DRAFT DECISION
APA VTS Australia
Gas access arrangement
2018 to 2022

Attachment 7 – Operating expenditure

July 2017

AUSTRALIAN ENERGY REGULATOR

Inquiries about this publication should be addressed to:

Australian Energy Regulator
GPO Box 520
Melbourne Vic 3001

Tel: 1300 585 165
Email: AERInquiry@aer.gov.au

Note

This attachment forms part of the AER's draft decision on the access arrangement for APA Australia for 2018-22. 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

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Attachment 10 - Reference tariff setting

Attachment 11 - Reference tariff variation mechanism

Attachment 12 - Non-tariff components

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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

7 Operating expenditure

Operating expenditure (opex) is the operating, maintenance and other non-capital expenses, incurred in the provision of pipeline services.[1] Forecast opex is one of the building blocks we use to determine a service provider's total revenue requirement.

This attachment outlines our assessment of APA's forecast opex for the 2018–22 access arrangement period.

7.1 Draft decision

Our draft decision is to accept APA's forecast opex of $132.4 million ($2017) for the 2018–22 access arrangement period, as set out in Table 7.1.[2] We are satisfied this forecast opex complies with the opex criteria.[3]

Our draft decision represents a 2.5 per cent increase compared to APA's opex expenditure in the 2013–17 access arrangement period.[4] It is 19.9 per cent lower than the approved opex forecast for the 2013–17 access arrangement.

Table 7.1 Our draft decision on total opex ($ million, 2017)

	2018	2019	2020	2021	2022	Total
APA's amended proposal and our draft 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.

Note: Includes debt raising costs.

Our assessment approach, as detailed below, is to develop an alternative estimate of APA's total opex requirements to test whether APA's proposal meets the opex criteria. We have not included some aspects of APA's proposal in our alternative estimate, such as the office lease step change. However, this is offset by other factors, with the result that overall there is not a material difference between our estimate and its proposal.

We assess the efficiency of the overall level of forecast opex proposed by APA, as an element of the *total* revenue requirement. Under the ex-ante regulatory framework, it is for APA to decide how it will meet its obligations in delivering its services, including which specific opex projects it will undertake.

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1 NGR, r. 91.

2 APA VTS, *Access arrangement proposal 2018–22, B2 - Operating expenditure model revised with WORM*, 15 May 2017. Includes debt raising costs.

3 NGR, r. 91.

4 Opex expenditure in 2013–17 includes two years of estimated opex for 2016 and 2017.

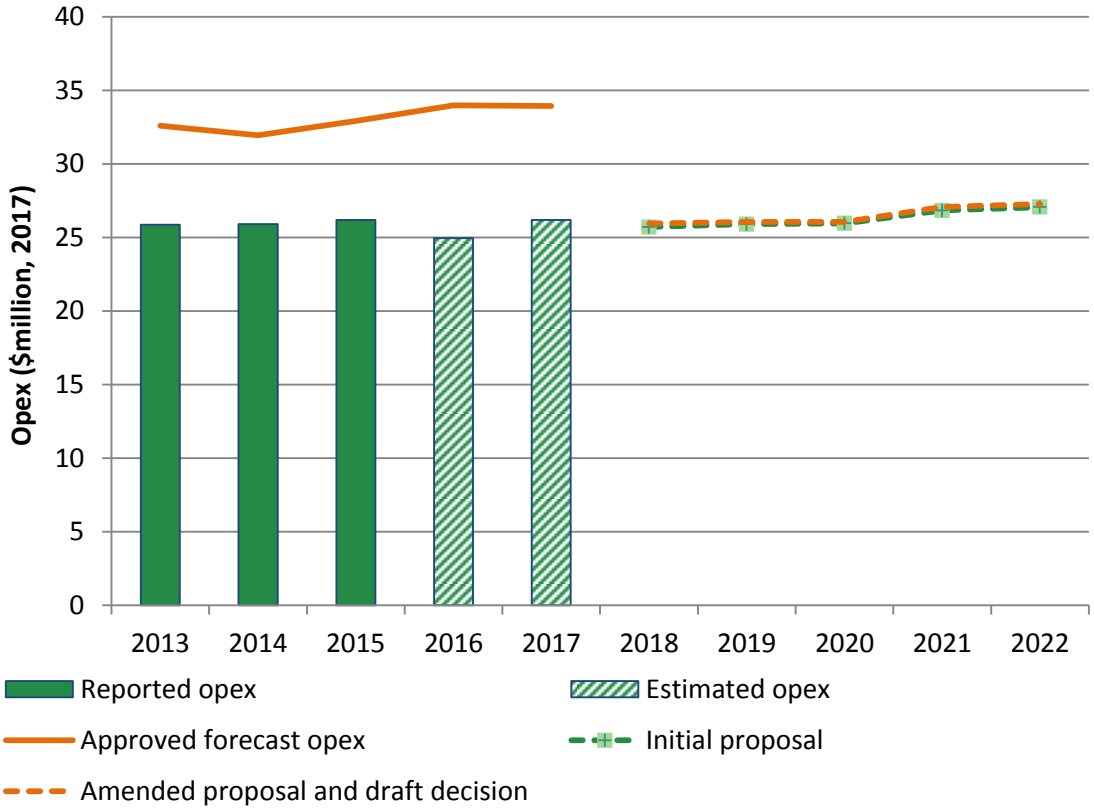
Our draft decision is based on APA's amended proposal. APA submitted its initial proposal on 3 January 2017. In response to that proposal, stakeholders submitted that APA would require significantly more capex than provided for in its initial proposal on the basis that APA should proceed with the Western Outer Ring Main (WORM) project in the 2018–22 access arrangement period. To further our consideration of these views, APA provided us with information setting out its assessment of the additional expenditure required to address stakeholders' concerns. The additional capex had a small consequential impact on its total opex forecast, increasing it from $131.5 million ($2017) to $132.4 million ($2017).[5] APA amended its proposal accordingly (see Attachment 6 of this draft decision).

Our alternative estimate of forecast opex is $134.9 million ($2017), including WORM related opex. This is higher than APA's amended proposal, however, we consider there is not a material difference between our alternative estimate and APA's proposal.

Figure 7.1 compares the opex forecast we approve in this draft decision (equal to APA's amended proposal) to APA's initial proposal, the forecast we approved for 2013–17 and its actual opex in that period. The figure shows our approved opex forecast for 2018–22 is in-line with AGN's expenditure in the current period (2013–17).

[5] APA VTS Australia, *Supplement to initial access arrangement proposal - Business Case for Western Outer Ring Main (WORM) Project*, 15 May 2017;
APA VTS, *Access arrangement proposal 2018–22, Business case 506 Western Outer Ring Main project*, April 2017.

Figure 7.1 Our draft decision compared to APA's 2013–17 opex and initially proposed opex ($ million, 2017)



Source: APA, Regulatory proposal 2018–22 RIN response, APA VTS, *B4 - APA Post Tax Revenue Model revised with WORM*, 16 May 2017; AER analysis.

Note: Includes debt raising costs.

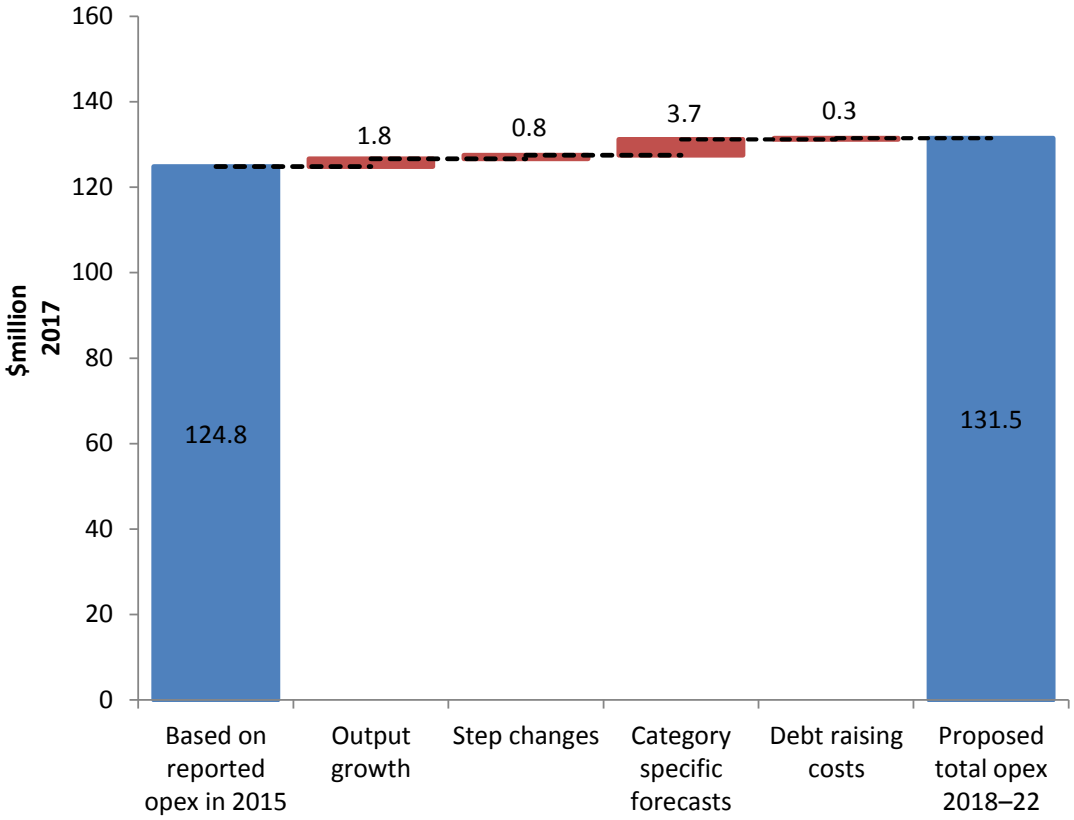
7.2 APA's proposal

APA initially forecast total opex of $131.5 million ($2017) for the 2018–22 access arrangement period.[6]

In Figure 7.2 we separate APA's initial proposal into the different elements that make up its forecast.

[6] Includes debt raising costs. See: APA VTS, *Access arrangement proposal 2018–22, Proposed opex model and Proposed PTRM*, 3 January 2017. Excludes Western Outer Ring Main (WORM) opex.

Figure 7.2 APA's initial forecast opex ($ million, 2017)



Source: APA, *Proposed opex model and Proposed PTRM*, 3 January 2017.

We describe each of these elements below:

- APA used the actual opex it incurred in 2016 as the base for forecasting its opex over 2018–22. This led to a base opex of $124.8 million ($2017), excluding debt raising costs.
- APA forecast growth in output which increased its opex forecast by $1.8 million ($2017). It did not forecast increases in prices or productivity.
- APA proposed a step change for the lease of new office accommodation in Southbank. This increased its total opex forecast by $0.8 million ($2017).
- APA proposed category specific forecasts for access arrangement costs ($1.8 million, $2017) and for an allowance for spare parts and inventory ($1.9 million, $2017).[7] This increased its total opex forecast by $3.7 million ($2017).
- APA forecast debt raising costs of $0.3 million ($2017).

[7] Removing the allowance from the base year reduced the opex forecast by $10.5 million. Adding the separate forecast for the allowance increased the forecast by $12.5 million. The net impact was to increase the total opex forecast by $1.9 million.

On 16 May 2017, APA submitted an amended opex model.[8] The amended model took into account APA's amended capex proposal which included the WORM project. The revised model also corrected an error in its forecast of its inventory and spare parts allowance and updated forecast inflation.[9] The net impact of these changes increased its total opex forecast from $131.5 million ($2017) to $132.4 million ($2017).

7.2.1 Submissions on APA's proposal

The Consumer Challenge Panel (CCP11) made submissions on various aspects of APA's opex proposal which we have considered in our analysis, including on APA's proposed level of allowance for a return on linepack and spares. Overall, the CCP11 welcomed the decrease in APA's base opex and was supportive of APA's amended proposal to include forecast expenditure for the WORM.

7.3 Our assessment approach

Our role is to decide whether or not to accept a business' forecast opex. We approve the business' forecast opex if we are satisfied that it is consistent with the opex criteria:

> Operating expenditure must be as such as would be incurred by a prudent service provider acting efficiently, in accordance with accepted good industry practice, to achieve the lowest sustainable cost of delivering pipeline services.[10]

In determining whether forecast opex is consistent with the opex criteria we apply the forecasting and estimate requirements under the NGR.[11]

Our approach is to assess the business' forecast opex at a total level, rather than to assess individual opex projects. To do so, we develop an alternative estimate of total opex using a 'top-down' forecasting method, known as the 'base–step–trend' approach.[12] The advantage of this forecasting approach is that it largely relies on the business' aggregate historic ('revealed') cost that is shown to be sufficient for the business to operate under its existing regulatory obligations. This contrasts with building a total opex forecast from the 'bottom up' using individual opex category or project forecasts. The disadvantage of the bottom-up approach is that it is more susceptible to forecasting risk given the business has an incentive to inflate its forecasts.

We compare our estimate with the business' total opex forecast to form a view on the reasonableness of the business' proposal. If we are satisfied the business' total

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8 APA VTS, *B2 - Operating expenditure model revised with WORM*, 15 May 2017.

9 APA VTS, *Response to AER Information Request #06 - Operating expenditure*, 28 March 2017.

10 NGR, rr. 91 and 40(2).

11 NGR, r. 74(2). A forecast or estimate must be arrived at on a reasonable basis and must represent the best forecast or estimate possible in the circumstances.

12 A 'top-down' approach forecasts total opex at an aggregate level, rather than forecasting individual projects or categories to build a total opex forecast from the 'bottom up'.

forecast meets the NGR requirements, we accept the forecast. If we are not satisfied, we substitute the business' forecast with our alternative estimate.

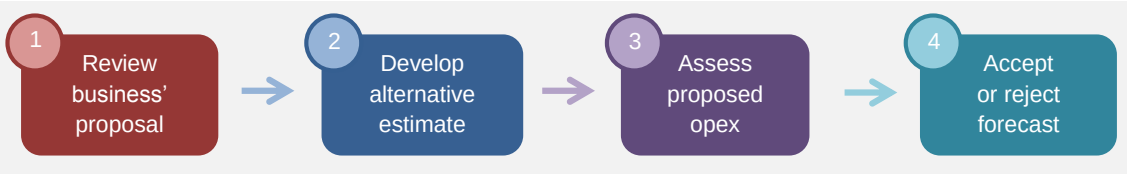
In making this decision, we take into account the reasons for the difference between our alternative estimate and the business' forecast, and the materiality of that difference. We also take into consideration the interrelationships between our opex forecast and the other constituent components of our decision, such that our decision is likely to contribute to the achievement of the NGO.[13]

We develop our alternative estimate of total opex using the base–step–trend forecasting approach, which is summarised in figure 7.3. Further explanation of the rationale behind our forecasting method can be found in our draft decisions for AusNet Services and Multinet's gas access arrangements for 2018–22.[14] These are available on our website.

[13] NGL, s28(1).

[14] AER, *Draft decision AusNet Services access arrangement 2018–22, Attachment 7 Operating Expenditure*, June 2017, pp. 7-8 to 7-15.
AER, *Draft decision Multinet Gas access arrangement 2018–22, Attachment 7 Operating Expenditure*, June 2017, pp. 7-8 to 7-15.

Figure 7.3 Our opex assessment approach



1. Review business' proposal

We review the business' proposal and identify the key drivers.

2. Develop alternative estimate

Base

We use the business' opex in a recent year as a starting point (revealed opex). We assess the revealed opex (e.g. through benchmarking) to test whether it is efficient. If we find it to be efficient, we accept it. If we find it to be materially inefficient we may make an efficiency adjustment.

Trend

We trend base opex forward by applying a forecast 'rate of change' to account for growth in input prices, output and productivity.

Step

We add or subtract any step changes for costs not compensated by base opex and the rate of change (i.e. costs associated with regulatory obligation changes or capex/opex substitutions).

Other

We include a 'category specific forecast' for any opex component that we consider necessary to be forecast separately.

3. Assess proposed opex

We contrast our alternative estimate with the business' opex proposal. We identify all drivers of differences between our alternative estimate and the business' opex forecast. We consider each driver of difference between the two estimates and go back and adjust our alternative estimate if we consider it necessary.

4. Accept or reject forecast

We use our alternative estimate to test whether we are satisfied the business' opex forecast meets the opex criteria and other NGR requirements. We accept the proposal if we are satisfied.

If we are not satisfied the business' opex forecast meets the opex criteria and other NGR requirements we substitute it with our alternative estimate.

7.4 Reasons for draft decision

Our draft decision is to accept APA's amended forecast opex of $132.4 million ($2017) for the 2018–22 access arrangement period.[15] Having regard to our alternative

[15] Includes debt raising costs.

estimate, we are satisfied APA's amended forecast opex complies with the opex criteria[16] and the requirements for forecasts and estimates.[17]

We compared our alternative estimate to APA's proposal. While the components of our forecast are different to APA's, the differences largely offset each other. So that, while our alternative estimate of total opex ($134.9 million, $2017) is higher than APA's amended forecast opex ($132.4 million, $2017),[18] the difference is not material.

We briefly discuss the components of our alternative estimate below. Full details of our alternative estimate are set out in our opex model, which is available on our website.

7.4.1 Base opex

We have relied on APA's estimated opex in 2016 to forecast its opex over the 2018–22 access arrangement period, consistent with APA's proposal.

APA's opex was subject to the incentives of an ex ante regulatory framework, including the application of an efficiency carryover mechanism in the 2013–17 period. Typically, where a service provider is subject to these incentives, we are satisfied there is a continuous incentive for a service provider to make efficiency gains and it does not have an incentive to increase its opex in the proposed base year.

The consumer challenge panel welcomed the decrease in APA's base opex, largely driven by lower corporate overheads and reduced insurance costs. However, it sought confirmation that this is not the result of a commensurate increase in the allocation of corporate overheads to capex.[19] We assess APA's proposed capex in attachment 6 of this draft decision.

Taking these factors into account, and in the absence of any evidence to the contrary, we are satisfied APA's proposed 2016 base year reflects its year-to-year opex requirements. [20]

7.4.2 Rate of change

Once we estimate opex in the final year of the current period, we apply a forecast annual rate of change to forecast opex for the 2018–22 access arrangement period. This accounts for forecast growth in prices, output and productivity.

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16 NGR, r. 91.

17 NGR, r. 74.

18 Both our alternative estimate and APA's amended forecast include WORM related opex. Both include debt raising costs.

19 Consumer Challenge Panel (sub-panel 11) (CCP11), *Response to proposal from APA VTS for a revenue reset/access arrangement for the period 2018 to 2022,* 3 March 2017, p. 27.

20 NGR, r. 71(1).

Forecast price growth

We applied average annual price growth of 0.5 per cent in our alternative estimate. APA did not include any price growth in its opex forecast.[21]

Our price growth forecast is a weighted average of forecast labour price growth and non-labour price growth:

- To forecast labour price growth, we use the growth in the wage price index for the Victorian utilities industry forecast by Deloitte Access Economics.
- To forecast non-labour price growth, we apply the forecast change in CPI.

We weight the forecast price growth to account for the proportion of opex that is labour and the proportion that is non-labour.[22] Our labour and non-labour price weights reflect the benchmark efficient mix of labour services and other costs required to provide transmission services.

Forecast output growth

We included output growth of $2.2 million ($2017) in our alternative estimate. This is consistent with APA's amended opex forecast.

APA forecast no output growth in the 2018–22 regulatory control period. However, it did propose a category specific forecast for augmentation and expansion related opex. This is, in effect, a bottom-up forecast of output growth. We have included this augmentation and expansion related opex in our alternative opex estimate because we have accepted the need for each of the augmentation and expansion projects proposed by APA. This approach is similar to the forecasting approach we adopted in making our 2013–17 final decision for the current access arrangement period. We consider that a forecast arrived at on this basis is the best possible in the circumstances.

This approach differs from our standard approach where we forecast output growth based on the forecast growth in a specified measure of output. We usually forecast output growth based on the forecast growth in a defined output measure that we base on the result of econometric modelling. However, at this time, we do not have the necessary dataset for gas transmission to undertake this modelling and adequately specify output.

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[21] APA VTS, *Access arrangement submission 2018–22 (initial proposal)*, January 2017, p.202.

[22] We applied Economic Insights' benchmark opex price weightings for labour and non-labour: 62 per cent for labour and 38 per cent for non-labour. For more detail for our approach to forecasting price changes refer to AER, *Draft decision AusNet Services transmission determination 2017–18 to 2021–22*, *Attachment 7- Operating expenditure*, 20 July 2016, pp. 7-19 to 7-20 , 7-47 to 7-53.

Forecast productivity

We did not include forecast productivity growth in our alternative opex estimate. Similar to output growth, we usually forecast productivity growth based on historic industry productivity performance as measured by econometric modelling. However, at this time, we do not have the necessary dataset for gas transmission to undertake this modelling.

Given that any reasonable estimate of productivity growth would not be sufficiently material to change our decision to accept APA's opex proposal, we have not undertaken a detailed analysis of productivity growth.

7.4.3 Step changes

We did not include any step changes proposed by APA when arriving at our alternative estimate.

APA proposed a step change of $0.8 million ($2017) to relocate personnel from its city and Dandenong offices to a leased site in Southbank.

CCP11 recommend rejecting the step change for the Southbank lease on the basis that it is not a new business cost, but simply a substitution for the previous operation and maintenance costs of offices at the Dandenong site. CCP11 submitted that this expenditure is already included in base year opex.[23]

We accept CCP11's submission to the extent that this expenditure is offset by the closure of APA's city office and a reduction costs associated with of office accommodation on the Dandenong site.

We consider base opex, trended forward by the forecast rate of change, is sufficient for APA to continue to meet its existing obligations. Office accommodation is a 'business-as-usual' expense for APA to consider within its existing base opex forecast.

7.4.4 Category specific forecasts

We included a category specific forecast for debt raising costs and costs associated with the allocation for linepack and spares as proposed by APA in our alternative estimate. However, we did not include a category specific forecast for access arrangement costs.

Debt raising costs

We included a category specific forecast for debt raising costs of $2.7 million ($2017), which is higher than APA's forecast. Debt raising costs are transaction costs incurred each time debt is raised or refinanced. We typically forecast them based on a

[23] CCP11, *Response to proposal from APA VTS for revenue reset/access arrangement for the period 2018 to 2022*, 3 March 2017, p. 29.

benchmarking approach rather than a service provider's actual costs for consistency with the forecast of the cost of debt in the rate of return building block. Further details are set out in the debt and equity raising costs appendix in the rate of return attachment.

Linepack and spare pipes, valves and fittings

We included a category specific forecast of $1.3 million ($2017) for the return on the inventory of linepack and spare pipes, valves and fittings (spares).

Linepack is the base volume of gas stored in the pipeline, required to enable the system to operate. It is part of the investment in a new pipeline and must be purchased from the wholesale gas market when a pipeline is commissioned. Theoretically, it is recoverable when a pipeline is decommissioned. Spares used for maintenance of pipelines are held in inventory to ensure they are available when required, especially in emergency situations. Both of these inventories represent an investment in the pipeline system. APA is seeking a return on these assets, included in allowable revenue.

CCP11 supported the inclusion of an allowance for a return on linepack and spares as a category specific forecast. We agree with this as the use of a category specific forecast to forecast these costs because these costs are not revealed in APA's reported opex.

However, CCP11 questioned APA's approach to the valuation of spares and inventory. They noted that it is surprising that a large sophisticated organisation such as APA, whose core business is asset management, does not maintain an accurate valuation of its spares inventory.[24] We were also concerned about the level of expenditure on linepack and spares included in APA's initial proposal, due to the substantial increase in the allocation relative to past proposals.

APA had initially proposed a category specific forecast of $12.5 million ($2017). However, upon further enquiry, APA submitted that it had grossly overestimated the allowance by using the full asset value of the linepack and spares instead of the return on the value of those assets. APA corrected its forecast to $1.3 million ($2017).[25]

APA stated that 'the provision of linepack gas is part of the investment in a new pipeline but is not a depreciable asset and is, theoretically, recoverable (at least in part) when the pipeline is eventually decommissioned.' APA stated that inventories of spare pipes, valves and fittings represent an investment in the pipeline system and it is seeking a return on these assets.[26]

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[24] CCP11, *Response to proposal from APA VTS for revenue reset/access arrangement for the period 2018 to 2022*, 3 March 2017, pp. 28–29.

[25] APA VTS, *Response to AER Information Request #06 - Operating expenditure*, 28 March 2017, p. 2.

[26] APA VTS, *Access arrangement submission 2018–22 (initial proposal)*, January 2017, p. 209.

We have included APA's corrected forecast in our alternative estimate and consider that it reflects the best forecast in the circumstances. We consider that this corrected forecast addresses the concerns raised by CCP11.

Access arrangement costs

We did not include a category specific forecast for access arrangement costs in our alternative estimate.

APA proposed a category specific forecast of $1.8 million ($2017) for costs it expects to incur in preparing its proposal for the 2023–27 access arrangement period.

Access arrangement costs are a 'business-as-usual' expense for APA to consider within its existing base opex forecast. Such costs are directly related to a business' regulatory obligations to submit a proposal for the subsequent access arrangement period. We accept that access arrangement costs are non-recurrent on a year-on-year basis and, therefore, may not be reflected in the particular base year chosen. However, they are costs that are typically borne within an access arrangement period. We expect some costs may go up, and some costs may go down—so despite potential volatility in the cost of certain individual opex activities, total opex is generally stable over time. We consider providing a category specific forecast for opex items identified by the business may upwardly bias the total opex forecast. Minimising the number of costs forecast on a category specific basis also helps to simplify our expenditure assessments and allows for greater consistency across our regulatory determinations.

7.4.5 Interrelationships

In assessing APA's total forecast opex we took into account other components of its revenue proposal, including:

- the capex we approve in this decision, such as the WORM
- the operation of the opex incentive mechanism in the 2014–17 regulatory control period, which provided APA an incentive to reduce opex in the base year
- the approach to assessing the rate of return, to ensure there is consistency between our determination of debt raising costs and the rate of return building block.

7.5 Revisions

Revision 7.1: We require APA make all necessary amendments to reflect our draft decision on forecast opex for the 2018–12 access arrangement period, as set out in Table 7.2.

Table 7.2 Forecast opex for the 2018–22 access arrangement period ($ million, 2017)

	2018	2019	2020	2021	2022	Total
Total opex excluding debt raising costs and allowance for linepack and spares	25.65	25.74	25.74	26.74	26.93	130.81
Debt raising costs	0.06	0.06	0.07	0.07	0.07	0.32
Linepack and spares	0.24	0.25	0.25	0.26	0.26	1.27
Total opex	**25.95**	**26.06**	**26.06**	**27.07**	**27.26**	**132.40**

Source: APA VTS, *B4 - APA Post Tax Revenue Model revised with WORM.*