



FINAL DECISION
Multinet Gas
Access arrangement
2018 to 2022

Attachment 6 – Capital
expenditure

November 2017

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Shortened forms

Shortened form	Extended form
AER	Australian Energy Regulator
CCP11	Consumer Challenge Panel, Sub-panel 11
HDPE	High density polyethylene
NGL	National Gas Law
NGO	National Gas Objective
NGR	National Gas Rules
PE	Polyethylene
SCADA	Supervisory control and data acquisition

6 Capital expenditure

This attachment outlines our assessment of Multinet's proposed conforming capital expenditure (capex) for 2013–17 and forecast capex for the 2018–22 access arrangement period.

6.1 Final decision

6.1.1 Conforming capital expenditure for 2013–17

We approve \$322.1 million (\$2017) of total net capex for Multinet during the 2013–17 period as conforming capex.¹ Table 6.1 shows our approved capex for 2013–17 by category.

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

Category	2013	2014	2015	2016	2017(a)
Connections	17.9	19.1	23.3	23.0	20.8
Mains replacement	12.4	24.8	21.5	31.1	42.6
Meter replacement	2.3	3.0	2.0	2.5	3.4
Augmentation	0.7	0.1	0.6	1.5	1.6
SCADA	0.2	0.0	0.1	0.0	0.1
Other capex	4.6	7.3	10.2	15.5	13.6
IT	25.4	3.5	6.3	5.4	4.4
Overheads	2.8	3.0	3.7	5.1	5.2
GROSS TOTAL CAPEX	66.3	60.8	67.6	84.1	91.7
Contributions	6.1	6.7	7.8	15.0	12.8
NET TOTAL CAPEX	60.2	54.0	59.8	69.0	79.0

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

Note: (a) As set out in our draft decision, 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.

¹ NGR, r. 79(1).

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

We approve total net capex of \$394.1 million (\$2017) for 2018–22 as conforming capex.²

Multinet proposed \$472.3 million of total net capex in its initial proposal, and we approved \$356.9 million total net capex in our draft decision. Multinet's revised proposal sought \$418.6 million (\$2017) total net capex for 2018–22.³

The increase from our draft decision reflects our acceptance of Multinet's modified low pressure mains replacement proposal of \$176.6 million, and subsequent increases to proposed overheads.

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

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	48.8	41.2	40.1	32.1	31.5	193.7
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	0.6	0.4	0.6	0.8	0.9	3.3
Overheads	5.2	4.5	4.7	4.2	4.1	22.7
GROSS TOTAL CAPEX	99.6	87.1	90.5	80.1	78.1	435.5
Contributions	8.2	8.2	8.3	8.3	8.3	41.3
NET TOTAL CAPEX	91.4	78.9	82.2	71.9	69.8	394.1

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

² NGR, r. 79(1).

³ Multinet Gas, *Capex Model*, 29 August 2017.

Table 6.3 shows Multinet's revised capex proposal compared with approved capex for each category. In coming to our position, we assessed Multinet's forecast capex taking into account the available evidence and submissions from stakeholders.

As shown in Table 6.3, the main difference between Multinet's revised capex and our final decision for the 2018–22 access arrangement period is due to our position on Multinet's revised mains replacement program (where we have maintained our draft decision on the proposed medium pressure and early first generation high density polyethylene (HDPE) mains replacement programs). Our final decision is to approve \$193.7 million (\$2017) of mains replacement capex, which is 11 per cent less than Multinet's forecast capex of \$217.3 million (\$2017).

This attachment discusses our assessment of those capex categories which Multinet re-proposed in its revised proposal. These categories include capex for mains replacement, overheads and escalation.

We accept the following capex items for the reasons set out in our draft decision:⁴

- Connections
- Meter replacement
- Augmentation
- SCADA
- Other capex
- IT
- Contributions

⁴ AER, *Draft Decision Multinet Gas Access Arrangement 2018 to 2022, Attachment 6 - Capital expenditure*, July 2017.

Table 6.3 Comparison of AER final decision and Multinet revised capital expenditure over the 2018–22 access arrangement period (\$million, 2017)

Category	Revised Proposed	Approved	Difference (\$millions)
Connections	105.2	105.2	0.0
Mains replacement	217.3	193.7	-23.6
Meter replacement	7.9	7.9	0.0
Augmentation	15.0	15.0	0.0
SCADA	4.1	4.1	0.0
Other capex	45.5	45.5	0.0
IT	38.1	38.1	0.0
Escalation	3.6	3.3	-0.2
Overheads	23.3	22.7	-0.6
GROSS TOTAL CAPEX	459.9	435.5	-24.5
Contributions	41.3	41.3	0.0
NET TOTAL CAPEX	418.6	394.1	-24.5

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

6.2 Multinet’s revised proposal

2013–17 period

Multinet proposed net capex of \$322.1 million for the 2013–17 period, where capex in 2017 is an estimate. Without the estimate of capex for 2017, Multinet proposed \$243.0 million as conforming capex. We accept \$243.0 million as conforming capex for 2012–17, and will assess whether capex incurred in 2017 is conforming capex in the next access arrangement review.

For 2013–17 Multinet overspent capex by five per cent (\$15 million). This includes the 2017 estimate. Without the 2017 estimate, Multinet underspent capex by six per cent (\$16 million).

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

Category	2013	2014	2015	2016	2017
Connections	17.9	19.1	23.3	23.0	20.8
Mains replacement	12.4	24.8	21.5	31.1	42.6
Meter replacement	2.3	3.0	2.0	2.5	3.4
Augmentation	0.7	0.1	0.6	1.5	1.6
Telemetry	0.2	0.0	0.1	0.0	0.1
Other capex	4.6	7.3	10.2	15.5	13.6
IT	25.4	3.5	6.3	5.4	4.4
Overheads	2.8	3.0	3.7	5.1	5.2
GROSS TOTAL CAPEX	66.3	60.8	67.6	84.1	91.7
Contributions	6.1	6.7	7.8	15.0	12.8
NET TOTAL CAPEX	60.2	54.0	59.8	69.0	79.0

Source: Multinet, 2018 to 2022 Revised Access Arrangement Information, 14 August 2017, p. 20.
Totals may not sum due to rounding.

2018–22 period

Multinet's revised proposal sought \$418.6 million (\$2017) total net forecast capex for 2018–22. This represents a real increase of 36 per cent over the amount approved by the AER for the 2013–17 access arrangement period.

Table 6.5 Multinet proposed capital expenditure 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	50.3	41.2	46.4	40.7	38.7	217.3
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
Telemetry	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	0.6	0.4	0.7	0.9	1.0	3.6
Overheads	5.1	4.4	4.9	4.5	4.3	23.3
GROSS TOTAL CAPEX	101.1	86.9	97.0	89.2	85.7	459.9
Contributions	8.2	8.2	8.3	8.3	8.3	41.3
NET TOTAL CAPEX	92.8	78.7	88.7	80.9	77.4	418.6

Source: Multinet Gas, Capex Model, 29 August 2017.
Totals may not sum due to rounding.

The Consumer Challenge Panel (CCP11) noted it remained uncertain as to whether the scale of the mains replacement program is justified in order to address safety and risk, and whether Multinet will be able to deliver the program.⁵

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 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.

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

⁵ CCP11, *Response to the AER's Draft Decisions and the Revised Proposals from AGN, AusNet and Multinet for a revenue reset/access arrangement for the period 2018 to 2022*, 12 September 2017.

⁶ NGR, r. 77(2)(b).

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 2018–22 access arrangement period. We explain this in the next section.

6.3.1 Capex in the 2013–17 access arrangement period

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.⁷ We have included conforming capex in the opening capital base for 2018–22.⁸
- 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 Multinet's actual capex for 2017 is conforming capex under the NGR, and adjust for any differences between actual and estimated capex.⁹

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.¹⁰ 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 capex drivers
- Multinet's Revised Mains Replacement Program and Advisian Delivery Status Report
- Multinet's Revised RIN template response
- Multinet's Revised 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.¹¹

⁷ NGR, rr. 77(2)(b), 79.

⁸ NGR, r. 77(2)(b).

⁹ NGR, rr. 77(2)(b), 79.

¹⁰ NGR, r. 79(1).

¹¹ NGR, r. 74(2).

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.¹²

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.

6.4 Reasons for final decision

6.4.1 Conforming capital expenditure for 2013–16

Multinet proposed net capex of \$322.1 million for the 2013–17 period, where capex in 2017 is an estimate. Without the estimate of capex for 2017, Multinet has proposed \$243.0 million as conforming capex. We accept \$243.0 million as conforming capex for 2013–16, and will assess whether capex incurred in 2017 is conforming capex in the next access arrangement review.

As set out in our draft decision, we considered the following factors in reaching this view:

- Multinet's capex was \$16.0 million (six per cent) less than the AER approved amount of \$259.0 million for 2013–16.
- The largest underspend in the 2013–16 period occurred in the augmentation category, where Multinet spent \$21.3 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 2013–16 period occurred in the connections category, where Multinet spent \$19.8 million more than forecast. Multinet submitted that this was because unit rates for residential connections, and the volume of commercial and industrial connections, were greater than forecast.

¹² NGL, s. 28(1).

The numbers set out above vary slightly to those in the draft decision. This is largely because the estimated capex for 2016 has been updated with actual capex, and also due to discrepancies between data provided in the roll forward model and the RIN template.

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

We approve \$394.1 million (\$2017) of Multinet's proposed \$418.6 million (\$2017) total net capex for the 2018–22 access arrangement period as conforming capex.

The rest of this attachment sets out our final decision on mains replacement and overheads, which Multinet has re-proposed in its revised proposal.

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.

In our draft decision we considered that \$159.5 million (\$2017) of Multinet's proposed \$249.7 million (\$2017) for mains replacement was conforming capex. We considered it prudent for Multinet to replace 425 km of low pressure mains and 12 km of medium pressure cast iron mains. We accepted that the unit rates proposed by Multinet were reasonable for all categories of mains replacement. We also accepted capex for reactive mains replacement (\$1 million) and unplanned service renewals (\$5.7 million) as proposed by Multinet.¹³

In its revised proposal, Multinet proposed \$217.3 million (\$2017) for mains replacement in the 2018–22 access arrangement period. Table 6.6 summarises our final decision on Multinet's total mains replacement capex relative to Multinet's revised proposal.

¹³ AER, *Draft Decision Multinet Gas Access Arrangement 2018 to 2022, Attachment 6 - Capital expenditure*, July 2017.

Table 6.6 Mains replacement final decision relative to revised proposal

Type of replacement	Revised proposal		AER final decision	
Low pressure	531 km	\$176.6m	531 km	\$176.6m
Medium pressure cast iron	24 km	\$18.1m	12 km	\$10.4m
Early first generation HDPE	40 km	\$15.9m	-	-
Reactive mains replacement	-	\$1.0m	-	\$1.0m
Unplanned service renewals	-	\$5.7m	-	\$5.7m
Total mains replacement	595 km	\$217.3m	543 km	\$193.7m

For the reasons detailed below, our final decision is to accept \$193.7 million of Multinet's proposed \$217.3 million for mains replacement as conforming capex. In determining Multinet's total capex requirement we have reviewed particular mains replacement projects and have had regard to the capex required for these projects.

Low pressure mains

Our final decision is to accept Multinet's revised proposal of \$176.6 million (\$2017) to replace 531 km of low pressure mains in the 2018–22 access arrangement period. Having regard to all the information before us, we consider this capex amount to be conforming under the NGR.¹⁴

The focus of our capex assessment of Multinet's low pressure mains replacement program has been on its proposed kilometres of replacement given our acceptance in our draft decision on unit rates. We note that in its revised proposal Multinet has updated its proposed program with the latest tender costs, which has reduced the average direct unit rate for the low pressure program from \$334.50 per metre to \$332.60 per metre.¹⁵

Multinet's revised proposed capex for its low pressure mains replacement program represents a significant reduction from its initial proposal of \$209.0 million (\$2017) to replace 624 km of low pressure mains. In our draft decision, we provided \$142.4 million (\$2017) to replace 425 km, which was consistent with Multinet's rate of replacement between 2003 and 2016. We considered that this volume would be sufficient to maintain the current risk profile during the 2018–22 access arrangement period.¹⁶

¹⁴ NGR, r. 79(1).

¹⁵ Multinet Gas, *Attachment 2 - Revised Mains Replacement Program*, 14 August 2017, p. 27.

¹⁶ AER, *Draft Decision - Multinet Gas access arrangement 2018–22: Attachment 6 - Capital expenditure*, July 2017, p. 6-18.

In coming to our final decision, we acknowledge that the low pressure mains replacement program was introduced by Multinet in 2003 to address the 'societal risk' posed from failure of cast iron mains and resulting risk of incidents leading to loss of life or significant property damage.¹⁷ Further, we have previously accepted it prudent to replace the aging cast iron and unprotected steel low pressure mains.¹⁸ Therefore the key issue for us to consider is Multinet's capability to deliver the proposed volumes over the 2018–22 access arrangement period. In assessing Multinet's delivery capability, we have had regard to a number of factors including its new contracting arrangements and its most recent replacement volumes.

We note that in its final advice CCP11 also referred to the need to consider Multinet's past performance (and the likelihood of delivery of the forecast 162 km of mains replacement in 2017) in assessing whether the mains replacement program proposed by Multinet is deliverable. CCP11 also noted it was uncertain as to whether the scale of mains replacement program is justified in order to address safety and risk.¹⁹

Based on all the material before us, we consider that Multinet's most recent replacement volumes lends support to its proposed replacement volumes of 531 km of low pressure mains over the 2018–22 access arrangement period. In the current access arrangement period, Multinet has so far replaced 427 km of low pressure mains (up to 30 June 2017). Multinet also submitted that it has arrangements in place to replace an additional 100 km of mains during the second half of 2017.²⁰ Multinet later provided a further update on its mains replacement program, which indicated it had replaced 43 km of low pressure mains in the period between 1 July 2017 and 30 September 2017.²¹ If Multinet continued its 2017 rate of replacement until the end of 2017, it would replace a total of 505 km. Multinet's latest update also indicated an increasing trend of replacement in August and September, which Multinet attributed to projects being delivered through its new competitive works panel.²² We consider that our alternative estimate of 505 km is relatively conservative and sufficiently proximate to Multinet's forecast of 531 km.

We therefore consider that Multinet's forecast is arrived at on a reasonable basis and is the best forecast in the circumstances²³, and Multinet's proposed capex is such as would be incurred by a prudent service provider acting efficiently.²⁴

In coming to our position we also note the supporting material Multinet has provided about its new competitive works panel introduced in May 2017 which will underpin the efficient delivery of the program forecast for the 2018–22 access arrangement period.²⁵

¹⁷ Multinet Gas, *Distribution Mains Strategy CY2017-CY2022*, 19 December 2016, p. 30.

¹⁸ AER, *Access arrangement final decision - Multinet Gas - Part 2: Attachments*, March 2013.

¹⁹ CCP11, *Response to the AER's Draft Decisions and the Revised Proposals from AGN, AusNet and Multinet for a revenue reset/access arrangement for the period 2018 to 2022*, 12 September 2017.

²⁰ Multinet Gas, *Attachment 2 - Revised Mains Replacement Program*, 14 August 2017, p. 15.

²¹ Multinet Gas, *Email entitled: 'FW: AER Email - Mains Replacement'*, received 4 October 2017.

²² Multinet Gas, *Email entitled: 'FW: AER Email - Mains Replacement'*, received 4 October 2017.

²³ NGR, r. 74(2).

²⁴ NGR, r. 79(1).

We also had regard to the advice provided by Advisian, Multinet's consultant, who has validated pipework replacement lengths undertaken between 1 January 2013 and 30 June 2017, and further assessed forecast replacements to the end of the 2017 calendar year. Advisian considered that Multinet's forecast of 100 km between 1 July 2017 and 31 December 2017 will most likely be met.²⁶

Medium pressure cast iron mains

Our final decision is to maintain our draft decision and accept \$10.4 million for Multinet to replace 12 km of medium pressure cast iron mains. This alternative estimate is 43 per cent less than Multinet's revised proposal. Having regard to all the information before us, we consider this capex amount to be conforming under the NGR.²⁷

Multinet's revised proposal of \$18.1 million (\$2017) capex to replace 24 km of medium pressure cast iron mains is the same as its initial proposal. Multinet submitted that the two projects that we did not accept in the draft decision (Clayton South and Like for Like) contain a higher proportion of 100 mm diameter mains, and this type of mains has the highest fracture incident rate. Multinet submitted that the driver for the medium pressure mains replacement projects is the inherent risk associated with this type of mains, and not solely because some of the projects support the low pressure replacement program.²⁸ We previously accepted the Graham Street and Aughtie Drive projects, as they were required to support the low pressure mains replacement program.²⁹

Multinet also noted in its revised proposal that the only effective method for reducing the high risk on medium pressure cast iron and early first generation HDPE is to replace the mains with latest generation PE.³⁰

In making our final decision we had particular regard to Multinet's leak and fracture rates for the proposed programs. Multinet's leak and fractures rates indicated:

- for Clayton South (3.2 km), 0.20 fractures and 0.28 leaks per year; and
- for Like for Like (8.1 km), 0.08 fractures and 0.57 leaks per year.

We requested Multinet provide historical evidence of fractures and leaks specific to these proposed projects. Multinet's response showed that, for the Clayton South and Like for Like projects, fracture and leak rates had decreased in recent years (Table 6.7).

²⁵ Multinet Gas, *Attachment 2 - Revised Mains Replacement Program*, 14 August 2017, p. 17.

²⁶ Advisian Pty Limited, *Multinet Pipe Works Projects - Independent Report: Validation of Pipework Lengths*, 4 August 2017, p. 3.

²⁷ NGR, r. 79(1).

²⁸ Multinet Gas, *Attachment 2 - Revised Mains Replacement Program*, 14 August 2017, p. 20.

²⁹ AER, *Draft Decision Multinet Gas Access Arrangement 2018 to 2022, Attachment 6 - Capital expenditure*, July 2017, p. 6-19.

³⁰ Multinet Gas, *Attachment 2 - Revised Mains Replacement Program*, 14 August 2017, p. 13.

Table 6.7 Medium pressure projects – leak and fracture history

Project	Failure type	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Clayton South	Leaks	-	1	-	-	1	-	-	1	-	-	-	-
	Fractures	-	-	-	1	2	1	-	-	-	1	-	1
Like for Like	Leaks	-	1	2	1	3	6	4	3	1	-	-	-
	Fractures	1	2	4	3	1	1	1	-	1	-	-	-

Source: Multinet Gas, Response to information request 31, 15 September 2017.

Zincara reviewed this information and concluded that the medium pressure mains do not show any increased level of deterioration in asset condition (leaks and fractures) that warrants priority for replacement during the 2018–22 period.³¹

Multinet noted that a reduction in fractures over time is not indicative of a reduction in risk, and that these pipes remain susceptible to future fractures.³² Upon reviewing the leak and fracture history, Zincara agreed that risks aren't reduced if the number of fractures decreases, because the "consequence" remains the same.³³ However, we agree with the observations made by Zincara that:

- this risk rating has been evident for many years, and the asset condition has not shown signs of further deterioration;³⁴
- there are many mitigation actions that Multinet has in place that have managed the residual risks to as low as reasonably practicable during this time;
- end of technical life is only an indicator and not a criterion for replacing mains and the mains replacement program should therefore be based on the condition of the mains and not the age of the mains.³⁵

Based on our analysis and the advice provided by Zincara, we consider that Multinet's proposed capex for its Clayton South and Like for Like medium pressure cast iron mains replacement projects does not satisfy the new capex criteria.³⁶

Early first generation HDPE mains

Our final decision is to maintain our draft decision and not accept capex for the replacement of early first generation HDPE mains.³⁷

³¹ Zincara, *AER Access Arrangement Multinet Stage 2 Review*, October 2017, p. 21.

³² Multinet Gas, *Response to information request 31*, 15 September 2017.

³³ Zincara, *AER Access Arrangement Multinet Stage 2 Review*, October 2017, p. 22.

³⁴ Zincara, *AER Access Arrangement Multinet Stage 2 Review*, October 2017, p. 22.

³⁵ *ibid.*, p. 12.

³⁶ NGR, r. 79(2)(c).

Multinet's revised proposal is the same as its initial proposal—\$15.9 million (\$2017) of capex to replace 22.3 km of HDPE in Glen Waverley in 2021 and 17.7 km of HDPE in Vermont in 2022. Multinet submitted that this timing will ensure the replacement program will coincide with completion of the medium pressure cast iron replacement program.³⁸ Multinet's revised proposal distinguished its data on historical broken HDPE mains between "broken mains" and "squeeze-off". Multinet also provided leakage incident rates for 2016. In our draft decision, we did not accept any capex for the replacement of these mains, because we considered the proposed projects were not necessary to maintain and improve the safety of services.³⁹

We requested Multinet provide evidence of historic fracture and leaks rates specific to the Glen Waverley and Vermont areas. This data showed that for early HDPE mains between 2005 and 2016:

- the Glen Waverley area experienced an average of 2.7 leaks and 3.1 fractures each year; and
- the Vermont area experienced an average of 0.7 leaks and 1.3 fractures each year.

Table 6.8 shows that the number of leaks and fractures in these areas has decreased in recent years. As with medium pressure cast irons mains, Multinet noted that a reduction in fractures over time is not indicative of a reduction in risk.⁴⁰

Table 6.8 HDPE projects – leak and fracture history (early HDPE)

Project	Failure type	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Glen Waverley	Leaks	3	6	0	8	1	5	2	2	2	1	2	0
	Fractures	3	2	6	3	7	5	3	4	1	2	1	0
Vermont	Leaks	0	1	1	1	0	0	2	1	1	1	0	0
	Fractures	2	0	1	0	0	2	4	2	2	1	1	1

Source: Multinet Gas, Response to information request 31, 15 September 2017.

Zincara reviewed this information and concluded that the condition of the early first generation HDPE mains does not show a level of deterioration that warrants increased priority for replacement during the 2018–22 period. Zincara also noted that Multinet's scheduling of work for 2021 and 2022 indicated that the replacement of these mains was not an immediate priority compared to other mains replacement programs.⁴¹

³⁷ Early HDPE includes Class 575 polyethylene mains installed pre-1976.

³⁸ Multinet Gas, *Attachment 2 - Revised Mains Replacement Program*, 14 August 2017, p. 24.

³⁹ AER, *Draft Decision Multinet Gas Access Arrangement 2018 to 2022, Attachment 6 - Capital expenditure*, July 2017, p. 6-23.

⁴⁰ Multinet Gas, *Response to information request 31*, 15 September 2017.

⁴¹ Zincara, *AER Access Arrangement Multinet Stage 2 Review*, October 2017, p. 27.

Based on our analysis and the advice provided by Zincara, we consider that the proposed capex for the early first generation HDPE mains replacement projects does not satisfy the new capex criteria.⁴²

Impact on accelerated depreciation

The revised forecasts for mains replacement have a consequential impact on the proposed accelerated depreciation amounts sought by Multinet. We will make a proportional adjustment to that amount. The volume of mains replacement has been reduced by 8.7 per cent over the 2018–22 access arrangement period. Accordingly, the amount of assets subject to accelerated depreciation over the next five years has been reduced proportionally from \$36.7 million to \$33.5 million. This reduction has also been spread proportionally across the two affected asset classes of 'Pipeworks mains' and 'Pipeworks services'.

In addition, we have adjusted Multinet's proposed accelerated depreciation of the residual (\$82.4 million) left in the 'Pipeworks mains' and 'Pipeworks services' asset classes (that is, the amount not depreciated over five years). In its revised proposal Multinet expected that the low pressure mains replacement program will be completed by the end of 2033, and therefore proposed a remaining asset life for these residual assets of 16 years. Zincara examined Multinet's rate of replacement and considered that an appropriate end date of 2036 or 2037 is more realistic.⁴³ We consider this to be reasonable and therefore increase the remaining asset lives for these residual asset classes from 16 years to 19 years (assuming Multinet will replace all low pressure mains by the end of 2036).

The total impact of the two changes above is to reduce Multinet's straight-line depreciation allowance by \$6.3 million (1.7 per cent) over the next five years, compared to Multinet's revised proposal.

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.

In our draft decision we considered that \$20.0 million (\$2017) of Multinet's proposed \$29.0 million (\$2017) for overheads was conforming capex. We considered that 5.3 per cent (of total direct capex) was the best possible estimate of overheads, as this was the overhead rate observed in the 2013–16 period. We did not account for 2017 estimates of overheads in this rate.

In its revised proposal, Multinet proposed \$23.4 million (\$2017) for overheads in the 2018–22 access arrangement period. Multinet updated its 2016 actual overheads and

⁴² NGR, r. 79(2)(c).

⁴³ Zincara, *AER Access Arrangement Multinet Stage 2 Review*, October 2017, p. 13.

has reforecast its 2017 overheads to arrive at an overhead rate of 5.35 per cent. It has applied this revised overhead rate to its revised capex forecast to attain its revised forecast of \$23.4 million.

Multinet calculated its revised overhead rate by taking internal direct overheads as a proportion of gross total capex over the 2013 to 2017 period. We consider that the overhead rate should be calculated as a proportion of gross total capex minus internal direct overheads, but should exclude the estimate of overheads in 2017.

Our final decision is that the best estimate of the overhead rate is 5.5 per cent, which is based on actual overheads in the 2013–16 period. Applied to our final decision for total direct capex, we accept \$22.7 million (\$2017) for overheads in the 2018–22 access arrangement period.