FINAL DECISION
Roma to Brisbane Gas Pipeline Access Arrangement 2017 to 2022

Attachment 6 – Capital expenditure

November 2017

AUSTRALIAN ENERGY REGULATOR

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Shortened forms

Shortened form	Extended form
AER	Australian Energy Regulator
ATO	Australian Tax Office
capex	capital expenditure
CAPM	capital asset pricing model
CPI	consumer price index
DRP	debt risk premium
ECM	(Opex) Efficiency Carryover Mechanism
ERP	equity risk premium
Expenditure Guideline	Expenditure Forecast Assessment Guideline
gamma	Value of Imputation Credits
MRP	market risk premium
NGL	National Gas Law
NGO	national gas objective
NGR	National Gas Rules
NPV	net present value
opex	operating expenditure
PTRM	post-tax revenue model
RBA	Reserve Bank of Australia
RFM	roll forward model
RIN	regulatory information notice
RPP	revenue and pricing principles
SLCAPM	Sharpe-Lintner capital asset pricing model
STTM	Short Term Trading Market
TAB	Tax asset base
UAFG	Unaccounted for gas
WACC	weighted average cost of capital
WPI	Wage Price Index

6 Capital expenditure

Capital expenditure (capex) refers to the capital costs and expenditure incurred in the provision of pipeline services.[1] This investment generally relates to assets with long lives and these costs are recovered over several regulatory periods. Annually, APTPPL recovers the costs of these assets through the return on capital and depreciation building blocks that form part of its total revenue.

This attachment outlines our assessment of APTPPL's proposed conforming capex for 2011–17, which forms part of its opening capital base.[2] It also outlines our assessment of APTPPL's forecast capex for the 2017–22 access arrangement period, which forms part of its projected capital base.[3]

6.1 Final decision

6.1.1 Conforming capex for 2011–17

We approve APTPPL's proposed total net capex of $69.0 million ($2016–17) for the 2012–17 access arrangement period as conforming capex.[4]

In our draft decision we approved APTPPL's actual capex of $57.9 million ($2016–17) in the 2011–12 year as conforming capex.[5]

Table 6.1 shows approved capex for the 2011–17 period by category.

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

Category	2011–12(a)	2012–13	2013–14	2014–15	2015–16	2016–17	Total 2012–17
Expansion	50.3	3.2	2.5	0.0	–	–	5.7
Replacement	–	0.7	2.3	4.0	4.5	6.3	17.7
Stay in business	7.6	2.5	6.3	19.6	5.5	12.0	45.9
GROSS TOTAL CAPEX	**57.9**	**6.4**	**11.1**	**23.6**	**10.0**	**18.2**	**69.3**
Contributions	–	–	0.1	–	–	–	0.1
Asset disposals	–	0.1	0.1	0.0	–	–	0.2
NET TOTAL CAPEX	**57.9**	**6.2**	**10.9**	**23.6**	**10.0**	**18.2**	**69.0**

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

1 NGR, r. 69.
2 NGR, r. 77.
3 NGR, r. 78(b)
4 NGR, r. 79(1).
5 NGR, r. 77(2).

Notes: (a) We have made a decision on conforming capex for the 2011–22 year for the purposes of establishing the opening capital base for the 2012–17 access arrangement period.

6.1.2 Conforming capex for the 2017–22 access arrangement period

We approve APTPPL's proposed $65.4 million ($2016–17) total net capex for the 2017–22 access arrangement period.[6]

We have approved APTPPL's proposed capex in this final decision because it has justified that the expenditure is necessary to maintain and improve the safety of services and maintain the integrity of services.[7]

Table 6.2 shows approved capex for the 2017–22 access arrangement period by category.

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

Category	2017–18	2018–19	2019–20	2020–21	2021–22	Total
Expansion	–	–	–	–	–	–
Replacement	8.7	10.2	5.5	6.8	6.4	37.6
Stay in business	17.2	5.7	1.4	1.6	1.9	27.8
GROSS TOTAL CAPEX	**25.9**	**15.9**	**6.9**	**8.4**	**8.3**	**65.4**
Contributions	–	–	–	–	–	–
Asset disposals	–	–	–	–	–	–
NET TOTAL CAPEX	**25.9**	**15.9**	**6.9**	**8.4**	**8.3**	**65.4**

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

6.2 APTPPL's revised proposal

6.2.1 Capital expenditure for the 2012–17 access arrangement period

In its revised proposal, APTPPL proposed total conforming net capex of $69.0 million ($2016–17) for the 2012–17 access arrangement period. This is the same as its initial proposal.

6 NGR, r. 79(1).

7 NGR, r, 79(2)(c)(i) and (ii).

Table 6.3 Proposed capex for the 2012–17 access arrangement period ($million, 2016–17)

Category	2012–13	2013–14	2014–15	2015–16	2016–17	Total
Expansion	3.2	2.5	0.0	–	–	5.7
Replacement	0.7	2.3	4.0	4.5	6.3	17.7
Stay in business	2.5	6.3	19.6	5.5	12.0	45.9
GROSS TOTAL CAPEX	**6.4**	**11.1**	**23.6**	**10.0**	**18.2**	**69.3**
Contributions	–	0.1	–	–	–	0.1
Asset disposals	0.1	0.1	0.0	–	–	0.2
NET TOTAL CAPEX	**6.2**	**10.9**	**23.6**	**10.0**	**18.2**	**69.0**

Source: APTPPL, Capital expenditure model, 14 August 2017.

APTPPL submitted that in our draft decision we incorrectly stated that APTPPL has already received flood related costs in its 2012–17 opex forecast. APTPPL also submitted that not all expenditure as a result of the floods in the current access arrangement period was covered by insurance. APTPPL therefore re-proposed the $7.8 million of flood related capex as conforming.

6.2.2 Capital expenditure for the 2017–22 access arrangement period

In its revised proposal, APTPPL proposed total forecast net capex of $65.4 million ($2016–17) for the 2017–22 access arrangement period. This is $1.3 million or 2 per cent less than its initial proposal capex.

Table 6.4 APTPPL's revised proposed capex over the 2017–22 access arrangement period ($million, 2016–17)

Category	2017–18	2018–19	2019–20	2020–21	2021–22	Total
Expansion	–	–	–	–	–	–
Replacement	8.7	10.2	5.5	6.8	6.4	37.6
Stay in business	17.2	5.7	1.4	1.6	1.9	27.8
GROSS TOTAL CAPEX	**25.9**	**15.9**	**6.9**	**8.4**	**8.3**	**65.4**
Contributions	–	–	–	–	–	–
Asset disposals	–	–	–	–	–	–
NET TOTAL CAPEX	**25.9**	**15.9**	**6.9**	**8.4**	**8.3**	**65.4**

Source: APTPPL, Capital expenditure model, 14 August 2017.

APTPPL identified two elements of its proposed capex for the 2017–22 access arrangement period that we did not accept in our draft decision:

- Pipeline integrity management—in our draft decision we did not accept $5.9 million of the $37.6 million proposed by APTPPL; and
- Dalby turbine overhaul—in our draft decision we did not accept total capex of $1.3 million proposed by APTPPL.

Pipeline integrity management

APTPPL submitted that it does not agree with our draft decision to:

- reduce the number of forecast excavations; and
- reduce the unit cost per excavation.

In its revised proposal, APTPPL maintained that $37.6 million ($2016–17) of capex is required to undertake pipeline integrity management activities in the 2017–22 access arrangement period.

APTPPL submitted that the 473 dig ups that the AER draft decision relies on (over the 2015–20 period) is not the complete set of forecast dig ups, and its integrity management system forecasts support the number of excavations it has proposed.[8]

APTPPL also submitted that it would be imprudent to not inspect for stress corrosion cracking (SCC) on every dig up, and therefore has included forecast capex that is consistent with the continued assessment for SCC at dig ups.[9]

Dalby turbine overhaul

APTPPL agreed that future usage is not likely to require the overhaul of the turbine in the forecast access arrangement period. APTPPL removed the capex from its forecast in its revised proposal.

6.3 Assessment approach

We must make two decisions regarding APTPPL's capex. First, we are required to assess past capex and determine whether it is conforming capex that we should add to the opening capital base.[10] Secondly, we are required to assess APTPPL's forecast of required capex for the 2017–22 access arrangement period to determine whether it is conforming capex. Capex will be 'conforming' if it meets the NGR's new capex criteria.[11] We have limited discretion when deciding whether capex conforms with the new capex criteria.[12] This means that we must approve the capex if we are satisfied it

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8 APTPPL, *Revised access arrangement submission*, 14 August 2017, p. 48.
9 APTPPL, *Revised access arrangement submission*, 14 August 2017, p. 49.
10 NGR, r. 77(2)(b).
11 NGR, r. 79.
12 NGR, r. 79(6).

complies with the applicable requirements of the NGR and NGL and is consistent with the criteria set out in the NGR or NGL.[13]

The following sections set out our approach and the tools and techniques we employ in making these assessments. 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 2012–17 access arrangement period and the need to forecast an opening capital base for the 2017–22 access arrangement period. We explain this in the next section.

6.3.1 Capex in the 2012–17 access arrangement period

We reviewed APTPPL's submission and supporting material to assess proposed capex for the 2012–17 access arrangement period. This included information on APTPPL's reasoning and, where relevant, business cases, responses to information requests and other relevant information. We used this information to identify whether capex in the 2012–17 access arrangement period was conforming capex and, in turn, whether that capex should be included in the opening capital base.[14] Generally, we use the same approach to assess whether both historical and forecast or estimated capex conforms with the new capex criteria. We have set out this approach in more detail in section 6.3.2.

We consider the following when determining the opening capital base for 2017–22:

- 2011–12 capex—when we conducted the previous access arrangement review, we did not yet have actual capex for 2011–12. Consequently, we need to adjust for the difference between actual and the estimated 2011–12 capex in the capital base.[15] Since actual capex for 2011–12 is now available, we have assessed whether this capex is conforming capex.
- 2012–16 capex—since we have actual capex data for these years, we have assessed whether this is conforming capex.[16] We have included conforming capex in the opening capital base for 2017–22.[17]
- 2016–17 capex—we do not yet have actual capex for 2016–17 and so must include an estimate in the opening capital base. We have assessed whether APTPPL's proposed estimate is conforming capex under the NGR. At the next access arrangement review, we will assess whether APTPPL's actual capex for 2016–17 is conforming capex under the NGR, and to adjust for any difference between actual and estimated capex.[18]

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13 NGR, r. 40(2).
14 NGR, r. 77(2)(b).
15 NGR, r. 77(2)(a).
16 NGR, rr.77(2)(b), 79.
17 NGR, 4. 77(2)(b).
18 NGR, rr. 77(2)(a), 79.

6.3.2 Capex for the 2017–22 access arrangement period

We have assessed the key drivers of forecast capex to consider whether APTPPL's proposed capex complies with the new capex criteria.[19] In doing so, we relied on information, including:

- APTPPL's revised access arrangement submission and information
- APTPPL's Gas pipeline asset management plan, Pipeline integrity management plan and associated appendices and reports which specific expenditure of technical detail
- business cases that detail the expenditure requirements for specific projects
- APTPPL's RIN template response and capex forecast model
- net present value (NPV) analyses of the incremental revenue associated with expansion projects
- engineering advice we commissioned from 4ei to help us assess the prudency and efficiency of selected projects in both the 2012–17 and 2017–22 access arrangement periods.

For each category of capex we considered the scope, timing and cost of the proposed capex in order to form a view on whether it complies with the new capex criteria. We also considered whether cost forecasts were arrived at on a reasonable basis and represent the best forecast possible in the circumstances.[20]

6.3.3 Interrelationships

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

- possible trade-offs between capex and opex
- any difference between the capitalisation policies applied in the 2012–17 and 2017–22 access arrangement periods
- the growth in the price of labour forecast for opex and capex.

6.4 Reasons for final decision

6.4.1 Conforming capex for 2011–17

We approve net conforming capex of $69.0 million ($2016–17) for the 2012–17 access arrangement period. This is in line with APTPPL's revised proposal of conforming capex. In our draft decision we approved APTPPL's actual capex of $57.9 million

[19] NGR, r. 79(1).
[20] NGR, r. 74(2).

($2016–17) in the 2011–12 year as conforming capex.[21] Table 6.5 summarises our approved conforming capex for the 2012–17 access arrangement period and the preceding 2011–12 year.

Table 6.5 AER approved capex, 2011–12 to 2016–17 ($million, 2016–17)

Category	2011–12	2012–13	2013–14	2014–15	2015–16	2016–17	Total 2012–17
Expansion	50.3	3.2	2.5	0.0	–	–	5.7
Replacement	–	0.7	2.3	4.0	4.5	6.3	17.7
Stay in business	7.6	2.5	6.3	19.6	5.5	12.0	45.9
GROSS TOTAL CAPEX	**57.9**	**6.4**	**11.1**	**23.6**	**10.0**	**18.2**	**69.3**
Contributions	–	–	0.1	–	–	–	0.1
Asset disposals	–	0.1	0.1	0.0	–	–	0.2
NET TOTAL CAPEX	**57.9**	**6.2**	**10.9**	**23.6**	**10.0**	**18.2**	**69.0**

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

In our draft decision we accepted capex incurred in the 2012–17 access arrangement period relating to expansion and replacement. Our analysis of stay in business capex is set out below.

Stay in business capex

In our draft decision we considered that $38.1 million of the proposed $45.9 million of stay in business capex over the 2012–17 access arrangement period was conforming. We did not consider that $7.8 million of capex for flood related costs was conforming.[22]

In our draft decision we considered that APTPPL's opex allowance for the 2012–17 access arrangement period was sufficient to cover flood related expenses, and that APTPPL has reclassified flood related costs from opex to capex during the current access arrangement period.

In its revised proposal, APTPPL submitted that the capital expenditure reflects the deductibles on the insurance policy (i.e. that portion of the expenditure not covered by insurance) and capital expenditure costs that were rejected by the insurer as being directly linked to an insurable event.

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21 NGR, r. 77(2).

22 AER, *Draft Decision Roma to Brisbane Gas Pipeline Access Arrangement 2017 to 2012: Attachment 6 – Capital expenditure*, p. 6-19.

APTPPL also submitted that the works undertaken on the Marburg Range and Toowoomba Escarpment were not similar to projects undertaken in the previous access arrangement period. In particular, APTPPL noted:

- the Marburg Range work involved construction of around 800 metres of new DN250 and DN400 pipeline, using HDD methodology to re-route and avoid the unstable land area; and
- the Toowoomba Escarpment involved construction of 70 metres of new pipeline using new materials to replace the area susceptible to ground movement, as well as another nearby section of new pipeline at the railway crossing.

APTPPL further noted that generally projects in the previous access arrangement period focused on the reinstatement of trenches and creek beds or cleaning up sites rather than a focus on the pipeline itself.[23]

Based on this information, we consider the proposed 2012–17 flood related capex satisfies the new capex criteria.[24] We approve $45.9 million of total stay in business capex for the 2012–17 access arrangement period.

6.4.2 Conforming capex for the 2017–22 access arrangement period

We approve APTPPL's revised proposal for net conforming capex of $65.4 million ($2016–17) for the 2017–22 access arrangement period. Table 6.6 summarises our approved forecast of conforming capex for the 2017–22 access arrangement period.

Table 6.6 AER approved capex over the 2017–22 access arrangement period ($million, 2016–17)

Category	2017–18	2018–19	2019–20	2020–21	2021–22	Total
Expansion	–	–	–	–	–	–
Replacement	8.7	10.2	5.5	6.8	6.4	37.6
Stay in business	17.2	5.7	1.4	1.6	1.9	27.8
GROSS TOTAL CAPEX	**25.9**	**15.9**	**6.9**	**8.4**	**8.3**	**65.4**
Contributions	–	–	–	–	–	–
Asset disposals	–	–	–	–	–	–
NET TOTAL CAPEX	**25.9**	**15.9**	**6.9**	**8.4**	**8.3**	**65.4**

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

[23] APTPPL, *Revised access arrangement submission*, 14 August 2017, p. 44.

[24] NGR, r. 79(1).

Expansion capex

Consistent with its initial proposal, APTPPL has not forecast any expansion capex in the 2017–22 access arrangement period.

Stay in business capex

In our draft decision we accepted $27.8 million ($2016–17) of the proposed $29.1 million of stay in business capex for the 2017–22 access arrangement period. We did not accept $1.3 million for the proposed Dalby turbine overhaul. APTPPL removed forecast capex for this project in its revised proposal. Our final decision is to accept $27.8 million ($2016–17) of stay in business capex.

Replacement capex

In our draft decision we accepted $31.7 million ($2016–17) of the proposed $37.6 million ($2016–17) of replacement capex for the 2017–22 access arrangement period. This capex is for pipeline integrity management activities, including works to address the corrosion and deterioration of buried pipelines. In our draft decision we accepted $8.3 million of capex for inline inspection activities[25], $5.1 million for cathodic protection upgrades and $0.6 million for other related costs. We accepted $17.8 million of the proposed $23.7 million for excavations and pipeline coating upgrades.[26] The difference of $5.9 million between our draft decision and APTPPL's proposal was because we considered APTPPL could undertake fewer pipeline excavations, at a lower cost per excavation. Our draft decision provided capex to undertake 450 excavations over the 2017–22 access arrangement period.[27]

APTPPL noted in its revised proposal that the forecast of 609 excavations is supported by its integrity management system forecasts. This figure in fact relates to actual/proposed excavations over the 2015–20 period, as revealed in a response to an earlier information request.[28] APTPPL has actually proposed 521 excavations in the 2017–22 access arrangement period.[29]

We requested APTPPL provide evidence of integrity management system forecasts to support the need to undertake the proposed excavations over the 2017–22 access arrangement period. We also requested APTPPL provide an update on the number of actual metro and non-metro excavations undertaken in 2015–16 and 2016–17, and the cost of these excavations.

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25 Inline inspection activities are classified as stay in business capex.

26 AER, *Draft Decision Roma to Brisbane Gas Pipeline Access Arrangement 2017 to 2012: Attachment 6 – Capital expenditure*, p. 6-28.

27 AER, *Draft Decision Roma to Brisbane Gas Pipeline Access Arrangement 2017 to 2012: Attachment 6 – Capital expenditure*, p. 6-27.

28 APTPPL, *Response to information request 20*, 1 December 2016.

29 APTPPL, *Attachment 5-2 – Forecast capital expenditure project documents: RBP Pipeline Integrity Management Upgrade*, p. 6.

In response, APTPPL noted that the difference between the ILI forecast (450 excavations provided in our draft decision) and the forecast contained in the business case (521) is explained by:

- the forecast post 2020 was halved due to the expected reduction following the ILI run;
- dig ups that relate to matters other than corrosion growth were added, in particular the backlog created by the greater than expected number of flaws identified in the previous ILI run; and
- the forecast for corrosion dig ups was reduced by dig ups that had already been undertaken at the time of the forecast.[30]

Based on this new information we are satisfied that APTPPL's forecast volume of excavations to maintain pipeline integrity is arrived at on a reasonable basis, and is the best forecast possible in the circumstances.[31]

APTPPL's response also indicated that its capex for excavations in 2015–16 and 2016–16 was consistent with the estimates previously provided in its business case.[32] We therefore consider that the excavation costs proposed by APTPPL are efficient.

Our final decision is to accept $37.6 million ($2016–17) of replacement capex.

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30 APTPPL, *Response to information request 33(A)*, 20 October 2017.

31 NGR, r. 74(2).

32 APTPPL, *Response to information request 33(B)*, 25 October 2017.