Issues Paper on Proposed Revisions to the Mid-West and South-West Gas Distribution System Access Arrangement

2 May 2014

Economic Regulation Authority
WESTERN AUSTRALIA

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Key Points

1. On 17 March 2014, ATCO Gas Australia Pty Ltd (**ATCO**) submitted to the Economic Regulation Authority (**Authority**) proposed revisions to the access arrangement for the Mid-West and South-West Gas Distribution System (**GDS**). The proposed revised access arrangement covers the five and a half year period 1 July 2014 to 31 December 2019 (herein referred to as **AA4**, fourth access arrangement period or forthcoming access arrangement period).

2. The role of the Authority is to approve or not approve the proposed access arrangement revisions, in light of the requirements of the *National Gas Law* (**NGL**) and *National Gas Rules* (**NGR**).

3. ATCO has proposed to increase reference tariffs by inflation plus 1.6 per cent on average each year. The proposed real increase in reference tariffs results from:

   - A proposed increase in operating expenditure by 59 per cent, from \$284.6 million[1] in the current access arrangement period (a four and a half year period) to \$453.8 million[2] for the forthcoming access arrangement period (a five and a half year period). ATCO has identified the main drivers for the proposed increase in forecast operating expenditure as safety requirements and network growth. Another driver for ATCO's operating expenditure is its gas marketing strategy.
   - A proposal to spend \$605.7 million[3] of capital expenditure over the fourth access arrangement period, which is 124 per cent higher than its proposed conforming capital expenditure for the current access arrangement period.[4] ATCO has identified the main drivers for the proposed increase as safety requirements and network growth. An additional driver for ATCO's capital expenditure proposal is IT expenditure to replace obsolete IT systems.
   - A forecast depreciation of the capital base at \$113.0 million[5] for the forthcoming access arrangement period. ATCO proposes that the depreciation schedule be determined by transitioning to a different depreciation approach.

4. ATCO has proposed an approach to the rate of return that yields a Weighted Average Cost of Capital of 8.53 per cent. ATCO proposes to depart from the Authority's Rate of Return Guidelines in a number of areas.

5. ATCO has estimated the total cost of corporate income tax for the forthcoming access arrangement period at \$40.3 million.[6] ATCO proposes to include tax on capital contributions for the purposes of determining target revenue.

6. The reference tariff increase calculation for the forthcoming access arrangement period is based on ATCO's demand forecast, which assumes the number of

[1] \$ million real at 30 June 2014

[2] \$ million real at 30 June 2014

[3] \$ million real at 30 June 2014

[4] The current access arrangement period was 4.5 years. The forthcoming access arrangement period is 5.5 years.

[5] \$ million real at 30 June 2014

[6] \$ million real at 30 June 2014

customers and overall consumption will grow at an average rate of 2.1 per cent per year.

7. ATCO proposes to increase the standing charge for B3 customers to cover the avoidable net present costs of connecting B3 customers. The tariff impact ranges from increases of 86 per cent for B3 customers who use little or no gas to decreases greater than 12 per cent for the highest consuming B3 customers. ATCO maintains that 60 per cent of B3 customers will face decreases in the network tariff and 40 per cent will face increases, based on 2013 usage patterns.

8. ATCO has proposed a revenue yield price control for B2 and B3 customer connections (small business and residential customers), which specifies revenue by customer based on ATCO's proposed tariffs and forecast customer usage. The revenue yield price control would reduce ATCO's risk of recovering revenue where actual customer gas usage is lower than forecast:

   - If actual usage is lower than forecast for B2 and B3 customers, the revenue yield control would translate into higher tariffs for these customers; and
   - If actual usage is higher than forecast for B2 and B3 customers, the revenue yield control would translate into lower tariffs for these customers.

Introduction

9. On 17 March 2014, ATCO submitted its proposed revised access arrangement, access arrangement information and access arrangement supporting information for the GDS to the Authority. The proposed revised access arrangement, access arrangement information and access arrangement supporting information are available on the Authority's website.

10. ATCO's proposed revised access arrangement covers the period 1 July 2014 to 31 December 2019. ATCO's current access arrangement (**AA3** or third access arrangement period) applies until a revised access arrangement is approved by the Authority.

11. The purpose of an access arrangement is to provide details about the terms and conditions, including price, upon which an independent third party user can gain access to the pipeline to transport gas.

12. The GDS consists of gas reticulation networks serving Geraldton, Bunbury, Busselton, Harvey, Pinjarra, Brunswick Junction, Capel and the Perth Greater Metropolitan Area including Mandurah. These combined networks constitute approximately 13,500km of gas mains and associated infrastructure.

13. ATCO was formed on 29 July 2011, when ATCO Ltd through 100 per cent owned entities, acquired 100 per cent of the shares in WA Gas Networks Pty Ltd (**WAGN**, formerly Alinta Gas Networks Pty Ltd) from Brookfield Infrastructure Group and DUET Group.

14. ATCO Ltd acquired the GDS on 29 July 2011. ATCO Ltd controls ATCO Group, which is a Canadian-based international group of companies that is engaged in the areas of structure and logistics, utilities, energy and technologies.[7]

[7] ATCO Gas Australia, *Access Arrangement Information*, 17 March 2014, p. 23.

15. ATCO is a privately owned subsidiary of Canadian Utilities Limited that is principally controlled by ATCO Ltd. Prior to the acquisition of the GDS, the access arrangement for the third access arrangement period was submitted by WAGN.[8]

16. The Authority has prepared this Issues Paper to:

- guide interested parties in preparing submissions to the Authority on ATCO's proposed revised access arrangement; and
- assist interested parties in understanding some of the key issues that will be addressed by the Authority in determining whether to approve or not approve the proposed revised access arrangement.

17. The Issues Paper is not an exhaustive review of the content of the proposed revised access arrangement or the matters that the Authority will address in making its determination. Interested parties are invited to make submissions on any elements of the proposed revised access arrangement.

18. The Authority invited submissions from interested parties on the revised access arrangement by publishing a notice on 4 April 2014. Interested parties are invited to make submissions on ATCO's proposed revised access arrangement proposal for the GDS by **4:00 pm (WST) Wednesday, 21 May 2014.**

19. Submissions should be marked to the attention of the Assistant Director, Gas Access.

- Email address: publicsubmissions@erawa.com.au
- Postal address: PO Box 8469, PERTH BC WA 6849.
- Office address: Level 4, Albert Facey House, 469 Wellington Street, Perth WA 6000.

Regulatory Framework

20. The requirements for an access arrangement are established by the NGL and NGR as enacted by the *National Gas (South Australia) Act 2008* and as implemented in Western Australia by the *National Gas Access (WA) Act 2009* as the *National Gas Access (Western* Australia*) Law* (**NGL(WA)**).

21. Under rule 100 of the NGR, all provisions of an access arrangement are required to be consistent with the National Gas Objective. The National Gas Objective is defined in section 23 of the NGL(WA):

> The objective of this Law is to promote efficient investment in, and efficient operation and use of, natural gas services for the long term interests of consumers of natural gas with respect to price, quality, safety, reliability and security of supply of natural gas.

22. Sections 28(1) and (2) of the NGL(WA) specify the manner in which the Authority must perform or exercise its economic regulatory functions or powers.

> 28. Manner in which [Authority] must perform or exercise [Authority] economic regulatory functions or powers
>
> 1) The [Authority] must, in performing or exercising an [Authority] economic regulatory function or power, perform or exercise that function or power in a

[8] ATCO Gas Australia, *Access Arrangement Information*, 17 March 2014, p. 17.

manner that will or is likely to contribute to the achievement of the national gas objective.

2) In addition, the [Authority] –

a) must take into account the revenue and pricing principles –

i) when exercising a discretion in approving or making those parts of an access arrangement relating to a reference tariff; or

ii) when making an access determination relating to a rate or charge for a pipeline service; and

b) may take into account the revenue and pricing principles when performing or exercising any other [Authority] economic regulatory function or power, if the [Authority] considers it appropriate to do so.

23. Appendix 2 of this Issues Paper details the access arrangement review process. The review process is set out in The Gas Access Arrangement Guideline on the Authority's website.

24. ATCO is required to submit a "full access arrangement" for the GDS. The required content of a full access arrangement proposal is specified in rule 48 of the NGR. Appendix 3 of this Issues Paper further elaborates the required content of an access arrangement.

25. During the course of ATCO's third access arrangement, the Australian Energy Market Commission updated rule 87 of the NGR. The Authority addressed this update in its Rate of Return Guidelines published on 16 December 2013. Appendix 4 of this Issues Paper further elaborates the update.

Specific Issues for Consideration

26. The Authority has identified a number of specific issues which it is particularly interested in receiving comment on. However, parties are also invited to make submissions on any matters in the ATCO proposal. The specific issues identified in this section include:

- Increase in operating and capital expenditure.
- Rate of return on the regulatory asset base.
- Depreciation of the capital base.
- Estimated cost of corporate income tax.
- Tariff variation and revenue yield control.

Increase in Operating and Capital Expenditure

27. ATCO has proposed an increase in operating expenditure of 59 per cent, from \$284.6 million[9] in the current access arrangement period to \$453.8 million[10] for the forthcoming access arrangement period.[11]

9 \$ million real at 30 June 2014

10 \$ million real at 30 June 2014

11 The current access arrangement period was 4.5 years. The forthcoming access arrangement period is 5.5 years.

28. ATCO's proposed operating expenditure is split into the following categories: network costs (41 per cent), corporate costs (29 per cent), unaccounted for gas and IT (15 per cent each).

29. ATCO has identified the main drivers for the proposed increase in forecast operating expenditure as safety requirements and network growth. Another driver for ATCO's operating expenditure is its gas marketing strategy.

30. ATCO has proposed an increase in capital expenditure of 124 per cent from $270.5 million in the current access arrangement period to $605.7 million[12] for the forthcoming access arrangement period.[13]

31. ATCO's proposed capital expenditure is split into the following categories: network sustaining expenditure (51 per cent), network growth expenditure (38 per cent), structures and equipment (6 per cent) and IT expenditure (5 per cent).

32. ATCO has identified the main drivers for the proposed increase as safety requirements and network growth. An additional driver for ATCO's capital expenditure proposal is IT expenditure to replace obsolete IT systems.

33. Further details on ATCO's proposed operating and capital expenditure is provided in the 'Overview of ATCO's Proposal' section below.

Rate of Return on the Regulatory Asset Base

34. The rate of return, based on the WACC, provides for a return on the regulatory asset base.

35. Rule 87 of the NGR addresses rate of return requirements. Rule 87 specifies that the return on the projected capital base for each regulatory year of the access arrangement period is to be calculated by applying a rate of return that is commensurate with the efficient financing costs of a benchmark efficient entity with a similar degree of risk as the service provider. The allowed rate of return for a regulatory year is to be a weighted average of the return on equity for the access arrangement period and the return on debt for that regulatory year, and is to be determined on a nominal vanilla basis that is consistent with the estimate of the value of imputation credits.

36. In line with the requirements of rule 87, the Authority published its Rate of Return Guidelines (**Guidelines**) on 16 December 2013.[14]

37. ATCO proposes, for the purposes of its access arrangement revision proposal, an approach to the rate of return which yields:

- a WACC of 8.53 per cent, comprising:

[12] $ million real at 30 June 2014

[13] The current access arrangement period was 4.5 years. The forthcoming access arrangement period is 5.5 years.

[14] Economic Regulation Authority, *Rate of Return Guidelines: Meeting the requirements of the National Gas Rules*, 16 December 2013. The term 'Guidelines' also refers to the companion explanatory statement for the Guidelines (Economic Regulation Authority, *Explanatory Statement for the Rate of Return Guidelines: Meeting the requirements of the National Gas Rules*, 16 December 2013 and Economic Regulation Authority, *Appendices to the Explanatory Statement for the Rate of Return Guidelines: Meeting the requirements of the National Gas Rules*, 16 December 2013)

  - a return on debt of 7.09 per cent;
  - a return on equity of 10.70 per cent; and
  - gearing of 60 per cent debt.

38. These estimates of the WACC are illustrative, and are based on a 20 day averaging period ended on 18 November 2013. For the purposes of determining the rate of return to apply in the Final Decision, ATCO proposes that a confidential averaging period would be agreed with the Authority for estimating the market based parameters for the rate of return.[15]

39. The return on debt proposed by ATCO is derived as the sum of:
    - an on the day estimate at the start of the regulatory period for:
      - the risk free rate; and
      - the Debt Risk Premium (**DRP**);

40. ATCO proposes to use an on the day estimate of the risk free rate, based on a 10 year Commonwealth Government Security (**CGS**).

41. ATCO also proposes to use an on the day estimate of the DRP at the start of the regulatory period, based on the Reserve Bank of Australia's (**RBA**) estimates of the corporate credit spread data for 10 year debt of the BBB band credit rating.

42. The estimate of the return on equity that is proposed by ATCO is derived as a simple average of a range of models and data – including the Sharpe Lintner Capital Asset Pricing Model (**SL CAPM**), the Fama French Model (**FFM**), the Dividend Growth Model (**DGM**) as well as observations of the required return for the market as a whole. These models are summarised below:
    - SL CAPM – return on equity of 9.9 per cent;
      - the risk free rate for the SL CAPM is based on the 10 year CGS;
      - an equity beta for the SL CAPM of 0.82 is proposed, with the estimate based on a sample of Australian and international data (56 United States listed stocks);
      - a Market Risk Premium (**MRP**) of 7.12 per cent – derived from Wright, Ibbotsen, independent experts' and DGM estimates for the average firm;
    - FFM – return on equity of 10.8 per cent;
      - the risk free rate is based on the 10 year CGS, with estimates of the market beta of 0.79, the size factor risk premium of -0.17 per cent and value risk premium of 1.23 per cent;
    - DGM – return on equity of 10.9 per cent;
      - estimated utilising a method which corrects for estimate bias;
    - required return of the 'average market firm' – 11.2 per cent;
      - derived from Wright, Ibbotsen, independent experts and DGM estimates for the average firm;

[15] ATCO submits that the length of the averaging period is immaterial to the outcomes for the rate of return (ATCO Gas Australia, *Access Arrangement* Information, 17 March 2014, p. 232).

- a simple average of the above gives the final return on equity of 10.70 per cent.

43. ATCO proposes a gamma of 0.25, based on a payout ratio of 0.7 and a market value of imputation credits of 0.35.

44. In its proposal, ATCO raises issue with regard to:
    - the application of the Guidelines;
    - the return on debt;
    - the return on equity; and
    - the value of imputation credits.

Application of the Guidelines

45. ATCO submits that with regard to departing from the Guidelines, where it 'puts in issue a particular methodology or value identified in the Guidelines, there is no requirement in rule 87 of the NGR for such a departure to be justified on the basis of fresh material or some new event'.[16]

46. ATCO considers the Authority's Guidelines do not meet the requirements of rule 87 of the NGR, because the Guidelines have not considered the consistency of the rate of return with respect to: [17]
    - – the allowed rate of return objective;
    - – the National Gas Objective and the Revenue and Pricing Principles.

Return on debt

47. ATCO agrees with the Guidelines that the cost of debt may be estimated as the sum of the risk free rate and the DRP.

48. However, ATCO submits that the approach set out in the Guidelines does not achieve the allowed rate of return objective or comply with the NGR, because it:[18]
    - is not an implementable debt management strategy, and results in an estimate that does not provide an opportunity to recover the efficient costs of debt;
    - is based on a term of debt that is not efficient and results in an underestimation of the cost of debt; and
    - requires an annual update that has no other effect than to increase the risk faced by the business with no additional compensation.

Implementable efficient debt management strategy

49. ATCO submits analysis by CEG (its consultant) that the regulator is required to define a financing strategy for the benchmark efficient entity, otherwise it cannot be measured.[19]

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[16] ATCO Gas Australia, *Rate of Return Guidelines – Meeting the Requirements of the National Gas Rules*, letter from Alan Dixon, 17 March 2014.

[17] ATCO Gas Australia, *Access Arrangement Information*, 17 March 2014, p. 230.

[18] ATCO Gas Australia, *Access Arrangement Information*, 17 March 2014, p. 249.

[19] ATCO Gas Australia, *Access Arrangement Information*, 17 March 2014, Appendix 20, p. 1.

50. Discussion of this issue can also be found in the Guidelines.[20]

Estimation of the debt risk premium

51. ATCO submits that the Guidelines' term of debt is not commensurate with efficient financing debt costs. ATCO's submission in this regard relates primarily to the method used to estimate the DRP. ATCO considers the observed average term of issuance of benchmark entity debt is the correct term, which is closer to 10 years, rather than the term to maturity, which is closer to 5 years.

52. ATCO submits that the Guidelines, in drawing on Professor Lally's analysis,[21] has misinterpreted his position with regard to the appropriate term for the DRP estimate.[22]

53. In addition, ATCO submits that the Guidelines did not consider the RBA approach to estimating the DRP, but rather set out the Bond Yield Approach. ATCO considers that the Bond Yield Approach for estimating the DRP is too restrictive in not considering foreign currency bonds issued by Australian benchmark firms. ATCO considers that the RBA's method overcomes this shortcoming, and further that it allows consideration of a ten year term to maturity.

54. With regard to base rate, CEG considers that the Guidelines erred in using CGS for the base rate, rather than the swap rate.[23]

Annual update of the estimate of the debt risk premium

55. ATCO submits that the annual update for the DRP estimate set out in the Guidelines introduces additional risks and costs that cannot be managed, and adds price volatility for customers. ATCO's consultant, CEG considers that the DRP should not be annually updated, as a firm's DRP is a historical average DRP, not the prevailing DRP at the beginning of each year.[24,25]

Return on equity

56. ATCO submits that the Guidelines did not consider all relevant methods, models, data and other evidence, resulting in a return on equity that does not achieve the allowed rate of return objective.[26]

57. ATCO engaged SFG to assess the Guidelines' approach with regard to the return on equity.[27] ATCO draws on SFG's assessment and submits that:[28]

- the Guidelines use of criteria leads to error;

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[20] Economic Regulation Authority, *Explanatory Statement for the Rate of Return Guidelines*, 16 December 2013, p. 69.

[21] Economic Regulation Authority, *Appendices to the Explanatory Statement for the Rate of Return Guidelines*, 16 December 2013, p. 15.

[22] ATCO Gas Australia, *Access Arrangement Information*, 17 March 2014, p. 250.

[23] The Guidelines considered this issue at length. See Economic Regulation Authority, *Explanatory Statement for the Rate of Return Guidelines*, 16 December 2013, p. 84.

[24] ATCO Gas Australia, *Access Arrangement Information*, 17 March 2014, Appendix 20, p. 76.

[25] Economic Regulation Authority, *Explanatory Statement for the Rate of Return Guidelines*, 16 December 2013, p. 78.

[26] ATCO Gas Australia, *Access Arrangement Information*, 17 March 2014, p. 234.

[27] ATCO Gas Australia, *Access Arrangement Information*, 17 March 2014, Appendix 19.

[28] ATCO Gas Australia, *Access Arrangement Information*, 17 March 2014, p. 236.

- the FFM satisfies the Guidelines criteria at least as well as the CAPM and therefore should be considered relevant information;
- the rejection of the DGM does not recognise contemporary studies and is inconsistent with the acceptance of the DGM for estimating the MRP;
- the estimate of the return on equity for the average firm is relevant as a comparator for the benchmark efficient firm; and
- the Guidelines' implementation of the SL CAPM does not utilise the best parameter estimates.

Criteria

58. ATCO has questioned the Guidelines' use of criteria with regard to the achievement of the allowed rate of return objective.[29]

Choice of models for estimating the return on equity

59. A major issue in ATCO's submission is the use of models other than the SL CAPM for estimating the return on equity. The issue of relevant models was considered in the Guidelines.[30]

60. Incorporating the estimate for the average firm in the method for estimating the return on equity of the benchmark efficient entity is justified by ATCO on the basis that it is the starting point of most asset pricing models, which are then adjusted for the relative risk of the specific firm or industry.[31]

61. ATCO incorporates estimates from FFM, as it considers that the model is theoretically sound and is relevant for setting the return on equity.[32,33]

62. With regard to the DGM, ATCO submits that the DGM has 'a sound basis and is extensively used in practice, including for the purpose of determining regulatory rates of return'.[34] ATCO therefore considers DGM estimates are relevant for estimating the return on equity, and incorporates a version in the overall approach to estimating the return on equity. In particular, ATCO relies on updated DGM estimates from a study by SFG from 2013.[35]

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29 See Economic Regulation Authority, *Explanatory Statement for the Rate of Return Guidelines*, 16 December 2013, p. 7.

30 See Economic Regulation Authority, *Appendices for the Explanatory Statement for the Rate of Return Guidelines*, 16 December 2013, Appendix 8.

31 ATCO Gas Australia, *Access Arrangement Information*, 17 March 2014, Appendix 19, p. 28.

32 ATCO Gas Australia, *Access Arrangement Information*, 17 March 2014, p. 245.

33 ATCO Gas Australia, *Access Arrangement Information*, 17 March 2014, Appendix 19, p. 18 on.

34 ATCO Gas Australia, *Access Arrangement Information*, 17 March 2014, p. 246.

35 SFG Consulting, *Dividend discount model estimates of the cost of equity*, 19 June 2013.

Implementation of the Sharpe Lintner Capital Asset Pricing Model

63. ATCO considers that the SL CAPM is a relevant model for estimating the return on equity, but that the Guidelines' implementation of the model – in particular the parameters used – has shortcomings.

64. With regard to the SL CAPM, ATCO submits that:[36]

- the estimate of the risk free rate should be based on 10 year term CGS, as the approach is consistent with market and regulatory practice, and is supported by the average tenor of issuance by Australian gas and electricity businesses in excess of 10 years;[37]
- the estimate of the equity beta, from within the Guidelines range of 0.5 to 0.7, would lead to an estimate lower than that which applied in the previous access arrangement (of 0.8);
  - ATCO considers that its risk has increased rather than decreased since the last access arrangement, due to declining average consumption, subsidy policies for solar PV and regulations in the building industry that create barriers for gas use;
- in estimating the equity beta, the Guidelines disregarded overseas comparators and issues associated with the reliability of its estimates stemming from the small sample of Australian listed firms;
  - ATCO submits that its method drawing on international data (giving nine Australian-listed stocks and 56 United States stocks) overcomes the problems associated with the Guidelines' approach;
- the estimate of the MRP is not the best estimate as its primary range of 5 to 7.5 per cent has been incorrectly established, and there is no justification for choosing a point estimate below the mid-point of the range;
  - SFG consider that the best estimate of the historic mean of the MRP is 6.5 per cent (based on a theta of 0.35);
  - recent estimates of the MRP using the DGM fall outside the range of 6 to 7.5 per cent estimated by the Authority.

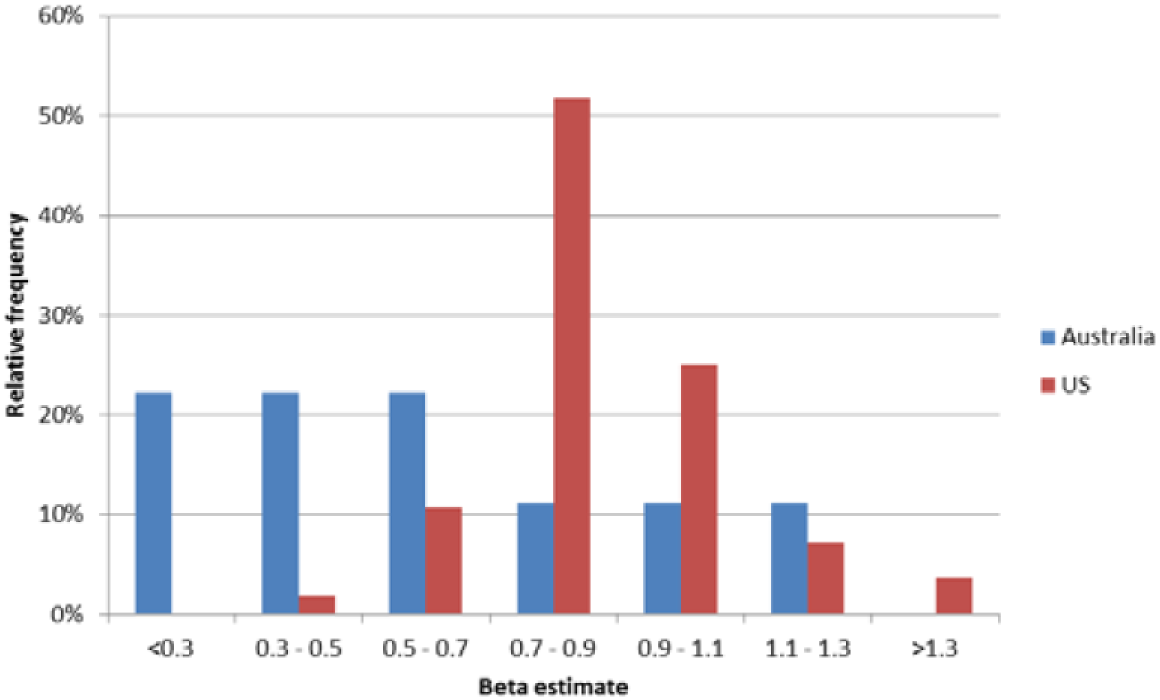
65. With regard to the equity beta, SFG contends that the Guidelines' range for the estimates, of 0.5 to 0.7, is arbitrary and unreliable.[38] SFG compares the Australian estimates of re-levered beta with estimates for 56 listed energy network companies from the United States estimates, which SFG considers are more reliable given the larger sample size, as illustrated in Figure 1.

[36] ATCO Gas Australia, *Access Arrangement Information*, 17 March 2014, p. 237.

[37] SFG contend that the 'present value' principle relied on by the Guidelines to support the 5 year term CGS for the risk free rate 'is not found anywhere in the rules' (ATCO Gas Australia, *Access Arrangement Information*, 17 March 2014, Appendix 19, pp. 69 to 70). SFG go on to quote the Australian Energy Regulator's views that the risks for equity investors investing in regulatory assets mitigate against the adoption of a five year term, as the equity holders could not walk away from the asset at the end of five years and be fully compensated.

[38] ATCO Gas Australia, *Access Arrangement Information*, 17 March 2014, Appendix 19, p. 72.

Figure 1 Frequency Distribution of Beta Estimates



Source: ATCO Gas Australia, *Access Arrangement Information*, 17 March 2014, Appendix 19, p. 76.

66. ATCO also submits that the Authority's estimate assumes that there is no inverse relationship between the MRP and the risk free rate as accepted and demonstrated by other methods and models.[39] Specifically, SFG argues that the upper bound for the Guidelines' DGM range does not capture the potential for the return on equity to be stable over time, in which case the MRP and the risk free rate would be inversely related. This issue was considered in the Guidelines.[40]

67. With regard to the point estimate of the MRP, both ATCO and its consultant SFG have criticised the method adopted in the illustrative example in the Guidelines. SFG in particular indicates that it considers that an estimate below the mid-point of its range cannot be justified at the current time, particularly as the three indicator variables contain large variations associated with the GFC.

The value of imputation credits

68. Gamma may be estimated as the product of two components:

(i) the payout ratio (F); and

(ii) the market value of imputation credits (θ).

69. This can be represented as follows:

$$\gamma = F \times \theta$$

70. ATCO agrees with the Guidelines' proposed payout ratio estimate of 0.7.

[39] ATCO Gas Australia, *Access Arrangement Information*, 17 March 2014, p. 240.

[40] Economic Regulation Authority, *Appendices to the Explanatory Statement for the Rate of Return Guidelines,* 16 December 2013, p. 216.

71. However, ATCO submits that the Guidelines' estimate of the market value of imputation credits, theta, in the range of 0.35 to 0.55, is based on the 'unreasonable assumption' that the 'expected return, in the absence of the stock trading ex-dividend, is equal to zero'.[41] ATCO's consultant, SFG, states this as follows:[42]

> …the ERA study also reports results in the absence of this standard market adjustment on the basis that, but for the dividend, a particular stock price might have moved (over the ex-dividend day) by somewhat more or less than the market. For example, it is possible that when the broad market increases by 2%, a particular stock might have moved (but for the dividend) by 1.8% or by 2.2%.
>
> Omitting the market adjustment entirely is certain to be an inferior estimate on average. Whereas individual stocks might have moved by somewhat more or less than the broad market, on average stocks will move exactly in accordance with the market index, by definition.[43] That is, the standard market adjustment produces estimates of "but for the dividend" stock price movements that are unbiased on average – in the sense that it is equally likely that (but for the dividend) the stock might have moved somewhat more or somewhat less than the broad market index. Omitting the market adjustment entirely is to assume that (but for the dividend) the stock price would not have moved at all. Such an omission creates a bias. If the broad market increased by 2% over the ex-dividend day, the assumption that the stock price would have been 0% is clearly likely to be a material underestimate, on average.

72. The Authority notes that discussion of the above issue can be found in the Guidelines.[44]

73. ATCO further considers, based on advice from SFG, that the Guideline's range is not the best estimate given the available information. Discussion of this issue can be found in the Guidelines.[45]

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[41] ATCO Gas Australia, *Access Arrangement Information*, 17 March 2014, p. 258.

[42] ATCO Gas Australia, *Access Arrangement Information*, 17 March 2014, Appendix 24, p. 9.

[43] This is because the market portfolio is an average taken over all stocks.

[44] Economic Regulation Authority, *Explanatory Statement for the Rate of Return Guidelines*, 16 December 2013, p. 220.

[45] Economic Regulation Authority, *Explanatory Statement for the Rate of Return Guidelines*, 16 December 2013, p. 220.

Issue 1 Rate of Return on the Regulatory Asset Base

Submissions are invited from interested parties on the following:

- ATCO's departure from the Rate of Return Guidelines.
- ATCO's proposed approach to estimating the cost of debt for the benchmark efficient entity, and its consistency with the requirements of the NGL and the NGR, and the allowed rate of return objective in particular.
- ATCO's proposed approach to estimating the return on equity, and its consistency with the requirements of the NGL and NGR, and the allowed rate of return objective in particular.
- ATCO's proposed approach to estimating gamma and its consistency with the requirements of the NGL and the NGR, and the allowed rate of return objective in particular.

Depreciation of the Capital Base

74. Rules 88, 89 and 90 of the NGR specify particular requirements for the depreciation of pipeline assets in the Regulatory Asset Base (**RAB**).

75. Rule 88 states that the depreciation schedule may consist of a number of separate schedules, each relating to a particular asset or asset class.

76. Rule 89 states that the depreciation schedule should be designed so that:[46]

- reference tariffs will vary in a way that promotes efficient growth in the market for reference services;
- each asset or asset class is depreciated over its economic life;
- the expected economic life of a particular asset or asset class can be adjusted;
- the amount by which the asset is depreciated over its economic life does not exceed the value of the asset at the time of its inclusion in the capital base; and
- the service provider's reasonable needs for cash flow to meet financing, non-capital and other costs.

77. Rule 90 of the NGR specifies that a full access arrangement must contain provisions governing the calculation of depreciation for establishing the opening capital base for the next access arrangement period. The provisions must resolve whether depreciation of the capital base is to be based on forecast or actual capital expenditure.[47]

[46] NGR 89.

[47] NGR 90.

Method of accounting for the RAB and treatment of depreciation

78. ATCO is proposing Historic Cost Accounting (**HCA**) of the RAB, with nominal straight line depreciation. HCA is based on the values of the assets at the time of expenditure. Under HCA, the historic cost values are not indexed year to year for inflation. Annual depreciation is calculated by dividing the historic value by the effective life of the asset. The resulting value in nominal terms for each year is then included as the depreciation building block in the cost of service.

79. This approach contrasts with a Current Cost Accounting (**CCA**) approach, which has been used for the GDS access arrangements to date. The CCA approach indexes the closing value of the previous year's asset base each year to account for inflation, thereby maintaining the historic value in real terms (giving the so-called 'current cost'). The resulting straight line depreciation building block differs slightly whether it is used in a real or nominal revenue model:

   - In a real revenue model – as was used by the Authority for the previous access arrangement – the resulting real straight line depreciation is used directly as the depreciation building block in the cost of service.
   - In a nominal revenue model – such as the Post Tax Revenue Model (**PTRM**) used by the AER – the value of the indexation increase on the previous year's closing asset value is deducted from the nominal depreciation calculated on the indexed capital base for the current year. This removes a double count for inflation, which would otherwise occur in the PTRM.[48]

80. ATCO considers that:[49]

> …the HCA method is simpler and better understood than CCA and is more widely used in competitive markets. The HCA approach also eliminates the need for a deduction for the double counting of inflation, which under the CCA method is an additional step that addresses a problem that does not need to be introduced.
>
> Both methods comply with rule 89(1)(b). ATCO considers the HCA method better complies with rule 89 (1)(a) and removes the need to consider rule 89(2) as deferral of depreciation is not required.
>
> Although the HCA approach results in a short term price impact, this is offset by lower prices in the longer term. If HCA is applied, the higher prices in the short term would result in ATCO Gas Australia receiving more revenue in the AA4 period than under a CCA approach. However, ATCO Gas Australia receives no more revenue in net present terms over the life of the capital base under either approach.

81. In support, ATCO cites the opinion of NERA to argue that there is no economic rationale for the CCA approach. Rather, NERA considers that the HCA approach is consistent with the standard treatment of depreciation by firms operating in competitive markets.[50]

82. ATCO also draws on separate work by NERA which suggests that the overall ATCO tariff with the HCA method would be more stable tariffs over time in real terms, as compared to the other methods.[51] NERA suggests that this is more consistent with

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48 This is because the nominal WACC also includes a return for inflation. In the PTRM, the WACC is also applied to the opening value of the capital base in the current year. Therefore, a return for inflation is included in both the WACC and in the unadjusted depreciation. Deducting the value of inflation applied through indexation under the CCA depreciation approach therefore avoids a double count.

49 ATCO Gas Australia, *Access Arrangement Information*, 17 March 2014, p. 212.

50 ATCO Gas Australia, *Access Arrangement Information*, 17 March 2014, Appendix 15, p. 4.

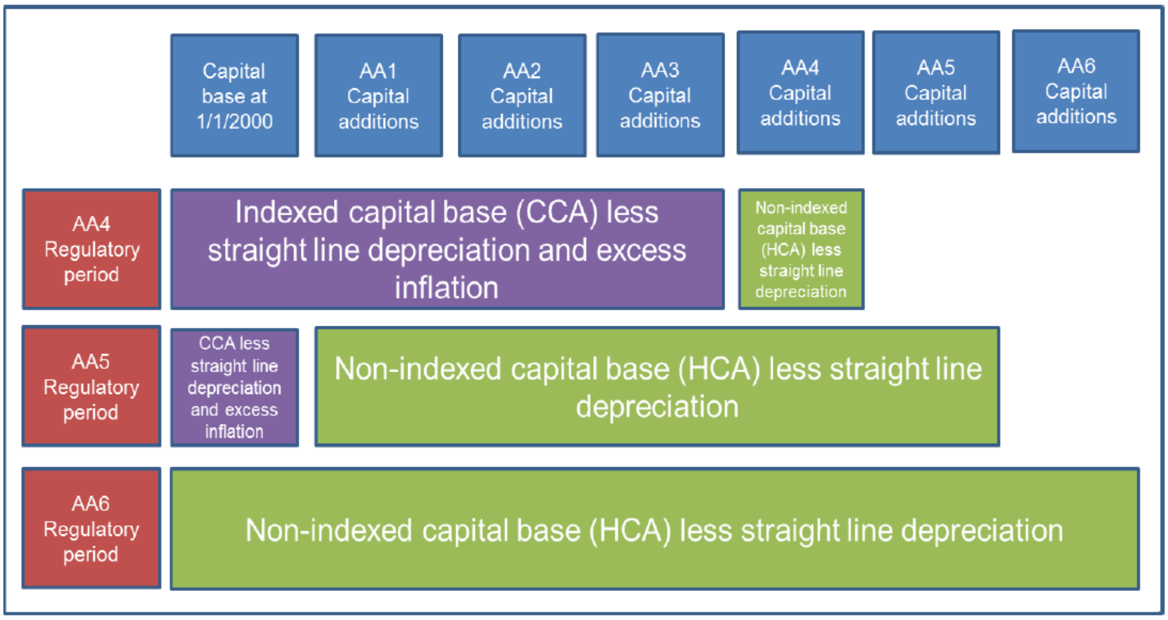
51 ATCO Gas Australia, *Access Arrangement Information*, 17 March 2014, Appendix 13.

economic efficiency principles, as it would minimise the gap between an expected long run decline in the long run marginal cost of providing capital intensive products – such as gas transport services – and the revenue per unit to be recovered over the life of the asset.

Transitional arrangements

83. In order to limit the impact of an initial tariff shock from a change in approach to depreciation, ATCO proposes to phase in the HCA method, as illustrated in Figure 2.

Figure 2 ATCO Proposed Arrangements for Transitioning from CCA to HCA



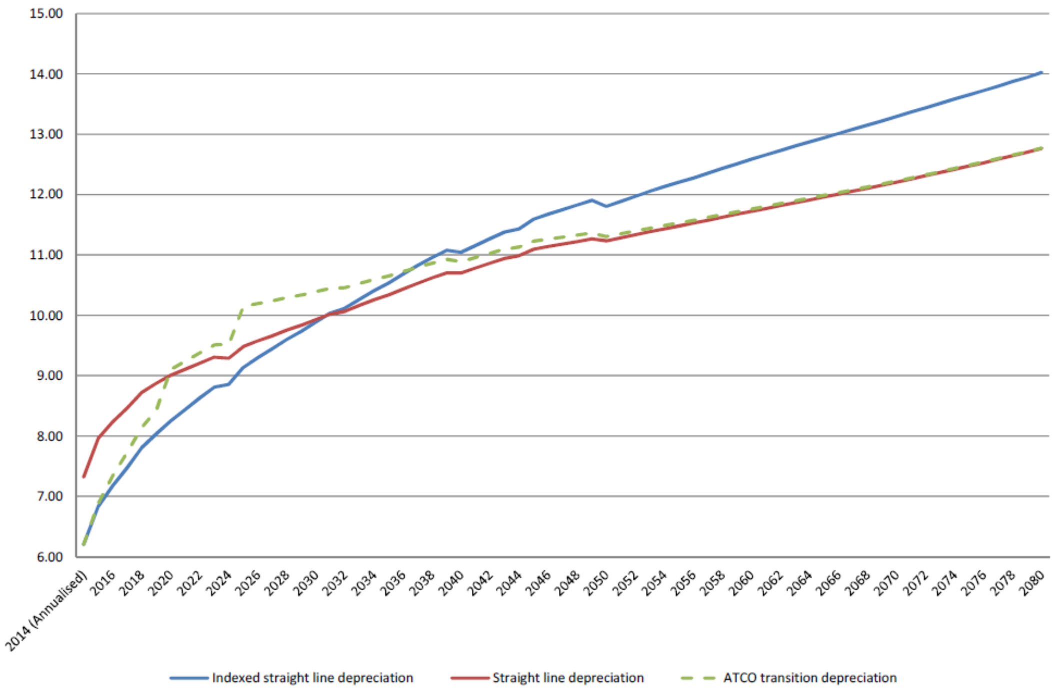
Source: ATCO Gas Australia, Access Arrangement Information, 17 March 2014, Figure 83, p. 220.

84. Rule 99 of the NGR provides for an access arrangement to include principles that may be fixed over two or more access arrangement periods. Fixed principles can be revoked by the Authority, but with the service provider's consent. ATCO has proposed a fixed principle in relation to depreciation for the period 1 July 2015 to 1 January 2030.[52] The principle relates to ATCO's proposal to change the depreciation methodology over more than one access arrangement period.

85. If the proposed move to HCA for the purposes of estimating forecast depreciation was accepted, then the proposed method of transition would limit the immediate tariff increase (Figure 3 from ATCO's proposal shows the current CCA approach as the blue line, the proposed HCA approach as the red line, and the proposed transition as the green dashed line).

[52] ATCO Gas Australia, *Access Arrangement for the Mid-West and South-West Gas Distribution System*, 17 March 2014, pp. 22-24.

Figure 3 Total revenue per GJ under ATCO proposed transition, constant prices



Source: ATCO Gas Australia, Access Arrangement Information, 17 March 2014, Appendix 15, p. 30.

Asset lives to be used for depreciation purposes

86. ATCO proposes to reduce the economic asset lives of its high pressure steel and plastic pipelines from 120 years to 80 years and 60 years respectively, for depreciation purposes.

87. Rule 89 (c) of the NGR provides that the depreciation schedule should be designed so as to allow, as far as reasonably practicable, for adjustment reflecting changes in the expected economic life of a particular asset, or a particular group of assets.

88. ATCO states that the economic lives of high pressure mains are affected by changing standards in asset management and safety requirements and are significantly out of step with other gas distribution businesses in Australia.

Issue 2 Depreciation of the Capital Base

Submissions are invited from interested parties on the following:

- The merits of using forecast capital expenditure for depreciation purposes, or actual capital expenditure, for the purposes of rule 90 of the NGR (refer to paragraph 77).
- Whether the LRMC of provision of gas services on the GDS is increasing or decreasing in the short to medium term, or over the longer term. Whether the trend for LRMC over time supports a switch from CCA to HCA depreciation, given that HCA depreciation would result in higher tariffs in the period to 2030, as compared to CCA depreciation, and lower tariffs thereafter.
- The impact of the switch from CCA to HCA on the efficient growth in the market for reference services on the GDS.
- Other considerations the Authority should take into account when considering the application of rule 89 of the NGR to ATCO's proposed switch to CCA depreciation.
- Reasonableness of ATCO's proposed transition, if there were to be a switch to the CCA depreciation method.
- Reasonableness of ATCO's proposed reduction of the economic asset lives of high pressure mains reasonable.

Estimated Cost of Corporate Income Tax

89. Rule 76 of the NGR provides for the estimated cost of corporate income tax as a building block for total revenue. Rule 87A of the NGR elaborates that the estimated cost of corporate income tax of a service provider for each regulatory year of an access arrangement period (ETC_t) is to be estimated in accordance with the following formula:

$$ETC_t = (ETI_t \times r_t)(1-\gamma)$$

Where

ETI_t is an estimate of the taxable income for that regulatory year that would be earned by a benchmark efficient entity as a result of the provision of reference services if such an entity, rather than the service provider, operated the business of the service provider;

r_t is the expected statutory income tax rate for that regulatory year as determined by the AER; and

γ is the value of imputation credits.

90. Ernst & Young has been engaged by ATCO to estimate the Tax Asset Base (**TAB**) at 30 June 2014 by taking into account the following:

- date the business was first subject to tax;
- tax value of assets at that date, separating between the RAB and non-RAB;
- profile of RAB when first subject to tax, including any capital expenditure that took place before the business was first regulated; and
- rolling forward of TAB from when first subjected to tax to commencement of post-tax approach, taking into account tax depreciation, actual capital expenditure and asset disposals.

91. The Ernst & Young consultant noted that he was instructed by ATCO to make a number of assumptions, including the following:[53]

    - As at 30 June 2000, AlintaGas Networks (the former name of ATCO Gas Australia) was privatised. At this date, accounting and tax values for regulated tax assets were established.
    - As at 23 July 2003, AlintaGas Networks was acquired by WA Network Holdings (previously Alinta Network Holdings), and the tax base values of the regulated assets were reset for tax purposes. A step down in value of approximately $72 million was included in the tax base.
    - As at 29 July 2011, ATCO Australia acquired 100 per cent of WA Gas Networks (subsequently renamed ATCO Gas Australia). As part of this acquisition, the tax base values of the regulated assets were reset for tax purposes, which resulted in a step up in the tax base. For the purpose of calculating a regulated TAB, income tax consolidation adjustments which reset the tax bases of the regulated assets have been disregarded.

92. Ernst & Young has not elaborated the rationale for disregarding resets to the tax asset base as at 29 July 2011, upon ATCO acquiring the assets that constitute GDS.

93. Ernst & Young has calculated the TAB as at 1 July 2014 as $495,305,697. This TAB:[54]

    - excludes unregulated assets;
    - excludes land on the basis that it is not depreciable for tax purposes;
    - incorporates contributed and gifted assets, which Ernst & Young states is required by the income tax legislation; and
    - uses the prime cost method of depreciation.[55]

94. ATCO has proposed to include capital contributions in the tax module for the purposes of the determining the target revenue. The Authority notes that this issue

[53] ATCO Gas Australia, *Access Arrangement Information*, 17 March 2014, Appendix 26: Review of regulated tax asset base for regulated revenue purposes, p. 5.

[54] ATCO Gas Australia, *Access Arrangement Information*, 17 March 2014, Appendix 26: Review of regulated tax asset base for regulated revenue purposes, p. 8.

[55] Ernst & Young state (ATCO Gas Australia 2014, *Access Arrangement Information: 1 July 2014 – 31 December 2019 (AA4)*, www.erawa.com.au, March, Appendix 26: Review of regulated tax asset base for regulated revenue purposes, p. 8):

> …the prime cost method of depreciation is an election which is generally available under the provisions of the ITAA97. This method appears reasonable for the purposes of this exercise, as prime cost depreciation provides a consistent annual deduction over the life of an asset and it also appears to be consistent with the approach used by other regulatory authorities where a post-tax WACC is adopted.

has previously been considered by the Authority in its assessment of the Western Power access arrangement for the third access arrangement period.[56]

95. Finally, some of the asset lives in the TAB are inconsistent with the Australian Taxation Office rulings. The Ernst & Young consultant has noted:[57]

> "I have not been advised of any specific reasons for the choice to use these longer self-assessed effective lives."

Issue 3 Estimated Cost of Corporate Income Tax

Submissions are invited from interested parties on the following:

- The impact of disregarding the reset of the Tax Asset Base upon ATCO acquiring GDS in 29 July 2011.
- The inclusion of capital contributions in the Tax Asset Base.
- The impact of using longer asset lives for the Tax Asset Base.

Tariff Variation and Revenue Yield Control

96. A reference tariff variation mechanism gives the Authority oversight to approve any variation of the reference tariff. A reference tariff is not to vary during the course of an access arrangement period, except as provided by a reference tariff variation mechanism.

97. Rules 92 and 97 of the NGR set out requirements for an access arrangement to include a mechanism for variation of reference tariffs during an access arrangement period.

98. Rule 92 states that the reference tariff variation mechanism must be designed to equalise (in terms of present values) forecast revenue from reference services over the access arrangement period, and the portion of total revenue allocated to reference services for the access arrangement period.

99. Rule 97 states that a formula for variation of a reference tariff may (for example) provide for:

- variable caps on the revenue to be derived from a particular combination of reference services; or
- tariff basket price control; or
- revenue yield control; or
- a combination of all or any of the above.

[56] Economic Regulation Authority, *Final Decision on Proposed Revisions to the Access Arrangement for the Western Power Network*, 5 September 2012, p. 250.

[57] Ernst & Young, *Review of regulated tax asset base for regulated revenue purposes – ATCO Gas Australia*, 18 December 2013.

100. Rule 97 also states that in deciding whether a particular reference tariff variation mechanism is appropriate, the Authority must have regard to relevant factors such as:

- the need for efficient tariff structures;
- the administrative costs of the reference tariff variation mechanism;
- the regulatory arrangements (if any) applicable to the relevant reference services before the commencement of the proposed reference tariff variation mechanism; and
- the desirability of consistency between regulatory arrangements for similar services (both within and beyond the relevant jurisdiction).

101. ATCO proposes to make amendments to its tariff variation mechanism[58] in the forthcoming access arrangement period. ATCO has proposed two distinct tariff variation mechanisms:

- For A1, A2 and B1 customers, ATCO has proposed a tariff basket price control.
- For B2 and B3 customers, ATCO has proposed a revenue yield control per delivery point (connection).

102. ATCO states that a tariff basket approach provides more flexibility to adjust prices in response to changes in cost relativities among the tariff classes, variation from forecast volumes and variation from forecast customer numbers. ATCO believes that allowing for prices to be varied within the tariff basket will provide more efficient price signals.

103. ATCO states that a revenue yield tariff variation works by first establishing a forecast yield (revenue) per delivery point. The total allowable tariff revenue in a year is the actual average number of delivery points for the year times the forecast yield per delivery point. When consumption per customer is less or higher than forecast, the revenue under or over recovered per connection will be added or subtracted to the tariffs in the year after the actual revenue is recorded (a two-year lag).

104. Rule 99 of the NGR provides for an access arrangement to include principles that may be fixed over two or more access arrangement periods. Fixed principles can be revoked by the Authority, but with the service provider's consent. ATCO has proposed a fixed principle in relation to the revenue yield control for the period commencing on or about 1 January 2020. [59] The principle would enable any amount of allowable revenue under or over recovered for B2 and B3 tariff classes based on a yield per delivery point approach in an access arrangement period to be recovered or returned in the subsequent access arrangement period.

105. ATCO has stated that its revenue yield control proposal for B2 and B3 customers would minimise the risk of under recovery of revenues through actual usage being below than forecast. Actual usage has been below forecast for both the past (AA2) and current (AA3) access arrangement periods. ATCO also states that the majority of costs associated with providing gas haulage services are fixed, which means that a reduction in consumption levels does not result in reduced costs.

[58] ATCO Gas Australia, *Access Arrangement for the Mid-West and South-West Gas Distribution Systems*, 17 March 2014, Annexure B.

[59] ATCO Gas Australia, *Access Arrangement for the Mid-West and South-West Gas Distribution System*, 17 March 2014, pp. 22-24.

106. ATCO states that this application of a revenue yield control is unique to the GDS and has not occurred in other jurisdictions. However, a similar approach was adopted by ATCO Gas in Canada, which has the effect of offsetting revenue risk where temperatures are different to those forecast.

107. ATCO has also proposed to amend the cost pass through events in the tariff variation mechanism to include regulatory costs, to the extent that such costs can be demonstrated to have been reasonably excluded from the forecast Conforming Capital Expenditure or forecast Operating Expenditure. This is a change from the current access arrangement as regulatory costs were previously part of the formula. Previously actual regulatory costs were assessed against forecasts and any over or under spend was reflected in the tariff. ATCO's proposal now only includes any over spend as a result of unforseen costs and doesn't cater for any underspend that may occur.

108. Finally, ATCO proposes to reduce the notice period from 90 business days to 45 business days. The Authority notes that this may be an issue for retailers as the notice they will receive for changes to the tariffs may be reduced.

Adjustments to the standing charges for B3 reference tariff customers

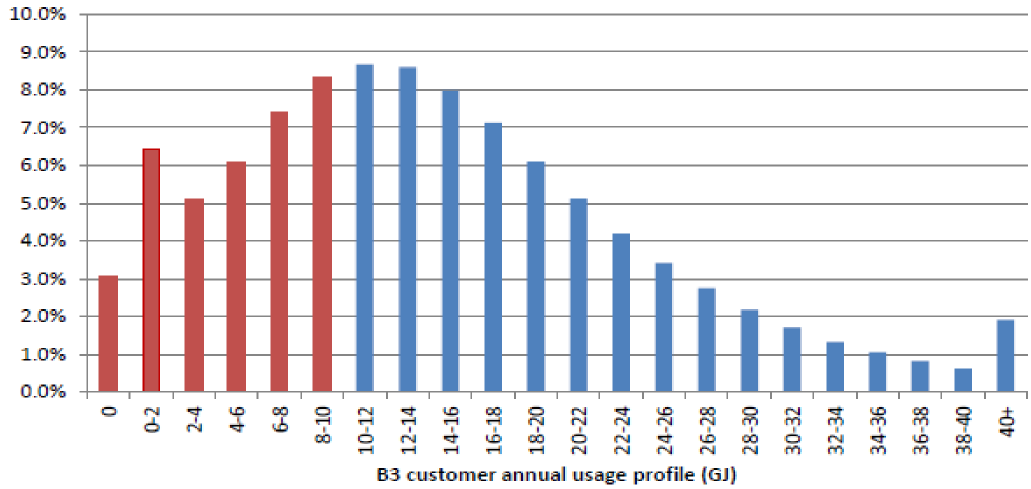
109. The Authority must consider the possible impact of proposed reference tariffs, the method of determining the tariffs and the reference tariff variation mechanism on small use customers and retailers when making an access arrangement for a distribution pipeline under the *National Gas Access (WA) (Local Provisions) Regulation 2009*.

110. ATCO proposes to increase the standing charge for B3 customers to cover the avoidable net present costs of connecting B3 customers and to provide efficient price signals to new customers.

111. ATCO states that the average annual tariff increase to B3 reference tariff customers is 2 per cent. ATCO has demonstrated the impact that this change will have on B3 customers in Figure 4 and Figure 5 below. [60]

[60] ATCO Gas Australia, *Access Arrangement Information*, 17 March 2014, p. 275.

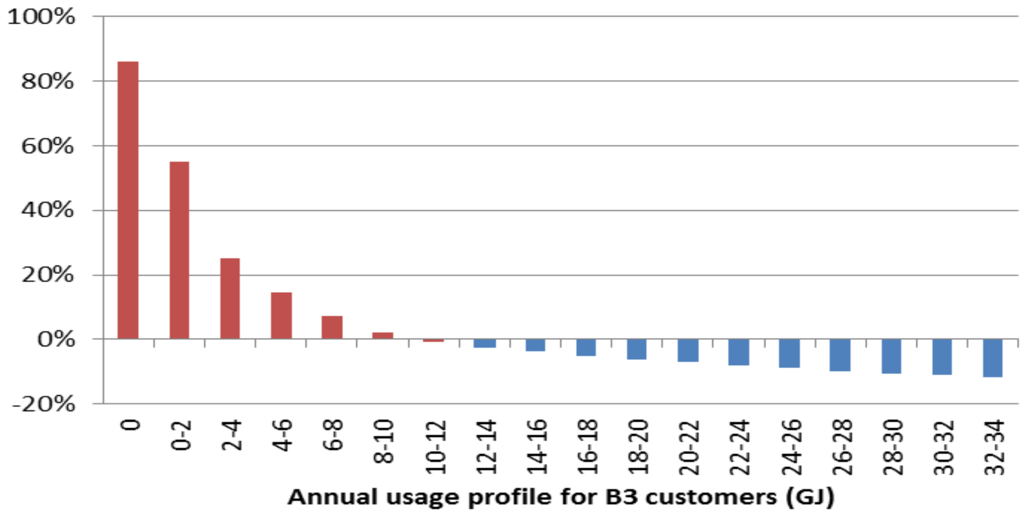
Figure 4 Distribution of Annual Consumption of B3 Customers (2013)



Source: ATCO Gas Australia, Access Arrangement Information, 17 March 2014, Figure 87, p. 275.

112. The annual consumption of B3 customers is shown in Figure 4. The price impact on a B3 customer moving to the proposed tariff in the fourth access arrangement period is shown in Figure 5.

Figure 5 ATCO Proposed Tariff Impact on B3 Customers (AA4)



Source: ATCO Gas Australia, Access Arrangement Information, 17 March 2014, Figure 88, p. 275.

113. The tariff impact ranges from increases of 86 per cent to decreases greater than 12 per cent. B3 customers that currently use little to no gas will be subject to large price increases as ATCO proposes to increase the standing charge. The largest annual network bill increase is $60, which is the difference between the current annual standing charge and the new annual standing charge.

114. ATCO maintains that 60 per cent of B3 customers will face decreases in the network tariff and 40 per cent will face increases, based on 2013 usage patterns. The actual impact on customers will depend on the changes that the retailers make to their charges to small customers to reflect the changes in the network charge.

Demand

115. Rule 72 of the NGR states that the access arrangement information for a full access arrangement of a distribution pipeline must include the usage of the pipeline over the earlier access arrangement period.

116. ATCO has forecast that the number of GDS customers will grow at a rate of 2.1 per cent over the forthcoming access arrangement period. This forecast is based on an assumed increase in customer connections as a result of ATCO's proposed marketing activities. ATCO's forecast customer numbers by tariff class over the fourth access arrangement period are shown in Table 1.

Table 1 ATCO Forecast Customer Numbers (AA4)

Tariff Class	2014	2015	2016	2017	2018	2019
A1	70	70	70	70	70	69
A2	114	120	126	132	138	145
B1	1,406	1,468	1,528	1,589	1,652	1,717
B2	9,932	10,346	10,792	11,270	11,781	12,326
B3	664,763	679,549	694,284	708,948	723,542	738,065

Source: ATCO Gas Australia, Access Arrangement Information, 17 March 2014, Table 9, p. 57.

117. ATCO has also forecast an increase in customer usage over the forthcoming access arrangement period. ATCO's forecast customer usage by tariff class over the fourth access arrangement period are shown in Table 2.

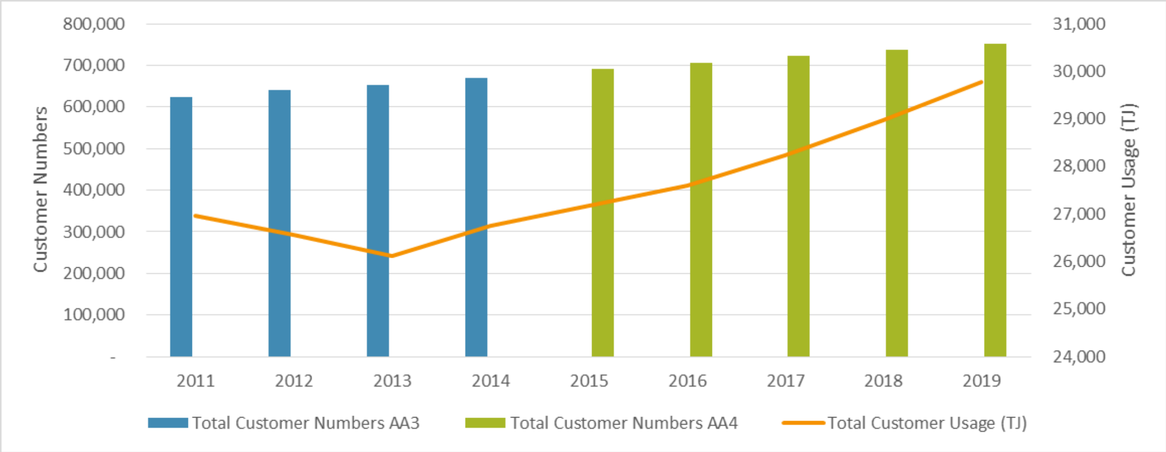
Table 2 ATCO Forecast Customer Usage (AA4)

Tariff Class	2014	2015	2016	2017	2018	2019
A1	11,922,065	12,029,555	12,143,688	12,370,908	12,673,841	13,008,602
A2	2,103,786	2,208,644	2,315,018	2,445,268	2,593,941	2,752,930
B1	1,652,379	1,667,284	1,691,685	1,729,881	1,775,516	1,823,895
B2	1,194,484	1,177,612	1,169,788	1,173,334	1,183,114	1,195,512
B3	9,970,563	10,089,375	10,274,990	10,501,759	10,747,244	10,999,195

Source: ATCO Gas Australia, Access Arrangement Information, 17 March 2014, Table 9, p. 57.

118. Actual customer usage was six per cent lower than forecast in the last access arrangement period. Usage by both A1 (industrial) and B3 (residential) customers in the current access arrangement period has been lower than forecast. ATCO has attributed lower A1 usage primarily to the shutdown of two industrial plants. ATCO has attributed lower B3 usage to warmer weather, retail gas price increases, low electricity prices, advent of solar photovoltaic cells and improved appliance efficiency levels. Figure 6 shows the trend in actual and forecast customer numbers and usage over the current and forthcoming access arrangement periods.

Figure 6 ATCO Actual and Forecast Customer Numbers and Usage (AA3 and AA4)[61]



Source: ATCO Gas Australia, Tariff Model, 17 March 2014.

119. Consistent, with the demand forecast for the current access arrangement, ATCO has developed a demand forecast for the forthcoming access arrangement period that is based on the forecast number of connections by tariff class (A1, A2, B1, B2, B3) and the expected corresponding consumption. ATCO proposes to modify its demand forecast methodology by:

- Using Effective Degree Day (EDD) weather normalisation rather than from Heating Degree Day (HDD) weather normalisation, in order to minimise demand forecast bias from extreme one-off weather events.[62]

- Adopting a long-term price elasticity factor, which is based on the identification and validation of long-term sensitivity factors.[63]

120. ATCO expects the minimum, average and maximum demand to increase over the forthcoming access arrangement period.

121. ATCO has provided actual demand figures that indicate a decreasing trend over the last few years. ATCO has also directly attributed part of this drop (lower B3 usage) to the increase in retail price over the current access arrangement period.

[61] AA3 customer numbers are as at June each year and AA4 customer numbers are as at December each year.

[62] ATCO Gas Australia, *Access Arrangement Information*, 17 March 2014, pp. 47 – 49.

[63] ATCO Gas Australia, *Access Arrangement Information*, 17 March 2014, pp. 49 – 50.

Issue 4 Tariff Variation and Revenue Yield Control

Submissions are invited from interested parties on the following:

- The impact of ATCO's proposed revenue yield control on demand and tariffs.
- The impact of ATCO's proposed amendments to its cost pass through events.
- The impact of ATCO's proposed reduction of the notice period for tariff variation.
- The main factors that affect customer numbers and usage for A1, A2, B1, B2 and B3 customers.
- ATCO's forecast demand trends for the forthcoming access arrangement period.
- ATCO's estimated demand given the proposed reference tariff increase.
- ATCO's compliance with the NGR and in relation to the increase in the standing charge parameter for B2 and B3 customers.
- The impact on retailers and small use customers of ATCO's proposed tariff variation and revenue yield control.

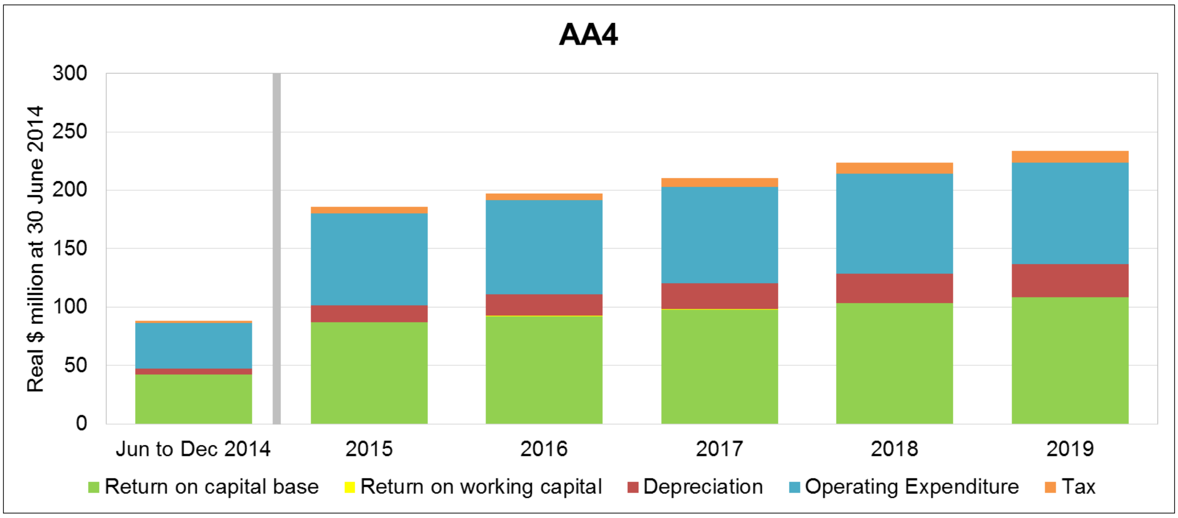
Overview of ATCO's Proposal

Total Revenue

122. Under rule 76 of the NGR, total revenue is determined using the building block approach in which the building blocks are:
    - return on the projected capital base;
    - depreciation on the projected capital base;
    - estimated cost of corporate income tax;
    - increments of decrements resulting from the operation of incentive mechanism to encourage gains in efficiency; and
    - forecast operating expenditure.

123. ATCO has applied the building block methodology, including an estimate of the tax liability, to propose a total revenue requirement for the forthcoming access arrangement of $1.139 billion. Figure 7 and Table 3 show ATCO's proposed building blocks of the total revenue requirement for the fourth access arrangement period.

Figure 7 ATCO Proposed Total Revenue Building Blocks (AA4)



Source: ATCO Gas Australia, Access Arrangement Information, 17 March 2014, Table 79, p. 260.

Table 3 ATCO Proposed Total Revenue Building Blocks (AA4)

Real $ million at 30 June 2014	Jun to Dec 2014	2015	2016	2017	2018	2019	Total
Return on capital base	42.4	87.0	92.3	97.9	103.2	108.2	531.1
Return on working capital	0.1	0.2	0.2	0.2	0.2	0.3	1.1
Depreciation	4.8	14.4	18.5	22.0	25.1	28.1	113.0
Operating Expenditure	39.3	78.8	80.5	82.7	85.5	87.1	453.8
Tax	2.0	5.4	5.9	7.7	9.4	10.0	40.3
Total	**88.6**	**185.8**	**197.4**	**210.4**	**223.5**	**233.6**	**1,139.4**

Source: ATCO Gas Australia, Access Arrangement Information, 17 March 2014, Table 79, p. 260.

124. ATCO has revised its revenue modelling for the forthcoming access arrangement period on a nominal post-tax basis, with main revisions including:

- Retain current cost accounting treatment for the opening capital base at 1 July 2014, and apply straight line depreciation to the opening capital base (discussed in Depreciation of the Capital Base).
- Adopt historical cost accounting and nominal straight line depreciation for conforming capital expenditure (discussed in Depreciation of the Capital Base).
- Include an estimate of the tax liability as per the updated rule 87 of the NGR (discussed in Rate of Return on the Regulatory Asset Base).
- Include provision for equity raising costs.
- Include an allowance for working capital.

125. ATCO has estimated the cost of working capital using a working capital cycle model. Working capital refers to the stock of funds that a business must maintain to pay

costs as they fall due. The cost of working capital refers to the return on capital that is required to be maintained as a result of the misalignment between costs incurred and revenues received. ATCO has calculated the cost of working capital as the difference between the implicit cost of providing credit to service users and the implicit benefit of receiving credit from suppliers.

Issue 5 Total Revenue

Submissions are invited from interested parties on the following:

- ATCO's proposal to include equity raising costs in revenue modelling.
- ATCO's proposal to include an allowance for the cost of working capital in revenue modelling.

Operating Expenditure

126. Rule 91 of the NGR states that operating expenditure must be such as would be incurred by a prudent service provider acting efficiently, in accordance with accepted good industry practice, to achieve the lowest sustainable cost of delivering pipeline services.

127. Rule 71 of the NGR is also relevant to the Authority's consideration of forecast operating expenditure, particularly in considering whether actual operating expenditure for the current access arrangement period provides a benchmark of an efficient level of operating expenditure for the forthcoming access arrangement period.

128. Total operating expenditure for the current access arrangement period is estimated at $284.6 million.[64] ATCO has forecast a 59 per cent increase in operating expenditure to total $453.8 million[65] for the forthcoming access arrangement period. [66] [67]

129. ATCO has presented a favourable position in terms of operating expenditure levels until 2014 compared to selected benchmarks.[68] ATCO has not benchmarked its proposed forecast operating expenditure for the forthcoming access arrangement period.

130. Figure 8 shows the Authority's approved Operating expenditure (**OPEX**) forecast for AA3, ATCO's actual OPEX in AA3, in addition to ATCO's proposed OPEX forecast for AA4.

[64] $ million real at 30 June 2014.

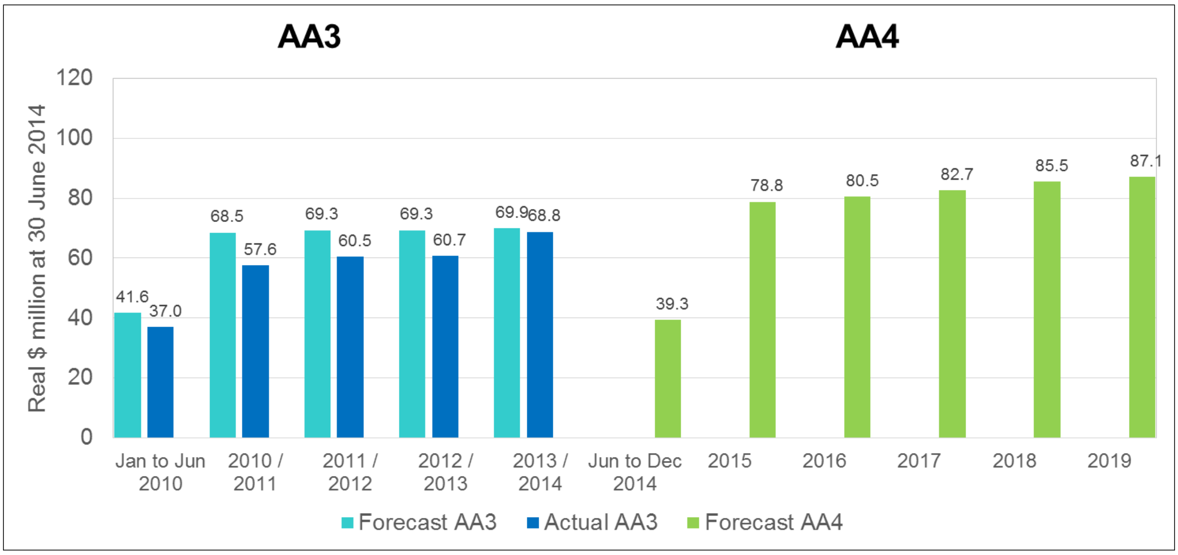
[65] $ million real at 30 June 2014.

[66] ATCO Gas Australia, *Access Arrangement Information*, 17 March 2014, p. 61.

[67] The current access arrangement period was 4.5 years. The forthcoming access arrangement period is 5.5 years.

[68] ATCO Gas Australia, *Access Arrangement Information*, 17 March 2014, pp. 64-66.

Figure 8 Authority Approved Forecast and Actual Operating Expenditure (AA3) and ATCO Proposed Operating Expenditure (AA4) by Year



Source: ATCO Gas Australia, Tariff Model, 17 March 2014

131. ATCO has identified the main drivers for the proposed increase in forecast operating expenditure as safety case requirements and network growth assumptions. Another main driver is ATCO's gas marketing strategy that supports network growth assumptions, and aims to increase the number of connections to the GDS network.

132. In the access arrangement information document, ATCO has split operating expenditure for the forthcoming access arrangement period into four categories: corporate, network, UAFG and IT. In Appendix 2A to the access arrangement information document, ATCO splits operating expenditure for the current access arrangement period into seven categories: network, marketing, UAFG, IT, corporate and regulatory. ATCO maps marketing and regulatory operating cost categories into corporate for the forthcoming access arrangement period. The corresponding financial models for both the current and forthcoming access arrangements also list license fees and full retail contestability as operating cost categories.

133. Of the total forecast operating expenditure for the forthcoming access arrangement period, 41 per cent is attributed to network, 29 per cent is attributed to corporate, and 15 per cent is attributed to each of UAFG and IT.

134. ATCO has forecast an increase in network operating expenditure from $125.5 million[69] in the current access arrangement to $183.1 million[70] for the forthcoming access arrangement.[71] The key driver for this increase has been the assumptions in relation to the implementation of the safety case. The GDS safety case has been developed under the *Gas Supply and System Safety Standard Regulations 2000*, and will be revised and re-submitted to Energy Safety this year.

135. ATCO has forecast an increase in corporate costs, which could mainly be attributed to the following:

69 $ million real at 30 June 2014.

70 $ million real at 30 June 2014.

71 The current access arrangement period was 4.5 years. The forthcoming access arrangement period is 5.5 years.

- ATCO maps marketing and regulatory operating cost categories into corporate costs for the forthcoming access arrangement period;
- ATCO proposes to apply the Massachusetts Method as defined by the American Gas Association to allocate costs incurred by the parent company ATCO to ATCO Gas Australia;
- ATCO proposes a labour cost escalation; and
- ATCO proposes a significant increase in spending on business development and marketing.

136. ATCO has factored in an annual average increase in labour costs of two per cent above the Consumer Price Index. This labour cost escalation is based on ATCO's assessment of modifications to the Communications, Electrical and Plumbing Union Enterprise Agreement, Western Australian Wage Price Index forecasts and changes to superannuation legislation.

137. ATCO has forecast a total spending of $25.3 million[72] in the forthcoming access arrangement period on business development and marketing in an effort to grow the number of GDS customers.

138. ATCO has forecast an increase in IT operating expenditure from $35.3 million[73] in the current access arrangement to $67.1 million[74] for the forthcoming access arrangement.[75] ATCO has attributed the increase to the safety case requirements and investment in the billing system.

139. ATCO has forecast an overall reduction in UAFG from 2.67 per cent in 2014 to 2.6 per cent in 2019. However, ATCO has forecast an increase in UAFG costs due to forecast increases in the wholesale price of gas and in GDS throughput.

140. Figure 9 shows the Authority's approved OPEX forecast for AA3, ATCO's actual OPEX in AA3, in addition to ATCO's proposed OPEX forecast for AA4, by OPEX category.

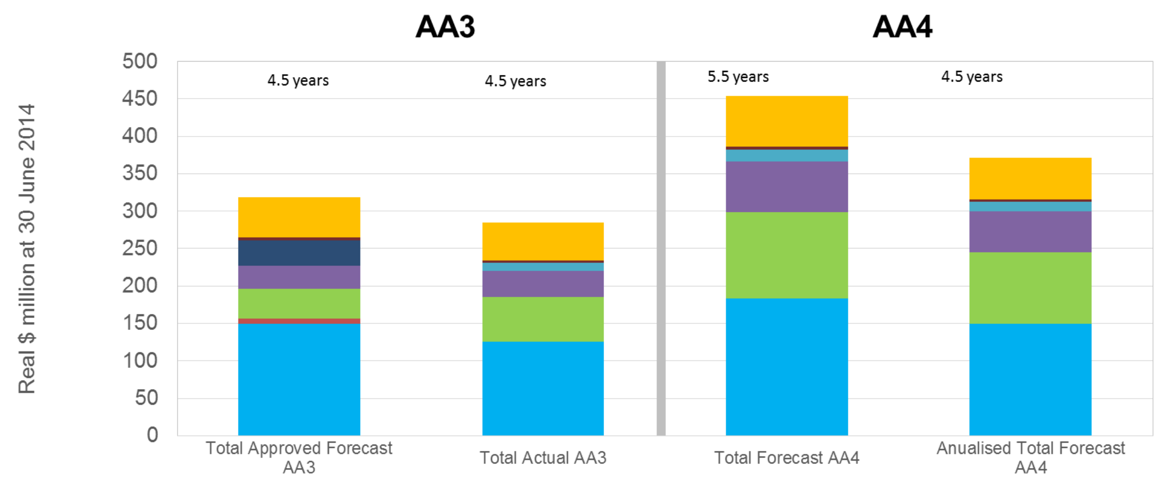
[72] $ million real at 30 June 2014.

[73] $ million real at 30 June 2014.

[74] $ million real at 30 June 2014.

[75] The current access arrangement period was 4.5 years. The forthcoming access arrangement period is 5.5 years.

Figure 9 Authority Approved Forecast and Actual Operating Expenditure (AA3) and ATCO Proposed Operating Expenditure (AA4) by Category



	Total Approved Forecast AA3	Total Actual AA3	Total Forecast AA4	Anualised Total Forecast AA4
UAFG	54.2	50.2	67.7	55.4
Ancillary Services	3.8	3.1	3.8	3.1
Regulatory Cost	33.9	-	-	-
FRC	-	-	-	-
Licence fees	-	10.7	16.1	13.1
IT	30.3	35.3	67.1	54.9
Corporate	40.3	59.7	116.1	95.0
Marketing	6.8	-	-	-
Network	149.3	125.5	183.1	149.8
Total	318.6	284.5	453.8	371.3

Source: ATCO Gas Australia, Tariff Model, 17 March 2014.

Issue 6 Operating Expenditure

Submissions are invited from interested parties on the following:

- Reasonableness of ATCO's forecast operating expenditure for the forthcoming access arrangement period and compliance with rule 91 of the NGR, specifically in relation to the safety case assumptions, business development and marketing policy and IT cost drivers.
- The application of the Massachusetts Method in the allocation of costs of the parent company ATCO to ATCO Gas Australia.
- ATCO's benchmarks to assess the level of its operating expenditure for the forthcoming access arrangement period.

Opening Capital Base for AA4

141. Rule 77(2) of the NGR establishes the approach to determine the opening capital base for an access arrangement period that follows immediately on the conclusion of a preceding access arrangement period.

142. Under rule 77(2) of the NGR, ATCO's proposed opening capital base has been calculated using a roll-forward method that involves commencing with the opening value at the beginning of the third access arrangement period:

plus:

- conforming capital expenditure during the earlier access arrangement period;

plus:

- any amounts to be added to the capital base under rule 82, 84 or 86;

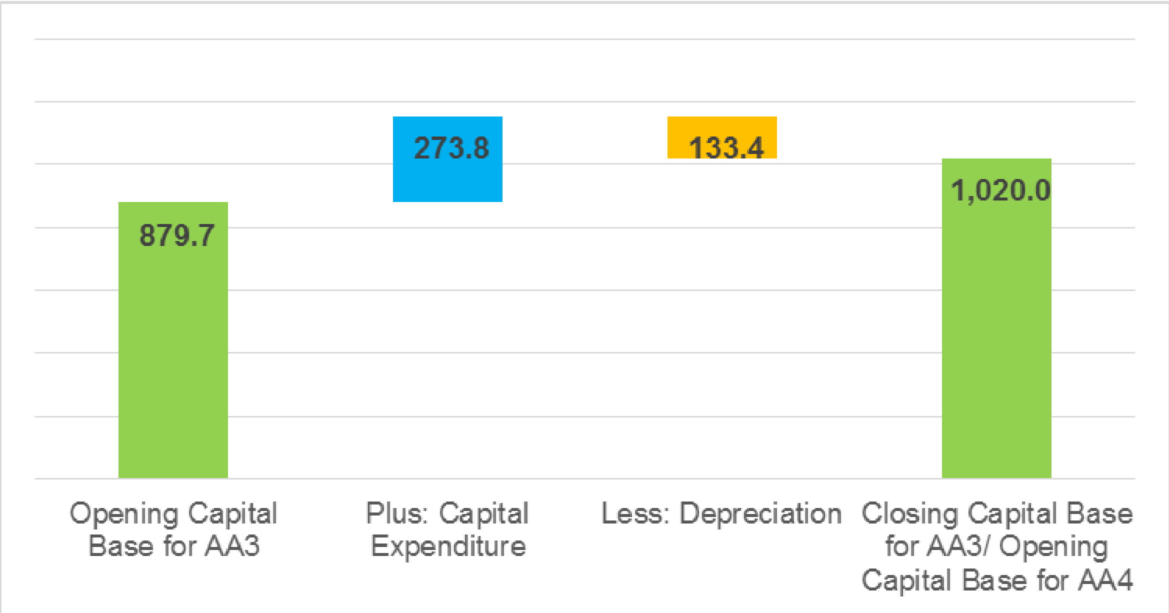
less:

- depreciation over the earlier period;
- redundant assets over the earlier period; and
- disposed assets over the earlier period.

143. ATCO proposes an opening capital base for the fourth access arrangement period of $1,020.0 million[76] as at 1 July 2014. ATCO's proposed opening capital base includes $273.9 million in conforming capital expenditure less depreciation of $133.5 million for AA3.

144. ATCO's calculated values of the capital base at the commencement of the third access arrangement period are shown in Figure 10 below.

Figure 10 ATCO Proposed Opening Capital Base for AA4



Source: ATCO Gas Australia, Access Arrangement Information, 17 March 2014, Table 74, p. 209.

Past Conforming Capital Expenditure

145. Conforming capital expenditure is capital expenditure that conforms with the criteria under rule 79 of the NGR. The capital expenditure must be such as would be incurred by a prudent service provider acting efficiently, in accordance with accepted good industry practice, to achieve the lowest sustainable cost of providing services. It must also be justifiable based on:

[76] $ million real at 30 June 2014.

- a positive overall economic value of the expenditure; or
- the present value of the expected incremental revenue to be generated as a result of the expenditure exceeds the present value of the expenditure; or
- the expenditure is necessary:
  - to maintain and improve the safety of services; or
  - to maintain the integrity of services; or
  - to comply with a regulatory obligation or requirement; or
  - to maintain the service provider's capacity to meet levels of demand for services existing at the time of the capital expenditure is incurred.

146. ATCO has proposed that its actual past capital expenditure is capital expenditure that conforms to the criteria under rule 79 of the NGR. Under rule 77(2) of the NGR capital expenditure must be 'conforming capital expenditure' in order to be added to the capital base.

147. ATCO proposes to add $273.9 million for the third access arrangement period to the opening capital base. This includes $270.5 million[77] conforming capital expenditure and $3.3 million[78] for WestNet Energy assets.

148. The $270.5 million for conforming capital expenditure is $9.2 million or 3.5 per cent more than the forecast amount approved by the Authority for the third access arrangement period.

[77] $ million real at 30 June 2014.

[78] ATCO Gas Australia, *Access Arrangement Information*, 17 March 2014, p. 158.

149. The Authority's approved capital expenditure for AA3 and ATCO's proposed conforming capital expenditure for the AA3 period are shown in Table 4 below. This information is also shown in Table 23 of ATCO's AAI.[79]

Table 4 Authority Approved Capital Expenditure and ATCO Proposed Conforming Capital Expenditure for AA3 by Category

Real $ million at 30 June 2014	Total Approved Forecast AA3 (A)	Total Actual AA3 (B)	Difference (B-A)
High Pressure Mains	46.9	42.3	- 4.6
Medium / Low Pressure Mains	60.5	69.4	8.9
Regulators	1.8	3.7	1.8
Secondary Gate Stations	2.7	2.3	- 0.4
Buildings	10.4	17.7	7.4
Meter and Services Pipes	117.6	99.9	- 17.7
Equipment & Vehicles	1.4	15.7	14.3
Information Technology	19.9	19.5	- 0.5
Total	**261.4**	**270.5**	**9.2**

Source: ATCO Gas Australia, Access Arrangement Information, 17 March 2014, Table 23, p. 121.

150. ATCO considers that its actual capital expenditure conforms to rule 79 of the NGR because it has managed its network in accordance with good industry practice, incurred expenditure on a prudent basis in line with business planning and investment governance systems and processes, and used efficient procurement practices to achieve the lowest sustainable cost of providing services. Also, ATCO considers that growth related capital expenditure satisfies the incremental revenue test and that the remaining capital expenditure satisfies at least one of the safety related criteria in rule 79 of the NGR.[80]

151. ATCO submits that the main drivers for the variance between the Authority's approved forecast and expenditure undertaken are:

- High pressure mains and meter service pipes - lower than forecast connection numbers due to economic conditions resulted in lower expenditure on meters and service pipes and a deferral of high pressure mains extensions.
- Medium/low pressure mains - the Safety Case, which was accepted by EnergySafety, was implemented in January 2013. This resulted in an increase in expenditure across the work programme from 2013.
- Buildings and vehicles – There was an increase in spending as ATCO has implemented a built for purpose and ownership strategy for buildings and vehicles on the basis that costs over time are lower than leasing.

152. The majority of ATCO's investment occurred in the later years of the third access arrangement period subsequent to ATCO acquiring the network.

[79] ATCO Gas Australia, *Access Arrangement Information*, 17 March 2014, p. 121.

[80] ATCO Gas Australia, *Access Arrangement Information*, 17 March 2014, section 7.1, p. 118.

153. ATCO has proposed to include depreciation of $133.5 million[81] in the opening capital base for AA4.

Issue 7 Past Conforming Capital Expenditure

Submissions are invited from interested parties on the following:

- ATCO's proposed actual capital expenditure for the AA3 period and its conformance with the criteria in rule 79(1)(a) of the NGR.
- Adequacy of ATCO's demonstration that its proposed actual capital expenditure in AA3 is justifiable under rule 79(2) of the NGR.

Projected Capital Base for AA4

154. Rule 78 of the NGR establishes the approach to determine the projected capital base for an access arrangement period.

155. ATCO proposes a projected capital base for the fourth access arrangement period of $1,357.1 million[82] at 31 December 2019. The projected capital base includes forecast conforming capital expenditure of $605.8 million less forecast depreciation of $113.0 million.

156. ATCO's proposed projected capital base has been calculated using a roll-forward method that involves commencing with the opening value at the beginning of the fourth access arrangement period in accordance with rule 78 of the NGR:

plus:

- forecast conforming capital expenditure for the period;

less:

- forecast depreciation for the period; and
- forecast disposed assets for the period.

157. ATCO's proposed forecast closing capital base for each year of the fourth access arrangement period are shown in Table 5 below.

[81] $ million real at 30 June 2014.

[82] $ million real at 30 June 2014.

Table 5 ATCO Proposed Closing Capital Base by year for AA4[83]

Real $ million at 30 June 2014	Jun to Dec 2014	2015	2016	2017	2018	2019
Closing Capital Base	1,045.3	1,109.0	1,175.5	1,239.6	1,299.6	1,357.1

Source: ATCO Gas Australia, Access Arrangement Information, 17 March 2014, Table 77, p. 221.

Forecast Conforming Capital Expenditure

158. ATCO proposes that its forecast capital expenditure for AA4 conforms to the criteria under rule 79 of the NGR. ATCO's proposal must also conform to rule 74 of the NGR, which requires that forecasts and estimates must be supported by a statement of the basis of the forecast or estimate, must be arrived at on a reasonable basis and must represent the best forecast or estimate possible in the circumstances.

159. ATCO has forecast to spend $605.8 million of capital expenditure over the fourth access arrangement period, which is 124 per cent greater than the current access arrangement period.[84] [85]

160. ATCO's proposed capital expenditure is shown in Table 6 below.

Table 6 ATCO Proposed Conforming Capital Expenditure for AA4

Real $ million at 30 June 2014	Jun to Dec 2014	2015	2016	2017	2018	2019	Total AA4
Asset Class							
High pressure mains - steel	2.6	16.9	37.7	36.8	30.4	29.5	153.9
High pressure mains - PE	0.2	0.5	-	1.2	4.2	6.8	12.9
Medium/low pressure mains	14.2	27.0	27.6	26.5	28.6	28.9	152.7
Regulators	1.8	2.8	1.5	1.5	1.5	2.0	11.1
Secondary gate stations	-	-	3.9	7.6	3.4	4.1	19.0
Buildings	1.0	9.4	0.6	0.4	0.0	0.0	11.5
Meter and services pipes	17.0	33.1	31.5	32.3	35.7	35.7	185.2
Equipment and vehicles	0.6	1.2	1.5	1.3	1.0	1.0	6.7
Vehicles	2.1	1.2	0.8	1.4	4.6	4.4	14.5
Information technology	3.0	6.6	6.4	5.5	6.1	4.8	32.5
Land	-	4.9	0.6	0.4	-	-	5.8
Total	**42.5**	**103.7**	**112.1**	**114.8**	**115.4**	**117.3**	**605.8**

Source: ATCO Gas Australia, Access Arrangement Information, 17 March 2014, Table 55, p. 168.

161. ATCO states that its proposed forecast capital expenditure during the fourth access arrangement period is required for: [86]

[83] ATCO has directly converted the closing capital base from nominal to real dollars.
[84] ATCO Gas Australia, *Access Arrangement Information*, 17 March 2014, section 8.1, p. 160.
[85] The current access arrangement period was 4.5 years. The forthcoming access arrangement period is 5.5 years.
[86] ATCO Gas Australia, *Access Arrangement Information*, 17 March 2014, pp. 168-205.

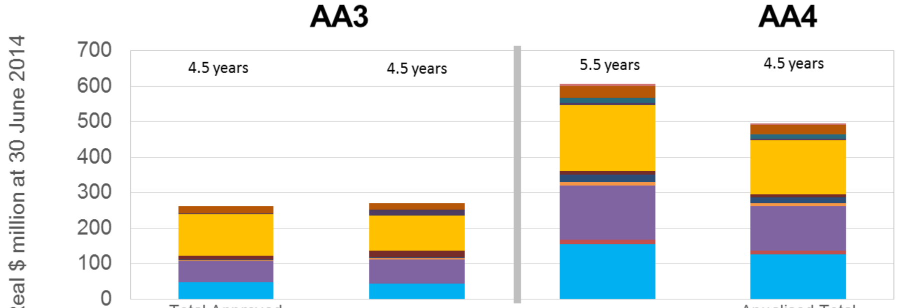
- Network sustaining expenditure ($311.3 million).
- Network growth expenditure ($228.5 million).
- Structures and equipment expenditure ($38.4 million).
- IT expenditure ($27.4 million).

162. ATCO submits that the increase in capital expenditure is primarily driven by:

- Network sustaining expenditure - which includes asset replacement and asset performance and safety. For example, remove all unprotected metallic mains from the network, upgrade or replace distribution infrastructure within multistorey buildings, upgrade high pressure pipelines to facilitate in-line inspections and Install high pressure pipelines and associated infrastructure.
- Network growth expenditure which includes customer initiated expenditure (approximately 101,000 new connections) and demand related expenditure. For example, new mains, new services and demand related high pressure spur lines (Two rocks, Peel, Baldivis etc.).
- Structures and equipment such as operational depots and training centre, fleet and plant and equipment.
- IT expenditure as a result of replacement of legacy and end of life IT systems.

163. A comparison of the Authority's approved forecast and ATCO's proposed actual capital expenditure for the third access arrangement period and ATCO's proposed forecast of capital expenditure for the fourth access arrangement period by year is shown in Figure 11 below.

Figure 11 Authority Approved Forecast Capital expenditure for AA3 and ATCO Proposed Conforming Capital Expenditure for AA3 and AA4



	Total Approved Forecast AA3	Total Actual AA3	Total Forecast AA4	Anualised Total Forecast AA4
Land	-	-	5.8	4.7
Full retail contestability	-	-	-	-
Information technology	19.9	19.5	32.5	26.6
Vehicles			14.5	11.9
Equipment and vehicles	1.4	15.7	6.7	5.4
Meter and services pipes	117.6	99.9	185.2	151.5
Buildings	10.4	17.7	11.5	9.4
Secondary gate stations	2.7	2.3	19.0	15.5
Regulators	1.8	3.7	11.1	9.1
Low pressure mains	-	-	-	-
Medium/low pressure mains	60.5	69.4	152.7	125.0
Medium pressure mains	-	-	-	-
High pressure mains - PE			12.9	10.5
High pressure mains - steel (incl PE for AA3)	46.9	42.3	153.9	125.9
Total	261.4	270.5	605.7	495.6

Source: ATCO Gas Australia, Tariff Model, 17 March 2014; Economic Regulation Authority's Analysis.

Depreciation of the AA4 Capital Base

164. As noted above under the heading 'Depreciation of the Capital Base', the NGR sets out certain requirements in relation to forecast depreciation.

165. ATCO's projected capital base includes forecast depreciation of $113.0 million over the forthcoming access arrangement period. ATCO's proposed forecast depreciation is shown in Table 7.

166. ATCO proposes that the depreciation schedule for the AA4 period will be determined by applying:

- straight-line depreciation to the CCA value of the opening capital base in any year of the period and subtracting an amount to remove the double counting of inflation; and
- straight-line depreciation to the HCA value of all capital additions to occur during AA4 (from 1 July 2014).

Table 7 ATCO Forecast Depreciation for AA4

Real $ million at 30 June 2014	Jun to Dec 2014	2015	2016	2017	2018	2019	Total
Forecast depreciation on opening capital base 1 July 2014							
Nominal depreciation	17.3	36.7	36.2	35.1	33.7	31.6	190.7
Nominal depreciation per Tariff Variation	-	-	-	-	-	-	-
Less Inflation on Asset Base	12.5	24.3	23.6	22.7	21.8	21.0	125.9
Subtotal	**4.8**	**12.4**	**12.6**	**12.4**	**11.9**	**10.7**	**64.8**
Forecast depreciation on forecast capital expenditure during AA4	-	2.1	5.9	9.6	13.2	17.5	48.2
Total Forecast Depreciation	**4.8**	**14.4**	**18.5**	**22.0**	**25.1**	**28.1**	**113.0**

Source: ATCO Gas Australia, Tariff Model, 17 March 2014; Economic Regulation Authority's Analysis.

Issue 8 Forecast Conforming Capital Expenditure

Submissions are invited from interested parties on the following:

- ATCO's forecast of conforming capital expenditure for the AA4 period and the reasonableness of the basis for determining the forecast to represent the best possible forecast or estimate in the circumstances.
- Adequacy of ATCO's demonstration that its forecast of conforming capital expenditure for the AA4 period meets the requirements for conforming capital expenditure under rule 79 of the NGR.

Issue 9 Depreciation

Submissions are invited from interested parties on the following:

- ATCO's calculation of its forecast depreciation.

Return on the Regulatory Asset Base

167. The rate of return, based on the WACC, provides for a return on the regulatory asset base. The key issues on the rate of return are set out in pages 7 to 18 above.

168. ATCO has forecast a return on investment for AA4 of $531.1 million[87]. ATCO's forecast return on investment is the largest 'building block' component representing nearly a half of the target revenue. ATCO's proposed WACC parameters for AA4 and the Authority's approved WACC parameters for AA3 are shown in Table 8.

[87] $ million real at 30 June 2014.

Table 8 Authority Approved Weighted Average Cost of Capital for AA3 and ATCO Proposed Weighted Average Cost of Capital for AA4

Weighted Average Cost of Capital (WACC)	Authority's approved real, pre-tax WACC	ATCO's Proposed AA4 WACC Parameters
Nominal Risk Free Rate	5.61%	4.06%
Real Risk Free Rate	2.93%	1.52%
Inflation Rate	2.60%	2.50%
Debt/Equity Proportion	60%/40%	60%/40%
Cost of Debt; Debt Risk Premium	2.893%	2.880%
Cost of Debt; Debt Issuing Cost	0.125%	0.125%
Cost of Debt; Hedging Cost		0.025%
Australian Market Risk Premium	6.00%	N/A[88]
Equity Beta	0.80	0.82[89]
Corporate Tax Rate	30%	30%
Franking Credit	25%	25%
Nominal Cost of Debt	8.63%	7.09%
Real cost of debt	5.88%	4.48%
Nominal Pre Tax Cost of Equity	13.43%	13.81%
Nominal After Tax Cost of Equity	10.41%	10.70%
WACC; Pre-tax Officer (Market Practise or Forward Transformation)		
Nominal Pre Tax WACC	10.55%	9.78%
Real Pre Tax WACC	7.75%	7.10%
WACC: Vanilla		
Nominal After Tax WACC	9.34%	8.53%
Real After Tax WACC	6.57%	5.89%

Source: Economic Regulation Authority's Analysis.

Pipeline Services

169. A "pipeline service" is defined under section 2 of the NGL(WA) as a service that is provided by means of a pipeline including a haulage service, an interconnection service, or an ancillary service. Under rule 48 of the NGR, a full access arrangement proposal must describe the pipeline services that the service provider proposes to offer to provide by means of a pipeline, and specify the reference services. Rule 101 of the NGR defines a reference service as a pipeline service that is likely to be sought by a significant part of the market.

[88] ATCO does not explicitly state a Market Risk Premium.

[89] The equity beta is only used by ATCO in estimating a return on equity using the Sharpe Lintner CAPM.

170. The proposed access arrangement defines pipeline services as haulage services (reference services) and non-reference services. Ancillary services are also referred to as reference services.

171. Consistent with the current access arrangement, haulage reference services for the forthcoming access arrangement period are A1, A2, B1, B2 and B3. However, the proposed access arrangement includes modifications in relation to the identification of standard delivery facilities for B1, B2 and B3:

- Standard delivery facilities for B1 are proposed to be a standard 18 m^3/h meter, or a standard meter with a badged capacity of more than 18 m^3/h.
- Standard delivery facilities for B2 are proposed to be a standard 12 m^3/h meter, or a standard meter with a badged capacity of less than 18 m^3/h.
- Standard delivery facilities for B3 are proposed to be a standard 10 m^3/h meter, or a standard meter with a badged capacity of less than 12 m^3/h.

172. Also, consistent with the current access arrangement, proposed ancillary services for the forthcoming access arrangement period include:

- Deregistering a delivery point: removing delivery facility and removing delivery point from delivery point register. This service is requested by retailers for B3 customers.
- Applying a meter lock: applying a lock to a valve that comprises part of the delivery facility to prevent receipt of gas at delivery point. This service is requested by retailers for B3 customers.
- Removing a meter lock: removing a lock that is applied to a valve that comprises part of the delivery facility to prevent receipt of gas at delivery point. This service is requested by retailers for A1, A2, B1, B2 and B3 customers.
- Disconnecting a delivery point: physically disconnecting a delivery point to prevent gas from being delivered to the delivery point. This service is requested by retailers for B2 and B3 customers.
- Reconnecting a delivery point: reconnecting a delivery point to allow gas to be delivered to the delivery point. This service is requested by retailers for B2 and B3 customers.

Issue 10 Pipeline Services

Submissions are invited from interested parties on the following:

- The impact of the modification of the standard delivery facilities for B1, B2 and B3 services.

Total Revenue Allocation between Reference Services and Other Services

173. Rule 93 of the NGR requires that total revenue is allocated between reference services and other services on the basis of an allocation of costs. As an alternative to cost allocation, rule 93 of the NGR provides for some services other than reference

services to be classed as rebateable services, with part of the revenue from the sale of these services to be rebated or refunded to users of reference services.

174. ATCO has subtracted ancillary service and prudent discount revenue from total revenue to determine the total revenue that is to be recovered from reference haulage services.

175. The Authority allowed a number of customers to receive prudent discounts in the third access arrangement. ATCO forecasts no additional customers will receive prudent discounts for the fourth access arrangement period and the number of customers receiving discounts will decrease from 14 to 11.

176. Table 9 shows the forecast reference tariff revenue requirement, in addition to the revenue allocated to ancillary services and prudent discounts, by year for the forthcoming access arrangement period.

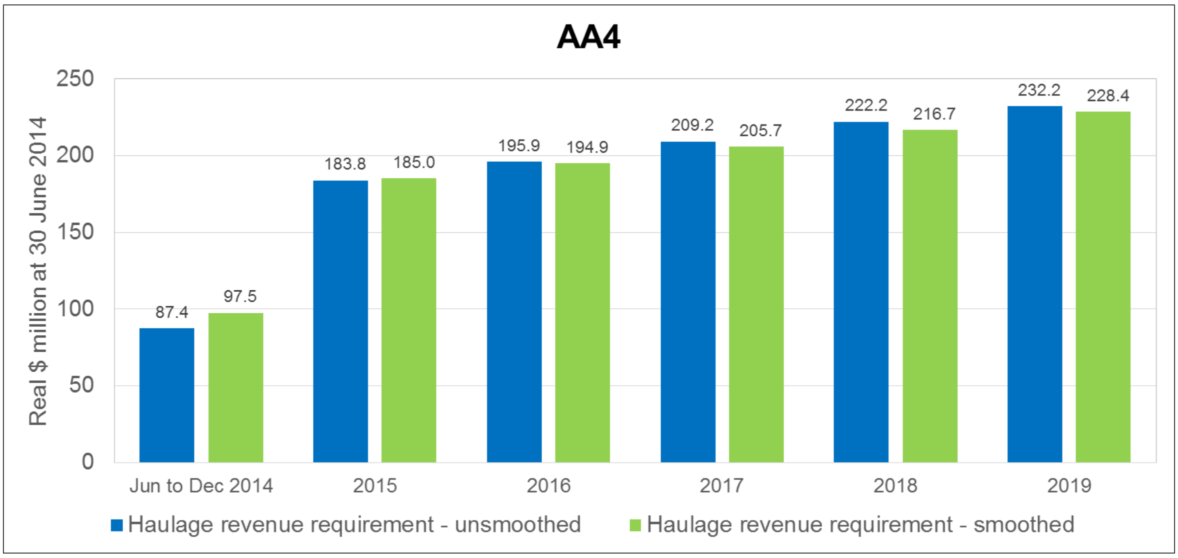
Table 9 ATCO Forecast Revenue and Haulage Revenue Requirement (AA4)

Nominal $ million	Jun to Dec 2014	2015	2016	2017	2018	2019
Haulage revenue requirement - unsmoothed	87.4	183.8	195.9	209.2	222.2	232.2
Forecast revenue from Ancillary Services	0.4	0.6	0.7	0.7	0.7	0.7
Forecast revenue from customers receiving prudent discounts	0.7	1.4	0.8	0.6	0.6	0.6
Total Revenue	88.6	185.8	197.4	210.4	223.5	233.6

Source: ATCO Gas Australia, Access Arrangement Information, 17 March 2014, Table 86 and Table 87, pp. 266-267.

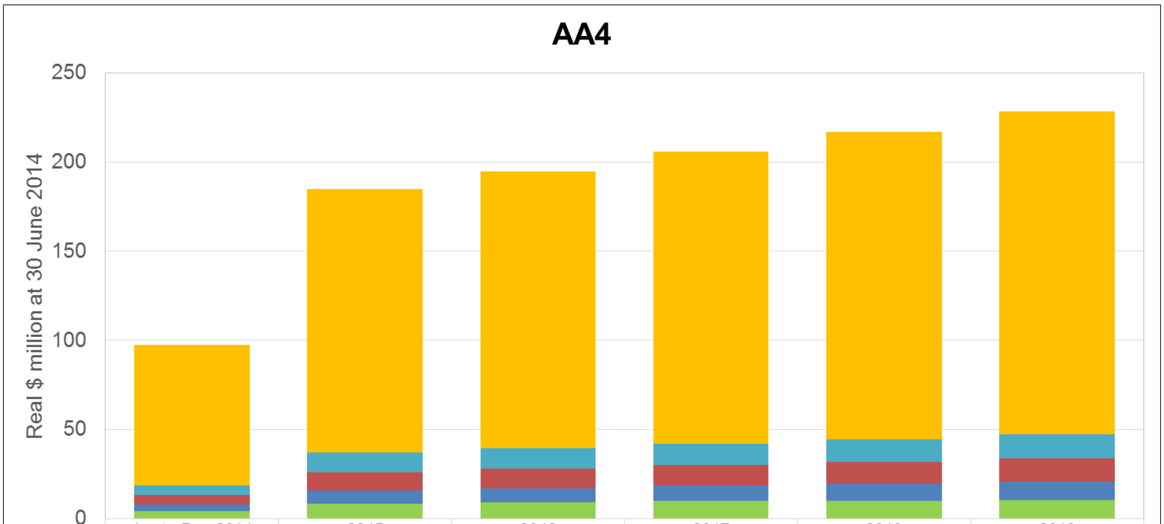
177. ATCO has solved for price paths that align the net present value of its five and a half year cost of service with the net present value of forecast revenues. ATCO has stated that the specified price paths for its reference haulage services seek to achieve price stability over the forthcoming access arrangement period. Figure 12 shows the smoothed and unsmoothed forecast reference tariff revenue requirement, by year for the forthcoming access arrangement period. Figure 13 further breaks down the forecast revenue requirement by tariff class.

Figure 12 ATCO Smoothed and Unsmoothed Forecast Haulage Revenue Requirement (AA4)



Source: ATCO Gas Australia, Access Arrangement Information, 17 March 2014, Table 87, p. 267.

Figure 13 ATCO Smoothed Forecast Revenue Requirement by Tariff Class (AA4)



	Jun to Dec 2014	2015	2016	2017	2018	2019
B3	78.8	147.9	155.4	163.5	172.2	181.2
B2	5.6	11.0	11.5	12.1	12.7	13.4
B1	5.4	10.5	11.0	11.6	12.3	13.1
A2	3.5	7.4	8.0	8.7	9.4	10.2
A1	4.2	8.3	9.0	9.8	10.1	10.5
Total	97.5	185.0	194.9	205.7	216.7	228.4

Source: ATCO Gas Australia, Access Arrangement Information, 17 March 2014, Table 88, p. 267

Issue 11 Allocation of Total Revenue between Reference Services and Other Services

Submissions are invited from interested parties on the following:

- ATCO's allocation of revenue to reference services as per rule 93 of the NGR.
- ATCO's allocation of revenue/costs across regulated (GDS) and unregulated (Albany and Kalgoorlie) sections of the network.

Reference Tariffs

178. Rule 94 of the NGR sets out the requirements for the determination of reference tariffs for distribution pipelines. The rule states that for the purpose of determining reference tariffs, customers for reference services provided by a distribution pipeline must be divided into tariff classes. For each tariff class, the revenue expected to be recovered should lie on or between:

- an upper bound representing the stand alone cost of providing the reference service to customers who belong to that class; and
- a lower bound representing the avoidable cost of not providing the reference service to those customers.

179. Rule 94 of the NGR requires that where there are two or more charging parameters, each charging parameter for a tariff class must take into account the long run marginal costs for the service, transaction costs and whether customers are able to respond to price signals.

Reference tariffs and charging parameters

180. ATCO's proposed reference tariffs and methodology are outlined in section 12 of the proposed revised access arrangement information.[90]

181. The current reference tariffs have applied since 1 January 2014, and will continue to apply until a new access arrangement is in place. ATCO has calculated the proposed reference tariffs based on the assumption that the tariffs will be effective from 1 January 2015.

182. ATCO has proposed that the tariff classes for the current access arrangement period (A1, A2, B1, B2 and B3) continue into the fourth access arrangement period.

183. ATCO does not propose to change the charging parameters for reference tariffs in the fourth access arrangement. This is demonstrated in Table 89 of ATCO's access arrangement information.[91]

184. ATCO has calculated its proposed reference tariffs for the fourth access arrangement period by multiplying each charging parameter for each AA3 tariff by the customer

[90] ATCO Gas Australia, *Access Arrangement* Information, 17 March 2014, pp. 268-293.

[91] ATCO Gas Australia, *Access Arrangement Information*, 17 March 2014, Table 89, p. 273.

numbers and consumption forecasts for each AA4 tariff (with the adjustments to the standing charge for B2 and B3 customers).

185. Each charging parameter is then adjusted by the same amount until the revenue generated by the reference tariffs is equalised with the total revenue to be recovered from reference service customers.

Proposed reference tariffs for AA4

186. ATCO has calculated the reference tariffs for the forthcoming access arrangement period based on the assumption that the tariffs will be effective from 1 January 2015.

187. ATCO proposes a real average annual increase across all reference tariffs of 1.6 per cent.

188. ATCO's proposed reference tariffs are in Annexure A of its access arrangement proposal. ATCO's analysis of the impact of changes in reference tariffs on customer classes is shown in Table 10 below.

Table 10 ATCO Average Price Impacts by Reference Tariff Class Over AA4

Annual tariff increase (%)	2015	2016	2017	2018	2019	Average annual % change
A1	1.5%	1.8%	4.8%	1.0%	0.9%	2.0%
A2	3.1%	3.2%	2.6%	2.3%	2.3%	2.7%
B1	3.5%	3.5%	3.4%	3.3%	3.3%	3.4%
B2	4.6%	5.1%	4.8%	4.6%	4.6%	4.7%
B3	-1.6%	3.2%	3.0%	2.9%	2.8%	2.0%
All customer average %	**-0.8%**	**1.4%**	**2.6%**	**2.6%**	**2.5%**	**1.6%**

Source: ATCO Gas Australia, Access Arrangement Information, 17 March 2014, Table 98, p. 283.

Issue 12 Reference Tariffs

Submissions are invited from interested parties on the following:

- ATCO's calculation of its proposed reference tariffs and consistency with rule 94 of the NGR.

Terms and Conditions

189. The NGR requires an access arrangement proposal to detail, in addition to the reference tariff, the terms and conditions for each reference service.

190. ATCO has proposed a Template Haulage Contract (**Contract**) that covers proposed terms and conditions for haulage services and ancillary services. The duration of the Contract is not linked to the access arrangement period[92]. The service terms and conditions that are outlined in the Contract form an integral part of the access arrangement proposal as per the NGR.[93] Moreover, the Contract includes a new sub-section that deals with the impact of an access arrangement revision on the Contract. [94]

191. The Contract proposes an approved system pressure protection plan that users are required to adhere to, and refers to rule 182 of the Retail Market Rules.[95]

192. ATCO proposes that users pay for services that are received under the Contract until a delivery point is deregistered[96], even if:

- ATCO does not claim payment.
- An event of Force Majeure occurs.[97]

193. ATCO also proposes that users pay any duties in relation to the Contract. [98]

194. In contrast to the template haulage contract for the current access arrangement period, the Contract covers additional provisions in relation to gas quality, balancing and pressure. The provisions release ATCO from any liability in relation to off-specification gas.[99]

195. The Contract gives ATCO liability over the gas only within the Mid-West to South-West Gas Distribution System. Liability for the gas before arrival at the Receipt Point and after arrival at the Delivery Point falls on the user.[100] At the same time, the Contract gives the user liability for payment of all taxes incurred before arrival at the Receipt Point and after arrival at the Delivery Point.[101] Moreover, the Contract gives ATCO the right to refuse to accept gas at a Receipt Point.[102]

[92] ATCO Gas Australia, *Template Haulage Contract,* 17 March 2014, section 2, p. 3.

[93] *National Gas Rules Version 20,* http://www.aemc.gov.au/Energy-Rules/National-gas-rules/Current-rules, rule 48.

[94] ATCO Gas Australia, *Template Haulage Contract,* 17 March 2014, sub-section 13.2, pp. 29-30.

[95] ATCO Gas Australia, *Template Haulage Contract,* 17 March 2014, paragraph 1 (a) (iii) (A), p. 2 and sub-section 5.3, p. 5 and sub-section 6.9, p. 12.

[96] ATCO Gas Australia, *Template Haulage Contract,* 17 March 2014, sub-section 4.4, p. 4.

[97] ATCO Gas Australia, *Template Haulage Contract,* 17 March 2014, sub-sections 4.2 and 4.3, p. 4.

[98] ATCO Gas Australia, *Template Haulage Contract,* 17 March 2014, sub-section 22.5, p. 52.

[99] ATCO Gas Australia, *Template Haulage Contract,* 17 March 2014, section 6, pp. 8-13.

[100] ATCO Gas Australia, *Template Haulage Contract,* 17 March 2014, sub-sections 7.2, p. 14.

[101] ATCO Gas Australia, *Template Haulage Contract,* 17 March 2014, sub-section 11.1, p. 26.

[102] ATCO Gas Australia, *Template Haulage Contract,* 17 March 2014, sub-section 8.2, pp. 17-18.

196. In relation to meter reading, the Contract refers to part 4.2 of the Retail Market Rules.[103] Meter reading for B2 and B3 reference service customers is referred to in the following clause in the Contract:

> METER READING
>
> (a) <Service Provider> will be responsible for calculating and recording the
>
> quantity of Gas delivered to <User> at the Delivery Point.
>
> (b) <Service Provider> must use reasonable endeavours to read the Meter
>
> approximately 4 times each Year at intervals of approximately 100 days.

197. The clause is currently inconsistent with the Authority's Compendium of Gas Customer Licence Obligations.[104] The Compendium makes provision for the alignment of meter reading and billing periods, in order to ensure that bills reflect up-to-date meter readings.

198. The Contract requires a performance guarantee by users and details the requirement.[105] The Contract also includes additional provisions in relation to security and guarantee arrangements in the event that ATCO is restructured.[106]

199. The Contract covers additional content on mitigation of loss, exercise of indemnities, and application of the Australian Consumer Law liability.[107]

200. The Contract includes an updated section on dispute resolution.[108]

201. The Contract has expanded the section on intellectual property, confidentiality and privacy compliance.[109]

202. Finally, the Contract includes an expanded sub-section on waivers.[110]

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[103] ATCO Gas Australia, *Template Haulage Contract,* 17 March 2014, section 9, pp. 21-22.

[104] Economic Regulation Authority, *Compendium of Gas Customer License Obligations*, http://www.erawa.com.au/licensing/gas-licensing/compendium, sub-section 4.7, p. 18.

[105] ATCO Gas Australia, *Template Haulage Contract,* 17 March 2014, sub-section 16.2, pp. 38-40.

[106] ATCO Gas Australia, *Template Haulage Contract,* 17 March 2014, paragraphs 15.9 (c) and 15.9 (d), pp. 37-38.

[107] ATCO Gas Australia, *Template Haulage Contract,* 17 March 2014, sub-sections 17.8-17.10, pp. 42-43.

[108] ATCO Gas Australia, *Template Haulage Contract,* 17 March 2014, section 19, pp. 46-48.

[109] ATCO Gas Australia, *Template Haulage Contract,* 17 March 2014, section 21, pp. 49-51.

[110] ATCO Gas Australia, *Template Haulage Contract,* 17 March 2014, sub-section 22.2, p. 52.

Issue 13 Terms and Conditions

Submissions are invited from interested parties on the following:

- ATCO's proposed system pressure protection provisions consistent with the Retail Market Rules.
- ATCO's proposed user liabilities under Force Majeure, and for gas before arrival at the Receipt Point and after arrival at the Delivery Point.
- ATCO's proposed user liabilities, user performance guarantees and other indemnities.
- ATCO's proposed terms and conditions and consistency with the Compendium of Gas Customer Licence Obligations, Australian Consumer Law, and legislation on dispute resolution, intellectual property, confidentiality and privacy compliance.

Appendices

Appendix 1: Summary of Issues

Issue 1 Rate of Return on the Regulatory Asset Base
Submissions are invited from interested parties on the following:

- ATCO's departure from the Rate of Return Guidelines.
- ATCO's proposed approach to estimating the cost of debt for the benchmark efficient entity, and its consistency with the requirements of the NGL and the NGR, and the allowed rate of return objective in particular.
- ATCO's proposed approach to estimating the return on equity, and its consistency with the requirements of the NGL and NGR, and the allowed rate of return objective in particular.
- ATCO's proposed approach to estimating gamma and its consistency with the requirements of the NGL and the NGR, and the allowed rate of return objective in particular.

Issue 2 Depreciation of the Capital Base
Submissions are invited from interested parties on the following:

- The merits of using forecast capital expenditure for depreciation purposes, or actual capital expenditure, for the purposes of rule 90 of the NGR (refer to paragraph 80).
- Whether the LRMC of provision of gas services on the GDS is increasing or decreasing in the short to medium term, or over the longer term. Whether the trend for LRMC over time supports a switch from CCA to HCA depreciation, given that HCA depreciation would result in higher tariffs in the period to 2030, as compared to CCA depreciation, and lower tariffs thereafter.
- The impact of the switch from CCA to HCA on the efficient growth in the market for reference services on the GDS.
- Other considerations the Authority should take into account when considering the application of rule 89 of the NGR to ATCO's proposed switch to CCA depreciation.
- Reasonableness of ATCO's proposed transition, if there were to be a switch to the CCA depreciation method.
- Reasonableness of ATCO's proposed reduction of the economic asset lives of high pressure mains reasonable.

Issue 3 Estimated Cost of Corporate Income Tax
Submissions are invited from interested parties on the following:

- The impact of disregarding the reset of the Tax Asset Base upon ATCO acquiring GDS in 29 July 2011.
- The inclusion of capital contributions in the Tax Asset Base.
- The impact of using longer asset lives for the Tax Asset Base.

Issue 4 Tariff Variation and Revenue Yield Control
Submissions are invited from interested parties on the following:

- The impact of ATCO's proposed revenue yield control on demand and tariffs.
- The impact of ATCO's proposed amendments to its cost pass through events.
- The impact of ATCO's proposed reduction of the notice period for tariff variation.
- The main factors that affect customer numbers and usage for A1, A2, B1, B2 and B3 customers.

- ATCO's forecast demand trends for the forthcoming access arrangement period.
- ATCO's estimated demand given the proposed reference tariff increase.
- ATCO's compliance with the NGR and in relation to the increase in the standing charge parameter for B2 and B3 customers.
- The impact on retailers and small use customers of ATCO's proposed tariff variation and revenue yield control.

Issue 5 Total Revenue
Submissions are invited from interested parties on the following:

- ATCO's proposal to include equity raising costs in revenue modelling.
- ATCO's proposal to include an allowance for the cost of working capital in revenue modelling.

Issue 6 Operating Expenditure
Submissions are invited from interested parties on the following:

- Reasonableness of ATCO's forecast operating expenditure for the forthcoming access arrangement period and compliance with rule 91 of the NGR, specifically in relation to the safety case assumptions, business development and marketing policy and IT cost drivers.
- The application of the Massachusetts Method in the allocation of costs of the parent company ATCO to ATCO Gas Australia.
- ATCO's benchmarks to assess the level of its operating expenditure for the forthcoming access arrangement period.

Issue 7 Past Conforming Capital Expenditure
Submissions are invited from interested parties on the following:

- ATCO's proposed actual capital expenditure for the AA3 period and its conformance with the criteria in rule 79(1)(a) of the NGR.
- Adequacy of ATCO's demonstration that its proposed actual capital expenditure in AA3 is justifiable under rule 79(2) of the NGR.

Issue 8 Forecast Conforming Capital Expenditure
Submissions are invited from interested parties on the following:

- ATCO's forecast of conforming capital expenditure for the AA4 period and the reasonableness of the basis for determining the forecast to represent the best possible forecast or estimate in the circumstances.
- Adequacy of ATCO's demonstration that its forecast of conforming capital expenditure for the AA4 period meets the requirements for conforming capital expenditure under rule 79 of the NGR.

Issue 9 Depreciation
Submissions are invited from interested parties on the following:

- ATCO's calculation of its forecast depreciation.

Issue 10 Pipeline Services
Submissions are invited from interested parties on the following:

- The impact of the modification of the standard delivery facilities for B1, B2 and B3 services.

Issue 11 Allocation of Total Revenue between Reference Services and Other Services

Submissions are invited from interested parties on the following:

- ATCO's allocation of revenue to reference services as per rule 93 of the NGR.
- ATCO's allocation of revenue/costs across regulated (GDS) and unregulated (Albany and Kalgoorlie) sections of the network.

Issue 12 Reference Tariffs

Submissions are invited from interested parties on the following:

- ATCO's calculation of its proposed reference tariffs and consistency with rule 94 of the NGR.

Issue 13 Terms and Conditions

Submissions are invited from interested parties on the following:

- ATCO's proposed system pressure protection provisions consistent with the Retail Market Rules.
- ATCO's proposed user liabilities under Force Majeure, and for gas before arrival at the Receipt Point and after arrival at the Delivery Point.
- ATCO's proposed user liabilities, user performance guarantees and other indemnities.
- ATCO's proposed terms and conditions and consistency with the Compendium of Gas Customer Licence Obligations, Australian Consumer Law, and legislation on dispute resolution, intellectual property, confidentiality and privacy compliance.

Appendix 2: Access Arrangement Review Process

A service provider must, on or before the review submission date of an applicable access arrangement, submit an access arrangement revision proposal (access arrangement proposal) to the Authority in accordance with rule 52 of the NGR.

The service provider must also provide information necessary to understand the proposal as well as the basis for deriving elements of the proposal which is referred to as access arrangement information as per rule 43(1) of the NGR. In addition, a service provider may wish to provide further information to support its proposal.

In accordance with rule 58 of the NGR, the Authority must as soon as practicable publish an initiating notice, along with the access arrangement proposal on its website. The initiating notice must include an invitation for written submissions on the access arrangement proposal of at least 20 business days.

Following this consultation process, the Authority must make a draft decision and indicate whether the Authority is prepared to approve or not approve the access arrangement proposal under rule 59 of the NGR. The draft decision represents the Authority's assessment of the proposed requirements under the NGL(WA) and NGR, current access arrangement provisions, the service provider's access arrangement proposal, and submissions from interested parties.

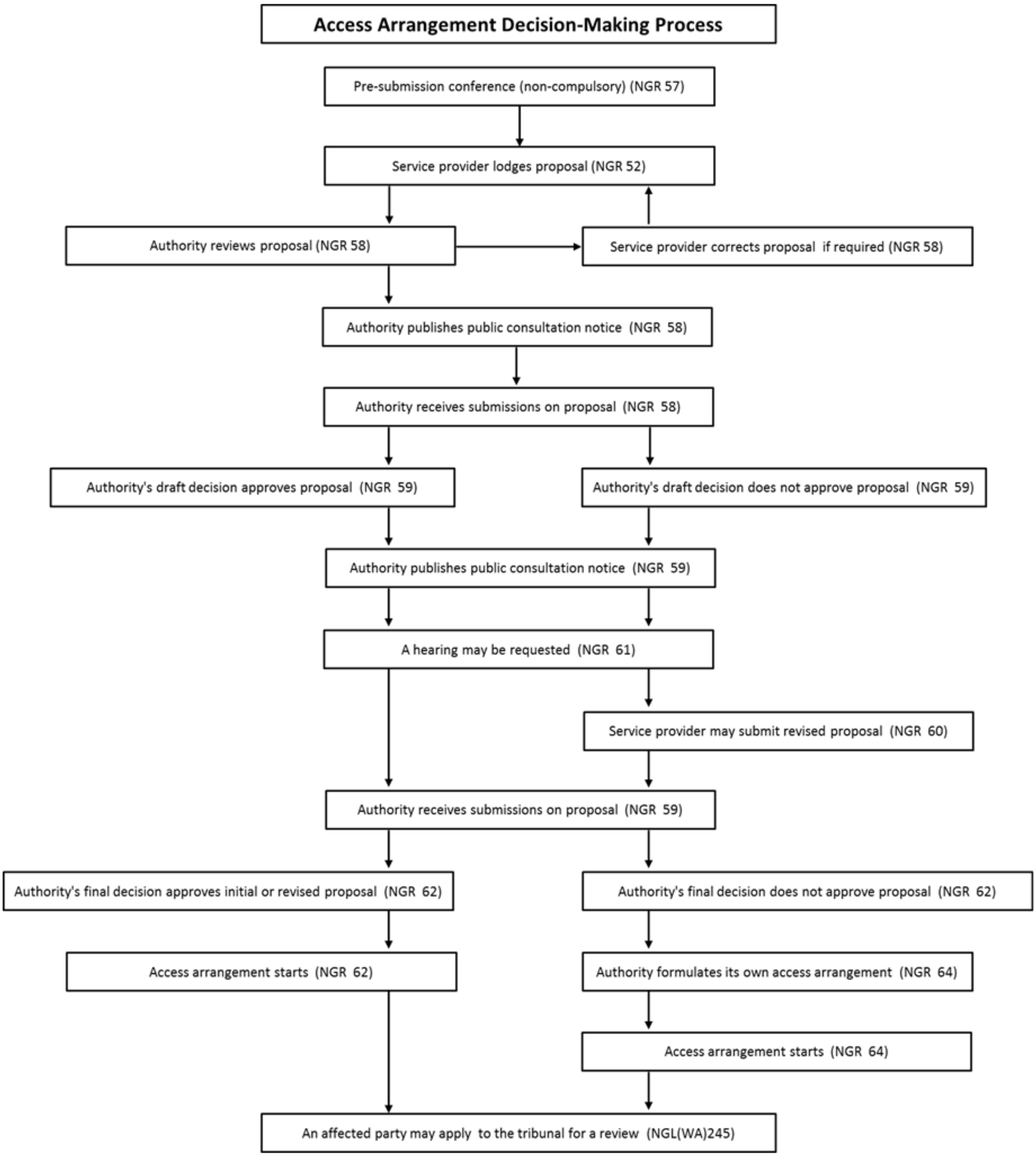
Under rule 60 of the NGR, the service provider may, within the period allowed by the draft decision (at least 15 business days), submit additions or other amendments to the access arrangement proposal to address matters raised in the draft decision. The service provider must provide amendments to the Authority in a revised access arrangement proposal. The Authority must publish the revised access arrangement proposal on its website as soon as practicable and invite submissions from interested parties on the revised proposal and draft decision for a period of at least 20 business days.

After the Authority considers the revised access arrangement proposal, further submissions from interested parties, and any other matters the Authority considers relevant, the Authority must make a final decision as required under rule 62 of the NGR. The final decision is a decision to approve or refuse to approve the access arrangement proposal. If the Authority approves the access arrangement proposal, the access arrangement takes effect on either a date fixed in the final decision, or if no date is fixed, 10 business days after the date of the final decision.

If the Authority's final decision refuses to approve an access arrangement proposal (as submitted or as revised after the draft decision), the Authority must itself propose an access arrangement or revisions to the access arrangement under rule 64 of the NGR. The Authority's proposal for an access arrangement or revisions is to be formulated with regard to the following:

- matters that the applicable legislation requires an access arrangement to include;
- service provider's access arrangement proposal; and
- Authority's reasons for refusing to approve the access arrangement proposal.

The Authority's proposal for an access arrangement or revisions take effect on a date fixed in the determination or if no date is fixed, 10 business days after the Authority's decision.


Access Arrangement Decision-Making Process
Pre-submission conference (non-compulsory) (NGR 57)
Service provider lodges proposal (NGR 52)
Authority reviews proposal (NGR 58)
Service provider corrects proposal if required (NGR 58)
Authority publishes public consultation notice (NGR 58)
Authority receives submissions on proposal (NGR 58)
Authority's draft decision approves proposal (NGR 59)
Authority's draft decision does not approve proposal (NGR 59)
Authority publishes public consultation notice (NGR 59)
A hearing may be requested (NGR 61)
Service provider may submit revised proposal (NGR 60)
Authority receives submissions on proposal (NGR 59)
Authority's final decision approves initial or revised proposal (NGR 62)
Authority's final decision does not approve proposal (NGR 62)
Access arrangement starts (NGR 62)
Authority formulates its own access arrangement (NGR 64)
Access arrangement starts (NGR 64)
An affected party may apply to the tribunal for a review (NGL(WA)245)

Appendix 3: Content of an Access Arrangement

ATCO is required to submit a "full access arrangement" for the GDS. Under section 2 of the NGL(WA), a "full access arrangement" is an access arrangement that:

- provides for price or revenue regulation as required by the NGR; and
- deals with all other matters for which the NGR require provisions to be made in an access arrangement.

The required content of a full access arrangement proposal is specified in rule 48 of the NGR.

48 Requirements for full access arrangement (and full access arrangement proposal)

1) A full access arrangement must:
   a) identify the pipeline to which the access arrangement relates and include a reference to a website at which a description of the pipeline can be inspected; and
   b) describe the pipeline services the service provider proposes to offer to provide by means of the pipeline; and
   c) specify the reference services; and
   d) specify for each reference service:
      i) the reference tariff; and
      ii) the other terms and conditions on which the reference service will be provided; and
   e) if the access arrangement is to contain queuing requirements – set out the queuing requirements; and
   f) set out the capacity trading requirements; and
   g) set out the extension and expansion requirements; and
   h) state the terms and conditions for changing receipt and delivery points; and
   i) if there is to be a review submission date – state the review submission date and the review commencement date; and
   j) if there is to be an expiry date – state the expiry date.
2) This rule extends to an access arrangement proposal consisting of a proposed full access arrangement.

As per rule 43 of the NGR, the service provider must submit access arrangement information when submitting a full access arrangement proposal. Rule 42 of the NGR states that access arrangement information is information that is reasonably necessary for users to understand the background to the access arrangement, and the basis and derivation of various elements of the access arrangement.

The required content of access arrangement information for a full access arrangement proposal is specified in rule 72 of the NGR.

Appendix 4: Updates to the National Gas Rules

During the course of ATCO's third access arrangement, the Australian Energy Market Commission updated rule 87 of the NGR. The Authority addressed this update in its Rate of Return Guidelines published on 16 December 2013.

At the time of submission for the proposed revisions to the third access arrangement for the GDS, rule 87 of the NGR[111] stated that the rate of return on capital is to be commensurate with prevailing conditions in the market for funds and the risks involved in providing reference services. Rule 87 stated that in determining a rate of return on capital, the service provider should:

- meet benchmark levels of efficiency;
- use a financing structure that meets benchmark standards as to gearing and other financial parameters for a going concern;
- use a well-accepted approach that incorporates the cost of equity and debt, such as the Weighted Average Cost of Capital; and
- use a well-accepted financial model, such as the Capital Asset Pricing Model.

The current version of rule 87[112] states that the return on the projected capital base for each regulatory year of the access arrangement period is to be calculated by applying an allowed rate of return. Rule 87 requires that the allowed rate of return be commensurate with the efficient financing costs of a benchmark efficient entity with a similar degree of risk as that which applies to the service provider in respect of the provision of reference services. The allowed rate of return for a regulatory year is to be a weighted average of the return on equity and the return on debt for the access arrangement period in which that regulatory year occurs. The rule also states that the allowed rate of return should be determined on a nominal vanilla basis that is consistent with the estimate of the value of imputation credits. Rule 87 states that in determining the allowed rate of return, regard must be had to:

- relevant estimation methods, financial models, market data and other evidence;
- the desirability of using an approach that leads to the consistent application of any estimates of financial parameters that are relevant to the estimates of, and that are common to, the return on equity and the return on debt; and
- any interrelationships between estimates of financial parameters that are relevant to the estimates of the return on equity and the return on debt.

Rule 87 requires that in estimating the return on equity, regard must be had to the prevailing conditions in the market for equity funds. As such, the return on debt for a regulatory year is to be estimated using a methodology that results in either:

- the return on debt for each regulatory year in the access arrangement period being the same; or
- the return on debt (and consequently the allowed rate of return) being different for different regulatory years in the access arrangement period.

[111] National Gas Rules 87 (Version 10).

[112] National Gas Rules 87 (Version 20).

Rule 87 states that the methodology adopted to estimate the return on debt may be designed to result in the return on debt reflecting:

- the return that would be required by debt investors in a benchmark efficient entity if it raised debt at the time or shortly before the time when the [Authority's] decision on the access arrangement for that access arrangement period is made; and/or
- the average return that would have been required by debt investors in a benchmark efficient entity if it raised debt over an historical period prior to the commencement of a regulatory year in the access arrangement period.

In estimating the return on debt under rule 87, regard must be had to the following factors:

- the desirability of minimising any difference between the return on debt and the return on debt of a benchmark efficient entity referred to in the allowed rate of return objective;
- the interrelationship between the return on equity and the return on debt;
- the incentives that the return on debt may provide in relation to capital expenditure over the access arrangement period, including as to the timing of any capital expenditure; and
- any impacts (including in relation to the costs of servicing debt across access arrangement periods) on a benchmark efficient entity referred to in the allowed rate of return objective that could arise as a result of changing the methodology that is used to estimate the return on debt from one access arrangement period to the next.

Rule 87 elaborates that if the return on debt is to be estimated using a methodology of the type referred to above, then a resulting change to the service provider's total revenue must be effected through the automatic application of a formula that is specified in the decision on the access arrangement for that access arrangement period.