and on capital and corporate overheads are allocated to customers on a postage stamp basis. For example, APA's expenditure on the VNIE will be recovered during the 2018–22 access arrangement from those using the interconnector to take gas from Victoria to New South Wales and Queensland (shippers and retailers) to supply markets outside Victoria. Likewise, the zonal tariff structure will appropriately allocate APA's costs associated with the WORM to users based on their use of the WORM.

However, we do not accept the changes made by APA in its revised proposal in response to our draft decision on the application of the cross system tariff.

Our final decision is to retain the methodology in APA VTS' current 2013–17 access arrangement and which it proposed in its initial January 2017 proposal. Under this approach, users that ship gas across the VTS into Iona storage only pay the refill tariff.

We consider this decision reasonably balances the need for simple pricing structures with the requirement for cost reflectivity. The key reasons for retaining the current approach are:

- APA's revised proposal to charge the cross system tariff to all users would result in a significant increase in price to all users transporting gas across the VTS into Iona storage and would result in an over-recovery of cost from most of these users.
- Difficulties in implementing our draft decision to charge the cross-system tariff to only those users who subsequently ship gas from storage on to the SEAGas pipeline.
- The increase in cost to all users for gas going into Iona storage would undermine the incentive to use the storage facility, thus discouraging refill in off-peak seasons.

While our draft decision envisaged a more targeted approach to capture the under-recoveries associated with certain users not paying for the costs of using the VTS, difficulties with implementing such an approach means APA's alternative is likely to be a disproportionate response to correct for this under-recovery, particularly as this is relatively minor and concerns only a small number of users.

These reasons relating to our decision on the cross-system tariff are discussed in more detail in attachment 10 to this final decision.

Cost pass through events

APA's revised proposal adopted most of our draft decision amendments to its pass through mechanism, including our required changes to the time limit, considerations for a pass through application and the definition of 'material'. [18] However, it maintained its proposal for two pass through events that our draft decision did not accept—the Carbon Cost Event and New Gas Market Structure Event—with slightly modified definitions.[19] In its latest advice, CCP11 stated it does not consider the revised definitions address its original concerns with the breadth and uncertainty of both definitions.[20]

Our final decision does not accept these two events. Both appear to be within the scope of things already contemplated by the Regulatory Change Event we have approved. [21] The definition of 'regulatory obligation or requirement' in the National Gas Law (which is an element of the Regulatory Change Event) is clear and brings changes in obligations under national and jurisdictional energy laws, as well as under legislation and instruments relating to the protection of the environment, within the scope of the regulatory change event.[22] We do not accept APA's submission that a change in obligations must affect 'the nature of'[23] a reference service, as opposed to 'the manner in which reference services are provided' (the language used in the approved definition). Nor do we agree with APA that the approved definition of the regulatory change event is so narrow as to require a change in obligation to have actually taken effect (as opposed to the nature of that change having been confirmed, e.g. a final rule determination by the AEMC), or that addition of a new obligation would not constitute a change in obligations. [24]

2.1.3 Forecast demand

Our draft decision accepted APA's overall methodology to forecast total VTS withdrawal volumes (demand), but applied updated forecasts for residential and commercial demand and storage refill demand—components of total demand.

APA adopted these revisions in its revised proposal, and advised that no new information had become available between our draft decision and its revised proposal that were relevant to the forecast. [25]

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18 APA-VTS, *Access Arrangement Revision Proposal Submission*, August 2017, pp. 111-112.

19 APA-VTS, *Access Arrangement - Response to Draft decision - marked changes*, August 2017, p. 19.

20 CCP11, *Final advice - APA VTS*, September 2017, pp. 49 – 52.

21 In addition, the Carbon Cost Event could potentially fall within the Tax Change Event.

22 NGL, s. 6.

23 APA VTS - *Access Arrangement revision proposal submission* - 20170814 - Public, p. 106.

24 APA VTS - *Access Arrangement revision proposal submission* - 20170814 - Public, p. 110.

25 APA VTS, *Access Arrangement revision proposal submission*- - 20170814 - Public, pp. 19-20.

Our final decision updates the residential and commercial demand forecast component of APA's revised proposal to reflect our final decisions on demand forecasts for Victorian gas distributors, released at the same time as this decision.[26] The change results in a small (0.26 per cent) decrease to APA's revised VTS demand forecast.

The demand forecasts approved in this final decision anticipate:

- a decrease in Tariff V gas demand of around -0.35 per cent per year over 2018–22 access arrangement period. The relatively flat demand reflects population growth being offset by improving appliance efficiency and improving quality of insulation in Victoria's housing stock.[27]
- a decrease in Tariff D demand of -2.0 per cent per year over the 2018–22 access arrangement period. This decline reflects an ongoing decline in industrial demand observed since 2007, owing to reduced economic activity in that sector.[28]
- a decline in gas powered generation (GPG) demand over the 2018–22 access arrangement period, following a short-term spike in GPG generation in 2017 as gas-fired power generators replace electricity supply lost through the closure of the Hazelwood power station. GPG demand is forecast to fall to below a third of the pre-2017 level by 2022, following an increase in renewable generation in response to the Victorian Renewable Energy Target.
- annual gas flows from the VTS through Culcairn into the NSW transmission system is forecast to remain at the estimated 2017 level over the 2018–22 access arrangement period.

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[26] AER, *Final decision - Australian Gas Networks Victoria and Albury gas access arrangement 2018-22: Overview*, November 2017; AER, *Final decision - AusNet Services gas access arrangement 2018-22: Overview*, November 2017; AER, *Final decision - Multinet gas access arrangement 2018-22: Overview*, November 2017

[27] APA VTS, *VTS Revision Proposal submission*, 20170103 - Public, p. 4.

[28] APA VTS, *VTS Revision Proposal submission*, 20170103 - Public , pp. 4–5.

2.2 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 (see section 2.3.3) to determine what the nominal price levels will be in future periods.

Our final decision is to approve a total revenue requirement (smoothed) of $560.7 million ($ nominal) for APA over the 2018–22 access arrangement period. This is 18.0 per cent lower than APA's revised proposal of $684.2 million. [29]

Table 2-1 sets out our final decision on APA's total revenue requirement, by building block, for each year of the 2018–22 access arrangement period, the total revenue after equalisation (smoothing) and the X factors for use in the tariff variation mechanism.

Table 2-1 Final decision on smoothed total revenue and X factors for 2018–22 ($ million, nominal)

Building block	2018	2019	2020	2021	2022	Total
Return on capital	55.8	58.8	62.4	65.8	65.7	308.6
Regulatory depreciation	12.9	15.7	17.8	21.4	17.0	84.9
Operating expenditure	26.6	27.3	28.0	29.8	30.8	142.6
Revenue adjustments	7.1	4.7	3.9	2.4	0.0	18.0
Net tax allowance	1.6	2.0	2.2	1.7	0.4	8.0
Building block revenue - unsmoothed	104.1	108.6	114.3	121.1	113.9	562.0
Building block revenue - smoothed	108.2	109.6	112.0	114.5	117.2	561.5
X factors	n/a	1.09%	0.25%	0.19%	0.16%	n/a

Source: AER analysis.

n/a: not applicable.

(a) Under the CPI–X form of control, a positive X factor is a decrease in price (and therefore in revenue). The X factor for 2018 is indicative only. The final decision establishes 2018 tariffs directly, rather than referencing a change from 2017 tariffs.

[29] This is calculated by smoothing the unsmoothed building block revenue for the 2018–22 access arrangement period as set in this decision.

2.2.1 Revenue smoothing and tariffs

After our assessment of APA's total building block revenue (unsmoothed revenue), we determined the smoothed revenue profile across the 2018–22 access arrangement period.[30] APA's price control formula adjusts prices annually for the effect of differences between actual and forecast volumes over the access arrangement period, to ensure that the net present value of building block revenues equals the revenues forecast to be achieved in the current regulatory year and future regulatory years of the 2018–22 access arrangement (an 'average revenue yield').[31]

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

Our final decision approves less revenue than APA proposed. As a result, we have also had to adjust APA's proposed X factors. APA's proposal was for a weighted average increase in real tariffs of 14.5 per cent in 2018, followed by further weighted average increases in real tariffs of around 4.0 per cent per year thereafter.[32] As a result of our lower total revenue requirement, our final decision is for a real increase in weighted average tariffs for 2018 of 2.3 per cent, and on average a real decreases of 0.4 per cent in the remaining years of the 2018–22 access arrangement period. Our decision aims to balance APA's ability to recover revenues and recognises the potential for stable prices over the access arrangement period.

Table 2-2 presents our final decision X factors, and compares them to the APA proposal.

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

31 The average revenue yield shares characteristics with both a revenue and a price cap. Like a price cap, the business is exposed to the risk that demand may be greater or less than forecast. If actual demand is greater than forecast, the NSP earns higher revenues than forecast and vice versa if actual demand is less than forecast.

32 APA VTS, *B5-Revised proposal Tariff Model-20170814-Confidential v2,* 14 August 2017.

Table 2-2 Comparison of final decision and revised proposal weighted average tariff change (X factors)

	2018	2019	2020	2021	2022
AER final decision					
X factor[a]	–2.3%	1.1%	0.2%	0.2%	0.2%
Nominal price change	4.8%	1.3%	2.2%	2.3%	2.3%
APA's revised proposal					
X factor[a]	–14.5%	–3.0%	–4.0%	–4.0%	–4.1%
Nominal price change[b]	17.3%	5.5%	6.5%	6.5%	6.7%

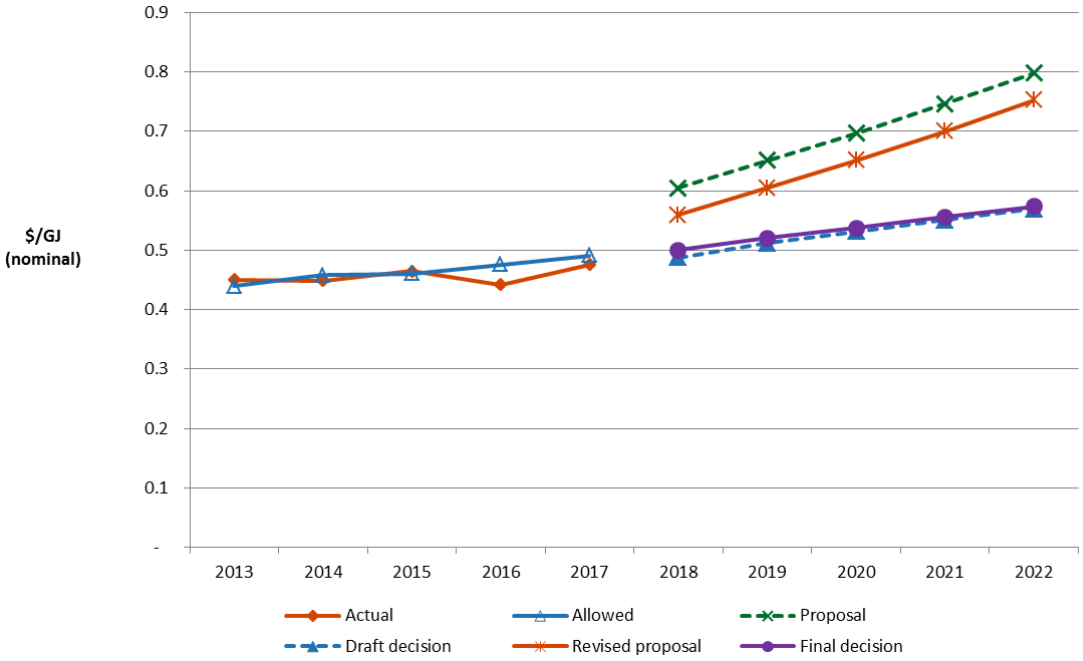
Source: APA, *Proposed supplementary capital expenditure submission PTRM*, May 2017; AER analysis.

(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 –14.5 per cent in 2018 proposed by APA means a real price increase of 14.5 per cent that year. After consideration of inflation (assumed at 2.45 per cent) this becomes a nominal price increase of 17.3 per cent.

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

The tariff path that flows from this final decision is an increase of 3.0 per cent in tariffs (in nominal terms) on average over the 2018–22 access arrangement period. Figure 2-1 shows indicative tariff paths for APA's reference services across the 2018–22 period, and compares APA's revised proposal tariff path with that approved in the 2013–17 access arrangement, and with our final decision. This provides a broad overall indication of the average movement across this period.

Figure 2-1 Indicative reference tariff paths for APA's reference services from 2013 to 2022 (nominal index)



Source: AER analysis; APA VTS, B5-Revised proposal Tariff Model-20170814-Confidential v2.xlsm 14 August 2017.

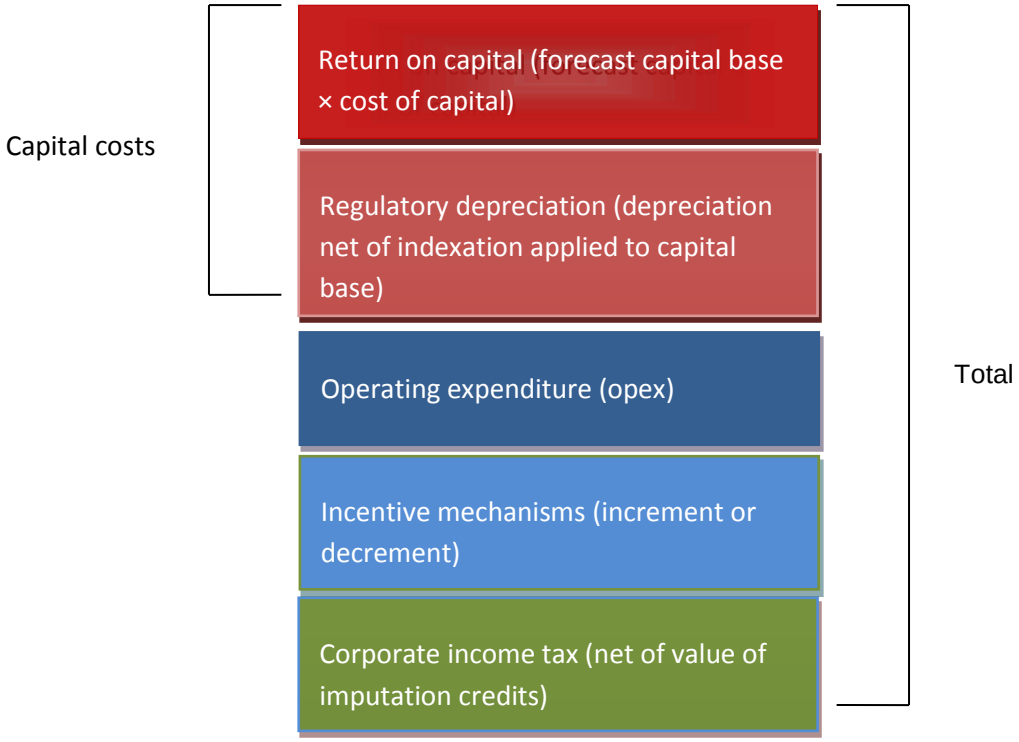
2.3 Key elements of our decision on revenue

The total revenue requirement is based on forecasts of the efficient costs that APA is likely to incur in providing its reference service. This is commonly referred to as the building block approach. The building blocks, shown in Figure 2-2, include:[33]

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

[33] NGR, r. 76.

Figure 2-2 The building block approach to determining total revenue



Note: Capital expenditure (capex)—the capital costs incurred in the provision of pipeline services —mostly relates to assets with long lives and these costs are recovered over several access arrangement periods. APA recovers the costs of these assets through the return on capital and depreciation building blocks that form part of its total revenue. In this way APA recovers the financing cost and depreciation associated with these assets over the expected life of these assets, not just in the years that expenditure was incurred.

In the following sections we explain how the various components of this final decision compare to our draft decision and APA's revised proposal.

2.3.1 Capital base

The capital base roll forward accounts for the value of APA's regulated assets over the access arrangement period. The opening value of the capital base is used to determine the return of capital (regulatory depreciation) and return on capital building block allowances.

Our final decision approves an opening capital base of $971.1 million ($ nominal) as at 1 January 2018 for APA. This amount is $26.6 million lower than the $997.6 million in APA's revised proposal. As discussed in attachment 14, we have not accepted APA's revised proposal to use forecast inflation as an input to roll forward the capital base over the 2013–17 access arrangement period. Our final decision incorporates

corrections to APA's inputs to the capital base roll forward.[34] As in our draft decision, we have also substituted our latest version of the roll forward model to correct a number of errors in APA's revised proposal modelling.

Table 2-3 summarises our final decision on the roll forward of APA's capital base during the 2013–17 access arrangement period.

Table 2-3 Capital base roll forward for 2013–17 ($ million, nominal)

	2013	2014	2015	2016	2017
Opening capital base	634.0	649.8	762.5	842.7	918.0
Net capex	15.9	127.9	97.4	94.5	64.5
Indexation of capital base	12.3	11.2	12.9	12.4	18.4
Less: straight-line depreciation	12.4	26.4	30.2	31.6	29.8
Closing capital base	649.8	762.5	842.7	918.0	971.1
Opening capital base as at 1 January 2018					**971.1**[a]

Source: AER analysis.

(a) The adjustment to account for any difference between actual and estimated capex in the final 'year' of the previous access arrangement period (in this case, 1 January 2012 to 31 December 2012 and the additional six months from 1 January 2013 to 30 June 2013) is not required for APA because actual capex was included in APA's 2013 approved opening capital base. This occurred as part of the amendments to the 2013–17 access arrangement that followed a decision by the Australian Competition Tribunal.

We approve a forecast closing capital base value of $1143.5 million ($ nominal) at 31 December 2022. This is $35.7 million (or 3.0 per cent) lower than the $1179.2 million in APA's revised proposal. Our final decision on the projected closing capital base reflects our changes to the opening capital base as at 1 January 2018, and our final decisions on expected inflation and forecast depreciation (sections 2.3.3 and 2.3.5 of this overview). As discussed in section 2.3.3, we have not accepted APA's revised proposal to use lagged actual inflation (annually updated) in the roll forward of its projected capital base (attachment 14).

Table 2-4 sets out our final decision on the projected roll forward of the capital base during the 2018–22 access arrangement period.

[34] Our final decision on APA's capex for 2013–17 and its forecast capex for 2018–22 incorporates corrections to the capex modelling submitted in its August revised proposal, which we have made in consultation with APA

Table 2-4 Projected capital base roll forward for 2018–22 ($ million, nominal)

	2018	2019	2020	2021	2022
Opening capital base	971.1	1022.8	1085.6	1145.1	1141.9
Net capex	64.6	78.5	77.2	18.2	18.7
Indexation of capital base	23.8	25.1	26.6	28.1	28.0
Less: straight-line depreciation	36.7	40.8	44.4	49.5	45.0
Closing capital base	1022.8	1085.6	1145.1	1141.9	1143.5

Source: AER analysis.

2.3.2 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.

Our final decision allows APA a nominal vanilla rate of return of 5.75 per cent, compared to its revised proposal of 7.67 per cent.

Table 2-5 sets out our rate of return and APA's proposed rate of return.

Table 2-5 APA's rate of return (% nominal)

	Previous allowed return (2013-17)	APA's revised proposal (2018-22)	AER final decision (2018)	Allowed return over 2018 regulatory control period
Return on equity (nominal post–tax)	8.02%	8.8[a]	7.3	Constant (7.3%)
Return on debt (nominal pre–tax)	6.68%	6.91	4.72	Updated annually
Gearing	60	60	60	Constant (60%)
Nominal vanilla WACC	7.22%	7.67	5.75%	Updated annually for return on debt
Forecast inflation	2.5%	2.45	2.45	Constant (%)

Our return on equity point estimate and the parameter inputs are set out in the table below.

Table 2-6 APA's return on equity (% nominal)

	AER previous decision (2013–17)	APA's revised proposal (2018–22)	AER final decision (18)
Nominal risk free rate (return on equity only)	3.22%	2.68[a]	2.73% [b]
Equity risk premium	4.8%	6.16%	4.55%
Market risk premium	6%	7.7%	6.50%
Equity beta	0.8	0.8	0.70
Nominal post–tax return on equity	8.02%	8.8	7.3%

Source: AER analysis; APA, *VTS Revision proposal submission*, 3 January 2017

[a] Based on APA's indicative averaging period adopted for its revised proposal of 20 business days to 31 July 2017

[b] Calculated with a final averaging period of 20 business days up to 29 September 2017.

For the reasons set out in attachment 3 to this final decision, we have not accepted APA's rate of return as set out in its revised proposal with the key differences being:

- The estimate of the market risk premium
- The estimate of the equity beta
- The choice of debt curves used to estimate the return on debt
- The method used to transition from the on-the-day approach to a trailing average approach to estimating the return on debt

We are not satisfied that APA's revised proposal would result in an outcome that better achieves the allowed rate of return objective.[35]

2.3.3 Inflation

Our final decision is to estimate expected inflation using our standard approach, labelled the 'RBA method'. This is consistent with APA's revised proposal.[36]

However, we have not accepted several other inflation-related changes proposed by APA, including changes to the 2013–17 RFM and the 2018–22 PTRM.[37] This included

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35 NGR, cl. 87(18)

36 It is also consistent with our draft decision and APA's initial proposal. See AER, *Draft decision, APA VTS Australia Gas access arrangement 2018 to 2022*, July 2017, attachment 2 (2-19 to 2-31) and attachment 3 (3-152 to 3-161); and APA VTS, *VTS Revision Proposal submission*, 3 January 2017, pp. 118–119.

37 APA proposed to use expected inflation from the 2013 decision in the 2013–17 RFM (instead of actual inflation). APA proposed to use actual inflation (technically, one-year lagged actual inflation implemented via annual updates) in the 2018–22 PTRM, instead of expected inflation. APA, *Victorian transmission system, Access arrangement revised proposal, Submission response to draft decision*, August 2017, pp. 52–58, 65.

a proposal to annually update the estimate of expected inflation within the access arrangement period. These changes would have substantially altered inflation exposure for both APA and consumers. Instead, we propose to maintain our standard inflation treatment in both the RFM and PTRM, consistent with:

- past treatment of the VTS
- AER decisions for other gas and electricity service providers
- the preliminary position paper released as part of our *Review of the regulatory treatment of inflation*.[38]

The revenue we set in this final decision incorporates expected inflation over the 2018–22 access arrangement period, so that targeted revenue is sufficient to meet expected changes in purchasing power. However, our approach then allows revenue recovered from consumers to vary in line with inflation outcomes. Service providers and their investors ultimately receive a revenue allowance with the same purchasing power as initially targeted. This means:

- if inflation is lower than expected, APA will recover less than the initial target
- if inflation is higher than expected, APA will recover more than the initial target.

In either case, purchasing power is preserved and investors receive the initial real rate of return on capital.

Attachment 3 sets out our reasons for accepting APA's proposed approach for estimating expected inflation. Attachment 14 sets out our reasons for not accepting the other inflation changes proposed by APA, and the rationale for applying our standard inflation treatment instead.

2.3.4 Value of imputation credits (gamma)

Under the Australian tax system investors can receive imputation credits for tax paid at the company level. We make an adjustment to our tax building block to account for the value of imputation credits (gamma). The higher the value of gamma, the larger the adjustment to the corporate income tax allowance.

Our draft decision did not accept APA's proposed gamma value of 0.25, and instead applied a gamma of 0.4. For the purposes of its revised proposal, APA has adopted our draft decision on gamma. CCP11 generally supported this position.

Our final decision, consistent with our draft decision and APA VTS's revised proposal, is to apply a gamma value of 0.4. Our reasons for this decision are principally set out in our draft gamma decision for APA VTS.[39] However, in this final decision we have also

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[38] The final position paper has not yet been released. See https://www.aer.gov.au/networks-pipelines/guidelines-schemes-models-reviews/review-of-expected-inflation-2017.

[39] AER, *Draft Decision - APA VTS Australia Gas Access Arrangement 2018 to 2022 - Attachment 4 - Value of imputation credits*, July 2017.

had regard to: the recent Australian Competition Tribunal decision for ActewAGL [Gas] Distribution and Jemena Electricity Networks;[40] recent submissions on gamma by TransGrid; and updated tax and equity ownership data. Our consideration of TransGrid's recent submissions on gamma, recent legal decisions and the most recent data, are set out in our draft electricity transmission determination for ElectraNet.[41]

2.3.5 Regulatory depreciation (return of capital)

Our decision on APA's total revenue includes an allowance for the depreciation of the projected capital base (the 'return of capital'). Regulatory depreciation is used to model the nominal asset values over the 2018–22 access arrangement period and the depreciation allowance in the total revenue requirement. [42]

We have approved a regulatory depreciation allowance of $84.9 million ($ nominal) for APA over the 2018–22 access arrangement period.[43]

Our final decision on APA's regulatory depreciation allowance for the 2018–22 access arrangement period is set out in Table 2-7.

Table 2-7 Regulatory depreciation allowance for the 2018–22 access arrangement period ($ million, nominal)

	2018	2019	2020	2021	2022	Total
Straight-line depreciation	36.7	40.8	44.4	49.5	45.0	216.4
Less: indexation on capital base	23.8	25.1	26.6	28.1	28.0	131.5
Regulatory depreciation	12.9	15.7	17.8	21.4	17.0	84.9

Source: AER analysis.

2.3.6 Capital expenditure

Capital expenditure (capex) refers to the capital costs and expenditure incurred in the provision of pipeline services.[44] This investment mostly relates to assets with long lives. APA recovers the costs of these assets over their expected life, through the return on capital and depreciation building blocks that form part of its total revenue.

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40 Australian Competition Tribunal, *Application by ActewAGL Distribution [2017] ACompT 2,* 17 October 2017.

41 AER, *Draft Decision - ElectraNet transmission determination 2018 to 2023 - Attachment 4 - Value of imputation credits*, October 2017.

42 Regulatory depreciation allowance is the net total of the straight-line depreciation (negative) and the annual inflation indexation (positive) on the projected capital base.

43 This is a reduction of $0.005 million from APA's revised proposal, reflecting our adjustments to the opening capital base and our updated inflation forecast. APA VTS, *B1 - Revised proposal post tax revenue model - 20170814 - Public.xlsm,* August 2017.

44 NGR, r. 69.

Our decision on APA's revenue includes an assessment of its actual capex in the current period, which forms part of its opening capital base.[45] It also includes an assessment of APA's forecast capex for the 2018–22 access arrangement period, which forms part of its projected capital base.[46] Table 2-8 shows our final decisions on both, by capex category.

Table 2-8 Conforming capex, 2013–17 and 2018–22 ($million, 2017)

Category	Total 2013–17	Total 2018–22
Augmentation	**322.2**	**161.2**
Replacement & Upgrade	**40.2**	**61.1**
Non-System	**26.1**	**16.7**
TOTAL CAPEX	**388.5**	**239.0**

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

Conforming capex for the current period

Our final decision approves $388.5 million ($2017) in conforming capex from the current access arrangement period, and accepts APA's revised proposal.[47]

APA's revised proposal included a number of updates to its estimates of capex in the later years of the current period, which were not available at the time of its initial proposal or our draft decision. The combined impact of these updates is a reduction of $13.8 million ($2017), or 3.4 per cent, from the amount approved in our draft decision. While a number of projects are now expected to be completed at a lower cost than contemplated earlier in this review, the reduction in current period capex is primarily a result of extended timing for works which will now be completed in the forecast (2018–22) access arrangement period.

Forecast conforming capex for 2018–22

We approve APA's revised proposal of $239.0 million ($2017) in forecast capex for the 2018–22 access arrangement period.[48]

The total forecast capex approved in this final decision is $24 million ($2017), or 11 per cent, higher than the forecast approved in our draft decision. With the benefit of new information in APA's revised proposal, submissions and further advice from Sleeman

45 NGR, r. 77.

46 NGR, r. 78(b)

47 Our final decision on APA's capex for 2013–17 incorporates corrections to the capex modelling submitted in its August revised proposal, which we have made in consultation with APA.

48 Our final decision on APA's forecast capex for 2018–22 incorporates corrections to the capex modelling submitted in its August revised proposal, which we have made in consultation with APA.

Consulting, we have revisited our draft decision and are now satisfied that a higher capex forecast for 2018–22 is appropriate.

Around half of this increase is a reallocation of expenditure that our draft decision included elsewhere in the revenue calculation. Extended timeframes for capex on the SWP to Anglesea Pipeline, which was previously expected to be completed in the current period, and pigging on the Dandenong–Morewell pipeline have led to increases of $9.6 million and $2.0 million respectively in the forecast for 2018–22. At the same time, $1.8 million in savings and $3.2 million of capex for work at the Brooklyn and Winchelsea compressor stations have been removed from the forecast as these works have now been brought forward to 2017.

A further $4.8 million relates to expenditure on turbine overhauls at the Wollert Compressor Station, which in our draft decision we considered could instead be met within the opex allowance. APA's revised proposal provided additional explanation of the nature of these works, which we are now satisfied should be treated as forecast capex.

The remaining $15.1 million has been approved as a result of further information and advice on the amount of capex required for safety management in high consequence areas ($5.7 million), expansion of the Warragul lateral pipeline ($4.2 million), pipeline integrity management activities ($2.7 million). In attachment 6 to this final decision we discuss how this new information has addressed the concerns we raised with these projects in our draft decision, and given us comfort that this additional expenditure is warranted.

2.3.7 Operating expenditure

Operating expenditure (opex) is the operating, maintenance and other non-capital expenses, incurred in the provision of reference services for a pipeline. Forecast opex is one of the building blocks we use to determine a service provider's total revenue requirement.

Our draft decision accepted APA’s opex proposal of $132.4 million ($2017) over the 2018–22 access arrangement period:[49] an increase of 2.5 per cent from APA's actual opex in the 2013–17 access arrangement period, but a reduction of 18 per cent from opex forecast approved in our final decision for the 2013–17 access arrangement period, and used to set reference tariffs for that period.[50] This forecast was confirmed in APA's revised proposal, and is accepted in this final decision.

Table 2-9 sets out the total opex approved in this final decision.

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[49] APA VTS, *B2 - Operating expenditure model revised with WORM*, 15 May 2017. Includes debt raising costs.

[50] AER, *Access arrangement final decision - APA GasNet - Part 1*, March 2013, p. 33.

Table 2-9 Total opex for 2018-22 ($ million, 2017)

	2018	2019	2020	2021	2022	Total
APA's revised proposal and our final decision	26.0	26.1	26.1	27.1	27.3	132.4

Source: APA VTS, *B4 - APA Post Tax Revenue Model revised with WORM* (includes 3 March 2017 updates for inflation in response to AER information request IR#03), 16 May 2017; AER analysis.

2.3.8 Efficiency carryover mechanism

The opex incentive mechanism in APA's access arrangement provides an additional incentive to that provided under an incentive based regime for APA to pursue efficiency improvements in its opex over an access arrangement period. It does this by allowing APA to retain efficiency savings achieved within a particular period for a longer period of time.

Our draft decision approved a benefit sharing allowance of $17.1 million ($2017) from the application of the opex incentive mechanism in the 2013–17 access arrangement period. That amount has been confirmed in APA's revised proposal[51] and our final decision.

Table 2-10 shows our final decision on APA's proposed benefit sharing allowance.

Table 2-10 APA's benefit sharing allowance ($ million, 2017)

	2018	2019	2020	2021	2022	Total
Benefit sharing allowance	6.9	4.5	3.6	2.1	–	17.1

Source: APA VTS - IR17 - Response to AER - 20171013 - Public; AER analysis.

Note: Numbers may not add up due to rounding.

While we accept APA's proposal that an opex efficiency carryover mechanism continue to apply for the 2018–22 access arrangement period, our final decision is not to accept the mechanism as drafted in APA's revised proposal. Our draft decision accepted APA's proposal to apply an opex incentive mechanism in the 2018–22 period, subject to a number of amendments.[52] APA included most of these amendments. However, it did not remove the opex incentive mechanism from the list of fixed principles.[53] APA also proposed that we exclude opex associated with un-forecast extensions and

[51] APA's revised proposal included an error in the historic operating costs in the PTRM, suggesting a lower carryover amount of $16.2 million. This was subsequently corrected in response to an information request from the AER: APA VTS - IR17 - Response to AER - 20171013 - Public.

[52] AER, *Draft decision - APA VTS Australia gas access arrangement 2018-22*, *Attachment 9 - Opex incentive mechanism*, July 2017, p. 9.

[53] APA VTS, *Access Arrangement revision proposal submission*, 14 August 2017, pp. 16–17.

expansions from the operation of the opex incentive mechanism.[54] Our final decision is consistent with our draft decision in both respects.

In our draft decision we stated that we will not adjust forecast opex for opex associated with extensions and expansions that were not included in APA's capex allowance. By not excluding these costs they will be shared between APA and consumers in the same way as any efficiency gain or loss. We saw no reason why these costs should be shared differently to any other efficiency gain or loss.[55] We maintain this view. We see no reason why changes in opex driven by exogenous factors should be shared differently than genuine efficiency gains even if they could be identified. Excluding these costs from the opex incentive mechanism would not provide APA a continuous incentive to minimise these costs and would provide an incentive to increase these costs in the expected base year.

We also maintain the view that the opex incentive mechanism should not be a fixed principle. We recognise that a degree of certainty is required if the opex incentive mechanism is to provide the intended incentive. We consider that the fact that we have applied these incentive mechanisms to both gas and electricity networks over a number of periods should provide sufficient certainty. We consider some flexibility is required in the event that circumstance change unexpectedly, which could yield unintended results. We would only alter the operation of the scheme if it was necessary to ensure that APA is not rewarded for efficiency losses or penalised for efficiency gains.

2.3.9 Corporate income tax

APA has adopted the post-tax framework to derive its revenue requirement for the 2018–22 access arrangement period. [56] Under the post-tax framework, a separate corporate income tax allowance is calculated as part of the building blocks assessment we use to calculate APA's forecast revenue requirement.

Our final decision on the estimated cost of corporate income tax for 2018–22 is $8.0 million ($ nominal). This is a reduction of $6.6 million ($ nominal) or 45.2 per cent from APA's revised proposal, reflecting our amendments to a number of inputs to the calculation in APA's revised proposal including:

- the opening tax asset base at 1 July 2017
- remaining tax asset lives.

Our adjustments to the return on capital and regulatory depreciation allowance also affect revenues, and in turn impact the tax calculation.

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54 APA VTS, *Access Arrangement revision proposal submission*, 14 August 2017, pp. 14–16.

55 AER - *Draft decision - APA VTS Australia gas access arrangement 2018-22*, *Attachment 9 - Opex incentive mechanism*, July 2017, p. 9.

56 APA VTS, *VTS Revision Proposal submission* - 20170103 - Public, p. 213.

Our final decision on APA's estimate cost of corporate tax allowance for the 2018–22 access arrangement period is set out in Table 2-11.

Table 2-11 Cost of corporate income tax allowance 2018–22 ($million, nominal)

	2018	2019	2020	2021	2022	Total
Tax payable	2.7	3.4	3.7	2.8	0.7	13.3
Less: value of imputation credits	1.1	1.4	1.5	1.1	0.3	5.3
Net corporate income tax allowance	**1.6**	**2.0**	**2.2**	**1.7**	**0.4**	**8.0**

Source: AER analysis.

2.4 Non-tariff components

The non-tariff components of an access arrangement include:

- the terms and conditions for the supply of reference services
- 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 and change delivery and receipt points
- provisions for receipt and delivery point changes, and
- a review submission date and a revision commencement date.[57]

Our draft decision accepted all of the non-tariff components as proposed, although we invited APA to consider changing the revisions submission date from 1 January 2022 to 1 December 2021. APA put forward no further revisions in response, and has subsequently indicated its agreement to our suggested revisions submission date. [58] Our final decision accepts these elements of the revised proposal, including the new review submission date, in full.

[57] Although not required in the present case, all transmission pipelines and some distribution pipelines are also required to set out how any spare or developable capacity will be allocated among prospective users ('queuing requirements' - see NGR r. 103.

[58] APA-VTS, *Response to AER Information Request IR#13*, 27 September 2017; APA-VTS, *Access Arrangement revision proposal submission*, 14 August 2017, p. 10.

A The National Gas Objective

The NGL requires us to make this decision in a manner that contributes, or is likely to contribute, to achieving the NGO.[59] The focus of the NGO is on promoting efficient investment in, and operation and use of, natural gas services (rather than assets) in the long term interests of consumers of natural gas with respect to price, quality, safety, reliability and security of supply of natural gas.[60] This is not delivered by any one of the NGO's factors in isolation, but rather by balancing them in reaching a regulatory decision.[61]

In general, we consider that the long-term interests of consumers are best served where consumers receive a reasonable level of safe and reliable service, which they value, at least cost in the long run.[62] A decision that places too much emphasis on short term considerations may not lead to the best overall outcomes for consumers once the longer term implications of that decision are taken into account. [63]

There may be a range of economically efficient decisions that we could make in a revenue decision, each with different implications for the long term interests of consumers.[64] A particular economically efficient outcome may not be in the long term interests of consumers, depending on how prices are structured and risks allocated within the market.[65] There are also a range of outcomes that are unlikely to advance the NGO, or advance the NGO to the degree that others would. For example:

- the long term interests of consumers will not be advanced if our decisions encourage over-investment which results in prices so high that consumers are unwilling or unable to efficiently use the network.[66] This could have significant longer term pricing implications for those consumers who continue to use network services.
- equally, the long-term interests of consumers will not be advanced if we allowed revenues to result in prices so low that investors do not invest to sufficiently maintain the appropriate quality and level of service.[67] This could create longer term problems in the network, and could have adverse consequences for safety, security and reliability of the network.

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59 NGL, s. 28(1)

60 This is also the view of the Australian Energy Markets Commission (the AEMC). See, for example, the AEMC, *'Applying the Energy Objectives: A guide for stakeholders'*, 1 December 2016, p. 5.

61 Hansard, *SA House of Assembly,* 26 September 2013, p. 7173. See also the AEMC, '*Applying the Energy Objectives: A guide for stakeholders'*, 1 December 2016, p. 7-8.

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

63 See, for example, the AEMC, *'Applying the Energy Objectives: A guide for stakeholders'*, 1 December 2016, p. 6-7.

64 *Re Michael: Ex parte Epic Energy* [2002] WASCA 231 at [143].

65 See, for example, the AEMC, *'Applying the Energy Objectives: A guide for stakeholders'*, 1 December 2016, p. 5.

66 NGL, s. 24(7).

67 NGL, s. 24(6).

The legislative framework recognises the complexity of this task by providing us with significant discretion in many aspects of the decision-making process to make judgements on these matters.

A.1 Achieving the NGO to the greatest degree

Our decisions on gas access arrangements are complex. In most cases, 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 judgement. For example, part 9 of the NGR requires us to consider forecasts, which are predictions about unknown future circumstances. Very often, there will be more than one plausible forecast, and much debate amongst stakeholders about relevant costs. For certain components of our decision there may therefore be several plausible answers or several plausible point estimates.

When the components of our decision are considered together, this means there will almost always be several potential, overall decisions. More than one of these may contribute to the achievement of the NGO. In these cases, our role is to make an overall decision that we are satisfied contributes to the achievement of the NGO to the greatest degree.

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, 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.

A.2 Interrelationships between the different components of our decision

Examining individual components of our decision in isolation ignores the importance of the interrelationships between components of the overall decision, and would not contribute to the achievement of the NGO. We consider these interrelationships as part of our analysis of the various components of our decision. Examples include:

- underlying drivers and context which are likely to affect many constituent components of our decision. For example, forecast demand affects the efficient levels of capex and opex in the regulatory control period.
- direct mathematical links between different components of a decision. For example, the level of 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.
- trade-offs between different components of revenue. For example, undertaking a particular capex project may affect the need for opex or vice versa.