Access Arrangement Information for the Mid-West and South-West Gas Distribution Systems

ERA APPROVED
15 November 2019

Economic Regulation Authority
WESTERN AUSTRALIA

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Contents

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Access Arrangement Information

Overview

1. This document comprises the Access Arrangement Information (AAI) for the revised access arrangement for the Mid-West and South-West Gas Distribution Systems (GDS) that was proposed by the ERA and given effect on 15 November 2019, pursuant to rule 64(4) of the National Gas Rules (NGR).[1]

2. The purpose of this document is to: (1) set out the information necessary for users and prospective users to understand the background to the access arrangement for the GDS and (2) to enable users and prospective users to understand the derivation of the elements of the access arrangement for the GDS for the fifth access arrangement period (AA5) – 1 January 2020 to 31 December 2024. The provision of AAI is also necessary for compliance with the NGR.

3. The GDS consists of gas reticulation networks servicing Geraldton, Bunbury, Busselton, Harvey, Pinjarra, Brunswick Junction, Capel and the Perth greater metropolitan area (including Mandurah). These combined networks supply approximately 750,000 customers through more than 14,000 kilometres of pipeline.

4. ATCO Gas Australia (ATCO) owns and operates the GDS. ATCO is the natural gas distribution business within the Pipelines and Liquids Global Business Unit of the ATCO Group of global companies. The ATCO Group is engaged in structures and logistics, electricity (generation, transmission and distribution), pipelines and liquids (natural gas transmission, distribution and infrastructure development, energy storage and industrial water solutions) and retail energy.

Interpretation

5. Unless the contrary intention is expressed, words or phrases in this document have the same meaning as those defined in Part 13 (Definitions and Interpretation) of the revised access arrangement for the GDS.

6. A reference in this document to:

   - "access arrangement period" means the fifth access arrangement period or AA5 (1 January 2020 to 31 December 2024).
   - "earlier access arrangement period" or "previous access arrangement period" means the fourth access arrangement period or AA4 (1 July 2014 to 31 December 2019) which preceded the access arrangement period.

7. Where a word or phrase has not been defined in this document then, unless the contrary intention is expressed, the word or phrase is to be given the meaning prescribed in the National Gas Law, Rules or Regulations (as relevant and applicable in Western Australia).

[1] Economic Regulation Authority, *Final decision on proposed revisions to the Mid-West and South-West Gas Distribution Systems access arrangement for 2020 to 2024*, 15 November 2019.

Structure and compliance

8. This document follows the structure of rule 72 of the NGR, which sets out specific requirements for AAI relevant to revenue and price regulation (Table 1).

9. In March 2019, the Australian Energy Market Commission (AEMC) made a final determination to make changes to the regulatory framework for covered transmission and distribution natural gas pipelines in Australia.[2] The specific changes to the NGR are set out in *National Gas Amendment (Regulation of covered pipelines) Rule 2019 No.1*.[3] Most of the new rules commenced on 21 March 2019, including new transitional provisions. Transitional rule 61 (in schedule 1) of the NGR applies to the GDS, which provides for exemptions from the new rules made under Parts 8, 9 and 10 of the NGR.[4]

10. Rule 72 of the NGR falls within Part 9 of the NGR. Hence, the requirements for AAI that apply for the access arrangement period and that are detailed in Table 1 are those requirements set out in the version of the NGR that applied at the time ATCO submitted its proposed access arrangement revisions for AA5 to the ERA.[5] Subsequent access arrangement periods will be subject to the new rules.

Table 1: Requirements for access arrangement information relevant to price and revenue regulation

National Gas Rule	Requirement for Access Arrangement Information (AAI) [6]
72(1)(a)	If the access arrangement period commences at the end of an earlier access arrangement, AAI must include: • Capital expenditure (by asset class) and operating expenditure (by category) over the earlier access arrangement period. • Usage of the pipeline over the earlier access arrangement period showing: – For a distribution pipeline: minimum, maximum and average demand and customer numbers in total and by tariff class. – For a transmission pipeline: minimum, maximum and average demand for each receipt or delivery point and user numbers for each receipt or delivery point.
72(1)(b)	AAI must include information on how the capital base is arrived at, and if the access arrangement period commences at the end of an earlier access arrangement, a demonstration of how the capital base increased or diminished over the previous period.
72(1)(c)	AAI must include the projected capital base over the access arrangement period, including:

2 Australian Energy Market Commission, *Regulation of covered pipelines, Rule determination*, 14 March 2019 (online) (accessed September 2019).

3 Australian Energy Market Commission, *National Gas Amendment (Regulation of covered pipelines) Rule 2019 No.1* (online) (accessed September 2019).

4 Part 8 of the NGR cover rules 40 to 68. Part 9 of the NGR cover rules 69 to 99. Part 10 of the NGR cover rules 100 to 106.

5 Version 38 of the NGR applied at the time ATCO submitted its proposed access arrangement revisions to the ERA on 31 August 2018.

6 On 8 April 2019, the binding rate of return instrument came into operation in Western Australian. There were several consequential changes to the NGR. Rules 72(1)(g) and 72(1)(h) were amended and rule 72(1)(ga) was deleted. The summary in this table reflects the current wording of the rules.

National Gas Rule	Requirement for Access Arrangement Information (AAI) [6]
	• A forecast of conforming capital expenditure for the period and the basis for the forecast. • A forecast of depreciation for the period, including a demonstration of how the forecast is derived on the basis of the proposed deprecation method.
72(1)(d)	To the extent it is practicable to forecast capacity and utilisation over the access arrangement period, AAI must include a forecast of pipeline capacity and utilisation of pipeline capacity over the period and the basis on which the forecast has been derived.
72(1)(e)	AAI must include a forecast of operating expenditure over the access arrangement period and the basis on which the forecast has been derived.
72(1)(f)	AAI must include the key performance indicators to be used by the service provider to support the expenditure to be incurred over the access arrangement period.
72(1)(g)	AAI must include the allowed rate of return for each regulatory year of the access arrangement period.
72(1)(h)	AAI must include the estimated cost of corporate income tax, calculated in accordance with rule 87A, including the allowed imputation credits referred to in that rule.
72(1)(i)	If an incentive mechanism operated in the previous access arrangement period, the AAI must include the proposed carry over of increments or decrements for efficiency gains or losses, and a demonstration of how an allowance is to be made for any such increments or decrements.
72(1)(j)	AAI must include the proposed approach to setting tariffs including: • The suggested basis of reference tariffs, including the method used to allocate costs and a demonstration of the relationship between costs and tariffs. • A description of any pricing principles employed, but not otherwise disclosed.
72(1)(k)	AAI must include the service provider's rationale for any proposed reference tariff variation mechanism.
72(1)(l)	AAI must include the service provider's rational for any proposed incentive mechanism.
72(1)(m)	AAI must include the total revenue to be derived from pipeline services for each regulatory year of the access arrangement period.

Financial information

11. Rule 73 of the NGR specifies the basis on which financial information is to be provided.[7]

> **73 Basis on which financial information is to be provided**
>
> (1) Financial information must be provided on:

[7] Rule 73 of the NGR falls within Part 9 of the NGR. Hence, the requirements specified are the requirements that applied at the time revisions to the access arrangement for the GDS were assessed and approved by the ERA.

(a) a nominal basis; or

(b) a real basis; or

(c) some other recognised basis for dealing with the effects of inflation.

(2) The basis on which financial information is provided must be stated in the access arrangement information.

(3) All financial information must be provided, and all calculations made, consistently on the same basis.

12. Financial information in this document is provided on both a nominal and real basis. All real financial information is expressed in constant prices as at 31 December 2019.

13. Where necessary, to express financial values in dollar values of 31 December 2019, financial values prior to this date were escalated at the rate of inflation as measured by the *Consumer Price Index (All Groups, Weighted Average of Eight Capital Cities)* as published by the Australian Bureau of Statistics. The rate of inflation for December 2018 to December 2019 includes two quarters of published (actual) inflation for the March and June 2019 quarters and two quarters of estimated (forecast) inflation for the September and December 2019 quarters.

14. Financial values after 31 December 2019 are de-escalated using the forecast rate of inflation from the weighted average cost of capital (WACC) parameter estimates shown in Table 17 (see paragraph 53).

15. Table 2 shows actual consumer price index and forecast inflation values used to provide financial information in this document.

Table 2 Actual and forecast consumer price index and inflation rates

	July to Dec 2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
	Actual	Actual	Actual	Actual	Actual	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast
December CPI	106.60	108.40	110.00	112.10	114.10	115.46	116.77	118.10	119.45	120.81	122.19
Inflation rate (%)						1.19	1.14	1.14	1.14	1.14	1.14

Source: ERA, Final Decision Appendix 5, GDS Tariff Model, November 2019.

Forecasts and estimates

16. Rule 74 of the NGR contains specific requirements for the provision of forecasts and estimates.

74 Forecasts and estimates

(1) Information in the nature of a forecast or estimate must be supported by a statement of the basis of the forecast or estimate.

(2) A forecast of estimate:

(a) must be arrived at on a reasonable basis; and

(b) must represent the best forecast or estimate possible in the circumstances.

Expenditure and Pipeline Usage – NGR 72(1)(a)

17. If the access arrangement period commences at the end of an earlier access arrangement period, AAI must include:

- Capital expenditure (by asset class) over the earlier access arrangement period (rule 72(1)(a)(i) of the NGR).
- Operating expenditure (by category) over the earlier access arrangement period (rule 72(1)(a)(ii) of the NGR).
- Usage of the pipeline over the earlier access arrangement period showing, for a distribution pipeline:
  - minimum, maximum and average demand (rule 72(1)(a)(iii)A of the NGR); and
  - customer numbers in total and by tariff class (rule 72(1)(a)(iii)B of the NGR).

18. The above information is shown in the following tables. GDS customers and tariff classes are further explained elsewhere in this document (see *Forecast Demand* and *Approach to Setting Tariffs*).

Table 3: Capital expenditure by asset class for AA4 ($ million real as at 31 December 2019)

Asset class	Jul to Dec 2014	2015	2016	2017	2018	2019 (forecast)	Total
High pressure mains – steel	0.75	0.53	2.38	6.43	5.38	2.55	**18.01**
High pressure mains – polyethylene (PE)	1.17	1.40	0.72	0.44	0.56	-	**4.29**
Medium and low pressure mains	13.62	32.05	31.02	30.74	32.85	26.73	**167.00**
Regulators	1.51	2.60	4.03	4.75	1.46	0.74	**15.08**
Secondary gate stations	0.01	0.02	-	0.19	0.66	5.02	**5.90**
Buildings	0.17	0.45	0.68	1.43	9.43	2.87	**15.02**
Meter and services pipes	17.88	29.75	30.00	28.18	26.37	31.37	**163.56**
Equipment and vehicles	0.40	1.23	1.06	1.05	1.58	0.49	**5.80**
Vehicles	1.53	1.34	2.15	2.05	3.36	3.56	**13.99**
Information technology (including telemetry)	5.28	3.30	9.70	8.42	2.68	2.22	**31.60**
Land	0.00	0.87	2.36	0.42	0.01	2.02	**5.69**
Equity raising costs	0.00	0.00	0.00	0.00	0.28	0.68	**0.96**
Total	**42.32**	**73.53**	**84.09**	**84.10**	**85.41**	**78.84**	**448.30**

Source: ERA, Final Decision Appendix 5, GDS Tariff Model, November 2019.

Table 4: Operating expenditure by category for AA4 ($ million real as at 31 December 2019)

Category	Jul to Dec 2014	2015	2016	2017	2018	2019 (forecast)	Total
Network	13.70	34.57	34.13	34.38	34.38	34.93	**186.08**
Corporate	11.14	19.04	18.94	19.10	20.30	20.43	**108.95**
Information technology	4.24	11.34	11.45	11.45	11.30	11.19	**60.97**
Unaccounted for gas	4.34	7.79	7.82	7.90	7.98	8.05	**43.87**
Ancillary services	0.21	0.62	0.64	0.65	0.66	0.67	**3.45**
Total	**33.62**	**73.36**	**72.96**	**73.48**	**74.63**	**75.28**	**403.32**

Source: ATCO Gas Australia, 2020-24 Revised Plan (Access Arrangement Supplementary Information), 09.100 Base Step Trend – Opex Forecast Model_DDR SUBMITTED CONFIDENTIAL.

The values in the table have been adjusted from their original source based on the ERA's final decision inflation index numbers.

Table 5: Minimum, maximum and average demand for AA4 (TJ / day)

Demand	Jul to Dec 2014	2015	2016	2017	2018	2019 (forecast)
Average	78	73	75	71	74	75
Minimum	44	41	38	40	39	40
Maximum	118	121	120	119	117	123

Source: ATCO Gas Australia, 2020-24 Revised Plan, Table 7.8, pg. 75.

Table 6: Average Customer numbers by tariff class for AA4 (average for year)

Tariff Class	Jul to Dec 2014	2015	2016	2017	2018	2019 (forecast)
A1	73	74	76	76	75	75
A2	107	107	102	99	103	105
B1	1,400	1,445	1,520	1,600	1,671	1,728
B2	10,225	10,625	11,115	11,497	11,740	11,957
B3	671,182	686,911	705,513	718,911	728,627	735,065
Total	**682,986**	**699,160**	**718,325**	**732,182**	**742,215**	**748,930**

Source: ERA, Final Decision Appendix 5, GDS Tariff Model, November 2019.

Opening Capital Base – NGR 72(1)(b)

19. AAI must include how the capital base is arrived at, and if the access arrangement period commences at the end of an earlier access arrangement period, it must provide a demonstration of how the capital base increased or diminished over the previous access arrangement period.

20. The opening capital base for the access arrangement period (that is, the capital base at 1 January 2020) is determined in accordance with the formula in rule 77(2) of the NGR.

> **77 Opening capital base**
>
> …
>
> (2) If an access arrangement period follows immediately on the conclusion of a preceding access arrangement period, the opening capital base for the later access arrangement period is to be:
>
> (a) the opening capital base as at the commencement of the earlier access arrangement period adjusted for any difference between estimated and actual capital expenditure included in that opening capital base. This adjustment must also remove any benefit or penalty associated with any difference between the estimated and actual capital expenditure;
>
> plus:
>
> (b) conforming capital expenditure made, or to be made, during the earlier access arrangement period;
>
> plus:
>
> (c) any amounts to be added to the capital base under rule 82, 84 or 86;
>
> less:
>
> (d) depreciation over the earlier access arrangement period (to be calculated in accordance with any relevant provisions of the access arrangement governing the calculation of depreciation for the purpose of establishing the opening capital base); and
>
> (e) redundant assets identified during the course of the earlier access arrangement period; and
>
> (f) the value of pipeline assets disposed of during the earlier access arrangement period.

21. The NGR define *conforming capital expenditure* as "capital expenditure that complies with the new capital expenditure criteria". Rule 79 of the NGR sets out the criteria.

> **79 New capital expenditure criteria**
>
> (1) Conforming capital expenditure is capital expenditure that conforms with the following criteria:
>
> (a) 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;
>
> (b) the capital expenditure must be justifiable on a ground stated in subrule (2).
>
> (2) Capital expenditure is justifiable if:

(a) the overall economic value of the expenditure is positive; or

(b) the present value of the expected incremental revenue to be generated as a result of the expenditure exceeds the present value of the capital expenditure; or

(c) the capital expenditure is necessary:

(i) to maintain and improve the safety of services; or

(ii) to maintain the integrity of services; or

(iii) to comply with a regulatory obligation or requirement; or

(iv) to maintain the service provider's capacity to meet levels of demand for services existing at the time the capital expenditure is incurred (as distinct from projected demand that is dependent on an expansion of pipeline capacity); or

(d) the capital expenditure is an aggregate amount divisible into 2 parts, one referable to incremental services and the other referable to a purpose referred to in paragraph (c), and the former is justifiable under paragraph (b) and the latter under paragraph (c).

(3) In deciding whether the overall economic value of capital expenditure is positive, consideration is to be given only to economic value directly accruing to the service provider, gas producers, users and end users.

(4) In determining the present value of expected incremental revenue:

(a) a tariff will be assumed for incremental services based on (or extrapolated from) prevailing reference tariffs or an estimate of the reference tariffs that would have been set for comparable services if those services had been reference services; and

(b) incremental revenue will be taken to be the gross revenue to be derived from the incremental services less incremental operating expenditure for the incremental services; and

(c) a discount rate is to be used equal to the rate of return implicit in the reference tariff.

(5) If capital expenditure made during an access arrangement period conforms, in part, with the criteria laid down in this rule, the capital expenditure is, to that extent, to be regarded as conforming capital expenditure.

(6) The [ERA's] discretion under this rule is limited.

Conforming capital expenditure

22. Conforming capital expenditure was assessed using the following framework.

- Determine whether the expenditure satisfies the prudent service provider criteria set out in rule 79(1) of the NGR. That is, the expenditure 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.
- Determine whether the expenditure is justifiable on one or more of the grounds set out in rule 79(2) of the NGR.
- Assess whether forecasts or estimates comply with rule 74(2) of the NGR, which requires a forecast or estimate to be arrived at on a reasonable basis and represent the best forecast or estimate possible in the circumstances.

23. Refer to Table 3, which shows the conforming capital expenditure made during the earlier access arrangement period.

Amounts added under rules 82, 84 and 86

24. Rules 82, 84 and 86 of the NGR cover provisions for capital contributions by users to new capital expenditure, the speculative capital expenditure account and the re-use of redundant assets.

> **82** **Capital contributions by users to new capital expenditure**
>
> (1) A user may make a capital contribution towards a service provider's capital expenditure.
>
> (2) Capital expenditure to which a user has contributed may, with the [ERA's] approval, be rolled into the capital base for a pipeline but, subject to subrule (3), not to the extent of any such capital contribution.
>
> (3) The [ERA] may approve the rolling of capital expenditure (including a capital contribution made by a user, or part of such a capital contribution) into the capital base for a pipeline on condition that the access arrangement contain a mechanism to prevent the service provider from benefiting, through increased revenue, from the user's contribution to the capital base.
>
> …
>
> **84** **Speculative capital expenditure account**
>
> (1) A full access arrangement may provide that the amount of non-conforming capital expenditure, to the extent that it is not to be recovered through a surcharge on users or a capital contribution, is to be added to a notional fund (the speculative capital expenditure account).
>
> (2) The balance of the speculative capital expenditure account must be adjusted annually by applying to the balance a rate that is the same as the allowed rate of return for the regulatory year in which the adjustment is made.
>
> (3) If at any time the type or volume of services changes so that capital expenditure that did not, when made, comply with the new capital expenditure criteria becomes compliant, the relevant portion of the speculative capital expenditure account (including the return referable to that portion of the account) is to be withdrawn from the account and rolled into the capital base as at the commencement of the next access arrangement period.
>
> …
>
> **86** **Re-use of redundant assets**
>
> (1) Subject to the new capital expenditure criteria, if, after the reduction of the capital base by the value of assets identified as redundant, the assets later contribute to the delivery of pipeline services, the assets may be treated as new capital expenditure of an amount calculated by taking their value as at the time of their removal from the capital base and increasing it annually at the rate of return implicit in the reference tariff.
>
> (2) To the extent the new capital expenditure criteria allow, the amount arrived at under subrule (1) will be returned to the capital base in accordance with those criteria.

25. There were no amounts added to the opening capital base under rules 82, 84 or 86.

Depreciation

26. The depreciation method used for calculating the depreciation on the regulatory asset base over the earlier access arrangement period was a straight-line depreciation

method (or otherwise a current cost accounting approach). This approach is consistent with the depreciation criteria set out in rule 89 of the NGR (see paragraph 39).

Redundant and disposed assets

27. There were no redundant assets identified during the earlier access arrangement period.

28. The value of pipeline assets disposed of during the earlier access arrangement period was $0.99 million (real as at 31 December 2019).

Opening capital base

29. The opening capital base at 1 January 2020 is $1,292.38 million (Table 7).

Table 7 Opening capital base at 1 January 2020 ($ million real as at 31 December 2019)

	Jul to Dec 2014	2015	2016	2017	2018	2019 (forecast)
Opening capital base	1,096.18	1,120.52	1,154.44	1,194.38	1,231.29	1,266.40
Plus: Capital expenditure	42.32	73.53	84.09	84.10	85.41	78.84
Less: Depreciation	(17.93)	(39.61)	(43.95)	(46.97)	(49.78)	(52.87)
Less: Asset disposals	(0.04)	(0.02)	(0.20)	(0.21)	(0.52)	-
Closing capital base	**1,120.52**	**1,154.44**	**1,194.38**	**1,231.29**	**1,266.40**	**1,292.38**

Source: ERA, Final Decision Appendix 5, GDS Tariff Model, November 2019.

Projected Capital Base – NGR 72(1)(c)

30. AAI must include the projected capital base over the access arrangement period, including:

- A forecast of conforming capital expenditure for the period and the basis for the forecast (rule 72(1)(c)(i) of the NGR).
- A forecast of depreciation for the period, including a demonstration of how the forecast is derived based on the proposed depreciation method (rule 72(1)(c)(ii) of the NGR).

31. The projected capital base for the access arrangement period is determined in accordance with the formula in rule 78 of the NGR.

> **78 Projected capital base**
>
> The projected capital base for a particular period is:
>
> (a) the opening capital base;
>
> plus:
>
> (b) forecast conforming capital expenditure for the period;
>
> less:
>
> (c) forecast depreciation for the period; and
>
> (d) the forecast value of pipeline assets to be disposed of in the course of the period.

32. The return on the projected capital base for each year of the access arrangement period is determined in accordance with the formula in rule 87 of the NGR.

> **87 Rate of return**
>
> The return on the projected capital base for a service provider for a regulatory year of an access arrangement period for an applicable access arrangement ($RPCB_t$) is to be calculated using the following formula:
>
> $RPCB_t = a_t \times v_t$
>
> where:
>
> a_t is the allowed rate of return for the regulatory year; and
>
> v_t is the value, as at the beginning of the regulatory year, of the projected capital base for the regulatory year (as established under rule 78 and subject to rule 82(3)).[8]

33. The projected capital base for the access arrangement period is shown in Table 8.

34. No pipeline assets of material value are expected to be disposed of during the access arrangement period.

[8] Rule 82(3) states: The [ERA] may approve the rolling of capital expenditure (including a capital contribution made by a user, or part of such a capital contribution) into the capital base for a pipeline on condition that the access arrangement contain a mechanism to prevent the service provider from benefiting, through increased revenue, from the user's contribution to the capital base.

Table 8 Projected capital base for AA5 ($ million nominal)

	2020	2021	2022	2023	2024
Opening capital base (start of period)	1,292.38	1,348.59	1,391.13	1,431.50	1,470.44
Inflation	14.73	15.37	15.86	16.32	16.76
Opening capital base (end of period)	1,307.11	1,363.96	1,406.99	1,447.82	1,487.21
Plus: Capital expenditure	88.13	83.77	83.27	83.33	85.76
Less: Depreciation	46.65	56.59	58.76	60.71	63.87
Less: Asset disposals	0.00	0.00	0.00	0.00	0.00
Closing capital base	**1,348.59**	**1,391.13**	**1,431.50**	**1,470.44**	**1,509.11**

Source: ERA, Final Decision Appendix 5, GDS Tariff Model, November 2019.

Forecast conforming capital expenditure (NGR 72(1)(c)(i))

35. The NGR define *conforming capital expenditure* as "capital expenditure that complies with the new capital expenditure criteria". Rule 79 of the NGR sets out the criteria, which is reproduced at paragraph 21 (above).

36. Forecast conforming capital expenditure for the access arrangement period was assessed using the following framework.

- Determine whether the expenditure satisfies the prudent service provider criteria set out in rule 79(1) of the NGR. That is, the expenditure 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.
- Determine whether the expenditure is justifiable on one or more of the grounds set out in rule 79(2) of the NGR.
- Assess whether forecasts or estimates comply with rule 74(2) of the NGR, which requires a forecast or estimate to be arrived at on a reasonable basis and represent the best forecast or estimate possible in the circumstances.

37. Table 9 shows the forecast conforming capital expenditure for the access arrangement period by asset class.

Table 9 Forecast conforming capital expenditure by asset class ($ million real as at 31 December 2019)

Asset class	2020	2021	2022	2023	2024	Total
High pressure mains – steel	2.70	2.78	4.22	2.62	0.54	**12.87**
High pressure mains – polyethylene (PE)	0.00	0.00	0.00	0.00	0.00	**0.00**
Medium and low pressure mains	40.69	33.23	33.12	34.04	34.54	**175.62**
Regulators	1.07	0.75	0.96	0.70	0.38	**3.86**
Secondary gate stations	0.07	0.07	0.07	0.07	0.07	**0.34**
Buildings	1.90	0.35	0.30	0.10	0.10	**2.76**
Meter and services pipes	28.05	28.68	30.91	31.82	32.33	**151.80**
Equipment and vehicles	0.79	0.79	0.87	0.88	0.88	**4.20**
Vehicles	3.31	4.68	1.87	2.97	3.11	**15.93**
Information technology	7.35	8.58	6.72	5.02	7.59	**35.27**
Telemetry	1.19	1.98	1.44	1.43	1.49	**7.54**
Land	0.00	0.00	0.00	0.00	0.00	**0.00**
Equity raising costs	0.00	0.00	0.00	0.00	0.00	**0.00**
Total	**87.13**	**81.89**	**80.49**	**79.64**	**81.04**	**410.19**

Source: ERA, Final Decision Appendix 5, GDS Tariff Model, November 2019.

Forecast of depreciation (NGR 72(1)(c)(ii))

38. Rule 88 of the NGR sets out the requirements for the depreciation schedule.

> **88 Depreciation schedule**
>
> (1) The depreciation schedule sets out the basis on which the pipeline assets constituting the capital base are to be depreciated for the purpose of determining a reference tariff.
>
> (2) The depreciation schedule may consist of a number of separate schedules, each relating to a particular asset or class of assets.

39. Rules 89 and 90 of the NGR set out the depreciation criteria and requirements for the calculation of depreciation for establishing the opening capital base for the next access arrangement period.

> **89 Depreciation criteria**
>
> (1) The depreciation schedule should be designed:
>
> (a) so that reference tariffs will vary, over time, in a way that promotes efficient growth in the market for reference services; and

(b) so that each asset or group of assets is depreciated over the economic life of that asset or group of assets; and

(c) 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; and

(d) so that (subject to the rules about capital redundancy), an asset is depreciated only once (ie that 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 (adjusted, if the accounting method approved by the [ERA] permits, for inflation)); and

(e) so as to allow for the service provider's reasonable needs for cash flow to meet financing, non-capital and other costs.

(2) Compliance with subrule (1)(a) may involve deferral of a substantial proportion of the depreciation, particularly where:

(a) the present market for pipeline services is relatively immature; and

(b) the reference tariffs have been calculated on the assumption of significant market growth; and

(c) the pipeline has been designed and constructed so as to accommodate future growth in demand.

(3) The [ERA's] discretion under this rule is limited.

90 Calculation of depreciation for rolling forward capital base from one access arrangement period to the next

(1) A full access arrangement must contain provisions governing the calculation of depreciation for establishing the opening capital base for the next access arrangement period after the one to which the access arrangement currently relates.

(2) The provisions must resolve whether depreciation of the capital base is to be based on forecast or actual capital expenditure.

40. A current cost accounting approach (that is, a straight-line depreciation method) is used to calculate the depreciation on the regulatory asset base for the access arrangement period. The approach is consistent with the criteria under rule 89(1) of the NGR.

41. Table 10 shows the forecast of depreciation for the access arrangement period.

42. The asset lives used to calculate the forecast are shown in Table 11.

Table 10 Forecast of depreciation for AA5 ($ million real as at 31 December 2019)

Asset categories	2020	2021	2022	2023	2024	Total
High pressure mains – steel	3.48	3.51	3.55	3.60	3.63	**17.76**
High pressure mains – polyethylene (PE)	0.07	0.07	0.07	0.07	0.07	**0.36**
Medium pressure mains	5.94	5.94	5.94	5.94	5.94	**29.69**
Medium/low pressure mains	9.85	10.53	11.08	11.63	12.20	**55.29**
Low pressure mains	1.42	1.42	1.42	1.42	1.42	**7.09**
Regulators	1.16	1.19	1.21	1.23	1.25	**6.03**
Secondary gate stations	0.10	0.39	0.39	0.39	0.26	**1.53**
Buildings	(0.02)	0.89	0.90	0.87	0.88	**3.51**
Meter and services pipes	19.81	20.93	22.08	23.32	24.59	**110.73**
Equipment and vehicles	1.86	1.85	1.81	1.56	1.12	**8.21**
Vehicle	(0.17)	1.29	1.76	1.95	2.24	**7.06**
Information technology	2.47	7.04	6.12	5.42	5.98	**27.04**
Telemetry and monitoring	0.15	0.27	0.47	0.61	0.75	**2.25**
Full retail contestability	0.00	0.00	0.00	0.00	0.00	**0.00**
Land	0.00	0.00	0.00	0.00	0.00	**0.00**
Equity raising cost	0.01	0.01	0.01	0.01	0.01	**0.07**
Total	**46.12**	**55.33**	**56.80**	**58.02**	**60.35**	**276.62**

Source: ERA, Final Decision Appendix 5, GDS Tariff Model, November 2019.

Table 11 AA5 asset lives

Asset categories	Asset life
High pressure mains – steel	80.0
High pressure mains – polyethylene (PE)	60.0
Medium and low pressure mains	60.0
Regulators	40.0
Secondary gate stations	40.0
Buildings	40.0
Meter and services pipes	25.0
Plant and equipment	10.0
Vehicles	10.0
Information technology	5.0
Land	-
Equity raising cost	53.1
Telemetry	10.0
Historical asset categories - no longer used for new capex	
Medium pressure mains	*60.0*
Low pressure mains	*60.0*
Full retail contestability (historical IT costs)	*5.0*

Source: ERA, Final Decision Appendix 5, GDS Tariff Model, November 2019.

Forecast Demand – NGR 72(1)(d)

43. AAI must include, to the extent it is practicable to forecast pipeline capacity and utilisation of pipeline capacity over the access arrangement period, a forecast of pipeline capacity and utilisation of pipeline capacity over that period and the basis on which the forecast has been derived.

44. It is not practicable to forecast pipeline capacity and utilisation of pipeline capacity for a gas distribution network because such networks consist of various sized interlinked pipelines, each with different pipeline capacities. For this reason, demand forecasts are limited to:

- For haulage reference services – customer numbers and gas consumption (or usage) over the access arrangement period (Table 12).
- For ancillary reference services – the number of services provided over the access arrangement period (Table 13).

Table 12 Demand forecast for haulage reference services for AA5

Tariff Class	2020	2021	2022	2023	2024	CAGR* (%)
A1						
Customers	75	75	75	74	74	-0.34%
Usage (TJ)	11,537.74	11,850.74	11,509.45	11,200.54	11,140.73	-0.87%
A2						
Customers	106	106	107	107	108	0.47%
Usage (TJ)	1,818.99	1,801.25	1,783.78	1,766.60	1,749.70	-0.97%
B1						
Customers	1,780	1,834	1,888	1,943	1,999	2.94%
Usage (TJ)	2,111.59	2,150.39	2,190.62	2,224.66	2,247.16	1.57%
B2						
Customers	12,239	12,519	12,796	13,096	13,402	2.30%
Usage (TJ)	1,373.37	1,386.83	1,404.34	1,418.24	1,425.21	0.93%
B3						
Customers	740,372	747,883	757,221	769,293	783,000	1.41%
Usage (TJ)	9,973.32	9,926.00	9,878.78	9,820.17	9,798.95	-0.44%
Total						
Customers	**754,571**	**762,417**	**772,087**	**784,513**	**798,583**	**1.43%**
Usage (TJ)	**26,815.01**	**27,115.21**	**26,766.98**	**26,430.21**	**26,361.76**	**-0.43%**

*compound annual growth rate

Source: ERA, Final Decision Appendix 5, GDS Tariff Model, November 2019.Note: Customer numbers are the midpoint between years as per the ERA tariff model.

Table 13 Demand forecast for ancillary reference services for AA5

Ancillary service	2020	2021	2022	2023	2024	CAGR* (%)
Applying a meter lock	9,329	9,429	9,563	9,732	9,907	1.51%
Removing a meter lock	8,077	8,164	8,280	8,426	8,578	1.51%
Deregistering a delivery point	2,212	2,235	2,267	2,307	2,349	1.51%
Disconnecting a delivery point	3,646	3,685	3,737	3,803	3,872	1.51%
Reconnecting a delivery point	2,927	2,959	3,001	3,054	3,109	1.51%
Special meter reading	124,977	126,318	128,115	130,374	132,721	1.51%

*compound annual growth rate

Source: ERA, Final Decision Appendix 5, GDS Tariff Model, November 2019.

Forecast Operating Expenditure – NGR 72(1)(e)

45. AAI must include a forecast of operating expenditure over the access arrangement period and the basis on which the forecast has been derived.

46. Rule 91 of the NGR sets out criteria governing operating expenditure.

> **91 Criteria governing operating expenditure**
>
> (1) 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.
>
> (2) The [ERA's] discretion under this rule is limited.

47. Table 14 shows the forecast operating expenditure over the access arrangement period. The forecast was derived on the following basis.

- Estimates for the network, corporate and IT operating expenditure categories derived using the base-step-trend method. Under this method, operating expenditure forecasts for these cost categories were based on costs incurred in an efficient base year plus adjustments to account for unanticipated differences between the base year and the AA5 years.
- Specific yearly forecasts for unaccounted for gas and ancillary services. Specific forecasts were calculated for these cost categories because ATCO considered that the expenditure profiles for these categories' over AA5 were not suitably captured by the method of growth in the base-step-trend method.

Table 14 Forecast operating expenditure for AA5 by category ($ million real as at 31 December 2019)

Category	2020	2021	2022	2023	2024	Total
Base network, corporate and IT operating expenditure	52.32	52.32	52.32	52.32	52.32	**261.61**
Step changes	1.22	1.38	1.98	2.69	2.33	**9.61**
Output growth escalation	0.55	0.93	1.40	1.99	2.62	**7.49**
Input growth escalation	0.36	0.54	0.73	0.93	1.11	**3.66**
Unaccounted for gas	3.77	4.46	4.49	4.54	4.70	**21.97**
Ancillary services	3.29	3.33	3.37	3.43	3.49	**16.92**
Total	**61.51**	**62.96**	**64.30**	**65.90**	**66.58**	**321.25**

Source: ERA, Final Decision Operating Expenditure Model, November 2019.

Key Performance Indicators – NGR 72(1)(f)

48. AAI must include the key performance indicators to be used by the service provider to support the expenditure to be incurred over the access arrangement period.

49. The key performance indicators to be used by the service provider over the access arrangement period are shown in Table 15 and Table 16.

Table 15 Key performance indicators and targets for AA5

KPI	Description	AA5 Target
Customer Service		
Domestic customer connections within five business days *	The percentage of new customer connections to established domestic dwellings on the distribution network provided within five business days (the applicable regulated time limit).	>98.7%
Attendance to broken mains and services within one hour *	The percentage of attendance to broken mains and services within one hour of the service request being received.	>99.9%
Attendance to loss of supply within three hours *	The percentage of attendance to loss of gas supply within three hours of the service request being received. This indicator is included in [ATCO's] Safety Case[9] and is covered by the Guarantee Service Level scheme.	>99.9%
Network Integrity		
Asset health index	An index based on unplanned System Average Interruption Duration Index (SAIDI), unplanned System Average Interruption Frequency Index (SAIFI), mains leaks, service leaks, and meter leaks.	100
Total public reported gas leaks per km of main	Total number of confirmed gas leaks reported by the public (excluding third-party damage) per kilometre of main per year.	<0.65
System average interruption frequency index (SAIFI)	The number of supply interruptions experienced by the average customer as a result of sustained unplanned interruptions, calculated as: *"(sum of the number of customers interrupted) / (number of customers served)"*.	<0.0041
Unaccounted for gas (UAFG) rate *	UAFG is the difference between the measurement of the quantity of gas delivered into the gas distribution system in each period and the measurement of the quantity of gas delivered from the gas distribution system during that period.	Yearly target (Table 16)

9 ATCO, *Gas Distribution System Safety Case*, December 2017.

KPI	Description	AA5 Target
Expenditure		
Operating expenditure per km of main	The total operating expenditure per year divided by the total km of main.	Yearly target (Table 16)
Operating expenditure per customer connection	The total operating expenditure per year divided by the total number of customer connections.	Yearly target (Table 16)

** Reported to the ERA annually as required under ATCO's gas distribution licence.*

Table 16: Unaccounted for gas and operating expenditure key performance indicator targets for AA5

KPI	2020	2021	2022	2023	2024
UAFG rate (%)	2.45	2.43	2.40	2.39	2.37
Operating expenditure per km of main ($ real 2019)	4,318	4,378	4,417	4,463	4,443
Operating expenditure per customer connection ($ real 2019)	82	83	83	84	83

Source: ERA, Final Decision Operating Expenditure Model, November 2019.

Rate of Return – NGR 72(1)(g)

50. AAI must include the allowed rate of return for each regulatory year of the access arrangement period.

51. The rate of return, based on the Weighted Average Cost of Capital (WACC), provides for a return on the regulatory asset base.

52. The allowed rate of return is determined in accordance with the gas rate of return guidelines, which became a binding instrument in Western Australia in April 2019.[10]

53. Table 17 shows the rate of return parameters for AA5.

Table 17 Rate of return parameters for AA5

Parameter	Value
Return on debt	
5-year interest rate swap (effective yield)	0.961%
Debt risk premium (10-year average)	2.273%
Debt issuing cost (0.100%) + hedging (0.114%)	0.214%
Nominal return on debt (%)	***3.45%***
Return on equity	
Nominal risk free rate (%)	0.82%
Market Risk Premium (%)	6.00%
Equity beta	0.7
Nominal return on equity (%)	***5.02%***
Other parameters	
Debt proportion (%)	55.0%
Inflation rate (%)	1.14%
Corporate tax rate (%)	30%
Franking credit	0.5
Nominal after-tax WACC (%)	**4.16%**
Real after-tax WACC (%)	2.98%

Source: ERA, Final Decision Appendix 5, GDS Tariff Model, November 2019.

[10] Economic Regulation Authority, *Final Rate of Return Guidelines (2018)*, 18 December 2018.

Estimated Cost of Income Tax – NGR 72(1)(h)

54. AAI must include the estimated cost of corporate income tax, calculated in accordance with rule 87A of the NGR, including the allowed imputation credits referred to in that rule. Rule 87A states:

> **87A Estimated cost of corporate income tax**
>
> (1) The estimated cost of corporate income tax of a service provider for each regulatory year of an access arrangement period (ETCt) 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 [ERA]; and
>
> γ is the allowed imputation credits for the regulatory year.

55. Table 18 shows the estimated cost of corporate income tax for the access arrangement period.

Table 18 Estimated cost of corporate income tax for AA5 ($ million nominal)

	2020	2021	2022	2023	2024
Estimated taxable income	3.34	11.19	12.21	12.16	13.08
Estimated income tax payable	1.00	3.36	3.66	3.65	3.93
Value of imputation credits	(0.50)	(1.68)	(1.83)	(1.82)	(1.96)
Estimated cost of corporate income tax	**0.50**	**1.68**	**1.83**	**1.82**	**1.96**

Source: ERA, Final Decision Appendix 5, GDS Tariff Model, November 2019.

Taxable income

56. Taxable income is estimated using the following method:

	Smoothed tariff revenue:
plus	revenue from prudent discounts
plus	ancillary service revenue
minus	approved forecast operating expenditure
minus	depreciation of the tax asset base, which excludes capital contributions
minus	debt servicing costs[11]
equals	estimated taxable income.

Tax asset lives

57. The tax asset categories and respective tax lives for the access arrangement period are shown in Table 19.

Table 19 Tax asset categories and tax lives for AA5

Asset category	Tax life
High pressure mains – steel	20
High pressure mains – polyethylene (PE)	20
Medium and low pressure mains	20
Regulators	40
Secondary gate stations	40
Buildings	40
Meters and service pipes to 31 December 2007	25
Meters and service pipes from 1 January 2008	15
Equipment	10
Vehicles	10
Information technology	5
Telemetry	10
Land	0
Equity raising cost	5

Source: ERA, Final Decision Appendix 5, GDS Tariff Model, November 2019.

[11] Debt serving costs were calculated by multiplying the debt portion of the opening regulatory asset base by the debt to equity ratio (assumed at 55 per cent). The nominal cost of debt was based on the rate of return.

Tax depreciation method

58. Depreciation of the tax asset base is calculated using a straight-line method for assets.

Tax asset base

59. The forecast tax asset base for the access arrangement period is shown in Table 20 and is determined using the following (roll forward) method:

    Opening value at 1 January 2020:

    plus forecast capital expenditure (net of capital contributions) incurred in AA5

    less depreciation based on the forecast of capital expenditure

    less any forecast asset disposals during AA5.

60. No asset disposals are forecast for the access arrangement period.

Table 20 Forecast tax asset base for AA5 ($ million nominal)

	2020	2021	2022	2023	2024
Opening tax asset base	614.48	643.58	664.75	683.61	700.05
Capital expenditure	88.13	83.77	83.27	83.33	85.76
Tax depreciation	59.03	62.59	64.42	66.89	69.71
Asset disposals	0.00	0.00	0.00	0.00	0.00
Closing value	**643.58**	**664.75**	**683.61**	**700.05**	**716.11**

Source: ERA, Final Decision Appendix 5, GDS Tariff Model, November 2019.

Statutory income tax rate

61. The expected statutory income tax (r_t) for each regulatory year of the access arrangement period is 30 per cent.

Imputation credits

62. As required by the gas rate of return guidelines, a value of 0.5 is used for the value of imputation credits (γ).[12]

[12] The gas rate of return guidelines became a binding instrument in Western Australia in April 2019.

Efficiency Gains and/or Losses – NGR 72(1)(i)

63. If an incentive mechanism operated for the previous access arrangement period, AAI must include the proposed carryover of increments for efficiency gains, or decrements for efficiency losses, in the previous access arrangement period and a demonstration of how allowance is to be made for any such increments or decrements.

64. There was no incentive mechanism that operated in the previous (earlier) access arrangement period.

Approach to Setting Tariffs – NGR 72(1)(j)

65. AAI must include the proposed approach to the setting of tariffs including:

- The suggested basis of reference tariffs, including the method used to allocate costs and a demonstration of the relationship between costs and tariffs (rule 72(1)(j)(i) of the NGR).
- A description of any pricing principles employed but not otherwise disclosed under this rule (rule 72(1)(j)(ii) of the NGR).

Tariff classes and charging parameters

66. Rule 94 of the NGR sets out the requirements for determining reference tariffs for distribution pipelines.

> **94 Tariffs – distribution pipelines**
>
> (1) For the purpose of determining reference tariffs, customers for reference services provided by means of a distribution pipeline must be divided into tariff classes.
>
> (2) A tariff class must be constituted with regard to:
>
> (a) the need to group customers for reference services together on an economically efficient basis; and
>
> (b) the need to avoid unnecessary transaction costs.
>
> (3) For each tariff class, the revenue expected to be recovered should lie on or between:
>
> (a) an upper bound representing the stand alone cost of providing the reference service to customers who belong to that class; and
>
> (b) a lower bound representing the avoidable cost of not providing the reference service to those customers.
>
> (4) A tariff, and if it consists of 2 or more charging parameters, each charging parameter for a tariff class:
>
> (a) must take into account the long run marginal cost for the reference service or, in the case of a charging parameter, for the element of the service to which the charging parameter relates;
>
> (b) must be determined having regard to:
>
> (i) transaction costs associated with the tariff or each charging parameter; and
>
> (ii) whether customers belonging to the relevant tariff class are able or likely to respond to price signals.
>
> (5) If, however, as a result of the operation of subrule (4), the service provider may not recover the expected revenue, the tariffs must be adjusted to ensure recovery of expected revenue with minimum distortion to efficient patterns of consumption.
>
> (6) The [ERA's] discretion under this rule is limited.

Tariff classes

67. Services provided by means of the GDS include reference services and non-reference services. Non-reference services do not form part of the access arrangement for the GDS and as such the service provider will continue to negotiate the price for non-reference services directly with the prospective user (see Part 4.13 of the revised access arrangement for the GDS).

68. Reference services are grouped into haulage reference services and ancillary reference services.

- Haulage reference services are primarily the transportation of gas from the transmission pipeline to the customer, and include the installation and maintenance of a standard meter, meter reading and associated data collection and reporting.
- Ancillary reference services are services that are ancillary to haulage services and include:
  - deregistering a delivery point
  - applying a meter lock
  - removing a meter lock
  - disconnecting a delivery point
  - reconnecting a delivery point
  - special meter reading.

69. Haulage reference services are grouped into five separate services with associated tariff classes and include the A1 Service, A2 Service, B1 Service, B2 Service and B3 Service. Table 21 details the characteristics for each tariff class.

Table 21 Tariff classes for haulage reference services for AA5

Tariff Class	Characteristics
A1	• A pipeline service where a user may take delivery of gas at a delivery point on the GDS. • Preconditions of the service: – The prospective user submits an application and at that time: – It is reasonably anticipated that the prospective user will take delivery of 35 terajoules or more of gas during each year of the haulage contract; and – The prospective user requests a contracted peak rate of 10 gigajoules or more per hour; and – The prospective user requests user specific delivery facilities. • The reference tariff is Tariff A1.
A2	• A pipeline service where a user may take delivery of gas at a delivery point on the GDS. • Preconditions of the service: – The prospective user submits an application and at that time: – It is reasonably anticipated that the prospective user will take delivery of 10 terajoules or more of gas, but less than 35 terajoules of gas, during each year of the haulage contract; or

Tariff Class	Characteristics
	– The prospective user requests a contracted peak rate of less than 10 gigajoules per hour; or – An above 10 TJ Determination has been, or is likely to be made, under the Retail Market Procedures; and − The prospective user requests user specific delivery facilities. • The reference tariff is Tariff A2.
B1	• A pipeline service where a user may take delivery of gas at a delivery point on the GDS. • Preconditions of this service: − The prospective user submits an application and at that time either (or both): – It is reasonably anticipated that the prospective user will take delivery of less than 10 terajoules of gas during each year of the haulage contract; or – The prospective user requests a contracted peak rate of less than 10 gigajoules per hour; and − The prospective user requests user specific delivery facilities; or − The prospective user takes delivery of gas at a delivery point on the medium pressure/low pressure system using standard delivery facilities, which include a standard 18m3/h meter or a standard meter with a badged capacity of more than 18m3/h. • The reference tariff is Tariff B1.
B2	• A pipeline service where a user may take delivery of gas at a delivery point on the medium pressure/low pressure system using standard delivery facilities, which include a standard with a badged capacity of greater than or equal to 12m3/h and less than 18m3/h. • The reference tariff is Tariff B2.
B3	• A pipeline service where a user may take delivery of gas at a delivery point on the medium pressure/low pressure system using standard delivery facilities, which include a standard with a badged capacity of less than 12m3/h. • The reference tariff is Tariff B3.

70. For ancillary reference services, there is a single tariff class for each service (listed above at paragraph 68). The characteristics for each ancillary reference tariff class are detailed in Parts 4.7 to 4.12 of the revised access arrangement for the GDS.

Charging parameters

71. The tariff structure for haulage and ancillary reference services are as follows:

- Tariffs for haulage reference services include a fixed charge and a declining block usage charge component.
- Tariffs for ancillary reference services are charged at the same rate to all customers within the tariff class, or at a rate reflecting the costs of the individual service that is provided.

72. Table 22 and Table 23 show the tariff structures (charging parameters) for haulage and ancillary reference services respectively.

Table 22 Tariff structures (charging parameters) for haulage reference services for AA5

Tariff Class	Service Element	Charging Parameter
A1	Fixed charge for using the distribution system	Standing Charge ($/year)
	Fixed charge for the capacity of network utilised	Demand Charge ($/MHQ GJ/km)
	Variable charge based on throughput and haulage distance	Usage Charge ($/GJ/km)
	Charge to reflect the specific costs associated with the customer for service pipe, regulators, metering, and telemetry	User specific Charge ($)
A2	Fixed charge for using the distribution system	Standing Charge ($/year)
	Variable charge based on throughput	Usage Charge ($/GJ)
	Charge to reflect the specific costs associated with the customer for service pipe, regulators, metering, and telemetry	User specific Charge ($)
B1	Fixed charge for using the distribution system	Standing Charge ($/year)
	Variable charge based on throughput	Usage Charge ($/GJ) with two blocks
	Charge to reflect the specific costs associated with the customer for service pipe, regulators, metering, and telemetry	User specific Charge ($)
B2	Fixed charge for using the distribution system	Standing Charge ($/year)
	Variable charge based on throughput	Usage Charge ($/GJ) with two blocks
B3	Fixed charge for using the distribution system	Standing Charge ($/year)
	Variable charge based on throughput	Usage Charge ($/GJ) with three blocks

Table 23 Tariff structures (charging parameters) for ancillary reference services for AA5

Ancillary Service	Charging Parameter
Deregistering a delivery point	Published tariff per activity, plus the reasonable cost to the service provider to deregister the delivery point
Applying a meter lock	Published tariff per activity
Removing a meter lock	Published tariff per activity
Disconnecting a delivery point	Published tariff per activity
Reconnecting a delivery point	Published tariff per activity
Special meter reading	Published tariff per activity

Reference tariffs and costs

73. Table 24 and Table 25 show the tariffs for haulage and ancillary reference services respectively for the access arrangement period.

Table 24 Haulage reference service tariffs for AA5 ($ real as at 31 December 2019) – indicative only

Charging parameter	Unit	1 Jan 2020	1 Jan 2021	1 Jan 2022	1 Jan 2023	1 Jan 2024
A1 tariff						
Standing charge	$/year	32,931.52	33,394.10	33,863.18	34,338.84	34,821.19
Demand charges						
First 10 km	$/GJ km	138.80	140.75	142.73	144.73	146.76
Distance > 10 km	$/GJ km	73.06	74.09	75.13	76.18	77.25
Usage Charges						
First 10 km	$/GJ km	0.02936	0.02977	0.03019	0.03061	0.03104
Distance > 10 km	$/GJ km	0.01480	0.01501	0.01522	0.01543	0.01565
A2 tariff						
Standing charge	$/year	18,221.28	18,477.23	18,736.77	18,999.96	19,266.85
First 10 TJ	$GJ	1.77	1.79	1.82	1.85	1.87
Volume > 10 TJ	$GJ	0.94	0.95	0.97	0.98	0.99
B1 tariff						
Standing charge	$/year	921.16	934.10	947.22	960.53	974.02
First 5 TJ	$GJ	3.50	3.55	3.60	3.65	3.70
Volume > 5 TJ	$GJ	3.01	3.05	3.10	3.14	3.18
B2 tariff						
Standing charge	$/year	230.14	233.37	236.65	239.97	243.35
First 100 GJ	$GJ	5.86	5.94	6.03	6.11	6.20
Volume > 100 GJ	$GJ	3.49	3.54	3.59	3.64	3.69

Charging parameter	Unit	1 Jan 2020	1 Jan 2021	1 Jan 2022	1 Jan 2023	1 Jan 2024
B3 tariff						
Standing charge	$/year	116.84	116.84	116.84	116.84	116.84
First 1.825 GJ	$GJ	-	-	-	-	-
Volume > 1.825 GJ and < 9.855 GJ	$GJ	5.39	5.47	5.54	5.62	5.70
Volume > 9.855 GJ	$GJ	3.60	3.65	3.70	3.75	3.81

Source: ERA, Final Decision Appendix 5, GDS Tariff Model, November 2019.

Table 25 Ancillary reference service tariffs for AA5 ($ real as at 31 December 2019)

Ancillary service	2020	2021	2022	2023	2024
Applying a meter lock	48.85	48.85	48.85	48.85	48.85
Removing a meter lock	26.57	26.57	26.57	26.57	26.57
Deregistering a delivery point	121.82	121.82	121.82	121.82	121.82
Disconnecting a delivery point	97.35	97.35	97.35	97.35	97.35
Reconnecting a delivery point	137.81	137.81	137.81	137.81	137.81
Special meter reading	12.74	12.74	12.74	12.74	12.74

Source: ERA, Final Decision Appendix 5, GDS Tariff Model, November 2019.

74. Rule 94(3) of the NGR requires that, for each tariff class, the expected revenue to be recovered from tariffs should lie on or between:

- an upper bound, representing the standalone cost of providing the reference service to customers in that class; and
- a lower bound, representing the avoidable cost of not providing the reference service to those customers.

75. As required by rule 94(3), Table 26 shows that the expected revenue to be recovered from the reference tariffs for each tariff class is between the *lower bound* of the *avoidable cost* of not providing the reference service and the *upper bound* of the *standalone cost* of providing the reference service. The reference tariffs for ancillary reference services are set to recover the cost of ancillary services.

Table 26 Haulage reference service revenue for AA5 – compliance with NGR 94(3) ($ million present value)

Tariff class	Avoidable costs	Expected revenue	Standalone costs
A1	3.1	31.0	174.3
A2	2.0	20.0	268.7
B1	6.9	43.6	419.3
B2	6.6	42.9	426.5
B3	115.4	588.0	739.4

Source: ERA, Final Decision Appendix 5, GDS Tariff Model, November 2019.

Reference Tariff Variation Mechanism – NGR 72(1)(k)

76. AAI must include the service provider's rationale for any proposed reference tariff variation mechanism.

77. Rule 92 of the NGR requires the access arrangement for the GDS to include a reference tariff variation mechanism, which must be designed to equalise (in terms of present values) the 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.

78. Rule 97 of the NGR specifies the requirements (or mechanisms) for reference tariff variations.

> **97 Mechanics of reference tariff variation**
>
> (1) A reference tariff variation mechanism may provide for variation of a reference tariff:
>
> (a) in accordance with a schedule of fixed tariffs; or
>
> (b) in accordance with a formula set out in the access arrangement; or
>
> (c) as a result of a cost pass through for a defined event (such as a cost pass through for a particular tax); or
>
> (d) by the combined operation of 2 or more or the above.
>
> (2) A formula for variation of a reference tariff may (for example) provide for:
>
> (a) variable caps on the revenue to be derived from a particular combination of reference services; or
>
> (b) tariff basket price control; or
>
> (c) revenue yield control; or
>
> (d) a combination of all or any of the above.
>
> (3) In deciding whether a particular reference tariff variation mechanism is appropriate to a particular access arrangement, the [ERA] must have regard to:
>
> (a) the need for efficient tariff structures; and
>
> (b) the possible effects of the reference tariff variation mechanism on administrative costs of the [ERA], the service provider, and users or potential users; and
>
> (c) the regulatory arrangements (if any) applicable to the relevant reference services before the commencement of the proposed reference tariff variation mechanism; and
>
> (d) the desirability of consistency between regulatory arrangements for similar services (both within and beyond the relevant jurisdiction); and
>
> (e) any other relevant factor.
>
> (4) A reference tariff variation mechanism must give the [ERA] adequate oversight or powers of approval over variation of the reference tariff.
>
> (5) Except as provided by a reference tariff variation mechanism, a reference tariff is not to vary during the course of an access arrangement period.

79. Annexure B of the revised access arrangement for the GDS sets out the tariff variation mechanism that the service provider will use to vary the haulage reference tariffs. The mechanism provides for the variation of tariffs in accordance with a formula and as a result of cost pass through events.

80. Annexure C of the revised access arrangement for the GDS sets out the tariff variation mechanism that the service provider will use to vary the ancillary reference tariffs. The mechanism provides for the variation of tariffs by the movement in the Consumer Price Index (CPI).[13]

Tariff variation by formula

81. Tariff variations by formula places a constraint on the overall movement in haulage reference services tariffs from one year to the next (referred to as a *weighted average price cap* or *tariff basket*). This type of variation:

- Allows average prices to increase by the annual change in CPI, plus or minus an X-factor that is varied for debt risk premium updates and cost pass through events.
- Provides an incentive for the service provider to increase customer connections and usage to generate additional revenue, which can benefit customers in future access arrangement periods with costs being spread over a larger customer base.

Tariff variation by cost pass through

82. Tariff variations by cost pass through allows the costs of cost past through events to be recovered through tariffs.

83. The cost past through events that give rise to costs that can be recovered through the tariff variation by cost past through are listed in Annexure B, Part 2.1(a) of the revised access arrangement for the GDS – in summary:

- Incurring HHV[14] costs that constitute conforming capital expenditure or conforming operating expenditure.
- Incurring physical gate point costs that constitute conforming capital or conforming operating expenditure.
- Incurring conforming capital expenditure or conforming operating expenditure as a result of a change in law or tax change.
- Incurring conforming capital expenditure or conforming operating expenditure as a direct result of any law that imposes a fee or tax on greenhouse gas emissions or concentrations.
- For the period 1 October 2018 to 31 December 2019 only, incurring conforming capital expenditure or conforming operating expenditure as a result of addressing an "intermediate" security of supply risk.

13 Weighted average of eight capital cities, as published by the Australian Bureau of Statistics.

14 Higher heating value.

Proposed Incentive Mechanism – NGR 72(1)(l)

84. AAI must include the service provider's rationale for any proposed incentive mechanism.

85. There is no proposed incentive mechanism for the access arrangement period.

Total Revenue – NGR 72(1)(m)

86. AAI must include the total revenue to be derived from pipeline services for each regulatory year of the access arrangement period.

87. Total revenue has been determined using the "building block approach" in accordance with rule 76 of the NGR.

> **76 Total revenue**
>
> Total revenue is to be determined for each regulatory year of the access arrangement period using the building block approach in which the building blocks are:
>
> (a) a return on the projected capital base for the year (See Divisions 4 and 5); and
>
> (b) depreciation on the projected capital base for the year (See Division 6); and
>
> (c) the estimated cost of corporate income tax for the year (See Division 5A); and
>
> (d) increments or decrements for the year resulting from the operation of an incentive mechanism to encourage gains in efficiency (See Division 9); and
>
> (e) a forecast of operating expenditure for the year (See Division 7).

88. The building blocks of total revenue for each year of the access arrangement period is shown in Table 27. There was no incentive mechanism that operated in the earlier access arrangement period and there is no proposed incentive mechanism for the access arrangement period. Hence, there are no increments or decrements that affect total revenue.

Table 27 Total revenue building blocks for AA5 ($ million nominal)

Building blocks	2020	2021	2022	2023	2024	Total
Regulatory operating expenditure	62.97	65.17	67.39	69.87	71.40	**336.79**
Operating expenditure	62.21	64.41	66.52	68.96	70.46	**332.56**
Return on working capital	0.76	0.76	0.87	0.91	0.94	**4.23**
Return on capital base	53.70	56.04	57.81	59.48	61.10	**288.14**
Regulatory depreciation	31.92	41.22	42.90	44.40	47.10	**207.54**
Depreciation	46.65	56.59	58.76	60.71	63.87	**286.59**
Inflationary gain	(14.73)	(15.37)	(15.86)	(16.32)	(16.76)	**(79.05)**
Regulatory corporate income tax	0.50	1.68	1.83	1.82	1.96	**7.80**
Corporate income tax	1.00	3.36	3.66	3.65	3.93	**15.59**
Imputation credits	(0.50)	(1.68)	(1.83)	(1.82)	(1.96)	**(7.80)**
Total revenue	**149.09**	**164.10**	**169.93**	**175.57**	**181.57**	**840.26**

Source: ERA, Final Decision Appendix 5, GDS Tariff Model, November 2019.

89. The NGL and NGR do not make specific reference to the cost of working capital used by a service provider. While not a specific building block, consideration has been given to the cost of working capital in determining total revenue for the access arrangement period.

90. Working capital refers to a stock of funds that must be maintained by the service provider to pay costs as they fall due. In circumstances where it is the norm for the costs of providing services to be incurred before the revenues from the provision of services are received, a stock of working capital (that is, the required return on the capital investment) is a cost to the service provider of operating its business and providing services.

91. Table 28 shows the calculation of the return on working capital used in the total revenue building blocks above (Table 27).

Table 28 Return on working capital for AA5 ($million nominal)

Working Capital Parameter	2020	2021	2022	2023	2024
Receivables	25.26	27.88	28.87	29.82	30.76
Inventory	0.78	0.75	0.74	0.74	0.76
Creditors	(7.80)	(7.71)	(7.80)	(7.93)	(8.11)
End of year working capital	***18.24***	***20.91***	***21.81***	***22.64***	***23.41***
Working capital opening value	18.24	18.24	20.91	21.81	22.64
Variation	-	2.67	0.90	0.83	0.77
Working capital closing value	***18.24***	***20.91***	***21.81***	***22.64***	***23.41***
Return on working capital					
Opening working capital	18.24	18.24	20.91	21.81	22.64
WACC % (nominal)	4.16	4.16	4.16	4.16	4.16
Return on working capital	***0.76***	***0.76***	***0.87***	***0.91***	***0.94***

Source: ERA, Final Decision Appendix 5, GDS Tariff Model, November 2019.

Allocation of total revenue

92. The NGR require total revenue to be allocated between reference services and other services on an allocation of cost basis. Rule 93(2) of the NGR states:

> (2) Costs are to be allocated between reference and other services as follows:
>
> (a) costs directly attributable to reference services are to be allocated to those services; and

(b) costs directly attributable to pipeline services that are not reference services are to be allocated to those services; and

(c) other costs are to be allocated between reference and other services on a basis (which must be consistent with the revenue and pricing principles) determined or approved by the [ERA].

93. The NGR further allow some services, other than reference services, to be classified as *rebateable services*, with part of the revenue from the sale of these services to be rebated or refunded to users of reference services. Rule 93(4) of the NGR states that "a pipeline service is a rebateable service if the service is not a reference service; and substantial uncertainty exists concerning the extent of the demand for the service or of the revenue to be generated from the service; and the market for the service is substantially different from the market for any reference service". There are no rebateable services for the access arrangement period.

94. Table 29 shows the allocation of total revenue for the access arrangement period.

Table 29 Total revenue allocation between reference services and other services for AA5 ($ million nominal)

	2020	2021	2022	2023	2024	Total
Haulage reference services	156.12	160.01	163.71	167.75	172.50	**820.10**
Ancillary reference services	3.33	3.40	3.49	3.59	3.70	**17.51**
Customers receiving prudent discounts	0.23	0.24	0.24	0.25	0.25	**1.21**
Total revenue	**159.69**	**163.65**	**167.45**	**171.59**	**176.45**	**838.82**

Source: ERA, Final Decision Appendix 5, GDS Tariff Model, November 2019.

95. Total revenue will be recovered from haulage reference services, ancillary reference services and from customers receiving prudent discounts.

96. Prudent discounts are offered to some customers in circumstances where the discount is necessary because of competition from other energy sources and the loss of the customer would lead to higher tariffs for existing customers. Rule 96 of the NGR sets out the requirements for prudent discounts.

96 Prudent discounts

(1) Despite the other provisions of this Division, the [ERA] may, on application by a service provider, approve a discount for a particular user or prospective user or a particular class of users or prospective users.

(2) The [ERA] may only approve a discount under this rule if satisfied that:

(a) the discount is necessary to:

(i) respond to competition from other providers of pipeline services or other sources of energy; or

(ii) maintain efficient use of the pipeline; and

(b) the provision of the discount is likely to lead to reference or equivalent tariffs lower than they would otherwise have been.

(3) If the [ERA] approves a discount under this rule, the [ERA] may also approve allocation of the cost, or part of the cost, of providing the discount to the costs of providing a reference or other service in one or more future access arrangement periods.

(4) In this rule:

equivalent tariff means the tariff that is likely to have been set for a service that is not a reference service if the service had been a reference service.

Appendix 1 List of Tables

Appendix 2 Abbreviations

AA5	(Fifth) Access Arrangement Period
AAI	Access Arrangement Information
AEMC	Australian Energy Market Commission
ATCO	ATCO Gas Australia
CPI	Consumer Price Index
GDS	Gas Distribution Systems
NGR	National Gas Rules
WACC	Weighted Average Cost of Capital