August 2017

roma to brisbane pipeline

revised access arrangement submission.

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contents

attachments

3.1	Rate of return parameters update: Report prepared for APA Group, August 2017

abbreviations

AA	Access Arrangement
AAI	Access Arrangement Information
ABS	Australian Bureau of Statistics
AC	Alternate Current
ACCC	Australian Competition and Consumer Commission
ACN	Australian Company Number
AER	Australian Energy Regulator
AMP	Asset Management Plan
APA	APA Group
APTPPL	APT Petroleum Pipelines Pty Limited
AS	Australian Standard
CAPM	Capital Asset Pricing Model
CP	Cathodic Protection
CPI	Consumer Price Index
Cth	Commonwealth
DCVG	Direct Current Voltage Gradient
FEED	Front End Engineering and Design
GDP	Gross Domestic Product
GIS	Geospatial Information System
GJ	Gigajoule
IT	Information Technology
km	Kilometres
KP	Kilometre Point
LNG	Liquefied Natural Gas
MAOP	Maximum Allowable Operating Pressure
MDQ	Maximum Daily Quantity

MRP	Market Risk Premium
MS	Meter Station
Mt	Mount
National Gas Code	National Third Party Access Code for Natural Gas Pipeline Systems
NEGI	North East Gas Interconnector
NGL	National Gas Law
NGR	National Gas Rules
PMP	Pipeline Management Plan
PRS	Pressure Reduction Station
PTRM	Post Tax Revenue Model
RBP	Roma Brisbane Pipeline
RFM	Roll Forward Model
RIN	Regulatory Information Notice
RTU	Remote Terminal Unit
SCADA	Supervisory Control and Data Acquisition
TAB	Tax Asset Base
TJ	Terajoule
WACC	Weighted Average Cost of Capital

Introduction and summary

This submission provides supporting information for APT Petroleum Pipelines Pty Limited (APTPPL)'s proposed revision of the Access Arrangement for the Roma Brisbane Pipeline (RBP) to be effective from 1 July 2017.

In accordance with the requirements of section 132 of the National Gas Law (NGL) and section 60(1) of the National Gas Rules (NGR), APTPPL has provided to the Australian Energy Regulator (AER) with this submission:

- a proposed revised access arrangement in respect of the RBP;
- an Access Arrangement Information document; and.
- a submission in support of the proposed amendments to the RBP access arrangement (this document).

Together these documents make up APTPPL's access arrangement revision proposal in response to the AER's draft decision issued 6 July 2017.

In this document, APTPPL has not repeated information provided in the original access arrangement revision proposal.

Revisions to the proposed revised access arrangement

APTPPL has accepted the vast majority of the changes to the access arrangement required by the AER in its draft decision. As discussed further in this submission, the remaining areas of difference between APTPPL and the AER are:

- the inclusion of Rebateable Services among the access arrangement Services;
- the level of approved actual capital expenditure over the 2012-17 access arrangement period;
- the level of approved forecast capital expenditure over the 2017-22 access arrangement period;
- some minor mechanical corrections to the calculation of tariffs;
- the proposed tariff variation mechanism to reflect annual updating of changes in the outturn rate of inflation; and

- Amendment to the Queuing Requirements to implement an auction for spare capacity.

A consolidated list of the AER's required amendments to the RBP Access Arrangement, and APTPPL's summary responses to those required amendments, is included in Appendix A.

Services

APTPPL accepts AER's definition of a single Reference Service and the terms of that service, including clarifying that intra-day renominations are included in the Reference Service.

APTPPL does not accept the AER's proposed inclusion of Rebateable Services in the access arrangement. As discussed in section 1.2, the AER's proposed Rebateable Service mechanism creates significant disincentives for the pipeline operator, dangerous interactions with other gas market reforms, and perverse behavioural incentives for other market participants.

Capex and capital base

APTPPL has provided additional information to assist the AER in understanding two capital expenditure projects – historical emergency flood repair works, and forecast pipeline integrity capex.

APTPPL has reinstated its mechanism to reduce the service provider's exposure to the inevitable forecasting errors relating to inflation between the derivation of allowed revenues in the Post Tax Revenue Model and the subsequent roll forward of the capital base using the Roll Forward Model. While the AER draft decision did discuss differences in forecasting methodology, it did not engage with the impacts of CPI forecasting errors on the capital base.

Rate of return

APTPPL disagrees with the AER that its proposed allowed rate of return is commensurate with the efficient financing costs of a benchmark efficient entity with a similar degree of risk as that which applies to the service

provider in respect of the provision of reference services, as required by the allowed rate of return objective.

APTPPL provides additional information in response to the AER draft decision on this matter.

Operating expenditure

The AER accepted APTPPL's proposed opex forecast as lodged, and APTPPL has not further addressed this matter.

Efficiency carryover mechanism

Consistent with its decisions on other regulated businesses, the AER draft decision imposed an Efficiency Benefit Sharing Scheme in the RBP access arrangement. APTPPL accepts this scheme, with minor amendment.

Demand forecast

The AER accepted APTPPL's load and demand forecast as lodged, and APTPPL has not further addressed this matter.

Forecast revenue outcome

Forecast allowed revenue is a function of its combined inputs, and to the extent APTPPL has not accepted the AER's draft decision on any component input, its views will differ as to the appropriate level of allowed revenue.

The culmination of APTPPL's positions on the AER draft decision results in the following allowed revenue in this submission:

($m, nominal)	2017/18	2018/19	2019/20	2020/21	2021/22
Return on capital	34.67	36.32	37.14	37.18	37.82
Return of capital	5.64	6.49	7.01	1.12	- 0.95
plus operating and maintenance	14.86	15.23	15.50	15.82	16.20
plus revenue adjustments	1.74	-	-	-	-
plus net tax allowance	1.76	1.74	1.72	0.67	0.46
Total	**58.67**	**59.79**	**61.36**	**54.79**	**53.53**
Smoothed revenue path	**49.49**	**54.81**	**58.69**	**62.53**	**66.83**
X factors tariff revenue (%)		**-5.0%**	**-5.0%**	**-5.0%**	**-5.0%**

Tariff outcome

This proposed revise access arrangement proposes a tariff for Long Term Firm capacity of $0.7750 per GJMDQ/day, commencing on the date revisions to the access arrangement are approved.

Consolidated list of AER's required amendments

A consolidated list of the AER's required amendments to the RBP Access Arrangement, and APTPPL's summary responses to those required amendments, is included in Appendix A.

APTPPL looks forward to continued engagement with the AER to finalise its review of APTPPL's proposed revised access arrangement.

1 services

This access arrangement accepts the AER's draft decision to provide a single Reference Service, the Long Term Firm Service, available in either an eastbound or westbound direction.

This access arrangement does not accept the inclusion of Rebateable Services.

1.1 Reference Service

In its original proposal, APTPPL proposed offering two Reference Services: a Long Term Firm service and a Short Term Firm service.

The AER accepted APTPPL's proposal to offer the Long Term Firm service as a Reference Service, but did not accept the proposal to offer the Short Term Firm service as a Reference Service.

The AER required the following revisions to the proposed revised access arrangement:

Reference	Required Amendment
AA s2.1	**Services under Access Arrangement** The following services are offered under this Access Arrangement: (a) ~~Firm Service –~~ Reference Service as described in section 2.2; ~~and~~ (b) Negotiated Services – non-Reference Services, as described in section 2.3; and (c) Rebateable Services, as described in section 2.3A. [this is discussed in section 1.2]
AA s2.2	**~~Firm~~ Reference Service**
AA s2.2.1	The Reference Service is the Long Term Firm Service The Long Term Firm Service is a service for the receipt, transportation and delivery of Gas through any length of the Covered Pipeline. Service Provider must provide the Long Term Firm Service on the

Reference	Required Amendment
	following basis: (a) the receipt by Service Provider at the Receipt Point of quantities of Gas Nominated by the User, not exceeding the applicable Receipt Point MDQ and in aggregate not exceeding the Firm MDQ, at a rate per Hour net exceeding the applicable Receipt Point MHQ; (b) the transportation of the Gas referred to in paragraph (a) on a firm basis and without interruption, except as is expressly permitted under the Transportation Agreement; and (c) the delivery by Service Provider to, or on account of, User at the Delivery Points of quantities of Gas Nominated by User, not exceeding the applicable Delivery Point MDQ and in aggregate not exceeding the Firm MDQ, at a rate per Hour not exceeding the applicable Delivery Point MHQ, as Scheduled in accordance with clauses 11 to 14 (inclusive) of the Terms and Conditions. Despite paragraphs (a) to (c) above (inclusive) and 2.2.4, the transportation of Gas received at Receipt Points by Service Provider under ~~the~~ a Firm Service is, for STTM purposes, to the Brisbane hub or, if Scheduled by Service Provider in accordance with clauses 11 to 14 (inclusive) of the Terms and Conditions, to Delivery Points upstream of the Brisbane hub. The Long Term Firm Service is provided at the Long Term Firm Reference Tariff. The Long Term Firm Service includes the following: (a) ability of User to request an Authorised Overrun; (c) for installations owned and operated by Service Provider, the measurement of gas quantity and quality and of gas pressures as detailed in the Terms and Conditions.
AA s2.2.5	**Term** The term of ~~a Firm Service is~~: ~~(a) for~~ a Long Term Firm Service is three years from the commencement of the Firm Service or such longer period ending on an anniversary of the commencement of the Firm Service as the User elects ~~(Long Term Firm Service); or~~ ~~(b) as agreed between the User and the Service Provider, but less than three years (Short Term Firm Service)~~.

APTPPL accepted these amendments to remove the Short Term Firm Service from the definition of Reference Service.

This change to the definition of Reference Services requires some consequential amendments to the proposed revised access arrangement, as identified by the AER in its draft decision:

Reference	Required Amendment
AA s2.3	**Negotiated Services** If a Prospective User's requirements and circumstances vary from the conditions of the Long Term Firm Service ~~Firm Service~~, including where the Prospective User seeks access to capacity other than the Existing Capacity, the Prospective User may seek to negotiate different terms and conditions, including tariffs, as a Negotiated Service. Negotiated Services will have priority agreed to in a Non-Discriminatory Manner in accordance with the Terms and Conditions set out in Schedule 3, but will not be higher than a Firm Service.
AA s4.2.1[1]	***Reference Service and Tariffs*** (a) The amount payable by the User for the ~~a~~ Long Term Firm Service Reference Service is the applicable Long Term Firm Service Charge. ~~(b) The amount payable by the User for the a Short Term Firm Service (Reference Service) is the Short Term Firm Service Charge.~~ ~~(c)~~ (b) Users will also pay any Other Tariff Charges applicable.
AA s4.2.2 (sic) 4.2.3	~~***Short Term Firm Service Charge***~~ ~~The Short Term Firm Service Charge for each Day is the product of:~~ ~~(a) the Short Term Firm Reference Tariff; and~~ ~~(b) the Firm MDQ (expressed in GJ) specified in the Transportation Agreement.~~ Not used
AA s4.5.1	***Annual Reference Tariff adjustment formula mechanism*** The Capacity Tariff for the Long Term Firm Service to apply on 1 July 2018 and on each subsequent 1 July, will be adjusted according to the following formula:

[1] There is some confusion around the required amendments to ss 4.2.1, 4.2.2 and 4.2.3 of the access arrangement between AER draft decision Attachment 3 and Attachment 10. APTPPL has implemented these required revisions in a way that they appear to have been intended.

Reference	Required Amendment
	$RT_n = RT_{n-1} \times \left[1 + \frac{CPI_{n-1} - CPI_{n-2}}{CPI_{n-2}}\right] \times (1 - X)$ Where: RT_n means the Long Term Firm Service ~~Capacity~~ Tariff in Year n n means the Year in which the adjusted Long Term Firm Service-Tariff is to be applied RT_{n-1} means the ~~Capacity~~ Long Term Firm Service Tariff in Year n – 1 CPI_{n-1} is the Consumer Price Index for the March quarter applying in the year n – 1. For tariffs in 2018–19, n-1 is March quarter 2018 CPI_{n-2} is the Consumer Price Index applying for the March quarter in year n – 2. For tariffs in 2018–19, n-2 is March quarter 2017.
4.2.2	***Long Term Firm Service Charges*** The Long Term Firm Service Charge for each Day is the product of: (a) the applicable Long Term Firm Reference Tariff as specified in section 2.2.1; and (b) the Firm MDQ (expressed in GJ) specified in the Transportation Agreement.
~~4.2.3~~	~~***Short Term Firm Service Charges***~~ ~~The Short Term Firm Service Charge for each Day is the product of:~~ ~~(a) the Short Term Firm Reference Tariff; and~~ ~~(b) the Firm MDQ (expressed in GJ) specified under the Transportation Agreement.~~
4.7	**Reference Tariff after 30 June 2022** In the event that the Revisions Commencement Date is later than 30 June 2022, the tariff in effect at 30 June 2022 shall continue to apply to the provision of Long Term Firm Service ~~Firm Services~~ between 30 June 2022 and that later Revisions Commencement Date. If the Reference Services under the revised Access Arrangement are different to those in this Access Arrangement, the applicable Reference Tariff and terms for an existing Service being supplied to a User are those as at the Revisions Commencement Date.
Sch. 1	**Details** […] **Rates and allowances**

Reference	Required Amendment	
	~~**Short Term Firm Reference Tariff** – 166% of the Long Term Firm Reference Tariff~~	
	[…]	
Terms and Conditions		
T&C s1	**Authorised Overrun Rate:**	120% of the Long Term Firm Reference Tariff ~~or Short Term Firm Reference Tariff (as applicable)~~
	Unauthorised Overrun Rate:	250% of the Long Term Firm Reference Tariff ~~or Short Term Firm Reference Tariff (as applicable)~~
	Imbalance Rate:	250% of the Long Term Firm Reference Tariff ~~or Short Term Firm Reference Tariff (as applicable)~~
	Imbalance Allowance:	5% (either positive or negative) of the sum of the MDQ for all Delivery Points
	Daily Variance Rate:	250% of the Long Term Firm Reference Tariff ~~or Short Term Firm Reference Tariff (as applicable))~~
	Daily Variance Allowance:	5% (either positive or negative) of the MDQ for the applicable Delivery Point or Receipt Point
	Notes on Tariffs: 1. Reference tariffs apply from the date on which the approval of the AER takes effect under Rule 62. 2. These tariffs apply as at 1 July 2017 to ~~the~~ a LTFS ~~Firm Service~~. For other services and terms, tariffs will be determined by negotiation. 3. The minimum term for ~~the~~ a Long Term Firm Service is 3 years. ~~The minimum term for the Short Term Firm Service is one day.~~ 4. Refer to section 4 of this Access Arrangement for details of the charges to which the above rates and tariffs apply and the basis upon which they will be adjusted. 5. These tariffs are quoted on a GST exclusive basis. […]	
T&C s2.1	**Definitions**	

Reference	Required Amendment
	[…] **Long Term Firm Service** has the meaning given in section 2.2.1 of this Access Arrangement. […]
T&C s3	**Terms and conditions applying to the Long Term Firm Service** 1. Service Provider will provide the Long Term Firm Service to Users with whom it has a Transportation Agreement to provide the Long Term Firm Service, in accordance with the Terms and Conditions set out in this Schedule 3. […] 3. For a Long Term Firm Service, the User must give to Service Provider, at least 3 Days before the beginning of each Month, a completed Nomination for the applicable Firm Service for each day of the Month about to commence. If the User fails to provide such a Nomination by this time then its Nomination for each Day it has failed to give a Nomination will be deemed to be zero GJ. […] 10AA User may submit an Intra-Day Nomination for any service, in which case: (a) Service Provider may accept or reject the Intra-Day Nomination, or any part of it, at its discretion and without liability to the user; (b) Service Provider must, as soon as possible after receipt of the Intra-Day Nomination, advise User if and to the extent that Service Provider is prepared to accept the Intra-Day Nomination; and (c) to the extent that Service Provider accepts the Intra-Day Nomination, the quantities of Gas to which the acceptance relates must be Scheduled by Service Provider in accordance with the terms and conditions of the Service under the Transportation Agreement to which the acceptance relates.
T&C s8	**Pro-forma Transportation Agreement** […] **Services** Long Term Firm Service

Reference	Required Amendment
	Authorised Overrun Service
	[…]

APTPPL accepts these required amendments.

1.1.1 Changing receipt and delivery point

Though not discussed in the text of the draft decision, the AER draft decision required the following revision to the proposed revised access arrangement:

Clause	Amendment
AA s5.5	**Changing Receipt and Delivery Points** [an additional paragraph at the end of section 5.5 as follows:] If the User's request relates to a Receipt Point or a Delivery Point which is in a different Zone to the existing Receipt Point or Delivery Point, Service Provider may make an adjustment to the relevant tariff and amount payable under the Transportation Agreement.

In its original proposed revised access arrangement, APTPPL proposed to apply a "postage stamp" tariff, which would apply for transportation across any length of the pipeline. The AER has accepted this aspect of the proposed access arrangement.

In Attachment 10 to its draft decision, the AER analysed the question of implementing a zonal tariff, concluding that a postage stamp tariff remained appropriate under all the circumstances.

The concept of adjusting the tariff for a shipper that has changed its receipt or delivery point between zones would only be required in a zonal tariff structure - it is not necessary within the concept of a postage stamp tariff. APTPPL considers that this required revision is a remnant of the AER's considerations regarding a zonal tariff.

Accordingly, APTPPL has not made this revision to its revised access arrangement.

1.1.2 Authorised Overruns

The purpose of an authorised overrun is to allow a shipper, faced with an opportunity to temporarily increase is activity levels, to access additional pipeline capacity when required.

Under the provisions of the APTPPL access arrangement, APTPPL is required to approve an authorised overrun so long as the pipeline is capable of providing the overrun without curtailing any other shipper (AA s2.2.4(f), (g)).

In the previous access arrangement period, the scope for a shipper to access an authorised overrun was limited by the capacity constraints on the pipeline. However, in the current environment, where there is spare capacity available, there is scope for the current authorised overrun provisions to be subject to abuse. APTPPL discussed this with the AER, who agreed that it would be reasonable to place a limit on the extent to which a shipper can access the authorised overrun service.

The AER, in Attachment 12 to its draft decision, required APTPPL to amend the definition of "Authorised Overrun Quantity", as follows:

Reference	Required Amendment
Schedule 2 Definitions and Interpretations	
	Authorised Overrun Quantity means the amount of an Overrun Quantity that is attributable to an Authorised Overrun, which cannot be greater than 20% of Firm MDQ.

APTPPL accepts this required revision.

APTPPL considers that this revision requires some consequential changes to the Overruns section of the Services Chapter. As discussed with the AER through the information request process, APTPPL proposes to amend s2.2.4 as follows:

2.2.4 Overruns

(a) An Unauthorised Overrun will occur where the User incurs an Overrun Quantity on a Day or in an Hour which is not an Authorised Overrun.

(b) An Authorised Overrun is:

(i) the receipt by Service Provider at the Receipt Points of quantities of Gas Nominated by the User:

(A) , in excess of the applicable Receipt Point MDQ but not greater than 20% of the applicable Receipt Point MDQ; or

(B) in aggregate exceeding the Firm MDQ but not greater than 120% of Firm MDQ,

at a rate per Hour nominated by the User;

(ii) the transportation of the Gas referred to in paragraph (i) on an interruptible basis; and

(iii) the delivery by Service Provider to the User at the Delivery Points of quantities of Gas Nominated by the User:

(A), in excess of the applicable Delivery Point MDQ but not greater than 20% of the applicable Delivery Point MDQ; or

(B) in aggregate exceeding the Firm MDQ but not greater than 120% of Firm MDQ,

at a rate per Hour Nominated by the User.

(c) An Authorised Overrun is requested by the User as part of the User's Nomination for the Firm Service by the User requesting an amount greater than the User's Firm MDQ or relevant Receipt Point or Delivery Point MDQ (as the case may be), which amount must not be greater than 120% of User's Firm MDQ or relevant Receipt Point or Delivery Point MDQ (as the case may be).

(d) Service Provider is not obliged to provide an Authorised Overrun, or to provide an Authorised Overrun in respect of quantities or at a rate Nominated by the User where:

(i) the provision of the Authorised Overrun for the transportation of the requested quantities would cause the Service Provider to curtail a service under a Transportation Agreement:

(A) for another User up to its MDQ on that Day; or

(B) already Scheduled for transportation to another User at the time the User's Nomination is received; or

(ii) clauses 11 to 14 (inclusive) of the Terms and Conditions operate to exclude or reduce the provision of the Authorised Overrun; or

(iii) the quantities of Gas requested to be transported as an Authorised Overrun exceed 20% of Firm MDQ.

…

This is more consistent with the intention of the Authorised Overrun service, which was meant to apply to allow shippers to access additional capacity to take advantage of infrequent business opportunities. The 20% limitation was not included in the previous access arrangement as the pipeline was at capacity, and this would have constrained the scope for abuse of the Authorised Overrun service.

1.2 Rebateable services

In the context of Service definition, the AER draft decision required the following revision:

Reference	Required Amendment
AA s2.1	**Services under Access Arrangement** The following services are offered under this Access Arrangement: (a) ~~Firm Service –~~ Reference Service as described in section 2.2; ~~and~~ (b) Negotiated Services – non-Reference Services, as described in section 2.3; and (c) Rebateable Services, as described in section 2.3A.

APTPPL accepts the first two components of this revision (AAs2.1 (a) and (b)). However, APTPPL does not accept the required revision to add AA s2.1(c), as discussed in this section.

APTPPL did not propose any Rebateable Services in its proposed Revised Access Arrangement. The AER draft decision required the following revisions:

Clause	Amendment
2.3A	**Rebateable Services**

Clause	Amendment
2.3A.1	The following Rebateable Services are offered: (a) Capacity Trading Service; (b) In-Pipe Trade Service; (c) Parking Service; and (d) Loan Service. The Capacity Trading Service is the facilitation services provided by Service Provider to a User for the sale of all or part of User's Operational MDQ to another User, or the purchase by User of all or part of another User's Operational MDQ. The In-Pipe Trade Service is the facilitation services provided by Service Provider to the User for a Gas Trade. The Parking Service is the service provided by Service Provider enabling a User to store quantities of gas in the Covered Pipeline which do not exceed prescribed limits agreed with Service Provider. The Loan Service is the service provided by Service Provider enabling a Prospective User to receive quantities of gas from the Covered Pipeline which do not exceed prescribed limits agreed with Service Provider.

APTPPL has a number of concerns with the AER's required changes regarding Rebateable Services, notably:

- the poor incentives for APTPPL to provide these services;
- the unequal treatment between revenues derived from Park and Loan Services and revenues derived from additional gas transportation services;
    - the scope for a Park and Loan rebateable Service to create perverse incentives in the market;

- the scope for Park and Loan Rebateable Service to pervert the reforms currently under development by the Gas Market Reform Group;

- the definitions of the services to be provided as Rebateable Services;
- concerns over the rebate mechanism, in terms of:
  - its compliance with the Rules;
  - the nature of the rebate mechanism; and
  - the arithmetical formula for the rebate mechanism

Each of these is discussed in turn below.

APTPPL concludes, at the end of this section, that creation of the AER's proposed Rebateable Service mechanism is ill-advised, and has therefore not implemented the AER's required revisions related to Rebateable Services.

1.2.1 Rebateable Services and incentives

APTPPL submits that the proposed Rebateable Service provisions provide poor incentives for APTPPL to provide these services.

Relevant to incentives, the draft decision requires the following amendment:[2]

Reference	Required Amendment
AA s4.8	**Rebate mechanism**
AA s4.8.1	***Rebate Pool*** Service Provider will track revenue received through the provision of Rebateable Services, and will allocate the following proportions of those revenues to the Rebateable Service Rebate Pool: (a) For Capacity Trading Services and In-Pipe Trade Services – 70 per cent of the revenue; (b) For Parking Services and Loan Services – 90 per cent of the revenue.

[2] AER draft decision p10-17. (APTPPL notes that the AER discusses this matter in the Tariff Setting attachment of the draft decision.)

In Attachment 10 of the draft decision, the AER proposes that APTPPL should rebate 70% of Capacity Trading and In-Pipe Trade Service revenues, and 90% of Park and Loan Service revenues, respectively.

APTPPL submits that the low amount of revenue proposed to be retained by the business, in combination with the additional administrative costs associated with providing these services, provide a significant disincentive for APTPPL to provide these services on the RBP. Through responses to AER information requests, APTPPL proposed that, should these services be classified as Rebateable Services, APTPPL should be able to retain 50% of the revenue derived from the provision of these services.

The incentive matter, particularly as it relates to consistency of incentives, is particularly relevant in the context of Park and Loan services, discussed below.

1.2.2 Park and Loan Services

To the extent a pipeline provides Park and Loan services (sometimes referred to as "pipeline storage"), it limits its capability to provide gas transmission services. Park and Loan sterilises firm transportation capacity and is therefore equivalent to selling additional transportation service. In the case of the RBP, 1 TJ/day of storage sterilises 1 TJ/day of transportation capacity.

Were APTPPL to sell an additional unit of transportation capacity, the additional revenue from that sale would not be rebateable. This mechanism is built into the gas access regime as an incentive for the pipeliner to increase pipeline utilisation. However, if the pipeline capacity were to be reserved through the sale of Park services, APTPPL would be required to rebate these revenues, and would further be unable to sell the sterilised transport capacity, which revenue it would be able to retain in full.

This inconsistency presents an additional significant disincentive to sell the rebateable Park and Loan services.

Not only would APTPPL not be able to keep any significant amount of revenue from providing the Park and Loan services, it would incur additional administrative costs in tracking the revenues received from the provision of these services, and tracking the amount of these revenues to be rebated to users of the Reference Service. APTPPL's systems currently do not provide this

capability. APTPPL notes that the AER did not provide for additional IT system capex or opex associated with a requirement to provide rebateable services. This means that APTPPL would be required to incur additional costs to provide these services, which it is not able to recover through the low revenue provided for in the proposed Rebateable Services mechanism.

APTPPL submits that, in order to maintain consistent incentives, revenues from Park and Loan services should be treated in an equivalent manner to revenues from the transportation services they sterilise, and not subject to rebate.

Park and loan services are not in a "substantially different market"

While APTPPL and the AER agree that substantial uncertainty exists concerning the extent of the demand for the Park and Loan service or the revenue to be generated from the service, APTPPL does not agree with the AER's conclusion regarding the market for the service. Rule 93(4)(c) also requires that:

> (4) A pipeline service is a rebateable service if: …
>
> (c) the market for the service is substantially different from the market for any reference service.

APTPPL and the AER disagree that these services are not substitutable, and are therefore in a substantially different market.[3]

APTPPL notes that a shipper could use the Park and Loan Service to create a synthetic transportation service, by simply injecting gas to, and withdrawing gas from storage on the same day. Indeed a shipper could adopt this strategy as a methodology to avoid the premium price on As-Available services, completely substituting transportation with storage.[4]

APTPPL submits that these service also exhibit both demand-side and supply-side substitution, in that Park and Loan services allows a shipper to substitute transportation services *inter-temporally*. That is, a shipper can use Park and

[3] AER draft decision p1-14.

[4] Where the shipper held a Reference Service contract, it would then receive a rebate for part of the cost of this synthetic transportation service.

Loan services to substitute gas transportation today with gas transportation tomorrow. This aspect, which goes to the core of the service definition, was not considered by the AER in its draft decision.

Moreover, and importantly in the context of other gas market reforms, APTPPL submits that these services are substitutes in that a storage service uses the same pipeline capacity as a transportation service – a storage service sterilises transportation capacity and therefore inhibits the ability of the service provider to provide the transportation service. Importantly, as discussed more fully below, a shipper could reserve a Park and Loan service, and block a competing shipper from accessing a transportation service.

The AER uses an example of customers buying tyres and petrol – APTPPL accepts that, while tyres and petrol may be bought by the same customers, they are not substitutes. However, a customer who buys tyres does not preclude another customer from buying petrol. In contrast, a shipper who uses a Park and Loan service can preclude another shipper from using a transportation service.

This is particularly relevant in the context of incentives, as the revenues from the Rebateable Park and Load service would be refunded to shippers, whereas the revenues from the (blocked) transportation service would not. A further complication to this issue is discussed more fully below.

Perverse incentives

APTPPL is concerned that creation of Rebateable Park and Loan Services has scope to create perverse incentives in the market.

For example, a Reference Service shipper could book all the available pipeline capacity for storage ("Park and Loan"), collect the rebate and enjoy a very low-cost storage service. Concerningly, this action, conducted completely in line with the provisions of the access arrangement, would quarantine all the transportation capacity for other shippers, including the storing shipper's competitors. This would present a low-cost opportunity to hoard capacity, making pipeline services unavailable to other shippers.

This incentive flies in the face of the initiatives of the Gas Market Reform Group, as discussed below.

Interaction with Gas Market Reform Group initiatives

The Gas Market Reform Group is currently finalising a number of initiatives aimed at reducing the scope for shippers to hoard pipeline capacity, by making "reserved but unutilised" capacity available to other shippers through a day-ahead capacity release auction. These reforms are to apply to covered and uncovered pipelines alike.

Further to the discussion above, the Rebateable Service mechanism creates a risk of low-cost capacity hoarding, by creating an opportunity for a Reference Service shipper to book all the available pipeline capacity for storage services, quarantining all transportation capacity. To avoid the capacity release mechanism, the shipper would only need to actually park gas the pipeline such that the storage was indeed being "utilised".

Perversely, the capacity would not be available for access under the capacity release mechanisms being put in place by the Gas Market Reform Group, and the hoarding shipper would receive a rebate of its costs of booking the capacity.

Considering the substitutability factors, consistency of incentives and scope for abuse of the Rebateable Service mechanism, APTPPL considers that a preferable option would be maintain the purity of the National Gas Access Regime incentives to encourage the business to earn additional revenue through volumetric out-performance. At the next access arrangement review, there may be more reliable information regarding the demand for the Park and Loan service that it could be considered to be a Reference Service at that time.

As discussed in this section, APTPPL considers that a Rebateable Service mechanism should not be implemented at this time. The further commentary below should be considered applicable in the event the AER nonetheless decides to persist with a Rebateable Service mechanism.

1.2.3 *Definitions of Services provided as Rebateable Services*

The Services to be provided as Rebateable Services are, by definition, not Reference Services. However, APTPPL is concerned that there is scope for confusion if the nature of the Rebateable Services is unclear. APTPPL considers, therefore, that the access arrangement should include a reference to a definition of these services and the relevant terms and conditions surrounding them.

These services need to be defined quite closely in the AA. For example, the "Park" service is quite different from an "Imbalance", in that the "Park" service is an *intentional* injection of additional gas through the nomination process (and vice-versa for "Loan"). Specifically, clauses 2.7(b) and (e) of the APA Standard Terms and Conditions state (*emphasis added*):

> (b) Shipper may store quantities of Gas in a Pipeline, which in aggregate with Parked Gas then stored in a Pipeline on account of Shipper under this Agreement do not exceed the Parking Allowance, *by causing a positive Imbalance to occur on a Day*.

and

> (e) Shipper may withdraw Parked Gas by making a Nomination under another Service with the effect that *a negative Imbalance is requested* in respect of the relevant Day…

Reciprocal language applies to the definition of "Loan Service".

APTPPL considers that, if these services are to be classified as Rebateable Services, it is important to clearly articulate how those services differ from other services provided for in the access arrangement. To this end, APTPPL proposes that the access arrangement refers to the APA Standard Gas Transportation Agreement Terms and Conditions for the definitions of the Services that will be considered Rebateable Services, and the terms and conditions under which they are provided:

- s2.7 (Parking Service);
- 2.8 (Loan Service);
- s2.11 (In-Pipe Trade service); and
- s2.12 (Capacity Trading Service).

If these services are to be retained as Rebateable Services, the relevant section of the RBP access arrangement should read as shown below:

Clause	Amendment
2.3A	**Rebateable Services**
2.3A.1	The following Rebateable Services are offered: (a) Capacity Trading Service; (b) In-Pipe Trade Service; (c) Parking Service; and (d) Loan Service. The Capacity Trading Service is the facilitation services provided by Service Provider to a User for the sale of all or part of User's Operational MDQ to another User, or the purchase by User of all or part of another User's Operational MDQ. The Capacity Trading Service is provided in accordance with s2.12 of the APA Standard Terms and Conditions. The In-Pipe Trade Service is the facilitation services provided by Service Provider to the User for a Gas Trade. The In-Pipe Trade Service is provided in accordance with s2.11 of the APA Standard Terms and Conditions. The Parking Service is the service provided by Service Provider enabling a User to store quantities of gas in the Covered Pipeline which do not exceed prescribed limits agreed with Service Provider. The Parking Service is provided in accordance with s2.7 of the APA Standard Terms and Conditions. The Loan Service is the service provided by Service Provider enabling a Prospective User to receive quantities of gas from the Covered Pipeline which do not exceed prescribed limits agreed with Service Provider. The Loan Service is provided in accordance with s2.8 of the APA Standard Terms and Conditions.

APTPPL considers that, as these services are (by definition) Negotiated Services, it is neither necessary nor appropriate to define the particulars of these services in the RBP access arrangement.

The AER draft decision also required the following revisions to the terms and conditions:

Clause	Amendment
Schedule 3 Terms and Conditions	
T&C s2.1	**Definitions** […] **Capacity Trading Service** has the meaning given in section 2.3A of this Access Arrangement. […] **Gas Trade** means an agreement between a Prospective User and another User for the sale and purchase of gas which is situated in the Covered Pipeline on account of or at the direction of the seller in accordance with a Transportation Agreement. […] **In-Pipe Trade Service** has the meaning given in section 2.3A of this Access Arrangement. […] **Loan Service** has the meaning given in section 2.3A of this Access Arrangement. […] **Parking Service** has the meaning given in section 2.3A of this Access Arrangement. […] **Rebateable Service** has the meaning given in the NGR. […]

APTPPL submits that, as it has not accepted the inclusion of Rebateable Services in the access arrangement, these revisions to the terms and conditions are not required.

1.2.4 Concerns over the Rebate Mechanism

APTPPL has a number of concerns over the rebate mechanism, including:

- its compliance with the Rules;
- the mechanism to provide the rebate; and
- its arithmetical calculation.

Each is discussed in turn below.

Compliance with the National Gas Law and National Gas Rules

The AER draft decision requires the following amendment:

Clause	Amendment
AA s4.8.2	***Distribution of Rebate Pool*** Service Provider will rebate to each Shipper taking a Reference Service, or service in the nature of a Reference Service, a proportion of the Rebateable Service Rebate Pool as determined by the following formula: …

APTPPL is most concerned with the AER's inclusion of the phrase, "or service in the nature of a Reference Service" in this required revision.

Rule 94(3)(a) allows the AER to classify a service as a Rebateable Service where:

> (a) the AER is satisfied that the service provider will apply an appropriate portion of the revenue generated from the sale of rebateable services to provide price rebates (or refunds) to the users of reference services

APTPPL considers, from a regulatory principle perspective, that the provision in the Rules to provide rebates "to the users of reference services" is in keeping with the nature of the Rules.

The AER acknowledges this on p10-16 of its draft decision:[5]

> *The NGR provides for rebates to reference service users because their tariff – the reference tariff – includes the costs of providing the rebateable services.*

This "tariffs follow costs" approach is the foundation of Rules 93 and 95. To the extent that the costs of providing the assets that are used to provide these "additional" services are embedded in the Reference Tariffs, then it could be argued that it is reasonable that shippers who pay the Reference Tariff should share in the revenues generated from these "additional" services.

But that argument cannot be said to hold for Negotiated Service users who may take a service "in the nature of the Reference Service". Invariably, a Negotiated Service contract for a service "in the nature of a Reference Service" will be priced at a discount to the Reference Tariff – a shipper would never agree to pay more than the Reference Tariff for a service "in the nature of a Reference Service" when it could simply take the Reference Service at a lower price.

It cannot be said, then, that a Negotiated Service shipper taking a service "in the nature of a Reference Service" is carrying the cost of assets used to provide the "additional" services. Negotiated Service users, therefore, should not be eligible to receive a rebate that is attributable to users of the Reference Service.

APTPPL is concerned that such an amendment by the AER intrudes upon the contractual relationship between the pipeline service provider and Negotiated Service users - under a Negotiated Service, it is the bilateral contract, not the access arrangement, that governs the relationship between the parties. A requirement to provide rebates to users of Non-Reference Services asserts regulatory influence over the pricing of these Non-Reference (ie Negotiated) services, which is beyond the scope of the National Gas Rules and the access arrangement. In APTPPL's view, this aspect of the required revision violates ss321 and 322 of the National Gas Law.

[5] AER draft decision, p10-16.

APTPPL considers that the scope of the "Reference Service" is clearly defined in the access arrangement to provide certainty to shippers and the pipeline service provider as to what Services are required to be provided at the Reference Tariff, and what Services are to be provided subject to negotiated outcomes. Of course, the gas access regime includes a mechanism for shippers to lodge a dispute with the AER if it feels the pipeliner has not negotiated fairly.

APTPPL submits that including the requirement that rebates should be extended to shippers taking Negotiated Services "or service in the nature of a Reference Service" is beyond the scope of the National Gas Law and National Gas Rules, and must not be included in the rebate mechanism.

Should the AER persist in including Rebateable Services in the RBP access arrangement, it must provide that the rebate be applicable only to users of Reference Services.

The rebate mechanism

The AER draft decision requires the following amendment:

Clause	Amendment
AA s4.8.3	***Payment of Rebate*** Service Provider will pay each shipper its proportion of the Rebateable Service Rebate Pool annually within 14 days of the end of each financial year.

The proposed amendment requires cash payments to be made to distribute the balance of the rebate pool.

However, Rule 94(3)(a) provides that the pipeliner can provide either price rebates or refunds (emphasis added):

> (a) the AER is satisfied that the service provider will apply an appropriate portion of the revenue generated from the sale of rebateable services to provide price rebates (or refunds) to the users of reference services

APTPPL considers that a requirement to provide a cash refund requires a new administrative process to be developed, which will add to the costs associated with providing the rebateable services.

APTPPL proposes that, rather than a cash refund mechanism, the access arrangement should provide for a price rebate through prospective adjustments to the Reference Tariff, over the total reserved capacity.[6] This would be accomplished in the tariff variation mechanism, in the same manner as a pass-through. This would allow APTPPL to use an existing mechanism to effect the rebates in a manner consistent with the Rules.

This is also consistent with the AER's draft decision, which commented that applying the Rebateable Service revenues to determine future Reference Tariffs would be in accordance with the NGO and the Revenue and Pricing Principles (emphasis added):[7]

> *Another option is to deduct the revenue received from the proposed revenue requirement for the access arrangement, following the period in which the services were sold by APTPPL. This would be the access arrangement for the five year period commencing 1 July 2022. This would involve a five year lag in returning rebateable amounts to customers. As a refinement of this option, the revenues could be calculated each year based on actual revenue received and deducted from the annual revenue requirement, which would reduce reference tariffs each year for all shippers.*
>
> *In our view, both of these options would promote the NGO and are consistent with the RPPs as they would forestall an arbitrary windfall for a limited number of users. The NGR provides for rebates to reference service users because their tariff – the reference tariff – includes the costs of providing the rebateable services.*

APTPPL proposes that the Rebateable Services Rebate Pool be rebated in much the same way as a pass-through event, such that a balance in the Rebate Pool becomes a pass-through event, subject to the same materiality limits as any other pass-through event.

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[6] This is consistent with the derivation of the Reference Tariff, which is calculated over the forecast reserved capacity of all shippers - those taking Reference Services and those taking Negotiated Services.

[7] AER draft decision p10-16.

APTPPL considers that it would be administratively more expedient, and less costly, to utilise an existing mechanism to effect the rebate than to create a new administrative process. Moreover, as this would be effected through the Tariff Variation Mechanism, the AER would have annual visibility of the amount of revenue earned from these Rebateable Services.

Arithmetical calculation

(APTPPL's concerns over the arithmetical calculation of the distribution of the rebate pool fall away if the AER accepts the price rebate mechanism described above.)

In regards to calculating the amount of rebateable service revenue to be rebated to shippers, the AER draft decision requires the following amendment:

Clause	Amendment
AA s4.8.2	***Distribution of Rebate Pool*** … For in-pipe trading services and/or capacity trading services: $\sum_{Day=1}^{365} 0.70 \left[\frac{Capacity\ Reserved\ Shipper\ n}{Shipper\ n\ Total\ Usage}\right]$ For Park and loan services: $\sum_{Day=1}^{365} 0.90 \left[\frac{Capacity\ Reserved\ Shipper\ n}{Shipper\ n\ Total\ Usage}\right]$

APTPPL has two concerns with the formula in the required amendment:

On contract carriage pipelines, shippers reserve pipeline capacity to meet their needs (usually to accommodate their peak demand) and use that capacity as their daily needs require. In most circumstances, a shipper's usage on a particular day will be less that its reserved capacity.

The ratios in the square brackets above therefore appear to be inverted. As written, these ratios would consistently deliver a result greater than 100%, which would ultimately require APTPPL to rebate more than the balance of the rebate pool.

Also, as written, the rebate formula indicates that the required proportion of the rebate pool is required to be refunded to each shipper (shipper n). As written, the formula would require APTPPL to refund well in excess of the balance in the rebate pool.

APTPPL has engaged with the AER staff on this matter, and proposes that, should the "cash refund" approach be maintained, the formula should be drafted as follows:[8]

For in-pipe trading services and/or capacity trading services:

$$\begin{bmatrix} Inpipe\ trading\ services\ and\ or \\ capacity\ trading\ Service\ Revenue \end{bmatrix} x\ 0.70\ x \sum_{Day=1}^{365} \left[\frac{Capacity\ Reserved\ Shipper\ n}{Total\ Capacity\ Reserved}\right]$$

For park and Loan services:

$$[Park\ and\ Loan\ Service\ Revenue]\ x\ 0.90\ x \sum_{Day=1}^{365} \left[\frac{Capacity\ Reserved\ Shipper\ n}{Total\ Capacity\ Reserved}\right]$$

As discussed above, these calculations fall away if APTPPL's recommended "price rebate" approach is adopted.

1.2.5 Summary – Rebateable Services

In summary, APTPPL has significant concerns over the operation of the required Rebateable Service amendments such that it cannot accept them as proposed in the AER's draft decision. Notwithstanding its concerns over the poor incentives to provide the Rebateable Services, APTPPL has, in this response, provided alternative drafting to ensure that the mechanism is workable.

However, APTPPL is most concerned about the interaction of the Rebateable Service mechanism with the anti-hoarding reforms being implemented in the marketplace by the Gas Market Reform Group, and the incentives created for behaviour that would pervert the objectives of those reforms.

On balance, APTPPL considers that a Rebateable Service mechanism should not be implemented at this time.

[8] See the discussion above regarding the proportion of rebeateable services revenue to be included in the rebate pool.

APTPPL has therefore not implemented the AER's required amendments as they relate to the introduction of Rebateable Services.

2 capital base

This chapter synthesises all matters affecting the regulatory capital base, including those related to:

- the opening capital base at 1 September 2012;
- conforming capital expenditure in the current access arrangement period;
- conforming capital expenditure in the forecast access arrangement period;
- depreciation over the current access arrangement period;
- depreciation over the forecast access arrangement period; and
- the calculation of the tax asset base.

2.1 Required amendments

The AER's draft decision required a number of amendments affecting the capital base:

Reference	Required Amendment
Revision 2.1:	Make all necessary amendments to reflect this draft decision on the roll forward of the capital base over the 2012–17 access arrangement period, as set out in Table 2.1.
Revision 2.2:	Make all necessary amendments to reflect this draft decision on the roll forward of the capital base over the 2017–22 access arrangement period, as set out in Table 2.2.
Revision 5.1	Make all necessary amendments to reflect this draft decision on the regulatory depreciation allowance for the 2017–22 access arrangement period, as set out in Table 5.1.
Revision 5.2	Make all necessary amendments to reflect this draft decision on the remaining asset lives as at 1 July 2017, as set out in Table 5.4.

Reference	Required Amendment
Revision 6.1	Make all necessary amendments to reflect our draft decision on conforming capex for 2011–17, as set out in table 6.1.
Revision 6.2	Make all necessary amendments to reflect our draft decision on conforming capex for 2017–22, as set out in table 6.2.

These revisions, taken as a set, are built on an assumption that APTPPL has accepted the AER's draft decision on all of:

- the opening capital base at 1 September 2012;
- the approach to consolidating asset classes at 1 September 2012;
- the conforming capital expenditure over the 2012-17 access arrangement period (Revision 6.1);
- the allocation of depreciation among asset classes over the 2012-17 access arrangement period;
- the average remaining life of each asset class at 1 July 2017; and
- the forecast of conforming capital expenditure over the 2017-22 access arrangement period (Revision 6.2).

To the extent that APTPPL does not agree with the AER's findings on any of these matters, it will not be able to accept this set of required revisions.

The omnibus nature of these required amendments masks the fact that APTPPL has indeed accepted the vast majority of the AER's required revisions. However, there are two key matters in the AER draft decision with which APTPPL cannot agree:

- the AER's reclassification of historical land slip damage repair from capex to opex; and
- the reduction in forecast integrity management expenditure, particularly surrounding investigations into the presence of stress corrosion cracking.

These are discussed below.

2.2 The opening capital base

2.2.1 *The opening capital base at 1 September 2012;*

The AER approved the opening asset value of $368.8 million ($nominal) as at 1 July 2011 used to commence the roll forward of the capital base.[9]

The current access arrangement commenced on 1 September 2012. This misalignment between the 2012 and 2013 fiscal years created a 14-month "year" (1 July 2011 to 31 August 2012) in one access arrangement period, and a 10-month "year" (1 September 2012 to 30 June 2013) in the next access arrangement period.

As discussed in the APTPPL proposed revised access arrangement submission, APTPPL rolled forward the capital base to include capital expenditure to 31 August 2012, the end of the previous access arrangement period. The AER has accepted this approach, and the conforming capital expenditure to the end of August 2012.

However, APTPPL did not amend the Roll Forward Models to accommodate the 14-month and 10-month years for the purposes of indexing the capital base and calculating the half-year WACC allowed on conforming capital expenditure.

As part of its analysis, the AER made the amendments to the Roll Forward Models to accommodate the 10-month and 14-month regulatory "years", resulting in a slight difference between the opening capital base at 1 September 2012 as proposed by APTPPL, and that as amended by the AER.

APTPPL accepts this component of the AER's required amendments.

2.2.2 *Consolidation of Asset Classes*

In its original proposal, APTPPL reduced the number of asset classes from 25 Asset classes to 11 Asset classes. This was achieved by merging a number of pipeline asset classes into one asset class and merging the separate compressor classes into a single compressor class. The AER has accepted this consolidation of asset classes.

[9] Draft decision p2-16.

However, the AER draft decision required APTPPL to allocate the costs of the RBP8 expansion to the Pipeline, Compression and Meters and Regulators asset classes. APTPPL accepts this component of the AER's required amendments.

2.2.3 *Allocation of depreciation among asset classes*

APTPPL decommissioned four aged compressors in the 2012-17 access arrangement period.

In order to simplify the calculation of the capital base going forward, APTPPL proposed to re-allocate depreciation between asset classes so that the capital base value of the disposed compressors was reduced to nil. While this did not alter the total amount of depreciation reflected in the roll forward model, it did have a minor impact on the calculation of the remaining asset lives of the various classes.

The AER did not accept this re-classification of depreciation, and retained the value of the retired compressors in a separate asset class, which will continue to be depreciated over their remaining economic lives, finishing in the 2017-22 access arrangement period.

This change has a minor impact on the value recorded in, and the calculation of the remaining useful life of, the various asset classes at 30 June 2017. These effects result in cascading impacts on the amount of depreciation forecast for the 2017-22 access arrangement period, and the forecast remaining depreciable lives of the asset classes at 30 June 2022.

While these effects are widespread, they are relatively minor. APTPPL accepts this component of the AER's required amendments.

2.2.4 *Application of Rule 77(2)(a)*

Consistent with its approach to indexation and the half-year timing of capital expenditure, APTPPL did not amend the Roll Forward Model to accommodate the changes in asset classification and forecast capital expenditure to accommodate the 14-month and 10-month regulatory "years" for the purposes of the adjustment associated with the 'benefit or penalty' associated with any difference between the estimated and actual

capital expenditure for values included in the opening capital base established for the earlier access arrangement period under Rule 77(2)(a).

As part of its analysis, the AER imputed 2 months' of the 2012-13 forecast capital expenditure to 2011-12, creating a 14-month forecast capex for 2011-12 and a 10-month forecast of capex for 2012-13. The AER applied these revised values in calculating the "benefit or penalty" under Rule 77(2)(a).

APTPPL accepts this component of the AER's required amendments.

2.2.5 *Indexation of the opening capital base*

As outlined above, the AER draft decision adjusted the amount of indexation of the capital base to accommodate the 14-month and 10-month regulatory "years".

In other respects, APTPPL indexed the capital base for outturn inflation, consistent with the AER's decision of 10 August 2012. While the amount of indexation by asset class would be impacted by the re-allocation of depreciation discussed above, the AER did not raise any further concerns with the methodology used to apply the outturn indexation to the capital base.

APTPPL accepts this component of the AER's required amendments.

2.2.6 *Conforming capital expenditure in the current access arrangement period*

Regarding the amount of conforming capital expenditure over the 2012-17 access arrangement period, the AER required the following amendment:

Reference	Required Amendment
Revision 6.1	Make all necessary amendments to reflect our draft decision on conforming capex for 2011–17, as set out in table 6.1:

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

Category	2011–12[(a)]	2012–13	2013–14	2014–15	2015–16	2016–17	Total 2012–17
Expansion	50.3	3.2	2.5	0.0	–	–	5.7
Replacement	–	0.7	2.3	4.0	4.5	6.3	17.7
Stay in business	7.6	2.4	4.4	13.8	5.5	12.0	38.1
GROSS TOTAL CAPEX	**57.9**	**6.3**	**9.2**	**17.8**	**10.0**	**18.2**	**61.5**
Contributions	–	–	0.1	–	–	–	0.1
Asset disposals	–	0.1	0.1	0.0	–	–	0.2
NET TOTAL CAPEX	**57.9**	**6.1**	**9.0**	**17.7**	**10.0**	**18.2**	**61.1**

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

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

The AER did not accept APTPPL's proposals regarding historical capital expenditure to address damage done to the pipelines as a result of flooding and land slippage.

APTPPL does not accept the AER's draft decision in this regard. Clarification on this expenditure is provided in more detail below.

2.2.6.1 *Expansion capital expenditure*

The AER accepted the expenditure on RBP8 that incurred in the current access arrangement period. APTPPL is not proposing any changes to its proposal or the AER's draft determination on this matter.

2.2.6.2 *Replacement capital expenditure*

The AER accepted the expenditure on replacement capital expenditure incurred in the current access arrangement period. APTPPL is not proposing any changes to its proposal or the AER's draft determination on this matter.

2.2.6.3 *Stay in business*

The AER has approved the majority of APTPPL's proposal in relation to stay in business related capital expenditure with the exception of that capital expenditure related to flood and land slip related damage repairs.

Emergency works (flood related capital expenditure)

In 2011 flooding caused significant damage to the RBP. Some of the capital expenditure incurred as a result of this damage was included in the capital base at the start of the current AA.

Unfortunately, there was further flooding and flood-related land slippage in 2013 and 2014 that also resulted in damage to the RBP. This required capital expenditure additional to that which had been identified at the time of the last access arrangement revision.

The AER draft decision indicates the basis for its decision to reject this capital expenditure is that it is better categorised as operating expenditure. It bases this on:

1. APTPPL did not elaborate on why this expenditure was capital rather than operating expenditure
2. APTPPL previously treated flood related expenditure as operating expenditure
3. The AER considers the work in the previous period similar to those in the current period
4. The AER considers the operating expenditure allowance for 2012-17 sufficient to cover flood related expenditure

APTPPL has addressed each of these points below.

APTPPL did not elaborate on why this expenditure was capital rather than operating expenditure

APTPPL has previously provided the AER with a full and detailed outline why it considers the flood related expenditure to be capital expenditure. APTPPL has reproduced the AER's question, and our response, below:

AER Question

Please explain why APA has proposed flood recovery costs for the 2012-17 period as capex rather than opex.

APTPPL response to AER

The reasons for proposing flood recovery expenditure as capex is that it reflects the nature of that expenditure. The historic expenditure that APTPPL have supplied is consistent with Australian Accounting Standards.

Statement of Accounting Concepts 4 states that an asset should be recognised [capital expenditure].

> *An asset should be recognised in the statement of financial position when and only when:*
>
> a. *it is probable that the future economic benefits embodied in the asset will eventuate; and*
>
> b. *the asset possesses a cost or other value that can be measured reliably.*

In this context APTPPL notes that the avoidance of risk or future expenditure provides economic benefits. The nature of the expenditure is such that it reduces risk (safety, operational and financial risk) or is part of a larger project that reduces risk.

In addition, APTPPL considers that this capital expenditure will allow the pipeline to achieve its expected economic life. In the absence of this capital expenditure, either a) the economic life would likely need to be reduced, or b) the pressure (and capacity) would need to be reduced, which would reduce the future revenue generating potential of the pipeline, and result in a writedown to the asset value.

Marburg Range

As noted in the business case (AA-01) APTPPL undertook HDD to lower both the 250mm and 400mm pipelines below the level of the unstable land. As noted in that business case this avoids the significant risk of the pipeline being damaged as the result of future land movement. This makes it capex as a result of avoided financial risk being an economic benefit.

Sandy Creek

Also as noted in the business case (AA-01) APTPPL lowered both the 250mm and 400mm pipelines below the new level of the creek bed[10]. This avoids the significant risk of the pipeline being damage by the actions of the creek and debris. This makes it capex as a result of avoided financial risk being an economic benefit.

[CONFIDENTIAL]

APTPPL previously considered flood related expenditure as operating expenditure

The AER draft determination states

> *We note APTPPL previously treated flood related costs as opex. In its 2011 base year opex forecast APTPPL removed some of the flood related costs in incurred in 2011. APTPPL anticipated that it would recover the majority of its flood related costs through insurance except for ordinary labour costs. APTPPL left the remaining flood costs in its base year opex.*

The effect of the expenditure being covered by insurance is twofold:

1. APTPPL has already been compensated for this expenditure so it is not included in any of the building blocks that form the prices charged to customers
2. The event that created the need for the expenditure also created the insurance payment. That is, while there was an economic benefit[11] the creation of this benefit was immediate. This means that the insurance covered expenditure is operating expenditure.

Not all expenditure as a result of the floods in the current access arrangement period was covered by insurance.

In order to provide the AER with the complete picture in relation to the flood related expenditure in the current access arrangement period APTPPL

[10] APTPPL actually installed new pipe below the level of the unstable land.

[11] Consistent with accounting definitions of an asset.

provided all expenditure on a project basis before netting off insurance. We did not distinguish the nature of the expenditure between "covered by insurance" (operating expenditure) and "not covered by insurance" (capital expenditure). This is simply because the former was not included in our pricing proposal in any form so its exact status was not important.

The AER considers the work in the previous period similar to those in the current period

The AER draft decision notes:

> *We have also compared the repair works undertaken in the previous access arrangement period to the current access arrangement period and we consider these works are of a similar nature.*

Where the expenditure in the current access arrangement period was of a similar nature to that in the previous access arrangement period (ie covered by insurance) it was treated in the same way – it was not included in the RAB or base year operating expenditure.

The capital expenditure included in the capital base in APA's proposal and this revised proposal reflects the deductibles on the insurance policy (ie that portion of the expenditure not covered by insurance) and capital expenditure costs for major repair and replacement costs that APA's insurer rejected as being directly linked to an insurable event, for example the Marburg Range capital expenditure that was necessitated by ongoing land slippage.

The basis that APTPPL has treated this as capital expenditure is set out above. As the AER note in their draft decision APTPPL has provided the details of expenditure to the AER in the original proposal, business case and subsequent responses to AER information requests.

Even if the AER was to take the position that the projects in the previous access arrangement period were operating cost in nature even in the absence of insurance, a position rejected by APTPPL, there is no similarity in the projects undertaken on the Marburg range and Toowoomba escarpment with that work undertaken in the previous access arrangement.

The Marburg Range work involved construction of around 800 metres of new DN250 and DN400 pipeline, using HDD methodology to re-route and avoid the unstable land area. New pipe was designed and procured for this, and it was a major construction project.

The Toowoomba Escarpment involved construction of 70 metres of new pipeline using new materials to replace the area susceptible to ground movement, as well as another nearby section of new pipeline at the railway crossing.

At Sandy Creek, in order to facilitate the operational characteristics of the pipeline, the lowering was achieved by constructing new tie in spools at each end of the lowered section. In contrast, the Rocky Creek lowering[12] during the previous access arrangement period did not need new tie in spools.

In all cases the exposed pipeline was completely stripped and refurbished with modern protective coatings which are expected to provide an ongoing lifetime similar to the design lifetime of a new pipeline. This replaced the old coating / pipe which was over 45 years old at the time and approaching or at the end of its serviceable life.

Generally projects in the previous access arrangement period focused on the reinstatement of trenches and creek beds[13] or cleaning up sites[14] rather than a focus on the pipeline itself like those projects in the current access arrangement period.

In summary where the expenditure is similar in the two access arrangement periods it has been treated in a similar manner. It is the differences between the expenditure in the current access arrangement and that in the previous access arrangement that mean the former is capital expenditure.

[12] The only pipeline lowering in the previous access arrangement period.

[13] There was a minor cutout on the Toowoomba Escarpment.

[14] For example, the cleaning of mud and debris from the Arubial receipt point was recorded as opex; replacement of the flood-destroyed SCADA equipment was recorded as capex.

The AER consider the operating expenditure allowance for 2012-17 sufficient to cover flood related expenditure

The AER state:

> *"Since APTPPL has already received flood related costs in its 2012–17 opex forecast we do not consider the proposed 2012–17 flood related capex satisfies the new capex criteria."*

The AER's statement is not correct - APTPPL has not received flood related costs in its 2012-17 operating expenditure forecast. The AER's 2012 final decision allowed for a "business as usual" level of operating costs. It did not include an amount in the base year or forecast operating expenditure for flood related expenditure.

The AER's approach to setting the operating expenditure forecast was consistent with its base year roll forward approach. That is the AER started with the operating expenditure from 2011 in the previous access arrangement. The AER adjusted this operating expenditure for any one of activities that occurred in that year that would not be expected in the future. The AER then based a forecast on scope changes and step changes. The AER did not include in the either the base year or the forecast an amount to allow for the recovery of flood related expenditure or any allowance for unexpected events in the future.

There is simply no basis for a claim that APTPPL has "already received flood related costs in its 2012–17 opex forecast".

2.2.7 *Capital base roll forward 2012/13 to 2016/17*

The closing capital base as at 30 June 2017 shown below reflects those required amendments which APTPPL has implemented as requested, as discussed in the sections above. It also reflects the conforming capital expenditure for which APTPPL has provided further explanation as discussed above. This also includes actual amounts for conforming capex incurred to June 2017.

APTPPL has applied the forecast depreciation from the AER's 20 August 2012 final decision to roll forward the capital base.

Table 2.1: Capital base roll forward 2012/13 to 2016/17 ($m nominal)

($m, nominal)	2012/13	2013/14	2014/15	2015/16	2016/17
Opening capital base	417.07	420.75	427.47	438.88	437.15
Plus net conforming capex	5.94	10.85	23.63	10.16	18.84
Plus speculative capex	-	-	-	-	-
Plus reused redundant assets	-	-	-	-	-
Less depreciation	- 12.69	- 16.46	- 17.91	- 17.65	- 16.78
Plus indexation	10.43	12.33	5.69	5.75	9.31
Adjustment for previous period	-	-	-	-	3.71
Closing capital base	**420.75**	**427.47**	**438.88**	**437.15**	**452.22**

2.3 Forecast capital base

Regarding the forecast capital base, the AER draft decision required the following amendment:

Reference	Required Amendment
Revision 2.2:	Make all necessary amendments to reflect this draft decision on the roll forward of the capital base over the 2017–22 access arrangement period, as set out in Table 2.2.

Table 2.2 AER's draft decision on APTPPL's projected capital base roll forward for the 2017–22 access arrangement period ($million, nominal)

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

Source: AER analysis.

This required revision is necessarily built on an assumption that APTPPL has accepted the AER's draft decision on:

- all of the factors contributing to the calculation of the opening capital base at 1 July 2017 (and cascading into the depreciation and indexation calculations);

- the forecast of 2017-22 conforming capital expenditure; and
- the forecast rate of inflation to be applied to index the capital base going forward.

The factors contributing to the value of the opening capital base were discussed in section 2.2. This section discusses the forecast of conforming capital expenditure and the forecast rate of inflation to be applied to index the capital base.

2.3.1 *Opening capital base in 2017*

The opening capital base as at 1 July 2017 reflects the closing capital base as at 30 June 2017 as discussed above.

The projected capital base for the access arrangement period is shown in Table 2.2.

Table 2.2: Projected capital base for the access arrangement period ($nominal)

($m, nominal)	2017/18	2018/19	2019/20	2020/21	2021/22
Opening capital base	452.22	473.81	484.43	484.99	493.32
plus indexation	11.08	11.61	11.87	11.88	12.09
plus forecast capex	27.22	17.12	7.57	9.45	9.63
less forecast depreciation	16.72	18.10	18.88	13.00	11.13
less forecast disposals	-	-	-	-	-
less forecast redundant assets	-	-	-	-	-
Closing capital base	**473.81**	**484.43**	**484.99**	**493.32**	**503.90**

2.3.2 *Conforming capital expenditure in the forecast access arrangement period*

In its draft decision, the AER required the following amendment:

Reference	Required Amendment
Revision 6.2	Make all necessary amendments to reflect our draft decision on conforming capex for 2017–22, as set out in table 6.2:

Table 6.2 AER approved capex by category over the 2017–22 access arrangement period ($million, 2016–17)

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

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

In the draft decision, the AER accepted the majority of RBP's forecast capital expenditure program with the exception of:

- Pipeline integrity management - the AER rejected $5.9m; and
- Dalby turbine overhaul - rejected total expenditure of $1.3m.

These are discussed below.

2.3.2.1 *Pipeline integrity management*

The AER rejects APA's forecast on the basis that it considered the number of dig ups too high and the cost per dig is too high as APTPPL was undertaking stress corrosion cracking assessments at each dig up.

The AER reduced the number of digups and the unit cost per dig up.

The number of integrity dig ups

The AER indicated that the number of dig ups in APTPPL's forecast was too high on the basis that we had provided a forecast that only had 473 dig ups.

This number was provided in response to an AER information request specifically asking about dig ups for corrosion purposes. In our response, it appears we did not adequately specify that the 473 dig ups related solely to dig ups for corrosion purposes. This may have produced some confusion in the AER's understanding of the number of digups required to maintain pipeline integrity.

The 473 dig ups that the AER draft decision relies on is not the complete set of forecast digups. It excludes those forecast digups that relate to dents, stress corrosion cracking or pipeline strain. As the AER would recognise, reducing the number of dig ups to those that only relate to corrosion and ignoring other sources of damage is not consistent with the safe and reliable operation of the pipeline, and therefore not in keeping with the National Gas Rules or NGO.

In our proposal, and in this revised proposal, APTPPL have proposed 609 excavations, which is supported by our integrity management system forecasts.

Unit cost per dig up

As the AER recognises, APTPPL has based the unit cost per dig up on historical costs incurred on the RBP.

The AER has indicated that undertaking assessment for stress corrosion cracking (SCC) at every dig ups is unwarranted.

The AER draft decision suggests that, because stress corrosion cracking has historically been located in only 12% of dig ups, then SCC assessment should only be undertaken at 12% of dig ups. The only way this could be possible is if APTPPL has a flawless way of identifying those locations where stress corrosion cracking is present. This is not the case.

Even with modern EMAT techniques, there are limitations on the nature of stress corrosion cracking that can be detected, absent undertaking assessment at all dig ups. Of the two types of stress corrosion cracking – axial

and circumferential - the EMAT tools available for the DN250 are capable of detecting larger axial stress corrosion cracking, but not capable of detecting circumferential stress corrosion cracking and small axial stress corrosion cracking. This can only be detected by dig up assessment. Since the evidence to date indicates that the RBP is susceptible to SCC, it would be imprudent to not inspect for SCC on every dig up.

Three historical failures have been caused by circumferential stress corrosion cracking, and a percentage of stress corrosion cracking detected by assessment at dig ups to date has been either circumferential stress corrosion cracking, or a combination of axial and circumferential cracking (that is, not straightforward linear axial cracking). Given no ILI tools are available to detect circumferential stress corrosion cracking, continued assessment at dig ups is the only method available currently to manage this risk. The risk of stress corrosion cracking is required to be assessed under AS2885.3 Clause 6.5(c).

Crack detection is undertaken on all dent excavations as their most likely failure mode is by fatigue cracking or stress corrosion cracking – which is unlikely to be detected by EMAT due to sensor disturbance or possible circumferential orientation.

APTPPL has included forecast capital expenditure that is consistent with the appropriate forecast of dig ups and continued assessment for stress corrosion cracking at dig ups.

2.3.2.2 *Dalby Turbine overhaul*

In its September 2016 submission, APTPPL proposed that an overhaul of the Dalby turbine would be required in the last year of the forecast access arrangement.

At the time this proposal was based on usage data to the end of 2015. Based on more recent usage data, the AER rejected the overhaul on the basis that it would not be likely to be required in the forecast access arrangement period.

APTPPL has forecast the usage patterns of the Dalby compressor based on the updated usage information. While we anticipate the usage of the turbine to increase again beyond what was experienced in 2016 and 2017

we do not think that future usage is likely to require its overhaul in the forecast access arrangement period. APTPPL has removed it from the forecast capital expenditure in the revised proposal.

2.3.2.3 *Summary – forecast conforming capital expenditure*

With these revisions, this revised proposal features the following forecast of conforming capital expenditure for the 2017-22 access arrangement period:

Table 2.3: Forecast capital expenditure over the access arrangement period ($2016/17)

Asset Class	2018	2019	2020	2021	2022
Original Pipeline	15.82	11.59	4.90	4.67	6.23
Pipelines	7.03	2.55	0.86	2.44	0.45
Compressors	0.10	0.10	-	-	-
Regulators and meters	0.26	-	0.08	-	-
Easements	-	-	-	-	-
Communications	-	-	-	-	-
Other	-	-	-	-	-
Capitalised AA costs	0.07	-	-	0.06	0.91
Group IT	1.61	0.59	0.49	0.64	0.43
SIB Capex	1.03	1.08	0.53	0.55	0.30
PMA	-	-	-	-	-
Total	**25.92**	**15.91**	**6.86**	**8.37**	**8.32**

2.3.3 *Forecast Depreciation*

In its draft decision, the AER required the following amendment:

Reference	Required Amendment
Revision 5.1	Make all necessary amendments to reflect this draft decision on the regulatory depreciation allowance for the 2017–22 access arrangement period, as set out in Table 5.1:

Table 5.1 AER's draft decision on APTPPL's regulatory depreciation allowance for the 2017–22 access arrangement period ($million, nominal)

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

Source: AER analysis.

As alluded above, acceptance of this amendment is contingent on the acceptance of the inputs to the forecast depreciation calculation, including the opening capital base, asset classification, historical and forecast capital expenditure, and remaining lives.

While APTPPL does not disagree with this required amendment *per se*, the revised proposal forecast depreciation schedule reflects the outworkings of the discussions on these matters above.

Table 2.4: Forecast depreciation over the access arrangement period ($2016/17)

($m, nominal)	2017/18	2018/19	2019/20	2020/21	2021/22
Straight-line depreciation	16.72	18.10	18.88	13.00	11.13
Indexation	11.08	11.61	11.87	11.88	12.09
Regulatory depreciation	5.64	6.49	7.01	1.12	- 0.95

2.3.3.1 *Application of forecast depreciation at next access arrangement revision*

The AER draft decision required the following amendment:

Reference	Required Amendment
Revision 2.3:	Update the access arrangement (section 3.6) to set out the depreciation schedule used for rolling forward the capital base at the commencement of the 2022–27

Reference	Required Amendment
	access arrangement period as follows: The depreciation schedule (straight-line) for establishing the opening capital base at 1 July 2022 will be based on forecast capital expenditure at the asset class level.

One of the drivers of the difference between the APTPPL-proposed and AER draft decision remaining lives was APTPPL's proposal to allocate depreciation to the asset class containing redundant compressors to reduce the value in this asset class to zero. The AER did not accept this proposal, and accordingly retains a value in a "Redundant compressors" asset class to depreciate these assets over their original estimated economic lives.

APTPPL accepts that its proposal to re-allocate the allowed depreciation across asset classes had a minor effect on the remaining useful lives of the remaining asset classes. Required revision 2.3 requires APTPPL to roll forward the capital base to the next AA period by strictly adhering to the amount of forecast depreciation by asset class, rather than in total.

APTPPL is concerned that this approach to depreciation will require a rigid adherence to asset classification, which may not be appropriate once an additional 5 years' experience has elapsed. Such a rigid requirement may fall afoul of Rule 89(1)(c):

> 89 Depreciation criteria
>
> (1) The depreciation schedule should be designed:
>
> (c) 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;

APTPPL considers that the AER's required revision in this area will preclude any "adjustment reflecting changes in the expected economic life of a particular asset, or a particular group of assets" at the next access arrangement revision review.

APTPPL submits that its approach to rolling forward the capital base by the total of the previously forecast depreciation, rather than being specifically confined to a rigid roll forward by forecast depreciation by asset class, is more in keeping with the Rules in this area.

APTPPL does not agree that this required revision is either necessary or sensible (or compliant with the Rules), and has therefore not implemented it is its revised access arrangement.

2.3.4 *Remaining asset lives*

Regarding remaining asset lives for the purposes of calculating depreciation over the forecast access arrangement period, the AER draft decision requires the following amendment:

Reference	Required Amendment
Revision 5.2	Make all necessary amendments to reflect this draft decision on the remaining asset lives as at 1 July 2017, as set out in Table 5.4:

Table 5.4 AER's draft decision on RBP's standard and remaining asset lives as at 1 July 2017 (years)

	Standard asset life	Remaining asset life
Original pipeline (DN250)	n/a	34.3
Pipelines	80	65.2
Compressor	35	30.0
Regulators and meters	40	34.5
Easements	n/a	n/a
Communications	15	5.0
Other	5	n/a
Capitalised AA costs	5	4.9
Group IT	5	3.6
SIB capex	5	3.3
PMA	n/a	3.0
Redundant compressors[a]	n/a	2.9

Source: AER analysis.
n/a Not applicable.
a. The purpose of this asset class is to fully depreciate the residual value of the redundant compressors over the 2017–22 access arrangement period. We did not assign a standard asset life to this asset class because no new capex will be allocated to this asset class for the 2017–22 access arrangement period.

The calculation of the remaining asset lives is a function of all the matters that have been discussed to this point.

While APTPPL accepts that a revision to asset lives will be required, it has included asset lives that reflect the matters discussed above.

Table 2.5: Remaining asset lives

Reference	Remaining asset life (years)
Original Pipeline (DN250)	35.8
Pipelines	65.4
Compressor	30.0
Regulators and meters	34.5
Easements	n/a
Communications	5.0
Other	0.0
Capitalised AA costs	4.9
Group IT	3.6
SIB Capex	3.3
PMA	3.0

2.3.5 *Indexation of the capital base*

APTPPL has consistently stated that it does not take issue with the AER's approach to forecasting for the rate of inflation. APTPPL has therefore reflected the AER's forecast level of inflation in the PTRM for the purposes of forecasting the indexation of the capital base over the upcoming access arrangement period.

However, like any forecast, the AER's forecast of inflation is destined to be proven incorrect.

APTPPL maintains the position, put forward in the September 2016 proposal, that the impact of the inevitable differences between forecast and outturn

inflation must be sterilised, to the extent possible, from the calculation of allowed revenues and the future indexation of the capital base. Failure to do so subjects the service provider to uncontrollable inflation risk, which is not compensated through the allowed rate of return.

This is discussed in more detail in section 2.4

2.3.6 *Projected capital base over the period*

Having regard to all the foregoing matters, APTPPL's projected capital base is as follows:

Table 2.6: Projected capital base to 30 June 2022 ($m nominal)

($m, nominal)	2017/18	2018/19	2019/20	2020/21	2021/22
Opening capital base	452.22	473.81	484.43	484.99	493.32
plus indexation	11.08	11.61	11.87	11.88	12.09
plus forecast capex	27.22	17.12	7.57	9.45	9.63
less forecast depreciation	16.72	18.10	18.88	13.00	11.13
less forecast disposals	-	-	-	-	-
less forecast redundant assets	-	-	-	-	-
Closing capital base	**473.81**	**484.43**	**484.99**	**493.32**	**503.90**

2.4 Treatment of inflation in the access arrangement

The Draft Decision advises that Reserve Bank of Australia (RBA) forecasts of inflation and the target band approach are likely to result in the best forecast of inflation possible in the circumstances. The methods used to calculate the impact of inflation, forecast in this way, on regulated revenues and asset values are, then, the AER contends, the methods in the roll forward model (RFM) and the post-tax revenue model (PTRM). The use of these methods for calculating the impact of inflation on regulated revenues and asset values will, in the AER's view, achieve the national gas objective. [15]

The AER does not, therefore, accept APTPPL's proposal for the treatment of inflation in the RFM and the PTRM.

[15] AER 2017, RBP Gas Access Arrangement 2017 to 2022: Draft Decision: Attachment 3 – Rate of return, page 3-156.

APTPPL is of the view that the methods which the AER uses to calculate the impact of inflation on regulated revenues and asset values, the methods in the RFM and the PTRM, together with the actual inflation adjustment of the reference tariff variation mechanism of the RBP Access Arrangement, deliver appropriate compensation for inflation when forecast and actual inflation are the same.

However, making accurate forecasts of inflation over an extended period (the five years of an access arrangement period) is difficult. Any forecast – including a forecast made using the available RBA forecasts and the target band approach – is very likely to be different from actual inflation. In these circumstances, the treatment of inflation within the RFM, PTRM and the tariff variation mechanism should be such that the effects of differences between forecast and actual inflation are minimised by correction of those differences wherever possible.

When forecast and actual inflation are different, the RFM and the PTRM, together with the inflation adjustment of the reference tariff variation mechanism, do not deliver appropriate compensation for inflation. Reference tariffs are either too low or too high and, in consequence, do not provide effective incentives for the promotion of efficiency, including efficient investment, efficient provision of pipeline services, and efficient pipeline use. They do not provide incentives for efficient investment in, and the efficient operation and use of, natural gas services for the long term interests of consumers of natural gas.

The proposal in APTPPL's revisions to the RBP Access Arrangement is for a series of corrections, which would be applied going forward, to provide the approximately correct compensation for inflation. (The nature of the inflation adjustments, their timing, and the timing of the release of inflation statistics, preclude exact compensation for inflation). The result is a reference tariff which is an approximately correct outcome for both the service provider and users of its pipeline system. APTPPL is of the view that conditions for the ideal outcome, achieved when forecast and actual inflation are the same, are never likely to be realised. APTPPL's proposal provides a better outcome than is currently achieved with the methods of the RFM, the PTRM and the reference tariff variation mechanism.

While the AER draft decision on the RBP access arrangement did not engage with this issue as it relates to the capital base,[16] the AER disagrees with APTPPL's proposal to align the PRTM and RFM through minor changes to the PTRM to adjust inflation adjustment over time. The AER is of the view that the proposal which APTPPL has put forward in its revisions to the RBP Access Arrangement:

- overlooks the effect of inflation on other building blocks within the PTRM
- overlooks the effects of annual pricing adjustments within the access arrangement period which effectively remove the forecast inflation used in the PTRM and apply actual inflation each year
- does not consider the alignment between inflation in the return on capital building block and inflation deducted from the return of capital building block, an alignment which is crucial because, in the AER's view, the inflation adjustment included in the regulatory depreciation is directly linked to the method used to calculate the return on capital building block
- does not align APTPPL's lagged actual inflation update in the PTRM with actual inflation used in the tariff variation mechanism, or with inflation in the RFM.

APTPPL's concerns arise from the discrepancy which arises when actual inflation is used in applying the RFM, at the end of an access arrangement period, to roll forward the capital base after having previously established an allowance for return of capital using a forecast of inflation in the PTRM at the commencement of that period. Other things being equal, if the actual inflation used in the RFM is different from the forecast of inflation which was previously used in the PTRM, then the return of capital via reference tariffs will not be the same as the return of capital assumed when rolling forward the capital base. There will be either an over-recovery or under-recovery of the capital base. Neither over-recovery, nor under-recovery, is conducive to efficient investment in the pipeline system, or to the efficient operation and

[16] The AER did discuss this matter in the context of developing a more accurate forecast rate of inflation in the PTRM (Attachment 3, p3-155 et seq), but does not appear to have engaged with the issue from the perspective of the mismatch in the calculation of the value of the capital base.

use of the system, and is therefore not in the long term interests of consumers of natural gas.

This is easily demonstrated, and APTPPL showed the effect of the difference in its access arrangement revisions proposal.

The AER contends that APTPPL overlooked the effects of annual pricing adjustments within the access arrangement period, which effectively removes the forecast inflation used in the PTRM and applies actual inflation each year.

Certainly, APTPPL did not deal with the implications of the reference tariff variation mechanism in the proposed treatment of inflation in the RBP Access Arrangement revisions. APTPPL has, nevertheless, examined the question of whether over-recovery or under-recovery of the service provider's investment is corrected through the operation of the tariff variation mechanism. It is not.

If actual inflation is lower than forecast inflation, then the return of capital would be accelerated and depreciation in the RFM would be higher than depreciation in the PTRM when it was applied in determining reference tariffs for the same regulatory period. The return of capital through the allowed revenue of the PTRM would be too low. This would not be corrected through the operation of the reference tariff variation mechanism of the RBP Access Arrangement. That mechanism operates to lower the revenue earned by the service provider when inflation is lower. When actual inflation is lower than forecast inflation, and the return of capital should increase, the tariff adjustment of the reference tariff variation mechanism works in the opposite direction to lower revenue and to lower the recovery of capital.

Conversely, if actual inflation were higher than forecast inflation, the return of capital would be deferred, and depreciation in the RFM would be lower than depreciation in the PTRM: the return of capital through the allowed revenue of the PTRM would be too high. Again, this would not be corrected through the operation of the RBP reference tariff variation mechanism. That mechanism would operate to increase the revenue earned by the service provider, and increase the recovery of capital.

There is no reason to not use actual inflation in the RFM. But if actual inflation is used in the RFM, then an adjustment is required, either to the PTRM or to the reference tariff variation mechanism, or to both, to ensure that the recovery

of capital effected through tariffs subsequently matches the recovery of capital assumed in capital base roll forward. APTPPL has proposed making this adjustment in the PTRM by using the updating mechanism now included for the rate of return on debt to also update for changes in inflation. If the PTRM uses inflation updated in the way APTPPL proposes, there will be an approximate match between the capital recovery effected through reference tariffs and the capital recovery assumed in the RFM. The RFM will produce the correct opening capital base going forward.

This ongoing correction of those differences between actual and forecast inflation will not introduce any systematic bias towards overcompensation of the service provider as the AER suggests. Correction of error, in the way APTPPL proposes, is not the ex post selection to which the AER refers in section 2.5.2.1 of Attachment 2 to the APA VTS Draft Decision.

The APA VTS Draft Decision advises that APTPPL's proposal for inflation and depreciation does not consider the alignment between inflation in the return on capital building block and inflation deducted from the return of capital building block, an alignment which, the AER says, is crucial because the inflation adjustment included in the regulatory depreciation is directly linked to the method used to calculate the return on capital building block. APTPPL is, in effect, overlooking the effect of inflation on other building blocks within the PTRM.

There is, APTPPL acknowledges, an alignment between inflation in the return on capital building block and in the return of capital building block. That alignment is achieved through the use of a single forecast of inflation at the time total revenue and reference tariffs are determined for an access arrangement period. Once that initial determination has been made, the "alignment" is broken through the application of the reference tariff variation mechanism which effectively replaces the single forecast of inflation used at the time of total revenue and reference tariff determination with actual inflation year by year. To the extent that there is alignment, it is not as crucial as the Draft Decision indicates. The inflation in the return on capital building block does not need to be the same as the inflation in the return of capital building block. The post-tax revenue model anticipates delivery of a nominal rate of return on an original cost asset base and, ultimately, a return of that asset base. This outcome is unaffected by an inflation assumption made for the depreciation calculations of the post-tax revenue model which is different from the inflation assumed to be embedded in the model's nominal

rate of return. It is easily demonstrated using an extended PTRM. It is a particular instance of the well-known "depreciation invariance" result: if the regulated business is allowed to earn its nominal cost of capital on a depreciated original cost asset base, and actual earnings are equal to allowed earnings, then NPV is zero for any method of calculating depreciation.[17] APTPPL does not, in effect, overlook the effect of inflation in other building blocks within the PTRM.

APTPPL's proposal, the Draft Decision notes, does not give consideration to the service provider receiving a fixed nominal rate of return for the 2012-2017 access arrangement period, and an annually updated real rate of return for the 2017-2022 access arrangement period. This seems, to APTPPL, not to be correct. In the period 2012-2017, the service provider is ultimately returned, via the scheme of the PTRM and the reference tariff variation mechanism, an annually updated rate of return on equity. APTPPL's proposal for 2018 onwards does not significantly change this. A part of the inflation adjustment is made through the PTRM, via the annual updating process. To the extent that the inflation in the PTRM does not match actual inflation, a further adjustment is made via the reference tariff variation mechanism. Whether the rate of return on equity is an updated real rate of return is open to question: the rate of return of rule 87 is to be a nominal rate.

In its RBP Access Arrangement revisions, APTPPL proposed to:

- use, in the PTRM, for calculation of the total revenue for the period 2017-2022, a forecast of inflation which is equal to actual inflation immediately prior to the start of the period
- annually update this forecast of inflation during the access arrangement period, using actual inflation, and progressively incorporate the effects of the changes in depreciation in the reference tariffs through changes to the Scheduled Reference Tariff Variation Mechanism of the RBP access arrangement
- specifically, update the year-on-year forecast of inflation using the change in the December quarter Consumer Price Index (CPI):

[17] See, for example, Richard Schmalensee (1989), "An Expository Note on Depreciation and Profitability under Rate-of-Return Regulation", Journal of Regulatory Economics, 1: pages 293-298.

- for the regulatory year from July 2018 – June 2019, the estimate of expected inflation would be the change in the CPI from December 2016 to December 2017
- for the regulatory year from July 2019 – June 2020, the estimate of expected inflation would be the change in the CPI from December 2017 to December 2018
- for the regulatory year from July 2020 – June 2021, the estimate of expected inflation would be the change in the CPI from December 2018 to December 2019
- and so on

- apply actual inflation in the roll forward model when establishing the RBP capital base at the start of subsequent access arrangement periods.

APTPPL has applied the elements of this approach in responding to the Draft Decision.

APTPPL is of the view that the AER's roll forward of the RBP capital base using actual inflation in the roll forward model, contrasted against the approach of using forecast inflation in the post-tax revenue model, leads to reference tariffs which are either too low, or too high. Those tariffs, in consequence, do not provide effective incentives for the promotion of efficiency, including efficient investment, efficient provision of pipeline services, and efficient pipeline use. They do not provide incentives for efficient investment in, and the efficient operation and use of, natural gas services for the long terms interests of consumers of natural gas.

In responding to the Draft Decision APTPPL has substituted, for the AER's current approach, its earlier proposal which corrects the deficiencies in that current approach.

2.5 Tax Asset Base

Regarding the Tax Asset Base, the AER required the following amendment:

Reference	Required Amendment
Revision 8.2	Make all necessary amendments to reflect this draft decision on the opening tax asset base as at 1 July

Reference	Required Amendment
	2017, as set out in Table 8.4.

Table 8.4 AER's draft decision on APTPPL's tax asset base roll forward for the 2012–17 access arrangement period ($million, nominal)

	2012–13	2013–14	2014–15	2015–16	2016–17
Opening tax asset base	134.2	126.7	122.3	126.3	121.7
Capex	5.7	8.6	17.3	9.9	18.2
Tax depreciation	–13.2	–13.0	–13.3	–14.4	–13.5
Closing tax asset base	126.7	122.3	126.3	121.7	126.4

Source: AER analysis.

APTPPL has rolled forward the TAB in the earlier access arrangement period using the same principles as the normal asset base roll forward. That is, APTPPL has applied the AER's Asset Base Roll Forward Model adopting the opening TAB in the earlier access arrangement period, and rolled it forward using actual capital expenditure using the AER's PTRM methodology. As the TAB is not indexed, it was not necessary to update the roll forward for outturn CPI increases.

As with the matters discussed above, the calculation of the Tax Asset Base will be a function of other amendments. APTPPL has calculated the Tax Asset Base to reflect those amendments. The TAB roll forward to 30 June 2017 is shown in Table 2.7, and the forecast TAB is shown in Table 2.8.

Table 2.7: Tax Asset Base as at 30 June 2017 ($m nominal)

($m, nominal)	2012/13	2013/14	2014/15	2015/16	2016/17
Opening TAB	134.18	126.78	124.25	133.84	128.89
Net additions	5.77	10.45	22.95	9.87	18.22
Tax depreciation	- 13.17	- 12.98	- 13.36	- 14.82	- 13.94
Closing TAB	**126.78**	**124.25**	**133.84**	**128.89**	**133.17**

Table 2.8: Forecast Tax Asset Base ($nominal)

($m, nominal)	2017/18	2018/19	2019/20	2020/21	2021/22
Opening TAB	133.17	146.21	147.64	138.81	132.89
Net additions	26.56	16.70	7.38	9.22	9.39
Tax depreciation	- 13.52	- 15.26	- 16.22	- 15.13	- 14.33
Closing TAB	**146.21**	**147.64**	**138.81**	**132.89**	**127.96**

The TAB is then applied to determine the corporate income tax allowance derived for the revenue model as indicated in 5.6.

2.5.1 Remaining tax asset lives

Regarding tax asset lives, the AER required the following amendment:

Reference	Required Amendment
Revision 8.3	Make all necessary amendments to reflect this draft decision on the standard and remaining tax asset lives for the 2017–22 access arrangement period as set out in Table 8.5.

Reference	Required Amendment

Table 8.5 AER's draft decision on APTPPL's standard tax asset lives and remaining tax asset lives as at 1 July 2017 for the 2017–22 access arrangement period (year)

Tax asset class	Standard tax asset life	Remaining tax asset life as at 1 July 2017
Original pipeline (DN250)	20	19.0
Pipelines	20	9.5
Compressor	20	15.0
Regulators and meters	20	14.6
Easements	n/a	n/a
Communications	20	n/a
Other	20	1.8
Capitalised AA costs	5	4.9
Group IT	5	3.7
SIB capex	5	3.3
Redundant compressors	n/a	2.2

Source: AER analysis.
n/a Not applicable.

As with the matters discussed above, the calculation of the tax asset lives will be a function of other amendments. APTPPL has calculated the remaining tax asset lives to reflect those amendments:

Table 2.9: Revised proposal Tax Asset Lives

Reference	Remaining tax asset life years)
Original Pipeline (DN250)	18.8
Pipelines	9.9
Compressor	15.0
Regulators and meters	14.6
Easements	n/a
Communications	0.0
Other	1.8
Capitalised AA costs	4.9
Group IT	3.7
SIB Capex	3.3
PMA	0.0

3 rate of return and value of imputation credits

The AER draft decision required the following revision to the APTPPL access arrangement for the RBP:

Reference	Required Amendment
Revision 3.1:	Make all the necessary amendments to the access arrangement proposal to give effect to this draft decision.

As discussed in this chapter, APTPPL does not accept this required revision.

APTPPL has updated a number of the inputs to its proposal for the allowed rate of return to be used in determining the total revenue and reference tariff of the VTS. APTPPL has not changed the way in which the rate of return on equity and rate of return on debt components of the allowed rate of return are to be estimated.

APTPPL's updated rate of return estimates are set out in Table 3-1.

Table 3-1 – Allowed rate of return

	Proposed	Draft Decision	Response to Draft Decision
Risk free rate (nominal)	2.24%	2.60%	2.68%
Equity beta	0.80	0.70	0.80
Market risk premium	7.76%	6.50%	7.70%
Rate of return on equity	8.4%	7.2%	8.8%
Rate of return on debt	7.47%	4.79%	6.91%
Gearing	60.0%	60.0%	60.0%
Allowed rate of return	**7.8%**	**5.75%**	**7.7%**

In section 3.1 below, APTPPL explains why its estimate of the rate of return on equity contributes to the allowed rate of return objective of rule 87(3). In section 3.2, APTPPL explains why the on-the-day method does not lead to an estimate of the return on debt of the benchmark efficient entity of rule 87(3), and explains why the allowed rate of return must be determines using a trailing average method without transition.

APTPPL has used an estimate of gamma (the value of imputation credits) of 0.4 in responding to the Draft Decision. APTPPL's reasons for adopting this value (and not retaining its initially proposed estimate of 0.25) are discussed in section 3.3.

3.1 Return on equity

The AER rejected the rate of return on equity proposed by APTPPL (8.4%), and required a rate of 7.2%.

APTPPL had used the Sharpe-Lintner Capital Asset Pricing Model (SL CAPM) to estimate the rate of return on equity. This was in accordance with the AER's Rate of Return Guideline.[18] APTPPL also estimated the risk free rate of return for use in the SL CAPM using the method set out in the Rate of Return Guideline. Neither use of the SL CAPM, nor estimation of the risk free rate, is an issue which APTPPL considers further in this response to the Draft Decision.

APTPPL has, however, updated its estimate of the risk free rate since the submission of its access arrangement revisions proposal. APTPPL's updated estimate of the risk free rate is noted below. APTPPL expects that the AER will also update the estimate of the risk free rate as the regulator proceeds to a final decision on the revisions proposal.

The AER did not accept APTPPL's proposed estimate of 0.8 for the equity beta of the SL CAPM, and required a beta estimate of 0.7. The AER was of the view that APTPPL did not provide satisfactory evidence in support of a material change in the estimate of the equity beta which had been proposed in the Rate of Return Guideline. In its access arrangement revisions proposal, APTPPL supported the proposed estimate of beta with information from a number of (then) recent studies, and advised that it would make new estimates of beta and submit the results when responding to the AER's draft decision. APTPPL's reasons for retaining an estimate of 0.8 are discussed in section 3.1.2.

APTPPL's proposed estimate of the market risk premium, the Draft Decision advised, derived from a historical/alternative specification of the SL CAPM, and such specifications had been consistently rejected because they made

[18] AER, *Rate of Return Guideline*, December 2013.

unrealistic assumptions and were not theoretically justified.[19] The AER did not, therefore, accept APTPPL's proposal for a market risk premium of 7.76%, and required an estimate of 6.50%.

Contrary to the AER's assertion, APTPPL did not submit that the Wright specification of the SL CAPM was relevant material that could inform return on equity estimation through estimation of the market risk premium.[20] APTPPL explained, at length, in the submission accompanying its access arrangement revisions proposal, why its application of the SL CAPM was not use of the Wright specification, in so far as the AER had set out a view on what constituted that specification.

APTPPL also explained why its approach was the conceptually and theoretically correct approach to applying the SL CAPM. In the absence of sound argument that its approach was unorthodox, APTPPL has continued to apply the SL CAPM in a way consistent with the theoretical construction of the model. In particular, APTPPL has continued to estimate the market risk premium of the SL CAPM as the difference between the expected return on the market at the time the model is applied, and the estimate of the risk free rate at that time. This is further discussed in section 3.1.3 below.

3.1.1 Risk free rate of return

For this response to the AER's Draft Decision, APTPPL has estimated the risk free rate as the average of yields on Australian Government securities with terms to maturity of 10 years over the period of 20 consecutive business days ending 31 July 2017.

APTPPL's estimate of the risk free rate of return is 2.68 per cent.

3.1.2 Equity beta

In the Draft Decision, the AER advised that it had reviewed service provider material on equity beta estimates including the report which APA VTS had submitted with the access arrangement revisions proposal for the VTS. The AER acknowledged that the material showed small changes in the empirical estimates, but concluded that these were not sufficient to justify a departure

[19] Draft Decision, Attachment 3 – Rate of return, page 3-54.

[20] Draft Decision, Attachment 3 – Rate of return, page 3-53.

from the range and point estimate of the Rate of Return Guideline. Moreover, the AER had made its own beta estimates, using data to 28 April 2017, and using the methods which had been established earlier by Professor Henry. The results were, the AER advised, consistent with Professor Henry's results and supported its preferred range and point estimate for beta.[21]

The Draft Decision noted that Professors Partington and Satchell, the AER's rate of return experts, had reviewed the service provider material on equity beta estimation and had concluded that it made a weak case that beta had increased in recent times; there was little evidence of change.[22]

A key issue was the period of the data used in beta estimation. The Draft Decision advised that short-term data were more prone to one-off events, fluctuations and volatilities in the market, which could obscure the true value of beta, and that the AER had the most regard to longer term estimates and a large sample of firms.[23]

On page 3-76 of the Draft Decision, the AER advised that increases in the estimate of beta observed by CEG (in work for Multinet Gas) and by Frontier Economics (in its work for APA VTS) were driven by the use of shorter data series. APTPPL notes that the submission which formed part of its access arrangement revision proposal referred to the work by CEG (which was also undertaken for DBP, the DUET entity which owned the Dampier to Bunbury Natural Gas Pipeline) only for the purpose of pointing to the possibility of an increase in beta, and advising that that possibility warranted further investigation. APTPPL did not put forward the CEG estimates as clear evidence of an increase in beta, and did not rely on those estimates (other than to support a decision to commission, from Frontier Economics, the report on beta estimation which was promised in the RBP submission, and which was subsequently provided as part of the VTS submission.

Frontier Economics prepared estimates of beta using short (5 years) data series, but was cautious in making any inferences from those estimates. Frontier Economics advised:

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[21] Draft Decision, Attachment 3 – Rate of return, page 3-61.

[22] Draft Decision, Attachment 3 – Rate of return, page 3-61.

[23] Draft Decision, Attachment 3 – Rate of return, page 3-61.

> *Our view is that a five-year period is generally insufficient to provide sufficient statistical precision, so we also consider estimates from longer (ten-year) periods.*[24]

The results reported by Frontier Economics were not, as the AER maintained, driven by the use of shorter term estimates.

Eight reasons for the AER not accepting APTPPL's proposed estimate of the equity beta were set out in the Draft Decision.[25]

Three of these reasons for not accepting an estimate of 0.8 are irrelevant to the justification provided by APTPPL in the submission which formed part of its access arrangement revision proposal:

- since APTPPL did not rely on the ERA's estimates (other than as support for a decision to commission work from Frontier Economics), the fact that the ERA made estimates using data for periods of 5 years is irrelevant to APTPPL's specific estimate for beta of 0.8
- CEG's results were, similarly, a reason for commissioning work from Frontier Economics, and are irrelevant to APTPPL's specific estimate for beta of 0.8
- evidence of a structural break, whether that proposed by CEG, or evidence to the contrary as indicated by the AER's own analysis using data to 28 April 2017, is irrelevant; Frontier Economics did not propose, or carry out statistical tests intended to show, a structural break in a series of estimated betas.

A fourth reason for the AER rejecting an estimate of beta of 0.8 pertains to its own earlier estimate of 0.8. The AER advised that the increase in the number of data points available since the earlier estimate was made gives greater confidence to the range 0.4 to 0.7, and to a beta estimate of 0.7. APTPPL agrees that an increase in the number of data points will increase the precision of a statistical estimate of beta. However, that increase in precision has little direct bearing on the interval 0.4 to 0.7, and no relevance to the AER's decision that the estimate should be 0.8, given a prior decision on the interval. The estimation of beta for a particular project or business without

[24] Frontier Economics, *An equity beta estimate for Australian energy network businesses*, December 2016, page 13.

[25] Draft Decision, Attachment 3 – Rate of return, pages 3-81 – 3-83.

traded shares is imprecise beyond any imprecision associated with a specific statistical estimate. If the AER concluded, in 2012, that, in view of that imprecision, the relative riskiness – the beta – for the RBP was 0.8, then, in the absence of evidence that betas have fallen, there is no reason for now adopting a value of 0.7. An estimate of 0.8 remains the best estimate in the circumstances.

APTPPL has noted above that a fifth reason given by the AER for not accepting an estimate of 0.8 for beta – Frontier Economics' reliance on estimates made using data for 5 years – is not correct. Frontier Economics cautioned against using estimates made with 5 years of data.

A sixth reason given by the AER for rejecting the proposed beta estimate of 0.8 was that the average of Frontier Economics' re-levered firm level beta estimates, 0.48, was lower than the average of Professor Henry's estimates, 0.52, in 2014. The Frontier Economics estimates were made using data for a smaller number of companies than was the case for the Henry estimates. The Henry estimates included estimates for four companies (Alinta, Envestra, GasNet and Hastings Diversified Utilities Fund) for which share price data are no longer available because those companies have been restructured through ownership change and are no longer listed.[26] They also include an estimate for AGL, which is predominantly an energy retail business. The difference to which the AER draws attention throws doubt on the relevance of Professor Henry's estimates. The inclusion of companies, the shares in which have not been traded for a number of years, does not have regard to prevailing conditions in the market for equity funds, and the inclusion of an energy retailer in the sample is not prima facie relevant to a beta estimate for a benchmark efficient entity for gas pipeline service provider.

Given the decline in the number of listed energy network business which provided the date for beta estimation, Frontier Economics proposed looking at the betas for a number of transport infrastructure businesses. These businesses, like the energy networks:

- use very long-lived, tangible infrastructure assets
- are capital intensive

[26] A fifth company, DUET Group, was delisted on 16 May 2017.

- supply an access service to customers, that provides relatively stable cash flows.

The betas for these businesses, estimated using weekly data over a period of 10 years, are higher than those of the energy networks, and are significantly higher than the AER's current starting-point "best statistical" beta estimate for the energy businesses. They provide further evidence that a beta in the range 0.4 to 0.7 is likely to be too low.

The Draft Decision advises that the use of these betas is inappropriate.[27] Their risk characteristics are likely to be different from those of APTPPL. In support of this view, attention is drawn to inclusion of Auckland International Airport among the businesses for which Frontier Economics has estimated betas. The AER comments that the risk characteristics of the airport would be very different to those of the benchmark efficient entity, for example due to demand risk. This is not immediately obvious (but is not examined further in the Draft Decision). Even if it were, removal of Auckland International Airport from the sample of transport infrastructure businesses would remove the company with the lowest beta estimate. The estimates made by Frontier Economics would continue to provide evidence that a beta in the range 0.4 to 0.7 was likely to be too low for the benchmark efficient entity relevant to rate of return estimation for determination of RBP reference tariffs.

The eighth and final reason for the AER not accepting APTPPL's beta estimate of 0.8 was advice from the regulator's rate of return experts, Professors Partington and Satchell. Professors Partington and Satchell advised the AER that estimates for unregulated transport infrastructure should be given negligible weight, but provided no substantial reasoning in support of their advice.[28]

Professors Partington and Satchell also advised the AER:

- there is no statistical test for a significant change in beta

[27] Draft Decision, Attachment 3 – Rate of return, page 3-82.

[28] See Graham Partington and Stephen Satchell, *Report to the AER: Discussion of Submissions on the Cost of Equity*, 8 June 2017, page 44.

- Frontier Economics has acknowledged concerns with the reliability of five year estimates yet continues to use them; this makes its conclusions less compelling
- a comparison of Frontier Economics' five and 10 years estimates shows many overlaps; it is not clear that the 5 years estimates represent a recent increase in beta relative to the more reliable estimates (in Frontier's judgement) for 10 years
- Frontier Economics' 10 years relevered estimates for equally weighted portfolios are very close to the AER's base estimate
- the AER's value of 0.7 is well within the confidence interval from Frontier Economics' rolling average of value weighted portfolio estimates

Frontier Economics has updated its December 2016 report for APA Group.[29] The more recent estimates continue to point to an increase in beta. APTPPL acknowledges that they "point to an increase in beta"; Frontier Economics has not yet been asked to provide a statistical test of the change in the statistical estimates. As APTPPL noted in the submission accompanying its proposed revisions to the RBP Access Arrangement, there is evidence from Australian and other data that beta is not a constant, but varies over time for reasons which are not yet fully understood. The Frontier Economics estimates continue to point to that variation, and to an increase in beta at the present time. The Frontier Economics estimates are made having regard to prevailing conditions in the market for equity funds. This can no longer be said for the AER's base estimates to which Professors Partington and Satchell refer. Those base estimates were made using a sample which included companies no longer listed. The AER's base estimates are no longer current, and in view of the relatively large proportion of entities which have been restructured and delisted, are questionable bases for estimation of the beta of the benchmark efficient entity of rule 87(3).

In paragraphs above, APTPPL has noted Frontier Economics concerns about the reliability of beta estimates made using data for periods of 5 years, and that Frontier Economics has not relied on those estimates. That Professors Partington and Satchell continue to raise the issue of use of estimates made

[29] Frontier Economics, *Updated rate of return parameter estimates: Report prepared for APA Group*, August 2017.

using data for periods of 5 years is somewhat surprising. Estimating beta from data for periods of five years is market practice. The implication, from the advice provided by Professors Partington and Satchell is that (conceptually and theoretically incorrect) market practice may be relied upon when applying the SL CAPM, but it is not to be relied upon when estimating a key parameter of the model.

In a new report for APA Group, Frontier Economics concludes that the approach of the AER's Rate of Return Guideline, when applied to the most recent evidence, must produce an estimate of beta of at least 0.7.[30]

APTPPL sees no reason for not now using an estimate of beta 0.8 for the RBP. This was the estimate which the made in 2012. It remains the best estimate in the circumstances.

3.1.3 Market risk premium

APTPPL proposed estimating the market risk premium of the SL CAPM as the difference between the expected return on the market and the prevailing risk free rate. This was, APTPPL explained in the submission which was part of its access arrangement revisions proposal, consistent with the conceptual and theoretical basis of that model.

The Draft Decision advised that the AER disagreed.[31] The reasons why the AER disagreed seem to be the following:

- APTPPL proposed using the long term average of the return on the market as the expected return on the market
- APTPPL used the Wright approach to the CAPM
- APTPPL drew support for its proposal from the ERA's 2016 Goldfields Gas Pipeline final decision.

The AER notes that Professors Partington and Satchell advise that it is the risk premium that determines the market portfolio, and that practitioners tend to

[30] Frontier Economics, *Updated rate of return parameter estimates: Report prepared for APA Group*, August 2017, page 2.

[31] Draft Decision, Attachment 3 – Rate of return, page 3-95 – 3-96.

treat the MRP as the exogenous variable to the CAPM instead of the return on the market as suggested by APTPPL.[32]

Yes; practitioners do treat the MRP as the exogenous variable in the SL CAPM, and the practice is endorsed in many finance textbooks. That practice is, however, inconsistent with the conceptual and theoretical foundations of the SL CAPM (as APTPPL explained at length in its submission). Practitioners, it would seem, do not use the SL CAPM. They use an incorrectly estimated single factor model for which there is little or no theoretical or empirical support.

In their advice to the AER, Professors Partington and Satchell do not address the conceptual and theoretical foundations of the SL CAPM, or the implications which these might have for application of the model. They do not address the way in which APTPPL has applied the SL CAPM other than by saying "practitioners do it differently".

We note that Dr Lally has advised the AER:

> *The Sharpe-Lintner CAPM (Sharpe, 1964; Lintner, 1965; Mossin 1966) is a model that specifies the equilibrium expected rate of return on a risky asset (i.e., the expected rate of return that just compensates for risk), and one of the parameters of this model is the risk free rate. One of the assumptions underlying this model is that investors select portfolios based on the Markowitz (1952, 1959) model, in which an investor chooses (at some point in time, T) that portfolio of assets that has the 'best' probability distribution of returns over a period of time from T. One such asset is the risk free asset and the risk free rate in the Sharpe-Lintner model is then the risk free rate prevailing at time T for some future term. This model can be sued to estimate the cost of equity capital for a regulated entity. Doing so requires that the Sharpe-Lintner and regulatory models be aligned. This requires that the risk free rate within the Sharpe-Lintner model must be the prevailing rate at the beginning of the regulatory period. As before, pragmatic considerations lead to choosing a risk free rate averaged over a short period as close as practical to the start of the regulatory period.*

[32] Draft Decision, Attachment 3 – Rate of return, page 3-96.

> *Furthermore, averaging the risk free rate over a historical period would never be compatible with the Markowitz model (because an investor makes a portfolio decision at a point in time) and therefore would never be compatible with the Sharpe-Lintner model.*[33]

Dr Lally, it may be argued, does not refer to the market risk premium. But he does not need to. The risk free asset is one of the assets available to investors for the formation of portfolios based on the Markowitz model. The rate of return on that asset appears in two places in the SL CAPM – as the "base rate" to which the risk premium, $\beta \times [E(r_M) - r_f]$, must be added, and in the measure of the risk premium itself. There is only one risk free asset and only one risk free rate of return. There is only one risk free rate, although it appears twice in the SL CAPM and, in the in the regulatory context, that rate must be the prevailing rate at the beginning of the regulatory period.

If the SL CAPM is to be used to estimate the return on equity for the purpose of determining revised reference tariffs for the RBP, then, as APTPPL concluded in the submission accompanying its revisions proposal, the term $[E(r_M) - r_f]$ must be treated as comprising two components, the risk free rate and the expected return on the market. Estimates must be made, at the time the SL CAPM is applied, of:

- the rate of return on the risk free asset assumed to be available to investors at that time
- the return those investors expect, at that time, to earn on the market portfolio.

How is the expected return on the market portfolio to be estimated? In the submission accompanying the revisions proposal for the RBP Access Arrangement, APTPPL noted that it was not aware of any expectations data which might be suitable for directly estimating the expected return on the Australian market for risky financial assets. APTPPL therefore relied on two simple, but widely used, models of expectations formation. These are:

- the averaging of past values of the variable for which a forward looking estimate or expected value is required

[33] Martin Lally, *The risk free Rate and the Present Value Principle*, 22 August 2012, pages 8-9.

- the dividend growth model.

APTPPL acknowledges the limitations of historical data – averaging series of past values – when estimating the expected return on the market (and the market risk premium). Those data are not expectations data. Only the dividend growth model can provide the forward looking estimate of expected return required for application of the SL CAPM.

As part of recent work to update rate of return parameters for APA Group, Frontier Economics has provided an updated estimate of the expected return on the market made using the AER's dividend growth models. Assuming a dividend growth rate of 4.6%, a two-stage model provides an estimate of the market risk premium of 7.70%. A three-stage model provides an estimate of 7.72%. APTPPL views the AER's dividend growth models as providing an estimate of the market risk premium of approximately 7.7%.

APTPPL's current estimate of the risk free rate of return is 2.68%. In these circumstances, APTPPL has taken, as a current estimate of the rate of return on the market to be used in applying the SL CAPM, an estimate of 10.38%.

3.1.4 Estimating the rate of return on equity

The rate of return on equity proposed in the AER's Draft Decision has been estimated using the SL CAPM, an estimate of beta of 0.7, and an estimate of the market risk premium of 6.5%. The AER's estimate of beta is no longer current; it no longer accords with prevailing conditions in the market for equity funds. The AER's direct estimation of the market risk premium using, predominantly, historical data, is conceptually and theoretically incorrect. If the SL CAPM is used to estimate the rate of return on equity, separate estimates must be made of the risk free rate of return and the expected return on the market portfolio at the time the model is applied. Apply the SL CAPM in a way which is conceptually and theoretically incorrect, with parameter estimates which are no longer current, cannot lead to an estimate of the rate of return on equity which can contribute to achievement of the allowed rate of return objective of rule 87(3).

APTPPL has used the SL CAPM to estimate the rate of return on equity in its response to the Draft Decision. However, in applying the model, APTPPL has used a current estimate of beta, and has separately estimated the risk free rate of return and the expected return on the market portfolio. APTPPL has used the (AER's) dividend growth model to estimate the forward looking

expected return on the market required for application of the SL CAPM. APTPPL has correctly applied the SL CAPM using current estimates of its key parameters. To the extent that the SL CAPM adequately represents expected equity returns, APTPPL's estimate of the rate of return on equity is an estimate which can contribute to achievement of the allowed rate of return objective.

3.2 Return on debt

For the purpose of estimating the return on debt, APTPPL assumed that the benchmark efficient entity of rule 87(3) is a BBB+ rated entity which raises debt with a term to maturity of 10 years.[34] Debt raising is staggered so that only a part of the total debt must be refinanced each year, thereby reducing refinancing risk. The benchmark efficient entity for the determination of the allowed rate of return is, then, an entity which has a degree of risk similar to that of APTPPL in its provision of reference services, and which has a staggered portfolio comprising debt issues with terms to maturity of 10 years. Ten per cent of that portfolio is assumed to be refinanced annually, and the rate of return on debt is estimated as a trailing average of the returns on the debt which comprises the staggered portfolio.

A similar view of the benchmark efficient entity, and of rate of return on debt estimation, has been adopted by the AER for the purpose of estimating the rate of return on debt of the Draft Decision.

There is, however, a fundamental difference. The trailing average method proposed by APTPPL was backward looking; the rate of return on debt was estimated as an average of the current rate and rates applying during the past nine years. The trailing average method required by the AER is forward looking; the rate of return in debt is estimated as the current rate, and is to be progressively transitioned into a 10 years trailing average during the next two regulatory periods.

The Draft Decision rejects APTPPL's proposal for immediate implementation of the trailing average method (a trailing average without transition), and requires transition into a trailing average method of estimating the rate of return on debt over a transition period of 10 years.

[34] Where financial data to be used in estimating the rate of return are not available for entities with that credit rating, APA VTS has used data for BBB rated entities.

The rate of return on debt estimated as a trailing average with transition is, the AER advises, 4.79%. APTPPL had proposed a rate of return on debt, estimated as a trailing average without transition, of 7.26%.

The rate of return on debt which is to be a component of the allowed rate of return of rule 87 is to be the rate which contributes to the efficient financing costs of a benchmark efficient entity with a degree of risk similar to that which applies to the service provider in respect of the provision of reference services.

The relevant efficient financing costs are the borrowing costs of a benchmark efficient entity with a BBB+ credit rating which held a portfolio of debt with staggered maturities over the last 10 years. This benchmark efficient entity would have had a cost of debt significantly higher than the allowed 4.79%. This is clear from Table 3-2, which sets out yields on debt by BBB rated non-financial corporations during the period 2008 to 2017. (Yields, as reported by the Reserve Bank of Australia for varying effective tenors close to 10 years, have been extrapolated to provide a single series for debt with a term to maturity of 10 years.)

Table 3-2 – Yields on BBB rated corporate debt with term to maturity of 10 years

July 2008	July 2009	July 2010	July 2011	July 2012	July 2013	July 2014	July 2015	July 2016	July 2017
9.5%	9.2%	7.9%	7.8%	7.3%	7.4%	5.7%	5.1%	4.4%	4.6%

Source: Data from RBA F3 Aggregate Measures of Australian Corporate Bond Spreads and Yields; APA extrapolation to term of 10 years.

The estimated current cost of an equally weighted portfolio of debt with staggered maturities over the past 10 years is 6.91%. This – and not 4.79% – is the efficiently incurred cost of debt of the benchmark efficient entity of rule 87(3). It is the estimate of the rate of return on debt which contributes to the allowed rate of return objective.

The rate return on debt which the AER has allowed is insufficient to cover the efficiently incurred borrowing costs of the benchmark efficient entity.

The rate of return of 4.79% in the Draft Decision is, effectively, a rate of return on debt estimated using the on-the-day method. The on-the-day rate is to be progressively updated, but it will remain insufficient to cover efficiently

incurred borrowing costs during the next access arrangement period (and beyond).

In the Draft Decision, the AER summarises its view on estimation of the return on debt:

We consider a full transition is required to meet the ARORO because we consider current debt costs in the market reflect efficient financing costs and we consider correct compensation in a present value sense (or an allowance that meets the NPV = 0 condition) is required to meeting the ARORO and to achieve the NGO. In the absence of a full transition the only other approach we have examined that we consider will satisfy the ARORO and achieve the NGO is the continuation of the on-the-day method.[35]

However, neither the AER, nor its expert advisors on rate of return, explain why, in the context of financing the assets which the AER is called upon to regulate:

- if a trailing average method is to be used to estimate the rate of return on debt, there must be a full transition to that trailing average
- the current cost of debt represents an efficient cost of financing the assets
- the correct compensation for debt financing costs is an allowance which meets the NPV = 0 condition
- an allowance for debt which meets the NPV = 0 condition is required for meeting the allowed rate of return objective and achieving the national gas objective
- in the absence of a full transition, the only other method of estimating the return on debt which will satisfy the allowed rate of return objective and achieve the national gas objective is the on-the-day-method.

In the absence of these explanations, it is not clear that the AER's approach to the return on debt delivers an estimate which contributes to the allowed rate of return objective of rule 87(3).

[35] Draft Decision, Attachment 3 - Rate of return, page 3-119.

3.2.1 *Current cost of debt does not represent efficient financing costs*

In this section of this response to the Draft Decision, the primary focus is on the rate of return on debt. The rate of return on debt is one of two components of the rate of return of rule 87. In the discussion which follows, APTPPL assumes that the second component – the rate of return on equity – is the on-the-day rate of return on equity: the rate of return on equity is the rate at the commencement of the regulatory period, and that rate is assumed to continue, unchanged, during the period. The on-the-day rate of return on equity may, of course, change from one regulatory period to the next. APTPPL believes these are the assumption made by the AER in its analysis, and in the total revenue modelling of the PTRM, which gives effect to that analysis.

The rate of return which meets the allowed rate of return objective of rule 87 must, the AER advises, provide ex ante efficient compensation for efficient financing costs. This is because the regulatory regime is "forward looking".[36]

The requirement of the allowed rate of return objective for ex ante efficient compensation for efficient financing costs does not, the AER notes, entail compensating for historically incurred costs.[37]

This is not correct. Where costs have been sunk and arrangements have been made to finance those sunk costs over a period which extends into the future then, provided the costs themselves were efficiently incurred, and the financing arrangements were low cost at the time they were entered into, an ex ante regulatory regime which provides the service provider with the opportunity to recover its efficiently incurred costs, will allow compensation for those historically incurred costs.

Ex ante efficient compensation for efficient financing costs is, the AER contends, provided by a rate of return which is the current, or on-the-day, rate of return. The on-the-day rate is the current opportunity cost of capital for investments of similar risk to a benchmark efficient entity which has a degree of risk similar to that of the service provider in its provision of reference services. Estimation of the rate of return as an on-the-day rate

[36] Draft Decision, Attachment 3 - Rate of return, page 3-19.

[37] Draft Decision, Attachment 3 - Rate of return, page 3-130.

should appropriately compensate investors for their investment, and should aim to minimise the long run cost of capital (all else being equal).[38]

The on-the-day rate of return is, the AER advises, the efficient rate of return expected in a competitive capital market, consistent with models underpinning financial theory on efficient markets.[39]

When this efficient rate of return is applied to the book value of the capital invested in regulated assets as part of determining the capital cash flows (return on and of capital) from those assets, and those cash flows are discounted at that rate of return, the result is the book value of the investment. Moreover, in these circumstances, the book value of the investment will be equal to the market value of that investment. The cash flows give rise to a zero NPV investment in regulated assets.[40]

Under an ex ante regulatory regime, the AER advises, the regulator resets the allowed rate of return at the commencement of each regulatory period. If the allowed rate of return is reset to reflect the prevailing market cost of capital, it provides ex ante efficient compensation over each regulatory period and over the life of the investment.

An allowed rate of return on debt which reflects the prevailing market cost of debt at the time of a regulatory decision is, then, likely to be efficient because:

- a benchmark efficient entity faces competitive prices in financial markets – in raising debt it is likely to be productively efficient
- financial markets are competitive, with many buyers and sellers, so that the prevailing market cost of debt at any given time is likely to reflect investors' opportunity cost – debt raising is likely to be allocatively efficient
- a return on debt that reflects the prevailing market cost of debt provides an appropriate signal for new investment and promotes efficient investment decisions – debt raising is likely to be dynamically efficient.[41]

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[38] Draft Decision, Attachment 3 - Rate of return, page 3-324.

[39] Draft Decision, Attachment 3 - Rate of return, page 3-325.

[40] Draft Decision, Attachment 3 - Rate of return, page 3-326.

[41] Draft Decision, Attachment 3 - Rate of return, page 3-339 – 3-340.

In a competitive capital market, the AER explains, a benchmark efficient entity is expected to face competitive prices in the market for funds. Efficient debt financing costs are therefore reflected in the prevailing cost of debt observed in capital markets for investments with a degree of risk similar to that which applies to the service provider in respect of its provision of reference services.[42]

This, the AER notes, has an important implication. Mismatch between a service provider's actual incurred cost of debt and the allowed return on debt is a consequence of the service provider's choice of particular financing arrangements. It does not affect the benchmark efficient entity's opportunity to earn the efficient return on its capital base. The regulator attempts to replicate the competitive market equilibrium which results in zero NPV investments, and which is characterised by product prices, the market value of assets and the prices of securities adjusting to values at which the holders of those securities earn the current – on-the-day – cost of capital.[43]

All of this is supported by advice from the AER's rate of return advisors, Professors Partington and Satchell.

In their advice, Professors Partington and Satchell state that efficient financing costs are to be interpreted as the opportunity cost of capital. The opportunity cost of capital is the discount rate which determines the market value of the benchmark efficient entity. Use of the opportunity cost of capital is also consistent with the criterion that investment in regulated assets should, ex ante, be a zero NPV activity. [44]

Regulated businesses, Professors Partington and Satchell advise, have no market power in financial markets; they are price takers. Allowed revenue determination for those businesses should, in these circumstances, use the on-the-day approach, and the businesses should be left to sort out their

[42] Draft Decision, Attachment 3 - Rate of return, page 3-320.

[43] Draft Decision, Attachment 3 - Rate of return, page 3-331.

[44] Graham Partington and Stephen Satchell, *Report to the AER: Discussion of the Allowed Cost of Debt*, 5 May 2016, page 15.

financing as they see fit, bearing any costs or accruing any benefits which may arise.[45]

In particular, if a regulated business chooses not to match its actual cost of debt with the regulatory allowance, it can expect to earn the regulated cash flow on the book value of its capital base, but then equity investors will be exposed to changes in the market value of equity. This exposure can be managed by partially hedging interest rate risk. Hedging is a choice, but not necessarily the best choice. Not all businesses will choose to fully hedge, and some may choose not to hedge at all.[46]

Supported by advice from its expert advisors, the AER is essentially contending:

- the returns on equity and debt which are to comprise the allowed rate of return of rule 87 are to be commensurate with the efficient financing costs of the benchmark efficient entity of that rule
- these financing costs are to be the on-the-day rates of return on equity and debt prevailing in the capital market
- the capital market is competitive (and, like others, regulated businesses are price takers in that market; they have no monopoly power in the capital market)
- the prices at which securities currently trade in a competitive capital market – the market equilibrium prices – and the rates of return on those securities, are those required for efficiency (productive, allocative and dynamic efficiency)
- when determined from the on-the-day rates of return on equity and debt prevailing in the capital market, the return on a pipeline service provider's capital base will be commensurate with the efficient financing costs of the benchmark efficient entity (an entity with a degree of risk similar to that of the service provider in its provision of reference services).

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[45] Graham Partington and Stephen Satchell, *Report to the AER: Discussion of the Allowed Cost of Debt*, 5 May 2016, page 55.

[46] Graham Partington and Stephen Satchell, *Report to the AER: Discussion of the Allowed Cost of Debt*, 5 May 2016, page 18.

Furthermore, when capital related cash flows are calculated using the efficient on-the-day rates of return on equity and debt, and are discounted at those rates, the book value of regulated assets is equal to their market value. In the conditions which the AER assumes, cash flows determined from the market equilibrium prices of securities (and their rates of return) set in a competitive capital market, and discounted at an equivalent rate of return, are such that "NPV = 0".

The AER's contention that the on-the-day rates of return on equity and debt prevailing in the capital market are the basis for determination of the efficient financing costs of the benchmark efficient entity of rule 87(3), and its adherence to "NPV = 0", across regulatory periods and over the lives of regulated assets, rests firmly on the economic theory of competitive markets.

A large number of specific conditions are required for a market setting in which on-the-day rates of return represent equilibrium prices consistent with efficiency, and in which the NPV = 0 criterion applies. These are set out many textbooks on financial economics.[47] Two of these conditions are important in the circumstances of pipeline service providers. They are:

- there are no transaction costs
- markets are complete

The fundamental difficulty with the AER's contention concerning use of the on-the-day rates of return on equity and debt prevailing in the capital market as the basis for determination of the efficient financing costs of the benchmark efficient entity of rule 87(3), and its adherence to "NPV = 0", is that the AER, service providers, and others, have recognised that service providers face risks in refinancing debt which are not priced in the market, or which are priced high and lead to alternative, lower cost, non-market arrangements for addressing the refinancing issue. Service providers, as the AER and others have recognised, manage refinancing risk through the holding of portfolios of debt with staggered maturities. Where, as in these circumstances, competitive capital markets are imperfect because transaction costs are non-zero, and the market is incomplete, the simple

[47] An older, but still useful textbook presentation is in Eugene F. Fama and Merton H. Miller (1972), *The Theory of Finance*, Dryden: Orlando, Florida.

efficiency result from economic theory, on which the AER relies, no longer holds. Moreover, the NPV = 0 criterion may also no longer apply.

Consultants, CEG, saw this when advising AusNet Services, and proposed a practical solution: discount the cash flows over the regulatory period using a nominal WACC with a rate of return on debt component which is a weighted average of the rates of return on debt across the regulatory period (so that the rate of return on debt in the WACC is equivalent to the historical trailing average rate of return used to estimate the return on debt component of total revenue).

Professors Partington and Satchell referred to the nominal WACC determined using the historical cost of debt (and the current cost of equity) as the "historic WACC". They acknowledge that, if cash flows were determined, where appropriate, using the historic WACC, and those cash flows were discounted at that WACC, then their present value would be equal to the value of the RAB, and the computed NPV is zero.[48] However, they advised:

To our knowledge this is not a concept that is supported anywhere in the finance literature. Furthermore, the "present value" so computed is not really a present value since it will not in general be equal to the market value. [49]

In their advice to the AER, Professors Partington and Satchell did not address the key issue arising from the debate on estimation of the rate of return on debt which has continued since the rule changes made by the AEMC in November 2012 recognised the need for a trailing average approach. Professors Partington and Satchell revert to the standard – but not applicable – textbook arguments for an on-the-day rate of return.

Professors Partington and Satchell make the comment, in their advice to the AER, that what fundamentally drives the return which is required on a firm's portfolio of issued securities is the nature of the assets in which the firm invests.[50] APTPPL agrees, but would go further. The nature of the firm's assets

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[48] Graham Partington and Stephen Satchell, *Report to the AER: Issues in Relation to the Cost of Debt*, 9 April 2017, page 9.

[49] Graham Partington and Stephen Satchell, *Report to the AER: Issues in Relation to the Cost of Debt*, 9 April 2017, page 9.

[50] See, for example, Graham Partington and Stephen Satchell, *Report to the AER: Discussion of the Allowed Cost of Debt*, 5 May 2016, page 16.

not only determines the returns on the securities which the firm issues to finance those assets; it also determines the structure of the financing.

What has been identified and accepted by the ERA and others is that there are imperfections in the capital market which preclude a business, like the business of a pipeline service provider, which uses a technology based on long-lived purpose-specific assets, and consequently incurs large sunk costs, from relying on on-the-day financing arrangements.

The AER's on-the-day method of estimating rates of return and, in particular, of estimating the rate of return on debt, cannot lead to the efficient financing costs of a benchmark efficient entity which has a degree of risk similar to that of the service provider in its provision of reference services. It cannot, as APTPPL has shown above, provide a service provider with the opportunity to recover efficiently incurred borrowing costs.

3.2.2 *There is no justification for a full transition to a trailing average*

The Draft Decision indicates that the on-the-day and the trailing average methods of estimating the rate of return on debt are essentially equivalent. If, then, there were to be an immediate switch from the previously applied on-the-day method to the trailing average method, the AER is of the view that, given the recent history of returns on debt, there would an unwarranted transfer of wealth from users to the service provider. This unwarranted wealth transfer is avoided if, instead of an immediate switch, there is a transition into the trailing average method.

This is not correct.

The on-the-day and the trailing average methods of estimating the rate of return on debt are not, in general, equivalent. They are equivalent in quite specific circumstances; they are equivalent only when rates of return on debt are constant.

When rates of return on debt vary over time, the on-the-day and the trailing average methods are not equivalent. The on-the-day method does not lead to an estimate of the return on debt component of total revenue which is the same as the estimate of the return on debt made using the trailing

average method.[51] Use of the on-the-day method either overstates or understates the cost of debt of a benchmark efficient entity which is financed by an equally weighted staggered portfolio of debt. The on-the-day method does not lead to an estimate of the return on debt which is the best estimate in the circumstances.

If rates of return on debt in the recent past have been high relative to current rates, the on-the-day method leads to estimates of the return on debt which are less than the return on debt estimates for a benchmark efficient entity which is financed by a staggered portfolio of debt. The on-the-day method of estimating the rate of return on debt does not provide a service provider with an opportunity to recover at least the efficient costs incurred in providing reference services.

The on-the-day method of estimating the rate of return on debt is not equivalent to the trailing average method. The on-the-day method does not lead to an estimate of the return on debt which contributes to the achievement of the allowed rate of return objective, it does not provide an estimate of the return on debt which is the best estimate in the circumstances, and it does not provide the service provider with a reasonable opportunity to recover its efficiently incurred costs.

That the on-the-day method is not equivalent to the trailing average method (which properly compensates the service provider for the efficiently incurred cost of debt), and that the trailing average method is a method which satisfies the relevant requirements of the NGL and the NGR, mean that a change from the on-the-day method to the trailing average method is not a change from one method to another – equivalent – method. It is a change from a method of estimating the rate of return on debt which does not satisfy the relevant requirements of the NGL and the NGR to a method which does satisfies those requirements.

Use of the on-the-day method produced an incorrect estimate of the rate of return on debt. Change to a trailing average method involves recognition of the error, and correction of the return on debt going forward. There is, in

[51] The validity of a proposition like this one is difficult to demonstrate using a mathematical model like the model set out in Appendix J of Attachment 3 to the Draft Decision. It is better demonstrated using a simple spreadsheet model, which can incorporate the assumptions made for the mathematical model.

these circumstances, no issue of a wealth transfer from users to service providers at the time of a change from one method of estimation to another – equivalent – method. The on-the-day method did not correctly estimate the rate of return on debt of the benchmark efficient entity of rule 87(3). The priori use of that method to estimate the rate of return on debt of a benchmark efficient entity which finances using an equally weighted staggered portfolio of debt was incorrect. The trailing average method correctly estimates the rate of return on debt of the benchmark efficient entity of rule 87(3), and must now be adopted, without transition, to correct the prior error.

APTPPL acknowledges that, without transition in the way the AER proposes, the NPV = 0 principle will not be satisfied. The AER's proposed transition is a construct which attempts to maintain equivalence with the on-the-day rate of return on debt going forward, and which attempts to ensure that the NPV = 0 principle continues to be satisfied. But this is not correct. Transition into a trailing average may deliver NPV equal to zero over the regulatory periods during which the transition takes place, but once the transition is completed, any change in returns on debt from one year to the next will result in NPV not being equal to zero.

If, as has been recognised, pipeline service providers must finance the sunk costs in the very long-life assets with which they provide reference services with staggered portfolios of debt, then the NPV = 0 criterion may not be satisfied. This is no more than a consequence of the theory of competitive financial markets on which the AER relies for its efficiency contentions, not being strictly applicable in the specific circumstances of those service providers.

3.2.3 *Estimating the rate of return on debt*

The rate of return on debt proposed in the AER's Draft Decision has been estimated as an on-the-rate in anticipation of subsequent transition into a 10 years trailing average estimate. The AER contends that its on-the-day estimate of the rate of return on debt, and a prospective transition which is purported to maintain equivalence with on-the-day rates, delivers a cost of debt which is the efficient financing cost of the benchmark efficient entity of rule 87(3). It is not. Initial use of the on-the-day rate of return on debt, and the proposed transition, will not allow APTPPL to recover its efficiently incurred costs during the next access arrangement period and beyond.

If APTPPL is to have a reasonable opportunity to recover its efficiently incurred costs of financing its pipeline assets, there must be an immediate adoption of a trailing average (without transition). A rate of return on debt estimated as a trailing average without transition, in the way APTPPL has proposed, is an estimate which can contribute to achievement of the allowed rate of return objective of rule 87.

3.3 Value of imputation credits

In view of the decision of the Federal Court that the AER's preference for one theoretical approach to considering the determination of gamma (relying on an a priori view of the utilisation rate) over another (market-based dividend drop-off studies), was not a reviewable error, APTPPL has adopted the AER's estimate of 0.4 for gamma when responding to the Draft Decision.[52]

Although the Federal Court has found the AER not to be in error in its choice of one approach to estimation of gamma over another, the more basic question about the way in which the capital market values imputation credits remains. Market practitioners continue to assign to those credits little or no value. In these circumstances, a lower estimate of gamma – 0.25 – or even an estimate of zero cannot, at the present time, be rejected. APTPPL expects the debate on the valuation of imputation credits will continue, and an estimate of 0.4 will be no more than another step along the way.

[52] Australian Energy Regulator v Australian Competition Tribunal (No. 2) [2017] FCAFC 79.

4 operating expenditure

In its draft decision, the AER accepted the APTPPL proposal of forecast operating expenditure as reasonably reflecting the opex criteria. The AER required no amendments to APTPPL's forecast of operating expenditure.

APTPPL's forecast opex is as reported below:

Table 4.1: Forecast operating expenditure ($million, 2016)

Table 7.1 APTPPL's proposed opex ($million, 2016–17)

	2017–18	2018–19	2019–20	2020–21	2021–22	Total
Total opex excluding debt raising costs	14.3	14.3	14.2	14.1	14.1	70.9
Debt raising costs	0.3	0.3	0.3	0.3	0.3	1.3
Total opex	**14.5**	**14.5**	**14.4**	**14.4**	**14.4**	**72.1**

Source: APTPPL, *Roma to Brisbane Pipeline 2016–21, proposed PTRM*, September 2016.
Note: Numbers may not add up due to rounding.

Source: AER draft decision, Table 7.1.

Attachment 7 of the AER draft decision required the following amendment:

Reference	Required Amendment
	We require APTPPL, in its revised proposal, to update its opex forecast for 2017–22 to reflect the actual opex it incurred in 2015–16.

Actual expenditure for historical periods is reported in the Access Arrangement Information accompanying this revised proposal.

5 total revenue

Rule 76 requires the total revenue to be derived according to a building block approach. The considerations relevant to each of the building blocks are discussed in the relevant sections above. In many ways, this chapter of the submission is a mechanical summary of the discussion that has gone before.

Consistent with the discussions above, acceptance of the required revisions related to Total Allowed Revenue would be contingent on APTPPL's acceptance of each and every revision required by the AER.

While APTPPL has accepted the vast majority of the AER's required revisions, it cannot accept all of them. Accordingly, APTPPL's calculation of the Total Allowed Revenue will differ from the AER's, to the extent impacted by those areas, discussed above, in which our views differ.

This section summarises the building blocks to present the total revenue requirement.

5.1 Required amendments

The AER draft decision required the following revisions:

Reference	Required Amendment
Revision 8.1	Make all necessary amendments to reflect this draft decision on the proposed corporate income tax allowance for the 2017–22 access arrangement period, as set out in table 8.1
Revision 9.1	Amend the Roma to Brisbane Gas Pipeline access arrangement to include the following clause: (See section 5.5 Efficiency carry-over mechanism below).

Revisions 8.2 and 8.3 were addressed in section 2.5.

5.2 Return on capital

The required return on the capital base is discussed in chapter 3. The required return on the capital base is summarised in Table 5.1 below.

Table 5.1: Return on capital

($m, nominal)	2017/18	2018/19	2019/20	2020/21	2021/22
Return on capital	34.67	36.32	37.14	37.18	37.82

5.3 Return of capital

The forecast straight line depreciation over the access arrangement period is discussed in section 2.3.3. To calculate the amount of regulatory depreciation applicable to the revenue requirement, the amount of indexation of the capital base must be subtracted from the straight line depreciation. The indexation of the capital base is discussed in section 2.3.5.

Together, these two amounts combine to derive the forecast regulatory depreciation as shown in Table 5.2.

Table 5.2: Forecast depreciation over the access arrangement period ($nominal)

($m, nominal)	2012/13	2013/14	2014/15	2015/16	2016/17
Straight-line depreciation	16.72	18.10	18.88	13.00	11.13
Indexation	11.08	11.61	11.87	11.88	12.09
Regulatory depreciation	5.64	6.49	7.01	1.12	- 0.95

The depreciation schedule for establishing the opening capital base at 1 July 2022 will be based on forecast capital expenditure.

5.4 Operating expenditure

APTPPL's forecast operating expenditure is discussed in section 4. Amounts included in the total revenue allowance are shown below.

Table 5.3: Operating expenditure ($m nominal)

($m, nominal)	2017/18	2018/19	2019/20	2020/21	2021/22
Forecast operating expenditure	14.86	15.23	15.50	15.82	16.20

5.5 Efficiency carry-over mechanism

The draft decision requires APPPL to amend its access arrangement to include an efficiency carryover mechanism:

Reference	Required Amendment
Revision 9.1	Amend the Roma to Brisbane Gas Pipeline access arrangement to include the following clause: **8 Efficiency Carryover Mechanism** 8.1 Efficiency Carryover Mechanism (a) An efficiency carryover mechanism will apply to operating expenditure. (b) The incentive mechanism will operate in the following way: (i) the mechanism carries forward the Service Provider's incremental efficiency gains (or losses) for five Financial Years from the Financial Year those gains (or losses) occur (ii) annual carryover amounts accrue in each Financial Year of the subsequent access arrangement period as the summation of the incremental efficiency gains (or losses) in the immediately prior access arrangement period that are carried forward for five years or less into the Financial Year (iii) the annual carryover amounts are added to the Service Provider's Total Revenue in each Financial Year of the subsequent access arrangement period. If necessary, the annual efficiency gain (or loss) is carried forward into the access arrangement period commencing 1 July 2022 until it has been retained by the Service Provider for a period of five years. (c) To ensure the carryover amount in the first year of an Access Arrangement period is only for incremental efficiency gains made in that year, we will subtract any incremental efficiency gain made in the previous Access Arrangement period after the base year from the difference between actual opex and forecast opex in the first year of the new period. The incremental efficiency gain (or loss) for the Financial Year 2017–18 will be calculated as: $E_{2017–18} = (F_{2017–18} – A_{2017–18}) – (F_{2016–17} – A_{2016–17}) + (F_{2015–16} – A_{2015–16})$ where: $F_{2017–18}$ is the forecast operating expenditure for Financial Year 2017–18

Reference	Required Amendment

$A_{2017–18}$ is the actual operating expenditure for Financial Year 2017–18.

(d) The incremental efficiency gain (or loss) for Financial Years 2018–19 to 2020–21 (inclusive) will be calculated as:

$E_t = (F_t – A_t) – (F_{t–1} – A_{t–1})$

where:

E_t is the incremental efficiency gain (or loss) in Financial Year t of the Access Arrangement Period

F_t is the forecast operating expenditure in Financial Year t of the Access Arrangement Period

A_t is the actual operating expenditure in Financial Year t of the Access Arrangement Period

$F_{t–1}$ is the forecast operating expenditure in Financial Year t–1 of the Access Arrangement Period

$A_{t–1}$ is the actual operating expenditure in Financial Year t–1 of the Access Arrangement Period.

(e) The estimated incremental efficiency gain (or loss) for the Financial Year 2021–22 to will be calculated as:

$E_{2021–22} = (F_{2021–22} – A_{2021–22}^*) – (F_{2020–21} – A_{2020–21})$

Where $A_{2021–22}^*$ is to be estimated using the following equation:

$A_{2021–22}^* = A_{base} + F_{2021–22} – F_{base}$

where:

$A_{2021–22}^*$ is the estimate of operating expenditure for Financial Year 2021–22

$A_{2020–21}$ is the actual operating expenditure for Financial Year 2020–21

A_{base} is the actual operating expenditure for the Financial Year used to forecast opex for the following period

$F_{2021–22}$ is the forecast operating expenditure for Financial Year 2021–22

$F_{2020–21}$ is the forecast operating expenditure for Financial Year 2020–21

F_{base} is the forecast operating expenditure for the Financial Year used to forecast opex for the following period.

Reference	Required Amendment
	(f) The incremental efficiency gains (or losses) are carried over from Financial Year to Financial Year in real dollars to ensure that these gains (or losses) are not eroded by inflation. The price indices used in this calculation are to be consistent with those used to forecast opex for the following Access Arrangement period. (g) Increments or decrements from the summation of incremental efficiency gains or losses calculated in accordance with the approved incentive mechanism in the Access Arrangement Period will give rise to an additional 'building block' in the calculation of the Total Revenue amounts for each Financial Year of the subsequent access arrangement period. (h) The following costs will be excluded from the operation of the efficiency carryover mechanism: i. any cost category that is not forecast using a single year revealed cost approach in the access arrangement period following this Access Arrangement Period (intended to commence 1 July 2022); and i. any cost category that the AER determines, as part of a decision on revisions to apply to this Access Arrangement, to exclude from the operation of the efficiency carryover mechanism because it is satisfied that it would not promote the National Gas Objective. (i) The forecast operating expenditure amount for each year of the Applicable Access Arrangement Period will be adjusted to include any Determined Pass Through Amounts or other AER approved expenditure arising from Cost Pass Through Events which apply in respect of that year (j) Where the Service Provider changes its approach to classifying costs as either capital expenditure or operating expenditure during the Access Arrangement Period, the Service Provider will adjust the forecast operating expenditure in the Access Arrangement so that the forecast expenditures are consistent with the capitalisation policy changes. (k) If there is a change in the Service Provider's approach to classifying costs as either capital expenditure or operating expenditure during the access arrangement period, the Service Provider must provide to the AER a detailed description of the change and a calculation of its impact on forecast and actual operating expenditure for the access arrangement period. (l) Where there is an interval of delay the formula in (c) should be adjusted accordingly.

APTPPL accepts that the AER has implemented EBSS mechanisms on virtually all its regulated assets.

However, APTPPL is concerned that the operation of the AER's proposed EBSS does not adjust outturn operating expenditure to exclude operating and maintenance costs associated with extensions and expansions that were not included in APTPPL's capex allowance. This approach means that increased operating expenditure associated with unforecast extensions and expansions will be shared between APA and consumers in the same way as any efficiency gain or loss.

The design of the EBSS contains an implicit assumption that the risk of changes in operating expenditure are symmetrical. That is, that there is the same risk of overspending as underspending across a period, and any change in spending is associated with an efficiency gain or loss. As a general principle this may be appropriate, but it is also important to ensure that the scheme is not rewarding or penalising the business for events that are unrelated to efficiency gains or losses, or which are not symmetrical – events that are far more likely to operate in one direction rather than the other.

APTPPL considers that treating increases in operating expenditure associated with unforecast extensions or expansions as efficiency losses under the EBSS is not symmetrical, and operates to penalise the business for increased operating costs that are unavoidable and unrelated to efficiency.

Gas transmission sector investment differs from distribution sector investment in that it can be very "lumpy". Extensions and expansions are significant and discrete projects – they bear little resemblance to organic distribution sector investments in new connections or minor system augmentations that can number in their thousands across a period. This organic increase in opex will therefore be reflected in the distribution business' forecasts. Variation in distribution forecasts can be characterised as forecasting error and may indeed be symmetrical. By contrast, emerging needs for gas transmission system extension or expansion are not forecasting errors – they are genuinely new requirements not anticipated at the time of submission.

While APTPPL has implemented the majority of this required revision, it has not incorporated this aspect of the AER's draft decision in its revised proposal. APTPPL believes that AER should give further consideration as to the defining

features of gas transmission investment that make this decision inappropriate.

5.6 Corporate income tax

Regarding the corporate income tax allowance, the AER draft decision required the following amendments:

Reference	Required Amendment
Revision 8.1	Make all necessary amendments to reflect this draft decision on the proposed corporate income tax allowance for the 2017–22 access arrangement period, as set out in table 8.1

Table 8.1 AER's draft decision on corporate income tax allowance for APTPPL ($million, nominal) over the 2017–22 access arrangement period

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

Source: AER analysis.

Required revisions 8.2 and 8.3, relating to the calculation of the Tax Asset Base and the weighted average remaining tax asset lives, are discussed in sections 2.5 and 2.5.1 respectively.

As with the calculation of the total revenue requirement and tariffs, the allowance for corporate income taxes is a function of the other amendments to the access arrangement. APTPPL's corporate income tax allowance is set out in *Table 5.4* below.

Table 5.4: Corporate income tax allowance ($nominal)

($m, nominal)	2017/18	2018/19	2019/20	2020/21	2021/22
Tax allowance	1.76	1.74	1.72	0.67	0.46

5.7 Total revenue requirement

Combining these components as required under Rule 76 derives a total revenue requirement as shown in Table 5.5 below.

Table 5.5: Total revenue requirement ($nominal)

($m, nominal)	2017/18	2018/19	2019/20	2020/21	2021/22
Return on capital	34.67	36.32	37.14	37.18	37.82
Return of capital	5.64	6.49	7.01	1.12	- 0.95
plus operating and maintenance	14.86	15.23	15.50	15.82	16.20
plus revenue adjustments	1.74	-	-	-	-
plus net tax allowance	1.76	1.74	1.72	0.67	0.46
Building block revenue requirement	**58.67**	**59.79**	**61.36**	**54.79**	**53.53**

The present value of this revenue requirement stream, discounted at the WACC of 7.67 per cent, is $233.01 million.

6 demand and tariffs

The AER accepted the APTPPL proposed forecast level of demand of 200 TJ/day, comprised of a combined demand for Eastbound Services and Westbound Services.

This chapter derives a 2017/18 Reference Tariff for Long Term Firm service of $0.7750/GJMDQ/day.

6.1 Reference Tariffs

The AER draft decision require the following amendment to reflects its draft findings on the level of Reference Tariffs and the forecast X-factors:

<table>
<tr><th>Reference</th><th>Required Amendment</th></tr>
<tr><td>Sch. 1</td><td>
Details
[…]
Reference Tariffs:
<table>
<tr><th>Reference Service</th><th>Reference Tariff $ per GJ of MDQ/Day</th></tr>
<tr><td>LTFS</td><td>$0.6843</td></tr>
</table>
Forecast X-factors:
<table>
<tr><th></th><th>1 July 2018</th><th>1 July 2019</th><th>1 July 2020</th><th>1 July 2021</th></tr>
<tr><td>X Factor</td><td>0.05</td><td>0.05</td><td>3.00</td><td>7.00</td></tr>
</table>
The X factor for each financial year of the 2017-22 access arrangement period will be determined in the PTRM as approved in the AER's final decision, and annually revised for the changes in ~~the Consumer Price Index and~~ the return on debt update calculated for the relevant financial year during the access arrangement period in accordance with that approved in the AER's final decision.
[this aspect is discussed in section 6.2.1]
[…]
</td></tr>
</table>

APTPPL considers that the tariff outcome and price path are the outworkings of the other features of the analysis.

The AER draft decision Reference Tariff is also affected by a mechanical error in translating from a 2-part (capacity + throughput) tariff to a 100% capacity tariff, as discussed in section 6.1.1 below.

To the extent that APTPPL has made amendments to the various components of the access arrangement analysis, the Reference Tariff and price path outcomes will differ.

APTPPL has proposed the following amendment regarding Reference Tariffs:

<table>
<tr><th>Reference</th><th>Proposed Amendment</th></tr>
<tr><td>Sch. 1</td><td>
Details
[…]
Reference Tariffs:
<table>
<tr><th>Reference Service</th><th>Reference Tariff $ per GJ of MDQ/Day</th></tr>
<tr><td>LTFS</td><td>$0.7750</td></tr>
</table>
Forecast X-factors:
<table>
<tr><th></th><th>1 July 2018</th><th>1 July 2019</th><th>1 July 2020</th><th>1 July 2021</th></tr>
<tr><td>X Factor</td><td>5.0</td><td>5.0</td><td>5.0</td><td>5.0</td></tr>
</table>
[…]
</td></tr>
</table>

6.1.1 *Translating tariffs*

The AER draft decision PTRM did not derive a Reference Tariff directly from the allowed smoothed revenue and approved demand information. Rather, the AER calculated an adjustment factor to apply to the existing tariffs such that, when combined with the forward X factors, would derive a revenue stream that would be equivalent, in NPV terms, with the allowed smoothed revenue.[53]

However, the AER made a mechanical error in translating the historical 2-part (capacity + throughput) tariff to the approved 100% capacity tariff structure.

In calculating the historical tariff to which the adjustment factor was to be applied, the AER simply added the Capacity and Throughput components together. As the Throughput tariff is charged only on gas actually

[53] See AER draft decision PTRM, cells 'Tariff Calculation'!A29:A33 and B16.

transported, this would imply that all shippers were always transporting gas to the maximum amount of capacity they had reserved – a 100% load factor.

However, as identified in Table 3.7 of the APTPPL proposed revised access arrangement submission proposal lodged in September 2016, the RBP's average composite load factor is 60.3%. That is, on average over the last five years, shippers have shipped 60.3% as much gas as they would be allowed to under their reserved capacity.

The "starting tariff" in the AER's analysis is therefore overstated, as shown below:

	AER approach	Load factor adjusted
Published Throughput tariff ($/GJ)	0.0430	0.0430
Composite load factor (Table 3.7 Revised AA submission)	n/a	0.603
Capacity-equivalent Throughput tariff	n/a	0.0259
Published capacity tariff ($/GJMDQ/day)	0.6413	0.6413
2016 Approved Capacity - equivalent Tariff	0.6843	0.6672

This adjustment has implications for the starting point of the Reference Tariff, which is reflected in the proposed Reference Tariffs in section 6.1 above.

[CONFIDENTIAL]

6.1.2 *Revised Reference Tariffs*

Following on from the previous discussion, the Reference Tariffs are calculated by allocating the total allowed revenue over the forecast demand.

The AER accepted APTPPL's proposed Long Term Firm tariff as a capacity reservation tariff, and is therefore expressed as a capacity reservation charge.

The 2017/18 tariffs calculated through the application of the PTRM are shown below:

Table 6.1: Forecast Long Term Firm tariffs

	2017-18
Smoothed Revenue Requirement ($m)	$49.49
AER Revenue Adjustment Factor[54]	0.9075
Demand Forecast (TJMDQ/day)	200
X Factors	-13.4%
Long Term Firm capacity tariff ($/GJMDQ/day)	0.7750

The Long Term Firm Capacity tariff for 2017/18 derived from this approach is $0.7750 per GJ of MDQ per day, as shown in the attached PTRM.

APTPPL notes that the same Long Term Firm tariff applies to both Eastbound and Westbound services.

6.2 Reference tariff variation

The AER largely approved APTPPL's proposed tariff variation mechanism. Save for one proposed change with which the AER did not agree as discussed more fully below, the proposed mechanism was carried forward from the previous approved access arrangement.

APTPPL does not propose to modify the existing tariff variation mechanism save to allow for the annual recalculation of the relevant X factors arising from the AER's annual update of the cost of debt.

As discussed in section 2.4, APTPPL proposes to include a mechanical adjustment for out turn inflation through this process as well. APTPPL's aim is to reduce the impact (positive or negative) of forecasting error on the rate

[54] See AER draft decision Attachment 10.

of inflation between that included in the Post Tax Revenue Model and the subsequent indexation of the capital base for outturn inflation in the Roll Forward Model.

6.2.1 *Definition of X Factor – accounting for inflation*

The APTPPL proposed revised access arrangement sought to align the treatment of inflation between the Post Tax Revenue Model and the Roll Forward Model, by updating the X factor each year for contemporaneously observed inflation, using the same process as currently applied to update the X factor for changes in the rolling average cost of debt.

As discussed in the proposed revised access arrangement submission, the purpose of this proposed change to the definition of the X factor was to reduce the inevitable error in forecasting future changes in the Consumer Price Index.

The AER did not accept this approach to sterilising inflation forecasting errors, requiring the following revision:

Reference	Required Amendment
Sch. 1	**Details** […] The X factor for each financial year of the 2017-22 access arrangement period will be determined in the PTRM as approved in the AER's final decision, and annually revised for the changes in ~~the Consumer Price Index and~~ the return on debt update calculated for the relevant financial year during the access arrangement period in accordance with that approved in the AER's final decision. […]

APTPPL's reasoning for this change to the definition of "X" are discussed more extensively in section 2.4. APTPPL has not implemented this revision.

6.2.1.1 *Improving the ongoing forecast of inflation*

As discussed in section 2.3.5, APTPPL does not take issue with the AER's methodology to forecast inflation. However, in its access arrangement revisions proposal, APTPPL recommended an approach the would, in

APTPPL's view, improve the ongoing accuracy of the inflation forecast as the regulatory period wore on.

APTPPL understands that the AER is undertaking an omnibus review of its approach to inflation and, subject to the AER's acceptance of APTPPL's proposal to sterilise the inevitable forecasting errors related to inflation, will leave matters concerning improvements to the forecast of inflation to that process.

While acknowledging the AER's broader investigation of its treatment of inflation, APTPPL considers, from an administrative law perspective, that the AER must engage with the issue as presented to it in APTPPL's access arrangement revision proposal. APTPPL considers that the AER did not engage with the issue in the draft decision, particularly the disconnect between the return of capital recovered by the pipeliner through the Reference Tariff and the return of capital subsequently reflected in the Roll Forward Model.

6.3 Cost pass-through

The AER draft decision required the following revisions to the proposed pass through arrangements:

Reference	Required Amendment
Insurance cap event	An event that would be covered by an insurance policy but for the amount that materially exceeds the policy limit, and as a result the Service Provider must bear the amount of that excess loss. For the purposes of this Cost Pass Through Event, the relevant policy limit is the greater of the actual limit from time to time and the limit under the Service Provider's insurance cover at the time of making this Access Arrangement. This event excludes all costs incurred beyond a cap that are due to the Service Provider's negligence. This also excludes all liability arising from the Service Provider's unlawful conduct. Insurance Cap Event means an event where: (a) the Service Provider makes a claim or claims and receives the benefit of a payment or payments under a relevant insurance policy; (b) the Service Provider incurs costs beyond the policy limit; and

Reference	Required Amendment
	(c) the costs beyond the policy limit increase the costs to the Service Provider of providing the Reference Service. For this Insurance Cap Event: (d) a relevant insurance policy is an insurance policy held during the Access Arrangement Period or a previous period in which access to the pipeline services was regulated; and (e) the Service Provider will be deemed to have made a claim on a relevant insurance policy if the claim is made by a related party of the Service Provider in relation to any aspect of the Network or the Service Provider's business. Note in making a determination on an Insurance Cap Event, the AER will have regard to, amongst other things: (i) the insurance policy for the event; (ii) the level of insurance that an efficient and prudent Service Provider would obtain in respect of the event; and (iii) any assessment by the AER of the Service Provider's insurance in approving the access arrangement for the RBP for the relevant period.
Insurer credit risk event	Insurer Credit Risk Event means an event where the insolvency of the insurers of Service Provider occurs, : (a) an insurer of the Service Provider becomes insolvent, and (b) as a result, in respect of an existing or potential claim for a risk that was insured by the insolvent insurer, of which the Service Provider: (a) incurs materially higher or materially lower costs for insurance premiums than those allowed for in the Access Arrangement; or (b) in respect of a claim for a risk that would have been insured by Service Provider's insurers, is subject to a materially higher or lower claim limit or a materially higher or lower deductable that would have applied under that policy; or (i) is subject to a higher or lower claim limit or higher or lower

Reference	Required Amendment
	deductible than would have otherwise applied under the insolvent insurer's policy; or (ii) incurs additional costs associated with self-funding an insurance claim, which would have otherwise been covered by the insolvent insurer. Note for the avoidance of doubt, in making a determination on an Insurer Credit Risk Event, the AER will have regard to, amongst other things: (i) the Service Provider's attempts to mitigate and prevent the event from occurring by reviewing and considering the insurer's track record, size, credit rating and reputation, and (ii) in the event that a claim would have been made after the insurance provider became insolvent, whether the Service Provider had reasonable opportunity to insure the risk with a different provider.
Natural disaster event	Natural disaster event means any natural disaster including but not limited to major fire, flood or earthquake or other natural disaster beyond the control of Service Provider (but excluding those events for which external insurance or self-insurance has been included within the Service Provider's forecast operating expenditure) that occurs during the access arrangement period and materially increases the costs to the Service Provider in providing the Reference Firm Service, provided the fire, flood or other event was not a consequence of the acts or omissions of the Service Provider. Note for the avoidance of doubt, in making a determination on a Natural Disaster Event, the AER will have regard to, amongst other things: (a) whether the Service Provider has insurance against the event, and (b) the level of insurance that an efficient and prudent service provider would obtain in respect of the event.
Regulatory change event	An imposition of, a A change in, or the removal of a regulatory obligation or requirement that: (a) falls within no other category of pass through event; and (b) occurs during the course of an access arrangement period; and

Reference	Required Amendment
	(c) substantially affects the manner in which the Service Provider provides the Reference Service(as the case requires); and (d) materially increases or materially decreases the costs of providing those services.
Service standard event	A legislative or administrative act or decision that: (a) has the effect of: (i) substantially varying, during the course of an access arrangement period, the manner in which a Service Provider is required to provide the Reference Service; or (ii) imposing, removing or varying, during the course of an access arrangement period, minimum service standards applicable to the Reference Service; or (iii) altering, during the course of an access arrangement period, the nature or scope of the Reference Service, provided by the Service Provider; and (b) materially increases or materially decreases the costs to the Service Provider of providing the Firm Service.
Tax change event	A tax change event occurs if any of the following occurs during the course of the access arrangement period for Service Provider: (a) a change in a relevant tax, in the application or official interpretation of a relevant tax, in the rate of a relevant tax, or in the way a relevant tax is calculated; (b) the removal of a relevant tax; (c) the imposition of a relevant tax; and in consequence, the costs to Service Provider of providing the Reference Service are materially increased or decreased.
Terrorism event	Terrorism event means an act (including, but not limited to, the use of force or violence or the threat of force or violence) of any person or group of persons (whether acting alone or on behalf of or in connection with any organisation or government), which:

Reference	Required Amendment
	(a) from its nature or context is done for, or in connection with, political, religious, ideological, ethnic or similar purposes or reasons (including the intention to influence or intimidate any government and/or put the public, or any section of the public, in fear); and (b) increases the cost to the Service Provider in providing a Reference Service. Note for the avoidance of doubt, in making a determination on a Terrorism Event, the AER will have regard to, amongst other things: (i) whether the Service Provider has insurance against the event; (ii) the level of insurance that an efficient and prudent service provider would obtain in respect of the event; and (iii) whether a declaration has been made by a relevant government authority that an act of terrorism has occurred.

In summary, APTPPL:

- accepts changes to insurance cap event, natural disaster event, terrorism event with some very minor revisions to align it with the access arrangement style;
- agrees to update the insurer credit risk event, noting that a technical error appears to have occurred with the required revision text. APTPPL has instead used the definition approved by the AER for the VTS AA for this event; but
- does not agree with the AER to delete the carbon cost event

6.3.1 *Carbon cost event*

The AER's draft decision is to require APTPPL to delete its proposed carbon cost pass through event. APTPPL had revised the definition of this event compared to that which applied in the earlier access arrangement period due to changes in legislative arrangements. The earlier definition referred to the now defunct *Clean Energy Act 2011*.

APTPPL does not agree that the existing tax change event, or regulatory change event would be sufficient to manage changes in costs associated with a form of carbon cost pricing that may be introduced during the access arrangement period.

APTPPL considers that a future carbon pricing mechanism is very unlikely to take the form of a tax due to the recent political controversy over the imposition of a so-called 'carbon tax'. Further, a pricing mechanism may not satisfy requirements of a regulatory change event, which, under the current drafting, must 'affect the manner in which Service Provider provide the Reference Service'. It is unlikely that a carbon pricing mechanism would change the nature of the service provided – only its cost.

A failure to be able to pass through the effects of a future carbon pricing mechanism would not only put at risk APTPPL's ability to recover the efficient costs of providing reference services, it may also defeat the purpose of the policy. The success of a carbon pricing policy is to use price incentives to change behaviour. This is also why the carbon cost event is currently, and should remain, outside of the materiality threshold limits.

APTPPL queries the rationale given by the AER that consumer interests are best served by keeping events to a limited range of proven and predictable definitions applying across service providers. The appropriate rationale is surely to ensure that genuine changes in circumstance are managed during the access arrangement period using the most appropriate mechanism available.

APTPPL notes that the AER's draft decision also states that the pass through event does not refer to a specific carbon management scheme. If the scheme were known, arguably a pass through mechanism may not be required as it would be included in the forecast. APTPPL notes that the regulatory change event does not refer to a specific piece of legislation or change – specificity of this kind is clearly not a precondition for a pass through event.

Further, the AER states that it cannot assess whether the cost impact of a future scheme will be best managed by a service provider or its customers. APTPPL notes that by removing the pass through event, the AER may be removing its ability to take this matter into account at all. If a carbon cost event occurred that was not a regulatory change event or a tax change event, then the AER would not be able to pass through the costs to

customers, even where the design of the scheme was intended to expose customers to those costs.

APTPPL has not revised its access arrangement to remove the carbon cost event. APTPPL considers that more consideration is needed as to the purpose of a carbon cost policy and the importance that associated costs are able to be passed through, as well as how a carbon cost policy may be imposed in the future, as part of the need to have a clear and dedicated cost pass through event.

APTPPL has revised its proposed carbon cost event to make it clearer that it relates to government-imposed policies to reduce carbon emissions, as well as to provide decision-making point for the AER in relation to scheme design and the pass through of costs.

The proposed Carbon cost event is included in the revised access arrangement lodged with this submission, as follows:

> **Carbon cost event**—means:
>
> An event that occurs if, for a given Regulatory Year of the Access Arrangement Period, the Service Provider becomes liable for a carbon cost (part of which may be an estimate) in complying with a government imposed mechanism that is designed or intended to reduce or manage carbon emissions, or to otherwise reduce or manage greenhouse gas emissions, and for those costs to be passed on to end use consumers. The carbon cost event is taken to have occurred at the time liability for carbon costs is established. Actual carbon costs and associated revenues are to be reconciled at the time that it is possible for Service Provider to calculate the carbon costs it has incurred for a Regulatory Year without use of estimation.

7 non-tariff components

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

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

7.1 Revisions to the access arrangement

Regarding the Revisions Submission Date and the Revisions Commencement Date, the AER draft decision required the following revision:

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

APTPPL accepts this required revision

7.2 Terms and conditions

The AER draft decision requested a number of revisions to the Terms and Conditions, as discussed below.

7.2.1 *Daily variance charges*

By letter dated 24 October 2016, APTPPL advised shippers that it would waive its right to payment of all Daily Variance Charges/Nomination Variance Charges incurred under Gas Transportation Agreements for the period 1 December 2016 to 30 November 2017.

The AER required the following revision to the access arrangement:

Reference	Required Amendment
4.3.3 Daily Variance Charges	*Add a note stating that this charge has been waived for the period 1 December 2016 to 30 November 2017.*

Considering the timing of this access arrangement review, APTPPL considers it likely that the revisions to the access arrangement may come into effect after the waiver has expired.

APTPPL believes that including a reference to an expired condition introduces scope for confusion in the marketplace.

APTPPL has therefore elected not to make this revision to the access arrangement.

7.2.2 *Intra-day nominations*

The AER draft decision required the following changes to make it clear that intra-day nominations be included as part of the Reference Service:

Reference	Required Amendment
Schedule 3 Terms and Conditions	
T&C s2.1	**Definitions** […] **Intra-Day Nomination** means a new or revised Nomination, for Services on a Day, given after the Nomination Deadline in respect of that Day, except Nominations that User must give to otherwise comply with this Access Arrangement (for example, for balancing or to provide System Use Gas). […] **Schedule**, for a Day, means a determination made prior to the Day

Reference	Required Amendment
	(or, for any Intra-Day Nominations, made during the Day) by the Service Provider (acting reasonably, in accordance with the Transportation Agreement and having regard to nominations of (and appropriate Receipt Point and Delivery Point allocations between) all Users, the capacity of the Pipeline, rights and obligations under Transportation Agreements and Good Engineering and Operating Practice) of the Service Provider's intended Schedules of receipt quantities and delivery quantities of Gas and quantities of Gas transported to the Brisbane hub on that Day under Transportation Agreements, as amended by the Service Provider for intra-day nominations (before or on the Day) or for operational reasons. Scheduled and Scheduling have corresponding meanings.
3	**Nominations** *Incorporate words to make it clear that intra-day renomination is a standard feature of the reference service and that it is provided without an additional charge.*

These amendments align with the APA Standard Terms and Conditions. APTPPL accepts these revisions.

7.2.3 *Other definitions*

The AER draft decision required the following amendments to the terms and conditions:

Reference	Required Amendment
Schedule 3 Terms and Conditions	
15(c)	*Change the reference to paragraph 'e' to paragraph 'd'.*

APTPPL accepts this required revision.

7.3 Queuing requirements

The AER's draft decision did not approve APTPPL's proposed queuing requirements. APTPPL proposed to replace the existing "first-come-first-served" queuing policy with a new open season and auction process. The AER's draft decision requires APTPPL to amend its access arrangement

proposal to restore the 'fist come first served" queuing requirements in clauses 6.1 to 6.6 of the 2012–17 RBP Access Arrangement.

The AER draft decision required the following amendments related to queuing:

Reference	Required Amendment
6 Queuing Requirements	*Delete clauses 6.1 to 6.3 entirely.* *Insert following clauses from APTPPL RBP Access Arrangement 2012-17:* *6.1 Existing Capacity Queues* *6.2 Forming the Existing Capacity Queue* *6.3Conditions Applicable to the Existing Capacity Queue* *6.4 Procedure when capacity can be made available for Services provided by the Existing Capacity* *6.5 Developable Capacity* *6.6 Investigations to Determine if Developable Capacity is Available*

While APTPPL strongly maintains that its open season and auction approach is the superior approach to queuing, it has made this required revision to the access arrangement.

A Summary of APTPPL responses to AER required revisions

Reference	AER required revision	APTPPL response
Services		
AA s2.1	**Services under Access Arrangement** The following services are offered under this Access Arrangement: (a) ~~Firm Service –~~ Reference Service as described in section 2.2; ~~and~~ (b) Negotiated Services – non-Reference Services, as described in section 2.3; and (c) Rebateable Services, as described in section 2.3A.	APTPPL accepts this required revision in part. See section 1.2
AA s2.2	~~**Firm**~~ **Reference Service**	APTPPL accepts this required revision. See section 1.1
AA s2.2.1	The Reference Service is the Long Term Firm Service The Long Term Firm Service is a service for the receipt, transportation and delivery of Gas through any length of the Covered Pipeline. Service Provider must provide the Long Term Firm Service on the following basis: (a) the receipt by Service Provider at the Receipt Point of quantities of Gas Nominated by the User, not exceeding the applicable Receipt Point MDQ and in aggregate not exceeding the Firm MDQ, at a rate per Hour net exceeding the applicable Receipt Point MHQ; (b) the transportation of the Gas referred to in paragraph (a) on a firm basis and without interruption,	APTPPL accepts this required revision. See section 1.1

Reference	AER required revision	APTPPL response
	except as is expressly permitted under the Transportation Agreement; and (c) the delivery by Service Provider to, or on account of, User at the Delivery Points of quantities of Gas Nominated by User, not exceeding the applicable Delivery Point MDQ and in aggregate not exceeding the Firm MDQ, at a rate per Hour not exceeding the applicable Delivery Point MHQ, as Scheduled in accordance with clauses 11 to 14 (inclusive) of the Terms and Conditions. Despite paragraphs (a) to (c) above (inclusive) and 2.2.4, the transportation of Gas received at Receipt Points by Service Provider under ~~the~~ a Firm Service is, for STTM purposes, to the Brisbane hub or, if Scheduled by Service Provider in accordance with clauses 11 to 14 (inclusive) of the Terms and Conditions, to Delivery Points upstream of the Brisbane hub. The Long Term Firm Service is provided at the Long Term Firm Reference Tariff. The Long Term Firm Service includes the following: (a) ability of User to request an Authorised Overrun; (c) for installations owned and operated by Service Provider, the measurement of gas quantity and quality and of gas pressures as detailed in the Terms and Conditions.	
AA s2.2.5	**Term** The term of ~~a Firm Service is~~: ~~(a) for~~ a Long Term Firm Service is three years from the commencement of the Firm Service or such longer period ending on an anniversary of the commencement of the Firm Service as the User elects ~~(Long Term Firm Service); or~~ ~~(b) as agreed between the User and the Service Provider, but less than three years (Short Term Firm Service)~~.	APTPPL accepts this required revision. See section 1.1

Reference	AER required revision	APTPPL response
AA s2.3	**Negotiated Services** If a Prospective User's requirements and circumstances vary from the conditions of the Long Term Firm Service ~~Firm Service~~, including where the Prospective User seeks access to capacity other than the Existing Capacity, the Prospective User may seek to negotiate different terms and conditions, including tariffs, as a Negotiated Service. Negotiated Services will have priority agreed to in a Non-Discriminatory Manner in accordance with the Terms and Conditions set out in Schedule 3, but will not be higher than a Firm Service.	APTPPL accepts this required revision. See section 1.1
AA s2.3A AA s2.3A.1	**Rebateable Services** The following Rebateable Services are offered: (a) Capacity Trading Service; (b) In-Pipe Trade Service; (c) Parking Service; and (d) Loan Service. The Capacity Trading Service is the facilitation services provided by Service Provider to a User for the sale of all or part of User's Operational MDQ to another User, or the purchase by User of all or part of another User's Operational MDQ. The In-Pipe Trade Service is the facilitation services provided by Service Provider to the User for a Gas Trade. The Parking Service is the service provided by Service Provider enabling a User to store quantities of gas in the Covered Pipeline which do not exceed prescribed limits agreed with Service Provider. The Loan Service is the service provided by Service Provider enabling a Prospective User to receive quantities of gas from the Covered Pipeline which do not exceed prescribed limits agreed with Service Provider.	APTPPL does not accept this revision, as discussed in section 1.2

Reference	AER required revision	APTPPL response
AA s4.2.1	***Reference Service and Tariffs*** (a) The amount payable by the User for the ~~a~~ Long Term Firm Service Reference Service is the applicable Long Term Firm Service Charge. ~~(b) The amount payable by the User for the a Short Term Firm Service (Reference Service) is the Short Term Firm Service Charge.~~ ~~(c)~~ (b) Users will also pay any Other Tariff Charges applicable.	APTPPL accepts this required revision. See section 1.1
4.2.2	***Long Term Firm Service Charges*** The Long Term Firm Service Charge for each Day is the product of: (a) the applicable Long Term Firm Reference Tariff as specified in section 2.2.1; and (b) the Firm MDQ (expressed in GJ) specified in the Transportation Agreement.	APTPPL accepts this required revision. See section 1.1
~~4.2.3~~	~~***Short Term Firm Service Charges***~~ ~~The Short Term Firm Service Charge for each Day is the product of:~~ ~~(a) the Short Term Firm Reference Tariff; and~~ ~~(b) the Firm MDQ (expressed in GJ) specified under the Transportation Agreement.~~	APTPPL accepts this required revision. See section 1.1
4.7	**Reference Tariff after 30 June 2022** In the event that the Revisions Commencement Date is later than 30 June 2022, the tariff in effect at 30 June 2022 shall continue to apply to the provision of Long Term Firm Service ~~Firm Services~~ between 30 June 2022 and that later Revisions Commencement Date. If the Reference Services under the revised Access Arrangement are different to those in this Access Arrangement, the applicable Reference Tariff and terms for an existing Service being supplied to a	APTPPL accepts this required revision. See section 1.1

Reference	AER required revision		APTPPL response
	User are those as at the Revisions Commencement Date.		
AA s5.5	**Changing Receipt and Delivery Points** [an additional paragraph at the end of section 5.5 as follows:] If the User's request relates to a Receipt Point or a Delivery Point which is in a different Zone to the existing Receipt Point or Delivery Point, Service Provider may make an adjustment to the relevant tariff and amount payable under the Transportation Agreement.		APTPPL does not accept this revision, as discussed in section 1.1.1.
Terms and Conditions			
T&C s1	**Authorised Overrun Rate:**	120% of the Long Term Firm Reference Tariff ~~or Short Term Firm Reference Tariff (as applicable)~~	APTPPL accepts this required revision. See section 1.1
	Unauthorised Overrun Rate:	250% of the Long Term Firm Reference Tariff ~~or Short Term Firm Reference Tariff (as applicable)~~	
	Imbalance Rate:	250% of the Long Term Firm Reference Tariff ~~or Short Term Firm Reference Tariff (as applicable)~~	
	Imbalance Allowance:	5% (either positive or negative) of the sum of the MDQ for all Delivery Points	
	Daily Variance Rate:	250% of the Long Term Firm Reference Tariff ~~or Short Term Firm Reference Tariff (as applicable))~~	
	Daily Variance Allowance:	5% (either positive or negative) of the MDQ for the applicable Delivery Point or Receipt Point	
	Notes on Tariffs: 1. Reference tariffs apply from the date on which the approval of the AER takes effect under Rule 62.		

Reference	AER required revision	APTPPL response
	2. These tariffs apply as at 1 July 2017 to ~~the~~ a LTFS ~~Firm Service~~. For other services and terms, tariffs will be determined by negotiation. 3. The minimum term for ~~the~~ a Long Term Firm Service is 3 years. ~~The minimum term for the Short Term Firm Service is one day.~~ 4. Refer to section 4 of this Access Arrangement for details of the charges to which the above rates and tariffs apply and the basis upon which they will be adjusted. 5. These tariffs are quoted on a GST exclusive basis. […]	
T&C s2.1	**Definitions** […]**Capacity Trading Service** has the meaning given in section 2.3A of this Access Arrangement. […] **Gas Trade** means an agreement between a Prospective User and another User for the sale and purchase of gas which is situated in the Covered Pipeline on account of or at the direction of the seller in accordance with a Transportation Agreement. […] **In-Pipe Trade Service** has the meaning given in section 2.3A of this Access Arrangement. […] **Intra-Day Nomination** means a new or revised Nomination, for Services on a Day, given after the Nomination Deadline in respect of that Day, except Nominations that User must give to otherwise comply with this Access Arrangement (for example, for balancing or to provide System Use Gas). […]	See s1.2.1 See s1.2.1 See s1.2.1 See s7.2

Reference	AER required revision	APTPPL response
	Loan Service has the meaning given in section 2.3A of this Access Arrangement.	See s1.2.1
	[…]	
	Long Term Firm Service has the meaning given in section 2.2.1 of this Access Arrangement.	See s1.1
	Parking Service has the meaning given in section 2.3A of this Access Arrangement.	See s1.2.1
	[…]	
	Rebateable Service has the meaning given in the NGR.	See s1.2.1
	[…]	
	Schedule, for a Day, means a determination made prior to the Day (or, for any Intra-Day Nominations, made during the Day) by the Service Provider (acting reasonably, in accordance with the Transportation Agreement and having regard to nominations of (and appropriate Receipt Point and Delivery Point allocations between) all Users, the capacity of the Pipeline, rights and obligations under Transportation Agreements and Good Engineering and Operating Practice) of the Service Provider's intended Schedules of receipt quantities and delivery quantities of Gas and quantities of Gas transported to the Brisbane hub on that Day under Transportation Agreements, as amended by the Service Provider for intra-day nominations (before or on the Day) or for operational reasons. Scheduled and Scheduling have corresponding meanings.	See s7.2
T&C s3	**Terms and conditions applying to the Long Term Firm Service** 1. Service Provider will provide the Long Term Firm Service to Users with whom it has a Transportation Agreement to provide the Long Term Firm Service, in accordance with the Terms and Conditions set out in this Schedule 3. […] 3. For a Long Term Firm Service, the User must give to Service Provider, at least 3 Days before the beginning of each Month, a completed Nomination for the applicable Firm Service for each day of	APTPPL accepts this required revision. See section 1.1

Reference	AER required revision	APTPPL response
	the Month about to commence. If the User fails to provide such a Nomination by this time then its Nomination for each Day it has failed to give a Nomination will be deemed to be zero GJ. […] 10AA User may submit an Intra-Day Nomination for any service, in which case: (a) Service Provider may accept or reject the Intra-Day Nomination, or any part of it, at its discretion and without liability to the user; (b) Service Provider must, as soon as possible after receipt of the Intra-Day Nomination, advise User if and to the extent that Service Provider is prepared to accept the Intra-Day Nomination; and (c) to the extent that Service Provider accepts the Intra-Day Nomination, the quantities of Gas to which the acceptance relates must be Scheduled by Service Provider in accordance with the terms and conditions of the Service under the Transportation Agreement to which the acceptance relates.	
T&C s8	**Pro-forma Transportation Agreement** […] **Services** Long Term Firm Service Authorised Overrun Service […]	APTPPL accepts this required revision. See section 1.1
Capital expenditure		
Revision 6.1	Make all necessary amendments to reflect our draft decision on conforming capex for 2011–17, as set out in table 6.1.	APTPPL does not accept this revision, as

Reference	AER required revision	APTPPL response
		discussed in section 2.2.6
Revision 6.2	Make all necessary amendments to reflect our draft decision on conforming capex for 2017–22, as set out in table 6.2.	APTPPL does not accept this revision, as discussed in section 2.3.2.
The Capital Base		
Revision 2.1:	Make all necessary amendments to reflect this draft decision on the roll forward of the capital base over the 2012–17 access arrangement period, as set out in Table 2.1.	APTPPL accepts this revision in part, as discussed in section 2.3.
Revision 2.2:	Make all necessary amendments to reflect this draft decision on the roll forward of the capital base over the 2017–22 access arrangement period, as set out in Table 2.2.	APTPPL accepts this revision in part, as discussed in section 2.3.
Revision 2.3:	Update the access arrangement (section 3.6) to set out the depreciation schedule used for rolling forward the capital base at the commencement of the 2022–27 access arrangement period as follows: The depreciation schedule (straight-line) for establishing the opening capital base at 1 July 2022 will be based on forecast capital expenditure at the asset class level.	APTPPL does not accept this required revision, as discussed in section 2.3.3
Depreciation		

Reference	AER required revision	APTPPL response
Revision 5.1	Make all necessary amendments to reflect this draft decision on the regulatory depreciation allowance for the 2017–22 access arrangement period, as set out in Table 5.1.	APTPPL accepts this revision in part, as discussed in section 2.3.3.
Revision 5.2	Make all necessary amendments to reflect this draft decision on the remaining asset lives as at 1 July 2017, as set out in Table 5.4.	APTPPL accepts this revision in part, as discussed in section 2.3.4.
Rate of Return		
Revision 3.1:	Make all the necessary amendments to the access arrangement proposal to give effect to this draft decision.	APTPPL does not accept this revision, as discussed in section 3.
Tax		
Revision 8.1	Make all necessary amendments to reflect this draft decision on the proposed corporate income tax allowance for the 2017–22 access arrangement period, as set out in table 8.1	APTPPL accepts this revision in part, as discussed in section 5.6.
Revision 8.2	Make all necessary amendments to reflect this draft decision on the opening tax asset base as at 1 July 2017, as set out in Table 8.4.	APTPPL accepts this revision in part, as discussed in section 2.5.

Reference	AER required revision	APTPPL response
Revision 8.3	Make all necessary amendments to reflect this draft decision on the standard and remaining tax asset lives for the 2017–22 access arrangement period as set out in Table 8.5.	APTPPL accepts this revision in part, as discussed in section 2.5.1.
Incentives		
Revision 9.1	Amend the Roma to Brisbane Gas Pipeline access arrangement to include the following clause: **8 Efficiency Carryover Mechanism** 8.1 Efficiency Carryover Mechanism (a) An efficiency carryover mechanism will apply to operating expenditure. (b) The incentive mechanism will operate in the following way: (i) the mechanism carries forward the Service Provider's incremental efficiency gains (or losses) for five Financial Years from the Financial Year those gains (or losses) occur (ii) annual carryover amounts accrue in each Financial Year of the subsequent access arrangement period as the summation of the incremental efficiency gains (or losses) in the immediately prior access arrangement period that are carried forward for five years or less into the Financial Year (iii) the annual carryover amounts are added to the Service Provider's Total Revenue in each Financial Year of the subsequent access arrangement period. If necessary, the annual efficiency gain (or loss) is carried forward into the access arrangement period commencing 1 July 2022 until it has been retained by the Service Provider for a period of five years. (c) To ensure the carryover amount in the first year of an Access Arrangement period is only for incremental efficiency gains made in that year, we will subtract any incremental efficiency gain made in the previous Access Arrangement period after the base year from the difference between	APTPPL accepts this required revision with comments. See section 5.5

Reference	AER required revision	APTPPL response
	actual opex and forecast opex in the first year of the new period. The incremental efficiency gain (or loss) for the Financial Year 2017–18 will be calculated as: $E_{2017–18} = (F_{2017–18} – A_{2017–18}) – (F_{2016–17} – A_{2016–17}) + (F_{2015–16} – A_{2015–16})$ where: $F_{2017–18}$ is the forecast operating expenditure for Financial Year 2017–18 $A_{2017–18}$ is the actual operating expenditure for Financial Year 2017–18. (d) The incremental efficiency gain (or loss) for Financial Years 2018–19 to 2020–21 (inclusive) will be calculated as: $E_t = (F_t – A_t) – (F_{t–1} – A_{t–1})$ where: E_t is the incremental efficiency gain (or loss) in Financial Year t of the Access Arrangement Period F_t is the forecast operating expenditure in Financial Year t of the Access Arrangement Period A_t is the actual operating expenditure in Financial Year t of the Access Arrangement Period $F_{t–1}$ is the forecast operating expenditure in Financial Year t–1 of the Access Arrangement Period $A_{t–1}$ is the actual operating expenditure in Financial Year t–1 of the Access Arrangement Period. (e) The estimated incremental efficiency gain (or loss) for the Financial Year 2021–22 to will be calculated as: $E_{2021–22} = (F_{2021–22} – A_{2021–22}^*) – (F_{2020–21} – A_{2020–21})$ Where $A_{2021–22}^*$ is to be estimated using the following equation:	

Reference	AER required revision	APTPPL response

$A_{2021–22}^{*} = A_{base} + F_{2021–22} – F_{base}$

where:

$A_{2021–22}^{*}$ is the estimate of operating expenditure for Financial Year 2021–22

$A_{2020–21}$ is the actual operating expenditure for Financial Year 2020–21

A_{base} is the actual operating expenditure for the Financial Year used to forecast opex for the following period

$F_{2021–22}$ is the forecast operating expenditure for Financial Year 2021–22

$F_{2020–21}$ is the forecast operating expenditure for Financial Year 2020–21

F_{base} is the forecast operating expenditure for the Financial Year used to forecast opex for the following period.

(f) The incremental efficiency gains (or losses) are carried over from Financial Year to Financial Year in real dollars to ensure that these gains (or losses) are not eroded by inflation. The price indices used in this calculation are to be consistent with those used to forecast opex for the following Access Arrangement period.

(g) Increments or decrements from the summation of incremental efficiency gains or losses calculated in accordance with the approved incentive mechanism in the Access Arrangement Period will give rise to an additional 'building block' in the calculation of the Total Revenue amounts for each Financial Year of the subsequent access arrangement period.

(h) The following costs will be excluded from the operation of the efficiency carryover mechanism:

ii. any cost category that is not forecast using a single year revealed cost approach in the access arrangement period following this Access Arrangement Period (intended to commence 1 July 2022); and

iii. any cost category that the AER determines, as part of a decision on revisions to apply to

Reference	AER required revision	APTPPL response
	this Access Arrangement, to exclude from the operation of the efficiency carryover mechanism because it is satisfied that it would not promote the National Gas Objective. (i) The forecast operating expenditure amount for each year of the Applicable Access Arrangement Period will be adjusted to include any Determined Pass Through Amounts or other AER approved expenditure arising from Cost Pass Through Events which apply in respect of that year (j) Where the Service Provider changes its approach to classifying costs as either capital expenditure or operating expenditure during the Access Arrangement Period, the Service Provider will adjust the forecast operating expenditure in the Access Arrangement so that the forecast expenditures are consistent with the capitalisation policy changes. (k) If there is a change in the Service Provider's approach to classifying costs as either capital expenditure or operating expenditure during the access arrangement period, the Service Provider must provide to the AER a detailed description of the change and a calculation of its impact on forecast and actual operating expenditure for the access arrangement period. (l) Where there is an interval of delay the formula in (c) should be adjusted accordingly.	
Tariffs		
AA s4.2.1	***Reference Services and Tariffs*** (a) The amount payable by the User for the Long Term Firm Service Reference Service is the Long Term Firm Service Charge. ~~(b) The amount payable by the User for the Short Term Firm Service Reference Service is the Short Term Firm Service Charge.~~ (~~c~~b) Users will also pay any Other Tariff Charges applicable.	APTPPL accepts this required revision. See section 1.1
AA s4.2.2	~~***Short Term Firm Service Charge***~~ ~~The Short Term Firm Service Charge for each Day is the product of:~~ ~~(a) the Short Term Firm Reference Tariff; and~~	APTPPL accepts this required revision. See

Reference	AER required revision	APTPPL response
	~~(b) the Firm MDQ (expressed in GJ) specified in the Transportation Agreement.~~ Not used	section 1.1
AA s4.5.1	***Annual Reference Tariff adjustment formula mechanism*** The Capacity Tariff for the ~~-~~Long Term Firm Service to apply on 1 July 2018 and on each subsequent 1 July, will be adjusted according to the following formula: $RT_n = RT_{n-1} \times \left[1 + \frac{CPI_{n-1} - CPI_{n-2}}{CPI_{n-2}}\right] \times (1 - X)$ Where: RT_n means the Long Term Firm Service ~~Capacity~~ Tariff in Year n n means the Year in which the adjusted Long Term Firm Service-Tariff is to be applied RT_{n-1} means the ~~Capacity~~ Long Term Firm Service Tariff in Year n – 1 CPI_{n-1} is the Consumer Price Index for the March quarter applying in the year n – 1. For tariffs in 2018–19, n-1 is March quarter 2018 CPI_{n-2} is the Consumer Price Index applying for the March quarter in year n – 2. For tariffs in 2018–19, n-2 is March quarter 2017.	APTPPL accepts this required revision. See section 1.1

Reference	AER required revision	APTPPL response
AA s4.8 AA s4.8.1	**Rebate mechanism** ***Rebate Pool*** Service Provider will track revenue received through the provision of Rebateable Services, and will allocate the following proportions of those revenues to the Rebateable Service Rebate Pool: (a) For Capacity Trading Services and In-Pipe Trade Services – 70 per cent of the revenue; (b) For Parking Services and Loan Services – 90 per cent of the revenue.	APTPPL does not accept this revision, as discussed in section 1.2.1.
AA s4.8.2	***Distribution of Rebate Pool*** Service Provider will rebate to each Shipper taking a Reference Service, or service in the nature of a Reference Service, a proportion of the Rebateable Service Rebate Pool as determined by the following formula: For in-pipe trading services and/or capacity trading services: $\sum_{Day=1}^{365} 0.70 \left[\frac{Capacity\ Reserved\ Shipper\ n}{Shipper\ n\ Total\ Usage}\right]$ For Park and loan services: $\sum_{Day=1}^{365} 0.90 \left[\frac{Capacity\ Reserved\ Shipper\ n}{Shipper\ n\ Total\ Usage}\right]$	APTPPL does not accept this revision, as discussed in section 1.2.4.
AA s4.8.3	***Payment of Rebate*** Service Provider will pay each shipper its proportion of the Rebateable Service Rebate Pool annually within 14 days of the end of each financial year.	APTPPL does not accept this revision, as discussed in section 1.2.4.

<table>
<tr><th>Reference</th><th>AER required revision</th><th>APTPPL response</th></tr>
<tr><td>Sch. 1</td><td>
Details
[…]
Reference Tariffs:
<table>
<tr><th>Reference Service</th><th>Reference Tariff $ per GJ of MDQ/Day</th></tr>
<tr><td>LTFS</td><td>$0.6843</td></tr>
</table>
Forecast X-factors:
<table>
<tr><th></th><th>1 July 2018</th><th>1 July 2019</th><th>1 July 2020</th><th>1 July 2021</th></tr>
<tr><td>X Factor</td><td>0.05</td><td>0.05</td><td>3.00</td><td>7.00</td></tr>
</table>
The X factor for each financial year of the 2017-22 access arrangement period will be determined in the PTRM as approved in the AER's final decision, and annually revised for the changes in ~~the Consumer Price Index and~~ the return on debt update calculated for the relevant financial year during the access arrangement period in accordance with that approved in the AER's final decision.
[…]
<u>Rates and allowances</u>
~~Short Term Firm Reference Tariff – 166% of the Long Term Firm Reference Tariff~~
[…]
</td><td>APTPPL accepts aspects of this revision, as discussed in sections 1.1, 6.1, 6.2 and 6.2.1</td></tr>
<tr><td colspan="3">Cost pass through</td></tr>
<tr><td>Insurance cap event</td><td>An event that would be covered by an insurance policy but for the amount that materially exceeds the policy limit, and as a result the Service Provider must bear the amount of that excess loss. For the purposes of this Cost Pass Through Event, the relevant policy limit is the greater of the actual limit from time to time and the limit under the Service Provider's insurance cover at the time of making this Access Arrangement. This event excludes all costs incurred beyond a cap that are due to the</td><td>APTPPL accepts this required revision with amendments. See section 6.3</td></tr>
</table>

Reference	AER required revision	APTPPL response
	Service Provider's negligence. This also excludes all liability arising from the Service Provider's unlawful conduct. Insurance Cap Event means an event where: (a) the Service Provider makes a claim or claims and receives the benefit of a payment or payments under a relevant insurance policy; (b) the Service Provider incurs costs beyond the policy limit; and (c) the costs beyond the policy limit increase the costs to the Service Provider of providing the Reference Service. For this Insurance Cap Event: (d) a relevant insurance policy is an insurance policy held during the Access Arrangement Period or a previous period in which access to the pipeline services was regulated; and (e) the Service Provider will be deemed to have made a claim on a relevant insurance policy if the claim is made by a related party of the Service Provider in relation to any aspect of the Network or the Service Provider's business. Note in making a determination on an Insurance Cap Event, the AER will have regard to, amongst other things: (i) the insurance policy for the event; (ii) the level of insurance that an efficient and prudent Service Provider would obtain in respect of the event; and	

Reference	AER required revision	APTPPL response
	(iii) any assessment by the AER of the Service Provider's insurance in approving the access arrangement for the RBP for the relevant period.	
Insurer credit risk event	Insurer Credit Risk Event means an event where the insolvency of the insurers of Service Provider occurs, : (a) an insurer of the Service Provider becomes insolvent, and (b) as a result, in respect of an existing or potential claim for a risk that was insured by the insolvent insurer, of which the Service Provider: (a) incurs materially higher or materially lower costs for insurance premiums than those allowed for in the Access Arrangement; or (b) in respect of a claim for a risk that would have been insured by Service Provider's insurers, is subject to a materially higher or lower claim limit or a materially higher or lower deductable that would have applied under that policy; or (i) is subject to a higher or lower claim limit or higher or lower deductible than would have otherwise applied under the insolvent insurer's policy; or (ii) incurs additional costs associated with self-funding an insurance claim, which would have otherwise been covered by the insolvent insurer. Note for the avoidance of doubt, in making a determination on an Insurer Credit Risk Event, the AER will have regard to, amongst other things: (i) the Service Provider's attempts to mitigate and prevent the event from occurring by reviewing and considering the insurer's track record, size, credit rating and reputation, and	

Reference	AER required revision	APTPPL response
	(ii) in the event that a claim would have been made after the insurance provider became insolvent, whether the Service Provider had reasonable opportunity to insure the risk with a different provider.	
Natural disaster event	Natural disaster event means any natural disaster including but not limited to major fire, flood or earthquake or other natural disaster beyond the control of Service Provider (but excluding those events for which external insurance or self-insurance has been included within the Service Provider's forecast operating expenditure) that occurs during the access arrangement period and materially increases the costs to the Service Provider in providing the Reference Firm Service, provided the fire, flood or other event was not a consequence of the acts or omissions of the Service Provider. Note for the avoidance of doubt, in making a determination on a Natural Disaster Event, the AER will have regard to, amongst other things: (a) whether the Service Provider has insurance against the event, and (b) the level of insurance that an efficient and prudent service provider would obtain in respect of the event.	
Regulatory change event	An imposition of, a change in, or the removal of a regulatory obligation or requirement that: (a) falls within no other category of pass through event; and (b) occurs during the course of an access arrangement period; and (c) substantially affects the manner in which the Service Provider provides the Reference Service(as the case requires); and (d) materially increases or materially decreases the costs of providing those services.	

Reference	AER required revision	APTPPL response
Service standard event	A legislative or administrative act or decision that: (a) has the effect of: (i) substantially varying, during the course of an access arrangement period, the manner in which a Service Provider is required to provide the Reference Service; or (ii) imposing, removing or varying, during the course of an access arrangement period, minimum service standards applicable to the Reference Service; or (iii) altering, during the course of an access arrangement period, the nature or scope of the Reference Service, provided by the Service Provider; and (b) materially increases or materially decreases the costs to the Service Provider of providing the Firm Service.	
Tax change event	A tax change event occurs if any of the following occurs during the course of the access arrangement period for Service Provider: (a) a change in a relevant tax, in the application or official interpretation of a relevant tax, in the rate of a relevant tax, or in the way a relevant tax is calculated; (b) the removal of a relevant tax; (c) the imposition of a relevant tax; and in consequence, the costs to Service Provider of providing the Reference Service are materially increased or decreased.	
Terrorism	Terrorism event means an act (including, but not limited to, the use of force or violence or the threat	

Reference	AER required revision	APTPPL response
event	of force or violence) of any person or group of persons (whether acting alone or on behalf of or in connection with any organisation or government), which: (a) from its nature or context is done for, or in connection with, political, religious, ideological, ethnic or similar purposes or reasons (including the intention to influence or intimidate any government and/or put the public, or any section of the public, in fear); and (b) increases the cost to the Service Provider in providing a Reference Service. Note for the avoidance of doubt, in making a determination on a Terrorism Event, the AER will have regard to, amongst other things: (i) whether the Service Provider has insurance against the event; (ii) the level of insurance that an efficient and prudent service provider would obtain in respect of the event; and (iii) whether a declaration has been made by a relevant government authority that an act of terrorism has occurred.	
1.6 Revisions	Service Provider will submit revisions to this Access Arrangement to the AER on ~~or before~~ 1 July 2021~~, or four years from the commencement date of this Access Arrangement, whichever is the later~~ (Revisions Submission Date). The revisions to this Access Arrangement ~~will~~ are intended to commence on ~~the later of~~ 1 July 2022 ~~and the date on which the approval by the AER of the revisions to the Access Arrangement takes effect under the NGR~~ (Revisions Commencement Date).	APTPPL accepts this revision. See s7.1.
4.3.3 Daily Variance	*Add a note stating that this charge has been waived for the period 1 December 2016 to 30 November 2017.*	APTPPL does not accept this

Reference	AER required revision	APTPPL response
Charges		revision. See section 7.2.1
6 Queuing Requirements	*Delete clauses 6.1 to 6.3 entirely.* *Insert following clauses from APTPPL RBP Access Arrangement 2012-17:* *6.1 Existing Capacity Queues* *6.2 Forming the Existing Capacity Queue* *6.3Conditions Applicable to the Existing Capacity Queue* *6.4 Procedure when capacity can be made available for Services provided by the Existing Capacity* *6.5 Developable Capacity* *6.6 Investigations to Determine if Developable Capacity is Available*	APTPPL accepts this revision. See section 7.3.
Schedule 2 Definitions and Interpretations	**Authorised Overrun Quantity** means the amount of an Overrun Quantity that is attributable to an Authorised Overrun, which cannot be greater than 20% of Firm MDQ.	APTPPL accepts this required revision with amendments. See section 1.1.2
Schedule 3 Terms and Conditions		
3	**Nominations** *Incorporate words to make it clear that intra-day renomination is a standard feature of the reference service and that it is provided without an additional charge.*	APTPPL accepts this revision. See s7.2.2

Reference	AER required revision	APTPPL response
15(c)	*Change the reference to paragraph 'e' to paragraph 'd'.*	APTPPL accepts this revision. See s7.2.3