ATCO Revised Access Arrangement

Review of aspects of ATCO's 2020-24 Revised Plan

Report to

Economic Regulation Authority

from

Energy Market Consulting associates

October 2019

This report has been prepared to assist the Economic Regulation Authority (ERA) with its assessment of ATCO Gas Australia's Access Arrangement for the Mid-West and South-West Gas Distribution Systems, for the period from 1st January 2020 to 31st December 2024 (AA5), which it is required to conducted in accordance with the National Gas Law (NGL) and the National Gas Rules (NGR). This report covers a particular and limited scope as defined by the ERA and should not be read as a comprehensive assessment of proposed expenditure that has been conducted making use of all available assessment methods.

This report relies on information provided to EMCa by the ERA and by ATCO Gas Australia up until 25 September 2019. EMCa disclaims liability for any errors or omissions, for the validity of information provided to EMCa by other parties, for the use of any information in this report by any party other than the ERA and for the use of this report for any purpose other than the intended purpose.

In particular, this report is not intended to be used to support business cases or business investment decisions nor is this report intended to be read as an interpretation of the application of the NGR or other legal instruments. EMCa's opinions in this report include considerations of materiality to the requirements of the ERA and opinions stated or inferred in this report should be read in relation to this over-arching purpose.

Some numbers in this report may differ from those shown in ATCO's Access Arrangement Information (AAI) or other documents due to rounding.

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About EMCa

Energy Market Consulting associates (EMCa) is a niche firm, established in 2002 and specialising in the policy, strategy, implementation and operation of energy markets and related network management, access and regulatory arrangements. EMCa combines senior energy economic and regulatory management consulting experience with the experience of senior managers with engineering/technical backgrounds in the electricity and gas sectors.

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ATCO's proposed real cost escalation is not accepted

1. We consider that ATCO's proposed real labour cost escalation rate of 1.47% per year is overstated. We consider that the method for deriving this rate in real terms from a nominal WPI should utilise a CPI forecast from the same source. On the basis of updated evidence provided by ATCO, we propose to accept ATCO's inclusion of a premium for its category of workforce, noting that the premium ATCO now proposes is much smaller than it proposed in its Initial Plan.

2. We consider that 0.7% per year would be a reasonable real labour escalation rate. Adopting this rate will result in lower allowances for AA5 capex and AA5 opex, and we quantify these impacts in the relevant sections below.

ATCO's proposed additional capitalisation of overheads direct labour is not accepted

3. We have reviewed the additional information that ATCO has provided on its new policy and processes for time accounting and how it has back-cast an amount for 'overheads - direct labour' in AA4 which it proposes to capitalise. We have also reviewed the changes resulting from introduction of its time-recording process in January 2018, and which has led it to capitalise such costs on this basis in 2018 and 2019. We consider that both of these elements that ATCO proposes for inclusion as AA4 conforming capex reflect costs that were forecast and included within its AA4 opex allowance. We re-affirm our previous advice that it is not appropriate to now include these same costs as AA4 conforming capex.

4. Disallowing these elements of ATCO's propose overheads capitalisation will result in a lower amount being accepted as AA4 conforming capex. We quantify this impact in the section immediately below.

Findings on proposed AA4 capex

ATCO's new information addresses our key concerns

5. ATCO has re-estimated its AA4 capex, based on 2018 actuals and a revised estimate for 2019. This has reduced its proposed AA4 capex by $12.1m to $483.9m (excluding $1.0m equity raising costs).

6. ATCO has provided new information that explains the composition of the AA4 capex programs. It has largely demonstrated how its actual/estimated AA4 capex has aligned with its investment governance requirements and includes variance analysis against the ERA AA4 Final decision and capex approvals.

Clean Energy Innovation Hub is not adequately justified

7. We consider that ATCO has not addressed the concerns raised by the ERA regarding the proposed Clean Energy Innovation Hub project and accordingly we consider that the [redacted] associated with this project does not meet the capex criteria as conforming capex under the NGR.

Implications for proposed AA4 conforming capex

8. As a result of the new information, we consider that it is reasonable to include all projects except the Clean Energy Innovation Hub ([redacted] in ATCO's revised proposed AA4 capex. The impact of disallowing ATCO's proposed capitalisation of 'direct labour overheads' will reduce the remainder of ATCO's proposed conforming capex by $31.9m. In aggregate, therefore, we consider that $33.9m of expenditure that ATCO has proposed, should not be considered to be 'conforming capex'.

Findings on proposed AA5 capex

ATCO's new information addresses most issues raised in the Draft Decision

9. The new and clarifying information that ATCO has provided in its Revised Plan has addressed the majority of the concerns raised in our Final Technical Report.

10. Our revised assessment is that of ATCO's $308.1m revised AA5 capex that is within our scope, $283.8m satisfies the capex criteria (excluding our proposed real escalation adjustment). There are four sources of reduction, each in the Network sustaining capex category.

ATCO has revised its approach to evaluating and treating Security of supply risk

11. Whilst ATCO has rejected a number of our suggestions regarding its frequency and consequence risk assessment methodology, it has adopted two suggestions regarding its risk assessment methodology and, as a consequence, amended its treatments for those risks. It has therefore been able to prudently reduce its proposed capex for the three loss of supply projects from $49.0m to $0.8m.

ATCO has not adequately demonstrated compliance with the ALARP test

12. As expressed in our Final Technical Report for ATCO's AA4 and AA5 submissions, we do not consider ATCO has met the requirements of the ALARP test as

designated in Australian Standard 4645.1: 2018. Again, we consider that ATCO has failed to demonstrate compliance with the ALARP test for the two Parmelia Gas Pipeline (PGP) interconnection projects. We therefore consider that its proposed $14.9m expenditure on two PGP interconnection projects does not satisfy the capex criteria.

Other adjustments are due to inadequate justification

13. We have assessed that the proposed treatments for two other projects (End of Life replacement – PRS replacement, SCADA- remote network isolation) are not adequately justified because of lack of compelling information that the expenditure was necessary.

14. Lastly, we do not accept ATCO's arguments that the proposed automated meter reading program capex should be paid for by all reference-service customers. In our view, the user of the option should pay.

Implications for proposed AA5 capex

15. As a result of the new information, and from a project / program perspective, we consider that it is reasonable to include all but $19.7m of ATCO's revised AA5 capex forecast. The impact on the remainder of proposed AA5 capex of adopting a lower real escalation rate, is $4.6m. In aggregate, therefore, we consider that $24.3m of AA5 capex that ATCO has proposed in its Revised Plan should not be considered to be 'conforming capex'.

Findings on proposed AA5 opex

Use of 2018 base year is accepted, but additional adjustments are required

16. We consider that it is reasonable, as ATCO has proposed, to use the most recent year's actual opex as the origin of the base year value. ATCO has made several adjustments to that value, and we consider each of these to be appropriate. Consistent with our findings from our review of ATCO's Initial Plan, we consider that additional adjustments are required to reduce the base year expenditure for a portion of Business Development (BD) and marketing costs and for a portion of staff incentive costs, that we consider not to meet the criteria for inclusion in its forecast allowance.

17. ATCO's 2018 spending on IT is less than in 2017, and consistent with our findings on its Initial Plan and we consider that no further adjustment is required.

ATCO has accepted some step change reductions following its consideration of the Draft Decision

18. ATCO has accepted removal of the step change that it had previously proposed for Asset and business management systems review, and which it now proposes to capitalise, and has reduced its proposed step change amount for additional leak surveys.

ATCO has provided additional information that leads us to accept some but not all of its proposed step change amounts

19. Consideration of the further information that ATCO has provided leads us to now accept its proposed step changes for mains reclassification (including the higher amount that ATCO now proposes), for hazardous area remediation and for SCADA / automated pressure control. We consider that its proposed opex step change for a new PGP interconnection and a proposed increased allowance for its AA6 regulatory submission preparation are not justified.

Ancillary Services

20. Based on the sustained high volumes of Special Reads, we have reconsidered ATCO's unit rates by referring to benchmark information. This leads us to propose a reduced unit rate for this service. We propose accepting ATCO's unit rates for other services, and its forecast volumes.

Implications for AA5 opex

21. Our review scope comprises ATCO's proposed opex, excluding the components that are linked to ATCO's proposed growth allowance and its UAFG allowance. We consider that the elements that we reviewed (and which constitutes the majority of its proposed opex) should be reduced by $19.6m.

Capex and opex implications

22. In summary, we propose the following adjusted amounts:

- For AA4 capex, we consider that $450.0m of the $483.9m that ATCO proposes, can reasonably be considered to be 'conforming capex'. [1] This is a reduction of $33.9m.
- For AA5 capex within our scope, we consider that $283.8m of $308.1m that ATCO proposes, represents a reasonable forecast of its prudent and efficient requirements. This is a reduction of $24.3m for the components within our scope.
- For AA5 opex (and considering only those components within our scope) we consider that $325.5m of the $345.1m that ATCO proposes represents a reasonable forecast of its prudent and efficient requirements. This is a reduction of $19.6m for the components within our scope.

[1] Both figures exclude $1.0m that ATCO has allowed for equity raising costs

1 Introduction

1.1 Purpose of this report

23. The purpose of this report is to provide the Economic Regulation Authority ('ERA') with our assessment of aspects of ATCO Gas Australia's ('ATCO') revised proposal for the 2020-24 Access Arrangement period ('AA5') as set out in ATCO's 2020-24 Revised Plan ('Revised Plan') submitted as ATCO's Access Arrangement Information for ATCO's Mid-West and South-West Gas Distribution System ('GDS') in June 2019. The Revised Plan responds to the ERA's Draft Decision on Proposed Revisions to the Mid-West and South-West Gas Distribution Systems Access Arrangement for 2020 to 2024, dated 18 April 2019 ('Draft Decision').

24. Our assessment builds on the analysis and findings from our assessment of aspects of ATCO's Access Arrangement Information for the GDS dated 31 August 2018 ('Initial Plan') as set out in our Final Technical Report.[2] For this assessment, our primary information source has been ATCO's Revised Plan and supporting documentation provided to us by the ERA.

25. We have assessed those aspects of ATCO's Revised Plan that are directly relevant to the scope of requested work.[3] This does not take into account all factors, or all reasonable methods, for determining a capital allowance in accordance with the National Gas Rules (NGR). We understand that the ERA will establish a capital expenditure allowance for ATCO based on assessments undertaken by its own staff.

1.2 Scope of requested work

26. We are required to provide to the ERA an Updated Technical Report which covers whether, and in what manner, new information provided by ATCO or third parties in

[2] EMCa, *ATCO Gas Australia Proposed Access Arrangement for the Mid-West and South-West Gas Distribution Systems, Review of Technical Aspects of the Proposed Access Arrangement*, March 2019

[3] ERA, Request for Quote, 20 June 2019.

relation to our scope of review, changes conclusions drawn in the Final Technical Report in relation to the following matters:

- an assessment of any amendments to OPEX;
- an assessment of any amendments to AA4 CAPEX;
- an assessment of any amendments to AA5 CAPEX (except for greenfield and brownfield customer growth expenditure[4]);
- a review of any additional information provided on governance arrangements; and
- a review of relevant matters raised in public submissions in response to the ERA's draft decision.

1.3 Regulatory framework

27. The provisions the ERA is required to have regard to when assessing ATCO's proposed capex and opex are set out in Part 9 of the NGR. In short, these rules require the ERA to accept ATCO's proposal if:

- the capex complies with the conforming capex criteria in rule 79 of the NGR and any forecasts or estimates underpinning the capex proposal are arrived at on a reasonable basis and represent the best forecast or estimate possible in the circumstances (rule 74(2)); and
- the opex complies with the criteria set out in rule 91(1) of the NGR and any forecasts or estimates underpinning the opex proposal satisfy rule 74(2).

28. The ERA's discretion under rules 79 and 91(1) is limited, which means it may not withhold its approval, if it is satisfied the opex and capex proposals comply with the relevant rules and/or provisions in the NGL.

1.4 Our approach

29. We have followed the same approach to reviewing gas businesses' revised proposals as we have undertaken in the past for the ERA, by:

- reviewing new information and clarifications provided from ATCO; and
- reviewing feedback provided by the Secretariat and by relevant third parties.

30. As requested in the scope of work, our assessment focuses on whether the new information leads us to alter our findings and conclusions provided in our Final Technical Report regarding whether or not the proposed expenditure complies with one or more of the capex or opex criteria. In accordance with our scope of work, we have not undertaken a new standalone assessment of ATCO's proposed conforming AA4 capex, AA5 capex and AA5 opex forecasts against the NGR (WA).

[4] Our scope of work also excludes six growth-driven 'Network reinforcement' projects discussed in section 10.4.2.2 of its Revised Plan

1.5 Structure of this report

31. In the subsequent four sections, we describe our assessment and conclusions regarding ATCO's new information in its amended Access Arrangement submission:

- in Section 2, we provide our assessment of the new information provided by ATCO regarding its capitalisation of overheads and labour escalation;
- in Section 3, we provide our assessment of the new information provided by ATCO regarding its AA4 conforming capex;
- in Section 4, we provide our assessment of the new information provided by ATCO regarding its forecast AA5 capex; and
- in Section 5, we provide our assessment of the new information provided by ATCO regarding its forecast AA5 opex.

1.6 Information sources

32. We have examined relevant documents provided by ATCO in support of the projects and programs in the categories of expenditure that the ERA has designated for review. These documents are referenced directly where they are relevant to our findings. In general, we have reviewed:

- ATCO's revised Access Arrangement Information (AAI), referred to by ATCO as the 2020-24 Revised Plan;
- ATCO's Access Arrangement Supporting information (AAS); and
- Public submissions.

33. We refer to the various documents that comprised ATCO's initial Access Arrangement as its 'Initial Plan'.

34. Through ERA, we submitted Information Requests to ATCO, which were catalogued according to a numbering sequence '*EMCaxxx*'. For convenience, we refer to these as 'IRs' and refer to ATCO's responses according to that numbering sequence.

35. Unless otherwise stated, the basis of all expenditure is real December 2019 dollars and expenditure figures have been sourced from ATCO's Revised Plan.

2 Labour Cost Escalation and Overhead Capitalisation

2.1 Introduction

36. In this section, we describe ATCO's revised proposed real labour cost escalation and overhead allocation. We compare ATCO's Revised Plan with ERA's Draft Decision, and then assess and comment on the implications for ATCO's Revised Plan.

2.2 Labour cost escalation

2.2.1 Background

37. In its Initial Plan, ATCO proposed an average of 1.64% per annum for real labour cost escalation in the AA5 period. ATCO derived this by using a Western Australian government nominal Wage Price Index (WPI) forecast (for all industries), a CPI forecast averaging 1.92%, which it derived from an assessment of Commonwealth Government Securities (CGS), and by adding a 0.5% premium for the Western Australian WPI for the Energy, Gas, Water and Waste Services sector (EGWWS).

38. In its Draft Decision, the ERA adopted the Western Australian government CPI forecast and the Western Australian government WPI for all industries without adding a premium for the Western Australian WPI EGWWS. This resulted in a real labour cost escalation rate averaging 0.54% per annum.

39. In its Revised Plan, ATCO proposes an average real cost escalation of 1.47% per annum. ATCO proposes this based on the 2.60% average per annum forecast for Western Australian WPI for all industries incorporated in the 2019-20 State Budget, with a 0.15% premium for EGWWS which is based on the most recent five-year average. ATCO has estimated the real cost escalation rate from this using an

inflation forecast averaging 1.28%, which it has again derived from its analysis of CGS.

40. In its response to ERA's Draft Decision, ATCO presented ABS data (2015 – 2018) of average percentage changes for EGWWS compared to WPI (all sectors) in the same period. ATCO showed that historically there is a premium of 0.15% for EGWWS over this period, as shown in the table below.

Table 1: EGWWS premium 2015-2018

Year ending December	2015	2016	2017	2018	Average
Percentage change in hourly rates of pay in the EGWWS sector for Australia (ABS series A2603491L)	2.3%	2.2%	1.8%	2.8%	2.28%
Percentage change in the WPI for Australia (ABS series A2603611V)	2.1%	2.0%	2.1%	2.3%	2.13%
PREMIUM	0.2%	0.2%	-0.3%	0.5%	0.15%

Source: ATCO 2020-2024 Revised Plan, Table 9.22, pg 122.

2.2.2 Our assessment of ATCO's new information

WPI in real terms should be derived from common-sourced assumptions

41. We consider that ATCO's approach of forecasting real labour cost escalation rates by combining WPI forecasts from one source with CPI forecasts from another source, is inconsistent and misleading. WA Treasury has forecast both CPI and WPI to 2023 in its latest Economic Forecasts[5]. It is reasonable to expect that forecasts published by WA Treasury in the same document are based on common underlying assumptions and, specifically, that its nominal WPI forecast would be consistent with its CPI forecast.

42. Consistent with advice in our Initial Report, we consider that using the WA Treasury's CPI forecast is the better option for deriving a real-terms equivalent of WA Treasury's own WPI forecast. As shown in Table 2 a nominal WPI forecast of 2.60% and the inflation forecast averages 2.05% per year. This results in a real general labour cost increase rate averaging 0.55% per year over the period.

EGWWS premium

43. ATCO has updated its estimate of a historical premium for utilities real wage increases over and above real wage increases generally (i.e. the WPI). Whereas in its Initial Plan, ATCO proposed a premium of 0.5%, it now proposes a premium of 0.15%, as shown in Table 1.

44. In our review of ATCO's Initial Plan, we were concerned that ATCO's forecast premium in effect assumed 'mean reversion' to a 20-year average. While ATCO has now based its proposed premium on more recent history, we remain concerned that ATCO has not sourced this assumption from an independent provider of such forecasts.

45. In recent decisions, the AER has considered forecasts by independent economic forecasters in assessing a real labour cost escalation rate. For example, in its most recent decision on Ausgrid, it has considered both forecasts by its adviser, Deloitte

[5] https://www.treasury.wa.gov.au/Treasury/Economic_Data/Economic_Forecasts/ accessed on 8 August 2019.

Access Economics, and the forecast provided by Ausgrid's adviser, BIS Oxford.[6] The Deloitte Access Economics report in turn provides real state WPI forecasts and forecasts of real wage indices for the utilities sector.[7]

46. Whilst the AER's decision does not include information on overall WPI in conjunction with the real labour cost index that it has applied, our assessment is that a small premium is implicit in its decision.[8] On balance, we consider that ATCO's proposed inclusion of a 0.15% premium is reasonable. This results in a real cost escalation rate of 0.70% per annum, as shown in the table below.

Table 2: EMCa's amended labour real cost escalation

Real labour cost eslacation	Average per annum
Annual Average of Western Australian WPI over AA5	2.60%
Plus Premium of EGWWS WPI over Australian WPI	0.15%
Equals Nominal Labour Escalation Forecast per annum	2.75%
Less Forecast Inflation/CPI per annum	2.05%
Equals labour escalation factor	**0.70%**

Sources: EMCa analysis

2.3 AA4 overhead capitalisation

2.3.1 Background

47. In information ATCO provided in response to our information request,[9] ATCO indicated that it had included $76.0m of overhead to be capitalised as AA4 conforming capex in its Initial Plan. This comprised what ATCO described as $19.2m of 'Overhead-direct labour' and $56.8m of 'Overhead-true overhead'.[10]

48. In its Draft Decision, the ERA determined that $25.6m of overhead capitalisation was not conforming capex.

49. ATCO does not accept that the amount of capitalised overhead disallowed by ERA, does not meet the capex criteria.[11] ATCO has re-estimated 'True' overheads at $59.7m. In its Revised Plan ATCO has however reduced this by $9.0m, to $50.7m, by adopting ERA's AA4 allowance rate of 15% and applying this to its 'qualifying' AA4 capex.[12] ATCO maintains that the $19.2m of 'overheads-direct labour' that it

[6] AER Final Decision, Ausgrid Distribution Determination 2019 to 2024 (April 2019), p.34

[7] General Use Restrictions in the Deloitte report prevent it from being used or relied on by parties other than the AER. EMCa refers ERA to this report through references by AER and by Ausgrid in the Ausgrid determination documentation, which can be viewed at AER's website. EMCa does not rely on this report in its advice to ERA, noting that it was one of two reports relied on by the AER in its Ausgrid decision and that it does not contain information specific to WA.

[8] See, for example, Ausgrid's Revised Proposal attachment 6.01 (January 2019) Table 15, read in conjunction with AER's Final Decision, p.34

[9] IR EMCa042

[10] Based on ATCO response to IR EMCa042

[11] ATCO refers to the amount not accepted by ERA as $27.6, and which differs from the ERA figure by $2m due to a project-based component.

[12] 'Qualifying capex' is ATCO's term for that component of its capex to which it applies a capitalised overhead.

has determined for its regulatory submission by back-casting its current approach to accounting for direct labour overheads, back to the period 2015 to 2017, should be included in the capitalised amount.

2.3.2 Our assessment of ATCO's new information

50. ATCO has asserted that EMCa misrepresented the information provided in our review of the $76.0m of overheads that it presented in its Initial Plan. ATCO reiterates that $19.2m of this was direct labour and that this overstates the 'overhead' amount. We have revisited the material that ATCO provided in response to IR EMCa042, including ATCO's subsequent emails. We consider that we have correctly understood the situation, which we describe below.

51. As ATCO describes in its Revised Plan, it undertook a review of its overheads capitalisation policy in late 2014 and applied a new policy from 2015.[13] In its 2014 assessment ATCO refers to having found a '*significant under-allocation of direct labour costs to capex*' and, referring to application of its new policy from 2015, states that '(t)*he consequence of including direct labour in the overhead capitalisation process was an increase in the capitalised overhead percentage compared to the percentage adopted in the ERA's AA4 Final Decision*.'[14]

52. From January 2018, ATCO implemented '*a new timesheet system*' and used the information collected from 2018 to back-cast a 'direct labour' overhead amount for 2015 to 2017. [15] ATCO proposes that this amount should be capitalised as conforming AA4 capex. Relative to the basis on which ATCO's AA4 allowance was determined, this would result in $19.2m re-allocated from opex (where it was accounted for when ATCO submitted its AA4 Access Arrangement) to capex. ATCO argues that this amount of $19.2m should be removed from capex overheads and added directly to the qualifying capex, as occurred when it commenced its timesheet process in 2018.

53. We do not accept that ATCO's back-cast assessment of a $19.2m direct labour cost should be added to the qualifying AA4 capex. We consider that the regulatory capitalisation policy applied to a forecast allowance and to the actual expenditure incurred after the allowance is determined, should be on the same basis and should apply the same regulatory accounting policy, particularly in regard to capitalisation. While we understand the initiative that ATCO has taken to better account for personnel time, we maintain the view that the labour costs that ATCO now seeks to capitalise into its RAB (therefore, effectively, for recovery in AA5 and beyond) were already recovered through its AA4 tariffs through inclusion as part of ATCO's AA4 forecast opex allowance.

54. For the same reasons, we also consider that ATCO's attribution of 'direct labour' to conforming capex in 2018 and 2019 should not be accepted, regardless that this resulted from time that personnel booked to capex once ATCO introduced time-sheeting in 2018. We have estimated this amount as $12.9m, by applying the average percentage of such costs that ATCO applied in its back-cast estimate for

[13] ATCO Revised Plan, pages 43 and 44

[14] Ibid, page 44

[15] Ibid, page 46

2015 to 2017, after first deducting ATCO's stated 'true overheads' for those years, and noting that ATCO used its 2018 direct labour costs as the basis for back-casting in the first place.

55. As we show in the table below, this brings the total amount of direct labour which we consider does not meet the capex criteria to $32.1m.[16]

56. We consider that it is reasonable to accept ATCO's adjusted overhead capitalisation of $50.7m, which ATCO has calculated on a basis that is consistent with the ERA's AA4 determination.

57. The implication for both adjustments is included in *Section 3 – Assessment of New Information on AA4 Capex.*

Table 3: Capitalised overheads and ATCO adjustment ($m, 31 Dec 2019)

$m, real 2019	2014	2015	2016	2017	2018	2019	Total
Overhead - direct labour (ATCO back-cast)	0.0	5.8	6.6	6.7			19.2
Overhead - direct labour (implied)					6.7	6.2	12.9
Overhead - direct labour	**0.0**	**5.8**	**6.6**	**6.7**	**6.7**	**6.2**	**32.1**
overhead - true overhead	5.9	9.8	10.3	9.9	12.4	11.5	59.7
Overheads adjustment	-1.2	-1.0	-1.5	-1.0	-2.6	-1.7	-9.0
ATCO revised AA4 capitalised overhead	**4.7**	**8.8**	**8.8**	**8.9**	**9.8**	**9.8**	**50.7**

Source: EMCa analysis

16 This amount would apply in the absence of any other adjustments to AA4 capex. In section 3, we reduce this adjustment to avoid double-counting it to the extent of project / program based adjustment of AA4 capex

3 Assessment of new information on AA4 capex

3.1 Introduction

58. In this section we consider the new information provided by ATCO to justify its proposed AA4 conforming capex. We have focussed on those aspects that the ERA did not allow (partially or in full) in its Draft Decision, and any changes to AA4 capex that ATCO has introduced in its Revised Plan.

59. The results of our review and our overall assessment of whether this capex complies with the capex criteria for the purposes of determining the level of conforming capex under the NGR are set out below.

60. In this section we present our assessments from a 'projects' perspective, by expenditure category. ATCO provided further information on AA4 overhead capitalisation amounts, which we assessed in the previous section. Our summary of the implications for AA4 at the end of this section 3 combines the implications of our project-based assessment with our assessment of ATCO's proposed capitalised overheads.

3.2 ERA Draft Decision and ATCO's Revised Plan

61. In its Initial Plan, ATCO proposed $496.0m of AA4 conforming capex, and which was $7.5m more than the capex allowance approved in the ERA's Final Decision for AA4 of $488.5m (exclusive of equity raising costs).

62. In its Draft Decision, the ERA accepted that $421.5m (inclusive of equity raising costs) of the capital expenditure incurred in AA4 was conforming under the NGR.

The ERA did not accept $50.0m[17] associated with network and non-network expenditure, or a further $25.6m for overheads capitalisation.

63. The primary reasons provided by the ERA in its Draft Decision for its adjustments were that ATCO did not provide satisfactory justification for significant components of its proposed expenditure. Without such justification, the ERA made adjustments to the level of AA4 capex it considered conformed under the NGR based on the information ATCO had provided at that time.

64. In its Revised Plan, ATCO has reduced its proposed conforming capex for AA4 to $483.9m,[18] being $63.5m above the Draft Decision and $4.7m lower than the capex allowance for AA4. The movements in proposed AA4 capex are shown in the table below.

Table 4: Summary of changes to the proposed AA4 capex ($m, 31 Dec 2019)

Capex category	AA4 capex allowance	Initial Plan	ERA Draft Decision	Revised Plan
Sustaining	228.4	236.2	194.7	228.6
Growth	187.0	187.4	184.7	183.0
IT	28.9	30.2	28.9	29.8
Structures and Equipment	44.2	42.1	37.7	42.5
Overhead capitalisation adjustment			-25.6	
Sub-total	**488.5**	**496.0**	**420.4**	**483.9**
Equity raising	1.1	1.1	1.1	1.0
Total	**489.6**	**497.1**	**421.5**	**484.9**

Source: ATCO Revised Plan, 05.100 AA4 Capex Model_DDR_4.0_submitted 12 June 2019 CONFIDENTIAL, CAPEX_AA4 (net). Values may not add due to rounding

65. As noted in its Revised Plan, ATCO has:

- rejected the majority of the ERA's findings described its Draft Decision and associated adjustments;
- re-estimated the capex it expects to incur during AA4;
- included reductions to the Blue Flame kitchen and Caversham security of supply projects; and
- made changes to its overhead capitalisation, including proposing to allocate $9.0m to the speculative capex account.

66. As a result of the last of these changes, ATCO has re-presented its capex model showing, for each project or category, the cost with capitalised overheads as it originally proposed and the cost with a proportion of the 'disallowed' $9.0m of capitalise overheads removed. In the category-based assessments which follow, we present both costs, to enable tracking of project cost changes due to removing

[17] The references to the adjustment made by the ERA in its Draft Decision varied between $50.0m in aggregated for the category adjustments, and $49.9m when the adjustments made to the individual categories are totalled. We understand the differences are due to rounding error. We have used $50.0m in our assessment.

[18] The total capex reported may vary due to rounding differences. ATCOs capex model has a total capex of $484.9m whereas the Revised Plan refers to $484.8m (including Equity raising costs)

ATCO's 'disallowed' component of capitalised overheads, from other project or category cost changes.

3.3 Network sustaining capex

3.3.1 Background

67. ATCO proposed AA4 expenditure of $236.2m for network sustaining capex in its Initial Plan, compared with the capital allowance of $228.4m. In its Draft Decision the ERA determined that $41.5m of the proposed capex does not satisfy NGR 79, reducing the conforming AA4 capex to $194.7m. The primary reason for the adjustment provided by the ERA in its Draft Decision was that ATCO had not adequately justified the proposed AA4 capex as required by the NGR capex criteria.

3.3.2 Our assessment of new information

68. ATCO has updated its estimate of AA4 network sustaining capex to $228.6m, a reduction of $7.6m from its Initial Plan and $0.2m above the AA4 capex allowance.

69. ATCO does not describe specific changes to the network growth capex category. We note that ATCO has adjusted the estimated capex in all five years of the AA4 period, affecting both Asset replacement and Asset performance and safety capex. According to ATCO's Capex Model, the largest adjustments have been made to the 2018 and 2019 capex amounts. The largest reductions have been made to:

- AAP4051 EOL Replacement - PVC Mains & Services; and
- AAP4056 EOL Replacement - Unprotected Metallic Mains.

Unprotected metallic mains

70. In the Draft Decision, the ERA rejected $16.7m of capex being the value above the capex allowance of $49.3m. In its Revised Plan, ATCO has reduced its estimate of capex for AA4 from $66.0m to [redacted], with capitalised overheads as it originally proposed.[19] ATCO has now proposed [redacted] with removal of a proportion of its proposed $9.0m overheads reduction.[20]

71. ATCO has rejected the Draft Decision claiming that all of the actual capex meets the capex criteria. In its Revised Plan, ATCO has provided additional information,[21] including a summary of business cases and Capital Expenditure Approval Requests (CEAR) [22] that account for the estimated capex of [redacted].

[19] adjusted to accommodate 2018 actual data and other amendments

[20] ATCO, 05.100 AA4 Capex Model_DDR_4.0_submitted 12 June 2019 CONFIDENTIAL, CAPEX_AA4 (net). Project AAP4056 EOL Replacement - Unprotected Metallic Mains. ATCO refers to this figure as '*Capex attracting overheads after deducting disallowed amount*'.

[21] ATCO, 05.102 AA4 - Compliance Summary - Metallic Mains - CONFIDENTIAL

[22] ATCO, 05.107 AA4 – Compliance Summaries, G.001 through G.012. A summary of included expenditure is provided as G.013

72. In its Revised Plan, ATCO provides two reasons for the AA4 expenditure exceeding the capex allowance:[23]

- an increase in the volume of replacements delivered of approximately 10%, including the higher than forecast replacement in years 2017 and 2018 due to projects being brought forward; and
- the increased unit cost of delivery relative to the AA4 forecasts of approximately 14%.

73. During AA4, ATCO will replace a total of [redacted] of metallic mains, which is [redacted] higher than the length included in the AA4 forecast. ATCO states that the increase is primarily the result of '... *the identification of significant opportunities for more efficient delivery (e.g. bringing forward and bundling projects that were in the same suburb), and the inclusion of meterage that was unforeseen (and unforeseeable) at the time of preparation of the AA4 forecasts*.'[24] ATCO advises that 6.9km of the increase accumulated from efficiency-driven work, with the balance (7km) resulting from inaccuracies within historical records and from changes in ground and road conditions.

74. ATCO has explained that the unit cost assumptions relied upon at the time of the AA4 submission were derived from the historical volumes and capex. However, since that time, the contractual arrangements and composition of the projects (amongst other factors) has changed markedly. More recently in 2019, a higher number of smaller projects (replacement of small segments) has resulted in an increase to the unit costs.

75. Based on the new information provided by ATCO, we are satisfied that ATCO has now addressed the concerns raised in our Initial Report. Accordingly, we consider that the revised expenditure complies with the capex criteria.

Odd size unprotected steel

76. In the Draft Decision, the ERA rejected $5.4m capex being the value above the capex allowance of [redacted]. In its Revised Plan, ATCO has updated its estimate of capex for AA4 from $15.2m to [redacted], with capitalised overheads as it originally proposed. ATCO has now proposed [redacted] with removal of a proportion of its proposed $9.0m overheads reduction.[25]

77. ATCO has rejected the Draft Decision, claiming that all of the actual capex meets the capex criteria.

78. In its Revised Plan, ATCO has now provided additional information,[26] including a summary of business cases and CEARs[27] that account for the estimated capex of [redacted] and that demonstrates adherence to its governance process. ATCO explains that the capex above the AA4 allowance is due to an increase in the cost

[23] ATCO, Revised Plan, p.25

[24] ATCO, Revised Plan, p.26

[25] ATCO, 05.100 AA4 Capex Model_DDR_4.0_submitted 12 June 2019 CONFIDENTIAL, CAPEX_AA4 (net). Project AAP4048 EOL Replacement – Odd Size Unprotected Steel. ATCO refers to this figure as '*Capex attracting overheads after deducting disallowed amount*'.

[26] ATCO, 05.103 AA4 - Compliance Summary - Odd Size Steel - CONFIDENTIAL

[27] ATCO, 05.107 AA4 – Compliance Summaries, H.001 through H.008

of delivering the program, primarily due to the increasing proportions of service replacements incurred during AA4. This increased the unit cost of Odd Size Steel (OSS) mains replacements above the level used as the basis of the AA4 cost estimate, which at the time was based on unit rates for OSS replacement projects in East Perth, Kings Park, Tuart Hill and Maylands. The projects used for the basis of the unit cost estimate turned out to be unrepresentatively simple and hence considerably less expensive to implement.

79. We have reviewed ATCO's claims and consider them to be reasonable and would be likely to explain the material increase to the historical unit cost.

80. Based on the new information provided by ATCO, we are satisfied that ATCO has now addressed the concerns raised in our Initial Report. Accordingly, we consider that the revised expenditure complies with the capex criteria.

PVC mains & services

81. In the Draft Decision, the ERA rejected $12.2m being the value above the capex allowance of $12.4m, which was for the replacement of [redacted] of PVC mains and services. In its Revised Plan, ATCO has reduced its estimate of expenditure for AA4 from [redacted] to $20.5m, with capitalised overheads as it originally proposed. ATCO has now proposed $20.0m with removal of a proportion of its proposed $9.0m overheads reduction.[28]

82. ATCO explains that the increase in expenditure above the AA4 allowance is the result of '*a significant increase in the volume of replacements delivered relative to forecast, due to the emergence of a higher rate of leaks in some PVC assets and the opportunities for more efficient delivery identified during AA4*.'[29]

83. The increased replacement rates above the AA4 forecast levels reflect a risk assessment by ATCO of High or Intermediate. As noted in our Initial Report, ATCO has based its assessment of risk for its PVC assets on its Safety Case which recommended that PVC network replacement should be targeted in high density community use areas. For the proposed AA4 capex, our primary concern was that ATCO had not provided sufficient justification for the higher expenditure incurred in this program above the ERA allowance.

84. ATCO has explained that the pipeline assets that are addressed by this project in AA4 are prioritised based on the risk and poorest condition mains which have condition scores lower than the network average.

85. ATCO states[30] that the increase in volumes estimated to be completed in AA4 is driven by:

- ATCO's acquisition of new information about the deteriorating conditions and risks associated with parts of its PVC network through updated leak data and insights from the Mains Replacement Prioritisation (MRP) tool. ATCO reported a 43% increase in the mains leak rate in 2016 compared to the previous year;

[28] ATCO, 05.100 AA4 Capex Model_DDR_4.0_submitted 12 June 2019 CONFIDENTIAL, CAPEX_AA4 (net). Project AAP4051 EOL Replacement – PVC Mains & Services. ATCO refers to this figure as '*Capex attracting overheads after deducting disallowed amount*'.

[29] ATCO, Revised Plan, p.30

[30] ATCO, Revised Plan, p.31

Considering this new information, ATCO increased replacement rates above the approved AA4 forecast. ATCO targeted sections of the PVC associated with High risk and suburbs with elevated leak rates to maintain the safety and integrity of the gas distribution system; and

- identification of opportunities to combine delivery with other replacement projects to achieve higher cost efficiency and better outcomes for stakeholders.

86. Individual projects were implemented in accordance with specific CEARs. ATCO has provided details of its business cases and CEARs for the proposed capex, which demonstrate how it has adhered to its governance process.[31, 32]

87. Based on the new information provided by ATCO, we are satisfied that ATCO has now addressed the concerns raised in our Initial Report. Accordingly, we consider that the revised expenditure complies with the capex criteria.

Multi-storey buildings

88. In its Draft Decision, the ERA rejected $6.3m of ATCO's estimate of [redacted] due to inadequate justification against the capex criteria. In its Revised Plan, ATCO has retained its estimate of expenditure for AA4 at [redacted], with capitalised overheads as it originally proposed. ATCO has now proposed [redacted] with removal of a proportion of its proposed $9.0m overheads reduction.[33]

89. The information provided by ATCO at the time of our Initial Report included justification for the multi-storey buildings project only. Based on additional information received from ATCO at that time, it appeared that ATCO had completed the original program, and the replacement program may have been subsequently extended. We considered that ATCO had not demonstrated that the decision to extend the scope of this program satisfied the capex criteria.

90. ATCO has explained in its Revised Plan that its risk-based approach to prioritise the upgrade of infrastructure throughout all buildings included two separate programs:

- multi-storey buildings risk reduction: infrastructure within multi-storey buildings greater than or equal to 3 storeys [redacted];[34] and
- multi-occupancy buildings risk reduction: infrastructure within multi-occupancy buildings (2 storey) ([redacted].[35]

91. ATCO identified the investment need through a Formal Safety Assessment (FSA) required as part of its Safety Case. A risk-based approach has been used to prioritise the upgrade of infrastructure throughout all the buildings identified with unacceptable risks, in consultation with EnergySafety.

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[31] ATCO, 05.101 AA4 - Compliance Summary - PVC Mains replacement - CONFIDENTIAL

[32] ATCO, 05.107 AA4 – Compliance Summaries, I.001 through I.008

[33] ATCO, 05.100 AA4 Capex Model_DDR_4.0_submitted 12 June 2019 CONFIDENTIAL, CAPEX_AA4 (net). Project AAP4090 Multistorey Risk Reduction – Multistorey Buildings (≥3 stories) and AAP4091 Multistorey Risk Reduction – Multi Occupancy Buildings. ATCO refers to this figure as '*Capex attracting overheads after deducting disallowed amount*'.

[34] $7.3m with overheads removed

[35] $6.2m with overheads removed

92. ATCO outlined the steps taken to assess, plan and deliver the identified work efficiently, including using a strategic contracting approach and application of a thorough project management methodology.

93. Based on the new information provided by ATCO,[36] we are satisfied that ATCO has now addressed the concerns raised in our Initial Report. Accordingly, we consider that the revised expenditure complies with the capex criteria.

Security of supply – Caversham

94. In its Revised Plan, ATCO accepted the ERA's Draft Decision and has withdrawn the capex associated with this project from its conforming capex proposal for the AA4 period.

3.4 Network growth capex

3.4.1 Background

95. In its Initial Plan, ATCO proposed AA4 growth capex of $187.4m, which was $0.4m higher than the ERA's allowance for AA4 of $187.0m. In its Draft Decision, the ERA rejected $2.8m of expenditure that did not satisfy the capex criteria comprising:

- [redacted] relating to the sub-meter to master meter program; and
- [redacted] relating to the Murdoch Drive reinforcement project.

3.4.2 Our assessment of new information

96. In its Revised Plan, ATCO has updated its estimate of AA4 network growth capex to $182.9m, a reduction of $4.5m from its Initial Plan, which is $3.2m lower than the Draft Decision.

97. ATCO does not identify the specific changes it made to the network growth capex category in its Revised Plan. However, we note from its Capex Model that ATCO has made adjustments to estimated capex in each of the five years of the AA4 period, affecting both customer-initiated and demand-related project capex. The largest adjustment is a net reduction of $2.1m in its estimate for 2019 associated with customer-initiated projects, and which takes into account an additional $1.5m of capital contributions in 2019 only.[37] ATCO does not provide an explanation for the inclusion of this amount, which is presented separately to the treatment of capital contributions for the projects and variable volume part of its capex forecast.

Sub-meter to master meters

98. In its Revised Plan, ATCO has reduced its estimated AA4 capex associated with this project to [redacted] net of customer contributions, a $0.6m reduction from the [redacted] in its Initial Plan. ATCO has provided a detailed breakdown of the cost of sub-meter to master meter projects it has undertaken in AA4, after taking account

[36] ATCO Attachments 05.112 through 05.115 CONFIDENTIAL

[37] ATCO, 05.100 AA4 Capex Model_DDR_4.0_submitted 12 June 2019 CONFIDENTIAL, CAPEX_AA4 (net), rows 691-692 and rows 753-754, referred to as 'Less: 2019 capital contributions'

of total capital contributions of $0.2m.[38] However, ATCO did not provide the rationale for the reduction in its proposed conforming capex.

99. As stated in our Initial Report, any investment in the sub-meter to master meter program should be separately justified based on a positive NPV analysis. ATCO states that this program is justified under the incremental revenue test, such that each site is subject to a financial risk assessment, and any negative NPV is offset by a customer contribution before the project proceeds.

100. We consider that the new information provided by ATCO[39] leads us to conclude that it applies the process as stated and has sought capital contributions to meet the requirements of the incremental revenue test. We consider that the revised capex estimate for this project now complies with the capex criteria.

Reinforcement – Murdoch Drive

101. In its Draft Decision, the ERA did not allow [redacted] which ATCO incurred above the approved business case amount of [redacted] for this project. In its Revised Plan, ATCO contends that the [redacted] of capex rejected by the ERA meets the capex criteria, providing new information to support its claim.

102. ATCO has explained that:

- it incurred additional costs beyond its reasonable control resulting from changes to the Main Roads WA project[40] that occurred after the business case was approved; and
- the additional costs associated with an alternative pipeline installation method (due to the change in pipeline route) would be incurred by a prudent service provider acting efficiently, in accordance with accepted good industry practice.

103. ATCO states[41] that the actual expenditure of the project was [redacted],[42] which is $0.2m higher than the revised CEAR amount[43] and within reasonable limits that would not require ATCO to seek additional approvals under its governance process.

104. In light of the new information provided by ATCO,[44] we consider that ATCO has sufficiently demonstrated that the estimated capex associated with this project is consistent with accepted good industry practice and now complies with the capex criteria.

[38] ATCO, Revised Plan, Table 5.16, p. 36

[39] ATCO, Attachment 05.105 AA4 - Compliance Summary – Sub Meter to Master Meter program CONFIDENTIAL. ATCO, 05.108 AA4 – Compliance Summaries – Supporting Documents CONFIDENTIAL, L.001, L.012 through L.017

[40] Relating to the cancellation of the 'Roe 8' project

[41] ATCO, Revised Plan, p.35

[42] including overheads

[43] after conversion from nominal to real

[44] ATCO, Attachments 05.110 and 05.111 CONFIDENTIAL

3.5 Structures and equipment capex

3.5.1 Background

105. In its Initial Plan, ATCO proposed AA4 expenditure for structures and equipment of $42.1m, being $2.1m lower than the capex allowance of $44.2m. Although the $2.1m variance between ATCO's estimated expenditure and the ERA's AA4 Final Decision was relatively minor, the ERA notes in its AA5 Draft Decision the relatively large capex variations in two projects: the Jandakot redevelopment and training facility, and the Clean Energy Innovation Hub.

106. The ERA rejected $4.4m capex associated with these two projects on the basis that ATCO had not justified that the capex met the capex criteria.

3.5.2 Our assessment of new information

107. In its Revised Plan, ATCO has updated its estimate of AA4 Structures and equipment capex to $42.5m, an increase of $0.4m from its Initial Plan and $4.8m higher than the Draft Decision.

Clean Energy Innovation Hub

108. In its Revised Plan, ATCO has increased the estimated expenditure to be incurred for this project in AA4 by $0.5m to [redacted] net of ARENA grant funding of [redacted].[45] The project is intended to enable research into the commercial application of cleaner energy in micro-grid systems in the near term as well as incorporating the production, storage and use of hydrogen in the energy mix. The increase in expenditure would allow ATCO to expand the scope of the project.

109. In its documentation,[46] ATCO provides its business case approval history that leads to approval of project capex of [redacted], consistent with its Revised Plan. However, ATCO also states that it has incurred additional capex of $0.2m on this project bringing the total cost to [redacted], or [redacted] net of the ARENA capital contribution.[47] The additional capex is not evident in the AA4 Capex Model[48] provided to us for our review, and therefore we have based our assessment on the estimated project gross capex of [redacted] in our assessment.

110. ATCO claims that the benefits of the project provide a positive NPV of $0.9m supplemented by a range of non-quantifiable benefits associated with future gas network service provision over a 25-year review period. However, the NPV model that has been provided to the ERA[49] removes the initial project [redacted] capex (net of the [redacted] ARENA capital contribution) associated with this project, or any

[45] ATCO, Revised Plan, pp.39 - 40

[46] ATCO, 05.106 AA4 - Compliance Summary - Clean Energy Innovation Hub CEIH - CONFIDENTIAL

[47] ATCO, 05.106 AA4 – Compliance summary – Clean Energy Innovation Hub CEIH - CONFIDENTIAL, pp.1 - 2

[48] ATCO, 05.100 AA4 Capex Model_DDR_4.0_submitted 12 June 2019 CONFIDENTIAL, CAPEX_AA4 (net)

[49] ATCO, 05.108 AA4 – Compliance Summaries – Supporting Documents CONFIDENTIAL, N009. CEIH NPV Option 2 - En Sav - 25yr

replacement capex over the assessment period, such that only the changes in annual operating costs are considered in the NPV calculation.

111. For the changes in operating costs, ATCO has included opex reductions from its energy costs associated with Solar of over [redacted] per year[50] and hydrogen of [redacted] per year. ATCO has included an initial project advisory cost and annual maintenance costs in its analysis. The operating costs savings are likely to be reasonable estimates, albeit ATCO has selected benefits at the upper end of the identified range. Whilst ATCO's sensitivity analysis of these inputs in its NPV model indicates a reasonable payback period, our primary concern is the exclusion of any capital expenditure from the analysis. We note that in ATCO's original business case the NPV was negative when the capex was included (based on an earlier estimate).

112. ATCO proposes that this project is included as conforming capex under NGR 79(1)(a) and NGR 79(1)(b). We consider that the project has been undertaken primarily to benefit ATCO, and whilst there may be knowledge gained by ATCO as a result of investing in this demonstration project[51] for the benefit of gas consumers in the long-term, ATCO has not demonstrated that this project represents an efficient cost in gaining that knowledge or that the benefits are likely to materialise to justify the investment. Based on the provided cost benefit analysis, the long-term benefits to gas consumers do not currently outweigh the costs within a reasonable assessment period.

113. Where the savings in operating costs arising from this project are material, ATCO should have sufficient incentive for this project to be self-funded rather than the amount (net of ARENA funding) being funded from regulated gas customers. Similarly, where this project may provide a benefit to ATCO's unregulated business activities, the associated expenditure should not be recovered from regulated gas customers. Accordingly, we consider that the estimated capex of [redacted] (net of contributions by ARENA) for the Clean Energy Innovation Hub project does not meet the capex criteria as conforming capex.

Jandakot redevelopment and training facility

114. In its Revised Plan, ATCO has increased the estimated expenditure to be incurred for this project in AA4 by [redacted] to $[redacted], primarily driven by additional expenditure items in 2019 due to unexpected project costs.

115. ATCO has provided additional information[52] in response to the concerns previously raised by the ERA, including evidence of the governance and controls over the expenditure for this project, and the cost increases incurred by this project.

116. We have reviewed the new information provided by ATCO,[53] and consider that:

50 Being a reduction from an annual charge of [redacted]

51 ATCO, 05.108 AA4 – Compliance Summaries – Supporting Documents CONFIDENTIAL, N003. Business Case – CEIH – 05.2018. ATCO also refer to the CEIH project as an R&D project

52 ATCO, 05.104 AA4 – Compliance Summary – Jandakot Redevelopment Phase 2

53 ATCO, 05.108 AA4 – Compliance Summaries – Supporting Documents CONFIDENTIAL, M001 through M039

- ATCO has undertaken this project consistent with its stated expenditure planning and governance processes;
- ATCO has demonstrated: (i) a substantiated identified need, (ii) clearly specified scope and design; and (iii) the application of robust project management and delivery methods;
- approval was based on an independent cost estimate and it appears to be reasonable;
- actual expenditure was within a reasonable tolerance of the approved level of capex, given the complexities involved in this project;
- the overspend was contributed to by a number of site-specific factors not anticipated in the design scope to manage risks to groundwater for the redevelopment; and
- ATCO has taken reasonable measures to manage the project delivery and minimise the final cost associated with the project.

117. Based on the new information provided by ATCO, we are satisfied that the revised expenditure of [redacted] for the Jandakot redevelopment project complies with the capex criteria.

Blue flame kitchen

118. In its Revised Plan, ATCO accepted the ERA's Draft Decision and has withdrawn the $0.1m (rounded) capex associated with this project from AA4 conforming capex. ATCO has added the capex associated with the Blue Flame Kitchen to the speculative capital expenditure account, in accordance with Section 10 of ATCO's Access Arrangement and will be dealt with in accordance with NGR 84.[54] We have not been asked to review the speculative capital expenditure account.

3.6 IT capex

3.6.1 Background

119. In its Initial Plan, ATCO proposed inclusion of IT capex of $30.2m in AA4 as conforming capex, being $1.3m higher than the capex allowance of $28.9m. In its Draft Decision, the ERA rejected $1.3m of the proposed capex on the basis that two projects were identified as being AA5 projects (Asset Management Optimisation and GIS upgrade).

3.6.2 Our assessment of new information

120. In its Revised Plan, ATCO has updated its estimate of AA4 IT capex to $29.8m, a reduction of $0.4m from its Initial Plan and $0.9m above the Draft Decision, as shown in Table 4.

121. However, we note that ATCO states elsewhere in its Revised Plan[55] that the estimated capex of $30.2m (as included in its Initial Plan) is conforming IT capex.

[54] ATCO, Revised Plan, p.24

[55] ATCO, Revised Plan, p.41

This is inconsistent with the total of $29.8m included in its Table 5.19.[56] For the purposes of our assessment, we have used the estimated AA4 capex of $29.8m.

Error identified by ATCO

122. In its Revised Plan, ATCO states that it had '*incorrectly submitted* [redacted] *million for the Asset Management project. The* [redacted] *million should have been submitted for the Telephony Upgrade project as part of the Application Renewal Program as noted in the Information Technology Asset Strategy, and therefore is appropriately included as IT capex*.'[57]

123. ATCO submits that the revised project scope to replace the existing Geomant telephony system was correctly categorised as IT capex and meets the requirements of the capex criteria. Accordingly, ATCO considers that there is no longer a perceived overlap with projects planned for AA5.

124. We accept ATCO's claim of an error in its Initial Plan and agree that on the basis of the new information provided, the estimated capex should have been associated with the Telephony upgrade project (with identifier 'New-16') and not the Asset Management Optimisation project (with identified 'New-10').[58] We have observed this correction being made in the Capex Model submitted by ATCO.

125. We did not identify any issues with the proposed Telephony Upgrade/Replacement project in our Initial Report.

GIS upgrade

126. In its Revised Plan, ATCO has clarified that the estimated expenditure of [redacted][59] is associated with support of the planning and scoping phase of the GIS upgrade project, including for Esri Australia to prepare a Location Strategy,[60] providing a roadmap for transitioning from its current state. ATCO advises[61] that it has secured extended support from Esri Australia to mitigate the risk of application failure until the implementation phase of the project is complete in 2020, as part of AA5 expenditure.

127. Based on the new information provided by ATCO, we consider that it is reasonable to incur expenditure for the planning and scoping phase prior to commencement of a large IT project. We note that the Capex Model[62] includes estimated capex of [redacted] in 2019, and no [redacted] as stated in the Revised Plan.

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[56] ATCO, Revised Plan, Table 5.19, p.42

[57] ATCO, Revised Plan, p.41

[58] ATCO, 05.100 AA4 Capex Model_DDR_4.0_submitted 12 June 2019 CONFIDENTIAL, CAPEX_AA4 (net), rows 593, 596

[59] ATCO, Revised Plan, p.42

[60] ATCO, 10.106 ESRI Location Strategy Review - Report CONFIDENTIAL

[61] ATCO, Revised Plan, p.42

[62] ATCO, 05.100 AA4 Capex Model_DDR_4.0_submitted 12 June 2019 CONFIDENTIAL, CAPEX_AA4 (net), row 595

128. We are satisfied that the revised expenditure of [redacted] for the GIS upgrade project complies with the capex criteria.

Adjustments to IT program

129. From our review of the AA4 capex program[63] we observe a large number of changes to the IT program, primarily in 2018 and 2019, that has the effect of reducing the estimated capex from $30.2 to $29.8m, including:

- changes in estimated cost for the remainder of AA4;
- removal of some projects (e.g. Digital Portals and Smart Forms, and Network Digitisation & Intelligence Program);
- new projects added (e.g. Identify & Access Management, and Human Capital Management); and
- small variances to historical expenditure.

130. Whilst we have not reviewed each line item in the Revised Plan, we consider that the program requires sufficient flexibility to respond to the highest value projects for the business. Consistent with the findings in our Initial Report, ATCO has demonstrated how its approval and delivery of IT projects aligns with its investment governance framework. We consider that the revised expenditure for the IT capex program complies with the capex criteria.

3.7 Overheads capitalisation in AA4 capex

131. As we describe in section 2.3, ATCO's proposed AA4 capex includes capitalisation of an overhead amount for 'direct labour' that was treated as 'opex' for the purpose of establishing ATCO's AA4 regulated revenue. For the reasons described in that section, we consider that the 'direct labour' component of ATCO's proposed AA4 capex, which totals $32.1 million, should not be accepted as 'conforming capex' (in the absence of other adjustments). After making the project adjustment referred to below, the net effect of the capitalised overheads adjustment is $31.9m

3.8 Summary of our findings and their implications

3.8.1 Findings on AA4 capex projects

132. ATCO has re-estimated the AA4 capex, based on 2018 actuals and a revised estimate for 2019. This has reduced the proposed AA4 capex by $12.1m (excluding equity raising costs) to $483.9m.

133. In regard to its proposed projects and related expenditure, ATCO has provided new information that explains the composition of the AA4 capex programs, that demonstrates how its actual/estimated AA4 capex projects align with its investment governance requirements in place at that time and includes variance analysis against the ERA Final Decision for AA4 and its capex approvals. We consider that

[63] ATCO, 05.100 AA4 Capex Model_DDR_4.0_submitted 12 June 2019 CONFIDENTIAL, CAPEX_AA4 (net)

ATCO has not addressed the concerns raised by the ERA regarding the proposed Clean Energy Innovation Hub project and accordingly the estimated capex of [redacted] (net of ARENA funding) associated with this project does not meet the capex criteria as conforming capex under the NGR.

3.8.2 Implications

134. On balance, we consider that $450.0m (excluding $1.0m equity raising costs) of ATCO's proposed AA4 capex is conforming capex. This is comprised of:

- ATCO's proposed amount of $483.9m (excluding $1.0m equity raising costs);
- less [redacted] proposed for the Clean Energy Innovation Hub project (net of ARENA funding); and
- less [redacted] proposed for ATCO's proposed inclusion of an amount for capitalisation as 'overheads – direct labour'.

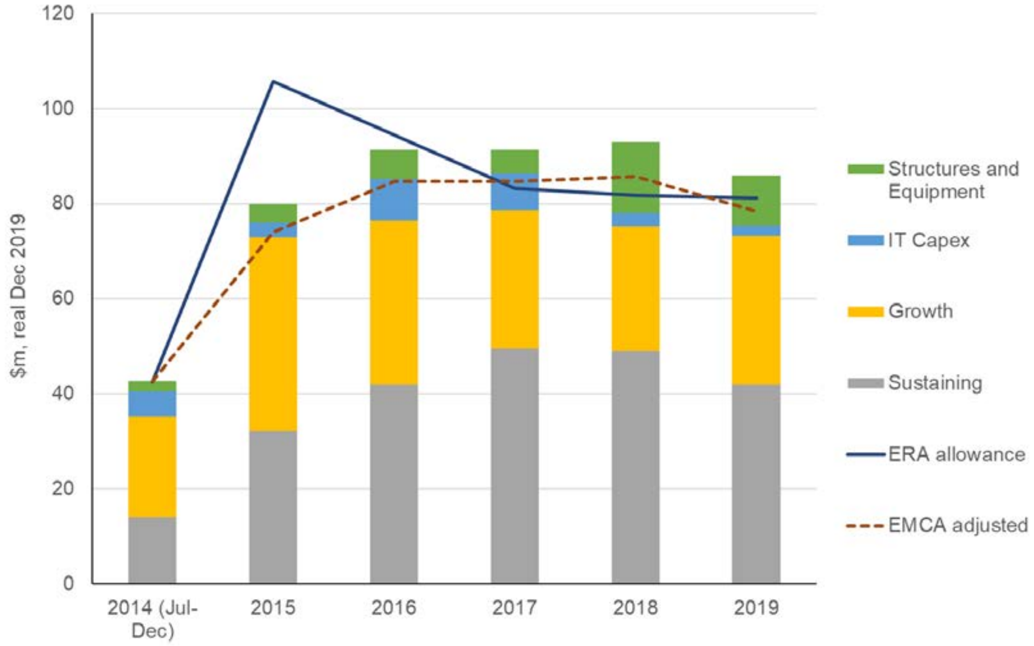
135. The annual and category breakdown of our adjusted AA4 capex is shown in the table and chart below.

Table 5: AA4 Summary Adjustment Table (excluding equity raising costs) ($m, 31 Dec 2019)

Category ($m, real Dec 2019)	2014 (Jul- Dec)	2015	2016	2017	2018	2019	Total 2014-19
Network sustaining	14.0	32.2	41.9	49.6	49.0	41.9	228.6
Network growth	21.2	40.7	34.5	29.0	26.3	31.3	183.0
IT	5.3	3.1	8.8	7.7	2.7	2.2	29.8
Structures and Equipment	2.1	3.9	6.1	5.0	14.9	10.5	42.5
ATCO Revised plan (excl. equity raising cost)	42.6	79.9	91.3	91.3	92.9	85.9	483.9
Less							
[redacted]							
[redacted] for overhead-direct labour (excl. amount already incl. in the project adjusment $0.18m)	*0.0*	*-5.8*	*-6.6*	*-6.7*	*-6.7*	*-6.0*	*-31.9*
Total adjusted	42.6	74.1	84.7	84.6	85.7	78.4	450.0
Total adjustment ($)	0.0	-5.8	-6.6	-6.7	-7.2	-7.5	-33.9
Total adjustment (%)	*0%*	*-7%*	*-7%*	*-7%*	*-8%*	*-9%*	*-7%*

Sources: ATCO Revised Plan Table 5.7 and EMCa analysis

Figure 1: ATCO Revised Plan 2020-24, ERA AA4 allowance and EMCa Adjusted



Source: ATCO Revised Plan Table 5.7 and EMCa analysis

4 Assessment of new information on AA5 capex

4.1 Introduction

136. In this section we consider the new information provided by ATCO to justify those aspects of its forecast AA5 capital expenditure that are within our scope of work.[64] We have focussed on those aspects that the ERA did not allow (partially or in full) in its Draft Decision and new forecast capex which has been introduced by ATCO in its Revised Plan.

137. The results of our review and our overall assessment of whether the forecast capex complies with the capex criteria for the purposes of determining the level of conforming capex under the NGR are set out below. In undertaking our project-based assessments in sections 4.3 to 4.6, we note that our acceptance (or otherwise) of associated capex excludes consideration of the effects of labour cost escalation, which has a global impact and which we take into our account in our implications assessment in section 4.7.

4.2 ERA Draft Decision and ATCO's Revised Plan

4.2.1 Background

138. In its Revised Plan, ATCO has submitted forecast AA5 capex of $437.0m, as shown in the table below.

[64] See section 4.2.1

Table 6: Summary of ATCO's revised AA5 capex ($m, 31 Dec 2019)

$real 31 December 2019	2020	2021	2022	2023	2024	Total
Network sustaining	58.3	44.2	48.0	41.4	39.8	231.6
Network growth	24.0	27.5	30.4	31.7	32.5	146.1
Information technology	7.4	8.7	6.9	5.1	7.8	35.9
Structure and equipment	6.1	5.9	3.2	4.1	4.2	23.5
Total	**95.7**	**86.3**	**88.4**	**82.2**	**84.3**	**437.0**

Sources: ATCO Revised Plan, Table 10.33

139. In Table 7, we show a comparison between ATCO's initial and revised AA5 capex forecast, excluding equity raising costs. ATCO proposed $509.3m capex in AA5 in its Initial Plan. The variance of -$72.3m to the Initial Plan is driven primarily by a re-forecast of (i) capex for security of supply projects, and (ii) reduced network growth capex.

140. The ERA did not accept ATCO's initial AA5 capex forecast and determined a revised forecast of $239.7m, a reduction of $269.6 (52.9%). The primary reason provided by the ERA in its Draft Decision for the reduction was that ATCO did not provide satisfactory justification for significant components of its proposed expenditure. Without such justification, the ERA made adjustments to the level of AA5 capex to reflect what it considered to satisfy the NGR capex criteria.

141. ATCO's revised AA5 capex forecast is $197.3m higher than the ERA's Draft Decision.

Table 7: ATCO's initial and revised forecast AA5 capex vs ERA's Draft Decision ($m, 31 Dec 2019)

$real 31 December 2019	Initial Plan (IP)	Revised Plan (RP)	ERA Draft Decision (DD)	Variance (RP vs IP)	Variance (RP vs DD)
Network sustaining	276.1	231.6	179.6	-44.5	52.0
Network growth	174.3	146.1	12.1	-28.2	134.0
Information technology	36.1	35.9	26.8	-0.2	9.1
Structures and equipment	22.8	23.5	21.2	0.7	2.3
Total	**509.3**	**437.0**	**239.7**	**-72.3**	**197.3**

Sources: ATCO Revised Plan, ERA Draft Decision

142. Within the Network growth category, Greenfield and brownfield growth capex and network reinforcement capex are not within our scope of assessment for this report.

4.2.2 Main points of difference

143. ATCO's revised capex forecasts in each AA5 capex category are higher than the ERA Draft Decision. The main reasons for the difference (not including changes to brownfield and greenfield capex) are:

- ATCO has retained the entire PVC mains replacement program capex ($18.7m higher than the Draft Decision); and
- ATCO has retained both PGP interconnection projects ($14.9m higher than the Draft Decision) and has added carry-over capex from AA4 totalling $11.7m.

4.3 Network sustaining capex

4.3.1 Background

144. ATCO proposed network sustaining AA5 capex of $276.1m in its Initial Plan. The ERA determined that $96.5m of the forecast capex does not satisfy NGR 79, reducing the forecast AA5 sustaining capex to $179.6m, as shown in the table below. ATCO's Revised Plan is $52m higher than the ERA's Draft Decision at $231.6m.

Table 8: ATCO's initial and revised network sustaining capex vs the Draft Decision ($m, 31 Dec 19)

Description	Initial Plan (IP)	Revised Plan (RP)	ERA Draft Decision (DD)	Variance (RP vs IP)	Variance (RP vs DD)
PVC replacement program	127.4	129.8	111.1	2.4	18.7
Meter replacement program	27.3	26.4	26.0	-0.9	0.4
End-of-life replacement program	33.6	29.2	30.2	-4.4	-1.0
Security of supply program	49.0	0.8	0.0	-48.2	0.8
SCADA projects	12.6	5.7	0.0	-6.9	5.7
PGP interconnection projects	13.5	14.9	0.0	1.4	14.9
Other network sustaining projects	12.7	13.1	12.3	0.4	0.8
Additional sustaining projects	0.0	11.7	0.0	11.7	11.7
Total	**276.1**	**231.6**	**179.6**	**-44.5**	**52.0**

Sources: EMCa Final Technical Report, Table 20; ATCO Revised Plan, Tables 10.2, 10.14

4.3.2 Our assessment of new information

PVC replacement program

145. In the Draft Decision, the ERA accepted that 277km of PVC mains identified for replacement at a forecast cost of $115.7m satisfied the capex criteria. However, it determined that ATCO had not adequately justified the case for replacing an additional 28km of PVC service connections to achieve 'program efficiencies' at a cost of $11.7m.[65]

146. In its Revised Plan,[66] ATCO has retained the initial scope of work, being replacement of 305km of PVC mains and service connections with PE mains, but at an increased cost of $129.8m. ATCO states that the $2.4m increase is to account for inflation and ATCO's proposed rate of labour cost escalation.

147. ATCO has provided additional and clarifying information in its response to address concerns we expressed in our Final Technical Report regarding the lack of justification for the 11km of extensions to allow safe 'tie-in' points and 17km of additional 'lower-risk' sections of PVC.

148. With respect to the additional tie-in points, ATCO states[67] that it is '…*prudent to extend the mains replacement a short distance to reach an efficient tie-in location*

[65] An adjustment of $4.6m was made by the ERA to account for its determination of an alternative labour escalation rate.

[66] ATCO, Revised Plan, p.144

[67] ATCO, Revised Plan, p.145

while addressing potential future leak points under the sealed surfaces.' ATCO has also confirmed that the quantum of the extension was based on lessons learned from recent experience, where '…*unforeseeable meterage accounted for 4-5% of total delivered replacement length.'* ATCO's proposed 11km tie-in extensions is 4% of the proposed 277km of high-risk mains replacement.

149. With respect to the lower risk sections to be replaced for efficiency benefits, ATCO has provided the following clarifying information in its Revised Plan:

- a diagram (Figure 10.1) illustrating that the high risk mains to be replaced are separated by sections of lower risk PVC, which it advises range in length from 20m to 500m; and
- a description of the pros and cons of the option of not replacing the extra 17km – the result is a capex increase of approximately $3.9m and a more negative NPV than the preferred approach due to construction inefficiencies.

150. The 4.2% higher upfront capital cost for replacing 6% (17km) more pipe results in a 2.1% better NPV outcome. We are satisfied that ATCO's NPV calculations are reasonable and that the revised proposed expenditure of $129.8m[68] complies with the capex criteria.

Meter replacement program

151. ATCO has revised its forecast AA5 meter replacement capex from $27.3m to $26.4m. The ERA did not accept that $0.6m of the initially proposed capex for replacement of [redacted] rotary-type commercial meters was justified because ATCO had assessed the risk of the alternative ('no action') as zero cost and low risk. An adjustment of -$0.7m was made by the ERA to account for its determination of an alternative labour escalation rate.

152. ATCO has revised its Project Brief for the commercial meters, revising the residual risk of the 'no action' option as 'intermediate non-ALARP'.[69] It considers the 'no action' option to be unacceptable. The rationale for the revised risk rating is that ATCO is required to comply with the Gas Standards Act 1972, the GSSSR[70] 2000 Part 3 – Metering: Section 16, and the National Measurement Act. Non-compliance with the requirement to replace rotary meters every 10 years would be in breach of its licence conditions. ATCO states that it '*currently complies with this regulation by replacing commercial meters with refurbished meters when available.* However, it replaces meters with a new meter when refurbishment is '*no longer feasible, cost efficient, or a refurbished meter is in limited availability.'*[71] ATCO advises that it replaces 98% of the non-compliant commercial meters with refurbished meters, with the remainder (about 10 p.a. historically) requiring replacement with new meters.

[68] As noted in section 4.1, this project-based assessment excludes consideration of real labour cost escalation that is embedded in this cost. In section 4.7, we show adjustment for real labour cost escalation at a global level rather than on an individual project basis. This caveat applies to all subsequent project-based capex findings.

[69] ATCO, Attachment 10.115 Project Brief – EOL Replacement – Billing Commercial Meters, Table 1-5, p.4

[70] Gas Standards (Gas Supply and System Safety) Regulations

[71] ATCO, Revised Plan, pp.146-147

153. Whilst the requirements of the GSSSR have not changed since ATCO's initial submission, we consider that (i) ATCO has clarified its obligations under the Act to replace commercial rotary type meters based on age and that its revised risk rating is consistent with its obligation, (ii) ATCO has been following a prudent strategy of meeting the requirements of the Act with refurbished meters, (iii) ATCO's proposed volume and cost of replacement meters (10 p.a.) over the AA5 period is based on the latest information, and (iv) that the proposed $0.7m[72] for replacement of commercial rotary meters is reasonable. We therefore consider the revised forecast capex of $26.4m complies with the capex criteria.

End-of-life replacement program

154. In its Initial Plan, ATCO proposed spending $33.6m capex during AA5 of which the ERA considered $30.2m was likely to satisfy the capex criteria. It rejected $2.5m of forecast capex associated with assuming a pressure regulating station (PRS) would be required to be replaced in the AA6 period.[73] ATCO's Revised Plan includes an AA5 forecast of $29.6m to achieve its initial scope of work.

155. ATCO is seeking provisional budget to replace components of a PRS in AA5 '…*because it is likely that it will be a Metro PRS that will require refurbishment or replacement'* and *'[o]ne site (PR005) has been identified for close monitoring with corrosion on the outer leg of the PRS.'*[74]

156. In our Final Technical Report, we observed that based on condition, a PRS was not required to be replaced in the AA5 period. Our assessment appears to be consistent with ATCO's own analysis, where it states that *'[r]ecent maintenance records show no PRS will require full replacement in AA5'.*[75] ATCO has not updated its Asset Lifecycle Strategy since its Initial Plan and there is no evidence included in it to indicate that refurbishment costing $2.5m will be required. Moreover, it appears that $2.5m is the estimated cost of PRS replacement rather than for refurbishment.[76] We therefore remain of the view that there is insufficient evidence to support ATCO's need for $2.5m capex in the AA5 period for addressing the condition of the nominated PRS and we consider that any further work can be accommodated within ATCO's maintenance (opex) budget.

Security of Supply program

157. In its Initial Plan, ATCO proposed three projects (Caversham, Bunbury, and Two Rocks) forecast to cost $49.0m to address security of supply risk arising from third party pipeline damage. The ERA rejected the proposed expenditure on all three projects on the basis that:

- ATCO's methodology for calculating the frequency of third party pipeline damage leading to the network isolation should include a further risk

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[72] The forecast cost has increased from $0.646m to $0.659m in the Revised Plan, so this rounds to $0.7m

[73] The balance ($0.9m) relates to different labour escalation assumptions adopted by the ERA in its Draft Decision

[74] ATCO, Revised Plan, p.148

[75] ATCO, Revised Plan, p.148

[76] The cost for the 2027 replacement of a PRS, which is mooted in Figure 4.1 of Attachment 12.3 *Asset Lifecycle Strategy Pressure Regulating facilities (PUBLIC)*, is the same as for the proposed AA5 allocation in real terms

reduction factor (RRF) to account for the low likelihood that a puncture (loss of containment) leads to the need for network isolation; and

- ATCO's consequence analysis overstated the risk of a rupture event leading to a catastrophic outcome (more than 100,000 customer weeks lost).

158. In our Final Technical Report, we further noted that:

- ATCO had identified a much cheaper alternative to the Caversham project that may prove viable in the short term; and
- increased pipeline patrols may prove to be a more prudent approach to reducing risk and satisfying the ALARP test.

159. In its Revised Plan, ATCO has:[77]

- included the additional RRF in its risk analysis (which reduces the frequency of assessed catastrophic supply loss outcomes by 91.75%);
- reduced the repair time of a punctured pipeline as used in its initial consequence analysis from 7 days to 3 days; and
- rejected '…*other EMCa commentary in relation to its risk tolerance criteria, security of supply frequency, and consequence assessments*.'[78]

160. As a result of the accepted feedback and subsequent revision to its supply risk assessment methodology and assumptions, ATCO has now determined that there are more cost-effective solutions to mitigate the inherent risk. As a result, it has reduced its forecast security of supply AA5 capex from $49.0m to $0.8m for installation of bypasses on PRS010 and PRS011. It has also proposed daily patrols of high-risk pipeline segments for the Bunbury and Two Rocks pipeline sections, representing extra opex of [redacted] p.a. consistent with an option that we suggested in our Final Technical Report.

161. Although ATCO has not undertaken an ALARP test analysis, we consider (i) the revised capex amount is likely to satisfy the ALARP test and the capex criteria, and (ii) the substitution of opex for regular patrols in place of the capex proposed in ATCO's Initial Plan to be consistent with the capex criteria.

SCADA projects

162. ATCO proposed $12.6m capex in its Initial Plan and has proposed $5.7m in its Revised Plan for SCADA projects. In its Draft Decision, the ERA concluded that none of the forecast $12.6m satisfied the capex criteria, due primarily to the lack of economic justification of the preferred options in each of the three business cases provided.

163. In its Revised Plan, ATCO has restructured its proposal into five discrete and independent projects with corresponding business cases. We consider each project below.

[77] ATCO, Revised Plan, p.149

[78] We also note that the Department of Mines, Industry Regulation and Safety, Building and Energy Division challenged some of EMCa's commentary in its Public submission in response to draft decision, 12 July 2019

Automated Network Pressure Control

164. This project is designed to '*reduce recurrent opex, defer or reduce capex and to provide a platform for continuous asset management improvement through remote network adjustment*' at a capital cost of $2.7m and a recurrent opex of [redacted] p.a.[79] ATCO employed a consultant to estimate the capex and opex associated with the project. The project NPV is estimated to be $2.4m with a payback period of 7 years.[80]

165. From our assessment of the NPV analysis provided we observe that the positive NPV is derived from avoided capex attributed to (i) pipeline reinforcement delayed by five years, (ii) ongoing increased network capacity allowing deferred mains replacement, and (iii) the ongoing ability to deploy smaller diameter pipes. The NPV is highly sensitive to changes in assumed capex savings from items (ii) and (iii). The annual opex savings forecast by ATCO from reduced operations and maintenance (O&M) and unaccounted for gas (UAFG) are significantly less than the increased opex associated with the new facilities.[81] Nonetheless, we are satisfied that:

- the project is likely to be slightly NPV positive even with a 20% reduction of claimed capex benefits; and
- there are unquantified (intangible) benefits from the proposed project which present achievable opportunities for ATCO to improve its operational performance.

166. On this basis we consider the proposed project applies principles that are consistent with good industry practice and that this project complies with the capex criteria.

Remote network isolation

167. ATCO proposes [redacted] in AA5 to provide remote isolation capability at selected locations to (i) maintain the integrity of services, and (ii) prevent the catastrophic loss of supply to customers in the event of an upstream supply emergency.

168. The project justification appears to be at the conceptual stage, as evidenced by several comments relating to further work being required. For example: '*ATCO intend to review the Intermediate supply risk pipelines and critical customers over the AA5 period and establish whether further action can be taken to reduce supply risks to ALARP on the network.*'[82] ATCO has not provided evidence that the proposed [redacted] expenditure meets the requirements of the ALARP test,[83] particularly considering the changes it has made to its security of supply risk analysis. As a consequence, we do not consider sufficient justification has been provided to demonstrate that the project complies with the capex criteria.

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[79] ATCO, Revised Plan, pp.153-154

[80] ATCO, 10.109 Business Case – Automated network pressure control CONFIDENTIAL, p.9

[81] ATCO, Automated pressure control - Option 1 NPV (CONFIDENTIAL)

[82] ATCO, 10.110 Business Case – Remote Network Isolation CONFIDENTIAL, p.5

[83] For background on the ALARP test requirements refer to our Final Technical Report, appendix B – demonstration of ALARP and comparison with AS4645

Constant monitoring of gas supply

169. ATCO has reviewed the scope of this project and has reduced the proposed number of sites to be monitored from 22 to 18 at a reduced forecast capex of [redacted] in AA5 and [redacted] p.a. opex, resulting in a positive $0.6m NPV and a payback period of six years. The opex savings are derived from reduced O&M.[84] Given the asset life of the telemetry components is 10 years and the relatively robust NPV outcome for unfavourable variance in opex savings, we consider that this project complies with the capex criteria.

Remote monitoring of corrosion protection systems

170. ATCO proposes installing 106 pipeline cathodic protection test point monitoring devices and 30 pipe-to-soil coupons to enable remote data acquisition of direct and alternating current levels on its pipeline. The forecast AA5 capex is [redacted] with net average opex savings estimated at [redacted] p.a. derived from reduced O&M. The project NPV is estimated to be $0.1m with a payback of 8 years. Whilst the NPV benefit is marginal, the assumed payback period is less than the average asset life of 10 years for the telemetry components[85] and we consider it complies with the capex criteria.

Automated Meter Reading Program

171. ATCO proposes a revised project capex of [redacted] to install operational technology to enable a customer and retailer demand driven option for automated meter reading solutions. This is considerably less than the [redacted] proposed in ATCO's Initial Plan due to a revised scope. The project is predicated on '*reducing overall costs of meeting regulatory obligations for ATCO and Retailers and to make gas supply simple for customers.'*[86] ATCO maintains that, among other things, *'[c]ustomer's future preference for natural gas is eroded by limited metering options restricting developers' installation options and customers' ability to manage retailer choice to obtain maximum value from their future energy combination.'*[87] ATCO states that following completion of the proposed project customers will be able to choose an AMR option via their retailer, with installation being undertaken by ATCO with the cost passed on to the retailer. The project NPV is $0.5m, with a payback of 17 years. [88]

172. We consider that this project should be fully funded by the retailers (who may choose to pass on the cost to the requesting customers (i.e. user-pays)). We therefore consider that this project does not satisfy the capex criteria.

Parmelia Gas Pipeline interconnection projects

173. In its Initial Plan, ATCO proposed $13.5m capex on installing interconnections from its network to the Parmelia gas pipeline (PGP) at Forrestfield and Rockingham. The interconnections are intended to mitigate the risk of catastrophic loss of supply to customers following a rupture of the DBNGP. The proposed capex was not

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[84] ATCO, 10.111 Business Case – Constant Monitoring of Gas Quality CONFIDENTIAL, p.vi

[85] ATCO, 10.112 Business Case – Remote Monitoring of Corrosion Protection Systems CONFIDENTIAL, p.2

[86] ATCO, 10.113 Business Case – Enable Automated Meter Reading CONFIDENTIAL, p.viii

[87] ATCO, 10.113 Business Case – Enable Automated Meter Reading CONFIDENTIAL, p.viii

[88] ATCO, Revised Plan, pp.157-158, noting that the payback period is longer than the 10 year asset life of the telemetry equipment and the 5 year asset life of the IT assets required for the project

accepted by the ERA in its Draft Decision. ATCO has proposed $14.9m capex for the same scope of work in its Revised Plan.

174. In our Final Technical Report to the ERA, our position was that with a risk rating of 'Intermediate', a cost-benefit analysis was required to demonstrate that the proposed expenditure was not grossly disproportionate to the benefit in accordance with the requirements of the ALARP test.

175. In its Revised Plan, ATCO has not changed its risk assessment that the loss of supply from the DBNGP is a hypothetical event (<10^{-6} probability of occurrence) which could result in a catastrophic loss, resulting in a risk rating of Intermediate. ATCO has provided the following new information:

- an explanation of the reason for delays to the proposed PGP interconnection projects to be completed in the AA4 period,[89] in which it confirmed that a combination of commercial and technical matters was responsible;[90]
- in its view, even though it agrees that the loss of supply from the DBNGP is a hypothetical event, a 1984 incident on the PGP '*resulting in its isolation for repair, indicates that these events are not unheard of, and that the risks of these incidents and their potential consequences should be treated as far is reasonably practicable';*[91]
- it would cost ATCO an estimated $21.7m opex to restore supply in the event of supply loss to 310,000 customers (which it assesses to be the worst case);
- through its Voice of the Customer program, ATCO's customers '*agreed that putting preventative measures in place to minimise disruptions was important to prevent the potential consequences of a supply loss event;'*[92]
- the timing of the Waitsia Stage 2 development is not certain, however it is expected to be in full operation by 2022; and
- ATCO has determined that the proposed project will incur a cost of $0.74 per year per customer, to B3 customers over the AA5 period.

176. ATCO maintains that '*[d]ue to the low cost impact to customers per year, coupled with the significant reduction in consequences should the event occur, (both financial and social), we consider that the expenditure is justified to reduce Intermediate supply risk to Negligible.'*[93]

177. We also note that the Department of Mines Industry Regulation and Safety, Building and Energy-Division disagreed with some of the risk mitigation factors that we suggested could be adopted in our Final Technical Report.[94]

[89] ATCO proposed five interconnection projects but will complete only the connection at Caversham

[90] ATCO, Revised Plan, p.159

[91] ATCO, Revised Plan, p.160

[92] ATCO, Revised Plan, p.161

[93] ATCO, Revised Plan, p.162

[94] Public submission to the Draft Decision, Department of Mines Industry Regulation and Safety, Building and Energy-Division, Jul 2019

178. In our view, the new information is not sufficient to demonstrate that ATCO's proposed $14.9m capex for the two projects satisfies the ALARP test (which is still required given that ATCO's assessed risk has not changed from 'Intermediate'). The applicable standard requires (among other things) that *'any risk that is determined to be intermediate shall be assessed to confirm that the risk meets the ALARP test. A risk cannot be considered as meeting the ALARP test until and including the following has been completed:*

(a) Analysis of the means of further reducing the risk, including an analysis of various options.

(b) Review as to the reasons why these further means have not been adopted.

(c) Substantiation that the sacrifice (including cost) of further risk reduction measures is grossly disproportionate to the benefit gained from the reduced risk that would result.[95]

179. ATCO has identified various options and proposes significant expenditure, but importantly it has not demonstrated that part (c) has been satisfied. Therefore, we consider that ATCO has not demonstrated that the proposed $14.9m capex complies with the capex criteria.

Other network sustaining capex projects and programs

180. ATCO proposed $9.2m capex on in-line inspections and $3.5m on network improvement projects in its Initial Plan. It has proposed the same scope of work, but at an increased cost of $13.1m in its Revised Plan. The ERA accepted both the ILI and network improvement components of the expenditure. The ERA's amended amount in its Draft Decision was $12.3m,[96] with the difference being due to labour cost escalation adjustment.

181. The revised amount of $13.1m includes inflation and ATCO's proposed rate of labour cost escalation (i.e. $9.4m + $3.7m = $13.1m). We consider that the revised forecast complies with the capex criteria, except in regard to labour cost escalation.

Additional sustaining projects

182. ATCO has included four additional scopes of work in its Revised Plan, all of which are carried over from AA4 to AA5 at a combined cost of $11.7m.

End of life replacement – Metallic mains

183. ATCO expects that it will not complete 1.4km of metallic mains replacement under railways and freeways in 2019 as originally scheduled. It proposes completing the project in AA5 at a total cost of $10.4m. ATCO advises that the 24 sections involved are critical and that it considered alternatives to the proposed approach, including decommissioning the existing sections and using alternate routes. ATCO advises that the unit cost of an average of [redacted] per meter is '*based on historical unit rates achieved in similar projects.'*[97]

[95] AS4645.1:2018, part B5.2, pp.83-84, noting that these requirements are essentially the same as in AS4645.1:2008 part C5.2, pp.63-64

[96] ERA, Draft Decision, Table 56

[97] ATCO, Revised Plan, p.163

184. We consider that the proposed AA5 capex complies with the capex criteria.

End of life replacement – CBD services

185. The CBD services project was approved in 2018 and was planned to be a 2-year project to be completed within the AA4 period. ATCO estimates that it will spend [redacted] in 2019[98] but it will require a further $0.9m in 2020 to complete the program due to unforeseen delays.

186. Based on the information provided,[99] we consider that the proposed AA5 expenditure complies with the capex criteria.

End of life replacement – Regulator set lids

187. ATCO forecasts spending $0.2m in 2019 on replacing regulator set lids, and a further [redacted] in AA5, including $0.2m to complete [redacted] lids in 2020 as a carry-over amount from AA4.[100]

188. Based on the information provided,[101] we consider that the proposed AA5 capex complies with the capex criteria.

Asset performance – Meter Compliance Project

189. ATCO has proposed $0.2m to complete replacement of 208 non-compliant gas meter installations, a project that was expected to be completed within the AA4 period.

190. Based on the information provided,[102] we consider that the proposed AA5 expenditure complies with the capex criteria.

4.4 Network growth capex

4.4.1 Background

191. The table below shows the variance between ATCO's Initial Plan (IP), its Revised Plan (RP), and the ERA's Draft Decision (DD) for the aspects of network growth that are within our scope for assessment. As the Draft Decision did not adjust ATCO's proposed CIC Meterset expenditure and ATCO has not changed it in its Revised Plan, this capex item is not shown in the table.

[98] ATCO, 10.126 AA5 - Capex Template Model submitted 12 June 2019 CONFIDENTIAL, WKs_Prgm worksheet, row 33

[99] ATCO, Revised Plan, p.163

[100] ATCO, 10.126 AA5 - Capex Template Model submitted 12 June 2019 CONFIDENTIAL, WKs_Prgm worksheet, row 53

[101] ATCO, Revised Plan, p.163

[102] ATCO, Revised Plan, p.163

Table 9: ATCO's initial and revised network growth capex vs the Draft Decision (within EMCa's scope) ($m, 31 Dec 2019)

Description	Initial Plan (IP)	Revised Plan (RP)	ERA Draft Decision (DD)	Variance (RP vs IP)	Variance (RP vs DD)
AL18 commercial meters	0.7	0.6	0.4	-0.1	0.3
Growth development [1]	14.5	13.6	1.3	-0.9	12.3
Less capital contribution	-7.6	-7.5	0.0	0.1	-7.5
Total	**7.6**	**6.7**	**1.7**	**-0.9**	**5.1**

Sources: Sources: EMCa Final Technical Report, Table 23; 10.126 AA5 - Capex Template Model submitted 12 June 2019 CONFIDENTIAL; ATCO Revised Plan, Tables 10.4 and 10.23,
[1] includes costs of (i) connecting subdivisions located away from the existing gas network; (ii) customer-initiated meter upgrades, and (iii) sub-meter to master-meter upgrades

192. In the table above and in section 4.4.2, we consider new information in accordance with the project descriptions in ATCO's Initial Plan, rather than its Revised Plan which refers to expenditure under the heading 'Other growth capex'.[103]

4.4.2 Our assessment of new information

AL18 commercial meters

193. ATCO proposed $0.7m capex in its Initial Plan to replace 22 customer-initiated AL18 meters p.a. based on a two-year historical average. In its Revised Plan it proposes replacing 21 meters p.a. at a total AA5 cost of $0.6m. Both the updated volume and unit costs are based on the 2016-2018 historical volumes.[104]

194. In its Draft Decision, the ERA accepted only half of the proposed $0.7m because: (i) light commercial connections were decreasing, and (ii) it did not allow ATCO's proposed greenfield and brownfield growth expenditure which was linked to the requirement to replace these meters.

195. Not taking into account the ERA's assessment of ATCO's revised greenfields and brownfields growth forecast, we consider that ATCO's updated information is sufficient to conclude that the forecast $0.6m capex would comply with the capex criteria.

Growth development

196. ATCO proposed three growth development projects in its Initial Plan:

- $10.4m for the expected cost to connect subdivisions 'far away' from the existing gas network, offset by forecast capital contributions of $7.6m;
- $1.3m for meter upgrades to respond to customer-initiated requests; and
- $2.8m for customer-initiated sub-meter to master-meter conversions.

197. The ERA was satisfied that the $1.3m for meter upgrades to respond to customer-initiated requests complied with the capex criteria upgrade expenditure. However, it rejected the remaining proposed capex (i.e. $5.6m net of the forecast capital contribution).

[103] Other growth capex comprises Network reinforcement (which is not in our scope), Growth-related meter projects, Growth development expenditure, and Sub-meter to master-meter.

[104] ATCO, Revised Plan, p.172

Connecting subdivisions located away from the existing network

198. In its Draft Decision, the ERA concluded that the NPV of greenfields connections was negative. On this basis, it also concluded that network development capex to connect greenfield developments located away from the existing network would require (i) a full capital contribution from developers to the extension of the network, and (ii) developer contributions to the connection of each customer within the development to make the projects economic. On this basis the ERA determined that the proposed $10.4m would not satisfy the capex criteria and therefore that the $7.6m aggregate capital contributions would not be deducted from the RAB. The ERA suggested that ATCO could consider funding the growth development projects as non-conforming expenditure.

199. In its Revised Plan,[105] ATCO has (i) increased its capex forecast to $10.7m (not including off-setting capital contributions), (ii) rejected the ERA's finding that the projects would collectively be NPV negative, and (ii) rejected the option of funding the development. On this last point, ATCO advises that it is not prepared to take the commercial risk of recovering its capex through the speculative capital expenditure account.

200. ATCO has provided updated information on the historical costs associated with its strategy of seeking capital contributions from respective land developers to ensure that each subdivision development project is NPV positive. It reports spending $5.4m on growth development projects from 2015-2018. Over five years this would be $6.8m.[106] ATCO's revised forecast of $3.2m capex (net of the forecast capital contribution of $7.5m) is less than half this amount. This is consistent with the current relatively weak state of WA's economy and property market.

201. Whether or not the growth development capex is likely to satisfy the capex criteria is dependent on the ERA's Final Determination regarding greenfields connection capex. Subject to the ERA's findings, we consider that ATCO's approach and amended forecast capex of $10.7m would comply with the capex criteria.

Sub-meter to Master meter conversions

202. ATCO has revised its proposed AA5 expenditure to [redacted] based on converting [redacted] sub-meters to master-meters using the current unit cost of conversions. ATCO advises that each conversion is individually assessed and it ensures that (i) the most cost-effective solution is identified for each project, and (ii) that '*each conversion project is individually tested under NGR 79 and where the NPV is not positive, a capital contribution is requested from the customer.*'[107]

203. On this basis we are satisfied that ATCO has responded adequately to the ERA's concerns and accordingly we consider that the proposed capex complies with the capex criteria.

Capital contribution

204. On the basis of the discussion above, we consider that deduction of the amended amount of $7.5m from the proposed AA5 capex to account for capital contributions

[105] ATCO, Revised Plan, p.173

[106] i.e. at the average annual spend rate of $1.35m

[107] ATCO, Revised Plan, p.174

from land developers included in its Revised Plan is consistent with the ATCO's strategy and with the capex criteria.

4.5 Information technology capex

4.5.1 Background

205. ATCO proposed $36.0m AA5 IT capex in its Initial Plan. The ERA did not accept $9.3m of the proposed expenditure in its Draft Decision. As shown in the table below, ATCO now forecasts $35.9m AA5 IT capex, providing new information that it believes addresses the ERA's issues with its Initial Plan.

Table 10: ATCO's initial and revised IT capex vs the Draft Decision ($m, 31 Dec 2019)

$real 31 December 2019	Initial Plan (IP)	Revised Plan (RP)	ERA Draft Decision	Variance (RP vs IP)	Variance (RP vs DD)
Energised & responsive customer engagement	2.9	2.9	2.2	0.0	0.7
Network Digitisation & Intelligence	1.3	0.8	0.0	-0.5	0.8
Asset Mgt and Service Delivery Excellence	2.0	2.0	1.5	0.0	0.5
Enterprise Employee Enablement	4.9	4.9	3.8	0.0	1.1
Application renewal	24.9	25.3	19.2	0.4	6.1
Total	**36.0**	**35.9**	**26.7**	**-0.1**	**9.2**

Sources: EMCa Final Technical Report, Table 25; ATCO Revised Plan, Tables 10.5 and 10.25

4.5.2 Our assessment of new information

Network digitalisation & intelligence

206. In its Initial Plan, ATCO explicitly linked the Network Digitalisation & Intelligence program to the SCADA systems program (under the Network Sustaining category). As the ERA did not accept any of the proposed AA5 SCADA capex in its Draft Decision, it did not accept the $1.3m Network Digitalisation and Intelligence program.

207. In its Revised Plan, ATCO now advises that this program comprised two projects: Continuous improvements ($0.8m) and Historian [redacted]. It has now included the Historian expenditure with the revised automated network pressure control project. This proposed capex has been assessed in section 4.3.2.

208. ATCO has clarified that the $0.8m capex for the Continuous Improvement projects described in its Initial Plan is not related to the SCADA expenditure. We have revisited the information provided in support of the Continuous Improvement projects within ATCO's Initial Plan and the information provided in the Revised Plan.[108] Based on the new information, we are satisfied that it is likely that enhancements to the five nominated software applications (in-house and commercial-off-the shelf)[109] will be required over the course of the AA5 period. We consider that the proposed capex complies with the capex criteria.

[108] ATCO, Revised Plan, p.178

[109] NEON, PowerSpring, Distribution Billing Data Verification, Gas Monitoring Data, and Gas Inflow Management System

Remaining IT capex

209. In its Draft Decision, the ERA drew upon our Final Technical Report with respect to our assessment of the business cases supporting the remaining IT capex which stated that '*the quality of the business case information would fall well short of that which would be required to justify the expenditure in most cases.'* We recommended an across-the-board adjustment of -20% to the remaining four projects/programs to recognise that, in our view, when ATCO subjected its business cases to more rigorous assessment, it would find ways of reducing the scope and/or cost required to address the identified needs.

210. ATCO has responded to our findings in its Revised Plan by claiming that its forecast is reasonable and has included new and clarifying information, which we summarise as follows:[110]

- the forecast '*represents the best forecast possible in an environment of rapid technological change, increased cybersecurity threats, increasing mobile workforces and adoption of cloud-based solutions'*;
- the ERA's Draft Decision *'will result in ATCO's IT assets not being maintained in accordance with industry best practice and an increased security risk of loss of data, unauthorised access to the network, employee and customer data and loss of integrity';*
- ATCO '*leveraged industry leader Deloitte's consultants and their proprietary Project Estimator and Planning Suite (PE&PS) tool to develop a P50 cost model…'* and '*Deloitte's forecast was validated and further refined by senior ATCO IT resources'* which led to a 10% reduction of Deloitte's forecast (per Table 10.27);
- ATCO further validated its forecast by subjecting it to analysis '*through an independent benchmarking study conducted by KPMG…'* which was favourable; and
- additional information on ATCO's delivery capability, including the number of projects delivered or to be delivered in the AA4 period (124) with a variance of only 4.5%.

211. We expected ATCO might provide updated versions of its Business Cases to address our concerns with the quality of justification expressed in our Final Technical Report. It has not done so, however, given the description of the combination of bottom-up and top-down forecasting methodologies applied to the IT capex forecast as summarised above, we are satisfied that the 'remaining' amended AA5 capex of $34.7m complies with the capex criteria.

212. ATCO also advises that in its Revised Plan it has also included a $0.4m increase to its Application renewal forecast resulting from capitalising opex required to complete the planning and scoping phase of its ERP system in 2022. This is a result of applying a revised accounting treatment.[111] Capitalisation of early planning and scoping expenditure in cases where the project has or is very likely to proceed is common practice. We consider that ATCO's ERP (SAP) upgrade is likely to proceed. We consider the amount complies with the capex criteria.

[110] ATCO, Revised Plan, pp.178-184

[111] ATCO, Revised Plan, p.183

4.6 Structures & equipment capex

4.6.1 Background

213. ATCO proposed $6.5m for structures and $16.4m for fleet capex in its Initial Plan. In its Draft Decision, the ERA accepted ATCO's forecast of $6.5m capex for Facilities, plant & equipment capex in AA5, but it did not accept $1.6m of ATCO's forecast fleet capex that the ERA concluded was driven by growth of the network.[112]

214. As shown in the table below, ATCO has proposed slightly lower fleet capex in its Revised Plan, and it has increased its AA5 Facilities, plant and equipment forecast by $1.0m.

Table 11: ATCO's initial and revised Structures & equipment capex vs the Draft Decision ($m, 31 Dec 2019)

$real 31 December 2019	Initial Plan (IP)	Revised Plan (RP)	ERA Draft Decision (DD)	Variance (RP vs IP)	Variance (RP vs DD)
Fleet	16.4	16.0	14.8	-0.4	1.2
Facilities, plant and equipment	6.5	7.5	6.5	1.0	1.0
Total	22.8	23.5	21.2	0.7	2.3

Sources: EMCa Final Technical Report, Table 25; ATCO 2020-24 Revised Plan, Tables 10.5 and 10.25

4.6.2 Our assessment of new information

Fleet

215. In its Revised Plan, ATCO proposes revised fleet capex of $16.0m.[113] ATCO states that its Asset Lifecycle Strategy (ALS) for fleet identified that [redacted] additional vehicles would be required over AA5 to support the following projects:[114]

- [redacted]
- [redacted]
- [redacted]

216. ATCO advises that it has retained the provision for [redacted] extra vehicles to meet its assessed requirements for greenfields and brownfields growth capex. ATCO also advises in its Revised Plan that it has reviewed its leak survey program and automated pressure control project and has reduced the forecast additional number of vehicles for these activities to [redacted], resulting in a $0.3m reduction[115] to its AA5

[112] ERA, Draft Decision, p.125; noting that the ERA determined that most of ATCO's proposed growth-related expenditure did not satisfy the NGR as conforming capital expenditure

[113] ATCO, Revised Plan, Table 10.24

[114] ATCO, Revised Plan, p.175, noting that ATCO appears to have double-counted the vehicle requirements for organic growth and Greenfield and brownfield projects (refer to Table 4.1 in its Asset Lifecycle Strategy Fleet)

[115] In its Revised Plan on page 175, ATCO also refers to reduction of its fleet capex by $0.23m – neither figure correlate with the required $0.4m reduction to the $16.4m total AA5 capex referred to on page 174 of the Revised Plan to achieve the revised forecast of $16.0m.

fleet forecast capex from its Initial Plan. As growth-related greenfield and brownfield capex is not within the scope of our assessment, we have not assessed this aspect of ATCO's Revised Plan.

217. We are unable to reconcile ATCO's statements about provisions for extra leak survey light commercial vehicles or for the proposed network pressure control project with ATCO's Fleet ALS, which makes no mention of these projects in justifying the increase.[116] Nonetheless, the reduction in forecast new vehicles resulting from ATCO's review of its program of network activities is consistent with the forecasting methodology described in ATCO's Fleet ALS.[117]

218. Subject to the ERA's findings regarding growth capex and growth-related fleet capex, we consider that the proposed capex complies with the capex criteria.

Facilities, plant and equipment

219. ATCO has included a carry-over amount of [redacted] from AA4 in its Revised Plan to complete work at the new Osborne Park/Balcatta depot building. This is an increase from the $0.7m carry-over forecast in its Initial Plan (which the ERA accepted in its Draft Decision). The delay is due to limited availability of suitable properties in the Osborne Park, Balcatta and Malaga area, but ATCO reports it has now secured an agreement with a developer to proceed with the purchase of a suitable site.[118] The total project cost has increased from an estimated [redacted] to [redacted] with the land cost reduced by [redacted] and the building cost estimate [redacted] higher.

220. We are satisfied that the revised AA5 amount of [redacted] complies with the capex criteria.

4.7 Summary of our findings and their implications

4.7.1 Overview

221. The new and clarifying information that ATCO has provided in its Revised Plan has addressed the majority of the concerns raised in the Draft Decision and in our Final Technical Report.

222. As shown in the adjustment summary tables below, our revised assessment is that of ATCO's revised AA5 capex of $308.1m (for projects capex within our scope), $283.5m complies with the capex criteria. This adjustment takes account both of program / project adjustments based on our assessments in subsections above, and also our assessment of ATCO's proposed labour cost escalation (as described in section 2).

[116] Only motorcycles are identified as being associated with leak surveys

[117] ATCO, Attachment 12.7 Asset Lifecycle Strategy – Fleet CONFIDENTIAL, p. 15 (provided as a supporting document with ATCO's Initial Plan

[118] ATCO, Revised Plan, p.175

4.7.2 Project / program-based adjustments

Network sustaining AA5 capex

223. In its Initial Plan, ATCO proposed $276.1m on AA5 network sustaining capex. The ERA's Draft Decision was that $179.6m (65%) satisfied the capex criteria. ATCO's Revised Plan proposes $231.6m AA5 capex, with ATCO's reduction of $48.3m (-98%) of its proposed Security of Supply capex accounting for the majority of the difference.

224. Whilst ATCO has revised its Security of supply capex forecast to $0.86m, it has retained the initially proposed $14.9m PGP interconnection capex in its Revised Plan. In our view, ATCO has not satisfactorily demonstrated that the requirements of the ALARP test have been satisfied in relation to the two PGP projects. This is despite what we consider to be clear obligations to do so in AS4845 and ample opportunity for ATCO to respond to those requirements.[119] There are three other sources of adjustment:

- end-of-life replacement of a PRS project (-$2.5m): in our view ATCO did not provide compelling information regarding the condition of the nominated pressure reduction station to support the requirement to spend capex rather than opex (preventative maintenance) during the AA5 period;
- remote network isolation project [redacted]: we consider that ATCO did not provide sufficient justification for this risk reduction SCADA project given that the pipeline risk that it is seeking to offset appears to be addressing intermediate risk pipelines; and
- automated meter reading [redacted] we consider that the initiating retailer should pay for this meter option cost through the charging mechanism, not all reference customers.

Network growth AA5 capex

225. In its Initial Plan, ATCO proposed $17.8m capex net of capital contributions of $7.6m on growth projects within our scope of work.[120] The ERA's Draft Decision was that $11.9m (67%) satisfied the capex criteria. ATCO's Revised Plan proposes $16.9m AA5 capex.

226. ATCO provided new and clarifying information that in our view satisfactorily addressed the concerns expressed by the ERA in the Draft Decision for the capex that is within our scope. There are some dependencies between ATCO's proposed capex in the growth-related projects within our scope and ATCO's revised proposed greenfield and brownfield connections capex, which may affect the Final Decision.

Information technology AA5 capex

227. In its Initial Plan, ATCO proposed $36.0m capex on IT projects. The ERA's Draft Decision was that $26.7m (74%) satisfied the capex criteria. ATCO's Revised Plan proposes $35.9m AA5 capex.

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[119] The same requirements were identified in the Draft and Final Decisions for the ATCO's AA4 submission, which ATCO essentially ignored

[120] Which does not include greenfield and brownfield connection capex or network reinforcement capex

228. ATCO provided new and clarifying information that in our view satisfactorily addressed the concerns expressed by the ERA in the Draft Decision. Consequently, we consider that all of ATCO's revised capex complies with the capex criteria.

Structures and equipment AA5 capex

229. In its Initial Plan, ATCO proposed $22.8m capex on Structures & equipment projects. The ERA's Draft Decision was that $21.2m (93%) satisfied the capex criteria. ATCO's Revised Plan proposes $23.5m.

230. The source of the ERA's adjustment was growth-related fleet capex, which it considered would not be required due to its assessment that greenfield and brownfield connections capex would be limited in AA5. ATCO has provided new information which we consider is sufficient to conclude that the proposed fleet expenditure is likely to satisfy the capex criteria if there is growth-related connections capex at the scale forecast by ATCO.

4.7.3 Summary Adjustment

231. Table 12 and Figure 2 summarise EMCa's adjustments to ATCO's revised proposed AA5 capex as a result of our assessment of the new and clarified information provided by ATCO in its Revised Plan and supporting documents. These adjustments take account of the project/program-based adjustments referred to above together with the impact of adjusting the real labour cost escalation rate for the reasons described in section 2.

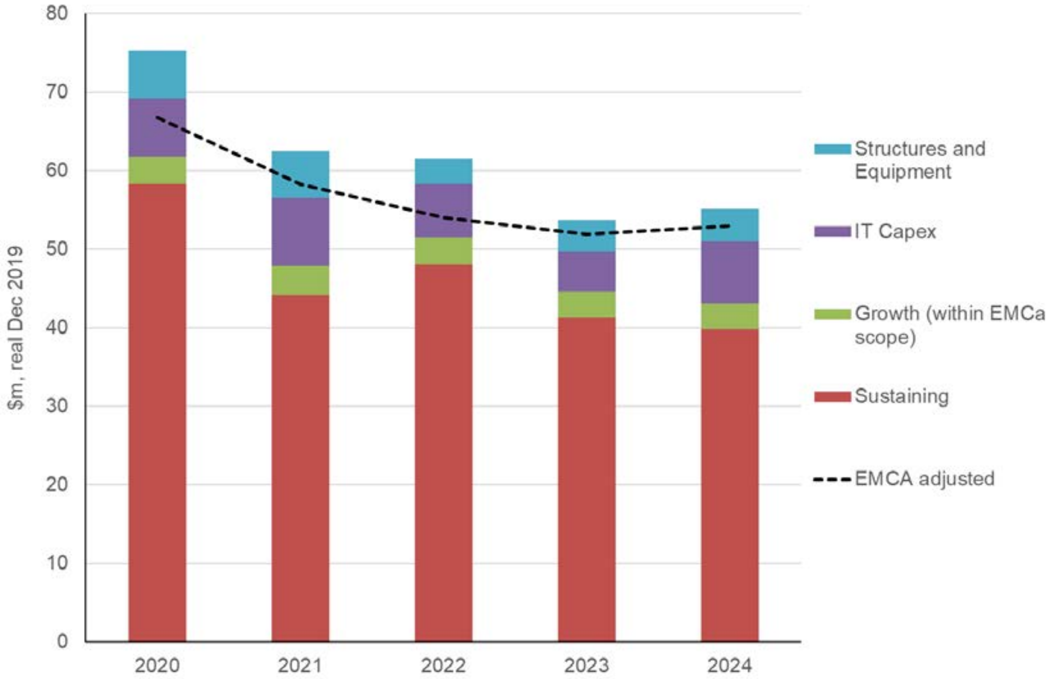
Table 12: AA5 capex – revised EMCa adjustments – annual ($m, 31 Dec 2019)

$m, real Dec 2019 Category		2020	2021	2022	2023	2024	Total AA5 (5 years)
Network sustaining							
	ATCO proposed	58.3	44.2	48.0	41.4	39.8	**231.6**
less	EMCa projects/program adjustments	-8.1	-3.6	-6.6	-0.7	-0.7	**-19.7**
less	real escalation adjustment	-0.3	-0.5	-0.8	-1.0	-1.2	**-3.9**
	EMCa adjusted	49.8	40.1	40.7	39.7	37.8	**208.1**
Network growth (EMCa scope)							
	ATCO proposed	3.5	3.7	3.5	3.2	3.3	**17.1**
less	EMCa projects/program adjustments	0.0	0.0	0.0	0.0	0.0	**0.0**
less	real escalation adjustment	0.00	-0.01	-0.01	-0.01	-0.01	**-0.04**
	EMCa adjusted	3.5	3.7	3.4	3.2	3.3	**17.1**
Information technology							
	ATCO proposed	7.4	8.7	6.9	5.1	7.8	**35.9**
less	EMCa projects/program adjustments	0.0	0.0	0.0	0.0	0.0	**0.0**
less	real escalation adjustment	-0.1	-0.1	-0.1	-0.1	-0.2	**-0.7**
	EMCa adjusted	7.3	8.6	6.7	5.0	7.6	**35.2**
Structures and equipment							
	ATCO proposed	6.1	5.9	3.2	4.1	4.2	**23.5**
less	EMCa projects/program adjustments	0.0	0.0	0.0	0.0	0.0	**0.0**
less	real escalation adjustment	0.00	0.00	-0.01	0.00	0.00	**-0.01**
	EMCa adjusted	6.1	5.9	3.1	4.1	4.2	**23.5**
TOTAL							
	ATCO proposed	75.3	62.5	61.5	53.7	55.2	**308.1**
less	EMCa projects/program adjustments	-8.1	-3.6	-6.6	-0.7	-0.7	**-19.7**
less	real escalation adjustment	-0.4	-0.6	-0.9	-1.2	-1.5	**-4.6**
	Total EMCa adjusted	**66.8**	**58.2**	**54.0**	**51.9**	**53.0**	**283.8**
	Total adjustment ($)	*-8.5*	*-4.2*	*-7.5*	*-1.9*	*-2.2*	*-24.3*
	Total adjustment (%)	*-11%*	*-7%*	*-12%*	*-3%*	*-4%*	*-8%*

Source: EMCa analysis

Note: differences in numbers due to rounding errors

Figure 2: ATCO AA5 Revised Plan and EMCa's Adjusted (based on EMCa scope)



Sources: EMCa analysis derived from 10.126 AA5 - Capex Template Model submitted 12 June 2019 CONFIDENTIAL

5 Assessment of new information on AA5 opex

5.1 Introduction

232. In this section we consider the justification for the opex allowance that ATCO has proposed for AA5. ATCO has again developed its proposed allowance using Base-Step-Trend ('BST') approach to forecast its requirements. Our assessment considers each of the three elements of such an approach in turn, noting that ATCO has disaggregated 'step' changes into recurrent and non-recurrent opex. In our assessment we have focused on those elements of the proposed approach that either:

- ERA did not accept in its Draft Decision, but which ATCO has challenged; or for which
- ATCO has altered its forecast since its Initial Plan.

233. We have assessed ATCO's proposed opex by reference to relevant criteria under the NGR, being primarily those stated under NGR 91(1) and NGR 74.

5.2 ERA Draft Decision and ATCO's Revised Plan

5.2.1 Overview of previous and revised information

234. In its Initial Plan, ATCO proposed an allowance of $357.4m for AA5 opex. The ERA determined a revised allowance of $316.8m in its Draft Decision. ATCO has not accepted this revised allowance, and in its Revised Plan has proposed an allowance of $345.1m. ATCO has developed its opex forecast from using a BST forecast as shown in the following table.

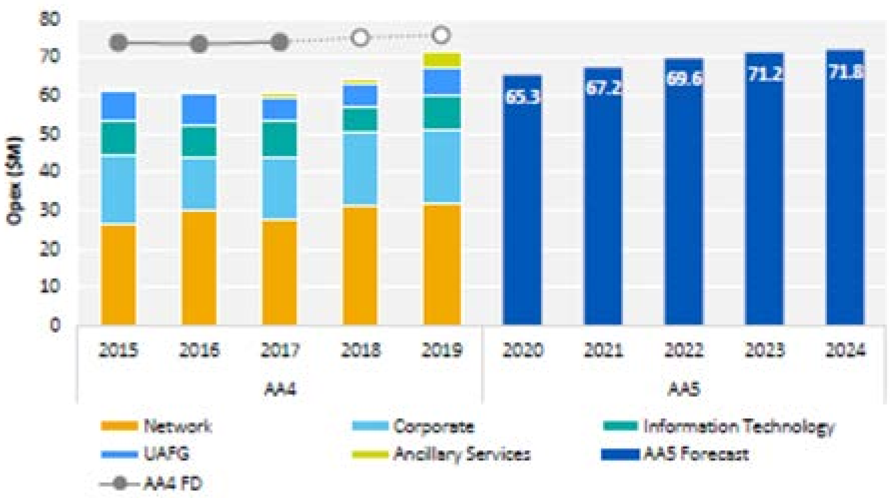
Table 13: ATCO's revised proposed opex ($m, real 31 Dec 2019)

	2020	2021	2022	2023	2024	TOTAL
Base Year	54.8	54.8	54.8	54.8	54.8	274
Recurrent Step Changes	0.7	0.9	1.1	1.2	1.2	5.2
Non-recurrent Step Changes	0.5	0.6	1.6	1.9	1.3	6.0
Output Growth	1.2	1.6	2.1	2.7	3.2	10.8
Input Cost	1.1	1.6	2.2	2.8	3.3	10.9
UAFG	3.8	4.4	4.4	4.5	4.6	21.8
Ancillary Services	3.2	3.2	3.3	3.3	3.4	16.4
TOTAL	**65.3**	**67.2**	**69.6**	**71.2**	**71.8**	**345.1**

Source: ATCO RAAI, table 9.28

235. In the following graph we show the trend of ATCO's historical opex and its proposed opex allowance.

Figure 3: ATCO's historical and proposed opex ($m, real 31 Dec 2019)



Source: ATCO RAAI figure 9.3

5.2.2 Main points of difference

236. The main points of difference between ATCO's Initial Plan and its Revised Plan are that:

- In its Revised Plan, ATCO now uses its actual 2018 expenditure as its base year value, and adjusts this value to remove non-recurrent amounts (which now differ from non-recurrent amounts that it previously adjusted for);
- ATCO has reduced the amounts that it proposes for certain recurrent step changes, but has proposed an additional step change for increased security patrols in lieu of a capital project which it has now removed; and
- ATCO has proposed changes to non-recurrent step changes, with removal of one, addition of a new step change, retention of one that the ERA disallowed, and increases to two others.

5.3 Our assessment of new information

5.3.1 Base year and associated adjustments

ATCO's revised proposal

237. ATCO accepts the ERA's Draft Decision that the basis on which it had derived its base year value from its forecast 2019 costs was not appropriate, and that using a recent representative year of actual expenditure is appropriate. ATCO states that it considers its 2018 actual expenditure to be more representative of ongoing costs than 2017 and that it '*…introduced time-sheeting from 1 January in 2018 for office staff and field supervisors resulting in more accurate cost allocation to reference services.*'[121]

238. ATCO makes the following deductions from its 2018 expenditure:

- $1.8m in non-recurrent Regulatory Submission costs incurred in that year;
- $0.4m for non-recurrent elements in its Pipeline inspections and Operations projects and Variable Volume Works; and
- [redacted] for UAFG and $1.0m for Ancillary Services, both of which it forecasts specifically (i.e. outside of its BST framework).

239. ATCO states that its most recent (now 2018) opex was $64.1m. After making the adjustments above, this results in a proposed base year value of $54.8m (in December $2019 terms) which is identical to the value in its Initial Plan.

240. In its Draft Decision, ERA reduced ATCO's proposed base year value for staff incentives, BD and marketing and IT costs, and which at that time were based on its 2017 costs. ATCO has not accepted these aspects of the ERA's Draft Decision and in its Revised Plan, it has not made any such adjustments to its base year costs. However, its 2018 BD and Marketing costs and IT costs are both less than the (2017) amounts in its Initial Plan.

Accept use of 2018 as base year

241. Consistent with the ERA's quote from the AER's Expenditure Forecast Assessment Guidelines, we consider that it is reasonable to use a revealed cost approach provided the most recent actual expenditure *'reasonably reflects the opex criteria*'.[122]

242. We consider it reasonable to bias consideration of what is an appropriate base year in favour of using the most recent actual expenditure, unless there is reason to conclude that it does not reflect the opex criteria. Information that has contributed to our reasoning includes ATCO's reconciliation of movements from its 2017 actual cost to its 2018 actual cost, its reference to improvements to time-sheeting to better allocate its costs, and the adjustments that ATCO has made in seeking to remove non-recurrent elements from its 2018 actual cost.

[121] ATCO Revised Plan, page 96

[122] ERA Draft Decision, paragraph 226

243. We have also considered the impact of ATCO now using its 2018 actual opex to derive its base opex. At $64.1m, ATCO's 2018 expenditure is $3.5m more than its 2017 expenditure (in $2019 terms)[123], Of this increase of $3.5m, $3.4m is attributed as follows:

- $1.8m of regulatory submission costs, which ATCO deducts;
- $0.4m of non-recurrent costs, which ATCO deducts;
- [redacted] of expenditure on pipeline inspections, which were not conducted in 2017 but which are otherwise recurrent requirements, and which ATCO retains in the base amount in lieu of a previous step change; and
- $0.7m is attributed to higher staff incentives in 2018, and which we assess below.

244. The remaining $0.1m increase results from the net effect of a combination of line item increases (including operations projects and variable volume works and licence fees) and decreases (including in BD & marketing and IT costs).

245. Except in regard to inclusion of its 2018 staff incentives, ATCO's choice of 2018 as a base year does not in itself give cause for concern, once its adjustments and offsets are taken into account. We consider below ATCO's explanations for the adjustments it has made, and the case for further adjustments.

Accept base year adjustment for operations projects and variable volume works

246. ATCO states that it incurred $0.7m more in 2018 on operations projects and variable volume works, than it did in 2017. ATCO claims that $0.5m of this increase is recurrent, but that $0.2m is non-recurrent and which it has accordingly deducted in deriving its base year value.

247. In its Revised Plan, ATCO has reconciled the increase from its 2017 to its 2018 expenditure and has explained the reasons for each element in this increase and why it considers some elements to be recurrent and some not. We consider that ATCO has provided a satisfactory reconciliation and justification for deducting $0.2m as non-recurrent but retaining $0.5m of the increase within the base year value.

Accept base year adjustment for pipeline inspections

248. ATCO did not undertake any pipeline inspections in 2017 and accordingly ERA did not have reason to consider the validity of a base year adjustment for such expenditure in its Draft Decision. Because of their absence from the 2017 base year value, and because pipeline inspections are required on a scheduled basis, ATCO had previously proposed step change amounts to account for these needs in AA5.

249. ATCO states that it incurred [redacted] in 2018 on pipeline inspections, and that [redacted] per inspection is a reasonable estimate for future inspections. ATCO states that [redacted] was for '*additional investigative works and specialist costs that are unlikely to*

[123] This and subsequent data in this paragraph is from ATCO's Base Step Trend opex forecast model, Inputs sheet

be required for future inspections' and accordingly ATCO has deducted this amount from its base year value.

250. The amount of [redacted] per inspection is consistent with the amount that ATCO proposed in its Initial Plan, and which the ERA accepted in its Draft Decision. We consider that ATCO has provided a satisfactory reconciliation and justification for deducting $0.2m as non-recurrent but retaining [redacted] in its base year value in lieu of step changes of $2.5m which it has now removed.[124]

Accept base year adjustment for regulatory submission costs

251. Because ATCO has now used 2018 as its base year, it has deducted costs related to preparing its regulatory submission and which it states as $1.8m. This is appropriate, as regulatory submission costs are not recurrent, and ATCO has proposed specific step amounts for these for AA5.

Reduce base year cost for BD and marketing costs

252. In its Initial Plan, ATCO's 2017 base year amount included $3.8m for BD and marketing. ERA did not accept that this amount would meet the opex criteria and applied a 50% reduction as a base year adjustment.

253. ATCO states that it incurred a lower amount ($3.2m) of BD and marketing expenditure in 2018 and rejects making any adjustment for this element of its base year value. ATCO does however accept that 2017 '*was an anomalously high year compared to historical levels of $1.4m in 2014 and $2.4m in 2015*'.[125]

254. In its Revised Plan, ATCO has provided an explanation of its BD and Marketing activities, which includes describing why it considers that it needs to spend more than previously and how it considers that this expenditure benefits customers. In summary, ATCO's argument is that there are increasing challenges in convincing developers, builders and potential customers to connect to the network and for existing customers to retain their connections and to continue to use gas at historical levels. ATCO lists seventeen BD and marketing activities that it undertakes, including modelling to determine capital contributions, developing business cases for potential customers, market research, internal and external communications programs, community and stakeholder engagement and gas safety campaigns.

255. In our Final Technical Report on ATCO's Initial Plan, we stated that we consider that ATCO had not demonstrated how its proposed expenditure can be reasonably expected to benefit its existing customers, and we noted that gas retailers in WA are providing a greater profile to the use of gas in WA.[126] Despite the additional information on what ATCO's BD and marketing activities comprise, we consider that this is still the case and that it is not reasonable to include expenditure at the level that ATCO has proposed, as part of its opex allowance. ATCO has not

[124] ATCO has proposed a one-off step change of $0.5m for an additional inspection in [redacted], which we also accept. See section 5.3.3.

[125] ATCO Revised Plan, page 100

[126] EMCa Review of Technical Aspects of the Proposed Access Arrangement, Report to ERA, March 2019, paragraphs 485 and 486.

demonstrated that its proposed expenditure will '*achieve the lowest sustainable cost of delivering pipeline services*' in accordance with NGR 91 (1).

256. We consider that the basis on which we proposed a BD and Marketing expenditure allowance in our assessment of ATCO's Initial Plan represents a reasonable balance that allows for necessary activities and is consistent with ERA's Draft Decision. That is, to allow BD and marketing expenditure of $1.9m per year, which implies a -$1.3m adjustment to ATCO's 2018 base year opex.

Reduce base year staff incentive costs

Information provided in ATCO's Initial and Revised Plans and in response to previous Information Requests

257. In its Initial Plan, ATCO stated that its then base of 2017 included $0.955m for staff incentive costs, and ATCO sought to increase this through a base year adjustment of $0.7m. In response to IR EMCa039, ATCO provided information showing a staff incentive amount of $1.6m in 2016, which seemed to indicate that the amount ATCO sought as a base year amount was already included in the actual base year cost. The ERA found that the 2017 amount '*…was anomalously high relative to the preceding years…*' and based on the evidence that ATCO had presented at that time, stated that it considered the $0.955m provisioned amount to '*… more closely represent[ ] a normal and efficient level…*'.[127]

258. ATCO's 2018 expenditure includes staff incentive payments, which ATCO states as being '*a provisioned amount of $1.643 million*.'[128] ATCO states that this is $0.7m more than the provisioned amount in 2017.

259. Through our process of reviewing ATCO's Initial Plan and following through to the current review, ATCO has provided a range of information on its staff incentive provisions and payments, which we summarise in the table below.

[127] ATCO refers to what it considers to be a confusion in the ERA's Draft Decision with removal of the increase of $0.7m that it sought. We consider that it is clear in reading the Draft Decision that ERA considered the reasonable amount to be $0.955m, and not some lesser amount.

[128] ATCO, Revised Plan 9.4.1.6, p.98

Table 14: ATCO information on staff incentive costs ($m, 31 Dec 2019)

Source	Description	2015	2016	2017	2018
EMCa019 (Corporate)	2016 Corporate bonuses		0.20		
	2017 incremental cf 2016			0.70	
	2018 incremental cf 2017				1.20
	Implied Corporate incentives	-	0.20	0.90	2.10
EMCa039	Incentives paid to staff	0.04	1.22	1.61	
ATCO IP BST model	'New' incentive payment			1.61	
ATCO RP 9.4.1.6 page 98	Provisioned amount			0.96	1.64
	Implied increment				*0.69*
EMCa 52 and 53 (table)	*2018 Corporate incremental cf 2017*				*0.70*
ATCO RP 9.4.2.4, page 110	Incentive payments			1.30	1.60

Sources: As indicated. EMCaxxx denote ATCO's responses to EMCa Information Requests. IP = Initial Plan. RP = Revised Plan. Some information is provided at greater precision than other information, and therefore may not reconcile due to rounding

260. The 2018 incentive provision of $1.6m referred to above differs slightly from the amount shown on page 110 of the Revised Plan, though this may be due to rounding. Of greater concern is that the increase of $0.7m referred to on page 98 does not reconcile to the difference between 2017 and 2018 staff incentives as shown on page 110 and, in footnote 125 in its Revised Plan, ATCO noted that its previously-provided 2017 Short-term Incentive Program (STIP) information was incorrect.

261. Further inspection of the information that ATCO provided in its Initial Plan, and in response to two information requests (EMCa019 and EMCa039) reveals a range of differences. We observe that some staff incentives are specifically labelled as 'Corporate'. However, in its response to IR EMCa039, ATCO sets out the bonuses attributed to Corporate and to Network, and this information shows that the majority of its bonuses are ascribed to 'Network'.[129] ATCO also states that the costs described there *'exclude the capitalised portion of bonus costs and also excludes the unregulated portion.*' From this, we learn therefore that ATCO's capex includes a portion of staff incentive payments. In its Initial Plan and its Revised Plan, we have not observed any reference to the amount, though it is difficult to envisage it being included anywhere except as part of a 'capitalised overhead', and which we assessed separately in Section 2.

262. In its Revised Plan, ATCO explains its staff incentives policies, which provides for STIP payments based on STIP payment rates against defined STIP values depending on staff levels. ATCO provides information on the process it follows and its sources of information that appear to inform this process. This information is essentially generic and ATCO does not provide sufficient information on the basis for its bonus payments to support its claim that they align with industry standards.

Further information provided

263. To assist with resolving a reasonable allowance for STIP in ATCO's base year amount, we sought further information in IR EMCa056. ATCO provided the following information for STIP amounts paid from opex for the four years to 2018. Comparison with the previous tables shows that these numbers differ again from those previously provided. In notes provided in its response, ATCO describes the

[129] Response to EMCa039(G). ATCO ascribes to Network $0.8m of $1.2m bonuses in 2016, and $1.2m of $1.6m in 2017, with the remainder ascribed to Corporate.

2017 and 2018 figures of $1.3m and $1.6m respectively as differing from the information in the table below due to rounding, although the combined effect of rounding down and up is a 2018 increase of $0.4m rather than the $0.3m stated in its revised Plan.

264. In addition to its error for 2017, ATCO's latest information also differs from previously provided information for 2015 and 2016. Though not significant to our consideration of a reasonable value for STIP, we observe that ATCO has not disclosed any STIP being attributed to 'network' opex, contrary to its information in its response to IR EMCa039. In its response to IR EMCa056, ATCO has also sought to reconcile the information now provided with information previously provided. However, some data that it claims to reconcile, does not.[130]

Table 15: ATCO information on staff incentive costs ($m, 31 Dec 2019)

Source	Description	2015	2016	2017	2018
EMCa056	Payment - opex portion	0.16	0.05	1.26	1.67
	Average (2015 to 2018)				0.79

Source: ATCO response to Information Request EMCa056

265. ATCO's latest information demonstrates (as we observed in reviewing its Initial Plan) that an incentive at the level of $1.6m that ATCO has proposed by virtue of its inclusion in its 2018 base expenditure, is still anomalously high. Given the wide variance in STIP amounts over the years, as shown in the table above, we consider that an average provides a better indication of revealed cost. With inclusion of additional data and correction of previous data, this average is now $0.79m and we consider that this would represent a reasonable amount to include in the adjusted base year for BST purposes. Relative to ATCO's proposed revised inclusion of $1.67m, we therefore propose a $0.88m reduction in adjusting the base year opex value.

Information on capitalised STIP

266. In its response to IR EMCa056, ATCO has disclosed that it capitalised further STIP amounts of $0.84m and $0.9m respectively in 2018 and 2019. The regulatory accounting basis for doing so is unclear to us, however we consider that any adjustment to AA4 conforming capex for such amounts is effectively covered by our consideration of capitalised overheads in section 2.

Accept IT and Corporate costs (for components not otherwise covered above)

267. ATCO has provided conflicting information on the level of its Corporate and IT costs:

- On page 98 of its Revised Plan, ATCO states that that '*2018 Corporate costs are $0.3m higher than in 2017*'. However, in Table 9.9, 2018 Corporate costs are shown as $19.2m against 2017 figure of $16.2m, a difference of $3.0m; and
- On page 98 of its Revised Plan, ATCO states that '*2018 financial year included IT costs of $9.0m, which was $0.7m lower than 2017*.' On page 108, ATCO again states that *'the 2018 base year cost includes IT costs of*

[130] For example, 2015 and 2016 STIP information in response to IR EMCa056 does not reconcile with ATCO's response to IR EMCa039.

$9.0m' and '*accept that $9.0m is more representative of a recurrent level of annual expenditure*' However in Table 9.9, IT costs are shown as $6.8m in 2018.

268. We sought clarification on these discrepancies and ATCO responded with information that reconciled the different values. In summary:

- The $0.3m increased Corporate costs is solely for an additional compliance requirement. Other reconciliation elements include lower BD and marketing costs (-$0.5m); higher staff incentives (+$0.7m); higher licence fees (+$0.2m); AA5 regulatory preparation costs (+$1.8m), and a $0.4m increase due to reclassifying some IT costs; and
- The stated $9.0m IT cost does not account for $2.2m that ATCO reclassified out of IT, with $0.4m recategorized to Corporate as above and $1.8m recategorized to Network.

269. We consider that this satisfactorily accounts for the differences within the Revised Plan.

270. ATCO's 2018 base year IT cost of $9.0m (before recategorization) is consistent with the ERA's Draft Decision and our advice from our review of ATCO's Initial Plan. We consider that this is a reasonable base year value.

271. Having dealt with ATCO's proposed BD and marketing costs, its staff incentives amount and noting that ATCO removes the $1.8m of AA5 regulatory preparation expenses in determining its base year value, the remaining additions comprise a $0.3m increase due to an increased compliance cost and $0.2m increase in licence and other fees. We consider that both of these amounts satisfy the opex criteria, on the basis of 'revealed cost' and the explanation that ATCO provides for the compliance cost-related increase.[131]

5.3.2 Recurrent step changes

ATCO's revised proposal

272. ATCO has accepted adjustments to the three opex step changes that ERA did not accept in its Draft Decision. Whereas in the Draft Decision, these amounts were wholly disallowed, ATCO has now proposed lower amounts and has provided information to support its claim for these amounts. In summary these are:

- additional leak survey and repair: in its Initial Plan, ATCO proposed $5.0m. ERA's allowed $2.5m in its Draft Decision, but ATCO has now reduced its proposal to $3.0m;
- new interconnections: in its Initial Plan ATCO proposed $1.2m additional for costs. ERA disallowed this and ATCO has re-proposed it but for a reduced amount of $0.9m;
- SCADA: in its Initial Plan ATCO proposed $2.3m for a project to introduce automated pressure control but has now reduced this to $0.8m.

[131] AAI, section 9.4.1.5 and further information provided in response to IR EMCa052(b)

273. In its Revised Plan, ATCO has proposed a new step change of $0.5m, to increase security patrols as an alternative to capex for a security of supply project.

Accept recurrent step increases for additional leak surveys and enhanced security patrols

274. In its Draft Decision, ERA allowed only 50% of the amount that ATCO had claimed to require for additional leak surveys. Based on our review of ATCO's Initial Plan, we considered that its case for its proposed level of expenditure was not well made. For its Revised Plan, ATCO has prepared an updated Project Brief which both clarifies the drivers for this step change and also provides quantified and costed information on the planned activities, amounting to $3.0m against the originally-proposed $5.0m. We are satisfied with both the need for this work and the quantum of the revised amount, and we therefore consider that it complies with the opex criteria.

275. As we describe under the heading 'Security of supply' in section 4.3.2, we consider that ATCO's proposal of daily security patrols is a reasonable risk mitigation option in lieu of the capex security capex projects that it has now removed. We further consider that ATCO's proposed step change of [redacted] per year ($0.5m in aggregate over AA5) is a reasonable allowance for such patrols.

Accept step increase for SCADA

276. ATCO's proposed step change associated with its proposed SCADA (Automated network pressure control) project is dependent on that component of its proposed SCADA capex project that ATCO now describes as 'Automated Network Pressure Control'. As described in Section 4.3.2 we now consider that ATCO has adequately justified this project. ATCO has now reassessed its opex requirement at $0.8m in total for AA5 rather than the $2.3m it originally proposed. Based on our acceptance of the proposed capex project and ATCO's reassessment of the step increase, we consider that this opex step change is a reasonable allowance

Recurrent step increase for interconnection not accepted

277. In its Draft Decision, ERA disallowed ATCO's proposed capex for two PGP interconnection projects and, consistent with this, disallowed the associated opex step change. We remain unconvinced of the justification for this interconnection, for reasons that we describe in Section 4.3.2. Although ATCO has now reassessed its opex requirement at $0.9m rather than the $1.2m it originally proposed, without the interconnection the opex step change is not required.

5.3.3 Non-recurrent step changes

ATCO's revised proposal

278. ATCO has not accepted the ERA's Draft Decisions to disallow three non-recurrent step changes and to reduce a fourth. In summary ATCO's positions on these are:

- Hazardous areas remediation: ATCO does not accept the ERA's assumption that this expenditure would be already implicit in its base year costs and has proposed $0.8m in its Revised Plan (same as its Initial Plan);

- Mains reclassification: ATCO proposed an amount of $0.6m in its Initial Plan, but which ERA disallowed. ATCO has not accepted ERA's Draft Decision and has now proposed a $1.7m step change;
- Asset and Business Management Systems Review: in its Revised Plan, ATCO states that it does not accept ERA's Draft Decision to disallow $0.7m that it had initially proposed. However, it no longer proposes this as opex and states that instead it intends to roll this expenditure into its capex for these systems; and
- AA6 Regulatory Submission preparation: in its Initial Plan, ATCO proposed $2.9m, but ERA allowed $2.3m in its Draft Decision. ATCO does not accept ERA's Draft Decision and maintains its proposal to allow $2.9m.

279. ERA allowed ATCO's initial AA5 allowance of a step change for pipeline inspections. However, ATCO undertook one pipeline inspection in 2018, therefore this cost is now implicit in its Base Year cost. It has now proposed only a one-off cost allowance in 2022, for a second pipeline inspection in that year;

Accept non-recurrent step changes for hazardous area remediation, pipeline inspections and mains reclassification

280. ATCO has provided additional information that now leads us to consider that ATCO's proposed step changes in regard to hazardous areas remediation, pipeline inspections and mains reclassification each comply with the opex criteria. ATCO no longer proposes an opex step change for expenditure on an asset and business management systems review, and states that it intends to capitalise this.

281. In Section 9.4.3.2 of its Revised Plan, ATCO has provided additional information that its 2018 base year expenditure only reflected the commencement of its activities in relation to [redacted] and that remaining expenditure is required both to complete work at those sites and to remediate a further [redacted] to address issues identified in an audit of ATCO's Safety Case. The information provided satisfies us that the extent of proposed future work is not implicit in ATCO's base year costs and that ATCO has developed a reasonable, costed work plan to bring these sites into compliance with its Safety Case. ATCO clarifies that the proposed hazardous areas remediation is a 'one-off' and therefore that it is best considered a non-recurrent step change.

282. As described under base year expenditure, the proposed single non-recurrent amount of $0.5m for an additional pipeline inspection in [redacted] is accepted on the basis that it is part of a scheduled and required program of such work.

283. ATCO has now proposed a significantly larger amount of $1.7m[132] for expenditure related to mains reclassification and has provided additional information on the rationale for this expenditure. We consider that ATCO has now adequately justified the need, which is driven by a 2018 change to AS/NZS 4645 that imposes a new obligation. We are also satisfied, notwithstanding the significant increase in ATCO's estimate, that ATCO has developed this estimate from what is now a clearer scope of works than was available to it at the time it prepared its Initial Plan, and that this cost estimate is reasonable.

[132] ATCO states $1.7m on page 115 of its Revised Plan, but shows this as $1.8m in its table 9.17 and 9.18 on subsequent pages. From its spreadsheet, we note that this shows to two decimal places as $1.75m.

Non-recurrent step amount for regulatory submission costs not accepted

284. ATCO has sought to justify an increased allowance of $2.9m for AA6 Regulatory Submission costs, relative to the ERA's Draft Decision allowance of $2.3m, on the basis of two more onerous requirements.

285. The first of these requirements involves participation in the ERA's review of rate of return, which will occur earlier in the regulatory process. ATCO claims that it will need to mobilise its regulatory submission project team ten months earlier at an associated cost of $0.3m. ATCO claims that a second additional cost relates to a change in the NGR that requires it to make a submission to the ERA on its reference services earlier in the regulatory cycle, allowing ERA to publish its decision on this six months before the remainder of the AA6 submission is due.

286. We consider that in both cases the additional costs that ATCO has proposed are not reasonable assumptions. We consider that both contributing to a rate of return review and providing an earlier submission on proposed Reference Services are essentially 'Business as Usual' activities for ATCO's regulatory personnel, albeit with the timing brought forward. Similarly, we consider it a reasonable assumption that any external resources required would be engaged at no incremental cost, though at an earlier stage in the regulatory cycle.

287. ATCO has not challenged ERA's Draft Decision that, absent the two factors above, a cost of $2.3m is a reasonable cost allowance for preparing a regulatory submission.

5.3.4 Escalation factors

Real labour cost escalation

288. As we discuss in section 2.2, we consider that ATCO has not justified its proposed AA5 real labour cost escalation rate of 1.47% p.a. We consider that a reasonable value is an average of 0.70% p.a. and we have used this alternative value in our adjusted forecast.

Growth escalation

289. In its Draft Decision, the ERA did not accept ATCO's proposed allowance of $13.0m for growth escalation and the ERA revised this allowance to $6.0m.

290. ATCO's Revised Plan includes an allowance of $10.8m for output growth. We have not been asked to assess the growth elements of ATCO's Revised Plan, therefore we have not considered an adjustment of its revised allowance.

5.3.5 Ancillary services

291. Relative to ERA's Draft Decision allowance of $17.1m for Ancillary Services, ATCO has proposed $16.4m in its Revised Plan. ATCO states that this forecast is based on the same unit rates as were included in its Initial Plan (and which the ERA accepted in its Draft Decision), but with a slightly lower volume forecast.

292. In our review of ATCO's Initial Plan, we noted the approximate doubling of Special Reads from 2016 to 2017, due to significantly increased retail churn but considered

that an argument could be made for this to settle at a lower level once pent-up demand for first-round churn dissipates. ATCO now reports that its 2018 Special Read volume was slightly higher than 2017, at 123,000. ATCO's forecast for those volumes to remain around 120,000 per year now looks more plausible and this leads us to reconsider its unit rates.

293. ATCO has proposed to reduce its current (AA4) 2019 Special Reads [redacted]. We have revisited Kleenheat's submission, in which it reports on Special Read unit rates for five eastern states gas distributors.[133] The information shows an average rate of $9.92, a median rate of $9.05, and that ATCO's new rate would be the [redacted]. Given ATCO's forecast continuation of high volumes, we consider that ATCO will continue to enjoy strong economies of scale in this service. ATCO has not provided information to demonstrate that its proposed rate reflects a reasonable estimate of efficient costs for Special Reads undertaken at this scale.

294. As a step towards an efficient rate, we consider that it would be reasonable to apply a benchmarked rate equal to the second-highest of the five eastern states gas distributors referred to in the Kleenheat submission, which is AGN South Australia. This rate is currently $10.80 per Special Read.[134]

295. We have assessed the volumes and rates for ATCO's other Ancillary Services. In aggregate, these reflect minimal change over the years and on a 'revealed cost' basis, we consider them to be reasonable estimates.

5.4 Summary of our findings and their implications

296. In the table below, we show the components of ATCO's base-step-trend (BST) opex forecast, and our proposed adjustments to that forecast. These comprise adjustments to the base year value, certain proposed step changes, to the real cost escalation component of the allowance and to the allowance for ancillary services. The subsequent figure shows the year by year values of ATCO's proposed opex allowance and the EMCa adjusted values.

[133] Kleenheat submission to ERA, 13th November 2018

[134] https://www.australiangasnetworks.com.au/our-business/regulatory-information/tariffs-and-plans; South Australia, 1 July 2019

Table 16: Derivation of ATCO proposed opex and EMCa adjusted opex allowance[135]

$m, real Dec 2019 Description	ATCO proposal	EMCa adjusted	EMCa adjustment
Base opex			
ATCO base (2018 actual)	64.1	64.1	-
Adjustments to base opex			
Network	(0.4)	(0.4)	
Corporate	(1.8)	(1.8)	
Information Technology	-	-	
BD & marketing	-	(1.3)	
Staff incentives	-	(0.9)	
Adjustments to Network, Corporate and IT	(2.2)	(4.4) -	-
UAFG	(6.1)	(6.1)	
Ancillary services	(1.0)	(1.0)	
UAFG and Ancillary Service allowances	(7.1)	(7.1) -	-
Efficient base year opex (for application of BST)	**54.8**	**52.6**	**(2.2)**
Efficient base opex for BST (5 years)	**274.0**	**263.1**	**(10.9)**
Step changes (aggregate amount over 5 years)			
Automated Network Pressure Control	0.8	0.8	
Increased Leak Survey & Repair	3.0	3.0	
New Interconnections (new PGP connections)	0.9	-	
Security of Supply - Pipeline Patrol	0.5	0.5	
Mains Reclassification	1.8	1.8	
Hazardous Areas Review & Remediation	0.8	0.8	
Pipeline Inline Inspections	0.5	0.5	
Access Arrangement 6 Regulatory Preparation	2.9	2.3	
Total for step changes	**11.2**	**9.7**	**(1.5)**
Rate of change over AA5			
Output growth	10.8	10.7	
Real price escalation	10.9	4.7	
Total for rate of change	**21.7**	**15.4**	**(6.3)**
Total BST	**306.9**	**25.1 288.2**	**(18.7)**
Category-specific			
UAFG	21.8	21.8	
Ancillary services	16.4	15.5	
Total for category-specific	**38.2**	**37.3**	- 0.9
Total AA5 opex allowance	**345.1**	**325.5**	**(19.6)**

Source information and calculations from ATCO model 09.100 Base Step Trend, and EMCa adjustments to that model.
NOTE: EMCa was not asked to review UAFG or 'output growth' – therefore the "EMCa adjusted' values for these items are default values only (for the purpose of completeness in this table).

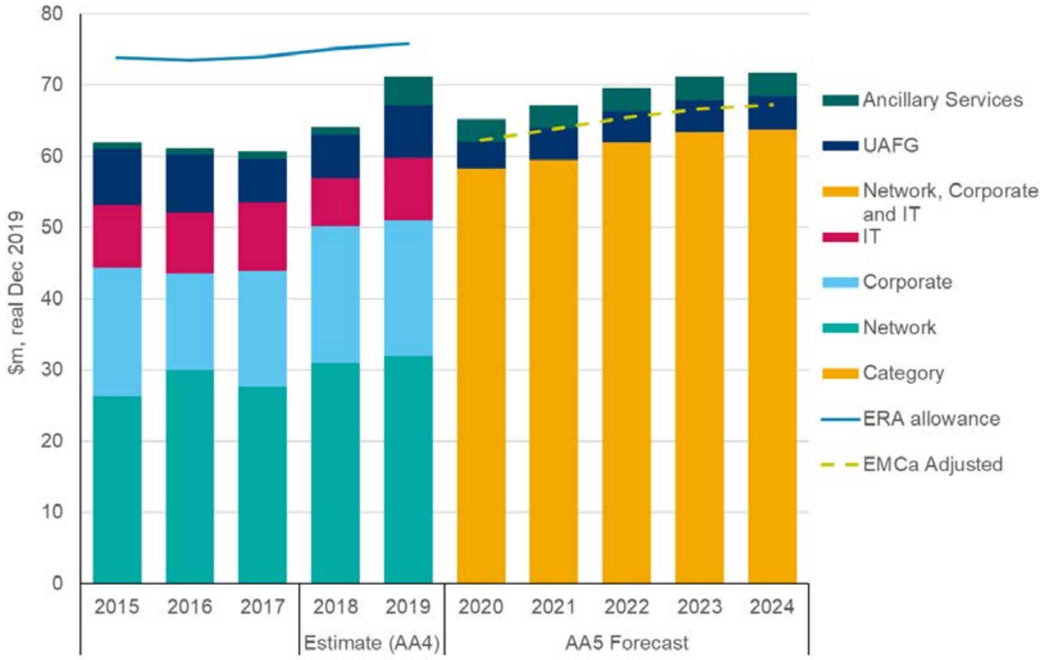
135 EMCa has not been asked to review ATCO's proposed UAFG or its proposed output growth. The information on these aspects reflects ATCO's assumptions, and is shown here for completeness only

Table 17: ATCO proposed and EMCa adjusted annual opex[136]

$m, real Dec 2019 Description	2020	2021	2022	2023	2024	*Total AA5*
ATCO proposal						
Network, corporate and IT	58.3	59.5	61.9	63.4	63.8	**306.9**
UAFG	3.8	4.4	4.4	4.5	4.6	**21.8**
Ancillaries	3.2	3.2	3.3	3.3	3.4	**16.4**
TOTAL	**65.3**	**67.2**	**69.6**	**71.2**	**71.8**	**345.1**
EMCa adjusted						
Network, corporate and IT	55.5	56.3	58.0	59.0	59.4	**288.2**
UAFG	3.8	4.4	4.4	4.5	4.6	**21.8**
Ancillaries	3.0	3.1	3.1	3.2	3.2	**15.5**
TOTAL	**62.3**	**63.8**	**65.5**	**66.7**	**67.3**	**325.5**

Source: EMCa analysis

Figure 4: ATCO Revised Plan 2020-24, ERA AA4 opex Allowance and EMCa AA5 opex Adjusted



Sources: EMCa analysis

[136] EMCa has not been asked to review ATCO's proposed UAFG or its proposed output growth. The information on these aspects reflects ATCO's assumptions, and is shown here for completeness only