



**DRAFT DECISION**  
**Amadeus Gas Pipeline**  
**Access Arrangement**  
**2016 to 2021**

**Attachment 6 – Capital**  
**expenditure**

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

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## 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

## 6 Capital expenditure

This attachment outlines our assessment of APTNT's proposed conforming capex for 2010–2016 and forecast capex for the 2016–21 access arrangement period.

### 6.1 Draft decision

#### 6.1.1 Conforming capex for 2010–16

We approve \$37.4 million (\$2015–16) of APTNT's proposed total net capex of \$44.4 million for the 2011–16 access arrangement period as conforming capex under rule 79(1) of the NGR. We also approve APTNT's actual capex of \$4.5 million (\$2015–16) in the 2010–11 year as conforming capex for the purpose of establishing the opening capital base for the 2011–16 access arrangement period.

Table 6.1 shows approved capex for the 2010–16 period by category.

**Table 6.1 AER approved capital expenditure by category over the 2010–16 period (\$million, 2015–16)**

Category	2010-11 <sup>(a)</sup>	2011-12	2012-13	2013-14	2014-15	2015-16 <sup>(b)</sup>	Total (2011-16)
Expansion	1.2	-	0.8	0.6	0.1	-	1.4
Replacement	2.9	4.3	14.6	2.2	2.3	5.4	28.8
Non-system	0.4	0.2	1.6	1.6	1.9	2.4	7.6
<b>GROSS TOTAL CAPITAL EXPENDITURE</b>	<b>4.5</b>	<b>4.5</b>	<b>17.0</b>	<b>4.3</b>	<b>4.2</b>	<b>7.8</b>	<b>37.8</b>
Contributions	-	-	-	-	-	-	-
Asset disposals	-	-	0.0	0.3	0.1	-	0.4
<b>NET TOTAL CAPITAL EXPENDITURE</b>	<b>4.5</b>	<b>4.5</b>	<b>16.9</b>	<b>4.0</b>	<b>4.1</b>	<b>7.8</b>	<b>37.4</b>

Source: AER analysis.

Notes: (a) We have made a decision on conforming capex for the 2010-11 year for the purposes of establishing the opening capital base for the 2011–16 access arrangement period.

(b) This is our estimate of conforming capex for this year, including our labour escalation adjustment. We will assess whether APTNT's actual capex for 2015–16 is conforming capex under the NGR in the next access arrangement review. We will adjust the capital base actual conforming capex at that time as required.

Table 6.2 shows APTNT's proposed capex compared with our approved conforming capex for each category in the 2011–16 access arrangement period. The reason for our reduction is that we consider that \$7.0 million of APTNT's estimated capex for the belowground station pipework recoating project in the 2015–16 year should be deferred to the 2016–21 access arrangement period. We are not satisfied that the timing of capex for this project as proposed by APTNT is efficient or consistent with

achieving the lowest sustainable cost of providing services.<sup>1</sup> We have also amended APTNT's forecast of real labour cost escalation, as discussed in attachment 7 of this decision.

**Table 6.2 Comparison of AER approved and APTNT's proposed capital expenditure over the 2011–16 access arrangement period (\$million, 2015–16)**

Category	Proposed	Approved <sup>(a)</sup>	Difference (\$millions)	Difference (%)
Expansion	1.4	1.4	-	-
Replacement	35.8	28.8	-7.0	-20%
Non-system	7.6	7.6	-	--
<b>GROSS TOTAL CAPITAL EXPENDITURE</b>	<b>44.8</b>	<b>37.8</b>	<b>-7.0</b>	<b>-16%</b>
Contributions	-	-	-	-
Asset disposals	0.4	0.4	-	N/A
<b>NET TOTAL CAPITAL EXPENDITURE<sup>1)</sup></b>	<b>44.4</b>	<b>37.4</b>	<b>-7.0</b>	<b>-16%</b>

Source: AER analysis.

Note: (a) Including AER labour escalation adjustments.

### 6.1.2 Conforming capex for the 2016–21 access arrangement period

We approve \$26.5 million (\$2015–16) of APTNT's proposed \$29.9 million (\$2015–16) total net capex for 2016–21 as conforming capex under r. 79(1) of the NGR.

Table 6.3 shows approved capex for the 2016–21 access arrangement period by category.

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<sup>1</sup> NGR, r. 79(1)(a).



**Table 6.3 AER approved capital expenditure<sup>(a)</sup> by category over the 2016–21 access arrangement period (\$million, 2015–16)**

Category	2016-17	2017-18	2018-19	2019-20	2020-21	Total
Expansion	-	-	-	-	-	-
Replacement	4.7	3.7	3.4	3.4	3.3	18.5
Non-system	4.4	0.9	1.0	1.1	1.3	8.7
<b>GROSS TOTAL CAPITAL EXPENDITURE</b>	<b>9.1</b>	<b>4.6</b>	<b>4.4</b>	<b>4.5</b>	<b>4.6</b>	<b>27.2</b>
Contributions	-	-	-	-	-	-
Asset disposals	0.2	0.1	0.1	0.1	0.2	0.7
<b>NET TOTAL CAPITAL EXPENDITURE</b>	<b>8.9</b>	<b>4.6</b>	<b>4.3</b>	<b>4.3</b>	<b>4.4</b>	<b>26.5</b>

Source: AER analysis.

Note: (a) Including AER labour escalation adjustments.

Table 6.4 shows APTNT's proposed capex compared with the AER's approved allowance for each category.

**Table 6.4 Comparison of AER approved and APTNT's proposed capital expenditure over the 2016–21 access arrangement period (\$million, 2015–16)**

Category	Proposed	Approved <sup>(a)</sup>	Difference (\$millions)	Difference (%)
Expansion	-	-	-	-
Replacement	21.2	18.5	-2.7	-13%
Non-system	8.7	8.7	-0.1	-1%
<b>GROSS TOTAL CAPITAL EXPENDITURE</b>	<b>29.9</b>	<b>27.2</b>	<b>-2.8</b>	<b>-9%</b>
Contributions	-	-	-	-
Asset disposals	-	0.7	0.7	N/A
<b>NET TOTAL CAPITAL EXPENDITURE<sup>1)</sup></b>	<b>29.9</b>	<b>26.5</b>	<b>-3.4</b>	<b>-11%</b>

Source: AER analysis.

Note: (a) Including AER labour escalation adjustments.

The reasons for the difference between APTNT's proposal and our draft decision are:

- we are not satisfied that forecast capex for the Channel Island bridge project is such as would be incurred by a prudent service provider acting efficiently to achieve the lowest sustainable cost of providing services. We consider that forecast capex of \$1.1 million rather than the proposed \$10.9 million is a

reasonable estimate of conforming capex for this project, as discussed in section 6.4.2.

- APTNT has not accounted for the proceeds from expected disposals of motor vehicle assets in the 2016–21 access arrangement period
- as discussed in attachment 7, we have not accepted APTNT’s forecast of real labour cost escalation
- we have deferred \$7.0 million of APTNT’s estimated capex for the belowground station pipework recoating project in the 2015–16 year into the 2016–21 access arrangement period.

## 6.2 APTNT’s proposal

### Capital expenditure over the 2011–16 access arrangement period

APTNT proposed total conforming net capex of \$44.4 million (\$2015–16) for the 2011–16 access arrangement period.<sup>2</sup> This is 90 per cent above the approved forecast for the 2011–16 access arrangement period.

**Table 6.5 APTNT’s proposed capital expenditure over the 2011–16 access arrangement period (\$million, 2015–16)**

Category	2011-12	2012-13	2013-14	2014-15	2015-16	Total
Expansion	0.0	0.8	0.6	0.1	0.0	1.4
Replacement	4.3	14.6	2.2	2.3	12.5	35.8
Non-system	0.2	1.6	1.6	1.9	2.4	7.6
<b>GROSS TOTAL CAPITAL EXPENDITURE</b>	<b>4.5</b>	<b>17.0</b>	<b>4.3</b>	<b>4.2</b>	<b>14.9</b>	<b>44.8</b>
Contributions	-	-	-	-	-	-
Asset disposals	-	0.0	0.3	0.1	-	0.4
<b>NET CAPITAL EXPENDITURE</b>	<b>4.5</b>	<b>17.0</b>	<b>4.0</b>	<b>4.1</b>	<b>14.9</b>	<b>44.4</b>

Source: APTNT, *Attachment B-6 Supporting model – Capital expenditure*, August 2015; APTNT, *Access Arrangement Revision Proposal Submission*, August 2015, p. 96; AER analysis.

<sup>2</sup> APTNT, *Access arrangement information*, August 2015, p. 3.

## Proposed capital expenditure for the 2016–21 access arrangement period

APTNT proposed total forecast net capex of \$29.9 million (\$2015-16) for the 2016–21 access arrangement period.<sup>3</sup> This represents a real decrease of 33 per cent from APTNT’s proposed actual and estimated net capex for the 2011–16 access arrangement period.

**Table 6.6 APTNT’s proposed capital expenditure by category over the 2016–21 access arrangement period (\$million, 2015-16)**

Category	2016-17	2017-18	2018-19	2019-20	2020-21	Total
Expansion	-	-	-	-	-	-
Replacement	15.9	1.6	1.3	1.3	1.1	21.2
Non-system	4.4	0.9	1.0	1.1	1.3	8.7
<b>GROSS TOTAL CAPITAL EXPENDITURE</b>	<b>20.3</b>	<b>2.5</b>	<b>2.3</b>	<b>2.3</b>	<b>2.4</b>	<b>29.9</b>
Contributions	-	-	-	-	-	-
Asset disposals	-	-	-	-	-	-
<b>NET TOTAL CAPITAL EXPENDITURE</b>	<b>20.3</b>	<b>2.5</b>	<b>2.3</b>	<b>2.3</b>	<b>2.4</b>	<b>29.9</b>

Source: APTNT, *B-6 Supporting model – Capital expenditure*, August 2015.

APTNT proposed capex for two categories – replacement capex (71 per cent of total forecast capex) and non-system capex (29 per cent of total forecast capex).

### 6.3 AER’s assessment approach

We must make two decisions regarding APTNT’s capex. First, we are required to assess past capex and determine whether it meets the criteria set out in the NGR to be added to the starting capital base.<sup>4</sup> Where capex meets these criteria, it is referred to as "conforming capex".<sup>5</sup> Secondly, we are required to assess APTNT’s forecast of required capex for the 2016-21 access arrangement period to determine whether it is conforming capex. The following sections set out our approach and the tools and techniques we employ in forming a view on these two issues. We also need to take into account timing issues associated with the lag between actual capex data being available in the last year of the 2011-16 access arrangement period and the need to

<sup>3</sup> APA Group, *Amadeus Gas Pipeline, Access Arrangement Revision Proposal, Submission, 1 July 2016 to 30 June 2021*, August 2015, p. 88.

<sup>4</sup> NGR, r. 77(2)(b).

<sup>5</sup> NGR, r. 79.

forecast an opening capital base for the 2016-21 access arrangement period. This is explained in the next section.

### 6.3.1 NGR requirements for conforming capital expenditure

The definition of capex is set out in rule 69 of the NGR. Capex is defined as costs and expenditure of a capital nature incurred to provide, or in providing, pipeline services.

Capex based on a forecast or estimate must be supported by a statement of the basis of the forecast or estimate (rule 74(1) of the NGR). In accordance with rule 74(2) of the NGR, any forecast or estimate submitted must:

- be arrived at on a reasonable basis; and
- represent the best forecast or estimate possible in the circumstances.

Capex will be 'conforming' if it conforms with the new capex criteria in rule 79 of the NGR. There are two essential criteria that must both be met under this rule:

- the expenditure must be such as would be incurred by a prudent service provider acting efficiently, in accordance with good industry practice, to achieve the lowest sustainable cost of providing services; and
- the expenditure must be justifiable on one of four grounds set out in rule 79(2) of the NGR.

The four grounds set out in rule 79(2) of the NGR can be summarised as follows. The capex must either:

- have an overall economic value that is positive
- demonstrate an expected present value of the incremental revenue that exceeds the present value of the capital expenditure
- be necessary to maintain and improve the safety of services, or maintain the integrity of services, or comply with a regulatory obligation or requirement, or maintain capacity to meet levels of demand existing at the time the capex is incurred, or
- be justifiable as a combination of the preceding two dot points.

We have limited discretion when making decisions under rule 79 of the NGR.<sup>6</sup> This means that we must approve a particular element of the access arrangement proposal if we are satisfied that that element complies with the applicable requirements of the NGR and NGL and is consistent with any criteria set out in the NGR or NGL.<sup>7</sup>

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<sup>6</sup> NGR, r. 79(6).

<sup>7</sup> NGR, r. 40(2).

### 6.3.2 Assessment of conforming capital expenditure in the 2011–16 access arrangement period

In assessing APTNT’s proposed capex in the earlier access arrangement period, we reviewed APTNT’s supporting material. This included information on APTNT’s reasoning and, where relevant, business cases, responses to information requests and other relevant information. This information helped us identify whether capex over the 2011–16 access arrangement period was conforming capex and, in turn, whether that capex should be included in the opening capital base in accordance with rule 77(2)(b) of the NGR. Generally, our approach to assessing whether capex conforms with the new capex criteria of the NGR is the same for both historical and forecast or estimated capex. This approach is set out in more detail in section 6.3.3 below.

We do not approve certain estimates and forecasts provided by APTNT if the information does not meet the requirements set out in the NGR.<sup>8</sup> We must exercise our economic regulatory functions in a manner that will or is likely to contribute to the achievement of the NGO.<sup>9</sup> For instance, having regard to the NGO, we take the view that a prudent service provider will seek cost efficiencies through continuous improvements, and that customers ultimately share in these benefits. This also provides the service provider with a reasonable opportunity to recover at least its efficient costs in accordance with the revenue and pricing principles.

Although the capital base roll forward relates to the 2011–16 access arrangement period, we are also required to adjust for the difference between actual and forecast capex in the capital base.<sup>10</sup> Generally, the final year of the previous access arrangement period is based on estimated capex (in this case, 2010-11). Therefore, our assessment of conforming capex includes the regulatory years for 2010–16. We consider the following when determining the opening capital base for 2016–21:

1. 2010–11 capex—when conducting the previous access arrangement review, we did not yet have actual capex for 2010–11. The NGR requires adjustment for differences between actual and estimated capex.<sup>11</sup> Since actual capex for 2010–11 is now available, we have assessed whether this capex is conforming capex under the NGR.
2. 2011–15 capex— since we have actual capex data for these years, we have assessed whether this is conforming capex under the NGR.<sup>12</sup> We have included conforming capex in the capital base roll forward.<sup>13</sup>

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<sup>8</sup> For instance, r. 74 of the NGR requires estimates and forecasts to be made on a reasonable basis, amongst other things.

<sup>9</sup> NGL, s. 28(1).

<sup>10</sup> NGR, r. 77(2)(a).

<sup>11</sup> NGR, r. 77(2)(a).

<sup>12</sup> NGR, rr. 77(2)(b), 79.

<sup>13</sup> NGR, r. 77(2)(b).

3. 2015–16 capex—for this access arrangement review, we do not yet have actual capex for 2015–16 and so must rely on an estimate. For this decision, we have assessed whether this estimate is conforming capex under the NGR. At the next access arrangement review, we will assess whether APTNT’s actual capex for 2015–16 is conforming capex under the NGR, and adjust for any differences between actual and estimated capex.<sup>14</sup>

### 6.3.3 Assessment of forecast capex for the 2016–21 access arrangement period

We assessed the key drivers of forecast capex to consider whether APTNT’s proposed capex in the projected capital base complies with the capex criteria in rule 79(1) of the NGR. In doing so, we relied on information, including:

- the access arrangement revision submission and access arrangement information (AAI) - these documents outline APTNT’s program and main drivers of capital expenditure<sup>15</sup>
- the Amadeus Gas Pipeline Asset Management Plan, Pipeline Integrity Management Plan and associated appendices and reports which provide specific expenditure or technical detail<sup>16</sup>
- business cases which detail expenditure requirements for specific projects
- APTNT’s RIN template response<sup>17</sup>
- APTNT’s capex forecast model<sup>18</sup>
- net present value (NPV) analyses of incremental revenue associated with expansion projects
- engineering advice we commissioned from Sleeman Consulting to assist in assessing the prudence and efficiency of selected projects in both the 2011–16 access arrangement period and the 2016–21 access arrangement period.<sup>19</sup>

For analysis purposes, the capex was broken into categories depending on whether the expenditure is driven by:

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<sup>14</sup> NGR, rr. 77(2)(a), 79.

<sup>15</sup> APTNT, *Access Arrangement Revision Proposal Submission*, August 2015; and APTNT, *Access Arrangement Information*, August 2015.

<sup>16</sup> APTNT, *Amadeus Gas Pipeline Asset Management Plan 2016-2020*, August 2015; and APA Group, *Pipeline Integrity Management Plan - Northern Territory APA Group Assets*.

<sup>17</sup> APTNT, *Amadeus Gas Pipeline AA Final RIN – 2016*, August 2015.

<sup>18</sup> APTNT, *Attachment B-6 Supporting model - Capital expenditure*, August 2015.

<sup>19</sup> Sleeman Consulting, *Review of Actual and Forecast Capex for Selected Projects*, 22 September 2015. We engaged an engineering consultant, Sleeman Consulting, to provide specialist technical advice on the need, timing and cost for selected projects over both the 2011–16 access arrangement period and the 2016–21 access arrangement period.

- expansion—required to expand the capacity of the pipeline to meet demand both within the access arrangement period and beyond
- replacement—on the basis of asset life, obsolescence, safety or regulatory obligations, which is required to maintain the integrity of the pipeline, or
- non-system capital expenditure—relating to capital required for replacement of items such as motor vehicles, office furniture and IT systems.

We assessed the prudence and efficiency of the proposed capex, to determine whether the capex is such as would be incurred by a prudent operator acting efficiently, in accordance with accepted good industry practice, to achieve the lowest sustainable cost of providing services.<sup>20</sup> We also assessed whether the proposed capex is justified on one of the four grounds under NGR r. 79(2).

For each category of expenditure the scope, timing and cost of the proposed expenditure was considered in order to form a view on the prudence and efficiency of the expenditure. Our assessment also considered whether cost forecasts have been arrived at on a reasonable basis and represent the best forecast possible in the circumstances.<sup>21</sup>

### 6.3.4 Interrelationships

In assessing APTNT's total forecast capex we took into account other components of its access arrangement proposal, including:

- the trade-off between potential capex and opex solutions in our assessment of APTNT's proposed capex
- any change in the capitalisation policy applied between the current access arrangement and the 2016–21 access arrangement period, and
- proposed real growth in the escalation of labour costs relevant to both opex and capex.

## 6.4 Reasons for draft decision

### 6.4.1 Conforming capex for the 2010–16 period

We approve net conforming capex of \$37.4 million (\$2015-16) for the 2011–16 access arrangement period. This is a reduction of \$7.0 million or 16 per cent from APTNT's estimate of conforming capex. We also approve APTNT's actual capex of \$4.5 million (\$2015-16) for the 2010-11 year as conforming capex. Table 6.7 summarises our approved conforming capex for the 2011–16 access arrangement period, and the preceding 2010-11 year.

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<sup>20</sup> NGR, r. 79(1)(a).

<sup>21</sup> NGR, r. 74(2).

**Table 6.7 AER approved capital expenditure over the 2010–2016 period (\$million, 2015-16)**

	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	Total (2011-16)
Expansion	1.2	-	0.8	0.6	0.1	-	1.4
Replacement	2.9	4.3	14.6	2.2	2.3	5.4	28.8
Non-system	0.4	0.2	1.6	1.6	1.9	2.4	7.6
<b>GROSS TOTAL CAPITAL EXPENDITURE</b>	<b>4.5</b>	<b>4.5</b>	<b>17.0</b>	<b>4.3</b>	<b>4.2</b>	<b>7.8</b>	<b>37.8</b>
Contributions	-	-	-	-	-	-	-
Asset disposals	-	-	0.0	0.3	0.1	-	0.4
<b>NET TOTAL CAPITAL EXPENDITURE</b>	<b>4.5</b>	<b>4.5</b>	<b>16.9</b>	<b>4.0</b>	<b>4.1</b>	<b>7.8</b>	<b>37.4</b>

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

Note: Includes AER labour escalation adjustments.

Our analysis of the capex driver categories is set out below.

## Expansion capex

APTNT has proposed expansion capex of \$1.4 million (\$2015-16) for the 2011–16 access arrangement period.<sup>22</sup> In the previous access arrangement review, APTNT did not propose, and the AER did not provide for, any expansion capex for the 2011–16 access arrangement period. Subsequently, APTNT completed two expansion projects in the 2011–16 access arrangement period: the Katherine meter station upgrade (\$0.8 million (\$2015-16)) and the Noonamah offtake (\$0.6 million (\$2015-16)).

APTNT submitted that, although the possibility of work on the Katherine meter station was known at the time of the previous access arrangement review, the customer had asked APTNT to put the project on hold. The customer subsequently asked APTNT to build a new outlet to the Katherine meter station, with associated valve and pipework, to allow it to connect some new gas turbine units. APTNT submitted that a lack of information on the form of these works meant that APTNT did not include a forecast for this expenditure in its earlier access arrangement proposal.<sup>23</sup>

The total capex for this work at the Katherine meter station site was \$0.8 million (\$2015-16), incurred across 2012-13 and 2013-14. APTNT submitted that these works increased the capacity of the Katherine meter station site as a result of the new outlet, and is justified under rule 79(2)(b) of the NGR as the incremental revenue to be

<sup>22</sup> APTNT, *Access Arrangement Revision Proposal Submission*, August 2015, p. 87.

<sup>23</sup> APTNT, *Access Arrangement Revision Proposal Submission*, August 2015, pp. 61-62.



generated from this expansion exceeds the present value of the capital expenditure.<sup>24</sup> On the basis of the information provided by APTNT, including an NPV analysis of the incremental revenue provided by the capacity expansion, we are satisfied that this amount is conforming capex in that it meets the criteria of rule 79(1)(a) of the NGR and is justifiable on the basis of rule 79(2)(b) of the NGR.

In respect to the Noonamah offtake expansion project, APTNT stated that in 2013-14 it built an offtake to supply a new industrial customer at a cost of \$0.6 million (\$2015-16). This capex was not forecast in the earlier access arrangement period. APTNT submitted that the project added an additional delivery point to the AGP, and is justified under rule 79(2)(b) of the NGR as the incremental revenue to be generated from this expansion exceeds the present value of the capital expenditure.<sup>25</sup> On the basis of the information provided by APTNT, including an NPV analysis of the incremental revenue provided by the capacity expansion, we are satisfied that this amount is conforming capex in that it meets the criteria of rule 79(1)(a) of the NGR and is justifiable on the basis of rule 79(2)(b) of the NGR.

## Replacement capex

APTNT proposed replacement capex of \$35.8 million (\$2015-16) for the 2011–16 access arrangement period.<sup>26</sup> This is \$13.6 million (\$2015-16) or 62 per cent more than the AER's allowance for APTNT's replacement capex for the 2011–16 access arrangement period.<sup>27</sup> APTNT stated that all projects in this category satisfy rule 79(2)(c) of the NGR as essential to maintain the safety and integrity of services, and to ensure continuing compliance with regulatory obligations, in particular those set out in Australian Standard 2885.3.<sup>28</sup>

We have included \$28.8 million (\$2015-16) for replacement capex in our estimate of conforming capex for the 2011–16 access arrangement period. This is a reduction of \$7.0 million or 20 per cent from APTNT's proposed replacement capex for the 2011–16 access arrangement period. We consider this amount is sufficient for APTNT to maintain the safety, reliability and integrity of the AGP, and is prudent and efficient.<sup>29</sup> Our reasoning is detailed below.

APTNT's proposed replacement capex for the earlier access arrangement period includes capex for thirty three separate replacement projects or programs. Many of these projects span both the 2011–16 and 2016–21 access arrangement periods. For the 2011–16 access arrangement period, thirty of these are relatively minor asset replacement or refurbishment projects or components within a program, planned to ensure the AGP meets regulatory, safety, environmental, and service level

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<sup>24</sup> APTNT, *Access Arrangement Revision Proposal Submission*, August 2015, p. 62.

<sup>25</sup> APTNT, *Access Arrangement Revision Proposal Submission*, August 2015, p. 62.

<sup>26</sup> APTNT, *Access Arrangement Revision Proposal Submission*, August 2015, p. 87.

<sup>27</sup> APTNT, *Access Arrangement Revision Proposal Submission*, August 2015, p. 87.

<sup>28</sup> APTNT, *Access Arrangement Revision Proposal Submission*, August 2015, p. 63.

<sup>29</sup> NGR, rr. 79(1)(a), 79(2)(c).

requirements. The total cost of these thirty projects and programs is \$15.0 million (\$2015-16). We accept APTNT's actual and estimated capex for these minor projects as conforming capex in accordance with rule 79 of the NGR.<sup>30</sup> Based on our review of the information provided by APTNT in support of these projects, we are satisfied that:

- APTNT's access arrangement revision submission and pipeline integrity management plan sufficiently justify the basis, need, timing and cost of these minor projects and programs
- the capex would be incurred by a prudent service provider acting efficiently, in accordance with accepted good industry practice, to achieve the lowest sustainable cost of providing services, and
- the incurred capex is justifiable on the basis that the asset replacement works are necessary to maintain the safety and integrity of pipeline services.

The most significant replacement capex projects contributing to the overspend in replacement capex are the belowground station pipework recoating project stage 1 (\$6.1 million (\$2015-16)) and stage 2 (\$9.7 million (\$2015-16)), and the bidirectional pigging project (\$5.0 million (\$2015-16)). These three projects account for \$20.8 million or 58 per cent of actual and estimated replacement capex in the 2011–16 access arrangement period. The total allowance for belowground station pipework recoating work and the bidirectional pigging project in the 2011–16 access arrangement period was \$5.8 million.<sup>31</sup> Our consideration of these projects is set out below.

### **Belowground station pipework recoating project**

APTNT submitted that during the construction of the AGP in the 1980s, complex joints, valves and fittings were coated with coal tar enamel. APTNT has identified coating defects at the majority of stations on the pipeline. Spot samples of the coating within the scraper stations have confirmed that coating defects exist in the coal tar enamel sections and at the heat shrink sleeves within the stations. APTNT considers that where coating defects exist in buried pipe work, there is high potential for the development of shielding of the pipe steel from the cathodic protection system, resulting in corrosion. None of this pipe work is able to be inspected through metal-loss pigging, and it is therefore necessary to excavate, inspect and repair each facility where coal tar was used by replacing the coatings with modern epoxy.<sup>32</sup>

APTNT submitted that it has recoated nine stations to date as part of stage one of this project at a cost of \$6.1 million (\$2015-16), compared to the AER's approved forecast for this work of \$5.6 million (\$2015-16). APTNT is proposing to complete recoating the remaining 25 stations in stage 2 of the recoating project. APTNT has estimated capex of \$9.1 million (\$2015-16) in 2015-16 for this work, with further capex in the first year of the 2016–21 access arrangement period. APTNT stated that it is conducting stage 2 of

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<sup>30</sup> With the exception of labour cost escalation as discussed below.

<sup>31</sup> APTNT, *Access Arrangement Revision Proposal Submission*, August 2015, pp. 66 and 71.

<sup>32</sup> APTNT, *Access Arrangement Revision Proposal Submission*, August 2015, p. 71.

this project through a fixed cost tender rather than a rates-based sole source contract it used for the first stage of the project, which it expects to deliver cost efficiencies.<sup>33</sup>

We sought engineering advice from Sleeman Consulting to assist in assessing the need, timing and cost of the belowground station pipework recoating work during the 2011–16 access arrangement period. In summary, Sleeman Consulting advised that:<sup>34</sup>

- when the AGP was constructed, below ground pipework within stations along the pipeline was coated in a manner consistent with industry standards of the time, which included the use of both coal tar enamel (on complex-shaped fittings) and heat-shrink sleeves
- the existence of defects has been confirmed through direct current voltage gradient (DCVG) surveys, cathodic protection (CP) surveys and through visual inspection
- information provided by APTNT shows that in all cases where pipeline metal loss was detected, the metal loss was minor. Further, there was no threat to pipeline integrity and healthy factors of safety were demonstrated, allowing continued operation of the pipeline at its designed maximum pressure
- on the basis of inspection work carried out to date, it is reasonable to expect that the remaining scraper stations and main line valves will have coating related issues, but the pipeline itself will be in sound condition
- in the context of r.79(1) of the NGR, whilst it is prudent to inspect and repair below ground station pipeline coating at the remaining stations (since it is likely they will have coating related issues) undertaking such a programme of work on an accelerated basis, as proposed by APTNT, is inconsistent with achieving the lowest sustainable cost of providing services. Since the pipeline itself is expected to be in sound condition, undertaking work on an accelerated basis would mean costs are incurred prematurely and, in turn, the cost of providing services is not at the lowest sustainable level.
- the remediation programme should be progressed at a slower rate, balancing between:
  - the need for coating repair work to be completed in a timely but not expedited manner; and
  - the need for the repair programme to be coordinated so as to ensure the fixed cost tender benefits are secured.
- an inspection of four stations per annum would not be unreasonable as this will ensure all station coating repair work is completed by the end of 2020-21, and the benefits of fixed cost tendering realised.

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<sup>33</sup> APTNT, *Access Arrangement Revision Proposal Submission*, August 2015, p. 71.

<sup>34</sup> Sleeman Consulting, *Review of Actual and Forecast Capex for Selected Projects*, 22 September 2015, pp. 5–7.

Having considered APTNT's proposal as well as the Sleeman Consulting engineering advice, we accept the need for and scope of the belowground station pipework recoating project. A prudent operator would seek to address the pipework coating defects identified at the pipeline stations. However, in respect of the timing of the project as proposed by APTNT, we are not satisfied that the capex is such as would be incurred by a prudent service provider acting efficiently, in accordance with accepted good industry practice, to achieve the lowest sustainable cost of providing services. It does not appear that an accelerated program of works which completes the bulk of the recoating work within two years is justified, given the generally sound condition of the pipework found at stations where recoating work was completed as part of stage one of the project. An accelerated program of replacement means that capex is incurred before it is required. In our view, this is likely to be inefficient and inconsistent with the need to achieve the lowest sustainable cost of providing services.

We consider that APTNT's estimated capex of \$9.1 million (\$2015–16) for this project in 2015–16 should, in part, be deferred such that the project is completed by the end of the 2016–21 access arrangement period. On the basis of the advice provided by Sleeman Consulting, we consider that an allowance to complete recoating work at four stations per annum over the period from 2015–16 to 2020–21 is likely to reflect a reasonable estimate of conforming capex for this project. We have therefore reduced APTNT's estimated capex for the final year of the 2011–16 access arrangement period by \$7.0 million (\$2015–16). This capex has been deferred to the 2016–21 access arrangement period.

### **Bidirectional pigging project**

APTNT submitted that the change in majority supply to the AGP, from the Amadeus to the Blacktip gas field, has resulted in majority southbound flows on the AGP between Ban Ban Springs and Palm Valley. As a consequence, this has required the AGP to be pigged<sup>35</sup> in the reverse direction compared to pipeline design. APTNT submitted that in addition, southbound flows are lower than required for effective metal-loss pigging and therefore it has been necessary to create a pressure/flow regime suitable for pigging.<sup>36</sup>

APTNT submitted that it incurred \$5.0 million (\$2015–16) in capex on this project in the 2011–16 access arrangement period compared to the approved allowance of \$0.2 million (\$2015–16). APTNT justified this additional expenditure on the basis that its original plan to use insertion sleeves to allow the launch and retrieval of pigs without physical modification of the stations was found to be unsuitable for the configuration of the AGP. APTNT reached this conclusion following further investigation of this option and discussions with other pipeline operators. APTNT's risk assessment concluded that this approach was not acceptable for the pipeline. As a consequence, APTNT has

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<sup>35</sup> The term 'pigging' refers to the internal inspection of a pipeline using an inline inspection tool.

<sup>36</sup> APTNT, *Access Arrangement Revision Proposal Submission*, August 2015, pp. 65–66.

had to physically modify the stations to allow for bidirectional pigging. APTNT completed this project in 2013–14 at a total cost of \$5.0 million (\$2015–16).<sup>37</sup>

We sought engineering advice from Sleeman Consulting to assist in assessing the need, timing and cost of the bidirectional pigging project during the earlier access arrangement period. In summary, Sleeman Consulting advised that:<sup>38</sup>

- the factors APTNT raised to justify the additional expenditure are valid, including that:
  - there was a material risk that a pig exiting the pipeline might strike the door of the pig receiver which necessitated modification of eleven scraper stations<sup>39</sup>
  - the present low rate of gas flow in a southerly direction is insufficient to propel pigs at a speed that is steady and meets requirements for intelligent pigging. Through use of pressure control facilities, a pressure gradient and gas flow regime can be created to facilitate pigging activities
- the additional expenditure incurred in excess of what was approved for the access arrangement period covered the costs of:
  - modifications to pig launching stations to allow them to receive pigs, overcoming the problem that a pig exiting the pipeline might strike the door of the pig receiver. These modifications were relatively extensive, with the pig launcher having to be extended by 1.9 metres, kicker and vent lines relocated and balance lines installed
  - fabrication of a mobile pressure reduction skid, to be used to overcome the present low rate of gas flow in a southerly direction
  - modification to pig receival stations to allow safe movement of pigs and to allow connection of the mobile pressure reduction skid.
- the expenditure incurred is reasonable given the relatively extensive modifications that were completed
- expenditure incurred by APTNT on the bi-directional pigging project is prudent and efficient.

Having considered APTNT's proposal as well as the Sleeman Consulting engineering advice, we accept the need, scope and timing of the bidirectional pigging project. The capex for this project meets the criteria of rule 79(1)(a) of the NGR and is justifiable on the basis of rule 79(2)(c) of the NGR. The capital expenditure was necessary to maintain APTNT's ability to conduct inline inspection of the pipeline. We have included

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<sup>37</sup> APTNT, *Access Arrangement Revision Proposal Submission*, August 2015, p. 66.

<sup>38</sup> Sleeman Consulting, *Review of Actual and Forecast Capex for Selected Projects*, 22 September 2015, pp. 3–4.

<sup>39</sup> APTNT, *Response to information request AER Amadeus 004*, 31 August 2015.

\$5.0 million (\$2015–16) for the bidirectional pigging project as proposed by APTNT as conforming capex for the 2011–16 access arrangement period.

## **Non-system capex**

APTNT proposed two non-system capex categories for the 2011–16 access arrangement period – information technology and motor vehicles.

### **Information technology**

APTNT incurred actual and estimated capex of \$4.4 million (\$2015–16) for IT capex in the 2011–16 access arrangement period.

APTNT's IT capex in the 2011–16 access arrangement period was in large part driven by APTNT's share of corporate level costs, as a number of stand-alone systems relating to the AGP were integrated into the broader APA Group systems. APTNT submitted that this transition has led to efficiencies, which have led to a reduction in opex. The majority of the increased capex is concentrated in the later years of the 2011–16 access arrangement period. As this expenditure was not contemplated at the time of submission of the access arrangement revision proposal for the current period, it was not included in the forecast for this period.<sup>40</sup>

Based on our review of the information submitted by APTNT in support of its IT capex, we are satisfied that the capex is such as would be incurred by a prudent service provider acting efficiently.<sup>41</sup> The integration of stand-alone systems into APA Group systems has provided operational efficiencies and improved system flexibility and reliability. The capex is justifiable on the basis of rule 79(2)(c) of the NGR. We accept APTNT's actual and estimated IT capex of \$4.4 million (\$2015–16) in the 2011–16 access arrangement period as conforming capex.

### **Motor vehicles**

APTNT incurred capex of \$2.2 million (\$2015–16) for motor vehicles in the 2011–16 access arrangement period. APTNT submitted that this category of expenditure was overlooked in its submission forecasts for the 2011–16 access arrangement period, and therefore there was no approved capex allowance for motor vehicles.<sup>42</sup>

We are satisfied that APTNT's motor vehicle capex of \$2.2 million (\$2015–16) for the 2011–16 access arrangement period is such as would be incurred by a prudent operator acting efficiently. As discussed in section 6.4.2 below, we consider that APTNT's vehicle replacement criteria are comparable with other Australian network service providers for similar vehicles. We consider APTNT's approach to fleet management is consistent with good industry practice and the need to achieve the

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<sup>40</sup> APTNT, *Response to information request AER Amadeus 010*, 9 October 2015, p. 4.

<sup>41</sup> NGR, r. 79(1)(a).

<sup>42</sup> APTNT, *Access Arrangement Revision Proposal Submission*, August 2015, p. 86.



lowest sustainable cost of providing services.<sup>43</sup> The capex is justifiable on the basis of rule 79(2)(c) of the NGR. We accept APTNT's actual and estimated motor vehicle capex of \$2.2 million (\$2015–16) in the 2011–16 access arrangement period as conforming capex.

### **Capital expenditure in the 2010-11 year**

In our previous access arrangement review, we included an estimate for capex for APTNT in 2010-11 of \$6.4 million (\$2015–16).<sup>44</sup> APTNT stated that its actual capital expenditure for the 13 month period between 1 July 2010 and 31 July 2011 was \$4.5 million (\$2015–16).<sup>45</sup>

Noting the underspend in capex of \$1.8 million or 29 per cent, and given the majority of this expenditure appears to be related to business as usual requirements, we accept APTNT's actual capex of \$4.5 million (\$2015–16) for the 13 month period between 1 July 2010 and 31 July 2011 as conforming capex. We are satisfied that capex is such as would be incurred by a prudent operator acting efficiently, in accordance with accepted good industry practice, to achieve the lowest sustainable cost of providing services. The capex is justifiable on the basis of one or more of the grounds stated in rule 79(2) of the NGR.

### **6.4.2 Conforming capex for the 2016–21 access arrangement period**

We approve conforming net capex of \$26.5 million (\$2015–16) for the 2016–21 access arrangement period. This is a reduction of \$3.4 million or 11 per cent from APTNT's forecast of conforming capex. Table 6.8 summarises our approved forecast of conforming capex for the 2016–21 access arrangement period.

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<sup>43</sup> NGR, r. 79(1)(a).

<sup>44</sup> AER, *N.T. Gas Access arrangement proposal for the Amadeus Gas Pipeline 1 August 2011 – 30 June 2016*, July 2011, p. 49; APTNT, *Access Arrangement Revision Proposal Submission*, August 2015, p. 94; and APTNT, *Attachment B-6 Supporting model - Capital expenditure*, August 2015.

<sup>45</sup> APA Group, *Access Arrangement Revision Proposal Submission*, August 2015, p. 94 and APTNT, *Attachment B-6 Supporting model - Capital expenditure*, August 2015.

**Table 6.8 AER approved capital expenditure over the 2016–21 access arrangement period (\$million, 2015–16)**

	2016-17	2017-18	2018-19	2019-20	2020-21	Total
Expansion	-	-	-	-	-	-
Replacement	4.7	3.7	3.4	3.4	3.3	18.5
Non-system	4.4	0.9	1.0	1.1	1.3	8.7
<b>GROSS TOTAL CAPITAL EXPENDITURE</b>	<b>9.1</b>	<b>4.6</b>	<b>4.4</b>	<b>4.5</b>	<b>4.6</b>	<b>27.2</b>
Contributions	-	-	-	-	-	-
Asset disposals	0.2	0.1	0.1	0.1	0.2	0.7
<b>NET TOTAL CAPITAL EXPENDITURE</b>	<b>8.9</b>	<b>4.6</b>	<b>4.3</b>	<b>4.3</b>	<b>4.4</b>	<b>26.5</b>

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

Note: Includes AER labour escalation adjustments.

Our analysis of the capex driver categories is set out below.

### Expansion capex

Expansion capex is capex that is required to expand the capacity of the pipeline to meet forecast demand both within and beyond the access arrangement period. APTNT has not forecast any expansion capex in the 2016–21 access arrangement period.

### Replacement capex

Replacement capex is capex that is required to maintain the safety and integrity of the pipeline. This category includes the refurbishment and replacement of:

- instrumentation, including metering, telemetry and remote terminal units
- pipeline hardware, including pipes, meter valves, regulators and fittings
- site capital improvements, such as fencing and security
- specialised major spares.

APTNT forecast replacement capex of \$21.2 million (\$2015–16) for the 2016–21 access arrangement period. This is a reduction of \$14.6 million or 41 per cent from actual and estimated replacement capex in the 2011–16 access arrangement period. Replacement capex accounts for 71 per cent of APTNT’s total forecast capex for the 2016–21 access arrangement period.



We have included \$18.5 million (\$2015–16) for replacement capex in our forecast of conforming capex for the 2016–21 access arrangement period. This is a reduction of \$2.8 million or 13 per cent from APTNT’s forecast of required replacement capex. We consider this amount is sufficient for APTNT to maintain the safety, reliability and integrity of the AGP, and is prudent and efficient.<sup>46</sup>

APTNT’s forecast replacement capex program includes capex for nineteen separate replacement projects or programs. Seventeen of these are minor asset replacement or refurbishment projects or programs, planned to ensure the AGP continues to meet regulatory, safety, environmental, and service level requirements in the 2016–21 access arrangement period. These projects and programs are typically routine and ongoing in nature, such as the purchase of minor plant and equipment or the replacement of various classes of assets due to obsolescence or poor condition. The total cost of these seventeen minor projects and programs is \$6.8 million (\$2015–16). We accept APTNT’s forecast capex for these minor projects as conforming capex in accordance with rule 79 of the NGR.<sup>47</sup> We are satisfied that:

- APTNT’s access arrangement revision submission and asset management plan sufficiently justify the need, timing and cost of these minor projects and programs
- the basis of the forecast capex for each project as set out in APTNT’s asset management plan for 2016–2020 appears reasonable
- the forecast capex would be incurred by a prudent service provider acting efficiently, in accordance with accepted good industry practice, to achieve the lowest sustainable cost of providing services
- the forecast capex is likely to be justifiable on the basis that the asset replacement works are necessary to maintain the safety and integrity of pipeline services.

The remaining two projects, the Channel Island Bridge and Belowground Station Pipework Recoating projects, account for \$14.4 million or 68 per cent of the forecast replacement capex. Our consideration of these projects is set out below.

### **Channel Island Bridge project**

APTNT forecast capex of \$10.9 million (\$2015–16) for the Channel Island bridge project in the 2016–21 access arrangement period.

The purpose of the Channel Island bridge project is to make the existing 12 kilometre spurline of the AGP which runs from the Darwin City Gate Station to Channel Island able to be inspected by intelligent inline inspection tools. APTNT is currently unable to inspect the Channel Island spurline using inline inspection tools (known as intelligent pigs) because the pipeline does not have a consistent diameter for its entire length.

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<sup>46</sup> NGR, rr. 79(1)(a), 79(2)(c).

<sup>47</sup> With the exception of labour cost escalation as discussed below.

The diameter of the pipeline changes from 300mm to 200mm for the 800 meter section running over the Channel Island bridge.<sup>48</sup>

APTNT considers that it is imperative to ensure the Channel Island spurline is piggable to manage its ongoing integrity.<sup>49</sup> In order to achieve this, APTNT considered three options, all of which would allow intelligent pigging of the entire length of the pipeline. APTNT's preferred option is to install pig launching and receiving facilities on the spurline and replace the existing bridge crossing with a new horizontal directionally drilled 300mm pipeline. The total cost of the project in the 2016–21 access arrangement period is \$10.9 million (\$2015–16), with additional minor preparatory costs incurred in the 2011–16 access arrangement period.<sup>50</sup>

We sought engineering advice from Sleeman Consulting to assist in assessing the need, timing and cost of the proposed Channel Island bridge project. In summary, Sleeman Consulting advised that:<sup>51</sup>

- APTNT is correct in stating that it cannot undertake inline inspection of the Channel Island spurline as intelligent pigging tools capable of handling both 300mm and 200mm diameter pipeline are not available
- intelligent pigging of gas pipelines, while desirable, is not mandated by Australian Standard AS2885
- it is not necessary to be able to intelligently pig the section of the Channel Island spurline that crosses the Channel Island bridge as this section can be readily inspected
- the condition of the short section of pipeline from the Channel Island bridge to the Channel Island meter station can be reliably assessed by a combination of Direct Current Voltage Gradient (DCVG) surveys, excavations and inspections, and the extrapolation of findings from survey work carried out on pipework upstream of the bridge crossing
- the extent of work proposed by APTNT to facilitate intelligent pigging of the entire Channel Island spurline is excessive and is not consistent with achieving the lowest sustainable cost of providing services
- the preferred option that is prudent, consistent with good industry practice and consistent with achieving the lowest sustainable cost of providing services is to install pig launching and receiving facilities at the Darwin City Gate Station and upstream of the Channel Island bridge respectively, to enable intelligent pigging of that section of the pipeline

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<sup>48</sup> APTNT, *Access Arrangement Revision Proposal Submission*, August 2015, p. 64; APTNT, *Amadeus Gas Pipeline Asset Management Plan 2016-2020*, August 2015, Appendix C Item 15.

<sup>49</sup> APTNT, *Amadeus Gas Pipeline Asset Management Plan 2016-2020*, August 2015, p. 5.

<sup>50</sup> APTNT, *Access Arrangement Revision Proposal Submission*, August 2015, pp. 64–65.

<sup>51</sup> Sleeman Consulting, *Review of Actual and Forecast Capex for Selected Projects*, 22 September 2015, pp. 8–10.

- forecast capex required to deliver this option is estimated at \$1.1 million, as compared to the proposed cost of APTNT’s option of \$10.9 million (\$2015–16).

We also sought further information from APTNT to justify the need for and scope of the proposed Channel Island bridge project.<sup>52</sup>

APTNT submitted that inline inspection is good industry practice, and should be carried out wherever there are specific integrity threats which must be managed, where there is a risk to public safety, or where continuity of supply is critical. APTNT considers that the form of construction and location of the Channel Island spurline mean it is subject to specific integrity threats such as electric currents induced by proximity to high voltage power lines, lightning strike damage, and third party damage. Also, excavation and visual inspection of the pipeline is difficult and costly as the pipeline is, in parts, located in a road reserve, in mangrove environments, and in areas of inundation where excavation is difficult or impossible for the majority of the year. APTNT submitted that in these circumstances, inline inspection is necessary to manage pipeline integrity, to minimise risk to the public and to maintain continuity of supply to the Channel Island Power Station (the main source of electricity for the Darwin-Katherine power system).<sup>53</sup>

Having considered APTNT’s proposal and response to our information request, as well as the Sleeman Consulting engineering advice, we are not satisfied that the capex associated with the full scope of the Channel Island spurline modification works proposed by APTNT meets the conforming capex criteria of the NGR.

We agree with APTNT that inline inspection is accepted good industry practice. However, we also note that inline inspection is not mandated by the relevant Australian Standard.<sup>54</sup> Inline inspection is therefore not the only approach to pipeline integrity management that is consistent with accepted good industry practice. There is no new or existing regulatory obligation that requires modifications to permit the inline inspection of gas pipelines regardless of the cost of doing so. The criteria for conforming capex in the NGR require not only that capex be in accordance with good industry practice, but also that the capex be efficient and achieve the lowest sustainable cost of providing services.<sup>55</sup> We are not satisfied that APTNT’s forecast capex for the Channel Island bridge project meets the criteria for conforming capex in rule 79 of the NGR.

APTNT considered three options for modifying the Channel Island spurline. All options provide for 100 per cent of the pipeline to be made piggable, including the section running over the Channel Island bridge, at a cost of approximately \$11 million in each

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<sup>52</sup> AER, *Information request AER Amadeus 004*, 21 August 2015.

<sup>53</sup> APTNT, *Response to information request AER Amadeus 004*, 31 August 2015, p. 4

<sup>54</sup> Australian Standard AS2885.3 provides that “where a pipeline (or section of a pipeline) is not capable of being inspected by an inline tool, the Licensee shall consider whether the pipeline needs to be modified to permit inspection by an inline inspection tool. Any decision not to undertake modifications for this purpose shall be consistent with the safety management study and the pipeline integrity management plan, and shall be documented.”

<sup>55</sup> NGR, r. 79(1)(a).

case. The preferred option recommended by Sleeman Consulting provides for approximately 90 per cent of the pipeline to be made piggable, for an estimated cost of approximately \$1.1 million. In our view, the option identified by Sleeman Consulting is prudent and likely to be consistent with achieving the lowest sustainable cost of providing services. It provides many of the benefits provided by APTNT's proposed option, but at one tenth of the cost.

We are not satisfied that a service provider acting efficiently to achieve the lowest sustainable cost of providing services would seek to replace the section of pipeline crossing the Channel Island bridge. This section of pipeline can be visually inspected for external damage or corrosion. APTNT can continue to manage pipeline integrity risks associated with this section of pipeline in accordance with existing practices. In our view, the forecast capex to replace this section of the Channel Island spurline is not consistent with achieving the lowest sustainable cost of providing services, and is not necessary to meet a regulatory obligation or to maintain the safety or integrity of services.

We consider that forecast capex of \$1.1 million is a reasonable estimate of conforming capex for this project. This level of capex is sufficient to provide for inline inspection of the majority of the underground portion of the Channel Island spurline, at a substantially lower cost than the project proposed by APTNT. The condition of the remaining section of unpiggable pipeline can continue to be assessed by visual inspection of the exposed pipeline and by a combination of DCVG surveys, excavations and the extrapolation of upstream pigging results. In our view, this approach is prudent, efficient, and consistent with achieving the lowest sustainable cost of providing services. This option is also consistent with good industry practice and, when documented in APTNT's pipeline integrity management plan, meets the requirements of Australian Standard AS2885. We have included \$1.1 million (\$2015–16) for the Channel Island spurline piggability project in our forecast of conforming capex for the 2016–21 access arrangement period.

### **Belowground station pipework recoating project – phase two**

APTNT forecast capex of \$3.5 million (\$2015–16) for the belowground station pipework recoating project in the 2016–21 access arrangement period. The total cost of the project is \$13.2 million, with the majority of the work scheduled to be completed in the 2015–16 year.

As discussed in our assessment of conforming capex for this project in the 2011–16 access arrangement period, we have accepted the need for and scope of the belowground station pipework recoating project. However, we are not satisfied that the timing of the capex for this project as proposed by APTNT is efficient or consistent with achieving the lowest sustainable cost of providing services. We consider that APTNT's forecast capex for this project in the 2015–16 and 2016-17 years should be deferred such that the project is completed by the end of 2020-21. This has the effect of reducing APTNT's estimated capex for the final year of the 2011–16 access arrangement period by \$7.0 million (\$2015–16) and increasing forecast capex in the 2016–21 access arrangement period by the same amount. We have included

\$10.7 million (\$2015–16) for the belowground station pipework recoating project in our forecast of conforming capex for the 2016–21 access arrangement period.

## Non-system capex

Non-system capex relates to the replacement or refurbishment of non-system assets such as motor vehicles, buildings and information technology. APTNT forecast non-system capex of \$8.7 million (\$2015–16) for the 2016–21 access arrangement period. This is an increase of \$1.1 million or 15 per cent from actual non-system capex in the 2011–16 access arrangement period. Non-system capex accounts for 29 per cent of APTNT’s total forecast capex.

We accept APTNT’s forecast of \$8.7 million (\$2015–16) for non-system capex.<sup>56</sup> We have included it in our forecast of conforming capex for the 2016–21 access arrangement period. We consider the forecast non-system capex is such as would be incurred by a prudent service provider acting efficiently, in accordance with accepted good industry practice, to achieve the lowest sustainable cost of providing services. The forecast capex is necessary to maintain the integrity of services and APTNT’s capacity to meet existing levels of demand for services. The main categories of non-system capex—motor vehicles, buildings and IT—are discussed below.

### Motor vehicles

APTNT forecast capex of \$2.2 million (\$2015–16) for motor vehicles in the 2016–21 access arrangement period.<sup>57</sup> APTNT operates a fleet of vehicles to service the AGP system including utilities and 4WD trucks. Vehicles are purchased or replaced on an as required basis depending on personnel, project or operational requirements. APTNT’s vehicles are purchased, replaced and maintained in accordance with the national APA Group procurement policy.<sup>58</sup>

We have reviewed the information provided with APTNT’s proposal, and sought further information regarding APTNT’s forecast motor vehicles capex.<sup>59</sup> APTNT’s proposed total motor vehicle capex is similar to its actual and estimated motor vehicle capex for the 2011–16 access arrangement period.<sup>60</sup> In its response to our information request, APTNT stated that the number of motor vehicles in its fleet over the 2016–21 access arrangement period is forecast to be consistent with the existing fleet levels of 22 light commercial vehicles with gross vehicle mass (GVM) of less than 4.5 tonnes and two heavy commercial trucks with GVM greater than 4.5 tonnes.<sup>61</sup>

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<sup>56</sup> Excluding labour cost escalation as discussed below.

<sup>57</sup> APTNT, *Access Arrangement Revision Proposal Submission*, August 2015, p. 86.

<sup>58</sup> APTNT, *Amadeus Gas Pipeline Asset Management Plan 2016-2020*, August 2015, Appendix C Item 25.

<sup>59</sup> AER, *Information request AER Amadeus 010*, 28 September 2015.

<sup>60</sup> APTNT, *Access Arrangement Revision Proposal Submission*, August 2015, p. 86.

<sup>61</sup> APTNT, *Response to information request AER Amadeus 010*, 9 October 2015, p. 1.

APTNT's replacement criterion for light commercial vehicles is the earlier of four years or 200,000km and for heavy commercial trucks 10 years.<sup>62</sup> These replacement criteria are comparable with other Australian network service providers for similar vehicles, particularly when considering the operating conditions in the Northern Territory.<sup>63</sup>

APTNT has estimated the replacement cost of light commercial vehicles to be \$72,000 per vehicle, based on historical vehicle replacement costs.<sup>64</sup> In our view, this cost estimate is reasonable as it is comparable to vehicle cost estimates provided by other Australian energy network service providers. The cost estimates account for the range of accessories that APTNT specifies for these vehicles in order to manage the remote off-road conditions encountered where these vehicles operate.<sup>65</sup> APTNT submitted that at the time of vehicle replacement, it assesses the condition of vehicle accessories such as communication equipment, winches, recovery equipment, compressors and driving lights, and where possible transfers them to the new vehicle.<sup>66</sup>

We are satisfied that APTNT's forecast motor vehicle capex of \$2.2 million (\$2015–16) is such as would be incurred by a prudent operator acting efficiently. We consider APTNT's approach to fleet management is consistent with good industry practice and the need to achieve the lowest sustainable cost of providing services.<sup>67</sup> The capex is justifiable on the basis of rule 79(2)(c) of the NGR. We will make an allowance for it in our estimate of conforming capex for the 2016–21 access arrangement period.

However, APTNT did not account for any forecast disposals of motor vehicles in its access arrangement revision proposal. In assessing APTNT's forecast non-system capex, we sought further information regarding APTNT's forecast motor vehicle disposals in the 2016–21 access arrangement period.<sup>68</sup>

In response to our information request, APTNT advised that it expected proceeds from the sale of motor vehicle assets over the 2016–21 access arrangement period of \$0.7 million.<sup>69</sup> We have accounted for these disposals in modelling APTNT's required revenue for the 2016–21 access arrangement period.

## Buildings

APTNT forecast non-system buildings capex of \$3.1 million (\$2015) for building modifications at its corporate office site in Palmerston.<sup>70</sup> APTNT currently operates an owned office site and a leased maintenance base depot, both in Palmerston. The office

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<sup>62</sup> APTNT, *Response to information request AER Amadeus 010*, 9 October 2015, p. 1.

<sup>63</sup> For example, Ergon Energy, *Fleet asset management strategy 2015-2020*, May 2015.

<sup>64</sup> APTNT, *Response to information request AER Amadeus 010*, 9 October 2015, p. 2.

<sup>65</sup> APTNT, *Response to information request AER Amadeus 010*, 9 October 2015, pp. 2-3.

<sup>66</sup> APTNT, *Response to information request AER Amadeus 010*, 9 October 2015, p. 2.

<sup>67</sup> NGR, r. 79(1)(a).

<sup>68</sup> AER, *Information request AER Amadeus 010*, 28 September 2015.

<sup>69</sup> APTNT, *Response to information request AER Amadeus 010*, 9 October 2015.

<sup>70</sup> APTNT, *Access arrangement revision proposal submission*, August 2015, pp. 86-87.



accommodation has a building age approaching 30 years and has had only minor internal modification since construction.<sup>71</sup>

APTNT proposed to redevelop the corporate office site at Palmerston in order to:<sup>72</sup>

- refurbish and expand office accommodation to provide sufficient space for both corporate and field services staff
- extend the existing warehouse area to provide adequate facilities for the field services function
- upgrade bathroom and kitchen amenities
- install chemical storage
- install building and perimeter security
- undertake civil works including paving, car parking and landscaping.

APTNT's access arrangement revision proposal and asset management plan provided a summary of the proposed building modification works.<sup>73</sup> However, APTNT did not provide a business case or other supporting documentation setting out the justification for the proposed investment. We therefore sought further information from APTNT to justify the need, timing and cost of the proposed building works.<sup>74</sup> APTNT submitted a business case which, in our view, provided appropriate evidence to support the preferred redevelopment option, including:<sup>75</sup>

- a description of the need for investment, with evidence as to the nature of asset obsolescence and other specific site condition, capacity, amenity and compliance issues
- evidence that a range of alternative options has been considered, including a do nothing option
- a summary of the costs and benefits for the options considered
- the basis of selection of the preferred development option
- a breakdown of the proposed scope of works and estimated costs.

APTNT's business case identified that the 'do nothing' option was not viable for APTNT's Palmerston operations because:<sup>76</sup>

- the existing office premises require significant maintenance, including ceiling, roof and air-conditioning replacement, and provide sub-standard amenity

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<sup>71</sup> APTNT, *Business case – Palmerston office facility building*, October 2015, p. 2.

<sup>72</sup> APTNT, *Business case – Palmerston office facility building*, October 2015, p. 6.

<sup>73</sup> APTNT, *Access arrangement revision proposal submission*, August 2015, pp. 86-87; and APTNT, *Amadeus Gas Pipeline Asset Management Plan 2016–2020*, 27 July 2015, Appendix C - Item 26.

<sup>74</sup> AER, *Information request AER Amadeus 010*, 28 September 2015.

<sup>75</sup> APTNT, *Business case – Palmerston office facility building*, October 2015.

<sup>76</sup> APTNT, *Business case – Palmerston office facility building*, October 2015, pp. 4-5.

- the office accommodation is at full capacity, with an inefficient distribution of workspace and inadequate meeting facilities
- the maintenance base is under a month by month lease, providing no security of tenure
- the current rental of the maintenance base is significantly less than market rental for similar properties and is not expected to continue into the future.

On the basis of the information submitted by APTNT, we are satisfied that the forecast capex for redevelopment of the Palmerston corporate office is likely to be prudent, efficient and consistent with achieving the lowest sustainable cost of providing services.<sup>77</sup> The capex is justifiable on the basis of rule 79(2)(c) of the NGR. The project will address the existing site condition, safety and capacity issues identified by APTNT, and allow for the consolidation of corporate and field services functions. This option will utilise excess land at the owned corporate office site, and provide ongoing savings in annual rental and security patrol costs through termination of the maintenance depot lease. We have included the forecast costs associated with this project in our estimate of conforming capex for the 2016–21 access arrangement period.

In order to achieve the lowest sustainable cost of providing services, it is important that opex savings achieved through consolidation of the two operating sites in Palmerston are passed on to users. In response to our information request, APTNT submitted that the forecast opex savings in rental and security patrol costs associated with this project were not reflected in its forecast opex for the 2016–21 access arrangement period.<sup>78</sup> We expect APTNT to reflect these opex savings in its revised opex proposal.

### **Information technology**

APTNT proposed \$3.4 million (\$2015–16, including cost escalation) for IT capex in the 2016–21 access arrangement period.<sup>79</sup> This is a decrease of \$1 million or 23 per cent from actual and estimated expenditure in the 2011–16 access arrangement period.<sup>80</sup> However, it is an increase of \$2.2 million from the forecast for the current period.<sup>81</sup>

We accept APTNT's proposed IT capex forecast and have included it in our forecast of conforming capex for the 2016–21 access arrangement period.<sup>82</sup> In our analysis, we have reviewed the two specific projects proposed for the upcoming access arrangement period.

APTNT's IT capex in the 2011–16 access arrangement period was in large part driven by APTNT's share of corporate level costs as a number of stand-alone systems relating to the AGP were integrated into the broader APA Group systems. This work

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<sup>77</sup> NGR, r. 79(1)(a).

<sup>78</sup> APTNT, *Response to information request AER Amadeus 010*, 9 October 2015, p. 3.

<sup>79</sup> APTNT, *Access Arrangement Revision Proposal Submission*, August 2015, pp. 84–85.

<sup>80</sup> APTNT, *Access Arrangement Revision Proposal Submission*, August 2015, p. 83.

<sup>81</sup> APTNT, *Access Arrangement Revision Proposal Submission*, August 2015, p. 87.

<sup>82</sup> Excluding labour cost escalation as discussed below.



program is due to be completed during the 2011–16 access arrangement period. As a consequence, APTNT’s forecast IT capex for the 2016–21 access arrangement period is 23 per cent lower than actual expenditure in the 2011–16 access arrangement period.<sup>83</sup>

APTNT identified two IT capex projects for the 2016–21 access arrangement period, an infrastructure upgrade project and an applications renewal program. Each of these is supported by an individual business case setting out the scope, business need and justification for the proposed IT capex project, as well as costs, options considered and a risk assessment.<sup>84</sup> The infrastructure upgrade project is to upgrade both the desktop infrastructure to the Windows 8/10 operating system and to upgrade the telephony infrastructure. The applications renewal program is to upgrade all of APTNT’s major applications on a two yearly cycle to maintain currency and vendor support. On the basis of the information provided, we are satisfied that these projects are appropriately justified in regard to APTNT’s business needs. We are therefore satisfied that the scope and nature of the capex proposed is such as would be incurred by a prudent service provider.

APTNT has utilised an industry standard project methodology to develop its project plans.<sup>85</sup> APTNT’s cost estimates are derived from historical figures for resource costs estimates. On this basis, we are satisfied that APTNT’s estimate of IT capex costs has been arrived at on a reasonable basis.<sup>86</sup>

Based on our review of the information submitted by APTNT in support of its forecast IT capex, we are satisfied that the forecast capex is such as would be incurred by a prudent service provider acting efficiently.<sup>87</sup> The projects included in the forecast capex are necessary to maintain the integrity of services.<sup>88</sup> On this basis, we accept APTNT’s IT capex forecast of \$3.4 million and have included it in our estimate of conforming capex for the 2016–21 access arrangement period.

## Labour cost escalation

APTNT’s forecast capex for the 2016–21 access arrangement period included \$0.5 million related to forecast real escalation of labour costs. As discussed in attachment 7 of this decision, we have not accepted APTNT’s forecast of real labour cost escalation in the 2016–21 access arrangement period. We have substituted our forecast of labour cost escalation in place of APTNT’s forecast in determining our

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<sup>83</sup> APTNT, *Amadeus Gas Pipeline Access Arrangement Revision Proposal Submission*, August 2015, p. 83.

<sup>84</sup> APTNT, *Amadeus Gas Pipeline – C-2 IT AM01 Applications Renewal Program – August 2015*, August 2015 and APTNT, *Amadeus Gas Pipeline – C-3 IT AM03 Infrastructure Renewal Program – August 2015*, August 2015.

<sup>85</sup> APTNT, *Amadeus Gas Pipeline – C-2 IT AM01 Applications Renewal Program – August 2015*, August 2015, p. 9 and APTNT, *Amadeus Gas Pipeline – C-3 IT AM03 Infrastructure Renewal Program – August 2015*, August 2015, p. 8.

<sup>86</sup> NGR, r. 74(2).

<sup>87</sup> NGR, r. 79(1).

<sup>88</sup> NGR, r. 79(2)(c).

estimate of conforming capex for the 2016–21 access arrangement period. The impact of applying our forecast for labour cost escalation is a reduction in forecast capex of \$0.2 million (\$2015–16).

## 6.5 Revisions

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

**Revision 6.1:** Make all necessary amendments to reflect our draft decision on conforming capex for 2010–16, as set out in Table 6.1.

**Revision 6.2:** Make all necessary amendments to reflect our draft decision on conforming capex for 2016–21, as set out in Table 6.3.