



DRAFT DECISION
Amadeus Gas Pipeline
Access Arrangement
2016 to 2021

Attachment 9 – Efficiency
carryover mechanism

November 2015

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Note

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

The draft decision includes the following documents:

Overview

Attachment 1 - Services covered by the access arrangement

Attachment 2 - Capital base

Attachment 3 - Rate of return

Attachment 4 - Value of imputation credits

Attachment 5 - Regulatory depreciation

Attachment 6 - Capital expenditure

Attachment 7 - Operating expenditure

Attachment 8 - Corporate income tax

Attachment 9 - Efficiency carryover mechanism

Attachment 10 - Reference tariff setting

Attachment 11 - Reference tariff variation mechanism

Attachment 12 - Non-tariff components

Attachment 13 - Demand

Contents

Note	9-2
Contents	9-3
Shortened forms	9-4
9 Efficiency carryover mechanism.....	9-6
9.1 Draft decision	9-6
9.2 APTNT’s proposal.....	9-6
9.3 AER’s assessment approach.....	9-7
9.4 Reasons for draft decision.....	9-8
9.5 Revisions to APTNT’s proposed access arrangement.....	9-10

Shortened forms

Shortened form	Extended form
AA	Access Arrangement
AAI	Access Arrangement Information
AER	Australian Energy Regulator
AGP	Amadeus Gas Pipeline
ATO	Australian Tax Office
capex	capital expenditure
CAPM	capital asset pricing model
CESS	Capital Expenditure Sharing Scheme
CPI	consumer price index
DRP	debt risk premium
EBSS	Efficiency Benefit Sharing Scheme
ERP	equity risk premium
Expenditure Guideline	Expenditure Forecast Assessment Guideline
gamma	Value of Imputation Credits
GSL	Guaranteed Service Level
MRP	market risk premium
NEGI	north eastern gas interconnector
NGL	national gas law
NGO	national gas objective
NGR	national gas rules
NPV	net present value
opex	operating expenditure
PFP	partial factor productivity
PPI	partial performance indicators
PTRM	post-tax revenue model
RBA	Reserve Bank of Australia
RFM	roll forward model
RIN	regulatory information notice
RPP	revenue and pricing principles
SLCAPM	Sharpe-Lintner capital asset pricing model

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

9 Efficiency carryover mechanism

An efficiency carryover mechanism (ECM) provides an additional incentive for service providers to pursue efficiency improvements in operating expenditure (opex). It is often used in incentive regulation. Given that opex is largely recurrent and predictable, opex in one period is generally a good indicator of opex in the next period. Where a service provider is relatively efficient, we use the actual opex it incurred in a chosen base year to forecast its opex for the next access arrangement period.

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

When a service provider is rewarded for making efficiency gains, consumers benefit through lower prices in the next access arrangement period. This is because forecast opex in the next access arrangement period will reflect the service provider's lower level of opex in the current access arrangement period. As a result, regulated prices will be lower.

An efficiency carryover mechanism did not apply to APTNT during the 2011–16 access arrangement period. APTNT did not propose to apply an efficiency carryover mechanism to its opex in the 2016–21 access arrangement period.

9.1 Draft decision

Our draft decision is to apply an efficiency carryover mechanism to APTNT in the 2016–21 access arrangement period.

9.2 APTNT's proposal

APTNT did not propose any incentive mechanism for the Amadeus Gas Pipeline (AGP), beyond the incentives implicit in the regulatory regime.¹

In its Access Arrangement Revision Proposal, APTNT stated:²

Under the price cap regime, the service provider has clear incentives to:

¹ APTNT, *Amadeus Gas Pipeline Access Arrangement Revision Proposal, Submission*, August 2015, p. 169.

² APTNT, *Amadeus Gas Pipeline Access Arrangement Revision Proposal, Submission*, August 2015, p. 169.

- Reduce operating expenditure from approved forecast levels
- Defer or avoid capital expenditure relative to the approved forecast; and
- Increase the utilisation of the pipeline.

APTNT also stated it faces strong incentives to reduce operating costs, as its actual revenue for the AGP is governed by a long term contract, and is not linked to regulated outcomes. It stated that it faces a continuous incentive to reduce operating costs over the life of the existing contract.³

In response to an information request from the AER, APTNT stated:⁴

an ECM would be an unnecessary additional administrative/regulatory burden and ... is not suitable for application to a regulated asset with commercial arrangements in place such as those on the AGP.

APTNT noted there are no customers using the reference service on the pipeline and all firm capacity is expected to remain contracted throughout the 2016–21 period. Further, it contended the contracts in place include incentives for APTNT to minimise opex regardless of the operation of the access arrangement.⁵

APTNT noted that the AER was considering imposing a trigger mechanism to address the potential demand impact on APG from the foreshadowed connection of North East Gas Interconnector (NEGI). It considered a trigger mechanism would significantly undermine the operation of an ECM, and that it would be inappropriate to impose both a trigger event and an ECM in the forecast period. It stated any opex associated with NEGI should be excluded from the ECM.⁶

9.3 AER's assessment approach

An efficiency carryover mechanism is a form of incentive mechanism. A full access arrangement may include (and we may require it to include) one or more incentive mechanisms to encourage efficiency in the provision of services by the service provider.⁷ An incentive mechanism must be consistent with the revenue and pricing principles.⁸

We consider the following revenue and pricing principle is most relevant for assessing APTNT's proposal to not apply an efficiency carryover mechanism.⁹

³ APTNT, *Amadeus Gas Pipeline Access Arrangement Revision Proposal, Submission*, August 2015, p. 161.

⁴ APTNT, Response to information request no. 11, 7 October 2015, p. 2.

⁵ APTNT, Response to information request no. 11, 7 October 2015, p. 2.

⁶ APTNT, Response to information request no. 11, 7 October 2015, p. 2.

⁷ NGR, r. 98(1).

⁸ NGR, r. 98(3).

⁹ NGL, s. 24(3).

A service provider should be provided with effective incentives in order to promote economic efficiency with respect to reference services the service provider provides.

The economic efficiency that should be promoted includes—

- (a) efficient investment in, or in connection with, a pipeline with which the service provider provides reference services; and
- (b) the efficient provision of pipeline services; and
- (c) the efficient use of the pipeline.

Interrelationships

The efficiency carryover mechanism we apply to opex is intrinsically linked to our revealed cost forecasting approach. Under this forecasting approach, the efficiency carryover mechanism has two specific functions:

- To mitigate the incentive for a service provider to increase opex in the expected 'base year' to increase its forecast opex allowance for the following access arrangement period.
- To provide a continuous incentive for a service provider to make efficiency gains (an underspend or overspend will result in the service provider receiving an equivalent reward or penalty in each year of the access arrangement period).

9.4 Reasons for draft decision

Our draft decision is to apply an efficiency carryover mechanism to APTNT for the 2016-21 access arrangement period.

In reviewing APTNT's proposal we have considered whether the existing regulatory regime provides effective incentives to promote economic efficiency in the provision of reference services. We have also reviewed APTNT's claim that the regulatory framework and existing operating environment provides it with a continuous incentive to reduce operating costs.

Under the existing regime, if APTNT spends less than the approved opex allowance, it retains the benefit of that underspend in all remaining years of the access arrangement period. The incentive to reduce opex is greatest at the beginning of the period, where the benefit can be retained for longer. APTNT also stated the current long term contract that governs the operation of the pipeline imposes an incentive upon it to continuously seek opex efficiencies.¹⁰

The efficiency carryover mechanism is an integral component of the base-step-trend (revealed cost) forecasting method we apply to opex. The base-step-trend forecasting

¹⁰ APTNT, *Amadeus Gas Pipeline Access Arrangement Revision Proposal, Submission*, August 2015, p. 161.

method relies on identifying an efficient opex amount in the base year (the 'revealed costs' of the service provider), from which to develop a total opex forecast. In this context, as noted above, the application of an efficiency carryover mechanism serves two important functions:

- it provides a continuous incentive for service providers to pursue efficiency improvements across the access arrangement period
- it reduces the incentive for the service provider to inflate its costs in the expected base year in order to increase its opex forecast for the next access arrangement period.

The application of an efficiency carryover mechanism allows us to undertake a non-intrusive top-down assessment of opex forecasts. The application of an efficiency carryover mechanism is consistent with our approach to other regulated service providers where we use the base-step-trend forecasting method to forecast opex. APTNT stated that the application of efficiency carryover mechanism is not required given its current commercial arrangements. While APTNT's actual opex has been stable over the 2011-16 access arrangement period, it is difficult for us to properly assess the efficacy of these commercial arrangements in constraining APTNT's monopoly power. Similarly, it will be difficult for us to assess the efficacy of any commercial arrangements when we choose a base year for the purpose of our opex forecast for the next access arrangement period.

We do not consider the application of the efficiency carryover mechanism will significantly increase in the regulatory burden on APTNT. We have identified the additional costs as the incremental costs of compiling, auditing and reporting opex data in the form required to derive the carryover amounts. Given that the required data is already largely compiled, audited and reported by APTNT we consider that the additional regulatory costs associated with applying an efficiency carryover mechanism to APTNT are minimal.

We also note APTNT's operating environment may change during the next access arrangement period, due to the potential connection of AGP to with eastern gas pipelines.¹¹ The NT Government has commenced a process to enable gas from the Northern Territory to reach south eastern gas markets, with gas flows currently scheduled to commence in 2018. The interconnection of the AGP with south-eastern gas markets has potential to impact on opex due to increased demand for gas through the pipeline. APTNT noted:¹²

Increased opex arising from the connection of the NEGI would be as a result of growing the market, rather than a loss of efficiency in opex related to serving existing demand. In this respect, an ECM, without an exclusion for additional

¹¹ NT Government, *North East Gas Interconnector, Request for final proposals*, website accessed 2 September 2015, http://dcm.nt.gov.au/territory_economy/north_east_gas_interconnector.

¹² APTNT, *Response to information request no. 11*, 7 October 2015, p. 1.

costs resulting from the NEGI, would not target opex efficiency, and could operate as a disincentive for APTNT to connect the NEGI.

No additional opex required as a result of NEGI has been included in the opex forecast for the 2016–21 period, and therefore the impact of NEGI on opex should also be excluded from the efficiency carryover mechanism that we will apply to APTNT.

In applying the efficiency carryover mechanism to APTNT in the 2016–21 access arrangement period we propose:

- excluding pigging costs
- excluding any other cost categories that are not forecast using a single year revealed cost approach in the access arrangement period commencing in 2021
- excluding additional opex associated with connection of the NEGI to AGP
- adjusting APTNT's opex forecast to account for any Determined Pass Through Amounts
- adjusting APTNT's opex forecast to account for any capitalisation policy changes.

9.5 Revisions to APTNT's proposed access arrangement

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

Revision 9.1: Amend the Amadeus Gas Pipeline access arrangement to include the following clause:

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 Service Provider will retain the benefit of actual operating expenditure being lower, or incur the cost of actual operating expenditure being higher, than forecast operating expenditure included in the Total Revenue in each Financial Year of the Access Arrangement Period;
 - ii. 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;
 - iii. 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; and
 - iv. 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 2021 until it has been retained by the Service Provider for a period of five years.

- (c) The incremental efficiency gain (or loss) for the Financial Year 2016-17 will be calculated as:

$$F_{(2016-17)} - A_{(2016-17)}$$

where:

$F_{(2016-17)}$ is the forecast operating expenditure for Financial Year 2016-17; and
 $A_{(2016-17)}$ is the actual operating expenditure for Financial Year 2016-17.

- (d) The incremental efficiency gain (or loss) for Financial Years 2017-18 to 2019-20 (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; and
 $A_{(t-1)}$ is the actual operating expenditure in Financial Year t-1 of the Access Arrangement Period.

- (e) Actual operating expenditure in the Financial Year 2020-21 is to be estimated using the following equation:

$$A_{(2020-21)}^* = A_{(2019-20)} + F_{(2020-21)} - F_{(2019-20)}$$

where:

$A_{(2020-21)}^*$ is the estimate of operating expenditure for Financial Year 2020-21;
 $A_{(2019-20)}$ is the actual operating expenditure for Financial Year 2019-20;
 $F_{(2020-21)}$ is the forecast operating expenditure for Financial Year 2020-21; and
 $F_{(2019-20)}$ is the forecast operating expenditure for Financial Year 2019-20.

- (f) For the avoidance of doubt:

- i. the incremental efficiency gain (or loss) for Financial Year 2020-21 will be assumed to equal zero;
 - ii. the incremental efficiency gain (or loss) for Financial Year 2021-22 will be carried over for 5 years and be calculated with reference to the actual operating expenditure for Financial Year 2020-21 and not $A_{(2020-21)}$ *; and
 - iii. 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 in the Access Arrangement determination.
- (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. pigging costs;
 - ii. any additional opex associated with interconnection of the North Eastern Gas Interconnector to the Amadeus Gas Pipeline; and
 - iii. any cost category that:
 - (1) 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 2021); and
 - (2) 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.