Economic Regulation Authority

Draft decision on revisions to the access arrangement for the Goldfields Gas Pipeline

Attachment 7: Return on capital, taxation, incentives

25 July 2024

D278806

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Note

This attachment forms part of the ERA's draft decision on proposed revisions to the access arrangement for the Goldfields Gas Pipeline. It should be read in conjunction with all other parts of the draft decision, which is comprised of the following document and attachments:

Draft decision on revisions to the access arrangement for the Goldfields Gas Pipeline – Overview, 25 July 2024

- Attachment 1: Access arrangement and services
- Attachment 2: Demand
- Attachment 3: Revenue and tariffs
- Attachment 4: Regulatory capital base
- Attachment 5: Operating expenditure
- Attachment 6: Depreciation
- Attachment 7: Return on capital, taxation, incentives (this document)
- Attachment 8: Other access arrangement provisions
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Attachment 7. Summary

Rate of return

The rate of return provides service providers with the funding to pay interest on loans and give a return on equity to investors. The rate of return is expressed as a weighted average cost of capital (WACC).

A gas rate of return instrument is required under the National Gas Law.[1] The gas instrument sets out the methods the ERA and service providers must use to estimate the allowed rate of return and the value of imputation credits for gas transmission and distribution service providers.

GGT's rate of return used in its access arrangement proposal is consistent with the gas rate of return instrument.

Changing economic and financial conditions, outside the control of both GGT and the ERA, are important factors in determining GGT's cost of capital and the regulatory value of its capital base.

Higher rates of inflation have increased the value of the AA4 asset base, which has led to a total revenue requirement that is 20 per cent above the approved AA4 requirement. Updated rates of return account for 40 per cent of the total increase between the AA4 approved revenue and the AA5 proposed revenue.

The rate of return in this draft decision was updated for current market conditions, with a 20-day averaging period to 30 April 2024. GGT is required to nominate the averaging period to be used for the rate of return for the final decision.

Taxation

A tax building block is included in the annual revenue requirement estimate for each year.

The taxation cost is calculated by multiplying the estimated taxable income by the statutory income tax rate of 30 per cent. The estimated taxation payable is calculated by deducting the value of imputation credits.

GGT's proposed method to calculate AA5 taxation is consistent with its approach in AA4.

GGT proposed to add two new asset categories into the AA5 tax asset base to better reflect information technology and shared corporate costs.

Incentive mechanisms

Rule 98 of the National Gas Rules provides that a full access arrangement may include incentive mechanisms to encourage efficiency in the provision of services by the service provider. An incentive mechanism may provide for carrying over increments for efficiency gains and decrements for losses of efficiency from one access arrangement period to the next.

The current AA4 access arrangement does not contain any incentive mechanisms, and GGT has not proposed any incentive mechanisms for AA5.

[1] NGL, section 30D, 30E.

Summary of required amendments

7.1 Subject to the nomination of a final averaging period, GGT must update its rate of return to be 7.46 per cent (vanilla nominal after-tax).

7.2 GGT must amend the estimated cost of corporate income tax in accordance with Table 7.11 of Draft Decision Attachment 7.

Regulatory requirements

1. The National Gas Rules (NGR) require the use of the "building block" approach to determine the total revenue requirement for each year of the access arrangement period.[2] The total revenue requirement is the amount that is needed by the service provider to recover the efficient costs incurred in operating the pipeline (that is, the service provider's cost of service).

2. In addition to a forecast of operating expenditure and depreciation on the projected capital base, other components (building blocks) for determining the service provider's total revenue requirement include:

   - A return on the projected capital base for the year.
   - The estimated cost of corporate income tax for the year.
   - Increments or decrements for the year that result from the operation of an incentive mechanism.

3. Rule 87 sets out the formula for calculating the return on the projected capital base ($RPCB_t$) for each year of an access arrangement period as follows. The allowed rate of return must be calculated in the way stated in the rate of return instrument that is approved by the ERA under a separate process:[3]

   $RPCB_t = a_t \times v_t$

   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)).

4. Rule 87A sets out the formula for calculating the estimated cost of corporate income tax (ETC_t) for each year of an access arrangement period as follows:

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

   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.

[2] Extracts of the NGR that are referenced in this document are provided in Appendix 3 for information. NGR, rule 76.

[3] ERA, *2022 final gas rate of return instrument*, 16 December 2022 (Amended 12 September 2023).

5. Rule 98 allows the service provider to include (or for the regulator to require the service provider to include) one or more incentive mechanisms to encourage efficiency in the provision of services by the service provider.[4] The incentive mechanism may provide for the carry-over of increments for efficiency gains and decrements for efficiency losses from one access arrangement period to the next.[5] Where such carry-overs exist, the increments/decrements that apply must form part of the building block approach to determine the service provider's total revenue requirement (cost of service).

6. Access Arrangement Information (AAI) is information that is reasonably necessary for users (including prospective users) to understand the background to the access arrangement and the basis and derivation of the various elements of the access arrangement. The NGR require the following cost of service information to be included in the service provider's AAI:[6]

- The allowed rate of return for each year of the access arrangement period (rule 72(1)(g)).
- The estimated cost of corporate income tax calculated in accordance with rule 87A, including the allowed imputation credits referred to in that rule (rule 72(1)(h)).
- If an incentive mechanism operated for the previous access arrangement period, the proposed carry-over of increments for efficiency gains or decrements for efficiency losses in the previous period and a demonstration of how allowance is to be made for any such increments/decrements (rule 72(1)(i)).

[4] Where an incentive mechanism is included in an access arrangement, the service provider must include the rationale for the proposed incentive mechanism in its Access Arrangement Information (NGR, 72(1)(l)).

[5] While an incentive mechanism may provide for the carry-over of increments for efficiency gains and decrements for efficiency losses from one access arrangement period to the next, it must be consistent with the revenue and pricing principles (which are set out in section 24 of the NGL and provide a framework for the construction of reference tariffs).

[6] NGR, rule 72.

GGT proposal

Rate of return

7. GGT's rate of return and inflation estimates were consistent with the methods detailed in the ERA's gas rate of return instrument.

8. GGT has proposed an average nominal post-tax WACC of 7.41 per cent for the AA5 period, compared with 4.09 per cent approved in AA4.[7] [8] GGT has estimated inflation of 2.58 per cent for the AA5 period, compared with 1.14 per cent that was approved in AA4.[9] [10]

9. GGT's proposed WACC and inflation are materially higher than those in AA4 due to changes in market conditions that have increased the cost of finance over the past few years.

10. GGT must nominate an averaging period in advance, which must be close and prior to an access arrangement determination. The nominated averaging period will affect various rate of return parameters that are calculated using market data. GGT used placeholder values for the average of the 20 trading days to 31 August 2023 for its proposed WACC calculation.[11] These placeholders will be replaced with updated values closer to the time of the ERA's final decision.

11. Table 7.1 details the individual rate of return components proposed by GGT for AA5 compared to the existing rate of return components approved in the ERA's final decision for AA4.

7 GGT, *Goldfields Gas Pipeline AA5 - Proposed Revised Access Arrangement Information*, 1 January 2024, p. 22.

8 ERA, *Final Decision on Proposed Revisions to the Goldfields Gas Pipeline Access Arrangement for 2020 to 2024 – Submitted by Goldfields Gas Transmission Pty Ltd*, 19 December 2019, p. 154.

9 GGT, *AA5 Tariff model (Public)*, 1 January 2024.

10 ERA, *Final Decision on Proposed Revisions to the Goldfields Gas Pipeline Access Arrangement for 2020 to 2024 – Submitted by Goldfields Gas Transmission Pty Ltd*, 19 December 2019, p. 154.

11 GGT, *Goldfields Gas Pipeline AA5 - Proposal Overview*, 1 January 2024, p. 52.

Table 7.1: GGT's rate of return estimate

Component	AA5 proposed	AA4 approved
Return on debt (%)		
5-year interest rate swap (effective yield)	4.285	0.870
Debt risk premium (10 year average)	1.986	2.325
Debt issuing cost	0.165	0.100
Debt hedging cost	0.123	0.114
Nominal return on debt	*6.559*	*3.409*
Return on equity		
Nominal risk free rate (%)	4.19	0.72
Market risk premium (%)	6.1	6.0
Equity beta	0.7	0.7
Nominal return on equity (%)	*8.46*	*4.92*
Other parameters		
Debt proportion (%)	55	55
Inflation rate (%)	2.58	1.14
Corporate tax rate (%)	30	30
Franking credits	50	50
Nominal after-tax WACC (%)	**7.41**	**4.09**
Real after-tax WACC (%)	4.71	2.92

Source: ERA analysis; GGT, Goldfields Gas Pipeline AA5 - Proposal Overview, p. 52.

Taxation

12. GGT has estimated its cost of tax over AA5 to be $13.2 million ($ real 2023) using a corporate tax rate of 30 per cent and the formula in rule 87A of the NGR.[12] [13]

13. GGT estimated its annual taxable income (ETI_t) for each year in AA5 by removing the cost of debt financing, operating expenses and tax depreciation from total revenue for each year.

14. GGT has adopted the value of imputation credits (gamma) of 0.5 from the ERA's 2022 gas rate of return instrument. As the instrument is binding on the ERA and GGT, the value of gamma will be 0.5 in the AA5 final decision.

[12] GGT, *AA5 Tariff model (Public)*, 1 January 2024.

[13] GGT, *Goldfields Gas Pipeline AA5 - Proposal Overview*, 1 January 2024, p. 50.

15. GGT's calculation of corporate income tax is presented in Table 7.2.

Table 7.2: GGT's calculation of corporate income tax ($ million)

	2025	2026	2027	2028	2029
Estimated taxable income	19.9	17.8	19.2	20.5	21.1
Tax payable	6.0	5.3	5.8	6.2	6.3
Less value of imputation credits	(3.0)	(2.7)	(2.9)	(3.1)	(3.2)
Estimate of corporate income tax ($nominal 2023)	3.0	2.7	2.9	3.1	3.2
Deflator to $ real 2023	0.944	0.920	0.897	0.875	0.853
Estimate of corporate income tax ($ million real 2023)	**2.8**	**2.5**	**2.6**	**2.7**	**2.7**

Source: ERA analysis; GGT, AA5 Tariff Model (Public); GGT, Goldfields Gas Pipeline AA5 - Proposed Revised Access Arrangement Information, p. 25.

16. GGT proposed to add two new tax asset categories to its existing tax asset base:[14, 15]

- Shared support assets – Information technology and operational technology (ITOT) and cyber security, with the proposed tax asset life of five years. Shorter lives represent the proposed capital expenditure for ITOT and cyber security projects.
- Shared support assets – net ITOT and cyber security, with the proposed tax asset life of 20 years. Longer lives represent the proposed capital expenditure for a range of APA Group's shared corporate costs from national property costs, national support functions, to programs such as risk-based pressure equipment inspections, SCADA alarm rationalisation and cathodic protection.

17. GGT considered that the new asset categories reflected the increasing benefit of shared corporate costs applied to the Goldfield Gas Pipeline. The APA Group invested in assets at a corporate level, which supported the operations of the APA assets, including ITOT and property. The covered portion of Goldfields Gas Pipeline had not been allocated a share of APA Group's corporate asset expenditures for regulatory purpose until the AA4 period (2020 to 2024).[16]

18. GGT's proposed tax asset lives and asset categories are set out in Table 7.3.

[14] GGT, *Goldfields Gas Pipeline AA5 - Proposal Overview*, 1 January 2024, p. 103.

[15] GGT, *AA5 Tariff Model (Public)*, 1 January 2024.

[16] GGT, *Goldfields Gas Pipeline AA5 - Proposal Overview*, 1 January 2024, p. 103.

Table 7.3: GGT's proposed tax asset lives (years)

Asset categories	AA5 proposed
Current asset categories	
Pipeline and laterals	20
Main line valve and scraper stations	20
Compressor stations	20
Receipt and delivery point facilities	20
SCADA and communications	10
Cathodic protection	10
Maintenance bases and depots	20
Other depreciable assets	10
New asset categories	
Shared support assets – ITOT & cyber security	5
Shared support assets – net ITOT & cyber security	20

Source: GGT, AA5 Tariff Model (Public).

19. GGT has used the roll forward method to roll forward the value from the tax asset base from the closing value in AA4 into the AA5 period. To calculate the tax asset base for AA5, GGT has added forecast capital expenditure and deducted forecast depreciation.

20. Table 7.4 sets out GGT's proposed tax asset base over the AA4 period and its closing AA4 balance to be rolled into AA5. GGT has determined a closing tax asset base value of $48.4 million (nominal) to be rolled forward as the opening value for the AA5 tax asset base.

Table 7.4: GGT's proposed tax asset base (AA4) ($ million nominal)

	2020	2021	2022	2023	2024
AA4 opening tax asset base	16.2	21.7	26.7	32.0	38.7
Capital expenditure	8.1	8.9	11.3	14.4	19.2
Tax depreciation	(2.6)	(3.9)	(5.9)	(7.7)	(9.4)
Asset disposal	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)
Closing value	**21.7**	**26.7**	**32.0**	**38.7**	**48.4**

Source: GGT, AA5 Tariff Model (Public).

21. Table 7.5 sets out GGT's calculation of the tax asset base for the AA5 period.

Table 7.5: GGT's proposed tax asset base (AA5) ($ million nominal)

	2025	2026	2027	2028	2029
Opening tax asset base	48.4	69.7	70.2	66.2	64.2
Capital expenditure	32.8	15.1	10.2	10.8	7.2
Tax depreciation	(11.5)	(14.6)	(14.1)	(12.8)	(12.0)
Asset disposal	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)
Closing value	**69.7**	**70.2**	**66.2**	**64.2**	**59.4**

Source: GGT, AA5 Tariff Model (Public).

Incentive mechanisms

22. The current (AA4) access arrangement does not contain any incentive mechanisms and GGT has not proposed to include any new incentive mechanisms for AA5.

23. GGT has provided reasoning for its decision for not including any incentive mechanism for AA5:[17]

- The current price cap provides an incentive for GGT to ensure that costs of providing the service are not excessive.
- As the current GGP Access Arrangement does not include a more specific incentive mechanism, there are no increments for efficiency gains from the operation of such a mechanism in the previous access arrangement period, and no decrements for efficiency losses, which are to be carried over into the total revenue for the AA5 period.
- A large proportion of GGP costs are not directly attributable to covered GGP. Most costs are allocated to covered GGP either from shared corporate costs or shared with the uncovered portion of GGP. As such, the cost allocation method makes it difficult to ascertain efficiency improvements.

[17] GGT, *Goldfields Gas Pipeline AA5 - Proposal Overview*, 1 January 2024, p. 133.

Submissions

Rate of return

24. One submission received by the ERA in response to the issues paper has commented on the rate of return.

25. Alinta Energy submitted that:[18]

- GGT's proposed AA5 revenue was substantially higher than its approved revenue for the AA4 period, mainly due to the proposed higher rate of return and inflation rate.
- The ERA should take the Australian Energy Regulator's (AER) actual debt cost review into account.

Taxation

26. The ERA received no submissions from interested parties that addressed GGT's proposal for taxation.

Incentive mechanism

27. The ERA received no submissions from interested parties that addressed GGT's proposal to not include an incentive mechanism.

[18] Alinta Energy, *Submission on GGT's proposal and ERA issues paper*, 8 April 2024, pp. 1-2.

Draft decision

Return on projected capital base

28. The ERA published its gas rate of return instrument on 16 December 2022.[19] On 12 September 2023, the instrument was amended due to the cessation of the Reserve Bank of Australia's (RBA) F16 statistical table.[20] The amended instrument applies to this review.[21]

29. The ERA accepts and considers that GGT's proposed rate of return satisfies the requirements set out under the NGR and the gas rate of return instrument.

30. This draft decision is consistent with the gas rate of return instrument.

31. The following sections detail the ERA's consideration of each of the rate of return parameters and the ERA's draft decision on the rate of return for AA5.

Gearing

32. Gearing is the proportion of a business' assets financed by debt and equity. Gearing is defined as the ratio of the value of debt to total capital (that is, the sum of debt and equity) and is generally expressed as follows:

$$Gearing = \frac{Debt}{Debt + Equity}$$

Equation 1

33. The ERA uses the gearing ratio to weight the costs of debt and equity when the WACC is determined.

34. Consistent with the gas rate of return instrument, for the draft decision the ERA has applied a gearing of 55 per cent.

Return on debt

35. Consistent with the gas rate of return instrument, the ERA maintains the hybrid trailing average approach to estimate the return on debt. Under the hybrid trailing average approach for estimating the return on debt:

- The benchmark entity enters into the assumed benchmark efficient debt strategy, assumed to be a portfolio of 10-year fixed-rate debt with 10 per cent refinanced each year (the same debt portfolio as the full trailing average approach).
- The benchmark entity uses derivative arrangements to adjust rates from the efficient debt portfolio to lock in five-year interest rate swaps rates, set on the day at the start of the regulatory period.

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19 ERA, *Notice – 2022 gas rate of return instrument review: Publication of final gas instrument and explanatory statement*, 16 December 2022 (online) (accessed June 2024).

20 ERA, *2022 final gas rate of return instrument*, 16 December 2022 (Amended 12 September 2023), p. 16 and p. 22.

21 It should be noted that the RBA added the F16 statistical table back onto its website on 29 December 2023. The instrument accommodates this circumstance and utilises RBA data in the first instance.

- The 10-year trailing average debt risk premium is updated annually.

36. The estimate of the return on debt under the hybrid trailing average approach comprises a risk premium above the risk free rate, plus an additional margin for administrative and hedging costs:

$$Return\ on\ debt = Risk\ free\ rate + Debt\ risk\ premium + Debt\ raising\ costs + Hedging\ costs$$

Equation 2

37. The individual debt components are further discussed below.

Debt risk free rate

38. The risk free rate is the return an investor would expect when investing in an asset with no risk.

39. The risk free rate is the rate of return an investor receives from holding an asset with a guaranteed payment stream (that is, where there is no risk of default). Since there is no likelihood of default, the return on risk free assets compensates investors for the time value of money.

40. Consistent with the hybrid trailing average approach, the ERA has used the interest rate swap rate at the start of a regulatory access arrangement period. The estimate is fixed for the duration of the access arrangement period.

41. The ERA has used the 20-day averaging period to 30 April 2024 as a placeholder for this draft decision. This update allows the draft decision to reflect more current financial market conditions, compared to GGT's initial proposal. The final decision will be updated for GGT's final averaging period. This rate will be fixed for the duration of AA5.

42. For this draft decision the ERA estimates a risk free rate for the return on debt of 4.3 per cent for the 20-day averaging period to 30 April 2024.

Term of debt

43. To estimate a return on debt, a regulator needs to set a benchmark term for debt.

44. Consistent with the gas rate of return instrument, the ERA has determined a 10-year term for debt that aligns with the recent Australian regulatory practices.[22]

45. For this draft decision, the ERA applies a benchmark efficient debt strategy as a portfolio of 10-year fixed-rate debt with 10 per cent refinanced each year to determine the return on debt.

Benchmark credit rating

46. The benchmark credit rating is an input required to estimate the debt risk premium.

47. The credit rating is defined as the forward-looking option provided by a ratings agency of an entity's credit risk. Credit ratings provide a broad classification of a firm's

[22] ERA, *Explanatory statement for the 2022 final gas rate of return instrument*, 16 December 2022, p. 74.

probability of defaulting on its debt obligations. Therefore, credit ratings represent the risk present in holding a debt instrument.

48. Credit ratings provide a broadly uniform measure of default risk. Firms with the same credit rating at a particular point in time should have similar levels of default risk.

49. Consistent with the gas rate of return instrument, the ERA applies a benchmark credit rating of BBB+ to determine the return on debt.

Debt risk premium

50. The debt risk premium is the return above the risk free rate that lenders require to compensate them for the risk of providing debt funding to a benchmark business. The debt risk premium compensates holders of debt securities for the possibility of default by the issuer.

51. Consistent with the gas rate of return instrument, the ERA uses a 10-year term to estimate the debt risk premium.

52. The ERA considers the revised bond yield approach should be used to determine the debt risk premium.

53. Estimating the debt risk premium involves the following steps:

- **Step 1**: Determining the benchmark sample: Identifying a sample of relevant domestic and international corporate bonds that reflect the credit rating of the benchmark efficient entity.
- **Step 2**: Collecting data and converting yields to Australian dollar equivalents: Converting the bond yields from the sample into hedged Australian dollar equivalent yields inclusive of Australian swap rates.
- **Step 3**: Averaging yields over the averaging period: Calculating an average AUD equivalent bond yield for each bond across the averaging period.
- **Step 4**: Estimating curves: Estimating yield curves on this data by applying the Gaussian Kernel, Nelson-Siegel and Nelson-Siegel-Svensson techniques.
- **Step 5**: Estimating the cost of debt: Calculating the simple average of the three yield curves' 10-year costs of debt to arrive at a market estimate of the 10-year cost of debt.
- **Step 6**: Calculating the debt risk premium: Calculating the debt risk premium by subtracting the 10-year interest rate swap rate from the 10-year cost of debt.

54. These steps determine the debt risk premium at a point in time, being the date of calculation.

55. The ERA publishes debt risk premium process documents and accompanying tools for stakeholders on the revised bond yield approach. These documents and tools provide technical steps and details necessary for stakeholders to estimate the debt risk premium.[23]

[23] Technical documents and tools to estimate the ERA's revised bond yield approach can be found on the ERA's website.

56. To determine the debt risk premium that should be used to calculate the return on debt, the ERA constructed a 10-year trailing average debt risk premium. This consists of a debt risk premium for the current year and a debt risk premium for each of the nine prior years.

57. The debt risk premium is then calculated for each year in the 10-year term, to work out an average value to be applied to AA5.

58. Table 7.6 details the ERA's estimated trailing average debt risk premium for this draft decision.

Table 7.6: ERA draft decision estimated trailing average debt risk premium for AA5 (%)

Year	Debt risk premium
2016	2.582
2017	2.553
2018	1.862
2019	1.619
2020	1.725
2021	2.009
2022	1.482
2023	2.209
2024	1.908
2025	1.568*
Trailing average debt risk premium	**1.952**

**Debt risk premium estimate for 20-day averaging period to 30 April 2024, is a placeholder only.*

Source: ERA analysis; GGT, Final Decision on Proposed Revisions to the Goldfields Gas Pipeline Access Arrangement for 2020-2024 – Submitted by Goldfields Gas Transmission Pty Ltd, p. 147.

59. The historical annual debt risk premium estimates that applied in AA4 in Table 7.6 are unchanged for AA5.

60. For this draft decision, the ERA considers a debt risk premium of 1.568 per cent for 2025 (the first year of AA5) as a placeholder only, based on the 20-day averaging period to 30 April 2024. This rate is an indicative value only, and it will be updated in the final decision for an appropriate final averaging period closer to the date of the final decision.

Debt raising and hedging costs

61. Debt raising and hedging costs are the administrative costs and other charges incurred by businesses when obtaining and hedging debt financing.

62. Historically, the ERA has allowed these costs to be included as part of the return on debt.

63. Consistent with the gas rate of return instrument, the ERA maintains that debt raising costs should be based on direct costs associated with established regulatory practices and that debt raising costs of 0.165 per cent per annum are appropriate.

64. In the gas rate of return instrument, the ERA has applied an allowance of 0.123 per cent per annum for debt hedging costs.

65. The debt raising and hedging cost allowance will be added to the return on debt.

Return on equity

66. The return on equity is the return that investors require from a firm to compensate them for the risk they take by investing their capital.

67. There are no readily observable proxies for the expected return on equity. While estimates of the cost of debt can be obtained by observing debt instruments, financial markets do not provide a directly observable proxy for the cost of equity, for either individual firms or for the market.

68. Estimating a forward-looking return on equity – sufficient to enable regulated firms to recoup their prevailing equity financing costs – requires the use of models.

69. The model most used by Australian regulators for quantifying the return on equity has been the Sharpe-Lintner Capital Asset Pricing Model (CAPM).

70. The ERA determines a single point estimate for the return on equity using the Sharpe-Lintner CAPM, applying the following formula:

$$R_i = R_f + \beta_i(R_M - R_f)$$

Equation 3

where:

R_i is the required rate of return on equity for the asset, firm or industry in question

R_f is the risk free rate

β_i is the equity beta that describes how a particular portfolio i will follow the market which is defined as $\beta_i = cov\ (R_i, R_M)/var(R_M)$

$(R_M - R_f)$ is the market risk premium.

71. The individual equity components are further discussed below.

Equity risk free rate

72. The risk free rate is the return an investor would expect when investing in an asset with no risk.

73. Consistent with the gas rate of return instrument, the ERA considers that 10 years is the most appropriate term for the equity risk free rate and considers observed yields from Commonwealth Government Security bonds are the best proxy for risk free assets in Australia.

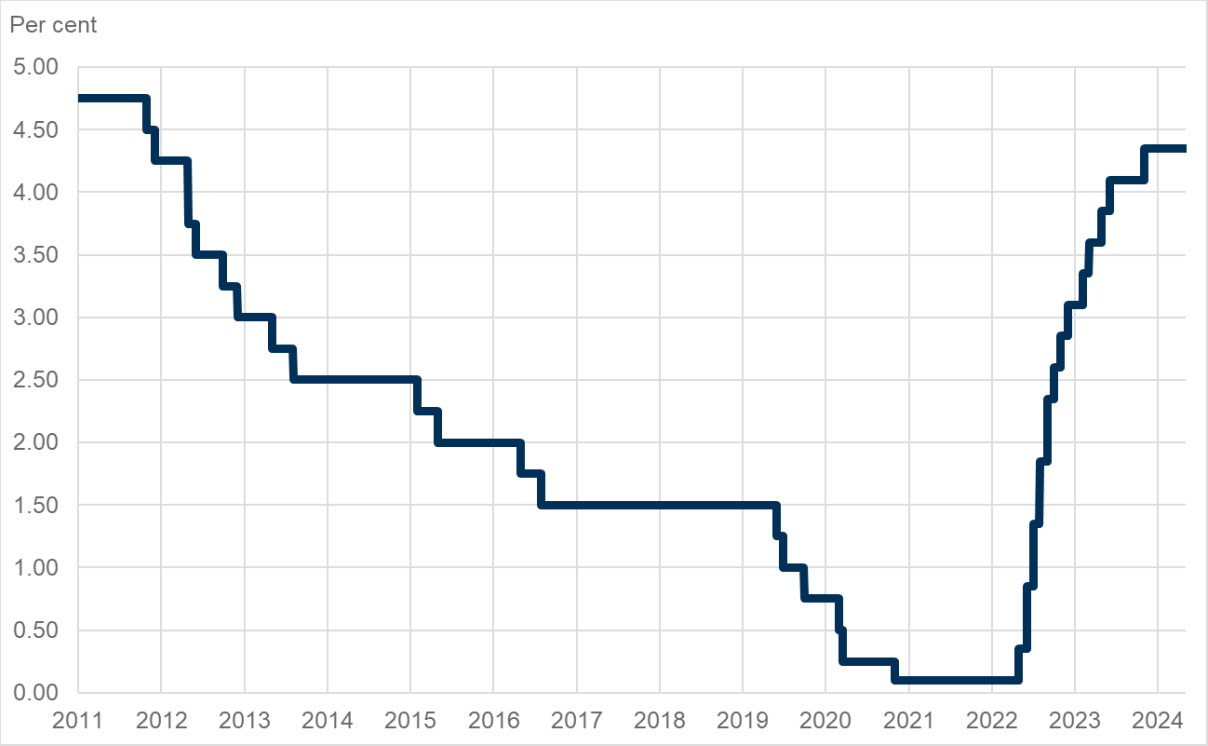
74. Economic and financial conditions have changed significantly since the ERA's AA4 final decision in December 2019.

75. The risk free rate has been volatile and uncertain as the economy recovers from the COVID-19 pandemic, and there is uncertainty around central bank monetary policy given the persistence of inflation.

76. Inflation in Australia increased to 6.6 per cent in 2022 and the rate of inflation has gradually been declining in response to the central bank's tightening of monetary policy to meet the inflation target band of 2 per cent to 3 per cent. However, the rate of decline has been slower than anticipated due to more persistent supply side inflationary factors. Other shocks such as the conflicts in the Middle East, Ukraine and global supply shortages have added to the uncertainty of the inflationary environment.

77. The RBA has been increasing the cash rate since May 2022. These monetary policy changes are illustrated in. Figure 7.1.

Figure 7.1: RBA cash rate target



Source: ERA analysis based on Reserve Bank of Australia F1 statistical tables.

78. The ERA has determined the risk free rate for equity by:

- Using observed yields from 10-year Commonwealth Government Security bonds.
- Using linear interpolation of observed yields of Commonwealth Government Security bonds.

79. For this draft decision the ERA estimates a risk free rate for the cost of equity of 4.31 per cent for the 20-day averaging period to 30 April 2024.

80. For the final decision the ERA will use an averaging period nominated by GGT to determine the yield and set the risk free rate for equity at the start of the AA5 period. This rate will be fixed for the duration of AA5.

Market risk premium

81. The market risk premium is a parameter of the Sharpe-Lintner CAPM.

82. The market risk premium is the expected rate of return in excess of the risk free rate that investors require to invest in a fully-diversified portfolio. *Ex-ante*, investors always require a rate of return above the risk free rate to invest in a risky asset, therefore the expected market risk premium is always positive. *Ex-post*, the realised return to the market portfolio may be negative. To establish the cost of capital, the *ex-ante* market premium is relevant.

83. The market risk premium compensates an investor for the systematic risk of investing in a fully diversified portfolio. Systematic risk is risk that cannot be diversified away by investors because it affects all firms in the market. This is a forward-looking concept.

84. For this draft decision, the ERA has applied a market risk premium of 6.1 per cent consistent with the gas rate of return instrument to determine the rate of return.

Equity beta

85. The equity beta is a parameter that measures the systematic risk of a security or a portfolio in comparison to the market as a whole.

86. Equity beta is the slope parameter β_i in the Sharpe-Lintner CAPM. The slope parameter β_i correlates a specific asset's return in excess of the risk free rate of return, to movements in the return on the market portfolio.

87. For this draft decision, the ERA has applied an equity beta of 0.7 consistent with the gas rate of return instrument to determine the rate of return.

Inflation

88. Inflation is the rate of change in the general level of prices of goods and services.

89. Forecast inflation can be used to translate the nominal post-tax WACC to a real post-tax WACC.

90. Consistent with the gas rate of return instrument, the ERA will estimate the expected inflation rate using the Treasury bond implied inflation approach. This approach uses the Fisher equation and the observed yield of:[24]

- Five-year Commonwealth Government Securities, which reflect a market-based estimate of the nominal risk free rate.
- Five-year Treasury indexed bonds, which reflect a market-based estimate of the real risk free rate.

[24] The formal Fisher equation is: $1 + i = (1 + r)(1 + \pi^e)$ where: i is the nominal interest rate, r is the real interest rate and π^e is the expected inflation rate.

91. The Treasury bond implied inflation approach uses linear interpolation to derive the daily point estimates of both the nominal five-year risk free rate and the real five-year risk free rate, using the Fisher equation.

92. The ERA considers that the term of expected inflation should be five years, consistent with the length of the access arrangement period as it offers the best estimate of what inflation is expected to be over the access arrangement period.

93. The revenue model takes the best estimate of the five-year inflation forecast out (of the nominal WACC) and puts back in the actual inflation over the five-year access arrangement period (through the indexation of the regulatory asset base).

94. For this draft decision, the ERA has used a 20-day averaging period to 30 April 2024 to determine a forecast inflation rate of 2.51 per cent to determine the rate of return.

Value of imputation credits (gamma)

95. The imputation tax system prevents corporate profits from being taxed twice. Under the Australian imputation tax system, franking credits are distributed to investors at the time that dividends are paid and provide an offset to those investors' taxation liabilities.

96. The gamma parameter accounts for the reduction in the effective corporate taxation that is generated by the distribution of franking credits to investors. Generally, investors who can use franking credits will accept a lower required rate of return, before personal tax, on an investment that has franking credits, compared with an investment that has similar risk and no franking credits.

97. Consistent with the gas rate of return instrument, for this draft decision, the ERA has applied a gamma of 0.5 to determine the rate of return, which will be fixed for AA5.

Draft decision on rate of return

Changes in financial markets

98. The ERA notes that GGT's rate of return and inflation are materially higher than those in AA5 due to changes in market conditions that have increased the cost of finance over the past few years.

99. The ERA's gas rate of return instrument is binding for gas networks. The gas rate of return instrument uses market information to estimate the prevailing returns that compensate investors for holding assets with a similar risk of return as the regulated asset.

100. Changing economic and financial conditions, outside the control of both GGT and the ERA, are important factors in determining GGT's cost of capital and inflation of the capital base and drive a large increase in the proposed revenue.

Actual debt costs

101. The ERA notes Alinta Energy's comment on the AER's review of actual debt costs.

102. The ERA considered this matter when it reviewed its gas rate of return instrument. Detail on this matter is provided in the ERA's explanatory statement for the gas rate of return instrument.[25]

103. The 2022 gas rate of return instrument is binding for gas networks in access arrangement determinations.

Indicative rate of return for AA5

104. Based on the gas rate of return instrument and the above assessments, the ERA has calculated the rate of return in Table 7.7.

105. For the draft decision:

- the ERA determines that the nominal after tax cost of equity as 8.58 per cent
- the ERA determines that the nominal cost of debt as 6.54 per cent
- the ERA determines a nominal after tax rate of return of 7.46 per cent.

106. While GGT's proposal used placeholder values for the average of the 20 trading days to 31 August 2023, for this draft decision the ERA used the 20 trading days to 30 April 2024 as a placeholder to estimate the rate of return.

107. The rate of return for the final decision will be updated based on an agreed averaging period nominated by GGT following the draft decision.

[25] ERA, *Explanatory statement for the 2022 final gas rate of return instrument*, December 2022, pp. 75-76.

Table 7.7: ERA's draft decision indicative rate of return for AA5

Component	GGT proposed	ERA draft decision
Return on debt (%)		
5-year interest rate swap (effective yield)	4.285	4.300
Debt risk premium (10 year average)	1.986	1.952
Debt issuing cost	0.165	0.165
Debt hedging cost	0.123	0.123
Nominal return on debt	*6.559*	*6.540*
Return on equity		
Nominal risk free rate (%)	4.19	4.31
Market risk premium (%)	6.1	6.1
Equity beta	0.7	0.7
Nominal return on equity (%)	*8.46*	*8.58*
Other parameters		
Debt proportion (%)	55	55
Inflation rate (%)	2.58	2.51
Corporate tax rate (%)	30	30
Franking credits	0.5	0.5
Nominal after-tax WACC (%)	**7.41**	**7.46**
Real after-tax WACC (%)	4.71	4.83

Source: ERA analysis; GGT, AA5 Tariff Model (Public); GGT, Goldfields Gas Pipeline AA5 - Proposed Revised Access Arrangement Information, p. 22.

Required Amendment

7.1 Subject to the nomination of a final averaging period, GGT must update its rate of return to be 7.46 per cent (vanilla nominal after-tax).

Taxation

108. The ERA has assessed GGT's estimated cost of corporate income tax for each regulatory year in AA5 against the requirements in rule 87A of the NGR.

109. The ERA accepts the value that GGT has used for:

- The expected statutory income tax rate for each regulatory year in AA5 of 30 per cent. This value is consistent with current expectations for the statutory company tax rate over the AA5 period.
- Allowed imputation credits (gamma) of 0.5 in accordance with the gas rate of return instrument.[26]

110. A tax building block is included in the annual revenue requirement estimate for each year.

111. The taxation cost is calculated by multiplying the estimated taxable income by the statutory income tax rate of 30 per cent. The estimated taxation payable is calculated by deducting the value of imputation credits.

Tax asset lives

112. The ERA has reviewed GGT's proposed tax asset lives, as detailed in Table 7.3.

113. GGT proposed to add two new asset categories to its tax asset base.

114. GGT's response to the ERA's information request provided additional information on the difference between the two new asset categories:[27] [28]

- Shared support assets – Information technology and operational technology and cyber security (ITOT & cyber security), with the proposed tax asset life of five years. Shorter lives represent the proposed capital expenditure for ITOT and cyber security projects.
- Shared support assets – net ITOT & cyber security, with the proposed tax asset life of 20 years. Longer lives represent the proposed capital expenditure for a range of APA Group's shared corporate costs from national property costs, national support functions, to programs such as risk-based pressure equipment inspections, SCADA alarm rationalisation and cathodic protection.

115. Attachment 4 of the ERA's draft decision discusses capital expenditure. As the shared support assets expenditure was considered to be non-conforming expenditure, the ERA does not accept GGT's tax asset life proposal for that expenditure.

116. The ERA considers that the tax asset lives for the other existing asset categories, which remain the same as those approved in the AA4 period, are either consistent with the *Income Tax Assessment 1997* or TR 2022/1. Accordingly, the ERA accepts maintaining the existing tax asset lives for GGT's current capital assets over the AA5 period.

117. The tax asset lives used by the ERA to determine tax depreciation and the tax asset base calculation in AA5 are detailed in Table 7.8.

[26] ERA, *2022 Final Gas Rate of Return Instrument*, 16 December 2022 (Amended 12 September 2023), p. 23.

[27] GGT, *Goldfields Gas Pipeline AA5 - Proposal Overview*, 1 January 2024, p. 103.

[28] GGT, *AA5 Tariff Model (Public)*, 1 January 2024.

Table 7.8: ERA's draft decision tax asset lives (years)

Asset categories	Tax asset lives for capital expenditure on or after 1 January 2020
Current asset categories	
Pipeline and laterals	20
Main line valve and scraper stations	20
Compressor stations	20
Receipt and delivery point facilities	20
SCADA and communications	10
Cathodic protection	10
Maintenance bases and depots	20
Other depreciable assets	10

Source: ERA analysis

Tax asset base

118. The ERA has reviewed GGT's assumptions and calculations and is satisfied that the calculations have been carried out consistently with the method and tax asset lives approved in AA4.

119. The ERA notes that GGT continues to apply the diminishing value method to calculate tax depreciation of assets purchased from 1 January 2020 onwards (excluding maintenance bases and depots) in accordance with the AA4 final decision.[29]

120. The ERA accepts that GGT used the roll forward method to establish the opening value of the tax asset base for each regulatory year in AA5.

- The opening tax asset base for the first regulatory year in AA5 (2025) was calculated by rolling forward the closing value of the actual tax asset base for AA4.
- The ERA calculated the closing value of the tax asset base for each regulatory year in AA4 using the method that was determined in the final decision for AA4.

121. The tax asset base calculated by the ERA for each regulatory year in AA4 is set out in Table 7.9.

[29] In the AA4 final decision, the ERA required that GGT used the diminishing value method as an efficient regulatory benchmark to depreciate assets purchased on or after 1 January 2020, except for maintenance bases and depots and the existing assets purchased prior to 1 January 2020, which are required to be depreciated using straight-line depreciation.

Table 7.9: ERA's draft decision actual tax asset base for AA4 ($ million nominal)

	2020	2021	2022	2023	2024
Opening tax asset base	16.58	17.36	15.77	14.16	12.37
Capital expenditure	3.36	1.08	0.71	0.50	0.89
Asset disposals	0.00	0.00	0.00	0.00	0.00
Tax depreciation	2.58	2.67	2.32	2.29	1.77
Closing value	**17.36**	**15.77**	**14.16**	**12.37**	**11.50**

Source: ERA analysis

122. The ERA calculates the closing value for forecast tax asset base for each regulatory year in AA5 using the following method:

Opening value (equal to the closing value for the previous regulatory year)

plus forecast expenditure (net of capital contributions) incurred in the regulatory year

less depreciation based on forecast capital expenditure incurred in using the diminishing value method for assets purchased on or after 1 January 2020

less forecast asset disposals during AA4

123. The forecast tax asset base calculated by the ERA in this draft decision for each regulatory year in AA5 is set out in Table 7.10.

Table 7.10: ERA's draft decision forecast tax asset base for AA5 ($ million nominal)

	2025	2026	2027	2028	2029
Opening tax asset base	31.64	52.72	56.04	55.82	53.31
Capital expenditure	24.83	10.24	7.01	4.39	1.09
Asset disposals	0.00	0.00	0.00	0.00	0.00
Tax depreciation	3.74	6.92	7.23	6.904	6.426
Closing value	**52.72**	**56.04**	**55.82**	**53.31**	**47.97**

Source: ERA analysis

Estimated cost of corporate income tax

124. The ERA has estimated the cost of corporate income tax based on its considerations above.

125. The annual estimates for the cost of corporate income tax are based on unsmoothed building block revenues.

126. The estimated cost of corporate income tax will be recalculated in each year of AA5 as part of the tariff variation process. This includes the change to reflect the annually updated debt risk premium.

127. The ERA's draft decision calculation of the estimated cost of corporate income tax (net of imputation credits) for each regulatory year in AA5 is set out in Table 7.11.

Table 7.11: ERA's draft decision calculation of the estimated cost of corporate income tax for AA5 ($ million nominal)

	2025	2026	2027	2028	2029
Unsmooth revenue	59.38	63.31	65.25	67.17	68.44
Tax expenses					
Operating expenditure	22.81	23.77	24.53	25.48	26.01
Debt servicing cost	14.74	15.14	14.98	14.70	14.32
Tax depreciation	3.74	6.92	7.23	6.90	6.43
Total tax expenses	**41.29**	**45.83**	**46.74**	**47.08**	**46.75**
Tax					
Estimated taxable income	18.08	17.47	18.51	20.09	21.69
Carried forward tax loss	0.00	0.00	0.00	0.00	0.00
Estimated taxable income (net of tax loss)	18.08	17.47	18.51	20.09	21.69
Estimated cost of corporate income tax	5.42	5.24	5.55	6.03	6.51
Value of imputation credits	(2.71)	(2.62)	(2.78)	(3.01)	(3.25)
Estimated cost of corporate income tax	**2.71**	**2.62**	**2.78**	**3.01**	**3.25**

Source: ERA analysis

Required Amendment

7.2 GGT must amend the estimated cost of corporate income tax in accordance with Table 7.11 of Draft Decision Attachment 7.

Incentive mechanisms

128. GGT has not proposed to include any new incentive mechanisms for the AA5 period.

129. The ERA accepts GGT's proposal and reasons for not including any new incentive mechanism for the AA5 period as the current incentive-based regulatory framework provides sufficient incentive for the efficient operation of GGT's gas network.

Appendix 1 List of Tables

Appendix 2 List of Figures

Appendix 3 National Gas Rules

The National Gas Law (NGL) and National Gas Rules (NGR), as enacted by the *National Gas (South Australia) Act 2008*, establish the legislative framework for the independent regulation of certain gas pipelines in Australia. The *National Gas Access (WA) Act 2009* implements a modified version of the NGL and NGR in Western Australia.

The legislative framework for the regulation of gas pipelines includes a central objective, being the national gas objective, which 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—
>
> (a) price, quality, safety, reliability and security of supply of natural gas; and
>
> (b) the achievement of targets set by a participating jurisdiction—
>
> (i) for reducing Australia's greenhouse gas emissions; or
>
> (ii) that are likely to contribute to reducing Australia's greenhouse gas emissions.
>
> **Note—**
>
> The AEMC must publish targets in a targets statement: see section 72A.[30]

The following extracts of the NGR, as they apply in Western Australia, are provided for information to assist readers.

> **72 Specific requirements for access arrangement information relevant to price and revenue regulation**
>
> (1) The access arrangement information for a full access arrangement proposal (other than an access arrangement variation proposal) must include the following:
>
> (a) if the access arrangement period commences at the end of an earlier access arrangement period:
>
> (i) capital expenditure (by asset class) over the earlier access arrangement period; and
>
> (ii) operating expenditure (by category) over the earlier access arrangement period; and
>
> (iii) usage of the pipeline over the earlier access arrangement period showing:
>
> (A) for a distribution pipeline, minimum, maximum and average demand and, for a transmission pipeline, minimum, maximum and average demand for each receipt or delivery point; and
>
> (B) for a distribution pipeline, customer numbers in total and by tariff class and, for a transmission pipeline, user numbers for each receipt or delivery point;

[30] NGL, section 23.

The national gas objective has changed since the last review of GGT's access arrangement. The amended objective came into effect in Western Australia on 25 January 2024. See: *Western Australian Government Gazette 24 January 2024 No.8* (online) (accessed July 2024).

(b) how the capital base is arrived at and, if the access arrangement period commences at the end of an earlier access arrangement period, a demonstration of how the capital base increased or diminished over the previous access arrangement period;

(c) the projected capital base over the access arrangement period, including:

(i) a forecast of conforming capital expenditure for the period and the basis for the forecast; and

(ii) a forecast of depreciation for the period including a demonstration of how the forecast is derived on the basis of the proposed depreciation method;

(d) 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;

(e) a forecast of operating expenditure over the access arrangement period and the basis on which the forecast has been derived;

(f) [Deleted];

(g) the allowed rate of return for each regulatory year of the access arrangement period;

(h) the estimated cost of corporate income tax calculated in accordance with rule 87A, including the allowed imputation credits referred to in that rule;

(i) if an incentive mechanism operated for the previous access arrangement period—the proposed carry-over 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;

(j) the proposed approach to the setting of tariffs including:

(i) the suggested basis of reference tariffs, including the method used to allocate costs and a demonstration of the relationship between costs and tariffs; and

(ii) a description of any pricing principles employed but not otherwise disclosed under this rule;

(k) the service provider's rationale for any proposed reference tariff variation mechanism;

(l) the service provider's rationale for any proposed incentive mechanism;

(m) the total revenue to be derived from pipeline services for each regulatory year of the access arrangement period.

(2) The access arrangement information for an access arrangement variation proposal related to a full access arrangement must include so much of the above information as is relevant to the proposal.

(3) Where the [ERA] has published financial models under rule 75A, the access arrangement information for a full access arrangement proposal must be provided using the financial models.

…

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).

…

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.

…

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.

…

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)).

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 (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 [ERA]; and

γ is the allowed imputation credits for the regulatory year.

…

98 Incentive mechanism

(1) A full access arrangement may include (and the [ERA] may require it to include) one or more incentive mechanisms to encourage efficiency in the provision of services by the service provider.

(2) An incentive mechanism may provide for carrying over increments for efficiency gains and decrements for losses of efficiency from one access arrangement period to the next.

(3) An incentive mechanism must be consistent with the revenue and pricing principles.