DRAFT DECISION
Amadeus Gas Pipeline Access Arrangement 2016 to 2021

Attachment 5 – Regulatory depreciation

November 2015

AUSTRALIAN ENERGY REGULATOR

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Note

This attachment forms part of the AER's draft decision on the access arrangement for the Amadeus Gas Pipeline for 2016–21. It should be read with all other parts of the draft decision.

The draft decision includes the following documents:

Overview

Attachment 1 - Services covered by the access arrangement

Attachment 2 - Capital base

Attachment 3 - Rate of return

Attachment 4 - Value of imputation credits

Attachment 5 - Regulatory depreciation

Attachment 6 - Capital expenditure

Attachment 7 - Operating expenditure

Attachment 8 - Corporate income tax

Attachment 9 - Efficiency carryover mechanism

Attachment 10 - Reference tariff setting

Attachment 11 - Reference tariff variation mechanism

Attachment 12 - Non-tariff components

Attachment 13 - Demand

Contents

Shortened forms

Shortened form	Extended form
AA	Access Arrangement
AAI	Access Arrangement Information
AER	Australian Energy Regulator
AGP	Amadeus Gas Pipeline
ATO	Australian Tax Office
capex	capital expenditure
CAPM	capital asset pricing model
CESS	Capital Expenditure Sharing Scheme
CPI	consumer price index
DRP	debt risk premium
EBSS	Efficiency Benefit Sharing Scheme
ERP	equity risk premium
Expenditure Guideline	Expenditure Forecast Assessment Guideline
gamma	Value of Imputation Credits
GSL	Guaranteed Service Level
MRP	market risk premium
NEGI	north eastern gas interconnector
NGL	national gas law
NGO	national gas objective
NGR	national gas rules
NPV	net present value
opex	operating expenditure
PFP	partial factor productivity
PPI	partial performance indicators
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

Shortened form	Extended form
TAB	Tax asset base
UAFG	Unaccounted for gas
WACC	weighted average cost of capital
WPI	Wage Price Index

5 Regulatory depreciation

When determining the total revenue for APTNT, we must decide on the depreciation for the projected capital base (otherwise referred to as 'return of capital').[1] Regulatory depreciation is used to model the nominal asset values over the 2016–21 access arrangement period and the depreciation allowance in the total revenue requirement.[2]

This attachment outlines our draft decision on APTNT's annual regulatory depreciation allowance for the 2016–21 access arrangement period. Our consideration of specific matters that affect the estimate of regulatory depreciation is also outlined in this attachment. These include:

- the standard asset lives for depreciating new assets associated with forecast capex[3]
- the remaining asset lives for depreciating existing assets in the opening capital base.[4]

5.1 Draft decision

We approve APTNT's proposal to use the real straight-line method to calculate the regulatory depreciation allowance. However, we do not approve APTNT's proposed regulatory depreciation allowance of $10.2 million ($nominal) for the 2016–21 access arrangement period. This is mainly because of our decision to not depreciate forecast land and easement capex (section 5.4.2.1), updates to remaining asset lives (section 5.4.2.2) and also our determinations on other components of APTNT's proposal. Discussed in other attachments, these determinations include the opening capital base (attachment 2) and the forecast capex (attachment 6).

We approve APTNT's proposed standard asset lives assigned to each of its asset classes for the 2016–21 access arrangement period. This is because they are consistent with the approved standard asset lives for the 2011–16 access arrangement period. Also, they are broadly comparable with the standard asset lives approved in our recent determinations for other gas transmission service providers.[5] In addition to the proposed asset classes, we have created a 'Land and easement' asset class for APTNT's forecast land capex in the 2016–21 access arrangement period. We have not

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1 NGR, r. 76(b).

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

3 The term 'standard asset life' is also referred to as 'standard economic life', 'asset life', 'economic asset life' or (in APTNT's proposal) 'economic life'.

4 The term 'remaining asset life' is also referred to as 'remaining economic life' or (in APTNT's proposal) 'remaining life'.

5 For example, AER*: APT Petroleum pipeline Pty Ltd access arrangement final decision Roma to Brisbane pipeline,* August 2012, p. 118; *AER: Access arrangement final decision APA GasNet Australia (Operations) Pty Ltd 2013–17 Part 2: Attachments,* March 2013, p. 149.

applied a standard asset life to this new asset class because land assets (and related purchases) do not depreciate.

We accept APTNT's proposed weighted average method to calculate the remaining asset lives as at 1 July 2016.[6] In accepting the weighted average method, we have updated the proposed remaining asset lives as at 1 July 2016 due to correcting input errors in the remaining asset lives calculation in APTNT's proposed roll forward model (RFM). The errors are discussed in detail in section 5.4.2.2.

Our draft decision on APTNT's regulatory depreciation allowance is $5.2 million ($nominal) in total for the 2016–21 access arrangement period as set out in Table 5.1.

Table 5.1 AER's draft decision on APTNT's regulatory depreciation allowance for the 2016–21 access arrangement period ($million, nominal)

	2016–17	2017–18	2018–19	2019–20	2020–21	Total
Straight-line depreciation	3.5	3.9	4.1	4.4	4.7	20.6
Less: indexation on capital base	2.8	3.0	3.1	3.2	3.3	15.5
Regulatory depreciation	**0.7**	**0.9**	**1.0**	**1.2**	**1.4**	**5.2**

Source: AER analysis.

5.2 APTNT's proposal

APTNT used the AER's post-tax revenue model (PTRM) to calculate the forecast depreciation for the 2016–21 access arrangement period. It proposed to apply the same standard asset lives as those approved by the AER over the 2011–16 access arrangement period. It also proposed to use the weighted average approach as set out in the AER's roll forward model to determine the remaining asset life of the capital base at the start of the 2016–21 access arrangement period.[7]

APTNT's proposed regulatory depreciation for the 2016–21 access arrangement period is set out in Table 5.2.

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

[7] APTNT, *Proposed RFM, August 2015.*

Table 5.2 APTNT's proposed regulatory depreciation for the 2016–21 access arrangement period ($million, nominal)

	2016–17	2017–18	2018–19	2019–20	2020–21	Total
Straight-line depreciation	4.9	5.4	5.7	6.0	5.3	27.3
Less: indexation on capital base	3.0	3.5	3.5	3.5	3.5	17.1
Regulatory depreciation	**1.9**	**1.9**	**2.2**	**2.5**	**1.7**	**10.2**

Source: APTNT, *Proposed PTRM,* August 2015.

5.3 AER's assessment approach

In its access arrangement proposal, APTNT must provide a forecast of depreciation for the 2016–21 access arrangement period, including a demonstration of how the forecast is derived on the basis of the proposed depreciation method.[8]

The depreciation schedule sets out the basis on which the pipeline assets constituting the capital base are to be depreciated for the purpose of determining a reference tariff. The depreciation schedule may consist of a number of separate schedules, each relating to a particular asset or class of asset.[9] In making a decision on the proposed depreciation schedule, we assess the compliance of the proposed depreciation schedule with the depreciation criteria set out in the NGR.[10] We must also take into account the NGO and the revenue and pricing principles.[11]

Our discretion under the depreciation criteria is limited.[12] The depreciation criteria state that the depreciation schedule should be designed:

- so that reference tariffs will vary, over time, in a way that promotes efficient growth in the market for reference services[13]
- so that each asset or group of assets is depreciated over the economic life of that asset or group of assets[14]

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8 NGR, r. 72(1)(c)(ii).

9 NGR, rr. 88(1), 88(2).

10 NGR, r. 89.

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

12 NGR, rr. 89(3) and 40(2). The example provided in r. 40(2) states: The AER has limited discretion under r. 89. Rule 89 governs the design of a depreciation schedule. In dealing with a full access arrangement submitted for its approval, the AER cannot, in its draft decision, insist on change to an aspect of a depreciation schedule governed by r. 89 unless the AER considers the change is necessary to correct non-compliance with a provision of the Law or an inconsistency between the depreciation schedule and the applicable criteria. Even though the AER might consider change desirable to achieve more complete conformity between the depreciation schedule and the principles and objectives of the Law, it would not be entitled to give effect to that view in the decision making process.

13 NGR, r. 89(1)(a).

14 NGR, r. 89(1)(b).

- so as to allow, as far as reasonably practicable, for adjustment reflecting changes in the expected economic life of a particular asset, or a particular group of assets[15]
- so that (subject to the rules about capital redundancy), an asset is depreciated only once[16]
- so as to allow for the service provider's reasonable needs for cash flow to meet financing, non-capital and other costs.[17]

The depreciation criteria also state that to comply with the rule regarding efficient growth in the market for reference services, a substantial amount of depreciation may be deferred.[18]

The regulatory depreciation allowance is the net total of the real straight-line depreciation (negative) and the annual inflation indexation (positive) on the projected capital base. Our standard approach is to employ a straight-line method for calculating depreciation. We consider that the straight-line method satisfies the NGR's depreciation criteria.[19] This is because the straight-line method smooths changes in the reference tariffs, promotes efficient growth of the market, allows assets to be depreciated only once and over its economic life, and allows for a service provider's reasonable needs for cash flow.

In assessing APTNT's proposed regulatory depreciation allowance, we have analysed APTNT's proposed inputs to the PTRM for calculating depreciation for the 2016–21 access arrangement period. These inputs include:

- the opening capital base as at 1 July 2016
- the forecast net capex in the 2016–21 access arrangement period
- the forecast inflation rate for the 2016–21 access arrangement period
- the standard asset life for each asset class—used for calculating the depreciation of new assets associated with forecast net capex in the 2016–21 access arrangement period
- the remaining asset life for each asset class—used for calculating the depreciation of existing assets associated with the opening capital base as at 1 July 2016.

Our determinations affecting the first three inputs in the above list are discussed elsewhere: opening capital base (attachment 2), forecast inflation (attachment 3) and forecast net capex (attachment 6). Our decision on the required amendments to APTNT's proposed regulatory depreciation allowance reflects our determinations on these building block components. Our assessment approach on the remaining two inputs in the above list is set out below.

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15 NGR, r. 89(1)(c).
16 NGR, r. 89(1)(d).
17 NGR, r. 89(1)(e).
18 NGR, r. 89(2).
19 NGR, r. 89.

In general, we consider that consistency in the standard asset life for each asset class across access arrangement periods will allow reference tariffs to vary smoothly over time. This will promote efficient growth in the market for reference services.[20] Our standard method for determining the remaining asset lives is the weighted average method.[21] The weighted average method rolls forward the remaining asset life for an asset class from the beginning of the earlier access arrangement period. This approach reflects the mix of assets within that asset class, when they were acquired over that period (or if they were existing assets at the beginning), and the remaining value of those assets (used as a weight) at the end of the period.[22] A submission by Jemena expressed concerns with the AER's weighted average approach used to calculate the remaining asset lives.[23] We acknowledge that there may be alternative approaches for calculating remaining asset lives. We will assess the outcomes of other proposed approaches against the outcomes of this standard approach.

5.3.1 Interrelationships

The regulatory depreciation allowance is a building block component of the annual building block revenue requirement.[24] Higher (or quicker) depreciation leads to higher revenues over the access arrangement period. It also causes the capital base to reduce more quickly (assuming no further capex). This reduces the return on capital allowance, although this impact is usually secondary to the increased depreciation allowance.

Ultimately, however, a service provider can only recover the capex it has incurred on assets once. The depreciation allowance therefore reflects how quickly the capital base is being recovered and is based on the remaining and standard asset lives used in the depreciation calculation.

The depreciation allowance also depends on the level of the opening capital base and the forecast capex. Any increase in these factors also increases the depreciation allowance.

To prevent double counting of inflation through the rate of return and capital base, the regulatory depreciation allowance also has an offsetting reduction for indexation of the

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20 NGR, r. 89(1)(a).

21 We consider this depreciation method to be a generally superior approach. The reasons are outlined in our decision on the roll forward model for electricity transmission network service providers. See AER, *Explanatory statement, Proposed amendment, Electricity transmission network service providers, Roll forward model*, August 2010, pp. 5–6.

22 See AER, *Final decision - amended transmission roll forward model*, December 2010, pp. 5–6 for further explanation.

23 Jemena Electricity Networks (Vic) Ltd, *Submission on recent proposals made by SAPN, AGN, AAD, Energex and Ergon Energy*, July 2015.

24 Under our standard approach, the distinction is made between straight-line depreciation and regulatory depreciation. The difference being that regulatory depreciation is the straight-line depreciation minus the indexation adjustment.

capital base.[25] Factors that affect forecast inflation and/or the size of the capital base will therefore affect the size of this indexation adjustment.

The relative size of the inflation and straight-line depreciation and their impact on the capital base using APTNT's proposal is shown in the capital base attachment 2. A ten per cent increase in the straight-line depreciation causes revenues to increase by about two per cent.

5.4 Reasons for draft decision

We approve APTNT's proposed method to calculate the regulatory depreciation allowance which is the straight-line depreciation less the annual inflation indexation on the projected capital base. However, we do not approve APTNT's proposed regulatory depreciation allowance of $10.2 million ($nominal) for the 2016–21 access arrangement period. Our draft decision on APTNT's regulatory depreciation allowance is $5.2 million ($nominal) over the 2016–21 access arrangement period, a reduction of $5.0 million ($nominal) or 49.1 per cent compared to the proposed amount. This reduction is made because of our decision to not depreciate forecast land and easement capex (section 5.4.2.1), updates to remaining asset lives (section 5.4.2.2) and also because of our amendments to other components of the proposal.

We accept APTNT's proposed standard asset lives for its asset classes. In addition to the proposed asset classes, we have created a 'Land and easement' asset class for APTNT's forecast land capex in the 2016–21 access arrangement period. We have not applied a standard asset life to this new asset class. This is because land assets (and related purchases) do not depreciate.

We accept APTNT's proposed weighted average method to calculate the remaining asset lives as at 1 July 2016. In accepting the weighted average method, we have updated APTNT's proposed remaining asset lives for its asset classes. This is due to removing an adjustment made by APTNT in the RFM to account for a one month delay in the commencement of the 2011–16 access arrangement period.[26]

Our determinations on other components of APTNT's proposal also affect the calculation of the regulatory depreciation allowance.[27] These include:

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[25] If the economic lives are extremely long, such that the straight-line depreciation rate is lower than the inflation rate, then negative regulatory depreciation can emerge. The indexation adjustment is greater than the straight-line depreciation in such circumstances.

[26] APTNT referred to the start date of 1 August 2011 in its proposal. We note that the 2011–16 access arrangement was intended to come into effect on 1 July 2011. Therefore, the values approved in the final decision reflect the planned start date of 1 July 2011. However, the commencement of the access arrangement was delayed by one month and took effect on 1 August 2011. We consider that no adjustments to the approved values are required to accommodate the one month delay as the RFM rolls forward the capital base on a yearly basis. See: APTNT: *Amadeus Gas Pipeline access arrangement information effective 1 August 2011 – 30 June 2016,* July 2011 p. 11.

[27] NGR, rr.88–90.

- a reduction to APTNT's forecast net capex of $3.4 million ($2015–16) or 11.5 per cent. Our detailed assessment of the proposed forecast capex allowance is set out in attachment 6.
- a reduction to the opening capital base as at 1 July 2016 of $8.4 million ($nominal) or 7.0 per cent. Our detailed assessment of the proposed opening capital base is set out in attachment 2.

Table 5.3 sets out our draft decision on the standard and remaining asset lives as at 1 July 2016 for APTNT.

Table 5.3 AER's draft decision on APTNT's standard and remaining asset lives as at 1 July 2016 (years)

	Standard asset life	Remaining asset life
Pipelines	80	57.4
Compression	30	15.0
Meter station	50	36.9
SCADA	15	10.7
O&M facilities	10	8.2
Buildings	40	31.0
Return tariff payment[a]	n/a	1.0
Corporate assets (IT software)[b]	n/a	n/a
Land and easement	n/a	n/a

Source: AER analysis.

n/a Not applicable.

(a) The remaining asset life as at 1 July 2016 for the 'Return tariff payment' asset class is set to 1 year in order to fully depreciate the small negative residual RAB value for this asset class within the 2016–21 access arrangement period by way of returning the amount to customers.

(b) The 'Corporate assets (IT software)' asset class is no longer used for regulatory depreciation purposes because there is no residual RAB value and no forecast capex allocated to this asset class for the 2016–21 access arrangement period.

5.4.1 Regulatory depreciation method

We are required to assess APTNT's proposed depreciation schedule against the depreciation criteria as set out in rule 89 of the NGR. We accept APTNT's proposed method to calculate the regulatory depreciation allowance which is the straight-line depreciation amount less the annual inflation indexation on the projected capital base. APTNT's proposal adopted our PTRM for calculating the total revenue requirement

and is therefore consistent with our standard approach for calculating regulatory depreciation as discussed in section 5.3. We therefore accept APTNT's proposal because we are satisfied that the proposed depreciation method complies with the depreciation criteria.[28]

We will use the same regulatory depreciation approach as accepted in this draft decision for the final decision, but with updated inputs for calculating the regulatory depreciation allowance such as the opening capital base (attachment 2) and remaining asset lives (section 5.4.2.2).

5.4.2 Asset lives

The straight-line depreciation component of regulatory depreciation is calculated by dividing the asset value for each asset class by its standard asset life (for new assets) or remaining asset life (for existing assets). Our draft decision on APTNT's standard and remaining asset lives follows.

5.4.2.1 Standard asset life

We accept APTNT's proposed standard asset lives for its existing asset classes, because they are:

- consistent with our approved standard asset lives for the 2011–16 access arrangement period
- comparable with the standard asset lives approved in our recent determinations for other gas transmission service providers.[29]

We are satisfied the proposed standard asset lives reflect the requirements of rule 89(1) of the NGR.

In addition to the proposed asset classes, we created a 'Land and easement' asset class for APTNT's forecast land capex in the 2016–21 access arrangement period. We have not applied a standard asset life to this new asset class. 'Land and easement' was not a separate asset class in APTNT's proposal. We consider that a separate asset class for land and easement forecast capex is necessary due to their unique depreciation requirement. Land assets (and related purchases) do not depreciate and therefore should not have a standard asset life for depreciation purposes. This approach is consistent with Australian accounting standards and the ATO's treatment for such assets.[30] We have also consistently treated land and easement as non-depreciating assets for other regulated businesses. For modelling purposes, we have

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28 NGR, r. 89.

29 For example, AER*: APT Petroleum pipeline Pty Ltd access arrangement final decision Roma to Brisbane pipeline,* August 2012, pp.117; *AER: Access arrangement final decision APA GasNet Australia (Operations) Pty Ltd 2013–17 Part 2: Attachments,* March 2013, p.101.

30 Australian accounting standard board, *Accounting standard AASB1021: Depreciation, August 1997*, pp. 10–11; ATO, *Guide to depreciating assets 2011*, 2011, p. 3.

assigned the standard asset life input of "n/a" in the PTRM for the 'Land and easement' asset class.

Table 5.3 sets out our draft decision on the standard asset lives for APTNT over the 2016–21 access arrangement period.

5.4.2.2 Remaining asset lives

We accept APTNT's proposed weighted average method to calculate the remaining asset lives as at 1 July 2016.[31] The proposed method is consistent with our preferred approach as discussed in section 5.3. In accepting the weighted average method, we have updated the proposed remaining asset lives as at 1 July 2016 because we corrected several inputs to the average remaining asset lives in the proposed RFM.

APTNT proposed to increase the approved remaining asset lives for each asset class as at 1 July 2011 by 13 months to account for a one month delay at the beginning of the 2011–16 access arrangement period. Under the RFM, the approved remaining asset lives are rolled forward from 1 July 2011 to arrive at the appropriate value for the average remaining asset lives at 1 July 2016. Altering the inputs to this model causes the calculated average remaining asset lives at 1 July 2016 to not be reflective of those approved in the 2011–16 access arrangement. We questioned APTNT about its approach and on review it agreed that no adjustment was required to the approved 1 July 2011 remaining asset lives inputs to the RFM.[32] We have therefore amended the 1 July 2011 remaining asset lives in the proposed RFM to reflect those approved in the 2011–16 access arrangement.

Table 5.3 sets out our draft decision on the remaining asset lives as at 1 July 2016 for APTNT.

5.5 Revisions

We require the following revisions to make the access arrangement proposal acceptable:

Revision 5.1 Make all necessary amendments to reflect this draft decision on the proposed forecast regulatory depreciation allowance for the 2016–21 access arrangement period, as set out in Table 5.1.

Revision 5.2 Make all necessary amendments to reflect this draft decision on the standard asset lives and remaining asset lives as at 1 July 2015, as set out in Table 5.3.

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

[32] APTNT, *Response to AER information request: AER Amadeus 05 – RFM,* 16 September 2015, p. 3.