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

Attachment 6 – Capital expenditure

July 2017

AUSTRALIAN ENERGY REGULATOR

Inquiries about this publication should be addressed to:

Australian Energy Regulator
GPO Box 520
Melbourne Vic 3001

Tel: 1300 585 165

Email: AERInquiry@aer.gov.au

Note

This attachment forms part of the AER's draft decision on the access arrangement for the Roma to Brisbane Gas Pipeline for 2017–22. It should be read with all other parts of the draft decision.

The draft decision includes the following documents:

Overview

Attachment 1 - Services covered by the access arrangement

Attachment 2 - Capital base

Attachment 3 - Rate of return

Attachment 4 - Value of imputation credits

Attachment 5 - Regulatory depreciation

Attachment 6 - Capital expenditure

Attachment 7 - Operating expenditure

Attachment 8 - Corporate income tax

Attachment 9 - Efficiency carryover mechanism

Attachment 10 - Reference tariff setting

Attachment 11 - Reference tariff variation mechanism

Attachment 12 - Non-tariff components

Attachment 13 - Demand

Contents

Shortened forms

Shortened form	Extended form
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 mostly 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 form 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]

We approve $61.1 million ($2016–17) for the 2012–17 access arrangement period and $59.5 million ($2016–17) for the 2017–22 access arrangement period. This is 11.4 per cent less than proposed for the 2012–17 access arrangement period and 10.7 per cent less than proposed for the 2017–22 access arrangement period. We also approve $57.9 million ($2016–17) actual capex in 2011–12.

We have not accepted APTPPL's forecast for the following projects:

- emergency works (flood recovery) in the 2012–17 access arrangement period,
- pipeline integrity management activities in the 2017–22 access arrangement period, and
- Dalby turbine overhaul in the 2017–22 access arrangement period.

6.1 Draft decision

6.1.1 Conforming capex for 2011–17

We approve $61.1 million ($2016–17) of APTPPL's proposed total net capex of $69.0 million ($2016–17) for the 2012–17 access arrangement period as conforming capex.[4] We also approve APTPPL's actual capex of $57.9 million ($2016–17) in the 2011–12 year as conforming capex.[5]

We have reduced APTTPPL's proposed capex because we consider that $7.8 million ($2016–17) of the proposed capex for emergency works (flood recovery) should be classified as operating expenditure (opex). We consider APTPPL has already been funded for this work through its opex allowance for the 2012–17 access arrangement period.

---

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

We show a summary of approved capex by category for 2011–17 in Table 6-1.

Table 6-1 Approved capex, 2011–12 to 2016–17 ($million, 2016–17)

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

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

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

6.1.2 Conforming capex for the 2017–22 access arrangement period

We approve $59.5 million ($2016–17) of APTPPL's proposed $66.7 million ($2016–17) total net capex for the 2017–22 access arrangement period.[6]

We have not accepted APTPPL's proposed capex in this draft decision because:

- the forecast capex for the pipeline integrity management activities does not reflect the efficient cost of undertaking the necessary pipeline excavations and coating activities.[7] We consider that forecast capex of $31.7 million ($2016–17), rather than the proposed $37.6 million ($2016–17), is a reasonable estimate of conforming capex for this project, as discussed in section 6.4.2.
- the forecast capex of $1.3 million ($2016–17) for the Dalby turbine overhaul is not necessary in the 2017–22 access arrangement period.[8] We discuss this in section 6.4.2.

We show approved capex by category for the 2017–22 access arrangement period in table 6-2.

6 NGR, r. 79(1).
7 NGR, r. 79(1).
8 NGR, r. 79(1).

Table 6-2 AER approved capex by category over the 2017–22 access arrangement period ($million, 2016–17)

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

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

6.2 APTPPL's proposal

6.2.1 Capital expenditure over the 2012–17 access arrangement period

APTPPL proposed total conforming net capex of $69.0 million ($2016–17) for the 2012–17 access arrangement period (Table 6-3). This is 2.4 times the forecast we approved for that period.[9]

APTPPL submitted that the proposed capex was required to:

- address damage done to the pipelines as a result of flooding and land slippage
- make the RBP bi-directional
- ensure the integrity of an aging pipeline.[10]

We have provided our analysis of the projects undertaken during the 2012–17 access arrangement period at 6.4.1.

[9] AER, *RBP Access Arrangement Final Decision 2012–13 to 2016–17*, August 2012.

[10] APTPPL, *RBP Access Arrangement Revision Proposal Submission*, September 2016, p. 119.

Table 6-3 Proposed capex over 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 CAPEX	**6.2**	**10.9**	**23.6**	**10.0**	**18.2**	**69.0**

Source: APTPPL, IR#026 RBP Capex Model (Final), February; APTPPL, RBP transmission roll forward model as at 30 June 2017, September 2016; AER analysis. Totals may not add due to rounding.

6.2.2 Proposed capital expenditure for the 2017–22 access arrangement period

APTPPL forecast total net capex of $66.7 million ($2016–17) for the 2017–22 access arrangement period (Table 6-4). This is 3 per cent lower than the actual and estimated net capex APTPPL proposed for the 2012–17 access arrangement period.

APTPPL submitted that it expects many of the same drivers that occurred over the 2012–17 access arrangement period to continue into the 2017–22 access arrangement period.[11] Specifically, APTPPL expects a continuing need for capex to maintain the operational capacity and safety of what it calls an aging asset, and to bring the RBP into compliance with changes to Australian Standard AS 2885.

We have provided our analysis of projects to be undertaken during the 2017–22 access at 6.4.2.

[11] ibid., p. 94.

Table 6-4 APTPPL's proposed capital expenditure by category over the 2017–22 access arrangement period ($million, 2016–17)

Category	2017–18	2018–19	2019–20	2020–21	2021–22	Total
Expansion	–	–	–	–	–	**–**
Replacement	8.7	10.2	5.5	6.8	6.4	**37.6**
Stay in business	17.2	5.7	1.4	1.6	3.3	**29.1**
GROSS TOTAL CAPEX	**25.9**	**15.9**	**6.9**	**8.4**	**9.7**	**66.7**
Contributions	–	–	–	–	–	**–**
Asset disposals	–	–	–	–	–	**–**
NET TOTAL CAPEX	**25.9**	**15.9**	**6.9**	**8.4**	**9.7**	**66.7**

Source: APTPPL, IR#026 RBP Capex Model (Final), February 2017. Totals may not add due to rounding.

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.[12] 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.[13] We have limited discretion when deciding whether capex conforms with the new capex criteria.[14] This means that we must approve the capex if we are satisfied it complies with the applicable requirements of the NGR and NGL and is consistent with the criteria set out in the NGR or NGL.[15]

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 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 its 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

12 NGR, r. 77(2)(b).
13 NGR, r. 79.
14 NGR, r. 79(6).
15 NGR, r. 40(2).

capex over the 2012–17 access arrangement period was conforming capex and, in turn, whether that capex should be included in the opening capital base.[16] 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 below.

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.[17] 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.[18] We have included conforming capex in the opening capital base for 2017–22.[19]
- 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 adjust for any differences between actual and estimated capex.[20]

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.[21] In doing so, we relied on information, including:

- the access arrangement submission and access arrangement information, which outline APTPPL's capex program and the main drivers of those programs
- APTPPL's *Gas pipeline asset management plan*, *Pipeline integrity management plan* and associated appendices and reports which provide specific expenditure or technical detail
- business cases that detail the expenditure requirements for specific projects
- APTPPL's RIN template response
- APTPPL's capex forecast model

---

16 NGR, r. 77(2)(b).
17 NGR, r. 77(2)(a).
18 NGR, rr. 77(2)(b), 79.
19 NGR, r. 77(2)(b).
20 NGR, rr. 77(2)(a), 79.
21 NGR, r. 79(1).

- 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.[22]

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 differences 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 capital expenditure for 2011–17

We approve net conforming capex of $61.1 million ($2016–17) for the 2012–17 access arrangement period. This is $7.8 million ($2016–17), or 11 per cent, lower than the $69.0 million ($2016–17) proposed by APTPPL. We also approve APTPPL's actual capex of $57.9 million ($2016–17) for 2011–12. We show approved capex by category for 2011–17 in table 6-5.

[22] NGR, r. 74(2).

Table 6-5 AER approved capital expenditure over the 2011–17 period ($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	2.4	4.4	13.8	5.5	12.0	**38.1**
GROSS TOTAL CAPEX	**57.9**	**6.3**	**9.2**	**17.8**	**10.0**	**18.2**	**61.5**
Contributions	-	-	0.1	-	-	-	**0.1**
Asset disposals	-	0.1	0.1	0.0	-	-	**0.2**
NET TOTAL CAPEX	**57.9**	**6.1**	**9.0**	**17.7**	**10.0**	**18.2**	**61.1**

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

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

Expansion capex

Expansion capex is required to expand the capacity of the pipeline to meet forecast demand within and beyond the access arrangement period under review.

APTPPL proposed expansion capex of $5.7 million ($2016–17) for the 2012–17 access arrangement period. This capex relates to the Roma to Brisbane Pipeline Expansion 8 (RBP8) project, which APTPPL commissioned in August 2012. Consequently we included RBP8 expansion capex in the closing capital base at the end of the 2006–11 access arrangement period. In our previous access arrangement review, APTPPL did not propose any additional expansion capex within the 2012–17 period, and we did not provide any.

APTPPL has now submitted that it incurred additional costs of $5.7 million ($2016–17) to close out its RBP8 project in the 2012–17 access arrangement period, resulting from a legal dispute with one of its contractors. This resulted in delays to APTPPL receiving invoices from its contractors which pushed the costs into the 2012–17 access arrangement period.[23] APTPPL submitted that this additional capex is consistent with the AER's draft and final determination in 2012, which agreed that expenditure on the RBP8 project is consistent with the NGR.

We sought additional information about the drivers of the additional expense. APTPPL responded that the project was still NPV positive overall and that the legal dispute was the lowest cost option to consumers because it avoided further costs.[24]

---

[23] APTPPL, *RBP Access Arrangement Revision Proposal Submission*, September 2016, p. 80.

[24] APTPPL, *Response to information request 22*, 9 December 2016, p. 2.

Having considered APTPPL's proposal, its responses to our information requests, and its NPV analysis, we accept the need for APTPPL to incur the additional costs submitted for the RBP8 expansion project. This is because it would result in the lowest increase in costs to APTPPL's customers and thereby meet the new capex criteria.[25] Consequently, we have included $5.7 million ($2016–17) for the RBP8 expansion project as conforming capex for the 2012–17 access arrangement period.

Replacement capex

Replacement capex 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.

APTPPL has proposed replacement capex of $17.7 million ($2016–17) for the 2012–17 access arrangement period. In the previous access arrangement review, APTPPL did not propose, and the AER did not provide for, any replacement capex for the 2012–17 access arrangement period. However, during that period, APTPPL spent $17.7 million ($2016–17) in replacement capex on pipeline integrity management activities and its Aquarium Passage project. It proposed to include the capex for both of these projects, in the opening capital base for the 2017–22 access arrangement period. Our assessment of this capex is discussed below.

Pipeline integrity management activities

Most of the additional replacement capex incurred by APTPPL during the 2012–17 access arrangement period was for pipeline integrity management. A total of $15.7 million ($2016–17) was spent on pipeline excavations, upgrades to cathodic protection and other minor integrity management activities. A further $2.8 million ($2016–17) was spent on inline inspections (classified as 'stay in business' capex).

APTPPL submitted that the RBP's over-the-ditch tape coating system and age mean it requires significantly greater effort and expense in corrosion and integrity management than most other pipelines in Australia. APTPPL submitted that, if insufficiently managed, the corrosion and integrity issues could lead to pipeline failures affecting both public safety, given the pipeline traverses many populated areas, and security of supply to customers.[26]

---

[25] NGR, r. 79(1)(a).

[26] NGR, r. 79(2)(c)(i) and (ii).
APTPPL, *RBP Access Arrangement Revision Proposal Submission*, September 2016, p. 96.

APTPPL submitted that the capex incurred resulted in a pipeline that was more resistant to metal loss and dents, thus reducing the risk of pipeline ruptures. Consequently, APTPPL considered the capex was required to improve the integrity and safety of the pipeline.[27]

APTPPL's integrity management programme is made up of three elements:

1. Systematic investigation of the integrity of the pipeline through inline inspection;
2. Detailed investigation and upgrades at specific locations through excavations
3. Monitoring and upgrading of integrity devices such as cathodic protection.

Inline inspection activities accounted for $2.8 million ($2016–17) of capex (this activity is classified as 'stay in business' capex, which is further discussed in the following section). APTPPL has a national policy and schedule for inline inspection, consistent with its statutory obligations. The RBP is designated in the Queensland Petroleum and Gas (Production and Safety) Regulation 2004 as a 'Strategic Pipeline'. Under this Regulation, all pipeline segments comprising the RBP licence are required to undergo inline inspection within the first 7 years of operation, and at least once within every 10-year period after that.

APTPPL submitted that the 2014–15 and 2011 inline inspection results pointed to deterioration in the health of the pipeline. Consequently APTPPL increased its excavations and integrity upgrades during the 2012–17 access arrangement period, incurring an additional $12.1 million ($2016–17) for excavations and integrity upgrades. APTPPL undertook 35 excavations in 2014–15 and 75 in 2015–16 (including inline inspection verification). These excavations were primarily to address dents and metal loss features that may have caused restrictions in maximum operating pressure, because these represented a more present risk to the integrity and safety of the pipeline.[28]

APTPPL also incurred $3.3 million ($2016–17) for cathodic protection upgrades in the 2012–17 access arrangement period. The RBP's primary mitigation against corrosion risk is a protective coating. The secondary mitigation for a buried pipeline is the use of a cathodic protection system. As the protective coating deteriorates over time, the cathodic protection system becomes the dominant method of preventing/minimising corrosion. APTPPL incurred a further $0.2 million ($2016–17) in other capex, which included acquiring an easement for cathodic protection and the Integrity Data Management Tool software system.

We agree that management of corrosion and pipeline integrity is important in order to maintain safety and ensure security of gas supply. We consider that APTPPL has appropriately undertaken inline inspection during the current access arrangement period, as required by statutory obligations. The inline inspection has revealed an

---

[27] APTPPL, *RBP Access Arrangement Revision Proposal Submission*, September 2016, p. 104.

[28] APTPPL, *Attachment 5-2 - Forecast capital expenditure project documents: RBP Pipeline Integrity Management Upgrade*, p. 5.

unexpected degree of damage to the pipeline, which has subsequently resulted in a significant increase in capex. We consider that APTPPL has acted prudently and in accordance with AS2885.3 by undertaking excavations to repair the defects identified by inline inspection. We consider that it was necessary to undertake the excavations and repairs during the 2012–17 access arrangement period given the risks to the integrity and safety of the pipeline.

We are satisfied that APTPPL's capex of $18.5 million ($2016–17) for pipeline integrity management activities in the 2012–17 access arrangement period is conforming capex.[29]

Aquarium Passage project

The Lytton Lateral is a 200mm pipeline, 6km in length, which was constructed and commissioned in 2010. APTPPL submitted that, during construction of the pipeline, it could not complete the planned crossing of the Aquarium Passage watercourse as designed due to delays in the Works Permit and Environmental Authority issuing relevant approval. Consequently it installed a temporary 100mm crossing with a short design life to meet customer schedule requirements. The Aquarium Passage project replaced the temporary crossing with a permanent 200mm crossing, which allowed required inline inspections to be undertaken on the Lytton Lateral. APTPPL claims this will ensure its integrity for the design lifetime.[30] Prior to the construction of the current pipeline, the long term integrity of the crossing was difficult to determine.

The Queensland Petroleum and Gas (Production and Safety) Act and Regulations designate the RBP, inclusive of laterals such as the Lytton Lateral, as a Strategic Pipeline. The legislation specifically requires strategic pipelines to be inspected by inline inspection within seven years of commissioning.[31] APTPPL submitted that the Aquarium Passage upgrade was necessary in order to comply with the Act in the required timeframe.[32]

APTPPL submitted that it completed the Aquarium Passage project in 2014–15 at a cost of $2.0 million ($2016–17), and that if the capex for the Aquarium Passage was added to that of the Lytton Lateral, the total capex would still satisfy the requirements of the NGR.[33] That is, the demand for the service was such that the revenue gained in the period up to the reconstruction of the Aquarium Passage Crossing exceeded the cost of the project.

Based on our review of the information submitted by APTPPL in support of the Aquarium Passage project, including the NPV analysis of the initial Lytton Lateral cost plus the Aquarium Passage crossing cost, we believe this expenditure is prudent and

---

29 NGR, r. 79(1)(a) and r. 79(2)(c).

30 APTPPL, *Access Arrangement Revision Proposal Submission*, September 2016, p. 81.

31 Petroleum and Gas (Production and Safety) Regulation 2004, s. 80.

32 APTPPL, *Access Arrangement Revision Proposal Submission*, September 2016, p. 81.

33 NGR, r. 79(2)(c).

efficient. We are satisfied that this amount is such as would be incurred by a prudent service provider acting efficiently[34] and is necessary to comply with a regulatory obligation or requirement.[35] Consequently we are satisfied APTPPL's actual capex of $2.0 million ($2016–17) in the 2012–17 access arrangement period meets the new capex criteria.

Stay in business capex

Stay in business capex includes routine capital activities targeted at maintaining the necessary pipeline services.

APTPPL has proposed stay in business capex of $45.9 million ($2016–17) for the 2012–17 access arrangement period. In the previous access arrangement review, APTPPL proposed, and the AER provided for, stay in business capex of $20.1 million ($2016–17) for the 2012–17 access arrangement period. APTPPL spent stay in business capex on projects discussed below.

Bi-directional flow upgrade

In 2014–15 APTPPL commenced capex to modify its pipework to facilitate westbound flows. Previously APTPPL's RBP licence did not permit westbound flows because APTPPL designed its pipework and associated equipment only for eastbound flows.[36] The bi-direction capex was designed to provide 120 TJ of westbound capacity per day. The total capital cost was $8.4 million ($2016–17). This project would provide APTPPL's customers with extra flexibility and options.[37]

APTPPL considered that this project satisfied the new capex criteria because it was NPV positive.[38] APTPPL noted that since the pipeline has been in operation, actual demand has exceeded the minimum demand necessary for the project to break even over the two years APTPPL has offered this service.[39]

We have assessed APTPPL's actual demand, forecast demand and NPV analysis. We are satisfied that the overall economic value of the expenditure is positive, mainly because, since the first delivery in October 2015, the average daily quantity of gas purchased on the westbound gas service exceeds the minimum threshold of demand for the project to be NPV positive. Further, demand data provided by APTPPL for the period October 2015 to June 2016[40] indicates demand for the westbound service is sufficiently high to allow APTPPL to nearly fully recover the capital cost of this project during the current access arrangement period. This is sufficient evidence to support

---

34 NGR, r. 79(1)(a).
35 NGR, r. 79(2)(c).
36 APTPPL, *RBP Access Arrangement Revision Proposal Submission*, September 2016, p. 83.
37 APTPPL, *Attachment 5-1 - Historical capital expenditure documents: Bi-directional flow*, p. 4.
38 NGR, rr. 79(2)(a) and 79(2)(b).
39 APTPPL, *Attachment 5-1 - Historical capital expenditure documents: Bi-directional flow*, p. 4.
40 ibid.

the conclusion that APTPPL's bi-directional flow project is prudent and is NPV positive. Therefore, we are satisfied that this project meets the new capex criteria.[41]

We note that in some circumstances, we may reduce the amount of conforming capex we roll into the capital base if there has been a capital contribution.[42] We sought information from APTPPL about the revenues it has recovered for this project and it informed us that no capital contributions have been made.[43]

As a consequence, we are satisfied that users did not enter into an agreement or understanding to make capital contributions. Rather, users paid the applicable service charge to use the westbound service once it was commissioned.

In these particular circumstances, this means APTPPL will likely over-recover the capital cost of this service. This is because the gross revenue received for the westbound service during the current access arrangement period, some of which contributes to APTPPL's capital costs, does not reduce the amount of conforming capex we roll into the opening capital base. Therefore, all of the $8.4 million in capex will be included when determining the regulated tariff for the next period despite APTPPL already recovering a significant portion of this capex in service fees charged during the current period.

The incentive regulation framework provided in the NGR encourages NSPs to identify and invest in new services valued by its customers. Unless there is a capital contribution by a user, APTPPL bears the full risk of investing in new services. If APTPPL invests in a new service that is not financially viable, the capex would not be conforming capex and would not be added to its capital base. In this case it would not be able to recoup these costs from its customers and would bear the full cost of this investment.

In this circumstance, the risk APTPPL undertook in providing this new westbound service has resulted in capex that has provided APTPPL with a new revenue source. If there is no reward for investing in new services where the overall economic value is positive then APTPPL will have a lower incentive to pursue new services such the bi-direction project.

Alternatively, APTPPL and its customers can undertake risk sharing of new capex projects that result in new services, through capital contributions.[44]

We also note that, despite the potential for over-recovery, all customers on APTPPL's network will benefit from the additional demand from the westbound service. This is because the westbound service accounts for over 30 per cent of our alternative 2017–22 average forecast demand. As a result of this new service, tariffs are over 10 per

---

41 NGR, rr. 79(2)(a) and 79(2)(b).

42 NGR, r. 82.

43 AER, *Information request AER#06*, 23 September 2016.

44 NGR, r. 82.

cent lower than they would have been without the westbound service, because APTPPL will recover revenue from a higher level of demand.

Emergency works (flood recovery)

APTPPL submitted that it incurred flood related capital expenditure in 2013 and 2014 following floods at Marburg Range, Sandy Creek and Toowoomba Escarpment.[45] After deducting insurance proceeds, net capex was $7.8 million ($2016–17).

APTPPL also submitted that this capex was necessary to maintain the safety and integrity of services.[46]

APTPPL provided detailed information on its flood repair works undertaken at each site, noting that these flood repair works were consistent with its flood repairs in 2010 and 2011.[47]

We requested further information about why APTPPL classified this expenditure as capex rather than opex. In response, APTPPL noted that the nature of the expenditure was capex rather than opex.[48] APTPPL did not further elaborate on why the expenditure was classified as capex instead of opex.

We note APTPPL previously treated flood related costs as opex. In its 2011 base year opex forecast APTPPL removed some of the flood related costs in incurred in 2011. APTPPL anticipated that it would recover the majority of its flood related costs through insurance except for ordinary labour costs.[49] APTPPL left the remaining flood costs in its base year opex.

APTPPL has historically treated flood related costs as opex. We consider that its opex allowance for the 2012–17 access arrangement period was sufficient to cover flood related expenses.

We have also compared the repair works undertaken in the previous access arrangement period to the current access arrangement period and we consider these works are of a similar nature. For example, APTPPL stabilised the flooded areas and lowered the pipeline trench at Rocky Creek in 2011 and Sandy Creek in 2013.[50]

Based on this information, we consider APTPPL has reclassified flood related costs from opex to capex during the current access arrangement period. Since APTPPL has already received flood related costs in its 2012–17 opex forecast we do not consider the proposed 2012–17 flood related capex satisfies the new capex criteria.[51]

---

45 APTPPL, *Access Arrangement Revision Proposal Submission*, September 2016, p. 86.
46 APTPPL, *Access Arrangement Revision Proposal Submission*, September 2016, pp. 86-88.
47 APTPPL, *Attachment 5-1 - Historical capital expenditure documents: Emergency works*, p. 2.
48 APTPPL, *Response to information request 10*, 10 October 2016, p. 2.
49 APTPPL, *Attachment 8.1 - Queensland floods, 2011*, p. 8.
50 APTPPL, *Attachment 8.1 - Queensland floods, 2011, p. 3, and APTPPL, Attachment 5-1 - Historical capital expenditure documents: Emergency works*, p. 3.
51 NGR, r. 79(1).

Urban risk reduction

APTPPL submitted that since the time of construction (of the Brisbane metropolitan section of the RBP), significant development has occurred in the Brisbane outskirts. Consequently, parts of the pipeline that were originally in rural areas are now surrounded by dense urban areas.[52]

APTPPL expects that it has incurred capex of $8.2 million ($2016–17) for the urban risk reduction project in the 2012–17 access arrangement period. A further $2.9 million ($2016–17) is forecast for this project in the 2017–22 access arrangement period.

APTPPL submitted that this capex is necessary to reduce the risk (frequency and consequence) of the pipeline rupture to a level that is compliant with the industry standard AS2885 and therefore meets the new capex criteria.[53]

AS2885 applies to the design, construction and operation of natural gas transmission pipelines. The standard sets out the requirements for locations of particular sensitivity called high consequence areas.[54] In high consequence areas 'the pipeline shall be designed such that rupture is not a credible failure mode'. The standard also requires that pipelines in high consequence areas meet certain specific technical requirements in relation to specific types of risks and consequences.[55]

For existing pipelines, the standard requires that they are assessed against the requirements of Clauses 4.7.2 and 4.7.3, which set out the criteria for "no rupture" and maximum energy release rate in high consequence areas. Where existing pipelines do not comply with either clause, mitigation options must be assessed in accordance with Clause 4.7.4.[56] The change was first introduced in the 2007 revision of AS2885.1.

APTPPL submitted that it first considered the retrospective high consequence area requirements in the 2010 RBP safety management study review (the first full review in the 5-yearly cycle since the 2007 release of AS2885.1). It was shown in that review that the rupture risk in high consequence areas was no higher than Intermediate, and 'as low as reasonably practicable' (ALARP) was demonstrated by a 'maximum justifiable spend' analysis, which was considered the industry standard at that time. That analysis determined that capital costs for effective mitigation would greatly exceed the maximum justifiable spend.[57]

APPTPPL carried out further safety management study reviews of the RBP through 2014 (for the Metro section) and 2015 (for the remainder of the RBP), with an

---

52 APTPPL, *Access Arrangement Revision Proposal Submission*, September 2016, p. 108.

53 APTPPL, *Access Arrangement Revision Proposal Submission*, September 2016, p. 112.

54 AS2885.1: 2012, c.4.7.2.

55 AS2885.1: 2012, c.4.7.3.

56 The standard states for a Change in Location Class section 4.7.4: "… safety assessment shall be undertaken and additional control measures implemented until it is demonstrated that the risk from a loss of containment involving rupture is ALARP." (As Low As Reasonably Practicable)

57 APTPPL, *Attachment 5-2 - Forecast capital expenditure project documents: Urban risk reduction*, p. 5.

important focus on the high consequence area requirements of AS2885.1. APTPPL submitted that the AS2885 safety management process required them to carry out an options study to reduce the risk to demonstrably ALARP where there have been land use changes around an existing pipeline.

The ALARP study assessed a range of options and identified a preferred solution. The chosen solution combines maximum operating pressure reduction (where it is feasible) and physical protection (barriers). The maximum operating pressure reduction is to be achieved by constructing:

- an additional regulating station at Brightview on the 250mm and 400mm lines
- an additional mainline valve at Ellengrove on the 300mm pipeline to enable the upstream section to run at a lower maximum operating pressure
- a new regulating station at Eight Mile Plains or Mt Gravatt to manage the downstream pressures. This location maximises the length of pipeline covered by the maximum operating pressure reduction in order to minimise the slab protection requirements.

Where maximum operating pressure reduction is not possible then physical protection barriers (pipeline concrete slab or equivalent) will be constructed at the following locations:

- All high consequence areas where excavator and auger access is credible, including road reserve, parkland and private properties (other than suburban residential yards), throughout the Ellengrove to Eight Mile Plains section of the metro pipeline. Approximately 7.7km of barrier protection is required.
- Outside of the Ellengrove to Eight Mile Plains section—specific high consequence areas where the revised technical requirements of AS2885 clause 4.7.3 are not currently met
- At identified hot-spot locations where the pipeline may be particularly exposed to external interference for example road crossing and within road reserves.

APTPPL submitted that this approach is the lowest cost solution assessed as meeting the ALARP requirements of AS2885.1. 4ei's report to us stated that, given the current level of demand on the pipeline, the analysis undertaken by APTPPL in identifying its proposed solution appears sound.

We are satisfied that APTPPL's capex of $8.2 million ($2016–17) for the urban risk reduction project is such as would be incurred by a prudent service provider acting efficiently.[58] The capex is also necessary to maintain and improve the safety of services.[59] Consequently we are satisfied APTPPL's actual capex of $8.2 million ($2016–17) in the 2012–17 access arrangement period satisfies the new capex

[58] NGR, r. 79(1)(a).

[59] NGR, r. 79(2)(c).

criteria. We also accept that the additional $2.9 million ($2016–17) forecast for this project in the 2017–22 access arrangement period is necessary to finalise this project.

Corporate IT projects

APTPPL incurred actual and estimated capex of $8.0 million ($2016–17) for corporate IT projects in the 2012–17 access arrangement period. APTPPL submitted that these projects are necessary because the ongoing operation of safe, secure and reliable IT programs are necessary to maintain reliable and safe pipeline services.[60]

The majority of this expenditure related to changing APTPPL's standalone IT systems to ones that would apply to all of APA Group. APTPPL noted that the cost of adopting APA wide projects was less than would be incurred by APTPPL running independent systems.[61]

Since the APA group projects apply to several pipelines, we have also examined the methodology APTPPL used to allocate its costs to RBP and are satisfied that it is consistent with the methodology used to allocate costs to APTNT, which we considered in a separate access arrangement review in 2015.[62]

We have also compared IT projects proposed by APTNT to the ones proposed by APTPPL and are satisfied that they relate to the same IT projects. We note that we also approved the APA Group wide corporate IT projects allocated to APTNT.[63]

Based on our review of the information submitted by APTPPL in support of its IT capex, we are satisfied that APTPPL's proposed corporate IT projects meet the new capex criteria.[64]

Other stay in business projects

APTPPL also identified the following non-material stay in business projects:

- Toowoomba station upgrade—an upgrade of a number of elements at this site were required to meet current standards or safety requirements.[65]
- SCADA upgrade—this upgrade allowed APTPPL's SCADA system to be compatible with other systems that APTPPL use to manage the RBP.[66]
- flow control (FC) and remote telemetry unit (RTU)—the previous hardware reached the end of its service lifetime and spare parts were no longer available from vendors. This resulted in a roll out of new flow controllers and RTU.[67]

---

60 APTPPL, *Access Arrangement Revision Proposal Submission*, September 2016, p. 93.
61 ibid., p. 92.
62 APTPPL, *Response to information request 15*, 26 October 2016, p. 1.
63 AER, *Attachment 6 – capital expenditure draft decision Amadeus gas pipeline access arrangement*, November 2015, pp. 6-21.
64 NGR, r. 79.
65 APTPPL, *Access Arrangement Revision Proposal Submission*, September 2016, p. 82.
66 ibid., p. 89.

In total these projects account for $3.5 million ($2016–17) of APTPPL's current period stay in business capex.

We sought engineering advice from 4ei to assist in assessing the need, timing and cost of the proposal for these projects. Overall 4ei was of the view that this expenditure met the new capex criteria.[68] Specifically 4ei advised that:[69]

- for the Toowoomba Station Upgrade, the additional costs above what we approved in our previous access arrangement decision should have been included when this project was first proposed. However, the upgrade undertaken by APTPPL was efficient and prudent consistent with industry practice.
- for the SCADA upgrade project, given APTPPL adopted solution is lower cost than a stand-alone SCADA solution, this expenditure was efficient.
- for the FC and RTU project, given the age of the hardware, replacement was consistent with good industry practice.

Based on our review of the information submitted by APTPPL and 4ei's analysis, we are satisfied that the capex is such as would be incurred by a prudent service provider acting efficiently.[70]

Capex in 2011–12

In our previous access arrangement review, we included an estimate of capex for 2011–12 of $56.2 million ($2016–17). APTPPL stated that its actual capex for the 14 month period between 1 July 2011 and 31 August 2012 was $57.9 million ($2016–17).[71] Of this amount, $50.3 million ($2016–17) was for the RBP 8 expansion project.

We accept APTPPL's actual capex of $57.9 million ($2016–17) for the 14 month period between 1 July 2011 and 31 August 2012 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 2017–22 access arrangement period

We approve conforming net capex of $59.5 million ($2016–17) for the 2017–22 access arrangement period. This is $7.2 million, or 11 per cent, less than that proposed by

---

67 ibid., p. 91.

68 NGR, r. 79.

69 4ei, *Roma-Brisbane Pipeline Access Arrangement 2017–22 Review of Capital Expenditure Forecasts*, November 2016, p. 22.

70 NGR, r. 79(1)(a).

71 The start of the 2012–17 access arrangement period was delayed and began on 1 September 2012.

APTPPL. We summarise our approved forecast of conforming capex for the 2017–22 access arrangement period in

table 6-6.

Table 6-6 AER approved capital expenditure over the 2017–22 access arrangement period ($million, 2016–17)

Category	2017–18	2018–19	2019–20	2020–21	2021–22	Total
Expansion	–	–	–	–	–	–
Replacement	6.3	8.2	5.2	6.3	5.8	31.7
Stay in business	17.2	5.7	1.4	1.6	1.9	27.8
GROSS TOTAL CAPEX	**23.5**	**13.9**	**6.5**	**7.9**	**7.7**	**59.5**
Contributions	–	–	–	–	–	–
Asset disposals	–	–	–	–	–	–
NET TOTAL CAPEX	**23.5**	**13.9**	**6.5**	**7.9**	**7.7**	**59.5**

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

APTPPL has not forecast any expansion capex in the 2017–22 access arrangement period. Our analysis of replacement and stay in business capex is set out below.

Replacement capex

APTPPL forecast replacement capex of $37.6 million ($2016–17) for the 2017–22 access arrangement period. This is an increase of $19.9 million, or 113 per cent, from actual and estimated replacement capex in the 2012–17 access arrangement period. Replacement capex accounts for 56 per cent of APTPPL's total forecast capex for the 2017–22 access arrangement period.

We have included $31.7 million ($2016–17) for replacement capex in our forecast of conforming capex for the 2017–22 access arrangement period. This is a reduction of $5.9 million or 16 per cent from APTPPL's forecast of required replacement capex. We consider this amount is sufficient for APTPPL to maintain the safety, reliability and integrity of the RBP, and is prudent and efficient.[72]

APTPPL's forecast replacement capex program includes capex for pipeline integrity management activities, which consists of inline inspection of pipelines, excavations and coating upgrades and cathodic protection upgrades.

Pipeline integrity management activities

[72] NGR, rr. 79(1)(a), 79(2)(c).

APTPPL forecast capex of $37.6 million ($2016–17) for pipeline integrity management activities in the 2017–22 access arrangement period. This project is a proposed continuation of works to improve the safety and integrity of the RBP buried pipelines. The proposed works address ongoing corrosion and deterioration of the buried pipelines associated with their age, construction methods, coating degradation and other time-dependant threats to the pipelines.

Of the $37.6 million ($2016–17) proposed:

- $23.7 million ($2016–17) is for excavations and pipeline coating upgrades
- $8.3 million ($2016–17) is for inline inspections (stay in business capex)
- $5.1 million ($2016–17) is for cathodic protection upgrades
- $0.6 million ($2016–17) is for other costs associated with pipeline integrity management activities.

APTPPL's rationale for these projects and our draft decision for each are discussed below.

APTPPL submitted that based on the past inline inspection results, and experience during the excavations, a program of more than 100 excavations (digs) per year is projected over the 2017–22 access arrangement period. APTPPL forecast the number of excavations from its integrity modelling based on inline inspection data, taking into account site verification of inline inspection results, tool tolerance and corrosion growth rates.[73]

We set out in table 6.7 APTPPL's forecast for excavations and upgrades over the 2017–22 access arrangement period.

Table 6.7 APTPPL proposed excavations and upgrades over the 2017–22 access arrangement period

	2017–18	2018–19	2019–20	2020–21	2021–22	Total
Metro excavations	33	36	15	11	7	102
Non-metro excavations	83	94	76	74	93	420
Total excavations	116	130	91	85	100	522
Total capex ($million, 2016–17)	**5.4**	**6.1**	**4.1**	**3.8**	**4.3**	**23.7**

Source: APTPPL, Forecast capital expenditure documents - Business Case AA-03, September 2016; AER analysis. Totals may not add due to rounding.

[73] APTPPL, *Attachment 5-2 - Forecast capital expenditure project documents: RBP Pipeline Integrity Management Upgrade*, p. 16.

APTPPL further noted that it based the forecast number of excavations on a reinspection of the DN250 pipeline in 2019, which is likely to reduce the excavation requirements in 2020.

We requested APTPPL to provide further details of its integrity modelling, including evidence of the inline inspection results used to forecast the number of excavations in table 6.7, as well as the methodology used to forecast the decrease in excavations following further inline inspections in 2019.

APTPPL provided a summary spreadsheet showing, for each pipeline section, the number of individual features identified as requiring repair and the number of required excavations after aggregation. This indicated that, for the six calendar years between 2015 and 2020, 473 total excavations are required.[74] This is compared with APTPPL's 609 actual/proposed excavations over the 2015–20 period.

APTPPL also submitted that the 50 per cent reduction in repairs in 2020 is an assumption based on real reductions in predicted repair requirements seen after re-inspection on the Moomba to Wilton and Parmelia Gas Pipelines. The 2019 inline inspections will effectively reset the corrosion growth model.[75]

We sought engineering advice from 4ei to assist in assessing APTPPL's forecast of excavations and repairs. 4ei's report noted that the improvement in data interpretation and growth estimation from a future inline inspection run has the potential to substantially change the required number of repairs after that run. 4ei informed us, and we agree, that it is difficult to assess the conservatism (or otherwise) in the predicted number of excavations for the later years of the forecast access arrangement period.[76]

We are largely satisfied that APTPPL's integrity modelling is consistent with industry practice, however the excavation forecasts based on inline inspection results (a key input in the corrosion growth modelling) indicate that fewer excavations are required than APTPPL has proposed in its business case.

APTPPL has forecast the cost per excavation based on 2015–16 work programme costs, taking into account variation in complexity and cost between metropolitan and rural sites.[77] The differences in costs are due to land access and landowner liaison, other underground services, increased depth of pipeline in some locations, council approval requirements, traffic control requirements, environmental controls and increased fencing.

APTPPL has proposed to undertake stress corrosion cracking direct assessment at all digs; this involves 100 per cent coating removal and crack detection by magnetic particle inspection or eddy current array, which increases dig cost and duration

---

74 This figure decreases to 394 when a 50 per cent reduction in 2020 excavation requirements is assumed.

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

76 4ei, *Roma-Brisbane Pipeline Access Arrangement 2017–22 Review of Capital Expenditure Forecasts,* November 2016, pp.8-9.

77 The average cost was $58,619 for a metropolitan dig and $41,909 for a rural dig ($2016/17).

compared to standard inline inspection verification digs.[78] We requested APTPPL to provide historical evidence of stress corrosion cracking that was found on the pipeline for the digs undertaken in 2014-15 and 2015-16. APTPPL responded that it observed and treated 13 stress corrosion cracking features (at 12 per cent of the digs).[79]

We also requested APTPPL to provide evidence of historical costs associated with stress corrosion cracking direct assessment. APTPPL informed us that they do not cost this separately; however the identifying and locating of stress corrosion cracking form part of the non-destructive testing costs and the engineering inspection forms part of engineering costs. In 2015–16 the non-destructive testing costs and engineering costs were approximately 9–10 per cent and 6–8 per cent of total dig costs, respectively.[80] We consider that it is not prudent to undertake stress corrosion cracking direct assessment at all excavations, given that improved inline inspection tools (see below) will provide targeted information about the location and state of potential pipeline cracks.

Based on our review of information in support of the number of excavations and the cost per excavation, we are not satisfied that APTPPL arrived at its capex estimate on a reasonable basis.[81]

Table 6.8 shows our draft decision on the number of excavations and upgrades over the 2017–22 access arrangement period. The number of excavations is based on inline inspection results for 2017–18, 2018–19 and 2019–20, (assuming a 50 per cent reduction in excavations in 2020) and APTPPL forecasts for 2020–21 and 2021–22. The average cost of each excavation is also reduced; we consider it prudent to only undertake stress corrosion cracking direct assessment at 12 per cent of excavations (based on historical levels), and have decreased excavation costs by 15 per cent for the remaining excavations over the 2017–22 access arrangement period (based on an estimate of the non-destructive testing and engineering costs).

Table 6.8 AER Draft Decision excavations and upgrades over the 2017–22 access arrangement period

	2017–18	2018–19	2019–20	2020–21	2021–22	Total
Metro excavations	29	29	20	11	7	96
Non-metro excavations	43	71	74	74	93	354
Total excavations	72	100	94	85	100	450
Total capex ($million, 2016–17)	**3.0**	**4.1**	**3.7**	**3.2**	**3.7**	**17.8**

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

78 APTPPL, *Access Arrangement Revision Proposal Submission*, September 2016, p. 101.
79 APTPPL, *Response to information request 13 (C)*, 31 October 2016, pp. 1-2.
80 APTPPL, *Response to information request 13 (A)*, 14 October 2016, p. 5.
81 NGR, r. 74(2).

In summary, we are not satisfied that APTPPL's proposed capex of $23.7 million ($2016–17) for excavations and pipeline coating upgrades is such as would be incurred by a prudent service provider acting efficiently.[82] Our draft decision is to accept $17.8 million ($2016–17) of the proposed $23.7 million ($2016–17) for excavations and pipeline coating upgrades over the 2017–22 access arrangement period.

APTPPL forecast $8.3 million ($2016–17) of capex for inline inspections in the 2017–22 access arrangement period. APTPPL based its forecast inline inspection costs on vendor quoted costs, with the vendor selected by a competitive tender process. Of this amount, $4.3 million ($2016–17) is attributed to inline inspection programs at intervals required by the pipeline integrity management plan and are typically high-resolution magnetic flux leakage inspection. This type of inline inspection is used to detect corrosion, gouges, grooves, mill defects, girth weld anomalies and other metal loss features.[83]

The remaining $4.0 million ($2016–17) is for electro-magnetic acoustic transducer inspection of the DN300 and DN250 pipelines. This type of inline inspection detects crack like features, such as stress corrosion cracking and longitudinal weld anomalies. The DN300 electro-magnetic acoustic transducer inspection tool only recently became available and was used in the RBP Metro due to its designation as a high consequence area.[84] APTPPL has also proposed to undertake electro-magnetic acoustic transducer inline inspection on the DN250, however a suitable tool is not yet available.[85] We requested that APTPPL provide evidence to support its proposal to undertake electro-magnetic acoustic transducer inline inspection on the DN250 in 2017–18. In response, APTPPL provided evidence of email correspondence with its inline inspection vendor, which indicated that an electro-magnetic acoustic transducer inspection tool suitable for the DN250 would be available by mid-2017.[86]

We are satisfied that APTPPL's proposed capex of $8.3 million ($2016–17) for inline inspection activities is such as would be incurred by a prudent service provider acting efficiently.[87]

APTPPL forecast $5.1 million ($2016–17) for cathodic protection upgrades and $0.6 million ($2016–17) for other capex associated with pipeline integrity management activities in the 2017–22 access arrangement period.

APTPPL submitted that continual upgrade of cathodic protection systems is required including an increase in current output of capacity of systems, and the installation of new cathodic protection systems to infill low protection areas between existing

---

82 NGR, r. 79(1).

83 APTPPL, *Attachment 5-2 - Forecast capital expenditure project documents: RBP Pipeline Integrity Management Upgrade*, p. 4.

84 AS2885.1: 2012, c.4.7.

85 Existing EMAT tools would not fit in a 250mm pipeline.

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

87 NGR, r. 79(1).

systems. This is because the increased exposed steel surface requires additional cathodic protection current.[88] Cathodic protection materials and contractors are competitively tendered. APTPPL also proposed to undertake cathodic protection telemetry upgrades to allow for remote monitoring of cathodic protection units.

Other capex proposed by APTPPL includes laser scanner and scraper trap modifications. The forecast laser scanner costs are a vendor price, with the unit expected to be replaced in 2021.

We are satisfied that APTPPL's proposed capex of $5.1 million ($2016–17) for cathodic protection upgrades and $0.6 million ($2016–17) for other capex is such as would be incurred by a prudent service provider acting efficiently.[89]

In summary, our draft decision is to accept $31.7 million ($2016–17) of the $37.6 million ($2016–17) proposed by APTPPL for the pipeline integrity management activities.

Stay in business capex

APTPPL forecast stay in business capex of $29.1 million ($2016–17) for the 2017–22 access arrangement period. This is $16.7 million ($2016–17), or 36 per cent, less than actual and estimated stay in business capex in the 2012–17 access arrangement period. Stay in business accounts for 44 per cent of APTPPL's total forecast capex for the 2017–22 access arrangement period.

We have included $27.8 million ($2016–17) for stay in business capex in our forecast of conforming capex for the 2017–22 access arrangement period. This is $1.3 million ($2016–17), or 5 per cent, less than APTPPL's forecast of stay in business capex.

APTPPL's forecast stay in business capex program includes capex for the Dalby turbine overhaul, urban risk reduction project and other minor projects.[90] The abovementioned inline inspection activities are also classified as stay in business capex.

Dalby turbine overhaul

APTPPL forecast capex of $1.3 million ($2016–17) for the Dalby turbine overhaul in the 2017–22 access arrangement period. APTPPL submitted that this capex is necessary in order to maintain the integrity of services.[91]

---

88 APTPPL, *Attachment 5-2 - Forecast capital expenditure project documents: RBP Pipeline Integrity Management Upgrade*, p. 7.

89 NGR, r. 79(1).

90 Inline inspection (under Pipeline Integrity Management activities) is also classified as 'stay in business' capex.

91 APTPPL, *Access Arrangement Revision Proposal Submission*, September 2016, p. 113.

APTPPL commissioned the turbine at Dalby in 2012. The recommended end of life overhaul for this turbine is at 32 000 operational hours; however APTPPL's regime allows this to be extended to a maximum of 50 000 hours, provided that condition monitoring proves the turbine is suitable for ongoing operation. APTPPL submitted that, since the turbine passed 20 000 hours of service in 2016, the proposed overhaul will take place in the forecast access arrangement period.

We sought further information from APTPPL about the annual breakdown of operational hours since it commissioned the turbine. This showed an average of 7422 operational hours per annum in 2013 and 2014, but only 1646 hours in 2015 and 135 hours from January to August 2016.

We sought engineering advice from 4ei to assist in assessing the need and timing of the proposed turbine overhaul. 4ei found that, in the absence of evidence to suggest earlier operating periods are a better approximation for likely future operation of the compressor, a greater weighting should be placed on recent performance. Based on the information provided, the actual required timing of the overhaul of the Dalby turbine is likely to be later than 2022.[92]

We accept the need for this project, however consider that based on the recent operation of the turbine it will not reach the minimum of 32 000 hours required for overhaul in the forecast access arrangement period. We are not satisfied that a service provider acting efficiently to achieve the lowest sustainable cost of providing services would seek to overhaul this turbine in the forecast access arrangement period.[93]

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 2011–17, as set out in table 6.1.

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

[92] 4ei, *Roma-Brisbane Pipeline Access Arrangement 2017–22 Review of Capital Expenditure Forecasts*, November 2016, p. 14.

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