

Issues Paper on Proposed Revisions to the Dampier to Bunbury Natural Gas Pipeline Access Arrangement 2016 - 2020

20 April 2015

Economic Regulation Authority

WESTERN AUSTRALIA

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Introduction

1. On 31 December 2014, DBNGP (WA) Transmission Pty Limited (**DBP**) submitted to the Economic Regulation Authority (**Authority**) proposed revisions to the access arrangement for the Dampier to Bunbury Natural Gas Pipeline (**DBNGP**). The proposed revised access arrangement covers the period 1 January 2016 to 31 December 2020 (herein referred to as **AA4**, or the fourth access arrangement period).
2. The role of the Authority is to approve or not approve the proposed access arrangement revisions in accordance with the requirements of the National Gas Law (**NGL**) and National Gas Rules (**NGR**).
3. The proposed revised access arrangement, access arrangement information and access arrangement supporting information (except for confidential information which is redacted) are available on the Authority's website.
4. DBP's proposed revised access arrangement covers the period from 1 January 2016 to 31 December 2020. DBP's current access arrangement (herein referred to as AA3, or the third access arrangement) applies until a revised access arrangement is approved by the Authority.
5. The purpose of an access arrangement is to provide details regarding the terms and conditions, including price, upon which an independent third party user can gain access to the DBNGP for the purpose of transporting gas.
6. The DBNGP is a transmission pipeline which extends approximately 1,600 kilometres from Dampier through to Perth and Bunbury.
7. DBNGP (WA) Transmission Pty Limited is the operator of the DBNGP and is a complying service provider for the purposes of section 10 of the *National Gas Access (Western Australia) Law*. DBP submitted its proposed revisions to the access arrangement for the DBNGP on its own behalf and on behalf of DBNGP (WA) Nominees Pty Limited as Trustee for the DBNGP WA Pipeline Trust, which is also a pipeline service provider.
8. The Authority has prepared this Issues Paper in order to:
 - guide interested parties in preparing submissions to the Authority on DBP's proposed revised access arrangement;
 - assist interested parties in understanding some of the key issues that will be addressed by the Authority in determining whether to approve or not approve the proposed revised access arrangement; and
 - provide an overview of DBP's proposal and the individual building blocks that comprise the proposed access arrangement.
9. The Issues Paper is not an exhaustive review of the content of the proposed revised access arrangement or the matters that the Authority will address in making its determination. Interested parties are invited to make submissions on any elements of the proposed revised access arrangement.
10. The Authority invited submissions from interested parties on the revised access arrangement by publishing a notice on 11 February 2015. Interested parties are

invited to make submissions on DBP's proposed revised access arrangement proposal for the DBNGP by **4:00 pm (WST) Tuesday, 2 June 2015**. Interested parties should note that this is an extension to the original deadline published in the Authority's initiating notice.

11. Submissions should be marked to the attention of the Manager Projects, Access.
- Email address: publicsubmissions@erawa.com.au
 - Postal address: PO Box 8469, PERTH BC WA 6849.
 - Office address: Level 4, Albert Facey House, 469 Wellington Street, Perth WA 6000.

Regulatory Framework

12. The requirements for an access arrangement are established by the NGL and NGR as enacted by the *National Gas (South Australia) Act 2008* and as implemented in Western Australia by the *National Gas Access (WA) Act 2009* as the *National Gas Access (Western Australia) Law (NGL(WA))*.
13. Under rule 100 of the NGR, all provisions of an access arrangement are required to be consistent with the National Gas Objective. The National Gas Objective is defined in section 23 of the NGL(WA):

The objective of this Law is to promote efficient investment in, and efficient operation and use of, natural gas services for the long term interests of consumers of natural gas with respect to price, quality, safety, reliability and security of supply of natural gas.
14. Sections 28(1) and (2) of the NGL(WA) specify the manner in which the Authority must perform or exercise its economic regulatory functions or powers.
 28. Manner in which [Authority] must perform or exercise [Authority] economic regulatory functions or powers
 - 1) The [Authority] must, in performing or exercising an [Authority] economic regulatory function or power, perform or exercise that function or power in a manner that will or is likely to contribute to the achievement of the national gas objective.
 - 2) In addition, the [Authority] -
 - a) must take into account the revenue and pricing principles –
 - i) when exercising a discretion in approving or making those parts of an access arrangement relating to a reference tariff; or
 - ii) when making an access determination relating to a rate or change for a pipeline service; and
 - b) may take into account the revenue and pricing principles when performing or exercising any other [Authority] economic regulatory function or power, if the [Authority] considers it appropriate to do so.
15. Appendix 2 of this Issues Paper details the access arrangement review process. The review process is set out in [The Gas Access Arrangement Guideline](#) on the Authority's website.
16. DBP is required to submit a "full access arrangement" for the DBNGP. The required content of a full access arrangement proposal is specified in rule 48 of the NGR. Appendix 3 of this Issues Paper further elaborates the required content of an access arrangement.

Specific Areas for Consideration

17. The Issues Paper provides an overview of the building block elements proposed by DBP to determine its allowable revenue. As set out in Table 1, DBP has proposed a total revenue requirement of \$2.2 billion over the five years which is around 2 per cent higher than AA3. Key points to note are:
 - DBP has proposed a post-tax nominal rate of return on the regulatory asset base of 8.36 per cent (based on a return on equity of 11.71 per cent and return on debt of 6.13 per cent).

- Actual capital expenditure during AA3 of \$257 million is \$31 million greater than the approved AA3 expenditure. DBP considers all expenditure incurred meets the conforming capital expenditure criteria and has included it in the opening capital base for AA4 (see paragraph 109).
 - DBP completed the Stage 5A and Stage 5B expansions in 2011 and 2012 respectively. It has not planned any further expansion during AA4.
 - DBP's proposed Stay in Business (**SIB**) capital expenditure for AA4 of \$107 million is 23 per cent lower than the approved expenditure for AA3 (see paragraph 124).
 - Operating expenditure during the first three years of AA3 has been considerably lower than forecast, particularly in relation to system use gas. DBP has proposed annual average operating expenditure for AA4 of \$112 million which is around 5 per cent lower than the approved expenditure for AA3 and around 38 per cent higher than actual expenditure for the first three years of AA3. The most significant increase relates to system use gas followed by wages and salaries (see Figure 5).
 - DBP has proposed a new mechanism to correct for over-depreciation of assets which has resulted in an adjustment to depreciation of around \$9 million over AA3 and AA4 see paragraphs 137 to 143).
 - DBP has proposed an increase in the reference tariffs of around 20 per cent (excluding CPI) and has amended the balance between the capacity reservation and commodity components of the tariffs (see paragraphs 172 to 173).
18. Changes to the NGR have required DBP to change from a pre-tax real rate of return to a post-tax nominal rate of return. This has had significant implications for the estimation of the rate of return. It has also required taxation costs to be estimated for the first time and impacted on the calculation of depreciation. As DBP has proposed an annual update of the trailing average cost of debt, it has proposed amendments to the annual tariff variation mechanism and proposed it should be a Fixed Principle. Discussion of these matters can be found at:
- Rate of Return on the Regulatory Asset Base (see paragraph 29 to 103);
 - Adjustment to remove double counting of inflation (see paragraph 137 to 143);
 - Estimation of taxation costs including establishment of opening Tax Asset Base (**TAB**) (see paragraph 144 to 150);
 - Inclusion of trailing average cost of debt annual update in Tariff Variation Mechanism (see paragraph 61); and
 - Inclusion of trailing average cost of debt annual update in Fixed Principles (see paragraph 221 to 225).
19. DBP notes in its submission that contracted capacity in relation to full haul services for the AA4 period is forecast to be 85 per cent of total available capacity compared with 100 per cent forecast at the last access arrangement review. Average annual throughput is forecast to be relatively flat over the period. The current access arrangement is based on a price cap whereby the tariff variation mechanism provides for reference tariffs to be adjusted annually for CPI and, under certain circumstances, new costs which may arise. For AA4 DBP has proposed to move to a revenue cap, whereby an adjustment will be made to reference tariffs each year to

take account of any under or over recovery of actual revenue compared with the allowed revenue determined in this access arrangement review. This is discussed further in paragraphs 190 to 191.

20. As noted above, DBP has also proposed an annual trailing average cost of debt update which will affect reference tariffs each year (see paragraphs 180 to 182). Changes have also been proposed to the approval process for tariff variations adjustment in relation to tax changes and new costs (see paragraphs 183 to 187).
21. DBP has proposed to retain the three reference services in the current access arrangement (T1, B1 and P1 reference services) but has proposed some amendments including:
 - Amending the definition of the P1 Service such that the outlet point must be at a point upstream of CS9, consistent with the definition used prior to the AA3 access arrangement review (see paragraph 196 to 198).
 - Various changes to terms and conditions (see paragraph 199 to 203).
22. Other changes DBP has proposed to its current access arrangement include:
 - Queuing requirement – requiring information to be provided by applicants demonstrating their ability to meet financial obligations (see paragraphs 210 to 213)
 - Capacity trading – extending the provisions to allow transfers where DBP is registered as a participant in a gas market and requiring shippers to reimburse it for any costs in relation to such transfers (see paragraphs 214 to 215).
 - Extensions and expansions – amending the process in relation to determining whether an expansion is covered (see paragraphs 216 to 220).
 - Speculative Capital Investment – specifying that speculative investment should be indexed annually by the return on equity that is used to estimate the allowed rate of return (see paragraphs 204 to 209).
 - Revision and commencement date – requiring DBP to submit revisions for AA5 one year prior to commencement of AA5¹ (see paragraphs 223 to 225).
23. In addition to the above, parties are also invited to make submissions on any matters in the DBP proposal.

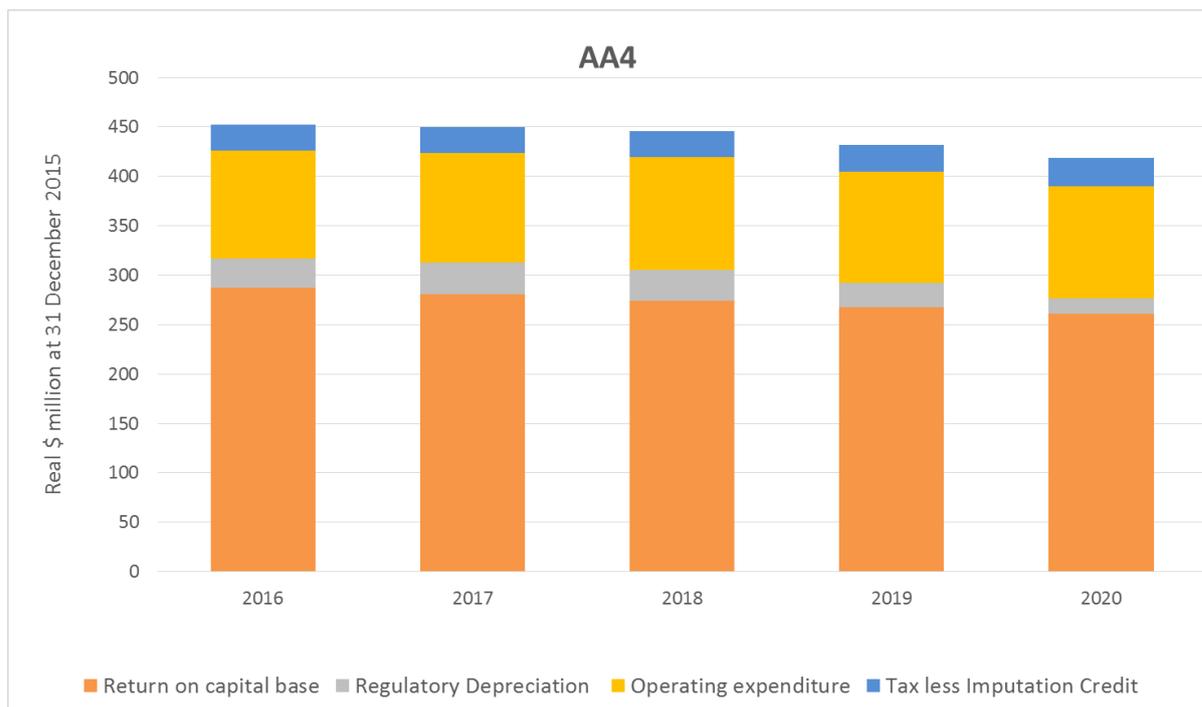
¹ Current access arrangement required revisions to be submitted two years prior to commencement of next access arrangement. However, this was overridden and reduced to one year to accommodate the preparation of WACC Guidelines as required under the NGR.

DBP's Revenue Proposal

Total Revenue

24. Under rule 76 of the NGR, total revenue is determined using the building block approach in which the building blocks are:
- return on the projected capital base;
 - depreciation on the projected capital base;
 - estimated cost of corporate income tax;
 - increments or decrements resulting from the operation of an incentive mechanism to encourage gains in efficiency; and
 - forecast operating expenditure.
25. DBP has applied the building block methodology, including an estimate of the tax liability, to propose a total revenue requirement for the fourth access arrangement period of \$2.199 billion. DBP's proposed building blocks of the total revenue requirement for the fourth access arrangement period is shown in Figure 1 and Table 1.

Figure 1 DBP's Proposed Total Revenue Building Blocks (AA4)²



Source: DBNGP (WA) Transmission Pty Limited, Proposed Revisions DBNGP Access Arrangement, Access Arrangement Information, 31 December 2014, Table 25, p. 27

² Regulatory Depreciation includes a correction for over-depreciation less inflationary gains on the projected capital base.

Table 1 DBP's Proposed Total Revenue Building Blocks (AA4)

Real \$ million at 31 December 2015	2016	2017	2018	2019	2020	Total
Return on capital base	287.68	281.03	274.28	267.18	260.70	1,370.87
Depreciation	102.77	101.63	102.27	96.34	87.14	490.15
Less inflationary gains on RAB	-70.09	-70.10	-70.87	-71.01	-71.57	-353.65
Correction for over-depreciation	-3.56	0.00	0.00	0.00	0.00	-3.56
Tax	26.55	26.13	26.31	27.25	28.49	134.74
Operating expenditure	109.45	111.07	114.05	112.16	114.12	560.84
Total	452.79	449.75	446.05	431.92	418.88	2,199.39

Source: DBNGP (WA) Transmission Pty Limited, *Proposed Revisions DBNGP Access Arrangement, Access Arrangement Information, 31 December 2014, Table 25, p. 27.*

26. DBP has proposed to not include an incentive mechanism in its access proposal as is the case with the current access arrangement.
27. However, DBP has noted that its contractual arrangements with its shippers provide extremely effective incentive mechanisms, whereby DBP is incentivised to ensure its capital and operating costs are at least efficient and prudent.³
28. At the last access arrangement review, DBP forecast 100 per cent of its revenue would be contracted with a negotiated tariff through shipper contracts. In the upcoming AA4 period, DBP has stated that approximately 85 per cent of DBP's revenue will be contracted with a negotiated tariff.

Issue 1 Total Revenue

- Do the contractual arrangements with shippers provide sufficient incentives to encourage gains in efficiency?

Rate of Return on the Regulatory Asset Base

29. The rate of return, based on a weighted average cost of capital (**WACC**), provides for a return on the regulatory asset base.
30. Rule 87 of the NGR addresses rate of return requirements. Rule 87 specifies that the return on the projected capital base for each regulatory year of the access arrangement period is to be calculated by applying a rate of return that is commensurate with the efficient financing costs of a benchmark efficient entity with a similar degree of risk as the service provider. The allowed rate of return for a regulatory year is to be a weighted average of the return on equity for the access arrangement period and the return on debt for that regulatory year (giving the

³ DBNGP (WA) Transmission Pty Limited, *Forecast Operating Expenditure – Supporting Submission 10*, 31 December 2014, p. 5.

WACC), and is to be determined on a nominal vanilla basis that is consistent with the estimate of the value of imputation credits.

31. In line with the requirements of rule 87(13) of the NGR, the Authority published its Rate of Return Guidelines on 16 December 2013.⁴

Application of the Guidelines

32. In developing its proposed rate of return, DBP has departed from the approach set out in the Guidelines, in developing its estimates, with regard to:
- the term of risk-free rate of return;
 - the method for estimating inflation;
 - return on equity – step 1 – the method for determining the relevance of a model;
 - return on equity – step 2 – the use of ranges versus point estimates;
 - return on equity – step 3 – the use of ranges versus point estimates;
 - the return on debt – the formula to be used for the return at the commencement of Access Arrangement Period;
 - the approach to cross checking the debt risk premium; and
 - the approach to annually updating the return on debt.
33. DBP has included additional material which was not included or considered in the approach set out by the Authority in the Guidelines; these additions are:
- return on equity – step 4 – the method for assessing consistency between the return on debt and on equity; and
 - the addition of a new issue premium for the return on debt.

Proposed rate of return

34. For the purposes of its access arrangement revision proposal, DBP nominates an approach to the rate of return which – at the time of its proposal – was estimated to yield a nominal post-tax WACC of 8.36 per cent, comprising:⁵
- a return on debt of 6.13 per cent (nominal pre-tax);
 - a return on equity of 11.71 per cent (nominal post-tax); and
 - gearing of 60 per cent debt.

⁴ Economic Regulation Authority, *Rate of Return Guidelines: Meeting the requirements of the National Gas Rules*, 16 December 2013. The term 'Guidelines' also refers to the companion explanatory statement for the Guidelines (Economic Regulation Authority, *Explanatory Statement for the Rate of Return Guidelines: Meeting the requirements of the National Gas Rules*, 16 December 2013 and Economic Regulation Authority, *Appendices to the Explanatory Statement for the Rate of Return Guidelines: Meeting the requirements of the National Gas Rules*, 16 December 2013).

⁵ DBNGP (WA) Transmission Pty Limited, *Proposed Revisions DBNGP Access Arrangement 2016-2020 Regulatory Period*, Rate of Return Supporting Submission 12, 31 December 2014, p. ii.

The benchmark efficient entity and a similar risk

35. DBP has followed the Guidelines' definition for the benchmark efficient entity:
- An efficient 'pure-play' regulated gas network business operating within Australia without parental ownership, with a similar degree of risk as that which applies to the service provider in respect of the provision of reference services.⁶
36. DBP notes that to this end it has:
- ...used the set of energy firms to determine the return on equity, and the set of BBB-rated debt (exclusive of finance firms, but including foreign bonds issued by Australian firms) to determine the return on debt. As such, there is no departure from the Guidelines in this respect.
- For the purposes of calculating the return on equity, we use the following set of energy firms:
- (a) Envestra;
 - (b) APA;
 - (c) DUET;
 - (d) Hastings Diversified Utility Fund;
 - (e) AusNet Services (previously, SP AusNet); and
 - (f) Spark Infrastructure.
- For the purposes of calculating the return on debt, we have followed the ERA's approach of including all BBB-band firms outside the finance sector.⁷

The term applied for the risk free rate

37. DBP proposes to adopt a 10 year risk free rate for the return on debt, instead of the 5 year rate advised in the Rate of Return Guidelines. It views the use of a 5 year rate to be inconsistent with standard regulatory practice, such as that adopted by the Australian Energy Regulator (**AER**), as well as commercial practice.⁸

Standard regulatory practice

38. DBP submits that the present value condition (or the requirement to achieve NPV = 0 over the life of the investment) – which the Authority has used to justify its use of the 5 year rate – uses assumptions that do not reflect the real-world nature of the regulatory framework.⁹ In particular, DBP considers that the assumption that the terminal value of the asset at the end of the Access Arrangement period is known with certainty at the outset of the Access Arrangement period is key, but may not necessarily hold in the real world.
39. In relation to certainty of the terminal value of the asset, DBP quotes the AER's rationale underpinning its use of a 10 year term:

⁶ Economic Regulation Authority, *Explanatory Statement for the Rate of Return Guidelines*, 16 December 2013, p. 21.

⁷ DBNGP (WA) Transmission Pty Limited, *Proposed Revisions DBNGP Access Arrangement 2016-2020 Regulatory Period*, Rate of Return Supporting Submission 12, 31 December 2014, p. 13.

⁸ DBNGP (WA) Transmission Pty Limited, *Proposed Revisions DBNGP Access Arrangement 2016-2020 Regulatory Period*, Rate of Return Supporting Submission 12, 31 December 2014, p. 14.

⁹ M. Lally, 'Regulation and the Term of the Risk Free Rate: Implications of Corporate Debt', *Accounting Research Journal*, vol. 20, no.2, 2007, pp.73-80.

...the residual value is not returned in cash, but rather comprises a 'value' whose recovery remains at risk from future regulatory decisions and changes in the market (both technological changes and changes to customer preferences).

40. In turn, the AER quotes Officer and Bishop:

Officer and Bishop said that the argument for a five year term would be correct only if after five years, in the event that 'they [the owners of the regulated business] choose to walk away from the asset, they would be fully compensated'. Officer and Bishop propose, however, that the owners are not, in reality, guaranteed of such compensation—the problem is that there is no guarantee that the secondary market will deliver a price equal to the value of the equity component of the RAB.¹⁰

41. DBP's consultant SFG Consulting (**SFG**) claims that:

If the market value of the regulated asset at the end of the first period (V_1) is not known with certainty from the outset, the opening market value of the firm would be computed in the standard manner by discounting the expected cash flows over the life of the asset using a discount rate that is appropriate for those cash flows (in terms of risk and duration) [sic].¹¹

42. SFG states that the reasons for which the end-of-period asset value might not be known with certainty are irrelevant and that as long as this value is not known with certainty, then setting the term to be equal to the regulatory period will not be consistent with the NPV = 0 principle. If there is no guarantee on the end-of-period market value, then the regulated firm is not materially different from the unregulated firm.¹²
43. SFG summarizes by stating that if the Authority argues that the NPV = 0 principle does not require that the end-of-period asset value must be known with 100 per cent certainty from the outset, then the mathematical proof outlined in Lally (2007) would demonstrate that it is wrong. Alternatively if the Authority believes that the end of period market value is known with certainty, it should be set out in the regulatory determination.¹³
44. DBP also submits that even if the value of the RAB were used as an incorrect proxy for market value, the RAB itself is not certain through time. It outlines that regulators have the power to declare assets redundant, change depreciation schedules, or disallow forecast capital expenditure from being rolled into the asset base. DBP cautions that over the longer run the entire regulatory system can change.¹⁴

¹⁰ DBNGP (WA) Transmission Pty Limited, *Proposed Revisions DBNGP Access Arrangement 2016-2020 Regulatory Period*, Rate of Return Supporting Submission 12, 31 December 2014, p. 16.

¹¹ DBNGP (WA) Transmission Pty Limited, *Proposed Revisions DBNGP Access Arrangement 2016-2020 Regulatory Period*, Rate of Return Supporting Submission 12 – Appendix B – Appropriate Term for Debt and Equity, 31 December 2014, p. 8.

¹² DBNGP (WA) Transmission Pty Limited, *Proposed Revisions DBNGP Access Arrangement 2016-2020 Regulatory Period*, Rate of Return Supporting Submission 12 – Appendix B – Appropriate Term for Debt and Equity, 31 December 2014, p. 8.

¹³ DBNGP (WA) Transmission Pty Limited, *Proposed Revisions DBNGP Access Arrangement 2016-2020 Regulatory Period*, Rate of Return Supporting Submission 12 – Appendix B – Appropriate Term for Debt and Equity, 31 December 2014, p. 9.

¹⁴ DBNGP (WA) Transmission Pty Limited, *Proposed Revisions DBNGP Access Arrangement 2016-2020 Regulatory Period*, Rate of Return Supporting Submission 12, 31 December 2014, pp. 17-18.

45. A similar rationale is then applied to justify DBP's use of the 10 year risk free rate in the return on equity, with DBP citing the views of the AER:¹⁵
- ...the cashflows from an equity investment in a regulated business are not like the cashflows from a five year bond in a very important respect – whereas a bondholder receives a known payment at maturity, the infrastructure equity owner does not. Rather, infrastructure equity (like all equity) is risky and the value of shares five years into the future cannot possibly be known with certainty. Using the same Lally derivation on which the ERA now relies, the AER notes that this necessary precondition does not hold in practice, but only under certain theoretical assumptions...
46. DBP also makes reference to the Authority's use of a 10 year risk free rate in its method for estimating the weighted average cost of capital for the regulated rail networks (Rail Guidelines). It is of the view that there is no difference between the degree of uncertainty of the regulated asset base value and revenue streams in the context of energy and rail, which are both long term infrastructure assets. Additionally, DBP submits that it is the certainty of market value as opposed to the certainty of the value of the regulated asset base (**RAB**) that is relevant in the application of the NPV = 0 principle.¹⁶

Consistency with Commercial Practice

47. In relation to commercial valuation practices, SFG quotes the Rate of Return Guidelines:
- the Authority considers that equity analysts are generally trying to estimate the value of the company... In that case it would be reasonable to utilise the longest possible term risk free rate to contribute to the discount rate to be applied to those cash flows. However, that is not the regulatory task, which involves determining rate of return for a 5 year period.¹⁷
48. SFG is of the view that deeming commercial valuation as irrelevant may result in a divergence between the regulator's and investors' view of risk. A regulator could 'de-risk' an investment and accordingly set a required rate of return that is not commensurate with investors' views of risk.¹⁸
49. In relation to this point, DBP submits that by avoiding standard commercial practice the Authority fails to compensate for the long-run risk for which owners of similar assets would be compensated in commercial market places and thus does not meet the National Gas Rules' allowed rate of return objective.¹⁹

¹⁵ DBNGP (WA) Transmission Pty Limited, *Proposed Revisions DBNGP Access Arrangement 2016-2020 Regulatory Period*, Rate of Return Supporting Submission 12, 31 December 2014, p. 15.

¹⁶ DBNGP (WA) Transmission Pty Limited, *Proposed Revisions DBNGP Access Arrangement 2016-2020 Regulatory Period*, Rate of Return Supporting Submission 12, 31 December 2014, pp. 16-18.

¹⁷ DBNGP (WA) Transmission Pty Limited, *Proposed Revisions DBNGP Access Arrangement 2016-2020 Regulatory Period*, Rate of Return Supporting Submission 12 – Appendix B – Appropriate Term for Debt and Equity, 31 December 2014, p. 13.

¹⁸ DBNGP (WA) Transmission Pty Limited, *Proposed Revisions DBNGP Access Arrangement 2016-2020 Regulatory Period*, Rate of Return Supporting Submission 12 – Appendix B – Appropriate Term for Debt and Equity, 31 December 2014, p. 15.

¹⁹ DBNGP (WA) Transmission Pty Limited, *Proposed Revisions DBNGP Access Arrangement 2016-2020 Regulatory Period*, Rate of Return Supporting Submission 12, 31 December 2014, p. 18.

Other Issues in Relation to the Applied Term in the Risk Free Rate

50. With respect to the Authority's market return on equity estimates in the ATCO Gas Draft Decision, SFG highlighted that the Authority's long run average of its 5 year return on equity estimates (which are based on the 5 year risk free rate) are materially lower than the 11.8 per cent historical average used to test its compliance with the allowed rate of return objective.²⁰
51. SFG submits that the Authority inconsistently applies the risk free rate in its implementation of the Sharpe-Linter CAPM (**SL CAPM**). While a 5 year risk free rate is applied as the first component of the SL CAPM, a 10 year risk free rate is implied in its market risk premium estimates. SFG cited the GasNet decision²¹ in the Australian Competition Tribunal where it was concluded that:
- the use of different values for a risk free rate in the working out of a rate of return by the CAPM formula is neither true to the formula nor a conventional use of the CAPM.²²

Return on debt

52. DBP does not accept the approach to estimating the return on debt set out in the Rate of Return Guidelines or in the Authority's Draft Decision for the Mid West and South West Gas Distribution System.
53. Among other things, DBP objects to the Authority's approach to annually update the 'on the day' estimate of the return on debt on the grounds that:
- (a) the notions of efficiency being pursued miss some important conceptual issues that mean the asserted efficiency gains might not be realised in reality. Perhaps more pertinently, the subsequent amendments to the ERA's original proposal detract still further from the ERA's original claims of efficiency gains;
 - (b) it is not clear whether the approach is consistent with and conforms to the requirements of the RPPs, something which depends upon the interpretation of efficient financing costs;
 - (c) in order for the ERA's approach to work, the price of debt must be correct. That is, it must correctly identify the premium in debt costs (reflective of credit risks) between firms in competitive and monopolistic industries. If it does not, debt will be mispriced, and any efficiency effects muted;
 - (d) other things may change. Firms in competitive industries may have different gearing and different costs of equity compared to those that face regulated return on debt regimes like those proposed by the AER. These effects must also be considered;
 - (e) consumer preferences are unclear; although the AER has received consumer support for its approach, every iteration of the approach proposed by the ERA has been opposed; and
 - (f) the objections to trailing averages made by the ERA in its Guidelines do not apply to the AER's approach. Indeed, it seems likely to better achieve the desirable efficiency effects the ERA cites, than its own approach, particularly in its current manifestation.

²⁰ DBNGP (WA) Transmission Pty Limited, *Proposed Revisions DBNGP Access Arrangement 2016-2020 Regulatory Period*, Rate of Return Supporting Submission 12, 31 December 2014, p. 25.

²¹ Australian Competition Tribunal, *Application by GasNet Australia (Operations) Pty Ltd*, ACompT 6, 2003, p. 18.

²² DBNGP (WA) Transmission Pty Limited, *Proposed Revisions DBNGP Access Arrangement 2016-2020 Regulatory Period*, Rate of Return Supporting Submission 12 – Appendix B – Appropriate Term for Debt and Equity, 31 December 2014, p. 27.

54. DBP therefore considers that its approach is more likely to meet the allowed rate of return objective.²³ DBP's proposed approach is summarised in what follows.

Trailing average

55. DBP proposes to estimate the return on debt by means of a 'full' trailing average – giving the average of ten weighted 'on the day' annual estimates:

We propose a different annual updating approach, which is based upon that proposed by the AER (2013) in its Rate of Return Guideline. That approach involves updating one tenth of the return on debt each year, to reflect the staggered debt portfolio that efficient firms implement to minimise their return on debt.²⁴

56. DBP considers that:

The formula for estimating a return on debt in a way which meets the requirements of the NGO, the RPPs and the NGR is as follows:²⁵

$$\text{Return on Debt} = \text{Risk Free Rate} + \text{Debt Risk Premium} + \text{Debt Raising Costs} + \text{Hedging Costs} + \text{New Issue Premium}$$

57. Each annual estimate is therefore derived as the sum of:

- the 10 year Commonwealth Government Securities (**CGS**) 10 year risk free rate;
- the spread from the 10 year CGS to the 10 year swap rate;
- the Debt Risk Premium (**DRP**) - estimated using the approach set out by the Authority in the ATCO draft decision - as the average of the Gaussian kernel, Nelson Siegel and Nelson Siegel Svenson spreads to the 10 year swap rate, albeit with some minor adjustments; and
- allowances for debt raising, hedging and new issue premium costs.

New issue premium

58. DBP accepts the estimates of the administrative costs of raising debt of 12.5 basis points per annum set out in the Guidelines.²⁶

59. However, DBP considers that the costs of debt estimated by the Authority, which are derived from secondary debt markets, are less than the actual costs of debt associated with any new issuance, and which should therefore be compensated:

If however, regard is to be had to the data from the secondary markets, the cost of raising debt in the primary markets is more costly than in the secondary markets. This is due, in part, because the tranches of debt issued in primary markets are larger and involve more risk than is the case after they have been divided into smaller parcels in secondary markets. CEG (see Appendix H) has traced the value of debt over a period of several months after issuance for a large number of firms and has calculated that the new issue premium is 27bps. Failure to include this premium would mean that the

²³ DBNGP (WA) Transmission Pty Limited, *Proposed Revisions DBNGP Access Arrangement 2016 – 2020 Access Arrangement Period*, Rate of Return Supporting Submission 12, 31 December 2014, p. 26.

²⁴ DBNGP (WA) Transmission Pty Limited, *Proposed Revisions DBNGP Access Arrangement 2016 – 2020 Access Arrangement Period*, Rate of Return Supporting Submission 12, 31 December 2014, p. 19.

²⁵ DBNGP (WA) Transmission Pty Limited, *Proposed Revisions DBNGP Access Arrangement 2016 – 2020 Access Arrangement Period*, Rate of Return Supporting Submission 12, 31 December 2014, p. 21.

²⁶ DBNGP (WA) Transmission Pty Limited, *Proposed Revisions DBNGP Access Arrangement 2016 – 2020 Access Arrangement Period*, Rate of Return Supporting Submission 12, 31 December 2014, p. 21.

service provider will not be compensated for the full cost of raising debt and thus NGR 87(10) has not been met. Accordingly, we include this premium in our methodology for estimating the rate of return on debt.²⁷

60. DBP therefore proposes a new issue premium of 0.27 per cent be added to debt raising costs.

Annual updating of the trailing average

61. The estimated trailing average return on debt would be annually updated:
- DBP proposes adoption of the Australian Energy Regulator (**AER**) / Queensland Treasury Corporation's (**QTC**) ten year transition to the full trailing average – which progressively phases in the trailing average;
 - with the result that the return on debt for the first year of the access arrangement would be 6.13 per cent, equivalent to the 'on the day rate, which is comprised of (indicative estimate as at 30 September 2014):
 - (a) ten year DRP over swap rate = 1.86 percent;
 - (b) premium between the ten year CGS and the ten-year swap rate = 0.31per cent;
 - (c) allowance for debt-raising and hedging costs = 0.15 per cent;
 - (d) new issue premium = 0.27per cent; and
 - (e) ten-year risk-free rate = 3.54 per cent.²⁸

Capex weights

62. DBP proposes that any new investment – greater than one tenth of the existing asset base – be transitioned to the trailing average over ten years, starting from the point that it is added to the asset base (on the basis that this will avoid perverse investment incentives under the trailing average approach)²⁹.
- DBP submitted a spreadsheet example illustrating how the 10 year transition and capex weighting would operate in practice, consistent with the QTC approach.³⁰

Use of swaps

63. DBP submits that the Authority's inclusion of the cost of swapping from a ten to a five-year risk free rate is not required because it proposed to use a 10 year risk free rate.³¹ Under the proposed approach, the trailing average would employ the 10 year return on debt for the benchmark efficient entity, which precludes the need for swaps.

²⁷ DBNGP (WA) Transmission Pty Limited, *Proposed Revisions DBNGP Access Arrangement 2016 – 2020 Access Arrangement Period*, 31 December 2014, Submission 12, p. 21.

²⁸ DBNGP (WA) Transmission Pty Limited, *Proposed Revisions DBNGP Access Arrangement 2016 – 2020 Access Arrangement Period*, Rate of Return Supporting Submission 12, 31 December 2014, p. 24.

²⁹ The Authority notes that DBP subsequently have agreed that there is no need for the lower limit of one tenth (DBP, response to ERA Discussion Paper of 4 March 2015, 25 March 2015).

³⁰ DBNGP (WA) Transmission Pty Limited, *Proposed Revisions DBNGP Access Arrangement 2016 – 2020 Access Arrangement Period*, 31 December 2014, Submission 12, Appendix J.

³¹ DBNGP (WA) Transmission Pty Limited, *Proposed Revisions DBNGP Access Arrangement 2016 – 2020 Access Arrangement Period*, 31 December 2014, Submission 12, p. 41.

64. However, with respect to the administrative costs associated with the return on debt, DBP has included the 2.5 basis point hedging swap allowance from the Rate of Return Guidelines in its calculation of the return on debt.³² This appears to be inconsistent.

Estimating the DRP

65. DBP notes that it agrees with the Authority's approach to estimating the DRP, as revised in the Draft Decision on the Mid West and South West Gas Distribution System.³³
66. DBP adopted the same sample of bonds as the ERA, using the same sample criteria, and used the same models to develop an average yield curve for the purpose of determining the 10 year cost of debt:³⁴
- the Reserve Bank of Australia's Gaussian normal approach – but with adjustment to bring the tenor to exactly 10 years;
 - the Nelson Siegel approach; and
 - the Nelson Siegel Svenson approach.
67. However, DBP considers that the Gaussian normal estimate performs poorly at the target tenor, so adjusts its estimate as follows:

The Gaussian normal approach tracks the answers for the other three methods very closely out to between eight and nine years, and then does increasingly poorly. This is because of small numbers of bonds from which to extrapolate at longer tenors. At a maturity of ten years, the effective tenor of the RBA's Gaussian Normal approach is no longer ten years. This has been noted elsewhere, most recently by Lally (2014a) in work for the AER and also by the ERA in its ATCO Draft Decision (paragraph 848). Lally also indicates how this ought to be corrected (*ibid*, p39, equation 4), and we employ Lally's correction. The only difference being that, unlike the RBA, when we estimate the yield under the Gaussian Normal approach, we do so directly, rather than by adding an estimated spread to a known swap rate (see Lally's footnote 21, p38, *ibid*). Thus, unlike Lally (*ibid*, p39, unnumbered equations) we do not need to subtract the difference between the swap rates at the target and effective tenor from our estimate of the ten-year yield formed under a Gaussian Normal approach. Our estimate of the yield at ten years is 5.404 (un-annualised), which is 3 bps higher than Lally's (*ibid*) figure of 5.37 after he has made his adjustment, and our estimate of the yield at seven years is 5.13 (un-annualised) per cent, which is 2 bps higher than that of Lally. The small differences appear to be based on a different sampling period, not a different methodology.³⁵

³² DBNGP (WA) Transmission Pty Limited, *Proposed Revisions DBNGP Access Arrangement 2016 – 2020 Access Arrangement Period*, 31 December 2014, Submission 12, p. iv.

³³ DBNGP (WA) Transmission Pty Limited, *Proposed Revisions DBNGP Access Arrangement 2016 – 2020 Access Arrangement Period*, 31 December 2014, Submission 12, p. 21.

³⁴ DBP note that the two year remaining term to maturity criteria is 'perhaps less relevant than it was in the past' (Dampier Bunbury Pipeline, *Proposed Revisions DBNGP Access Arrangement 2016 – 2020 Access Arrangement Period*, 31 December 2014, Submission 12, p. 21).

³⁵ DBP employ 'Lally's correction' (Dampier Bunbury Pipeline, *Proposed Revisions DBNGP Access Arrangement 2016 – 2020 Access Arrangement Period*, 31 December 2014, Submission 12, p. 23).

Issue 2 Rate of Return on Debt on the Regulatory Asset Base

Submissions are invited from interested parties on the following:

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

Return on equity

68. DBP's proposed return on equity is estimated taking the following models into account:
- the Sharpe Lintner Capital Asset Pricing Model (**SL CAPM**);
 - the Fama French Model (**FFM**);
 - the Black Capital Asset Pricing Model (**Black CAPM**); and
 - the dividend growth model (**DGM**).
69. DBP modified the SL CAPM to incorporate a 'bias-adjusted' beta estimate based on the Black CAPM in order to arrive at a post-tax nominal return on equity of 11.71 per cent. The following parameters were incorporated:
- a 40 day average of the risk free rate based on the 10 year CGS (3.54 per cent);
 - a Market Risk Premium (**MRP**) of 6.5 per cent – based on NERA Economic consulting's (**NERA**) 2013 study³⁶; and
 - an implied 'bias-adjusted' equity beta of 1.26 based on the mid-point of a range
70. DBP submitted that it has followed the Authority's five-stage process as outlined in the Guidelines, with three key departures.³⁷
71. First, DBP submitted that, at *Stage One*, if models are to have a role in the empirical estimation of the return on equity, they must not only have a theoretical grounding, but they must also be capable of being shown to be empirically relevant. DBP argued that the ERA has undertaken only a theoretical assessment of models at this Stage, without undertaking an empirical assessment of model outcomes to assess their relevance. DBP developed such an empirical assessment known as the "model adequacy test", which is based upon the notion that when model predictions are compared with actual subsequent outcomes, the predictions should not exhibit any statistically significant upward or downward bias. DBP considered that only models

³⁶ NERA Economic Consulting, *The Market Risk Premium: Analysis in Response to the AER's Draft Rate of Return Guideline*, A Report for the Energy Networks Association, October 2013.

³⁷ DBNGP (WA) Transmission Pty Limited, *Proposed Revisions DBNGP Access Arrangement 2016 – 2020 Access Arrangement Period*, 31 December 2014, Submission 12, p. iii.

that pass both tests are used in applying Stages Two and Three of the ERA's process outlined in the Guidelines.³⁸

72. Second, DBP submitted that the appropriate ranges rather than point estimates have been used in the application of each relevant model for the purpose of estimating a return on equity. DBP considered that these estimated ranges should be brought into the cross checks to be undertaken at *Stage Four* of the Authority's 5-steps approach. DBP argued that the use of point estimates by the Authority in the Rate of Return Guidelines causes relevant information to be discarded.
73. Third, in estimating the risk free rate used in all models, a ten-year term is used rather than the five-year term used by the ERA in the Guidelines.
74. In addition, DBP argued that cross checks play a greater role in its approach than is the case in the Guidelines. DBP argued that the Authority used cross checks sparingly, with a focus only on elements of the SL CAPM, rather than the overall return on equity. DBP also noted that it follows these two steps to determine a final estimate of a return on equity: (i) use of as much information as is available on the return on equity for a network service provider; and (ii) these estimates on return on equity are then refined using information from the return on debt.³⁹

Choice of models

75. DBP submitted that a financial model can be utilised in the direct estimation of the return on equity in Stages Two and Three if the following criteria can be met: (i) the model can be shown to have a firm grounding in the relevant economic theory; and (ii) the empirical outcomes produced by a model can be shown to have sound predictive abilities in respect of the return on equity.

A model's relevance - theory and principle – first criterion

76. DBP has considered the following financial models and assessed whether they are relevant from a theoretical and principle based perspective: (i) the SL CAPM; (ii) the Black CAPM; (iii) the Fama-French model; and (iv) the Dividend Growth Model.
77. DBP submitted that the Dividend Growth Model appears to be theoretically sound and therefore has a sufficient principled basis to be used for the purpose of establishing the return on equity. DBP then considered that due to difficulties in obtaining a long enough time series of relevant variables, it was not possible to conclude that it meets the second of the Authority's criteria and therefore did not subject it to its model adequacy test (DBP's second criteria).
78. DBP concluded that the remaining models were relevant and these were tested using DBP's "model adequacy test".⁴⁰

A model's role – the model adequacy test – second criterion

79. *Second*, DBP has developed the model adequacy test, which it recommends for adoption as an additional step in the process. The model adequacy test involves

³⁸ DBNGP (WA) Transmission Pty Limited, *Proposed Revisions DBNGP Access Arrangement 2016 – 2020 Access Arrangement Period*, 31 December 2014, Submission 12, p. iii.

³⁹ DBNGP (WA) Transmission Pty Limited, *Proposed Revisions DBNGP Access Arrangement 2016 – 2020 Access Arrangement Period*, 31 December 2014, Submission 12, p. iii.

⁴⁰ DBNGP (WA) Transmission Pty Limited, *Proposed Revisions DBNGP Access Arrangement 2016 – 2020 Access Arrangement Period*, 31 December 2014, Submission 12, p. 47.

using each of the relevant models (i.e., SL CAPM, the Black CAPM, and the Fama-French model as outlined above) to forecast returns in the past and then compare those forecasts to actual data. DBP considers that a model which is shown not to be statistically reliable for predicting actual outcomes (using historical data) is inappropriate for use as the sole relevant model going forward. DBP bases its justification of this approach on the Authority's use of Diebold-Mariano tests in the Western Power decision, which set a precedent in terms of using historical data to test the predictions of proposed models or hypotheses.⁴¹

80. DBP's model adequacy test proceeds as follows:⁴²
- *First*, DBP takes a financial model and parameterises it using data up to a particular point in time.
 - *Second*, the model is used to make a prediction on future returns.
 - *Third*, predicted and actual returns are compared and any error is recorded.
 - *Fourth*, DBP compared the errors over many periods and many different portfolios to understand whether they are, on average, zero.
81. In implementing its model adequacy tests, DBP used monthly observations of returns in excess of the risk free rate for each portfolio (including the market portfolio) as opposed to unadjusted returns on each portfolio. The monthly data was sourced from SIRCA's Share Price and Price Relatives Database. DBP stated that the beta estimates are not sensitive to whether one subtracts the risk free rate.⁴³
82. DBP submitted that its model adequacy test is not implemented using stocks solely from the energy sector. DBP used a wide variety of sectors of the economy. DBP argued that it is able to do this because asset pricing models are not sector specific.⁴⁴
83. DBP concluded that the only model which conclusively passed the model adequacy test was the Black CAPM. It is therefore this model which forms the basis of its assessment of the rate of return in Stages Two and Three of the Authority's process. DBP submitted that the Black CAPM is not implemented directly, but rather uses information from the model to modify beta in the SL CAPM formula. DBP considered that doing so will minimise its departure from the Authority's Guidelines.⁴⁵
84. DBP submitted that the overall conclusion from the analysis using DBP's model adequacy test is that the version of the empirical SL CAPM implemented by the Authority has significant limitations, and should not be utilised in Stages Two and Three of the Authority's five stage process. DBP argued that this model is demonstrably downwardly biased and cannot contribute to the achievement of the allowed rate of return objective.

⁴¹ DBNGP (WA) Transmission Pty Limited, *Proposed Revisions DBNGP Access Arrangement 2016 – 2020 Access Arrangement Period*, 31 December 2014, Submission 12, p. 49.

⁴² DBNGP (WA) Transmission Pty Limited, *Proposed Revisions DBNGP Access Arrangement 2016 – 2020 Access Arrangement Period*, 31 December 2014, Submission 12, p. 51.

⁴³ DBNGP (WA) Transmission Pty Limited, *Proposed Revisions DBNGP Access Arrangement 2016 – 2020 Access Arrangement Period*, 31 December 2014, Submission 12, p. 61.

⁴⁴ DBNGP (WA) Transmission Pty Limited, *Proposed Revisions DBNGP Access Arrangement 2016 – 2020 Access Arrangement Period*, 31 December 2014, Submission 12, p. 55.

⁴⁵ DBNGP (WA) Transmission Pty Limited, *Proposed Revisions DBNGP Access Arrangement 2016 – 2020 Access Arrangement Period*, 31 December 2014, Submission 12, p. 60.

85. In addition, DBP submitted that the SL CAPM itself has a solid theoretical grounding and that the problem is not necessarily with the SL CAPM in theory, but with this particular empirical implementation of the SL CAPM. DBP argued that a version of the SL CAPM can still be considered relevant and utilised in Stages Two and Three of the Authority's five-stage process; albeit applied using only the formula of the SL CAPM, rather than its empirical estimation of beta.⁴⁶

Market Risk Premium

86. DBP submitted that the Authority's range of 5 to 7.5 per cent for the MRP was based on studies that use 10 year Commonwealth Government Securities in estimating the MRP. It argues that since the tenor of the risk free rate needs to match that implied by the MRP, a range of 5.5 to 8 per cent would need to be considered.⁴⁷ DBP inferred its own long run MRP estimate of 5.6 per cent from the Authority's method applied in the ATCO Draft Decision, and combined this with an average risk free rate of 5.58 per cent calculated over June 2006 to June 2014 to arrive at a long run return on equity estimate of 11.16.⁴⁸ DBP was of the view that this figure is significantly below other Australian estimates and that the MRP method estimate is very different from other regulators, market analysts and the method the Authority applied in its rail WACC methodology.⁴⁹
87. With respect to the forward looking indicators used to inform a point estimate within the MRP range, DBP is of the view that the indicators construct a forward looking index. DBP finds, based a range of statistical tests, that the resulting index is not cointegrated with either the MRP or market returns. DBP therefore concludes that it is 'simply not possible to use the ERA's index to predict levels of either the MRP or market return'.⁵⁰
88. As a result of the above, DBP uses a constant point estimate of 6.5 per cent for the MRP based on NERA's (2013) study.⁵¹

Implementation of the SL CAPM

89. DBP argued that it could have implemented the Black CAPM directly. DBP submitted that it might also have used adaptations of the FFM (like using different points on confidence intervals for its betas, or forming the portfolios in a way more favourable to the model)⁵². DBP considered that doing so would have involved a more significant departure from the Guidelines than is perhaps necessary. DBP then concluded that it has endeavoured to maintain the basic framework of the SL CAPM, whilst using information from the results it obtains above for the Black CAPM.

⁴⁶ DBNGP (WA) Transmission Pty Limited, *Proposed Revisions DBNGP Access Arrangement 2016 – 2020 Access Arrangement Period*, 31 December 2014, Submission 12, p. 63.

⁴⁷ DBNGP (WA) Transmission Pty Limited, *Proposed Revisions DBNGP Access Arrangement 2016 – 2020 Access Arrangement Period*, 31 December 2014, Submission 12, p. 78.

⁴⁸ The 2 basis point difference in the total figure may reflect a rounding error.

⁴⁹ DBNGP (WA) Transmission Pty Limited, *Proposed Revisions DBNGP Access Arrangement 2016 – 2020 Access Arrangement Period*, 31 December 2014, Submission 12, p. 80.

⁵⁰ DBNGP (WA) Transmission Pty Limited, *Proposed Revisions DBNGP Access Arrangement 2016 – 2020 Access Arrangement Period*, 31 December 2014, Submission 12, p. 80.

⁵¹ NERA Economic Consulting, *The Market Risk Premium: Analysis in Response to the AER's Draft Rate of Return Guideline*, A Report for the Energy Networks Association, October 2013.

⁵² DBNGP (WA) Transmission Pty Limited, *Proposed Revisions DBNGP Access Arrangement 2016 – 2020 Access Arrangement Period*, 31 December 2014, Submission 12, p. 67.

90. DBP submitted that doing so would involve adjusting the estimate of beta by more than just choosing a different point on a confidence interval for the parameter. Instead, DBP submitted that beta (adopted in the SL CAPM) is replaced by *Betastar*, which is defined as below:⁵³

$$\beta_{jt}^* = \left(1 - \frac{\hat{z}_{0t}}{\hat{z}_{mt}}\right) \hat{\beta}_{jt} + \frac{\hat{z}_{0t}}{\hat{z}_{mt}}$$

where

Z_{0t} is an estimate of the zero-beta premium computed using data from before month t;

Z_{mt} is an estimate of the market risk premium computed using data from before month t; and

β_{jt} is an estimate of the beta of portfolio j computed using data from before month t.

91. Based on its own estimates, DBP concluded that *Betastar* falls within a range of 0.94 (20th percentile of *Betastar*) and 1.57 (99th percentile of *Betastar*)⁵⁴ which is equivalent to a range for a return on equity of 9.67 per cent and 13.72 per cent⁵⁵ (using a 10-year risk-free rate of 3.54 per cent⁵⁶ and an MRP of 6.5 per cent⁵⁷).
92. DBP submitted that it is not claiming that the benchmark efficient entity is riskier than the market, but rather that *Betastar* combines systematic risk and the fact that investors cannot borrow and lend at the risk-free rate into a single variable. DBP argued that:⁵⁸

This is important in interpreting betastar. DBP does not claim that energy firms in general, or the BEE in particular, are riskier than the market. The evidence from the SL-CAPM and Black CAPM shows that this is not the case. What leads to biased predictions in the SL-CAPM (but not the Black CAPM) appears to be the incorrect assumption that investors can borrow and lend at the risk-free rate. We attempt to correct for bias the bias [sic] in the SL-CAPM by adjusting beta in the betastar model, and since we load all of the correction onto a single parameter, the adjustment is very large. However, the resultant beta is an adjustment for bias, not a statement about the level of systematic risk faced by the BEE, this is exemplified by the level of the beta in the Black CAPM; around 0.53.

93. As a final point on estimation, DBP excluded robust regression techniques and employed ordinary least squares (**OLS**) alone. It reasoned that the three robust

⁵³ DBNGP (WA) Transmission Pty Limited, *Proposed Revisions DBNGP Access Arrangement 2016 – 2020 Access Arrangement Period*, 31 December 2014, Submission 12, p. 68.

⁵⁴ DBNGP (WA) Transmission Pty Limited, *Proposed Revisions DBNGP Access Arrangement 2016 – 2020 Access Arrangement Period*, 31 December 2014, Submission 12, p. 77.

⁵⁵ DBNGP (WA) Transmission Pty Limited, *Proposed Revisions DBNGP Access Arrangement 2016 – 2020 Access Arrangement Period*, 31 December 2014, Submission 12, p. 81.

⁵⁶ DBNGP (WA) Transmission Pty Limited, *Proposed Revisions DBNGP Access Arrangement 2016 – 2020 Access Arrangement Period*, 31 December 2014, Submission 12, p. 81.

⁵⁷ DBNGP (WA) Transmission Pty Limited, *Proposed Revisions DBNGP Access Arrangement 2016 – 2020 Access Arrangement Period*, 31 December 2014, Submission 12, p. 81.

⁵⁸ DBNGP (WA) Transmission Pty Limited, *Proposed Revisions DBNGP Access Arrangement 2016 – 2020 Access Arrangement Period*, 31 December 2014, Submission 12, p. 69.

regression techniques that the Authority use (Least Absolute Deviation, MM Robust Regression and Theil-Sen) typically provide biased estimates of beta while OLS estimates exhibit no significant bias making reference to a report compiled by NERA (2014).⁵⁹ Additionally, the NERA report claims that the Laplace goodness-of-fit tests do not perform well in determining whether to use OLS or Least Absolute Deviation.⁶⁰

94. DBP proposed an approach to cross check the consistency between debt and equity based on the elasticity between the two. This was determined by reference to the work of Schaefer and Strebulaev, (2008) who show that it is the inverse of the hedge ratio. The hedge-ratio is, in turn, a function of leverage and the standard call-option delta from Black and Scholes. Using this approach, SFG calculated the elasticity between debt and equity using many different values of the relevant input parameters and concluded that the elasticity is never lower than six, and thus make use of this as a conservative lower bound to give a return on equity inferred from the return on debt that is as close as is feasible to the return on debt.⁶¹
95. On the basis of SFG's advice, together with its estimate of the debt risk premium, DBP submitted a range for the cost of equity of 11.37 per cent and 12.04 per cent, with the point estimate of 11.71 per cent.⁶²
96. With the proposed return on equity of 11.71 per cent, together with the risk free rate of 3.54 per cent and the MRP of 6.5 per cent, this estimated return on equity implies that *Betastar* is 1.26.

Gamma

97. The Guidelines set out that gamma may be estimated as the product of two components:
 - (i) the payout ratio (F); and
 - (ii) the market value of imputation credits (θ).
98. This can be represented as follows:

$$\gamma = F \times \theta$$
99. DBP agrees with this formulation.
100. However in developing its estimate of gamma, DBP departed from the approach set out in the Guidelines. DBP also did not agree with the revised estimate of gamma that was adopted by the Authority for the Draft Decision on the Mid West and South West Gas Distribution System.⁶³

⁵⁹ NERA Economic Consulting, *Robust Regression Techniques*, A Report for DBP, Submission 12 – Appendix F - December 2014

⁶⁰ NERA Economic Consulting, *Robust Regression Techniques*, A Report for DBP, Submission 12 – Appendix F - December 2014, p. 21.

⁶¹ DBNGP (WA) Transmission Pty Limited, *Proposed Revisions DBNGP Access Arrangement 2016 – 2020 Access Arrangement Period*, 31 December 2014, Submission 12, p. 88.

⁶² DBNGP (WA) Transmission Pty Limited, *Proposed Revisions DBNGP Access Arrangement 2016 – 2020 Access Arrangement Period*, 31 December 2014, Submission 12, p. 89.

⁶³ The Authority in the Draft Decision required ATCO to adopt a gamma parameter of 0.5. This estimate was based on the product of a distribution rate F of 0.7 and utilisation rate, theta, of 0.7. The resulting estimate

101. DBP agreed with the Guidelines' proposed payout ratio estimate of 0.7.
102. However, DBP submits that gamma should be estimated based on the market value of imputation credits. DBP argued that the resulting best available estimate will be derived from a dividend drop-off (**DDO**) study. Accordingly, DBP proposed an estimate of theta of 0.35, which is consistent with DBP's consultant SFG's DDO study.
103. In consequence, DBP proposes an estimate of gamma of 0.25.⁶⁴

Issue 3 Rate of Return on Equity on the Regulatory Asset Base

Submissions are invited from interested parties on the following:

- DBP's departure from the Rate of Return Guidelines in relation to rate of return on equity.
- DBP's proposed approach to estimating the return on equity, and its consistency with the requirements of the NGL and NGR, and the allowed rate of return objective in particular.
- DBP's proposed approach to the term of the risk free rate of return, and its consistency with the requirements of the NGL and NGR, and the allowed rate of return objective in particular.
- DBP's proposed approach to estimating gamma, and its consistency with the requirements of the NGL and NGR, and the allowed rate of return objective in particular.

Opening Capital Base for AA4

104. Rule 77(2) of the NGR establishes the approach to determine the opening capital base for an access arrangement period that follows immediately on the conclusion of a preceding access arrangement period. The opening capital base for the later access arrangement period is to be:
- 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:

- conforming capital expenditure during the earlier access arrangement period;

plus:

of 0.49 was rounded to 0.5, in acknowledgement that the estimate is based on a fairly wide range, and subject to imprecision.

⁶⁴ DBNGP (WA) Transmission Pty Limited, *Proposed Revisions DBNGP Access Arrangement 2016 – 2020 Access Arrangement Period*, 31 December 2014, Submission 12, p. 96.

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

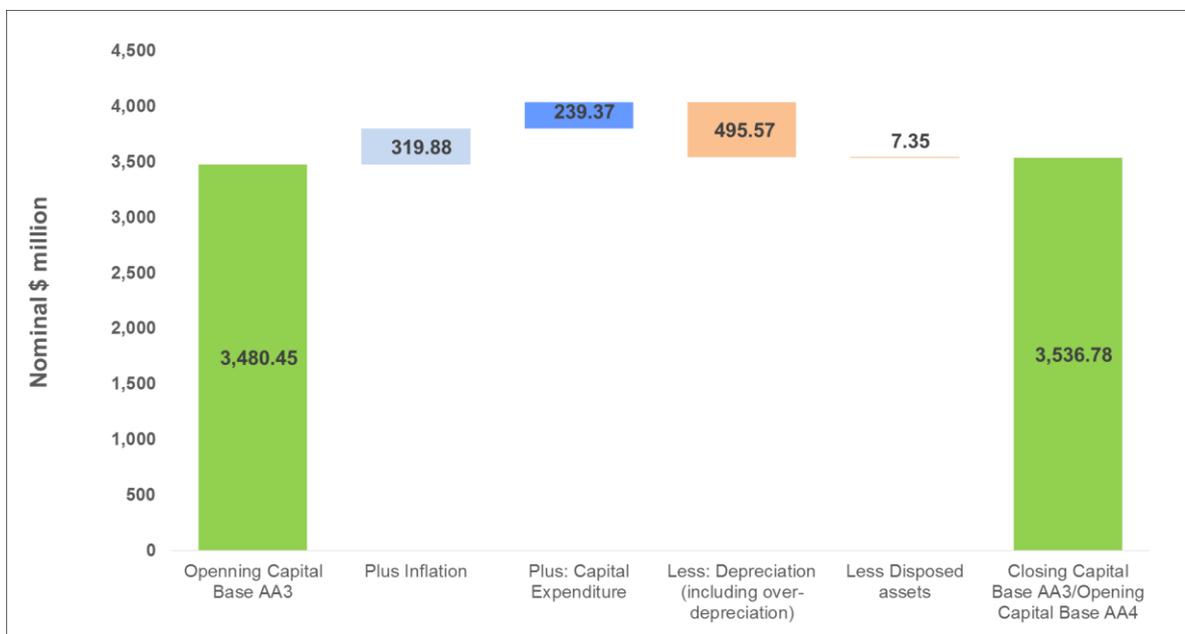
less:

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

105. DBP proposes an opening capital base for the fourth access arrangement period of \$3,536.78 million⁶⁵ as at 1 January 2016. DBP's proposed opening capital base includes \$239.37 million in conforming capital expenditure less depreciation of \$495.57 million for AA3.

106. DBP's calculated values of the capital base at the commencement of the fourth access arrangement period are shown in Figure 2 below.

Figure 2 DBP Proposed Opening Capital Base for AA4



Source: DBNGP (WA) Transmission Pty Limited, *Tariff Model, 31 December 2014*. DBNGP (WA) Transmission Pty Limited, *Proposed Revisions DBNGP Access Arrangement, Access Arrangement Information, 31 December 2014*, pp. 8-9.

Past Conforming Capital Expenditure

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

- A positive overall economic value of the expenditure; or
- The present value of the expected incremental revenue to be generated as a result of the expenditure exceeds the present value of the expenditure; or
- The expenditure is necessary:

⁶⁵ Real \$ million at 31 December 2015.

- to maintain and improve the safety of services; or
 - to maintain the integrity of services; or
 - to comply with a regulatory obligation or requirement; or
 - to maintain the service provider's capacity to meet levels of demand for services existing at the time of the capital expenditure is incurred.
108. DBP has proposed that its actual past capital expenditure is capital expenditure that conforms to the criteria under rule 79 of the NGR. Under rule 77(2) of the NGR, capital expenditure must be 'conforming capital expenditure' in order to be added to the capital base.
109. DBP proposes the addition of \$256.74 million⁶⁶ for the third access arrangement period to the opening capital base. The \$256.74 million for conforming capital expenditure is \$30.60 million, or 13.5 per cent more than the forecast amount approved by the Authority for the third access arrangement period.
110. The Authority's approved capital expenditure for AA3 and DBP's proposed conforming capital expenditure for the AA3 period is shown in Table 2 below.

⁶⁶ Real \$ million at 31 December 2015.

Table 2 Authority Approved Capital Expenditure and DBP Proposed Conforming Capital Expenditure for AA3 by Category

Real \$ million at 31 December 2015	Total Approved Forecast AA3 (A)	Total Actual AA3(B)	Difference (B-A)
Expansion			
Pipeline	15.19	47.24	32.05
Compression	30.68	31.21	0.53
Metering	0.16	0.00	-0.16
Other	50.92	18.12	-32.80
other non-depreciable	0.00	0.00	0.00
BEP Lease	21.26	21.26	0.00
Sub total	118.21	117.82	-0.38
Stay-in-business			
Pipeline	19.32	28.59	9.27
Compression	29.28	30.04	0.77
Metering	7.17	7.75	0.58
Other	52.17	72.39	20.22
Other non-depreciable	0.00	0.14	0.14
BEP Lease		0.00	
Sub total	107.93	138.91	30.98
Total			
Pipeline	34.51	75.83	41.32
Compression	59.96	61.25	1.29
Metering	7.33	7.75	0.42
Other	103.09	90.51	-12.58
Other non-depreciable	0.00	0.14	0.14
BEP Lease	21.26	21.26	0.00
Total	226.14	256.74	30.60

Source: DBNGP (WA) Transmission Pty Limited, Proposed Revisions DBNGP Access Arrangement, Access Arrangement Information, 31 December 2014, Table 4, p. 4.

111. Of the \$256.74 million⁶⁷ proposed by DBP as conforming capital expenditure for the third access arrangement period, \$117.82 million⁶⁸ of this relates to capital expenditure expansion works and \$138.92 million⁶⁹ relates to stay in business capital expenditure.

⁶⁷ Real \$ million at 31 December 2015.

⁶⁸ Real \$ million at 31 December 2015.

⁶⁹ Real \$ million at 31 December 2015.

112. DBP has noted that the proposed conforming capital expenditure for the current access arrangement period relates to the Stage 5A and 5B expansion projects. DBP provided substantiation of these expansion projects to the Authority as part of the approval for the third access arrangement.
113. DBP largely completed the Stage 5A and 5B expansion works in the 2005-2010 access arrangement period. There were amounts of expansion capital expenditure not included in the opening capital base of the third access arrangement period as they were incurred in 2011 and 2012.
114. DBP submits that the expansion capital expenditure meets the criteria contained in NGR 79 and should be approved as conforming capital expenditure and rolled into the opening capital base calculation.
115. DBP's stay in business capital expenditure is expenditure made to ensure DBP is able to continue operating the pipeline to meet its statutory and contractual obligations.
116. DBP notes that the reason for the difference between the level of conforming capital expenditure made in 2011 and the level of expenditure made in later years is due to the change in accounting treatment of capital expenditure from 2011 to subsequent years. In 2012, DBP moved from a capitalised basis of accounting to an incurred basis for regulatory purposes.
117. DBP submits that the prudence and efficiency criterion is met for each of the projects that make up the actual capital expenditure.

Issue 4 Past Conforming Capital Expenditure

Submissions are invited from interested parties on the following:

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

Projected Capital Base for AA4

118. Rule 78 of the NGR establishes the approach to determine the projected capital base of an access arrangement.
119. DBP's proposed projected capital base has been calculated using a roll-forward method that involves commencing with the opening value at the beginning of the fourth access arrangement period in accordance with rule 78 of the NGR:

plus:

- Forecast conforming capital expenditure for the period;

less:

- Forecast depreciation for the period; and
 - Forecast disposed assets for the period.
120. DBP has no forecast value of pipeline assets to be disposed of during the current access arrangement period which would be deducted from the projected capital base.
121. DBP proposes a projected capital base for the fourth access arrangement period of \$3,149.77 million at 31 December 2020. DBP's proposed forecast closing capital base for each year of the fourth access arrangement period are shown in Table 3 below.

Table 3 DBP's proposed Projected Capital Base by Year for AA4

Real \$ million at 31 December 2015	2016	2017	2018	2019	2020
Opening Capital Base	3,536.78	3,456.58	3,376.01	3,290.53	3,212.86
add Conforming capital	23.27	21.77	17.50	19.37	24.76
less Depreciation	103.47	102.33	102.97	97.05	87.85
less Disposed assets	0.00	0.00	0.00	0.00	0.00
Closing Capital Base	3,456.58	3,376.01	3,290.53	3,212.86	3,149.77

Source: DBNGP (WA) Transmission Pty Limited, Proposed Revisions DBNGP Access Arrangement, Access Arrangement Information, 31 December 2014, Table 12, p. 10.

122. The projected capital base includes forecast conforming capital expenditure of \$106.66 million less forecast depreciation of \$493.67 million.

Forecast Conforming Capital Expenditure

123. DBP proposes that its forecast capital expenditure for the fourth access arrangement period conforms to the criteria under rule 79 of the NGR. DBP's proposal must also conform to rule 74 of the NGR, which requires that forecasts and estimates must be supported by a statement of the basis of the forecast or estimate, must be arrived at on a reasonable basis and must represent the best forecast or estimate possible in the circumstances.
124. DBP has forecast \$106.66 million in stay in business capital expenditure over the fourth access arrangement period, which is 23.3 per cent less than DBP's proposed actual stay in business capital expenditure for the third access arrangement period of \$138.92 million. DBP has not proposed any capital expenditure on expansion projects in the AA4 period.
125. DBP's proposed capital expenditure is shown in Table 4 below.

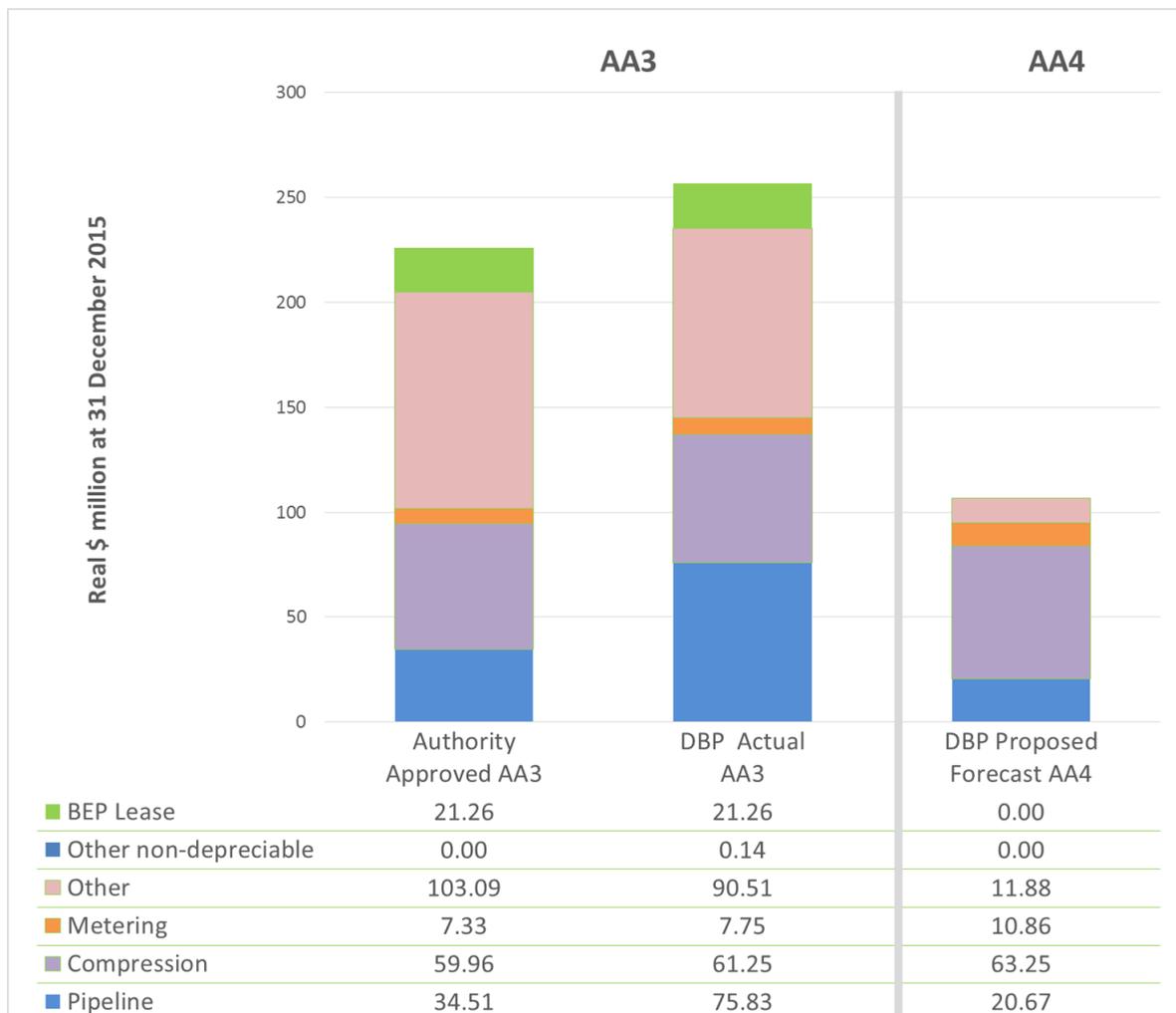
Table 4 DBP's Proposed Conforming Capital Expenditure for AA4

Real \$ million at 31 December 2015	2016	2017	2018	2019	2020	Total AA4
Pipeline	3.67	2.48	1.63	5.33	7.55	20.67
Compression	13.61	13.97	12.44	11.65	11.59	63.25
Metering	3.60	2.68	0.85	0.64	3.10	10.86
Other	2.39	2.64	2.58	1.75	2.52	11.88
Other non-depreciable	0.00	0.00	0.00	0.00	0.00	0.00
BEP Lease	0.00	0.00	0.00	0.00	0.00	0.00
Total	23.27	21.77	17.50	19.37	24.76	106.66

Source: DBNGP (WA) Transmission Pty Limited, Proposed Revisions DBNGP Access Arrangement, Access Arrangement Information, 31 December 2014, Table 13, p. 11.

126. Rule 79(1)(a) of the NGR requires that conforming capital expenditure must be incurred by a prudent service provider acting efficiently and in accordance with accepted good industry practice, to achieve the lowest sustainable cost of providing services.
127. DBP submits that the prudence and efficiency criteria are met for each of the projects that are included in the forecast capital expenditure for the fourth access arrangement period.
128. The most substantial capital expenditure projects proposed for the fourth access arrangement period include the design and installation of new accommodation units at each of the compressor stations, intelligent pigging of the network as per the DBP asset management plan, and the provision of subsequent costs for compressors to allow DBP to carry out activities that are required to continue to operate the assets.

Figure 3 Authority Approved Forecast Capital expenditure for the AA3 and DBP Proposed Conforming Capital Expenditure for AA3 and AA4



Source: Economic Regulation Authority, *Tariff Model*, 5 October 2012. DBNGP (WA) Transmission Pty Limited, *Tariff Model*, 31 December 2014.

Depreciation of the Capital Base

129. Rules 88, 89, and 90 of the NGR specify particular requirements for the depreciation of pipeline assets in the Regulatory Asset Base (RAB).
130. Rule 88 states that the depreciation schedule may consist of a number of separate schedules, each relating to a particular asset or asset class.
131. Rule 89 states that the depreciation schedule should be designed so that:
- Reference tariffs vary in a way that promotes efficient growth in the market for reference services;
 - each asset or asset class is depreciated over its economic life;
 - the expected economic life of a particular asset or asset class can be adjusted as far as reasonably practicable;
 - the amount by which the asset is depreciated over its economic life does not exceed the value of the asset at the time of its inclusion in the capital base; and

- the service provider's reasonable needs for cash flow to meet financing, non-capital and other costs are allowed for.
132. The Authority's discretion under rule 89 of the NGR is limited. This means that the Authority cannot withhold its approval if it is satisfied that it complies with applicable requirements of the NGL and NGR and is consistent with applicable criteria (if any) prescribed by the NGL and NGR.
133. Rule 90 of the NGR specifies that a full access arrangement must contain provisions governing the calculation of depreciation for establishing the opening capital base for the next access arrangement period. The provisions must resolve whether depreciation of the capital base is to be based on forecast or actual capital expenditure.
134. DBP's projected capital base includes forecast depreciation of \$490.15 million over the fourth access arrangement period. DBP proposes that the depreciation schedule for the fourth access arrangement period should be calculated using the straight line method.
135. DBP explains its derivation of depreciation in section 9 of both its access arrangement document and access arrangement information document.
136. DBP's proposed forecast depreciation expenditure is shown in Table 5 below.

Table 5 DBP Forecast Depreciation for AA4

Real \$ million at 31 December 2015	2016	2017	2018	2019	2020	Total AA4
Pipeline assets	58.63	58.68	58.71	58.74	58.81	293.57
Compression assets	34.58	35.04	35.50	29.45	20.10	154.68
Metering assets	1.05	1.13	1.18	1.20	1.21	5.76
Other depreciable assets	8.13	6.41	6.50	6.59	6.64	34.27
BEP Lease	0.37	0.37	0.37	0.37	0.37	1.86
Total⁷⁰	102.77	101.63	102.27	96.34	87.14	490.15

Source: DBNGP (WA) Transmission Pty Limited, Proposed Revisions DBNGP Access Arrangement, Access Arrangement Information, 31 December 2014, Table 15, p. 13.

Adjustment to remove double counting of inflation

137. In calculating the Total Revenue, DBP has made an adjustment to the amount of depreciation on the projected capital base for each year of the access arrangement period. This adjustment is required as a result of:
- The requirement under the NGR to move from a pre-tax real approach to a post-tax nominal approach when calculating the return on the capital base; and
 - Adopting the current cost accounting approach to accounting for the capital base and using that approach in the AER's post-tax revenue model (**PTRM**).

⁷⁰ Total excludes Depreciation for Shipper Assets

138. DBP is proposing Current Cost Accounting (**CCA**) of the RAB, with nominal straight line depreciation. The CCA approach maintains the historic value of the asset base in real terms (giving the so-called ‘current cost’), for example by indexing the closing value of the previous year’s asset base each year to account for inflation. Annual depreciation is then calculated on the current cost, given the effective life of the asset.
139. The CCA approach contrasts with the Historical Cost Accounting (**HCA**) depreciation approach. The HCA is based on the values of the assets at the time of expenditure; the historic cost values are not indexed year to year for inflation. Annual depreciation is calculated by dividing the historic value by the effective life of the asset. The resulting value in nominal terms for each year is then included as the depreciation building block in the cost of service.
140. The resulting indexed straight line depreciation component for the building block revenue model differs slightly, depending on whether it is used in a real or nominal revenue model. Assuming an indexed straight line depreciation method is adopted, then:
- In a real revenue model, the straight line depreciation is used directly as the depreciation building block in the cost of service.
 - In a nominal revenue model such as the PTRM used by the AER, the inflation gain in the regulated asset base, which is calculated by multiplying the previous year’s closing asset value by the rate of inflation, is deducted from the nominal depreciation for the current year. This removes a double count of inflation, which would otherwise occur in the PTRM.⁷¹
141. DBP has proposed the use of the PTRM and the adoption of the CCA method for accounting for the capital base, as per the method used by the AER in the PTRM.
142. DBP argues that the use of either the CCA or the HCA approach in the PTRM achieves the same objective; inflation is not double counted and both methods therefore comply with the criteria set out in rule 89(1) of the NGR.
143. DBP submits that both approaches also deliver the same net present value of revenue over the life of a given pipeline. The key difference between them pertains to when depreciation occurs and thus how consumers bear the costs of infrastructure through time.

Issue 5 Depreciation of the Capital Base

Submissions are invited from interested parties on the following:

- DBP’s proposed methodology for calculating depreciation.

⁷¹ This is because the nominal WACC also includes a return for inflation. In the PTRM, the WACC is also applied to the nominal opening value of the capital base in the current year. Therefore, a return for inflation is included in both the WACC and in the unadjusted depreciation. Deducting the value of inflation applied through indexation under the CCA depreciation approach therefore avoids a double count.

Estimated Cost of Corporate Income Tax

144. As DBP has been required to adopt a post-tax nominal WACC, it has also needed to include an estimate of taxation costs for the first time.
145. Rule 76 of the NGR provides for the estimated cost of corporate income tax as a building block for total revenue. Rule 87A of the NGR elaborates that the estimated cost of corporate income tax of a service provider for each regulatory year of an access arrangement period is to be estimated in accordance with the following formula:

$$ETC_t = (ETIt \times rt) (1-\nu)$$

Where

ETIt 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;

rt is the expected statutory income tax rate for that regulatory year as determined by the [Authority]; and

ν is the value of imputation credits.

146. DBP has used 25 per cent (0.25) for the value of imputation credits.
147. To establish the opening Tax Asset Base (**TAB**), DBP states it has started with its actual tax asset base as reported in its corporate income tax return. DBP notes it was first subject to the regulatory regime from 1 January 2000, and therefore notional tax calculations have commenced from 1 January 2000, with tax losses carried forward from that date only. DBP notes the opening Tax Asset Base (**TAB**) at 1 January 2000 was based on the actual tax fixed asset register that existed as at 1 January 2000. From the actual TAB, DBP has then made a number of adjustments to arrive at the TAB for regulatory purposes. The key adjustments made by DBP include:
- the exclusion of capital contributions (revenue and expenditure);
 - the value of the BEP lease asset that aligns with regulatory treatment; and
 - the depreciation of GEA and turbine overhaul expenditure which is treated as operating expenditure for regulatory purposes.
148. DBP's TAB and calculation of the tax depreciation is then used as part of the inputs into the reference tariff model to produce the estimate.
149. In calculating the estimate of corporate income tax, DBP has made assumptions about the opening written down value and opening tax loss position. Submission 14 of DBP's proposal provides the full list of assumptions made by DBP.⁷²

⁷² DBNGP (WA) Transmission Pty Limited, *Tariff Model and Tariff Calculation – Supporting Submission 14*, 31 December 2014, pp. 8-10.

150. KPMG was engaged by DBP to review the basis and assumptions used in its estimate for corporate income tax. KPMG's report is provided as Appendix C to Submission 14.⁷³

Issue 7 Estimated Cost of Corporate Income Tax

Submissions are invited from interested parties on the following:

- DBP's approach to estimating the cost of corporate income tax and its consistency with rules 76 and 87A of the NGR.

Operating Expenditure

151. Rule 91 of the NGR states that operating expenditure must be such as would be incurred by a prudent service provider acting efficiently, in accordance with accepted good industry practice, to achieve the lowest sustainable cost of delivering pipeline services.
152. Rule 71 of the NGR is also relevant to the Authority's consideration of forecast operating expenditure, particularly with respect to whether actual operating expenditure for the current access arrangement period provides a benchmark for an efficient level of operating expenditure for the forthcoming access arrangement.
153. DBP has forecast a 4.97 per cent decrease in operating expenditure to total \$560.84 million⁷⁴ from the Authority's approved figure for the third access arrangement period of \$590.15 million.⁷⁵
154. Figure 4 shows the Authority's approved operating expenditure forecast for the current access arrangement period, DBP's actual operating expenditure for the

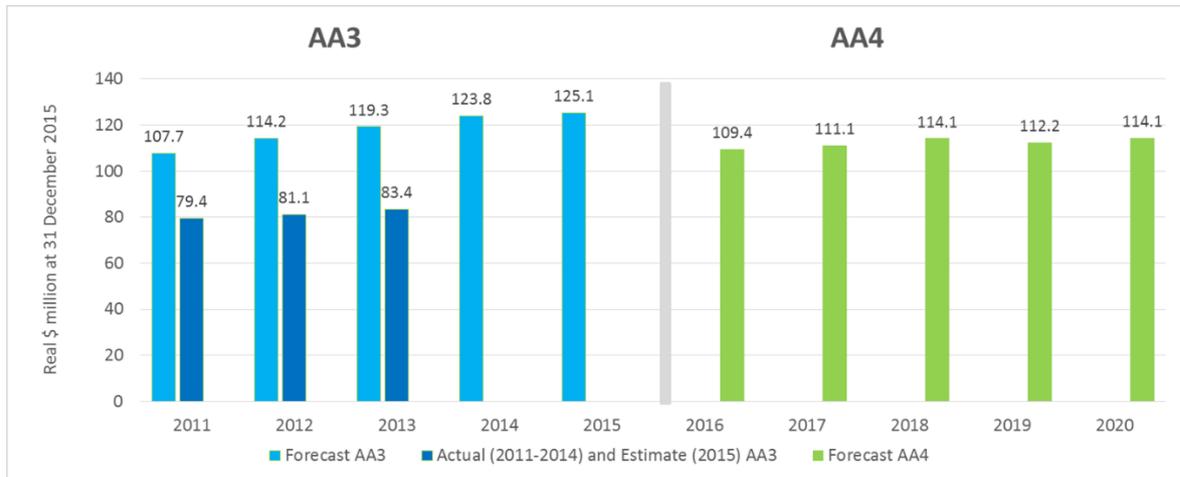
⁷³ DBNGP (WA) Transmission Pty Limited, *Tariff Model and Tariff Calculation – Supporting Submission 14*, 31 December 2014, p. 10.

⁷⁴ Real \$ million at 31 December 2015.

⁷⁵ Real \$ million at 31 December 2015.

current access arrangement period and DBP's proposed operating expenditure forecast for the forthcoming access arrangement period.⁷⁶

Figure 4 Authority Approved Forecast and Actual Operating Expenditure (AA3) and DBP Proposed Operating Expenditure (AA4) by year



Source: DBNGP (WA) Transmission Pty Limited, Tariff Model, 31 December 2014, DBNGP (WA) Transmission Pty Limited, Forecast Operating Expenditure – Supporting Submission 10.

155. Table 6 below shows the Authority approved operating expenditure for the current access arrangement period (2011 to 2015) and DBP's proposed forecast operating expenditure for the forthcoming access arrangement period (2016 to 2020).

Table 6 Authority Approved Forecast Operating Expenditure for AA3 and DBP Proposed Forecast Operating Expenditure for AA4

Real \$ million at 31 December 2015	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
	Approved					Proposed				
Wages & salaries	29.72	31.00	32.34	33.74	34.54	29.50	30.08	30.67	31.27	31.88
Non-field expenses	20.26	20.26	20.26	20.88	20.88	15.36	15.21	15.54	16.26	17.08
Field Expenses	22.36	22.36	22.36	22.36	22.36	15.96	17.87	19.41	15.64	15.53
Government charges	12.35	12.35	12.35	12.35	12.35	8.29	8.29	8.29	8.29	8.29
Reactive Maintenance	0.00	3.98	7.77	7.85	7.88	1.40	1.40	1.40	1.40	1.40
System use gas	22.99	24.29	24.18	26.64	27.13	38.93	38.22	38.74	39.30	39.94
Total	107.68	114.25	119.27	123.82	125.14	109.45	111.07	114.05	112.16	114.12

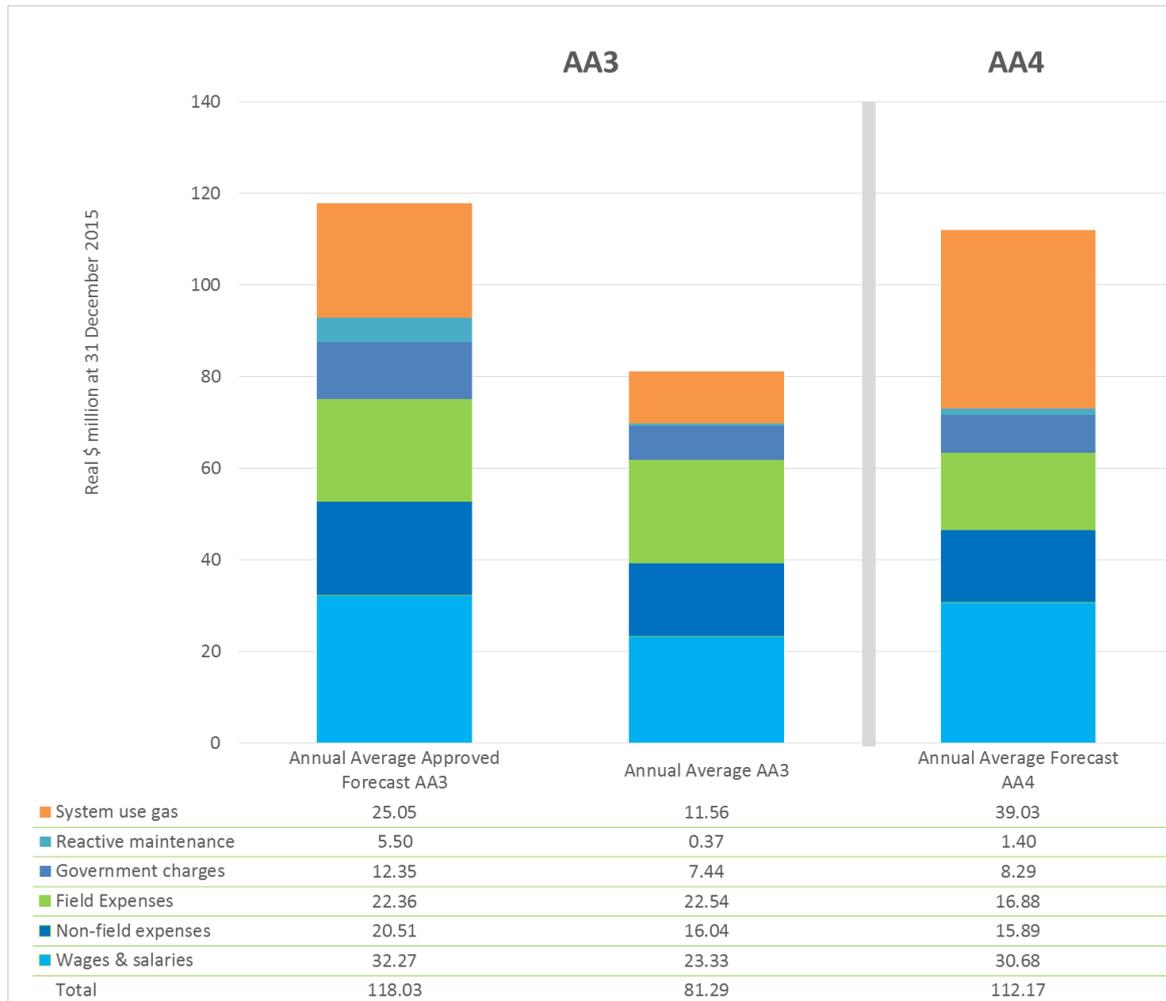
Source: Economic Regulation Authority, Tariff Model, 5 October 2012. DBNGP (WA) Transmission Pty Limited, Tariff Model, 31 December 2014.

156. Figure 5 shows the annual average for the Authority's approved operating expenditure over the third access arrangement period, the annual average of DBP's actual operating expenditure over the third access arrangement and the annual

⁷⁶ At the time of submission, actual operating expenditure was not available for 2014 and 2015.

average of DBP's proposed forecast operating expenditure over the forthcoming access arrangement period.

Figure 5 Annual Average Approved Forecast Operating Expenditure (AA3), Annual Average of Actual Operating Expenditure (AA3) and Annual Average of Proposed Forecast Operating Expenditure (AA4)



Source: DBNGP (WA) Transmission Pty Limited, *Tariff Model, 31 December 2014, DBNGP (WA) Transmission Pty Limited, Forecast Operating Expenditure – Supporting Submission 10.*

157. DBP has identified the key drivers that influence the proposed forecast operating expenditure as:

- requirements and obligations under the DBNGP Safety Case;
- obligations under pipeline licences and other mandatory requirements; and
- findings from internal and external audits that have been completed.⁷⁷

⁷⁷ DBNGP (WA) Transmission Pty Limited, *Forecast Operating Expenditure – Supporting Submission 10*, 31 December 2014, p. 48.

158. DBP's proposed operating expenditure forecast for each year of the fourth access arrangement period is based on the internal budget developed by management and approved by DBP's board and unitholders.⁷⁸
159. DBP has applied six months of CPI (All Groups Weighted average of eight capital cities) to each item in the approved budget for the financial year ending 30 June 2015 to arrive at a base year of forecast expenditure for the calendar year 2015, except in the following categories below:⁷⁹
- Regulatory
 - Gas Engine Alternator (**GEA**)/Turbine Overhauls
 - Fuel Gas
 - Insurance
160. To arrive at the operating expenditure forecast for each year of the fourth access arrangement period, cost categories contained in the base year have been escalated in each year by the expected inflation as provided by DBP in its access arrangement information document, except in the following categories below:⁸⁰
- Salaries - this forecast is escalated by expected inflation and 2 per cent, which DBP has determined to be the average real increase in average weekly earnings (**AWE**);
 - Salaries – Contractors – this forecast is escalated in the same manner as salaries;
 - Consulting – this forecast is escalated in the same manner as salaries;
 - Fuel Gas – the assumed gas price has been escalated based on DBP's methodology; and
 - Insurance, Regulatory and GEA/Turbine Overhauls have not been escalated by DBP as these categories are cyclical in nature.
161. DBP has assumed a real two per cent escalation to salary and wage expenditure based on evidence it has gathered on AWE from the Australian Bureau of Statistics (**ABS**) and the Western Australia Department of Treasury forward estimates wage price index (**WPI**).⁸¹
162. The key drivers behind the reduction in non-field expenses include a new Corporate ICT Service Agreement and a general softening in the global insurance market. Conversely, consulting expenditure is forecast to increase over the forthcoming access arrangement period.⁸²

⁷⁸ DBNGP (WA) Transmission Pty Limited, *Forecast Operating Expenditure – Supporting Submission 10*, 31 December 2014, p. 3.

⁷⁹ DBNGP (WA) Transmission Pty Limited, *Forecast Operating Expenditure – Supporting Submission 10*, 31 December 2014, p. 3.

⁸⁰ DBNGP (WA) Transmission Pty Limited, *Forecast Operating Expenditure – Supporting Submission 10*, 31 December 2014, p. 3.

⁸¹ DBNGP (WA) Transmission Pty Limited, *Forecast Operating Expenditure – Supporting Submission 10*, 31 December 2014, p. 10.

⁸² DBNGP (WA) Transmission Pty Limited, *Forecast Operating Expenditure – Supporting Submission 10*, 31 December 2014, pp. 16-24.

163. The key categories affecting field expenses include GEA/Turbine overhauls and repairs and maintenance. DBP's replacement philosophy for turbines on the DBNGP is for units that have exceeded 30,000 hours to be replaced in the following financial year. Similarly for the GEA overhaul, engines that reach a required run hour will require either a minor or major overhaul. The hours are normally 12,000 hours, 24,000 hours, 48,000 hours and 54,000 hours.⁸³
164. DBP states that due to the nature of work captured under the reactive maintenance category, expenditure is volatile and difficult to forecast. DBP has based its 2015 base year costs on historical costs.⁸⁴
165. System Use Gas (**SUG**) is the most significant increase in forecast operating expenditure categories from the third access arrangement period to the forthcoming access arrangement. SUG is required to operate compressors used to deliver gas on the DBNGP. DBP submits that the SUG price it contracted, which is a long term take or pay purchase and sales agreement rather than a short term spot agreement, should underpin its fuel gas price assumptions. DBP notes in its submission that public statements about new long term gas supply contracts negotiated in recent times infer gas prices of between \$6.50 and \$12/GJ.⁸⁵

Issue 8 Operating Expenditure

Submissions are invited from interested parties on the following:

- Reasonableness of DBP's forecast operating expenditure for the forthcoming access arrangement period and compliance with rule 91 of the NGR.
- Reasonableness of proposed operating expenditure trends in relation to the base year.

Reference Tariffs and Tariff Variation Mechanism

166. Rule 95 of the NGR sets out the requirements for the determination of reference tariffs for transmission pipelines. Rule 95(1) of the NGR states that a tariff must be designed:
- a) To generate from the provision of each reference service the portion of total revenue referable to that reference service; and
 - b) As far as is practicable consistently with paragraph (a), to generate from the user, or the class of users, to which the reference service is provided, the portion of total revenue referable to providing the reference service to the particular user or class of users.

⁸³ DBNGP (WA) Transmission Pty Limited, *Forecast Operating Expenditure – Supporting Submission 10*, 31 December 2014, pp. 44-45.

⁸⁴ DBNGP (WA) Transmission Pty Limited, *Forecast Operating Expenditure – Supporting Submission 10*, 31 December 2014, p. 43.

⁸⁵ DBNGP (WA) Transmission Pty Limited, *Forecast Operating Expenditure – Supporting Submission 10*, 31 December 2014, pp. 36-43.

167. DBP's proposed reference tariffs and methodology are outlined in section 15 of the proposed revised access arrangement information and in section 3 of the proposed access arrangement document.
168. DBP has stated that in determining the Reference Tariffs for the T1 Service, P1 Service and B1 Service, costs have been allocated to the Services provided to Shippers with Access Contracts entered into prior to the commencement of the Current Access Arrangement Period, as if those Shippers had been provided with the respective Reference Services.
169. For the purpose of recovery of costs from Shippers and of earning the portion of Total Revenue attributable to the Reference Services, DBP has divided each of the Reference Tariffs into a two part tariff structure as follows:
 - Capacity Reservation Tariff; and
 - Commodity Tariff.
170. The Capacity Reservation Tariff for each Reference Service, when applied to determine the Capacity Reservation Charge, recovers from each Reference Service Shipper a proportion of the return and depreciation on, and a proportion of the operating expenditure incurred in operating and maintaining, the DBNGP other than those assets that make up the DBNGP for which a capital contribution has been made by a Shipper.
171. The Commodity Tariff for each Reference Service, when applied to determine the Commodity Charge, recovers from the Shipper a proportion of the forecast Operating Expenditure (including but not limited to, the cost of the System Use Gas used on the DBNGP).
172. DBP's proposed revised reference tariffs applicable as at 1 January 2016 for the T1 Service, P1 Service and B1 Service are shown in Table 7, Table 8 and Table 9 respectively.
173. The tariff for each reference service is forecast to rise by 23 per cent between 2015 and 2016 of which 2 per cent relates to DBP's forecast of CPI for 2016. DBP has also proposed a change in the proportions between the capacity reservation and commodity components of the tariff for each reference service. In 2015, the capacity reservation component represents 92 per cent of the total tariff compared with 80 per cent in 2016.

Table 7 DBP Proposed Revised T1 Reference Tariff as at 1 January 2016 compared to the Current T1 Reference Tariff as at 1 January 2015 (Nominal)

Tariff Components	Current Tariff as at 1 January 2015	Proposed Tariff as at 1 January 2016
T1 Capacity Reservation Tariff (\$/ GJ)	1.2412	1.3224
T1 Commodity Tariff (\$/ GJ)	0.1048	0.3306
T1 Tariff (\$/ GJ)	1.3460	1.6530

Source: DBNGP (WA) Transmission Pty Limited, Proposed Revisions DBNGP Access Arrangement, Access Arrangement Document, 31 December 2014, Section 3, p. 4 and DBNGP (WA) Transmission Pty Limited, Variation of Reference Tariff from 1 January 2015 Letter to the Economic Regulation Authority, 12 January 2014.

Table 8 DBP Proposed Revised P1 Reference Tariff as at 1 January 2016 compared to the Current P1 Reference Tariff as at 1 January 2015 (Nominal)

Tariff Components	Current Tariff as at 1 January 2015	Proposed Tariff as at 1 January 2016
P1 Capacity Reservation Tariff (\$/GJ MDQ KM)	0.00088	0.00095
P1 Commodity Tariff (\$/ GJ KM)	0.00008	0.00024
P1 Tariff (\$/ GJ KM)	0.00096	0.00118

Source: DBNGP (WA) Transmission Pty Limited, Proposed Revisions DBNGP Access Arrangement, Access Arrangement Document, 31 December 2014, Section 3, p. 4 and DBNGP (WA) Transmission Pty Limited, Variation of Reference Tariff from 1 January 2015 Letter to the Economic Regulation Authority, 12 January 2014.

Table 9 DBP Proposed Revised B1 Reference Tariff as at 1 January 2016 compared to the Current B1 Reference Tariff as at 1 January 2015 (Nominal)

Tariff Components	Current Tariff as at 1 January 2015	Proposed Tariff as at 1 January 2016
B1 Capacity Reservation Tariff (\$/GJ MDQ KM)	0.00088	0.00095
B1 Commodity Tariff (\$/ GJ KM)	0.00008	0.00024
B1 Tariff (\$/ GJ KM)	0.00096	0.00118

Source: DBNGP (WA) Transmission Pty Limited, Proposed Revisions DBNGP Access Arrangement, Access Arrangement Document, 31 December 2014, Section 3, p. 5 and DBNGP (WA) Transmission Pty Limited, Variation of Reference Tariff from 1 January 2015 Letter to the Economic Regulation Authority, 12 January 2014.

174. Rules 92 and 97 of the NGR set out requirements for an access arrangement to include a mechanism for the variation of reference tariffs over the course of an access arrangement period.
175. Rule 92 of the NGR states that a full access arrangement must include a mechanism for the variation of a reference tariff over the course of an access arrangement period.
176. Rule 92(2) sets out that a reference tariff variation mechanism must be designed to equalise (in terms of present values):
- forecast revenue from reference services over the access arrangement period; and

- the portion of total revenue allocated to reference services for the access arrangement period.
177. Rule 97(1) of the NGR states that a reference tariff variation mechanism may provide for variation of a reference tariff:
- in accordance with a schedule of fixed tariffs; or
 - in accordance with a formula set out in the access arrangement; or
 - as a result of a cost pass through for a defined event (such as a cost pass through for a particular tax); or
 - by the combined operation of 2 or more or the above.
178. DBP proposes that the tariff variation mechanism continue to allow for the variation of the reference tariff by way of the combined operation of two or more of the examples listed in NGR 97(1).
179. DBP's tariff variation mechanism for the current access arrangement includes the following mechanisms:
- CPI Formula Variation.
 - Tax Change Variation.
 - New Cost Pass Through Variation.
180. In addition to the current mechanisms, DBP has proposed to include two additional mechanisms to vary the reference tariff during the access arrangement period. These are:
- a Revenue Cap Adjustment; and
 - a Trailing Average Cost of Debt Annual Update Variation.
181. DBP has noted that the Revenue Cap Adjustment is a means by which the reference tariff is varied in a way that establishes the revenue cap price control for the access arrangement period. DBP has stated that the revenue cap price control is consistent with rules 97(1)(b) and 97(2)(c) of the NGR.
182. DBP has noted that the Trailing Average Cost of Debt Annual Update Variation is a means by which the tariff is varied on an annual basis. This reflects that the rate of return on debt has been estimated using a methodology which results in the return on debt being, or potentially being, different allows for it to vary between different regulatory years in the access arrangement period , as per rule 87(9)(b) of the NGR. DBP has also stated that the trailing average cost of debt variation is consistent with NGR 97(1)(b).
183. Of the three tariff variation mechanisms contained in the current access arrangement DBP has made amendments to two of these in the proposed revised access arrangement.
184. DBP has proposed minor amendments to the access arrangement updating the 'CPI formula variation' for the AA Period to allow for the revenue cap price control to function as intended.
185. DBP has proposed amendments to the tax change variation mechanism to reflect that it is no longer proposing a separate variation mechanism to cover Carbon Costs.

This is due to the uncertainty surrounding the legislative framework that is to apply to regulate greenhouse gas emissions (called the Emissions Reduction Fund).

186. DBP has amended the tax change variation mechanism by designing it to more broadly cover the potential liability of DBP under the Emissions Reduction Fund or any replacement or complementary regime.
187. DBP has noted in supporting submission 14, 'Tariff model and tariff calculation', that it does not propose to change the existing drafting of the New Cost Pass Through Variation approved by the ERA for the current access arrangement.
188. However, upon review of the tracked change version of the proposed revised access arrangement document there are a number of changes proposed by DBP in the process for applying the New Cost Past Through Variation.
189. DBP's proposed inclusion of the new tariff variation trailing average cost of debt variation has been covered in the 'Rate of return on the Regulated Asset Base' section above in this Issues Paper.
190. As noted above, DBP has proposed the inclusion of a Revenue Cap Adjustment as a tariff variation mechanism. As a large proportion of DBP's customers pay charges in excess of the reference tariffs, DBP has proposed an approach using the concept of "regulated earned revenues". These are the revenues the benchmark efficient entity operating the DBNGP would earn with the same capacity and throughput as in actual operations, but on the assumption that all customers are paying the reference tariff.
191. DBP provides more detail, including a number of steps that would need to be followed to allow for this kind of revenue cap to work, in its Supporting Submission 14, 'Tariff model and tariff calculation'

Issue 9 Reference Tariffs

Submissions are invited from interested parties on the following:

- DBP's methodology and calculation of the T1, P1 and B1 Service Reference Tariffs;
- The proposed amendments to the current tariff variation mechanisms;
- The inclusion of the two new tariff variation mechanisms, being the trailing average cost of debt variation and the Revenue Cap Adjustment.

Pipeline and Reference Services

192. A "pipeline service" is defined under section 2 of the NGL(WA) as a service that is provided by means of a pipeline. These services include haulage services, interconnection services, or ancillary services. Under rule 48 of the NGR, a full access arrangement proposal must describe the pipeline services that the service provider proposes to offer by means of a pipeline, and specify the reference services.

Rule 101 of the NGR defines a reference service as a pipeline service that is likely to be sought by a significant proportion of the market.

193. The proposed access arrangement defines pipeline services as either reference services or non-reference services.⁸⁶ Non-reference services also include pipeline services provided by the operator under access contracts entered into prior to the commencement of the current access arrangement period, which are not for a reference service.
194. Consistent with the current access arrangement, reference services for the forthcoming access arrangement period are Full Haul T1 Service (T1 Service), Part Haul T1 Service (P1 Service) and Back Haul T1 Service (B1 Service).
195. Again, consistent with the current access arrangement, non-reference services for the forthcoming access arrangement period comprise a spot capacity service, park and loan service, seasonal service, peaking service, metering information service, pressure and temperature control service, odourisation service, co-mingling service, pipeline impact agreement service and interconnection service.
196. DBP has proposed a number of changes to the definitions of both Full Haul Service and Part Haul Service in the Definitions section of the proposed revised access arrangement.⁸⁷ As a result of these definition changes, there are some consequential changes to the reference services offered to customers in the Pipeline Services section of the proposed revised access arrangement.
197. Some of the changes relate to the removal of terminology relating to the receipt and inlet points being upstream of main line valve 31 and outlet points being downstream of compressor station 9 on the DBNGP.
198. DBP proposes to use a definition for part haul services that was used in access arrangements prior to the current access arrangement. DBP submits that the previous definition should be reinstated for part haul services as there is no evidence that there is significant demand in the market for the P1 Service with the current access arrangement definition and that there is demand in the market for a P1 Service that has the previous definition.

Issue 10 Pipeline services

Submissions are invited from interested parties on the following:

- The changes in definitions for the Full Haul and Part Haul services and resultant changes to the reference services (T1, P1 and B1) offered by DBP as part of the proposed access arrangement.

⁸⁶ DBNGP (WA) Transmission Pty Limited, Proposed Revisions DBNGP Access Arrangement, *Access Arrangement Document, 31 December 2014, Section 3 – Pipeline Services*.

⁸⁷ DBNGP (WA) Transmission Pty Limited, Proposed Revisions DBNGP Access Arrangement, *Access Arrangement Document, 31 December 2014, Section 15 - Definitions*.

Terms and Conditions for Reference Services

199. The NGR requires an access arrangement proposal to detail, in addition to the reference tariff, the terms and conditions for each reference service.⁸⁸
200. DBP has provided clean versions of the proposed T1, P1 and B1 service terms and conditions as attachments 2, 3 and 4 to the proposed access arrangement document. Marked up versions of the proposed T1, P1 and B1 service terms and conditions, showing the changes between the current access arrangement and DBP's proposed access arrangement have been provided as Appendix A, B and C respectively, to Proposed Terms and Conditions - Supporting Submission 4.
201. In addition to the proposed change to the definition of the P1 reference service as mentioned in paragraph 198, DBP has proposed making a number of drafting changes to the terms and conditions for each reference service in the current access arrangement.⁸⁹
202. Table 10 contains a short summary of the substantive changes, as contained in section 2 of the Proposed Terms and Conditions – Supporting Submission 4, that apply to each of the T1, P1 and B1 services. DBP's rationale for the changes can be found in pages 3 to 13 of the submission.⁹⁰

Table 10 Summary of Proposed Substantive Changes to Terms and Conditions

Topic	Clauses Affected	Main Change
Definition of Carbon Cost	Definitions	Insert additional words.
Definition of Major Works	Definitions 17.2(d) 18(e) 18(g)	Include Planned Maintenance in definition of Major Works. Delete clause 17.2(d). Delete reference to Planned Maintenance. Delete reference to Planned Maintenance.
Definition of Part Haul	Definitions	Amendment of Part Haul definition.
Term – Options to extend term	4.3 - 4.7	Deletion of options to renew. Consequential Change: Delete definition of Original Capacity
Refusal to receive gas	5.3(e)	Delete “subject to determination by Operator as a Reasonable & Prudent Person...”
Failure to receive where MAOP is exceeded	5.5	Delete cross reference to clause 5.3(d) (exceeding MAOP) as a basis for claiming that a refusal to deliver is a curtailment in certain circumstances.
Refusal to Deliver Gas	5.7(d)	Delete “to the extent that the Operator assesses as a Reasonable and Prudent Person that a reduction in Gas Transmission Capacity is required and decides to refuse to Receive Gas ...”
Multi-shipper Agreements	6.3(e)	Delete and insert words.
Out of Spec Gas	7.8	Insert the words “flare or burn” after “vent” in clauses 7.8(b)(i) and (ii).

⁸⁸ National Gas Rules 48 (Version 25).

⁸⁹ DBNGP (WA) Transmission Pty Limited, *Proposed Terms and Conditions – Supporting Submission 4*, 31 December 2014, p. 2.

⁹⁰ DBNGP (WA) Transmission Pty Limited, *Proposed Terms and Conditions – Supporting Submission 4*, 31 December 2014, pp. 3-13.

Topic	Clauses Affected	Main Change
Imbalance Limit	9.5(c)-(d)	Delete clauses 9.5(c) and 9.5(d).
Obligation to pay Excess Imbalance Charge	9.6(e)	Deletion of words.
Options for restoring the shippers' imbalance to zero	9.9	Insertion of new clauses.
Peaking limits	10.1	Drafting change to clarify the definition.
Rights and obligations of parties when peaking limits are exceeded	10.3(a)	Amendment of clause.
Issuing of notices when peaking limits are exceeded	10.3(b) 10.3(c)	Delete.
Outer Hourly Peaking Limit	10.5	Delete clause 10.5.
Overrun	11	Removal of references.
Operator's rights in respect of Overrun Gas	11.2	Delete the words "but only to the extent...obligations to Shippers"
Curtailement	17.4	Insert words.
Tax Changes	20.5	Amendment of clause to include words.
Tax Changes	20.7	Consequential Change: Delete clause 20.7.
Tax Changes	Definitions	Consequential Change.
Tax Changes	Definitions	Insert words.
Tax Changes	Definitions	Consequential Change: Delete definition of Tax Change Notice.
Relinquishment rights	26	Deleted.
Non-discrimination	45	Deletion of clause.

Source: DBP (WA) Transmission Pty Limited, *Proposed Terms and Conditions – Supporting Submission 4*, pp. 3-13.

203. DBP has also proposed minor changes or drafting changes to the terms and conditions for the T1, P1 and B1 services, which can be found in pages 14 to 16 of the submission. Additional changes specific to the P1 service can be found on page 17 of the submission.⁹¹

Issue 11 Terms and Conditions

Submissions are invited from interested parties on the following:

- DBP's proposed changes to the Terms and Conditions for the reference services.
- Consistency of DBP's proposed terms and conditions with the NGR.

⁹¹ DBNGP (WA) Transmission Pty Limited, *Proposed Terms and Conditions – Supporting Submission 4*, 31 December 2014, pp. 14-17.

Other Access Arrangement Provisions

Speculative Capital Investment

204. Rule 84 of the NGR sets out the criteria for the inclusion of a speculative capital expenditure account in an access arrangement. 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).
205. Rule 84(2) of the NGR allows for the balance of the speculative capital expenditure account to increase annually at a rate to be determined at the regulator's discretion, which may, but need not, be the rate of return implicit in a reference tariff.
206. If non-conforming capital expenditure that is included in the speculative capital expenditure account subsequently becomes compliant capital expenditure, that relevant portion including the return referable to that portion, may be rolled into the capital base at the commencement of the next access arrangement period.
207. DBP's current access arrangement does not specifically nominate a rate at which the speculative capital investment account is to increase annually. DBP has proposed that the speculative capital expenditure account will increase annually at the speculative investment rate. DBP has proposed that the speculative investment rate is the return on equity that is used to estimate the allowed rate of return (nominal post tax).
208. DBP has stated that the rate of return applied to the speculative capital expenditure account should be higher than the allowable rate of return for conforming capital expenditure, as speculative capital expenditure carries a higher risk profile than expenditure that is included in regulated revenue. It considers this to be the case because there is no certainty that a non-conforming investment will result in additional revenue to the service provider.⁹²
209. Consequently, DBP considers that the speculative investment rate should be higher than the allowable rate of return because there is a need to incentivise service providers to undertake prudent non-conforming investments and to compensate the service provider for undertaking the risk that non-conforming investment may never result in additional revenue.

Queuing Requirements

210. Rule 103 of the NGR requires that queuing requirements must establish a process or mechanism (or both) for establishing an order of priority between prospective users of spare or developable capacity, and for ensuring that prospective users are treated on a fair and equal basis. Rule 103 of the NGR also mandates that the queuing requirements must be sufficiently detailed to enable a prospective user to understand the basis on which the order of priority is determined and, if a queue has been established, to determine the prospective user's position in the queue.

⁹² DBNGP (WA) Transmission Pty Limited, *Non-Tariff Related Issues – Supporting Submission 5*, 31 December 2014, p. 6.

211. Rule 103(4) of the NGR gives the option of providing services on either a first-come-first-served basis or on the basis of a publically notified auction in which all prospective users of the relevant spare capacity or developable capacity are able to participate.
212. DBP has proposed continuing with the current access arrangement process of a single queue, whereby complying access requests submitted by prospective shippers of both spare and developable capacity are dealt with on a “first come, first served” basis.
213. DBP has proposed one revision to its existing queuing requirements, which is to require additional information from prospective shippers about their ability to meet financial obligations made under the Access Contract.⁹³

Capacity Trading Requirements

214. Rule 105 of the NGR requires that “Capacity trading requirements must provide for transfer of capacity:
 - if the service provider is registered as a participant in a particular gas market - in accordance with rules or procedures governing the relevant gas market.or
 - if the service provider is not so registered, or the relevant rules or procedures do not deal with capacity trading - in accordance with this rule.”
215. DBP has made amendments to its current access arrangement process for capacity trading in its proposed access arrangement. DBP has stated that the amendments are aimed at recognising that a secondary trading market may be established in the access arrangement period, and at adding clarity to costs that the shipper must reimburse the operator for in processing consent requests.

Extensions and Expansions

216. The applicable legislation for extensions and expansions of the DBNGP are section 18 of the NGL which relates to certain extensions to, or expansions of the capacity of, pipelines to be taken to be part of a covered pipeline and rule 104 of the NGR which sets out the extension and expansion requirements.
217. Section 18 of the NGL states that extensions or expansions of a covered pipeline must be taken to be part of the covered pipeline if this is required under the applicable access arrangement. Rule 48(1)(g) of the NGR requires a full access arrangement proposal to set out extension and expansion requirements. As set out in rule 104 of the NGR, extension and expansion requirements may state whether incremental services provided as a result of a particular extension to, or expansion of the capacity of, the pipeline will be covered by the access arrangement, or may allow for later resolution of that question and set out the process to be followed.

⁹³ DBNGP (WA) Transmission Pty Limited, Proposed Revisions DBNGP Access Arrangement, *Access Arrangement Document*, 31 December 2014, Section 5, p. 9-13 and DBNGP (WA) Transmission Pty Limited, *Non-Tariff Related Issues – Supporting Submission 5*, 31 December 2014, p. 2.

218. DBP has proposed a number of changes to the extension and expansions section of the current access arrangement.⁹⁴ In the case of extensions, enhancements and expansions which are to form part of the covered network, DBP proposes that coverage should become effective from the date it receives consent to operate the extension, enhancement or expansion under the Petroleum Pipelines Act. The current access arrangement does not specify a date.
219. In the case of expansions, if DBP does not wish an expansion of the pipeline to be covered, the current access arrangement requires it to demonstrate to the Regulator's satisfaction that not doing so is not inconsistent with the National Gas Objective. DBP proposes to change this so that, in such cases, it will notify the Regulator in writing that it wishes for the expansion not to be covered and then the Regulator has 30 days to advise DBP if it is not satisfied with the proposal and the reasons why it is not satisfied. If the Regulator fails to respond within 30 business days, the expansion is deemed not to be covered.
220. DBP states that the amendments will:
- bring clarity to when an extension or enhancement becomes part of the covered pipeline;
 - implement a timeline for the determination of whether an expansion is or isn't part of the covered pipeline;
 - provide further guideline on matters that should be addressed in a Coverage Notice and;
 - require detailed reasons supporting the determination of whether an expansion is or isn't part of the covered pipeline.

Fixed Principles

221. Provisions for fixed principles are set out in rule 99 of the NGR.
222. DBP has proposed to add a fixed principle in relation to the trailing average annual adjustment such that both the methodology and the actual allowed debt cost in a given year are to remain fixed. For example, if the debt rate formed for year *t* is five per cent, then it will remain at five per cent until that tranche of debt falls away from the trailing average, and the rate for period "*t*" cannot be changed in period "*t*+1" to some value other than five per cent.

Revision and Commencement Date

223. This section has been amended to provide for AA4 to commence on the later of:
- 1 January 2016;
 - The date stipulated in a Final Decision to approve the access arrangement (or 10 business days after the Final Decision is published if no date is stipulated; or
 - If the ERA refuses to approve the proposed access arrangement, the date stipulated in the ERA approved access arrangement.

⁹⁴ DBNGP (WA) Transmission Pty Limited, Proposed Revisions DBNGP Access Arrangement, *Access Arrangement Document*, 31 December 2014, Section 7, pp. 15-16 and DBNGP (WA) Transmission Pty Limited, *Non-Tariff Related Issues – Supporting Submission 5*, 31 December 2014, p. 3.

224. The review submission date has been amended from three years to four years after commencement of AA4.
225. The revision commencement date for the next access arrangement period (AA5) is the later of:
- Five years after commencement of AA4;
 - The date stipulated in a Final Decision to approve the access arrangement (or 10 business days after the Final Decision is published if no date is stipulated; or
 - If the ERA refuses to approve the proposed access arrangement, the date stipulated in the ERA approved access arrangement.

Issue 12 Other Access Arrangement Provisions

Submissions are invited from interested parties on the following:

- DBP's proposal to increase the speculative capital investment account by the return on equity that is used to estimate the allowed rate of return (nominal post tax);
- the additional requirements for prospective shippers to supply information about their ability to meet financial obligations made under the Access Contract when requesting access;
- the changes to the capacity trading requirements; and
- the changes to the extensions and expansions provisions.

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Appendix 1 Access Arrangement Review Process

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

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

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

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

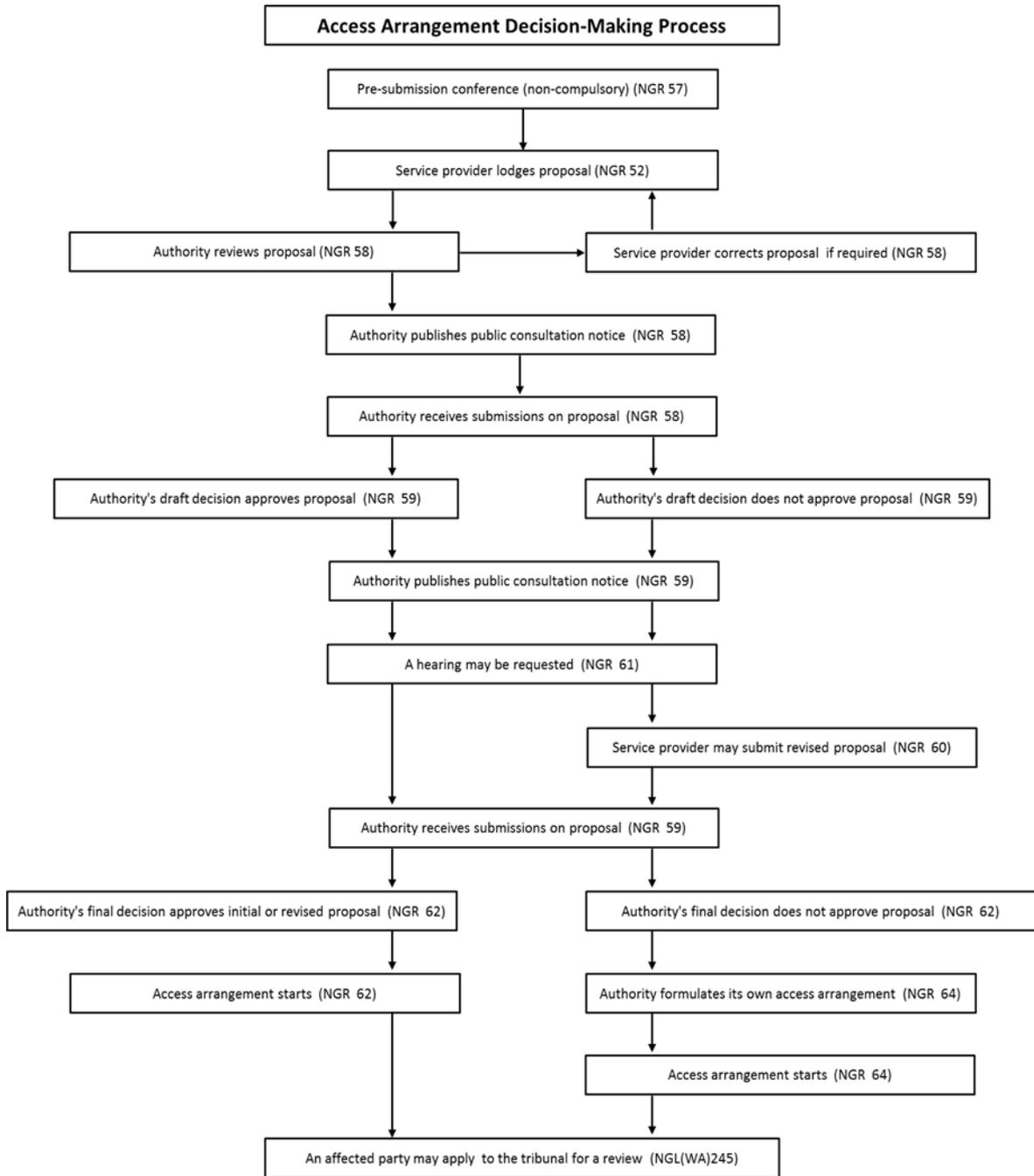
Under rule 60 of the NGR, the service provider may, within the period allowed by the draft decision (at least 15 business days), submit additions or other amendments to the access arrangement proposal to address matters raised in the draft decision. The service provider must provide amendments to the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

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

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

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

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



Appendix 2 Content of an Access Arrangement

DBP is required to submit a “full access arrangement” for the DBNGP. Under section 2 of the NGL(WA), a “full access arrangement” is an access arrangement that:

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

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

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

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

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

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