



DRAFT DECISION
Multinet Gas
Access arrangement
2018 to 2022

Attachment 6 – Capital
expenditure

July 2017

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Note

This attachment forms part of the AER's draft decision on the access arrangement for Multinet Gas for 2018-22. 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

Attachment 14 - Other incentive schemes

Contents

Note	6-2
Contents	6-3
Shortened forms	6-4
6 Capital expenditure	6-5
6.1 Draft decision	6-5
6.1.1 Conforming capital expenditure for 2013–17	6-5
6.1.2 Conforming capital expenditure for the 2018–22 access arrangement period	6-6
6.2 Multinet’s proposal	6-9
6.3 Assessment approach	6-11
6.3.1 Capex in the 2013–17 access arrangement period	6-11
6.3.2 Conforming capital expenditure for 2018–22	6-12
6.3.3 Interrelationships	6-13
6.4 Reasons for draft decision	6-13
6.4.1 Conforming capital expenditure for 2013–16	6-13
6.4.2 Conforming capital expenditure for the 2018–22 access arrangement period	6-13
6.5 Revisions	6-41

Shortened forms

Shortened form	Extended form
AER	Australian Energy Regulator
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
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.

This attachment outlines our assessment of Multinet's proposed conforming capital expenditure (capex) for 2013–17, which forms part of its opening capital base.² It also outlines our assessment of forecast capex for the 2018–22 access arrangement period, which forms part of its projected capital base.³

6.1 Draft decision

6.1.1 Conforming capital expenditure for 2013–17

We approve \$258.3 million (\$2017) of total net capex for Multinet during the 2013–16 period as conforming capex under the NGR.⁴ Multinet's actual 2012 capex was included in its 2013 approved opening capital base and therefore does not require assessment.

Table 6.1 shows our approved capex for 2013–16 by category.

¹ NGR, r. 69.

² NGR, r. 77.

³ NGR, r. 78(b)

⁴ NGR, r. 79(1).

Table 6.1 AER approved capital expenditure by category over 2013–17 (\$million, 2017)

Category	2013	2014	2015	2016	2017(a)
Connections	17.9	20.0	23.3	20.4	22.1
Mains replacement	11.4	23.9	20.5	33.5	42.5
Meter replacement	3.8	3.8	4.3	3.5	0.8
Augmentation	0.7	0.1	0.6	1.7	4.5
SCADA	0.2	0.0	0.1	0.5	1.7
Other capex	5.6	7.3	11.3	17.5	9.2
IT	25.4	3.5	6.3	6.5	2.1
Overheads	2.8	3.0	3.7	4.9	5.0
GROSS TOTAL CAPITAL EXPENDITURE	67.8	61.6	69.9	88.4	87.8
Contributions	5.1	5.8	6.6	11.9	9.1
NET TOTAL CAPITAL EXPENDITURE	62.7	55.8	63.3	76.5	78.7

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

Note: (a) As set out in attachment 2, we have not assessed the 2017 amounts as approved capex under this decision. This is because these values are estimates. We will undertake the assessment of whether the 2017 amounts are conforming capex as part of the next access arrangement determination.

6.1.2 Conforming capital expenditure for the 2018–22 access arrangement period

We approve \$356.9 million (\$2017) of Multinet's proposed \$472.3 million (\$2017) total net capex for the 2018–22 access arrangement period as conforming capex under the NGR.⁵ This is 24 per cent less than Multinet's proposed capex. Most of this reduction is because we consider Multinet has not justified its forecast for its mains replacement program.

Table 6.2 shows our approved capex for the 2018–22 access arrangement period by category.

⁵ NGR, r. 79(1).

Table 6.2 AER approved capital expenditure by category over the 2018–22 access arrangement period (\$million, 2017)

Category	2018	2019	2020	2021	2022	Total
Connections	22.0	21.1	20.3	20.7	21.2	105.2
Mains replacement	37.4	34.1	29.3	28.2	30.6	159.5
Meter replacement	3.0	0.7	2.0	1.0	1.0	7.9
Augmentation	4.1	5.0	3.5	2.4	0.0	15.0
SCADA	1.2	1.0	0.6	0.6	0.6	4.1
Other capex	10.2	8.6	9.4	8.0	9.4	45.5
IT	4.6	4.5	9.2	10.4	9.5	38.1
Escalation	0.5	0.4	0.5	0.8	0.9	3.2
Overheads	4.2	3.8	3.8	4.1	4.1	20.0
GROSS TOTAL CAPITAL EXPENDITURE	87.3	79.4	78.7	75.8	77.0	398.2
Contributions	8.2	8.2	8.3	8.3	8.3	41.3
NET TOTAL CAPITAL EXPENDITURE	79.1	71.1	70.5	67.5	68.7	356.9

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

Table 6.3 shows Multinet's proposed capex compared with our alternative capex estimate for each category. In coming to our draft decision, we assessed Multinet's forecast capex compared with our alternative capex estimate taking into account the available evidence and submissions from stakeholders.

Our assessment revealed that most aspects of Multinet's proposal is conforming capex and we included this expenditure in our alternative estimate. That is, the proposed expenditure is justified and 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.

In contrast, we found that other aspects of Multinet's proposal, in particular, its forecast capex for mains replacement, are not conforming capex. As such we have not included this level of expenditure in our alternative estimate.

Table 6.3 Comparison of AER approved and Multinet's proposed capital expenditure over the 2018–22 access arrangement period (\$million, 2017)

Category	Proposed	Approved	Difference (\$millions)
Connections	108.1	105.2	-2.9
Mains replacement	249.7	159.5	-90.2
Meter replacement	9.9	7.9	-2.1
Augmentation	15.0	15.0	0.0
SCADA	6.6	4.1	-2.5
Other capex	45.5	45.5	0.0
IT	45.7	38.1	-7.6
Escalation	4.0	3.2	-0.8
Overheads	29.0	20.0	-9.1
GROSS TOTAL CAPITAL EXPENDITURE	513.6	398.2	-115.4
Contributions	41.3	41.3	0.0
NET TOTAL CAPITAL EXPENDITURE	472.3	356.9	-112.7

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

As shown in Table 6.3, the main differences between Multinet's proposed capex and our alternative capex estimate for the 2018–22 access arrangement period concern the following capex drivers:

- Mains replacement

Our draft decision is to include \$159.5 million (\$2017, unescalated direct costs) of mains replacement capex in our alternative capex estimate. This is 36 per cent less than Multinet's forecast capex of \$249.7 million (\$2017, unescalated direct costs). We consider that Multinet did not demonstrate that its forecast increase in volumes relative to the 2013–17 access arrangement period is conforming capex. We have developed an alternative capex estimate based on historical volumes replaced by Multinet since 2003.

- Overheads

Our draft decision is to include \$20.0 million (\$2017, unescalated costs) of overheads capex in our alternative capex estimate. This is a reduction of 31 per cent from Multinet's forecast capex of \$29.0 million (\$2017, unescalated direct costs). Multinet's proposal did not distinguish its amount of overheads, but

assumed an overhead rate of 6 per cent for most items of capex. Multinet did not establish that this forecast is conforming capex. We consider that this rate is not reflective of historical overhead amounts, and have developed an alternative capex estimate based on an overhead rate of 5.3 per cent.

6.2 Multinet's proposal

2013–17 period

Multinet has proposed net capex of \$337.0 million for the 2013–17 period, where capex in 2017 is an estimate. Without the estimate of capex for 2017, Multinet has proposed \$258.3 million as conforming capex. We accept \$258.3 million as conforming capex for 2013–16, and will assess whether capex incurred in 2017 is conforming in the next review.

For 2013–17 Multinet overspent net capex by 9.9 per cent (\$30.2 million). This includes the 2017 estimate. Without the 2017 estimate, Multinet underspent net capex by 0.3 per cent (\$0.7 million).

Table 6.4 Multinet's proposed capital expenditure by category over 2013–17 (\$million, 2017)

Category	2013	2014	2015	2016	2017(a)
Connections	17.9	20.0	23.3	20.4	22.1
Mains replacement	11.4	23.9	20.5	33.5	42.5
Meter replacement	3.8	3.8	4.3	3.5	0.8
Augmentation	0.7	0.1	0.6	1.7	4.5
Telemetry	0.2	0.0	0.1	0.5	1.7
Other capex	5.6	7.3	11.3	17.5	9.2
IT	25.4	3.5	6.3	6.5	2.1
Overheads	2.8	3.0	3.7	4.9	5.0
GROSS TOTAL	67.8	61.6	69.9	88.4	87.8
CAPITAL EXPENDITURE					
Contributions	5.1	5.8	6.6	11.9	9.1
NET TOTAL	62.7	55.8	63.3	76.5	78.7
CAPITAL EXPENDITURE					

Source: Multinet, *Response to information request #10 – 0.11C Final 2018-22 Reset RIN Templates – MG response 150217 resubmitted 07032017*, Received 3 March 2017

Totals may not sum due to rounding.

2018–22 period

Multinet proposed net total capex of \$472.3 million (\$2017) for the 2018–22 access arrangement period. This represents a real increase of 54 per cent over the amount approved by the AER for the 2013–17 access arrangement period.

Table 6.5 Multinet proposed capital expenditure by category over the 2018–22 access arrangement period (\$million, 2017)

Category	2018	2019	2020	2021	2022	Total
Connections	22.6	21.6	20.8	21.3	21.8	108.1
Mains replacement	53.6	48.3	49.6	52.7	45.5	249.7
Meter replacement	3.6	1.4	2.7	1.3	1.0	9.9
Augmentation	4.1	5.0	3.5	2.4	0.0	15.0
Telemetry	1.8	1.6	1.1	1.1	1.0	6.6
Other capex	10.2	8.6	9.4	8.0	9.4	45.5
IT	10.4	5.6	9.4	10.6	9.7	45.7
Escalation	0.6	0.5	0.7	1.1	1.1	4.0
Overheads	6.4	5.5	5.8	5.9	5.4	29.0
GROSS TOTAL CAPITAL EXPENDITURE	113.4	98.1	103.1	104.2	94.8	513.6
Contributions	8.2	8.2	8.3	8.3	8.3	41.3
NET TOTAL CAPITAL EXPENDITURE	105.1	89.9	94.8	96.0	86.5	472.3

Source: Multinet, *Response to information request #10 - MG - IR#10 - 0.3C Capex model revised - 07032017 - PUBLIC* (received 3 March 2017).

Totals may not sum due to rounding.

The major components of forecast gross total capex over the 2018–22 access arrangement period are mains replacement (49 per cent) and connections (21 per cent).

6.3 Assessment approach

We must make two decisions regarding Multinet'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.⁶ Second, we are required to assess Multinet's forecast of required capex for the 2018–22 access arrangement period to determine whether it is conforming capex. Capex will be 'conforming' if it meets the NGR's new capex criteria.⁷ We have limited discretion when deciding whether capex conforms with the new capex criteria.⁸ 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.⁹

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 2013–17 access arrangement period and the need to forecast the opening capital base for the 2017–22 access arrangement period. We explain this in the next section.

6.3.1 Capex in the 2013–17 access arrangement period

We reviewed Multinet's submission and supporting material to assess its proposed capex for the 2013–17 access arrangement period. This included information on Multinet's reasoning and, where relevant, business cases, responses to information requests and other relevant information. We used this information to identify whether capex over the 2013–17 access arrangement period was conforming capex and, in turn, whether that capex should be included in the opening capital base.¹⁰ 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 2018–22:

- 2013–16 capex— since we have actual capex for these years, we have assessed whether this is conforming capex.¹¹ We have included conforming capex in the opening capital base for 2018–22.¹²
- 2017 capex—we do not yet have actual capex for 2017 and so must include an estimate in the opening capital base. We have not assessed Multinet's estimate of capex for 2017. At the next access arrangement review, we will assess whether

⁶ NGR, r. 77(2)(b).

⁷ NGR, r. 79.

⁸ NGR, r. 79(6).

⁹ NGR, r. 40(2).

¹⁰ NGR, r. 77(2)(b).

¹¹ NGR, rr. 77(2)(b), 79.

¹² NGR, r. 77(2)(b).

Multinet's actual capex for 2017 is conforming capex under the NGR, and adjust for any differences between actual and estimated capex.¹³

6.3.2 Conforming capital expenditure for 2018–22

We have assessed the key drivers of forecast capex to consider whether Multinet's proposed capex complies with the new capex criteria.¹⁴ In doing so, we relied on the following information:

- the access arrangement submission and access arrangement information, which outline Multinet's capex program and the main drivers of those programs
- Multinet's Distribution Mains Strategy, Distribution Services Strategy, Asset Management Plan and associated appendices and reports which provide specific expenditure or technical detail for each capex driver
- business cases that detail the expenditure requirements for specific projects
- Multinet's RIN template response
- Multinet's capex forecast model
- responses to information requests
- engineering advice we commissioned from Zincara to help us assess the prudence and efficiency of selected projects
- submissions from interested parties.

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.¹⁵

Our assessment results in an alternative estimate of the business's total capex requirements in the forecast period. If we are satisfied the business's total forecast meets the NGR requirements, we accept the forecast. If we are not satisfied, we substitute the business's forecast with our alternative estimate. In making this decision, we take into account the reasons for the difference between our alternative estimate and the business's forecast, and the materiality of that difference. We also take into consideration the interrelationships between the capex forecast and other constituent components of our decision such that our decision is likely to contribute to the achievement of the NGO.¹⁶

¹³ NGR, rr. 77(2)(b), 79.

¹⁴ NGR, r. 79(1).

¹⁵ NGR, r. 74(2).

¹⁶ NGL, s. 28(1).

6.3.3 Interrelationships

In assessing Multinet'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 2013–17 and 2018–22 access arrangement periods
- the growth in the price of labour forecast for opex and capex.
- the impact of Multinet's marketing opex on its forecast new connections and connection capex.

6.4 Reasons for draft decision

6.4.1 Conforming capital expenditure for 2013–16

Multinet has proposed net capex of \$337.0 million for the 2013–17 period, where capex in 2017 is an estimate. Without the estimate of capex for 2017, Multinet has proposed \$258.3 million as conforming capex. We accept \$258.3 million as conforming capex for 2013–16, and will assess whether capex incurred in 2017 is conforming in the next review.

In reaching this view we have considered the following factors:

- Multinet's capex was \$0.7 million (0.3 per cent) less than the AER approved amount of \$259.0 million for 2013–16.
- The largest underspend in the 2012–16 period occurred in the augmentation category, where Multinet spent \$23.1 million less than forecast. Multinet submitted that this was because it deferred certain projects due to lower than forecast network growth.
- The largest overspend in the 2012–16 period occurred in the connections category, where Multinet spent \$17.9 million more than forecast. Multinet submitted that this was because the unit rates for residential connections, and the volume of commercial and industrial connections, were greater than forecast.

6.4.2 Conforming capital expenditure for the 2018–22 access arrangement period

The following sets out our analysis of the capex drivers in coming to our draft decision to approve \$359.6 million (\$2017) of Multinet's proposed \$472.3 million (\$2017) total net capex for the 2018–22 access arrangement period as conforming capex under the NGR.¹⁷

¹⁷ NGR, r. 79(1).

Mains replacement

Distribution mains are the pipes that convey gas to service pipes at each end user point. Multinet's distribution mains replacement program, which has been operating since 2003, consists of proactive and reactive replacement programs.

We have included \$159.5 million (\$2017, unescalated direct costs) of mains replacement capex in our alternative estimate in this draft decision. This is 36 per cent less than Multinet's proposed forecast of \$249.7 million (\$2017, unescalated direct costs) for its mains replacement program.

We have undertaken a technical review of the mains replacement program, which has drawn on both internal and external engineering and technical expertise.

For the reasons below, we are not satisfied that Multinet's proposed forecast capex of \$249.7 million for its mains replacement program is conforming capex that complies with the NGR.¹⁸ In particular, Multinet has not satisfied us that its proposed forecast volume of mains replacement is justified. It exceeds that required to minimise risks of leaks and improve network safety. Specifically, Multinet's forecast volume is not arrived at on a reasonable basis nor does it represent the best forecast possible in the circumstances.¹⁹ We have therefore included in our alternative capex forecast conforming capex based on the total kilometres of main pipes we consider would be efficient to replace during the 2018–22 access arrangement period. Our analysis indicates that a replacement rate of 85 km per annum would enable Multinet to maintain and improve network integrity and public safety. Our volume forecast is based on Multinet's historical annual replacement rates and the leak data provided by Multinet.

We have applied Multinet's unit rates across all categories of mains replacement. Therefore our lower alternative capex estimate reflects our view regarding efficient and prudent volumes of mains replacement. This is explained further below.

Multinet's proposal

Multinet submitted that its mains replacement strategy focuses on minimising, to the extent practicable, public and maintenance personnel safety risk by targeting mains in areas that have a high incidence of mains fracture and leakage.²⁰ Multinet proposed expenditure of \$249.7 million (\$2017, unescalated direct costs) for the 2018–22 access arrangement period.²¹ This is 21.1 per cent higher than the \$131.7 million (\$2017, unescalated direct costs) it incurred in the 2013–17 access arrangement period.²²

¹⁸ NGR, r. 79(1).

¹⁹ NGR, r. 74(2).

²⁰ Multinet Gas, 13.9.1 – *Capital expenditure overview – mains replacement*, 15 December 2016, p. 26.

²¹ Multinet Gas, 13.9.1 – *Capital expenditure overview – mains replacement*, 15 December 2016, p. 5.

²² Multinet, Response to information request #10 – 0.11C Final 2018-22 Reset RIN Templates – MG response 150217 resubmitted 07032017, Received 3 March 2017.

Multinet submitted that this increase in the 2018–22 access arrangement period results from:

- a forecast volume of 688.5 km of mains to be replaced compared to 527 km in the 2013–17 access arrangement period comprising:
 - 625 km of low pressure network, of which 346 km are cast iron mains
 - 24 km of medium pressure cast iron
 - 40 km early generation HDPE program of which 31 km relates to HDPE, with the remaining 9 km relating to other mains being captured as part of the block replacement approach²³
- an average forecast unit rate of \$357.50 per metre compared to \$206 per metre in the 2013–17 access arrangement period²⁴
- extending its mains replacement program beyond low pressure mains to include medium pressure cast iron mains and early generation HDPE mains.²⁵

In support of its proposed mains replacement program, Multinet provided its:²⁶

- asset management plan,
- mains replacement overview,
- distribution mains strategy,
- Advisian independent estimate report of augmentation and mains replacement projects, and
- the current status of mains replacement in the 2013–17 access arrangement period and historical leak rate data.²⁷

Our assessment

We assess that Multinet's proposed mains replacement expenditure of \$249.7 million (\$2017, unescalated direct costs) for the 2018–22 access arrangement period is not that which 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 therefore is not conforming capex.²⁸

²³ Multinet Gas, 13.9.1 – *Capital expenditure overview – mains replacement*, 15 December 2016, pp. 16, 29 and 30.

²⁴ Multinet Gas, 13.9.1 – *Capital expenditure overview – mains replacement*, 15 December 2016, pp. 18, 28.

²⁵ Multinet stated that over 95 per cent of its mains replacement capex for the 2013–17 access arrangement period relates to low pressure replacement. Multinet Gas, 13.9.1 – *Capital expenditure overview – mains replacement*, 15 December 2016, pp. 9-10.

²⁶ See AER website, <https://www.aer.gov.au/networks-pipelines/determinations-access-arrangements/multinet-gas-access-arrangement-2018-22>.

²⁷ Multinet Gas, *Response to information request 18*, 7 April 2017.

²⁸ NGR, r. 79(1)(a).

We accept that mains replacement is justified on the grounds that it is necessary to maintain and improve the safety of services and to maintain the integrity of services.²⁹ Our forecast for mains replacement capex over the 2018–22 access arrangement period of \$159.5 million (\$2017, unescalated direct costs) reflects that we:

- accept forecast replacement volumes for low pressure mains of 425 km (an average of 85 km per annum, not 125 km per annum as proposed by Multinet)
- accept a forecast replacement volume for medium pressure mains of 12 km, which reflects the proposed mains replacement projects at Aughtie Drive and Graham Street
- do not accept Multinet's proposed forecast capex for first generation HDPE mains replacement program, and
- accept Multinet's unit rates across all categories of mains replacement.

Volumes

Low pressure to high pressure mains replacement

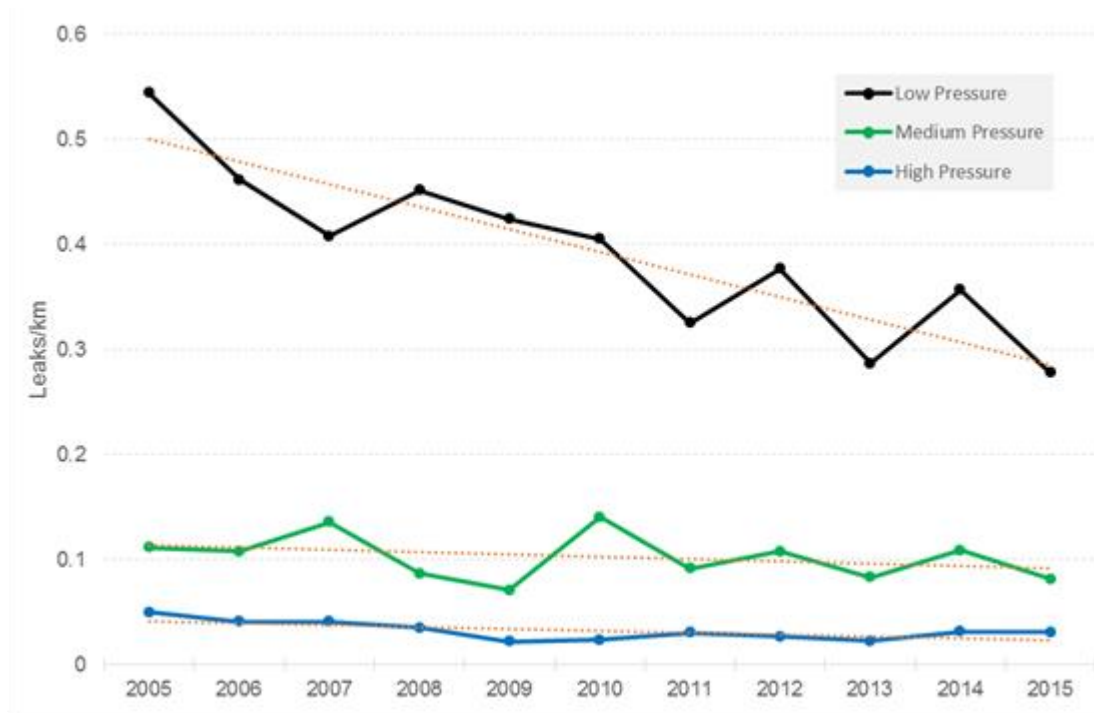
The volume of low pressure mains replacement over the 2018–22 access arrangement period that we are satisfied is arrived at on a reasonable basis and represents the best forecast possible in the circumstances is 425 km, at an average of 85 km per annum. This is also consistent with the historical annual volume of mains replacement rate between 2003 and 2016 of 83 km.³⁰

Figure 6.1 shows the historical trend in leaks across different pipeline pressures. Figure 6.2 shows the historical trend in leaks across different material types.

²⁹ NGR, rr. 79(1)(b) and 79(2)(c)(i)(ii).

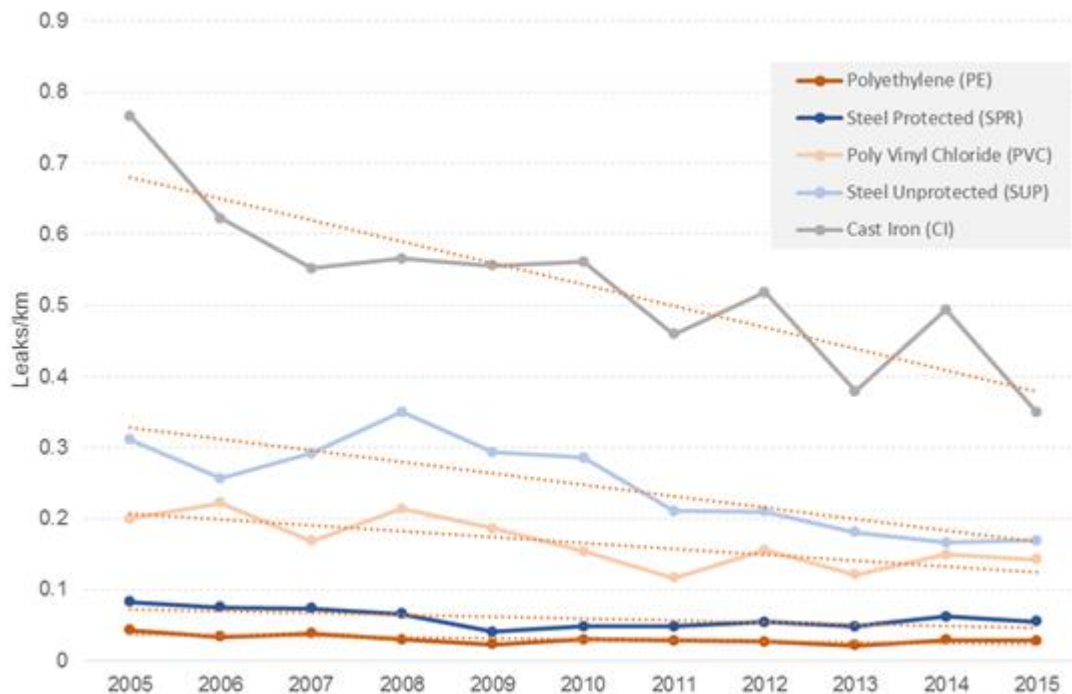
³⁰ Multinet Gas, 13.9.2 - *Distribution Mains Strategy CY2017-CY2022 - MG-SP-0009*, 19 December 2016, p. 31.

Figure 6.1 Distribution mains leak incident rate by pressure



Source: Multinet Gas, 13.9.2 - Distribution Mains Strategy CY2017-CY2022 - MG-SP-0009, 19 December 2016, p. 16.

Figure 6.2 Distribution mains leak incident rate by material



Source: Multinet Gas, 13.9.2 - Distribution Mains Strategy CY2017-CY2022 - MG-SP-0009, 19 December 2016, p. 16.

The historical leakage data Multinet provided reveals that leaks per kilometre for low pressure mains have declined from 0.54 in 2005 to 0.28 in 2015. However, between

2005 and 2015 these mains still had the highest average leak rate, with 4.3 leaks per kilometre, compared to 1.1 leaks per kilometre for medium pressure mains and 0.35 for high pressure mains. This data supports Multinet's approach of focusing on proactive mains replacement of its low pressure mains.³¹

Multinet's forecast low pressure mains replacement volume is based on the average volumes required to achieve its low pressure to high pressure replacement program by 2033. The program aims to decommission all low pressure cast iron mains by 2033.³² Accounting for the 2013–17 access arrangement period and the 2033 targets, Multinet proposed the following possible replacement volumes:

- adopting a historical rate of 85 km per annum post 2017,
- adopting a derived asset life failure volume from 2018 to 2022 with the remainder (post 2022) volumes being an average to meet the 2033 removal target, or
- adopting the average (straight line) of the remaining low pressure network (post 2017) to achieve the 2033 removal target. This equates to 125 km per annum.³³

Multinet submitted that an average replacement rate of 125 km per annum for the 2018–22 access arrangement period is efficient and prudent.³⁴ From these volumes, Multinet prioritises the replacement of low pressure mains based on fracture incident rates related to cast iron mains first. It then prioritises replacements based on leak incident rates.³⁵ Multinet's proposal to replace 625 km of low pressure mains equates to an annual average of 125 km. This is 50 per cent more than its 83 km per annum average since the start of the replacement program.

Figure 6.1 above also shows Multinet's declining leak incident rates for the low pressure network. The leak incident rate has decreased from 0.54 leaks per kilometre in 2005 to 0.28 leaks per kilometre in 2015. This is a 48 per cent reduction and, as Multinet submitted, indicative of improvements in network integrity and public safety resulting from the targeted and proactive replacement of the low pressure network.³⁶

We consider continuing replacements at the historical average during the 2018–22 access arrangement period will continue to improve network integrity and public safety. This is also consistent with Zincara's advice. Based on an analysis of pipeline failure, Zincara concluded that given the downwards trend in Multinet's risk profile, continuing with historical volumes of mains replacement at 85 km per annum would allow Multinet to maintain its current risk profile during the 2018–22 access arrangement period.³⁷ Multinet submitted that continuing at this historical rate may lead to a timeframe that

³¹ Zincara, *AER Access Arrangement 2017 – Multinet*, June 2017, p. 38.

³² Multinet Gas, 13.9.1 – *Capital expenditure overview – mains replacement*, 15 December 2016, pp. 3, 29.

³³ Multinet Gas, 13.9.2 - *Distribution Mains Strategy CY2017-CY2022 - MG-SP-0009*, 19 December 2016, p. 32.

³⁴ Multinet Gas, 13.9.2 - *Distribution Mains Strategy CY2017-CY2022 - MG-SP-0009*, 19 December 2016, p. 33.

³⁵ Multinet Gas, 13.9.1 - *Capital Expenditure Overview, Mains Replacement*, 16 December 2016, p. 29.

³⁶ Multinet Gas, 13.9.2 - *Distribution Mains Strategy CY2017-CY2022 - MG-SP-0009*, 19 December 2016, p. 15.

³⁷ Zincara, *AER Access Arrangement 2017 – Multinet*, June 2017, p. 41.

surpasses the 2033 target.³⁸ We accept Multinet's submission but note that the information available to us does not indicate that there is likely to be a credible impact on, or risk to public safety.

The AER's Consumer Challenge Panel (CCP11) submitted that we should consider whether the scale of each NSP's mains replacement program reflects a reasonable and balanced assessment of the risk and reliability issues. CCP11 further noted that in the case of Multinet, its past conduct in delaying its mains replacement program suggests that there may be further room for a more measured approach.³⁹

We recognise that Multinet's proposal will require it to face the complexities, challenges and costs that higher density inner urban areas present during the 2018–22 access arrangement period.⁴⁰ For example, in 2016 Multinet proposed to replace 148 km of low pressure mains but it submitted that due to the complexity of the areas in which it undertook the works, it only replaced 113 km.⁴¹ The increased complexity of dense inner urban areas in undertaking mains replacement is a reality that Zincara acknowledges.⁴² We have taken this into account in determining our forecast volume insofar as this more challenging environment indicates that proposed volume should not exceed historical volumes.

For these reasons, we are satisfied that a forecast that enables Multinet to continue with its previous average of replacing 425 km of low pressure mains in the 2018–22 access arrangement period is arrived at on a reasonable basis and represents the best forecast possible in the circumstances.⁴³

Medium pressure mains replacement

Multinet proposed forecast capex for a new medium pressure mains replacement program for the 2018–22 access arrangement period. This program was not in place during the 2013–17 access arrangement period.⁴⁴ Of this proposed capex, we have included forecast expenditure for two medium pressure mains replacement projects at Aughtie Drive and Graham Street in our alternative estimate. We consider forecast capex for these projects is conforming capex on the basis that Multinet has demonstrated that these programs need to proceed to support its low pressure mains replacement program.

Multinet proposed to replace 24 km of cast iron mains located within its medium pressure network, including:

³⁸ Multinet Gas, 13.9.2 - *Distribution Mains Strategy CY2017-CY2022 - MG-SP-0009*, 19 December 2016, p. 32.

³⁹ Consumer Challenge Panel (CCP11), *Response to proposals from AGN, AusNet and Multinet for the 2018–22 access arrangement proposals*, 3 March 2017, p. 52.

⁴⁰ Multinet Gas, 13.9.1 – *Capital expenditure overview – mains replacement*, 15 December 2016, p. 27.

⁴¹ Multinet Gas, *Response to information request 18*, April 2017, p. 1.

⁴² Zincara, *AER Access Arrangement 2017 – Multinet*, June 2017, pp. 51-52.

⁴³ NGR, r. 74(2).

⁴⁴ Multinet Gas, 13.9.1 – *Capital expenditure overview – mains replacement*, 15 December 2016, p. 9 and 10.

- \$6.3 million for like-for-like replacements of 8.1 km of small diameter cast iron;
- \$1.5 million to replace 3.2 km of MP cast iron via block renewal in Clayton South;
- \$5.8 million to replace 7.0 km of MP cast iron in Graham Street, Port Melbourne; and
- \$4.6 million to replace 5.5 km of MP cast iron in Aughtie Drive, Albert Park.⁴⁵

First, we examined the leak and fracture rates on both the low and medium pressure networks. The probability of failure on the medium pressure network is lower: in 2015 the leak rates were respectively 0.08 and 0.28.⁴⁶ This is illustrated in Figure 6.3 and Figure 6.4.

Figure 6.3 Distribution mains cast iron fracture incident rate

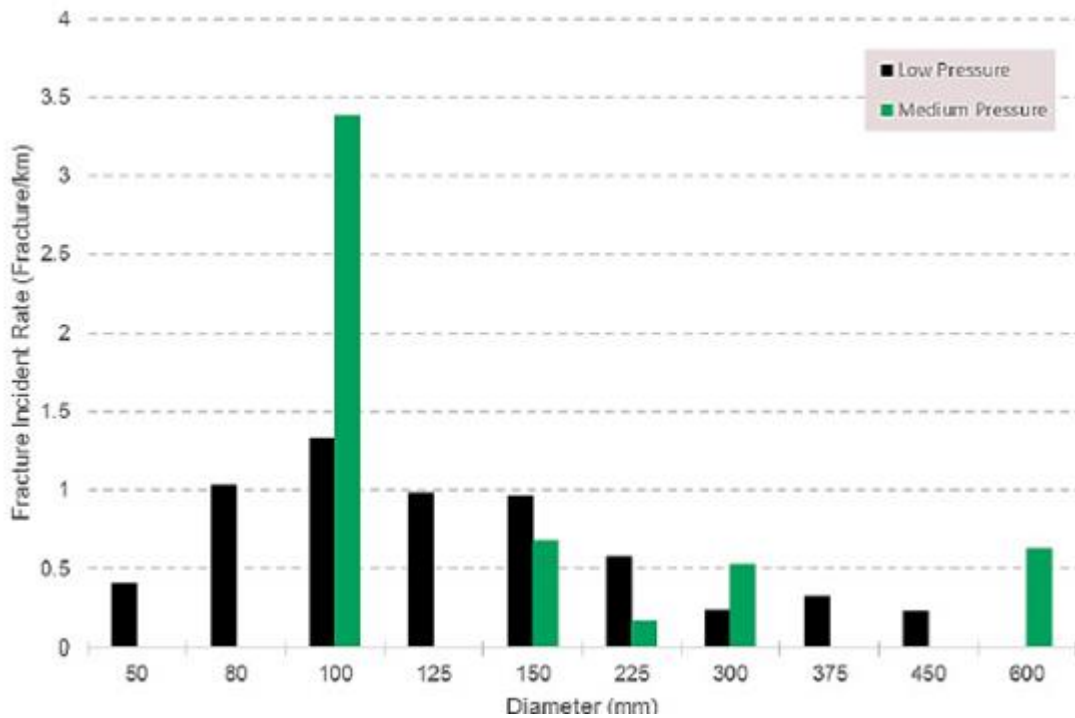


Source: Multinet Gas, 13.9.2 - Distribution Mains Strategy CY2017-CY2022 - MG-SP-0009, 19 December 2016, p. 18.

⁴⁵ Multinet Gas, 13.9.2 - Distribution Mains Strategy CY2017-CY2022 - MG-SP-0009, 19 December 2016, pp. 41-42.

⁴⁶ Multinet Gas, 13.9.2 - Distribution Mains Strategy CY2017-CY2022 - MG-SP-0009, 19 December 2016, p. 16.

Figure 6.4 Cast iron fracture incident rate comparison by pressure



Source: Multinet Gas, 13.9.2 - Distribution Mains Strategy CY2017-CY2022 - MG-SP-0009, 19 December 2016, p. 18.

Multinet submitted that although medium pressure cast iron mains have a lower probability of failure relative to low pressure mains, the combination of higher operating pressures, critical supply and high density geographic location places these assets as 'high risk' from a consequence perspective in comparison to that of the overall low pressure cast iron network.⁴⁷

Zincara acknowledged the greater consequence of a medium pressure mains fracture incident. However, Zincara also notes that the number of incidents has been very low and these have been managed through operations and maintenance.⁴⁸ There is nothing in the available information to suggest this approach should change.

Multinet has based its medium pressure replacement program on asset life profiles.⁴⁹ As of the end of 2017, Multinet has identified 29 km of medium pressure mains that have exceeded their technical life.⁵⁰ However, as Zincara has advised, the end of a mains' technical life merely indicates that a watching brief ought to be maintained over the mains in question; it is not a conclusive criterion to justify a replacement.⁵¹ Zincara

⁴⁷ Multinet Gas, 13.9.2 - Distribution Mains Strategy CY2017-CY2022 - MG-SP-0009, 19 December 2016, p. 40.

⁴⁸ Zincara, AER Access Arrangement 2017 – Multinet, June 2017, p. 45.

⁴⁹ Multinet Gas, 13.9.2 - Distribution Mains Strategy CY2017-CY2022 - MG-SP-0009, 19 December 2016, p. 13.

⁵⁰ Multinet Gas, 13.9.2 - Distribution Mains Strategy CY2017-CY2022 - MG-SP-0009, 19 December 2016, p. 13.

⁵¹ Zincara, AER Access Arrangement 2017 – Multinet, June 2017, p. 45.

notes that the mains replacement program should therefore be based on the condition of the mains and not the age.⁵²

Multinet proposes to replace/abandon 33 km of medium pressure cast iron mains. However, Multinet has not provided specific information on the fracture and leakage rates for each project. Zincara notes that it does not have the information to recommend approval of any medium pressure replacement programs.⁵³

Based on the available information including Zincara's advice, we consider that there is insufficient data to justify accepting capex for medium pressure replacement projects in isolation. However, we note that forecast capex for two medium pressure projects is required to support the low pressure replacement program. These projects are:

- Graham Street, Port Melbourne, which consists of 10 km to be replaced as high pressure grid main to support the low pressure to high pressure replacement projects, and
- Aughtie Drive, St Kilda, which consists of 9.5 km of medium pressure mains to be replaced to support low pressure mains replacements in Elwood and St Kilda.⁵⁴

These two projects are proposed to support the low pressure to high pressure mains replacement program. As we consider the low pressure mains replacement program will maintain and improve the safety of services - notwithstanding our lower best possible forecast volume estimate - we have included these two medium pressure projects in our alternative capex forecast. This is consistent with Zincara's advice.⁵⁵

Based on Zincara's advice and the information before us, we consider that a forecast replacement volume of 12 km of medium pressure mains the best forecast possible in the circumstances.⁵⁶

Early first generation high density polyethylene (HDPE) replacement program

Multinet proposed \$15.9 million (\$2017, unescalated direct costs) to replace 40 km of mains, of which 31 km relate to first generation HDPE pipes. Specifically, Multinet proposed:

- \$9.3 million (\$2017) to replace 22.3 km, including 20.4 km of early generation HDPE, in Glen Waverley
- \$7.8 million (\$2017) to replace 17.7 km, including 11 km of early generation HDPE in Vermont in 2020.⁵⁷

⁵² Zincara, *AER Access Arrangement 2017 – Multinet*, June 2017, p. 45.

⁵³ Zincara, *AER Access Arrangement 2017 – Multinet*, June 2017, pp. 45-46.

⁵⁴ Multinet Gas, *13.9.2 - Distribution Mains Strategy CY2017-CY2022 - MG-SP-0009*, 19 December 2016, p. 42.

⁵⁵ Zincara, *AER Access Arrangement 2017 – Multinet*, June 2017, p. 47.

⁵⁶ NGR, r. 74(2).

⁵⁷ Multinet Gas, *13.9.1 – Capital expenditure overview – mains replacement*, 15 December 2016, pp. 5, 31.

Multinet submitted that the first generation of HDPE that were installed between 1970 and 1980 should be proactively replaced because they are brittle and have high leak and fracture rates.⁵⁸ However, we are not satisfied that this proposal is justified on the grounds that it is necessary to maintain and improve the safety of services.⁵⁹

Zincara has advised that Multinet has managed these leaks and fractures through operations and maintenance programs.⁶⁰ We have no information to suggest that this cannot reasonably continue during the 2018–22 access arrangement period. Zincara recommends that Multinet should continue to monitor and analyse the cause of these leaks and fractures over the 2018–22 access arrangement period.⁶¹

Based on the available information and Zincara's advice, we are not satisfied that this Multinet's proposal to replace first generation HDPE pipes is justified on the grounds that it is necessary to maintain and improve the safety of services.⁶²

Unit rates

Our position is that Multinet's forecast unit rates are arrived at on a reasonable basis and represent the best forecast possible in the circumstances. Table 6.6 shows Multinet's proposed forecast annual unit rates for the 2018–22 access arrangement period for each mains replacement program.

Table 6.6 Multinet forecast unit rates 2018–22 access arrangement period (\$2017, per metre)

	2018	2019	2020	2021	2022	Average
Low pressure to high pressure mains replacement	379.8	353.0	350.6	338.4	369.1	357.5
Medium pressure cast iron	757.2	897.1	829.1			813.9
Early generation HDPE				414.8	439.0	425.5

Source: Multinet Gas, 13.9.1 – *Capital expenditure overview – mains replacement*, 15 December 2016, pp. 29-31.

Multinet's forecast unit rates reflect four methods. In order of preference, these methods are:

- where works are sufficiently well defined, a two party competitive tender process;

⁵⁸ In particular, the first generation HDPE pipes installed before 1976 have experienced leak incident rates between 0.2 to 1.1 leaks per annum. Their leak and brittle fracture rates are high, have increased and are comparable to that of cast iron and unprotected steel. Multinet Gas, 13.9.2 - *Distribution Mains Strategy CY2017-CY2022 - MG-SP-0009*, 19 December 2016, p. 44 and 45.

⁵⁹ NGR, rr. 79(1)(b) and 79(2)(c)(i).

⁶⁰ Zincara, *AER Access Arrangement 2017 – Multinet*, June 2017, p. 49.

⁶¹ Zincara, *AER Access Arrangement 2017 – Multinet*, June 2017, p. 49.

⁶² NGR, rr. 79(1)(b) and 79(2)(c)(i).

- where a tender is not practical, actual historical rates if it has not previously worked in the postcode;
- if it has not previously worked in the postcode, engaging independent estimator, Advisian; and
- if it undertook postcode density correlation to establish unit rates in similar post codes based on actual historical rates.⁶³

Zincara advised that these methods are consistent with typical industry practice.⁶⁴ Further, Multinet's proposed forecast low pressure to high pressure mains replacement average unit rates of \$357.50 per metre is greater than the average of \$253.70 per metre in the 2013–17 access arrangement period.⁶⁵ Largely, this increase can be explained by Multinet moving from the outer boundary of its low pressure network into higher density and more complex areas in the 2018–22 access arrangement period compared to in the 2013–17 access arrangement period.⁶⁶

Multinet has also informed us that it is currently undertaking a tender process for 47 km of mains replacement.⁶⁷ We expect the outcomes of any new tendered unit rates to be reflected in Multinet's revised access arrangement proposal.

Connections

Distribution businesses have a regulatory obligation to make a connection offer to residential and commercial/industrial customers making application to connect to its distribution network.⁶⁸

Connections capex is usually forecast by categorising connections into Tariff V (residential customers, and small commercial and industrial (I&C) customers⁶⁹) and Tariff D (large I&C customers⁷⁰). Residential customers can be disaggregated further into existing homes⁷¹, new estates, and medium/high density (or multi-user) dwellings.

For each connection type (overall residential, new home, I&C etc.), connections capex is derived by multiplying the forecast unit rate for that connection type by the forecast volume of new connections.

We have included \$105.2 million (\$2017, unescalated direct costs) of connections capex in our alternative estimate. We consider that this amount is conforming capex

⁶³ Multinet Gas, 13.9.1 – *Capital expenditure overview – mains replacement*, 15 December 2016, p. 30.

⁶⁴ Zincara, *AER Access Arrangement 2017 – Multinet*, June 2017, p. 43.

⁶⁵ Multinet Gas, 13.9.1 – *Capital expenditure overview – mains replacement*, 15 December 2016, p. 20.

⁶⁶ Multinet Gas, 13.9.1 – *Capital expenditure overview – mains replacement*, 15 December 2016, p. 20.

⁶⁷ Multinet, *Response to information request 18*, 7 April 2017.

⁶⁸ NGR, r. 119S, for basic and standard connections and NGR, r. 119V, for negotiated connections.

⁶⁹ I&C customers are generally classified under Tariff V if they consume less than 10 TJ of gas per year.

⁷⁰ I&C customers are generally classified under Tariff D if they consume more than 10 TJ of gas per year.

⁷¹ Connections to existing homes are sometimes referred to as 'electricity-to-gas' connections, whereby households replace electric appliances with gas equivalents and require connection to the gas distribution network.

that complies with rule 79(1) of the NGR. This is lower than Multinet's forecast capex of \$108.1 million (\$2017, unescalated direct costs). Our reduction of 3.0 per cent is driven by our draft decision to approve total opex that does not include Multinet's forecast opex for its proposed marketing campaign.

We have assessed whether Multinet's forecast connection volumes and unit rates are arrived at on a reasonable basis and represent the best forecasts possible in the circumstances as part of our assessment of conforming capex in this draft decision.⁷²

Volumes

Based on all the information before us, including a review from our consultants ACIL Allen⁷³ and Zincara⁷⁴, we accept the methodology used to forecast connection volumes on Multinet's network. However, we do not accept the additional connection volume associated with the marketing program.

Multinet explained that it undertakes most of its new customer connections by delivering "unitised jobs", rather than delivering a single consolidated project.⁷⁵ Multinet estimated the volumes of unitised jobs they have undertaken over the previous two or three years, to forecast an initial annual list of residential and I&C connection volumes to use as the starting year (2016).⁷⁶

Multinet then produces growth indices that rely on economic and industry forecasts published by the Australian Construction Industry Forum (ACIF).⁷⁷ These growth indices are applied to Multinet's estimate of 2016 volumes to forecast gross connection volumes over the 2018-22 access arrangement period.

We sought information from Multinet on the appropriateness of using ACIF data for residential connections, given its demand consultant, the National Institute of Economic and Industry Research (NIEIR) also produced forecasts of residential connections.⁷⁸ Attachment 13 sets out our assessment of the appropriateness of the ACIF residential connections forecast relative to NIEIR's. We are satisfied that the use of ACIF data is appropriate to forecast connections volumes on Multinet's network, and that Multinet has applied the growth indices appropriately to forecast connections volumes. We are therefore satisfied that Multinet's forecast of residential and I&C

⁷² NGR, r. 74(2).

⁷³ ACIL Allen, *Review of demand forecasts for Multinet*, May 2017, p. 16.

⁷⁴ Zincara, *AER Access Arrangement 2017 – Multinet*, June 2017, p. 28.

⁷⁵ Multinet Gas, *Attachment 13.10.1 - Capital expenditure overview - residential, commercial and industrial connections capital expenditure*, 15 December 2016, p. 21.

⁷⁶ Multinet Gas, *Attachment 13.10.1 - Capital expenditure overview - residential, commercial and industrial connections capital expenditure*, 15 December 2016, p. 21; Multinet, Response to information request #24.

⁷⁷ Multinet Gas, *Attachment 13.10.1 - Capital expenditure overview - residential, commercial and industrial connections capital expenditure*, 15 December 2016, p. 21.

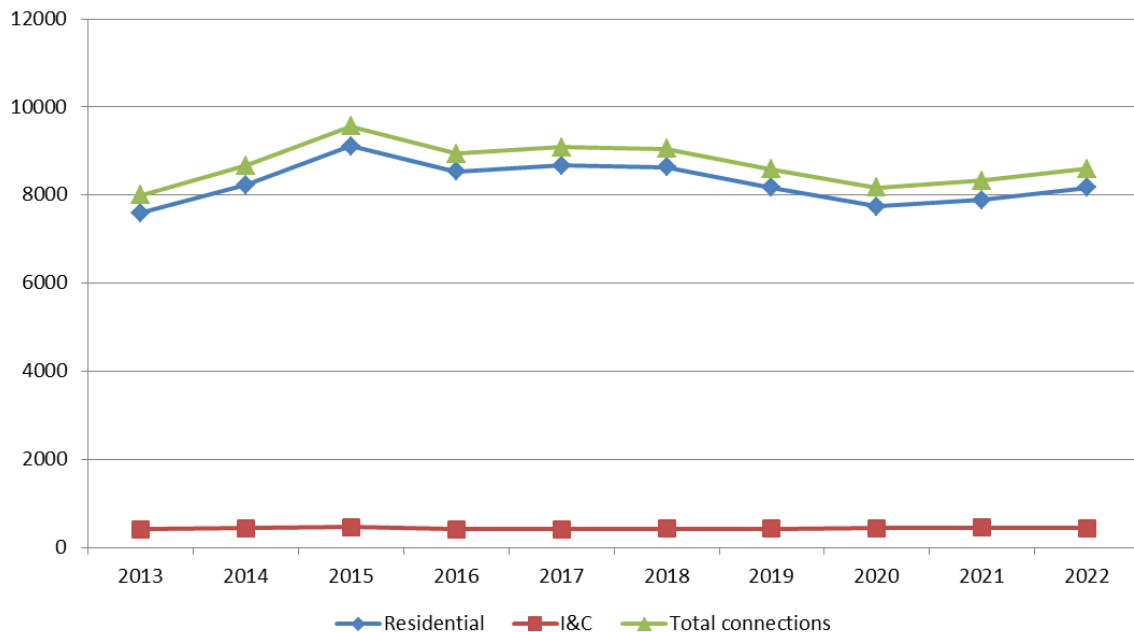
⁷⁸ AER, Information requests MG-IR#21 and MG-IR#24.

connection volumes is arrived at on a reasonable basis and represents the best forecasts possible in the circumstances.⁷⁹

In summary, Multinet forecasts an increase in total net residential and I&C connections of 0.54 and -0.95 per cent per annum respectively.⁸⁰ These forecast growth rates are similar to the 0.59 per cent (residential) and -0.94 per cent (I&C) growth rates experienced during the 2013–17 access arrangement period. While forecast net connections are relevant for demand forecasting purposes, forecast gross connections (that is, net connections plus disconnections) are used to determine connections capex. As noted above, Multinet has forecast volumes of gross connections.

Figure 6.5 shows the historical trend and forecast of Multinet's residential and I&C connections. Residential connections make up the vast majority of total connections, and are forecast to fall in 2019 and 2020 before recovering. I&C connections are expected to remain stable at approximately 430 connections per year.

Figure 6.5 Multinet's historical and forecast Tariff V connection volumes



Source: Multinet, Response to information request #10 – 0.11C Final 2018-22 Reset RIN Templates – MG response 150217 resubmitted 07032017, Received 3 March 2017,, AER analysis.

⁷⁹ NGR, r. 74(2).

⁸⁰ Multinet, Response to information request #10 – 0.11C Final 2018-22 Reset RIN Templates – MG response 150217 resubmitted 07032017, Received 3 March 2017.

Multinet's proposal incorporates additional capex associated with its proposed joint marketing campaign for an additional 281 connections per year over the 2018–22 access arrangement period.⁸¹

As set out in Attachment 7, in this draft decision we do not accept Multinet's forecast opex step change for its proposed marketing campaign. For the purpose of assessing conforming capex, we have assessed the impact of the proposed marketing campaign on Multinet's forecast connection volumes and associated capex. Consistent with our opex decision, we have removed the additional connections from our alternative capex estimate, which lowers our forecast capex by \$2.9 million (\$2017, unescalated direct costs). We are satisfied that Multinet's connections forecast, absent the additional connections associated with the marketing program, is arrived at on a reasonable and represents the best forecast possible in the circumstances.⁸²

Unit rates

We have reviewed Multinet's forecast methodology and proposed unit rates for Tariff V connections, and are satisfied that they are arrived at on reasonable basis and represent the best forecasts possible in the circumstances.⁸³

Each of Multinet's unitised jobs has a standardised unit rate, which is sourced from its current Operational and Management Service Agreements (OMSA) with its service providers, Comdain and ZNX.⁸⁴ To forecast unit rates, Multinet has applied the OMSAs unit rates for 2016–17 to its forecast volumes for each year of the 2018–22 access arrangement period. Multinet explained that its 2016–17 unit rates are based on the actual costs that were incurred from 1 July 2015 to 30 June 2016.

Overall, we are satisfied that Multinet's unit rates meet the NGR criteria. We took account of the following material in coming to our position:

- for tariff V (residential), we agree with Zincara that the profile of unit rates over the current period is relatively flat and this trend continues into the forecast period.⁸⁵ We also note that these unit rates are the result of competitively tendered processes; and
- for tariff V (I&C), Zincara observed that over the current period, the annual rate for these connections is variable which is consistent with the nature and complexity of these connections. In this regard, we consider that a better approach would be to apply a historical average to forecast the unit rate for this connection type. Zincara tested this proposition by applying a three-year average. We consider that the

⁸¹ Multinet Gas, *Attachment 13.10.1 - Capital expenditure overview - residential, commercial and industrial connections capital expenditure*, 15 December 2016, p. 24.

⁸² NGR, rr. 74(2) and 79(1).

⁸³ NGR, r. 74(2).

⁸⁴ Multinet Gas, *Attachment 13.10.1 - Capital expenditure overview - residential, commercial and industrial connections capital expenditure*, 15 December 2016, pp. 21, 23.

⁸⁵ Zincara, *AER Access Arrangement 2017 – Multinet*, June 2017, p. 31.

subsequent reduction in forecast capex relatively immaterial compared to Multinet's proposed amount and accordingly, have not made any adjustment. We note that Multinet's I&C unit rate is the lowest of the three distributors.

Contributions

We assess that Multinet's forecast contributions of \$41.3 million (\$2017)⁸⁶ over the 2018–22 period is arrived at on a reasonable basis and represents the best estimate in the circumstances.⁸⁷ The forecast is based on the five-year average of contributions (2013–17), where the 2016 and 2017 figures are estimates.⁸⁸ The total contributions include those connections from network users (\$2 million per annum) and contributions for major relocation works (\$6.2 million per annum).

We accept this forecast as we understand from Multinet's proposal that there has been significant growth in major relocation works in the 2013–17 access arrangement period which is set to continue post 2017. These works include infrastructure spending in metropolitan Melbourne on projects such as rail crossing removals, and metropolitan rail tunnel projects.⁸⁹

Tariff D connections

Multinet forecasts Tariff D connections capex based on the three-year average of historical expenditure (2013 to 2015).⁹⁰ Tariff D expenditure is forecast to be \$2.6 million (\$2017, excluding escalations) over the 2018–22 access arrangement period.

We consider that applying a historical average to forecast Tariff D unit rates, given the unique and variable nature of this type of work is a reasonable basis for forecasting Tariff D connections and results in the best forecast possible in the circumstances.

Information and communications technology

We have included \$38.1 million (\$2017, unescalated direct costs) for ICT capex in our alternative capex estimate. This is 16.6 per cent less than Multinet's proposed forecast expenditure of \$45.7 million (\$2017, unescalated direct costs) for its ICT capex program.

Multinet classified its ICT projects as either recurrent or non-recurrent. We are satisfied that Multinet's proposed recurrent ICT capex, which represents 75 per cent of the total

⁸⁶ In response to information request 6, Multinet advised there was an error in the customer contributions forecast for major alteration works, which is intended to match the forecast expenditure of the major alteration work itself. Multinet's forecast contributions were therefore revised downward from \$45.6 million.

⁸⁷ NGR, r. 74(2).

⁸⁸ Multinet Gas, *Attachment 13.10.1 - Capital expenditure overview - residential, commercial and industrial connections capital expenditure*, 15 December 2015, p. 20.

⁸⁹ Multinet Gas, *Attachment 13.10.1 - Capital expenditure overview - residential, commercial and industrial connections capital expenditure*, 15 December 2015, pp. 20-23.

⁹⁰ Multinet Gas, *Attachment 13.10.1 - Capital expenditure overview - residential, commercial and industrial connections capital expenditure*, 15 December 2015, pp. 25-26.

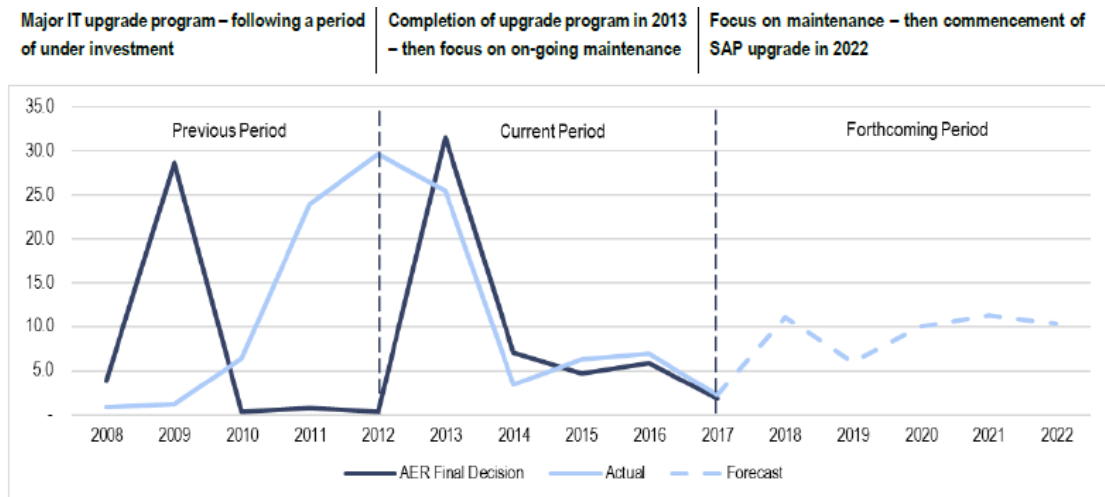
capex program, is conforming capex and is justified on the grounds of maintaining the integrity of services.⁹¹ Our assessment has therefore focused on the remaining non-recurrent projects in Multinet's ICT capex program, which we discuss in more detail below.

Multinet proposal

Multinet proposed \$45.7 million (\$2017, unescalated direct costs) for non-network ICT capex. Figure 6.6 shows a time series of Multinet's ICT capex from 2008 to 2017 relative to capex approved by us, and Multinet's forecast for the 2018–22 access arrangement period. As can be seen, Multinet has invested heavily in ICT capex in the 2013–17 access arrangement period. Multinet submitted that this expenditure brings its ICT systems up to the required standard and will deliver systems that meet the requirements of its business transformation following several years of under-investment.⁹²

Figure 6.6 also shows that Multinet has proposed higher ICT capex for the 2018–22 access arrangement period than it spent in the 2013–17 access arrangement period. Most of this expenditure is recurrent capex which Multinet submits is to ensure that it meets the information needs of its customers, maintains the integrity of its services and achieves the levels of demand required by customers. The proposed increase is due to the timing of the required maintenance of its systems.⁹³

Figure 6.6 Comparison of ICT capex across previous, current and forthcoming access arrangement period (\$m, real \$2017)



Source: Multinet Gas, 2018 to 2022 Access Arrangement Information, 21 December 2016, p. 90

⁹¹ NGR, r. 79(2)(c)(ii).

⁹² Multinet Gas, 2018 to 2022 Access Arrangement Information, 21 December 2016, p. 90.

⁹³ Multinet Gas, 2018 to 2022 Access Arrangement Information, 21 December 2016, p. 90.

Our assessment

We consider the proposed capex for the recurrent ICT projects is prudent and efficient. These projects are ongoing in nature and relate to updating or refreshing of ICT assets and processes it already has in place. We are satisfied that capex for these projects is required to maintain the integrity of Multinet's services.⁹⁴

Five out of 19 non-recurrent projects are shared between Multinet and United Energy. Consistent with our United Energy decision we consider the shared projects are prudent and efficient and constitute conforming capex.⁹⁵ Further, the largely recurrent nature of Multinet's IT program reflects its consolidation of its large IT program in the 2013–17 access arrangement period, as part of transforming its business from an outsourced to an in-house model. Our expectation is that this earlier program would allow Multinet to meet its regulatory compliance requirements.

We have focussed our assessment on the remaining seven non-recurrent ICT projects. Based on all the information before us, we have not included in our alternative capex estimate expenditure for the following non-recurrent ICT projects as we consider such expenditure is not prudent and efficient:

- IT08 - mobility integration (\$4.3 million)
- IT09 - digital metering (\$0.6 million)
- IT38 - customer experience improvements (\$1.5 million)
- IT40 - business intelligence. (\$1.1 million)

Our assessment of the proposed capex for the remaining three non-recurrent projects concludes that they are conforming capex, consistent with Zincara's advice that such expenditure is prudent and efficient.⁹⁶

Mobility integration

Multinet proposed its mobility integration project to address challenges in the processes for defining, scheduling, despatching, reporting and monitoring of field work activities. Multinet submits the project will allow for better integration with service provider systems or, where appropriate, will reduce dependence on service provider systems by providing an end-to-end solution.⁹⁷

We do not consider this project is justified on any of the grounds in rule 79(2). We consider that Multinet would be incentivised to undertake the project without the need for funding given the benefit it receives from field productivity efficiencies and reduced

⁹⁴ NGR, r. 79 2(c)(ii)

⁹⁵ AER, *Preliminary decision United Energy distribution determination 2016 to 2020 attachment 6 – capital expenditure*, October 2015, p. 105.

⁹⁶ Zincara, *AER Access Arrangement 2017 – Multinet*, June 2017, p. 98.

⁹⁷ Multinet Gas, *13.13.4.2 Project justification - IT08 - mobility integration*, 25 October 2016, p. 6.

administration costs. Further, we note that Multinet has not provided us with an NPV analysis which shows that the benefits of this project to consumers outweigh the costs.

Digital metering

We have not included ICT digital metering costs because it is not prudent and efficient and does not constitute conforming capex. Our assessment of digital metering is discussed in our metering replacement assessment below.

Customer experience improvements

Multinet submits that the purpose of this project is to provide a more efficient and customer friendly platform so customers can request and track services and obtain information about their supply on-line. It will also allow Multinet to maintain customer service through improving the on-line customer transfer process and assist Multinet in dealing with an increased volume of customer transfers.⁹⁸ To achieve this Multinet proposed to modify its existing portal developed for United Energy.⁹⁹

Our review of Multinet's supporting material suggests that a key outcome from this project is the reduction in actual staff. However, Multinet's cost benefit analysis included costs but not the savings relative to the status quo.

In particular, Multinet has not provided sufficient supporting material to justify the need for this project, including evidence that customers value and are willing to pay more for this increase in customer service. We also note Zincara's comments that since 2014, there has been a marginal increase in the number of inquiries received by Multinet and that the level of this increase did not justify a project of this nature.¹⁰⁰

We are not satisfied based on the information before us, that this IT project is justified on any of the grounds in rule 79(2).

Business intelligence

Multinet proposed capex for business intelligence tools to allow it to effectively address increased regulatory compliance requirements and to meet a wide range of business requirements for new and improved analysis and reporting from existing available data sources.¹⁰¹ Multinet identifies operational efficiencies as the main justification for this project, where there would be automation of a range of analytical and reporting activities. We note that Multinet provided limited information on how the benefits of this project will flow on to consumers. Further, it did not demonstrate how the benefits of this project will outweigh the costs.

⁹⁸ Multinet Gas, 13.13.4.7 - *Project justification - IT38 - customer experience improvements*, 25 October 2016, p. 5.

⁹⁹ Multinet Gas, 13.13.4.7 - *Project justification - IT38 - customer experience improvements*, 25 October 2016, p. 9.

¹⁰⁰ Zincara, *AER Access Arrangement 2017 – Multinet*, June 2017, p. 96.

¹⁰¹ Multinet Gas, 13.13.4.8 - *Project justification - IT40 - Business intelligence*, 25 October 2016, p. 5.

We consider that Multinet would be incentivised to undertake the project without the need for funding given the benefit it receives from operational efficiencies.

We note this position is also consistent with Zincara's analysis, which stated that Multinet had not quantified the number of issues it has experienced or the impact of those issues on its asset management, and that Multinet is already meeting its regulatory and customer services obligations.¹⁰²

On the information before us, this IT project is therefore not justified on any of the grounds in rule 79(2).

Augmentation

Network augmentation capex is directed at increasing the capacity of the existing network to meet the demand of existing and future customers. Augmentation capex is required to maintain gas pressure and minimise the risk of gas outages. Multinet stated its augmentation capex is necessary under the NGR.¹⁰³

We are satisfied Multinet's proposed capex forecast for augmentation is conforming capex.¹⁰⁴ We have included \$15.0 million (\$2017, unescalated direct costs) of augmentation expenditure in our alternative capex forecast. As we discuss further below, we consider this is conforming capex (\$2017, unescalated direct costs):

- \$9.2 million for the Oakleigh high pressure augmentation
- \$0.8 million for the Korumburra high pressure augmentation
- \$5.0 million for the Eastern high pressure augmentation.

In response to an information request about the proposed South Melbourne network augmentation, Multinet acknowledged that this project is no longer required.¹⁰⁵ We have therefore not included \$1.2 million (unescalated, direct costs) for this project in our alternative estimate.

We assessed Multinet's augmentation projects by considering the timing of the proposed works, the capacity benefit resulting from the augmentation solution and whether the input cost of each project is that which a prudent service provider acting efficiently, in accordance with accepted good industry practice, to achieve the lowest sustainable cost of providing services would incur.¹⁰⁶ We also sought advice from Zincara. Specifically, we considered:

- the capacity shortfall and/or projected growth demonstrating the requirement for the augmentation

¹⁰² Zincara, *AER Access Arrangement 2017 – Multinet*, June 2017, p. 98.

¹⁰³ NGR, r. 79(2)(c).

¹⁰⁴ NGR, r. 79(2)(c).

¹⁰⁵ Multinet Gas, *Response to information request 4(b)*, 10 February 2017.

¹⁰⁶ NGR, r. 79(1)(a).

- whether Multinet considered alternative options to address the issue
- the prudence of the timing of the proposed augmentation
- the prudence and efficiency of the scale of the proposed augmentation
- the efficiency of the proposed project costs.

Multinet's proposed augmentation capex comprises:

- Network reinforcement – the installation of new gas mains to reinforce or back-feed areas of poor supply.
- Network regulator capacity upgrades – the upgrading of regulating stations to allow for increased throughput of a station.
- New network regulating stations – the construction of new network supply points to allow for additional feeds to the networks.

Three projects make up Multinet's augmentation capex forecast of \$15.0 million (\$2017). Our assessment of these projects is set out below.

Oakleigh high pressure augmentation

We are satisfied that the proposed capex of \$9.2 million (\$2017) for the Oakleigh high pressure network augmentation is conforming capex.

Multinet submitted that it is currently operating the network outside of normal standard operating pressure. Multinet proposed network augmentation to increase minimum pressures to comply with the Victorian Gas Distribution System Code (GDSC). The proposed works include installing a new field regulating station in Oakleigh and a total of 6.7 kilometres of steel mains interconnecting the supply point to the Oakleigh high pressure network.¹⁰⁷ Multinet proposed to commence laying the steel mains in the 2013–17 access arrangement period, with a further \$3.1 million (\$2017) of capex proposed in 2017.

We requested further information about the proposed augmentation, including details of network modelling. In response, Multinet provided a network performance report and network modelling, which indicated that around 30 per cent of the network would experience pressures below 140kPa if the augmentation did not occur.¹⁰⁸

Multinet engaged Advisian to develop cost estimates for the proposed network reinforcement projects. The estimated cost of the new supply regulator in the Oakleigh network was based on recent redevelopment works for a similar project in Highett.

Zincara found the project to be prudent and, following a review of Multinet's detailed cost estimates, the proposed cost to be efficient.¹⁰⁹

¹⁰⁷ Multinet Gas, *13.12.1 - Capital Expenditure Overview – Augmentation*, 15 December 2016, p. 18.

¹⁰⁸ Multinet Gas, *Response to information request 4(A)*, 7 February 2017.

¹⁰⁹ Zincara, *AER Access Arrangement 2017 – Multinet*, June 2017, p. 22.

Korumburra high pressure augmentation

We are satisfied that the proposed capex of \$0.8 million (\$2017) for the Korumburra high pressure network augmentation is conforming capex.

Multinet submitted that modelling of this network indicates that network reinforcement is required in 2019 to maintain targeted minimum pressure as defined in the GDSC. The proposed works include 0.5 kilometres of steel mains and 1.9 kilometres of polyethylene in Korumburra.¹¹⁰

In response to an information request about the proposed augmentation, including details of network modelling, Multinet provided a network performance report and an updated growth forecast, which deferred this project from 2019 to 2021.¹¹¹

Zincara advised that it would be prudent to complete this augmentation in the 2018–22 access arrangement period, and that the proposed costs are efficient.¹¹² Based on the available information and Zincara's advice, we are satisfied that this project is justified on the grounds of maintaining the integrity and safety of services.¹¹³

Eastern high pressure augmentation

We are satisfied that the proposed capex of \$5.0 million (\$2017) for the Eastern high pressure network augmentation is conforming capex.

Multinet submitted that growth within its Ringwood, Olinda and Knox sub-networks has resulted in supply-related network constraints, which require reinforcements. In addition, Multinet proposed to upgrade five field regulators in this network.¹¹⁴

In response to an information request about the proposed augmentation, Multinet provided a network performance report and network modelling. The network performance report identified two groups of reinforcements: the Ringwood and Knox networks in 2018 and the Olinda South and Olinda North networks in 2021. The network modelling indicated that these networks are forecast to experience pressures below 140kPa if the proposed augmentation does not occur. Advisian cost estimates were prepared for each of the reinforcement projects. Multinet engaged Oil Gas Power International to perform regulator capacity analysis. The network performance report indicated that regulator capacity upgrades are required as the regulators are currently exceeding their optimum design capacity or design velocity limit.¹¹⁵

¹¹⁰ Multinet Gas, *13.12.1 - Capital Expenditure Overview – Augmentation*, 15 December 2016, p. 20.

¹¹¹ Multinet Gas, *Response to information request 4(B)*, 10 February 2017.

¹¹² Zincara, *AER Access Arrangement 2017 – Multinet*, June 2017, p. 23.

¹¹³ NGR, rr. 79(1)(b), 79(2)(c)(i) and 79(2)(c)(ii).

¹¹⁴ Multinet Gas, *13.12.1 - Capital Expenditure Overview – Augmentation*, December 2016, p. 20.

¹¹⁵ Multinet Gas, *Response to information request 4(B)*, 10 February 2017.

Zincara analysed the additional information provided by Multinet and found that the sub-projects will improve the supply constraints of the network and hence are prudent. Zincara also found Multinet's cost estimates to be efficient.¹¹⁶

Based on the available information and Zincara's advice, we are satisfied that this project is justified on the grounds of maintaining the integrity and safety of services.¹¹⁷

Meter replacement

Meter replacement is an ongoing activity which is necessary to ensure that gas meters in the field are replaced when they fail to accurately read data. Multinet has regulatory obligations to manage the integrity of meters and ensure they operate within the prescribed tolerance band for metering accuracy.¹¹⁸

Multinet calculated meter replacement expenditure for two general classes of meters: domestic meters, and industrial and commercial meters. It derived expenditure using forecast unit rates and volumes.

Based on all the information before us, we are not satisfied Multinet's capex forecast of \$9.9 million for meter replacement is conforming capex.¹¹⁹ We have included \$7.9 million (\$2017, unescalated direct costs) of meter replacement expenditure in our alternative capex forecast. This reflects that we are not satisfied that Multinet's proposed capex for a digital gas metering pilot study is conforming capex.

We consider other aspects of its proposal are justified on the grounds of being necessary to maintain the integrity of services, and that the associated volumes and unit rates are arrived at on a reasonable basis and represent the best forecasts possible in the circumstances. Specifically:

- the proposed number of meters to be replaced under Multinet's time expired, field life testing and reactive meter replacement programs, which Multinet is capable of delivering. We have therefore included \$7.5 million (\$2017, unescalated direct costs) in our alternative capex estimate.
- the proposed replacement of handheld meter reading units. We have therefore included \$0.4 million (\$2017, unescalated direct costs) of capex in our alternative capex estimate.

Our assessment of these projects is set out below.

Meter replacement programs

Multinet submitted that it capitalises the purchase of new meters installed on the network. This includes the procurement of meters to replace existing due to regulatory

¹¹⁶ Zincara, *AER Access Arrangement 2017 – Multinet*, June 2017, p. 26.

¹¹⁷ NGR, rr. 79(1)(b), 79(2)(c)(i) and 79(2)(c)(ii).

¹¹⁸ Under the *National Measurement Act 1960* (Commonwealth) and the Victorian Gas Distribution System Code.

¹¹⁹ NGR, r. 79.

requirements or meter failure. Installation is expensed for all meter replacement activities but capitalised when installing a new meter for a new network connection.¹²⁰

Using information on the age of its meter fleet, the types of meters and the most recent test results, Multinet estimated that 168,057 domestic meter replacements and 6,978 commercial meter replacements will be required in the next access arrangement period. Where possible, Multinet refurbishes small gas meters which it says provides the lowest cost of providing a metering installation to the end customer.¹²¹

Multinet's time expired meter replacement program is highly variable, with 59 613 small meters forecast for replacement in 2018, and only 953 in 2019. Despite the level of annual variation, Multinet does not have a policy of prematurely removing meter families from operation before their in-service compliance periods in an attempt to smooth the replacement program. Multinet has historically proven capable of undertaking large annual volumes of meter replacements.

Zincara considered that the methodology and assumptions used in developing the forecast volumes of the program to be prudent, and that the costs are efficient.¹²² Based on Zincara's advice, we are satisfied that Multinet's proposed volumes are arrived at on a reasonable basis and represent the best forecasts possible in the circumstances. We are also satisfied that this project is justified on the grounds of maintaining the integrity or services.¹²³

Handheld meter reading devices

Multinet submitted that it currently uses Itron FC300 Hand Held Unit (HHU) meter reading devices to read all gas meters. Multinet proposed to replace ten HHUs each year due to continued high use and exposure to the elements.

Zincara considered that the HHUs are subject to significant handling, and replacement of ten each year is reasonable. Zincara also considered the costs to be efficient.¹²⁴ Based on Zincara's advice, we are satisfied that Multinet's proposed volumes are arrived at on a reasonable basis and represent the best forecasts possible in the circumstances. We are also satisfied that this project is justified on the grounds of maintaining the integrity of services.¹²⁵

Digital gas metering pilot study

Multinet proposed \$2.1 million (\$2017) to undertake a digital gas metering pilot study. The proposed capex relates to the incremental costs of 10 000 digital meters, which

¹²⁰ Multinet Gas, 13.11.4 - *Small Meter Strategy – CY2017-CY2022 – MG-SP-007*, 19 December 2016, p. 18.

¹²¹ Multinet Gas, 13.11.4 - *Small Meter Strategy – CY2017-CY2022 – MG-SP-007*, 19 December 2016, p. 15.

¹²² Zincara, *AER Access Arrangement 2017 – Multinet*, June 2017, p. 66.

¹²³ NGR, r. 79(2)(c)(ii).

¹²⁴ Zincara, *AER Access Arrangement 2017 – Multinet*, June 2017, p. 67.

¹²⁵ NGR, r. 79(2)(c)(ii).

Multinet intends to install at new sites instead of standard gas meters. Multinet also proposed a further \$0.6 million (\$2017) for IT capex associated with the trial.

Multinet proposed a two phased approach to investigate the costs and potential benefits of digital gas metering. Phase 1 (2017) involves integrating a small number of functional meters into the United Energy AMI Network and demonstrating remote communication. Once this is demonstrated, Multinet has proposed to integrate a further 100 units in the field. Phase 2 (2018–21) allows the lessons learned in Phase 1 to apply to a 10 000 meter implementation into Multinet's network and United Energy AMI framework.¹²⁶

Multinet submitted that the forecast capex is justified on the grounds that the overall value of the proposed expenditure is positive, and consumers indicated support for the next stage. Multinet submitted that the digital meter pilot delivers a net benefit compared to the alternatives, which include:

- Proceeding with the mass rollout without the benefit of the information that will be provided by the pilot study; or
- Adopting a 'do nothing' approach, which would deny customers the potential benefits of digital metering.

Multinet submitted that the pilot scheme will provide a reliable cost benefit assessment of the mass rollout of digital meters, and that the economic value of the pilot scheme is therefore derived from the value of reliable cost benefit assessment of the larger project. Multinet further submitted that:

- the potential benefits of a mass rollout of digital gas meters include the elimination of manual and estimated meter reads, more flexibility and information for customers, improved safety, cost reflective tariffs and better information for network planning¹²⁷
- the value of some of these benefits such as the elimination of manual meter reading and estimated reads can be estimated with confidence now
- the value of other benefits such as automated leak detection, and the use of digital meter data to improve the efficiency of network planning is highly uncertain but the proposed pilot will enable all of these benefits to be quantified.¹²⁸

Zincara reviewed Multinet's 'Digital Gas Metering Pilot Study' document and concluded that the study was not prudent or cost efficient.¹²⁹ Zincara advised that the technology is still in development and has not yet matured. Zincara did not find any financial cost/benefit analysis to justify progress of the study nor information about the benefits to be realised for consumers or in support of Multinet's proposed volume of digital

¹²⁶ Multinet Gas, 13.11.4 - *Small Meter Strategy – CY2017-CY2022 – MG-SP-007*, 19 December 2016, p. 26.

¹²⁷ Multinet Gas, 13.11.2 – *Capital Expenditure Overview - Digital Gas Metering Pilot Study*, 15 December 2016, p. 8.

¹²⁸ Multinet Gas, 13.11.2 – *Capital Expenditure Overview - Digital Gas Metering Pilot Study*, 15 December 2016, p. 9.

¹²⁹ Zincara, *AER Access Arrangement 2017 – Multinet*, June 2017, p. 69.

meters. Zincara also advised that without the results of Phase 1 it was unable to determine whether Multinet should progress to Phase 2.¹³⁰

In addition, Multinet submitted that the stakeholder engagement it conducted indicated broad support for the digital gas metering pilot study.¹³¹ CCP11 submitted that it was concerned with some aspects of Multinet's consumer engagement, particularly with the information presented to consumer focus groups about the proposed digital metering trial. CCP11 concluded that it might not be possible to put high reliance on the focus group participants' responses in this instance.¹³² Origin Energy supported the proposal, submitting that further exploitation of this infrastructure will add to the benefits and remote reading to enable faster retail transfer is an important initiative that Origin supports.¹³³

Based on the available information and Zincara's advice, we consider that Multinet did not provide convincing evidence that the potential benefits of digital gas meters are worth pursuing. Further these benefits appear limited given residential gas customers are less likely to adjust their consumption behaviours to use gas in non-peak periods. The proposed capex therefore is not justified and we have therefore not included Multinet's proposed forecast capex of \$2.1 million (\$2017) in our alternative capex forecast.

SCADA

We are not satisfied Multinet's capex forecast for SCADA is conforming capex. We have included \$4.1 million (\$2017, unescalated direct costs) of 'other capex' in our alternative capex forecast.

Multinet proposed capex of \$6.6 million (\$2017, unescalated direct costs) to complete ten programs involving the installation, replacement or relocation of SCADA equipment. Multinet submitted that these programs were required to maintain its alignment with network objectives and remain compliant with its regulatory obligations under the GDSC, AS 4645 and AS 2885.¹³⁴

Zincara reviewed Multinet's SCADA Strategy and considered most of the proposed SCADA capex to be prudent and efficient. Zincara considered that the proposed 'step control' capex for the medium and low pressure networks was not required.

Multinet submitted that due to the density of the eastern suburbs and the amount of low pressure being supported off the Eastern medium pressure network, it is not feasible to abandon or upgrade sections to high pressure in the forecast period.

¹³⁰ Zincara, *AER Access Arrangement 2017 – Multinet*, June 2017, p. 68.

¹³¹ Multinet Gas, 13.11.2 – *Capital Expenditure Overview - Digital Gas Metering Pilot Study*, 15 December 2016, p. 9.

¹³² Consumer Challenge Panel (CCP11), *Response to proposals from AGN, AusNet and Multinet for the 2018–22 access arrangement proposals*, 3 March 2017, p. 36.

¹³³ Origin Energy, *Victorian gas access arrangement review 2018–22 – Response to gas distribution businesses' proposals*, 10 March 2017.

¹³⁴ Multinet Gas, *Attachment 13.14.2 - SCADA Strategy – CY2017-CY2022 – MG-SP-002*, 19 December 2016.

Multinet submitted that it has become critical to place the network on control.¹³⁵ Zincara noted that there has not been any indication that there are problems operating the network under this mode nor are there any indications that there is a material increase in demand that requires the total upgrade of the regulators to step control. Zincara therefore did not consider the project to be prudent.¹³⁶

Multinet submitted that there are certain low pressure sites that are not expected to be abandoned or replaced within the next 5 to 10 years, and it is essential for there to be some form of control especially in areas where leak volumes are high.¹³⁷ Multinet proposed to install step control at a number of sites, and that future winter testing would identify these sites. Zincara noted that it is unclear how Multinet has been able to estimate the number of sites that it is proposing to upgrade. Given the limited pressure range in the low pressure network, Zincara was not convinced that there can be many more adjustments in the regulators that would justify installing step control on the district regulators.¹³⁸

Based on the available information and Zincara's advice, we consider that Multinet has not justified the expenditure against a ground in rule 79(2), and therefore, we have not included Multinet's proposed forecast capex of \$2.5 million (\$2017) in our alternative capex estimate.

Other capex

This category captures remaining capex that does not fall into the categories discussed above. Multinet provided the justification of its proposed \$45.5 million for other capex in its 'Other capital expenditure' document and other supporting documents.¹³⁹

We are satisfied that the proposed \$45.5 million (\$2017, unescalated direct costs) is conforming capex.

Multinet's proposed other capex includes:

- \$29.5 million for recoverable works that are charged to the party requesting or causing them, so actual recoverable works capex has no effect on reference tariffs.¹⁴⁰
- \$9.1 million to replace a number of regulators, valves and equipment enclosures to ensure that it meets its regulatory obligations under the GDSC, which requires it to comply with AS 4645 and AS 2885.¹⁴¹
- \$4.2 million for pig rectification works

¹³⁵ Multinet Gas, *Attachment 13.14.2 - SCADA Strategy– CY2017-CY2022 – MG-SP-002*, 19 December 2016, p. 26.

¹³⁶ Zincara, *AER Access Arrangement 2017 – Multinet*, June 2017, p. 78.

¹³⁷ Multinet Gas, *Attachment 13.14.2 - SCADA Strategy– CY2017-CY2022 – MG-SP-002*, 19 December 2016, p. 27.

¹³⁸ Zincara, *AER Access Arrangement 2017 – Multinet*, June 2017, p. 79.

¹³⁹ Multinet Gas, *Attachments 13.15.1 to 13.15.8*, December 2016.

¹⁴⁰ Multinet Gas, *2018 to 2022 Access Arrangement Information*, 21 December 2016, p. 98.

¹⁴¹ Multinet Gas, *2018 to 2022 Access Arrangement Information*, 21 December 2016, p. 98.

- \$1.2 million for corrosion protection equipment
- \$0.9 million for property and accommodation
- \$0.6 million for services and service renewals and gas heaters.

Zincara advised that the proposed \$9.1 million for regulators, valves and equipment enclosures is efficient and prudent, noting that Multinet has efficiently estimated these costs based on similar historic works.¹⁴²

Based on the available information and the advice provided by Zincara, we are satisfied that this proposed capex is conforming capex under the NGR.¹⁴³

Overheads

Overheads are costs that are not directly attributable to the output of distribution businesses but are necessary to support their operations. Examples of overhead costs include network planning, procurement and human resources.

We are not satisfied Multinet's capex forecast for overheads of \$29.0 million (\$2017) is conforming capex. We have included \$20.0 million (\$2017, unescalated direct costs) of overheads expenditure in our alternative capex forecast.

Multinet's Access Arrangement Information did not distinguish the capitalised overheads component of its proposed capex. In response to our information request, Multinet noted that it capitalises "network planning" overhead costs.¹⁴⁴ These are internal staffing costs that are directly associated with identifying and planning network investments and delivering the capital works program. To forecast these costs, Multinet submitted that it used a three-year historical average of the most recent available information (2015-2017) as it is the best and most accurate information available.¹⁴⁵ This equates to 6 per cent of the total proposed forecast capex. Multinet also submitted that it expenses all other overhead costs (CEO, regulation, HR, Legal, Risk or any other "corporate overhead" activity).

We are not satisfied that the historical average Multinet used is a reasonable basis for forecasting overheads. This is because the amounts used for 2016 and 2017 are estimates and not actual capex. A reasonable basis would account for the overheads incurred in the 2013–2017 access arrangement period. Based on Multinet's RIN, we found that the actual overhead rate for the period 2013–2016 was 5.3 per cent. On this basis, we are satisfied that 5.3 per cent is the best estimate possible of overheads. We expect Multinet to update actual capex for 2016 accordingly in its revised proposal.

¹⁴² Zincara, *AER Access Arrangement 2017 – Multinet*, June 2017, p. 61.

¹⁴³ NGR, r. 79(2).

¹⁴⁴ Multinet Gas, *Response to information request 5*, 17 February 2017.

¹⁴⁵ Multinet Gas, *Response to information request 14*, 20 March 2017.

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 2018–22, as set out in Table 6.2.
