

# Proposed Revisions DBNGP Access Arrangement

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*2016 – 2020 Access Arrangement Period*

*Tariff model and tariff calculation*

*Supporting Submission: 14*



**PUBLIC VERSION**

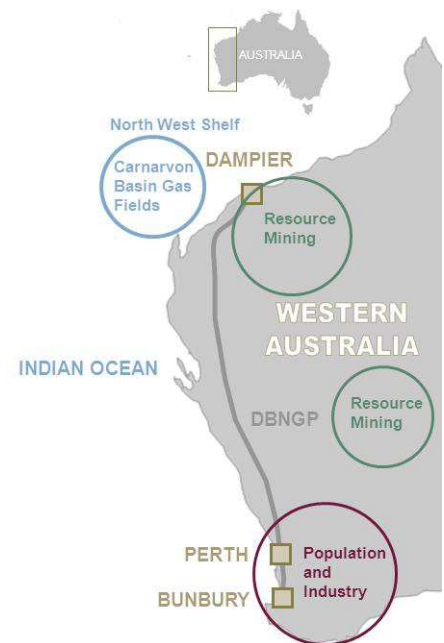
*Date Submitted: 31/12/2014*

## CONFIDENTIALITY

- 1.1 This submission is provided to the ERA to assist it in its assessment of the proposed revisions to the DBNGP Access Arrangement.
- 1.2 Some information contained in the submission is confidential and commercially sensitive. The reasons for DBP's claim of confidentiality are outlined in Appendix G: to this Submission.
- 1.3 A public version of this submission will be provided separately.
- 1.4 Accordingly, this version of the submission is provided to the ERA on the following conditions:
  - (a) it is to be used by the ERA solely for the purposes of assessing the proposed revisions to the DBNGP Access Arrangement;
  - (b) it is not to be disclosed to any person other than the following without DBP's prior written approval:
    - (i) those staff of the ERA who are involved in assisting the ERA in its assessment process; and
    - (ii) those of the ERA's consultants who are involved in assisting the ERA in its assessment process and who have appropriate confidentiality undertakings in place.

*DBP Transmission (DBP) is the owner and operator of the Dampier to Bunbury Natural Gas Pipeline (DBNGP), Western Australia's most important piece of energy infrastructure.*

*The DBNGP is WA's key gas transmission pipeline stretching almost 1600 kilometres and linking the gas fields located in the Carnarvon Basin off the Pilbara coast with population centres and industry in the south-west of the State*



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## 1. INTRODUCTION

- 1.1 On 31 December 2014, DBNGP (WA) Transmission Pty Ltd (**DBP**) filed the following documents with the Economic Regulation Authority (**ERA**):
  - (a) proposed revised Access Arrangement (**Proposed Revised AA**); and
  - (b) proposed revised Access Arrangement Information (**Proposed Revised AAI**).
- 1.2 These documents are proposed to cover the access arrangement period commencing on 1 January 2016 and ending on 31 December 2020 (**AA Period**)
- 1.3 These documents contain the information that the National Gas Access (WA) Act 2009 (**NGA**) (which includes the Western Australian National Gas Access Law text (**NGL**) and the National Gas Rules (**NGR**)) requires to be included in order to enable them to be approved by the ERA.
- 1.4 In addition to the Proposed Revised AA and Proposed Revised AAI, a number of additional supporting submissions were filed to assist the ERA in assessing the Proposed Revised AA. These included the following:
  - (a) Submission 1: Proposal
  - (b) Submission 2: Cost Controls and Governance
  - (c) Submission 3: Proposed Reference Service
  - (d) Submission 4: Terms and Conditions
  - (e) Submission 5: Non-tariff related issues
  - (f) Submission 6: Cost Verification and Allocation
  - (g) Submission 7: Actual Capital Expenditure (Expansion)
  - (h) Submission 8 Actual Capital Expenditure (Stay-in-Business) (Part 1 & 2)
  - (i) Submission 9: Forecast Capital Expenditure
  - (j) Submission 10: Forecast Operating Expenditure
  - (k) Submission 11: Capacity and throughput forecast
  - (l) Submission 12: Rate of Return
  - (m) Submission 13: Total Revenue
  - (n) Submission 14: Tariff model and tariff calculation
- 1.5 This supporting submission outlines DBP's approach on the following matters relating to the establishment of each of the reference tariffs included in the Proposed Revised AA:
  - (a) The basis for the allocation of total revenue and costs:
    - (i) Between reference services and other pipeline services;
    - (ii) Between each type of reference service; and
    - (iii) Between a user or class of users and other users or classes of users;
  - (b) Each component of the reference tariff variation mechanism;
    - (a) Determination of pipeline distances used in the reference tariff model;
    - (b) Estimated cost of corporate income tax and independent review of approach an inputs used; and
  - (c) DBP's development of the reference tariff model.

## 2. ALLOCATION OF COSTS AND TOTAL REVENUE

- 2.1 In accordance with NGR 93, Total Revenue is to be allocated between reference services and other services in the ratio in which costs are allocated between reference services and other services. Costs are to be allocated between reference services and other services as follows:
- (a) Costs directly attributable to reference services are to be allocated to those services
  - (b) Costs directly attributable to pipeline services that are not reference services are to be allocated to those services; and
  - (c) Other costs are to be allocated between reference services and other services on a basis determined or approved by the ERA (which basis must be consistent with the RPPs).
- 2.2 NGR 95 requires that a reference tariff must be designed to generate from the provision of each reference service the portion of Total Revenue referable to that reference service
- 2.3 NGR 93(3) permits the allocation of costs of rebateable services to reference services (in whole or in part) if certain conditions are met.
- 2.4 DBP's Proposed Revised AA does not include any rebateable services. Accordingly, the only relevant matters to be dealt with in this section of the submission in order to demonstrate the extent to which the Proposed Revised AA is compliant with NGR 93 and 95 are those outlined in paragraph 2.1.
- 2.5 When applied to the contracted Full Haul equivalent capacity and throughput forecasts for the AA Period, the proposed revised Reference Tariffs yield a forecast of revenue for each reference service which has a present value equal to the present value of the that portion of the total revenue referable to each Reference Service during that period.
- 2.6 DBP has proposed that:
- (a) all costs are to be allocated between reference services and non reference services on the basis that all costs are directly attributable to reference services;
  - (b) there are no costs directly attributable to non reference services;
  - (c) there are no other costs requiring allocation between reference and non reference services; and
  - (d) all the costs that are allocated to reference services (and accordingly the portion of the total revenue referable to providing reference services) are to be allocated amongst users of the reference services on an equal basis and based on the following assumptions:
    - (i) consistent with the Current AA, the demand for part haul and back haul reference services is equal to the demand for all shippers who are forecast to have contracted for all types of firm part haul and back haul services during the AA Period;
    - (ii) consistent with the Current AA, the demand for the T1 firm full haul reference service is equal to the demand for all shippers who are forecast to have contracted for all types of firm full haul pipeline services during the AA Period. Accordingly, the users of the T1 reference service will have the same amount of costs allocated to them as are to be allocated to users of all other types of firm full haul pipeline services; and
    - (iii) the demand for part haul and back haul reference services is converted to a full haul equivalent demand so that users of part haul and back haul services will have the same costs allocated to them (on a dollar per kilometre basis) as users of the T1 firm full haul reference service.

### 3. REFERENCE TARIFF VARIATION MECHANISM

- 3.1 NGR 91(1) provides that a full access arrangement must include a mechanism (a reference tariff variation mechanism) for variation of a reference tariff over the course of an access arrangement period. Furthermore, NGR 97 outlines:
- (a) examples of reference tariff variation mechanisms and the formula for variation of the reference tariff in the mechanism; and
  - (b) what the ERA must have regard to when assessing the appropriateness of a mechanism.
- 3.2 Relevantly, NGR 97(1)(d) allows for a reference tariff variation mechanism to vary by the combined operation of two or more of the examples listed in NGR 97(1).
- 3.3 DBP's tariff variation mechanism is contained in Section 11 of the Proposed Revised AA. Consistent with the Current AA (ie for the 2011 to 2015 period) and NGR 97(1)(d), 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).
- 3.4 The types of mechanisms in the Current AA that DBP proposes to continue as part of the reference tariff variation mechanism in the Proposed Revised AA are:
- (a) CPI Formula Variation;
  - (b) Tax Change Variation;
  - (c) New Cost Pass Through Variation;
- 3.5 The CPI Formula variation is a mechanism that is consistent with NGR 97(1)(b).
- 3.6 The Tax Change Variation and the New Cost Pass Through Variation are mechanisms that are consistent with NGR 97(1)(c).
- 3.7 In addition to the examples listed in paragraph 3.4, DBP's proposed reference tariff variation mechanism also provides for the variation of each reference tariff during the access arrangement period by way of the following:
- (a) Revenue Cap Adjustment - a means by which the reference tariff is varied in a way that established revenue cap price control for the AA Period.
  - (b) Trailing Average Cost of Debt Annual Update Variation - a means by which the tariff is varied on an annual basis to reflect the fact that, in accordance with NGR 87(9)(b), the rate of return on debt has been estimated using a methodology which results in the return on debt being, or potentially being, different for different regulatory years in the AA Period.
- 3.8 The Revenue cap price control is consistent with NGR 97(1)(b) and 97(2)(c).
- 3.9 The Trailing average cost of debt variation is consistent with NGR 97(1)(b).
- 3.10 The remainder of this section reviews the amendments to the existing tariff variation mechanism and reasons for including the revenue cap price control.

#### CPI formula variation

- 3.11 DBP proposes 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.
- 3.12 Proposed drafting is contained in Section 11 of the Proposed Revised AA annexed to Submission 1.

### Tax change variation

- 3.13 DBP's proposed amendments to the existing Tax Change Variation mechanism have been made to reflect the fact that it is no longer proposing a separate variation mechanism to cover Carbon Costs. This is because of the uncertainty surrounding the legislative framework that is to apply to regulate greenhouse gas emissions (called the Emissions Reduction Fund), in particular:
- (a) The formulae to determine DBP's liability under the Emissions Reduction Fund has not been settled and accordingly, DBP has not proposed any forecast costs in its forecast of operating expenditure
  - (b) The framework to determine DBP's liability is sufficiently unclear to warrant the continued inclusion in the tariff variation mechanism specifically designed to deal with carbon cost liability;
- 3.14 Instead, the tax change variation mechanism has been designed more broadly to cover potential liability of DBP under the Emissions Reduction Fund or any replacement or complimentary regime. Importantly, it:
- (a) removes the term 'Included Taxes and Carbon Costs' which may act to limit the tax change clause to taxes and carbon costs that have already been included in conforming forecast operating expenditure.
  - (b) allows any new Tax or Carbon Cost not yet known to DBP to be treated as a cost in providing the reference service allowing it the opportunity to recover at least its efficient costs.
- 3.15 Proposed drafting is contained in Section 11 of the DBNGP Access Arrangement provided as Submission 1.

### New cost pass through variation

- 3.16 DBP does not propose to change the existing drafting of the New Cost Pass Through Variation approved by the ERA for the Current AA.

### Revenue cap price control

- 3.17 DBP's proposed formula establishing the revenue cap approach is provided in the Access Arrangement at Section 11.
- 3.18 As the ERA's task is to determine the Total Revenue for an efficient service provider, there is likely to be a difference between the Total Revenue and actual revenue earned by every service provider. However, in the case of DBP, the difference is likely to be more substantial because of the fact that more than 85% of DBP's revenue is earned from contracts that have negotiated tariffs that are not tied to the reference tariffs during the AA Period. Accordingly, it is difficult to justify the inclusion of a traditional Revenue Cap variation mechanism.
- 3.19 By the same token, a revenue cap cannot apply only to customers paying the reference tariff because it would lead to cost allocation implications between negotiated shippers and reference tariff shippers.
- 3.20 DBP therefore has proposed an approach that, rather than assessing actual revenues from all shippers or from a small set of shippers, will use the concept of "regulated earned revenues" (RER). These are the revenues the benchmark efficient entity operating the DBNGP would earn (rather than DBP itself) with the same capacity and throughput as in actual operations, but on the assumption that all customers are paying the regulated tariff. To allow for this kind of revenue cap to be implemented, the following steps must be followed:
- (a) Total Revenue is set for each year of the AA Period by the ERA in accordance with NGR 76. This is referred to the Initial Total Revenue (**ITR**) in the formula in the Proposed Revised AA.

- (b) In December of each year the tariff model is updated for (1) the RER during that year and the extent to which it varies compared to the ITR and (2) any change in forecast contracted capacity and throughput for the remaining period. This creates a new allowed revenue (AR) for the next year, as well as new reference tariff to apply from 1 January of each year.

3.21 It is important to note that while a new allowable revenue is determined each year, the costs that are used to determine each of the building blocks required to calculate Total Revenue do not change during the period - it is only the allocation of the initial Total Revenue across the pipeline services of the benchmark efficient entity that may change from year to year.

3.22 The mathematical formula which delivers the revenue cap is as follows:

$$AR_t = ITR_t + \sum_{i=1}^{t-1} [(ITR_{t-1} - RER_{t-1})(1 + WACC)^i]$$

3.23 Note that the WACC is included because there is a time value of money, and it reflects the fact that one needs to wait before receiving a shortfall from the previous year, or will benefit from holding any excess. The sum includes all previous periods, raised to progressively higher powers to prevent double counting of the same impact of a deviation in capacity from year to year from that forecasted at the outset of the regulatory period. Including all previous periods removes this multiple-counting and delivers NPV-neutral outcome.

3.24 To obtain the relevant capacity and throughput tariffs (CT and TT respectively) for the given year, one multiplies  $AR_t$  by the split between capacity and throughput and divides each by the expectation formed in December of a given year of the capacity and throughput for the following year. That is, if the proportion of costs recovered by capacity charges is indexed by  $\theta$ .

$$CT_t = \frac{\theta AR_t}{E(capacity_t)} \quad \text{and} \quad TT_t = \frac{(1-\theta)AR_t}{E(throughput_t)}$$

3.25 In deciding whether a tariff variation mechanism is appropriate, under NGR 97(3) the ERA must have regard to:

- (a) The need for efficient tariffs structures; and
- (b) The possible effects of the reference tariff variation mechanism on administrative costs of the ERA, the service provider, and users or potential users; and
- (c) The regulatory arrangements (if any) applicable to the relevant reference services before the commencement of the proposed reference tariff variation mechanism; and
- (d) The desirability of consistency between regulatory arrangements for similar services (both within and beyond the relevant jurisdiction); and
- (e) Any other relevant factor.

3.26 DBP submits that the proposed revenue cap form of price control should be acceptable to the ERA on the following basis:

- (a) DBP's proposed revenue cap approach is more likely to achieve the Revenue and Pricing Principles in Section 24 of the National Gas Law. Specifically that DBP should be provided with a reasonable opportunity to recover at least the efficient costs the service provider incurs in providing reference services and complying with a regulatory obligation or requirement. Under the current price cap approach if approved forecast contracted capacity and throughput prove to be overly optimistic DBP will not be afforded the opportunity to recover the efficient costs in providing the reference services.
- (b) The revenue cap tariff variation mechanism gives consumers comfort that if DBP's proposed forecast contracted capacity and throughput process to be overly pessimistic DBP will not attract more than the total revenue determined by the ERA i.e. if spare capacity is contracted for in the AA Period the reference tariff will be revised down accordingly.



- (c) The importance of volume forecasts is reduced under the proposed reference tariff mechanism however - DBP is still incentivised to propose forecasts that are reasonable and best in the circumstances for the following reasons:
    - (i) To reduce the volatility in the prevailing reference tariff;
    - (ii) Total Revenue is fixed over the regulatory period; and
    - (iii) To the extent costs are determined by volume (i.e. fuel gas) if demand is greater than expected the costs would exceed proposed forecast for operating expenditure reducing profits.
  - (d) Administrative costs are minimal. DBP will carry out the tariff variation mechanism for the ERA's review and approval consistent with the existing tariff variation mechanisms. The administrative costs of the ERA are not expected to be significantly different to the costs it has incurred in reviewing the tariff variation mechanism of the Current AA.
- 3.27 Proposed drafting changes are contained in Section 11 of the DBNGP Access Arrangement (provided as an attachment to Submission 1).

### Trailing average cost of debt variation

- 3.28 DBP's explanation of its approach to the trailing average cost of debt is contained in Submission 12.
- 3.29 DBP submits that this variation mechanism is consistent with the matters listed in NGR 97(3) for the following reasons:
- (a) For the reasons set out in submission 12, it leads to an efficient return on debt during each year of the AA Period
  - (b) While administrative costs for DBP will be more than what they have been under the Current AA (which of course does not have this mechanism as part of its tariff variation mechanism), DBP has not proposed an increase in its forecast operating expenditure (relative to the expenditure incurred during the Current AA Period) as a result of these additional costs. Even if there were additional costs included in the forecast, it would not result in an increase in the reference tariffs.
  - (c) While the tariff variation arrangements in the Current AA don't include a mechanism for annual updates to the return on debt, it should lead to a smoother reference tariff from one access arrangement period to the next (to the extent that the return on debt changes significantly from the commencement of one access arrangement period to the next).
  - (d) While there will not be consistency in the tariff variation mechanism from one access arrangement period to the next, this mechanism is as a result of the change to the rate of return provisions of the NGR that was introduced mid way through the Current AA Period.

## 4. PIPELINE DISTANCES

- 4.1 Pipeline distances are based on those provided in the DBNGP Pipeline Description document provided as Attachment 1 of the Proposed Revised AA.
- 4.2 All T1 Service distances are assumed to be 1399km.
- 4.3 All P1 and B1 shipper distances have been calculated on a weighted average basis of the inlet to outlet distance to account for shippers who have gas supply agreements at multiple inlet points on the DBNGP. DBP's workings are provided in Appendix A: (which has been provided on a confidential basis).

## 5. ESTIMATED COST OF CORPORATE INCOME TAX

5.1 NGR 76(c) requires the estimated cost of corporate income tax to be included as a building block of total revenue.

5.2 NGR 87(A) requires that the estimated cost of corporate income tax of a service provider for each regulatory year of an access arrangement period in accordance with the following formula:

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

where

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

$r_t$  is the expected statutory income tax rate for that regulatory year as determined by the AER; and  $\gamma$  is the value of imputation credits.

5.3 DBP has used 25% (0.25) for the value of imputation credits or gamma the basis for which has is contained in supporting Submission 12.

### Approach

5.4 DBP's approach in estimating the forecast cost of corporate income tax has been to start with its actual tax asset base as reported in corporate income tax return. From the actual tax asset base DBP has then made a number of adjustment to arrive at the Tax Asset Base (TAB) for regulatory purposes that would be applicable to a benchmark efficient entity. Key adjustments made have included:

- (a) The exclusion of capital contributions (revenue and expenditure);
- (b) The value of the BEP lease asset that aligns with regulatory treatment; and
- (c) The depreciation of GEA and turbine overhaul expenditure which is treated as operating expenditure for regulatory purposes.

5.5 DBP's TAB and calculation of the tax depreciation used as an input into the reference tariff model is provided as Appendix B: used to produce the estimate.

5.6 The assumptions used to determine the estimated costs of corporate tax including the written down value of the tax asset base and the opening tax loss position are provided below.

### Assumptions

5.7 DBP's estimate of corporate tax for the DBNGP for the AA Period uses the following assumptions:

- (a) Allowed revenue is taxable (and leads to an iterative calculation);
- (b) Operating expenditure is immediately and fully deductible (except for GEAs and overhaul expenditure which has been added to the Tax Asset Base (TAB) and depreciated consistent with regulatory treatment for the Regulated Asset Base (RAB));
- (c) Debt is 60% of RAB which gives rise to tax deductible interest at the Weighted Average Cost of Capital (WACC);
- (d) Excludes capital contributions revenue and expenditure;
- (e) An opening TAB is established at 1 January 2016. The assets, values, rates and method of depreciation is rolled forward into the AA Period without change (including a notional BEP Lease valuation assumed for regulatory purposes);

- (f) Assets added to the TAB during the period are added at their nominal value in year of expenditure;
  - (g) Assets added to the TAB during the period are depreciated using the straight line method;
  - (h) For assets added to the TAB during the period, depreciation commences at the start of the year following the addition. Regulatory asset categories are not detailed enough to determine a tax effective life with accuracy, therefore it is assumed additions are those subject to the statutory cap of effective life resulting in depreciation at 5% straight line; and
  - (i) No tax deductions have been claimed for the cost of raising equity.
- 5.8 In calculating the opening Written Down Value (WDV) of the TAB as at 1 January 2016 DBP has used the following assumptions:
- (a) The TAB has been established from actual tax data used in income tax returns, with some adjustment (i.e. for capital contributions);
  - (b) The TAB has allowed IP deductions consistent with tax return treatment (1998 – 2002 inclusive);
  - (c) DBP has followed the tax return treatment for an asset sale & leaseback asset arrangement that was in place from early 1998 to October 2004;
  - (d) The TAB excludes:
    - (i) Assets created from capital contributions;
    - (ii) Land, and
    - (iii) Capital Works in Progress (CWIP).
  - (e) The TAB has been adjusted to include a BEP Lease asset valued as \$19.44m;
  - (f) Assets under construction as at 30 June 2014 and asset additions for regulatory purposes during the 6 months to 31 December 2014 commenced being depreciated for regulatory purposes during the 2015 calendar year. Additions added during the year ended 31 December 2015 (and onwards) are depreciated in the year following addition;
  - (g) Other minor adjustments have been made to ensure that tax return treatment aligns with regulatory expenditures (i.e. capitalised interest, fuel gas and pigging).
- 5.9 In calculating an opening tax loss position as at 1 January 2016 DBP has used the following assumptions:
- (a) If a tax loss arises in a given year that loss has been carried forward. It has also been assumed that the loss tests would continue to be passed;
  - (b) A flat tax rate of 30% for the period 2000 – 2015 (noting the tax rate at the start of this period was 36%, moved to 33% then to 30%) has been assumed as tax payable in periods prior to the AA Period does not impact the current submission;
  - (c) The DBNGP was constructed by the WA State Government and commissioned in 1984. IT was privatised and sold to Epic Energy in early 1998. The DBNGP 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. The opening TAB at 1 January 2000 was based on the actual tax fixed asset register that existed as at 1 January 2000;
  - (d) Total Allowable Revenue for prior years has been treated as assessable income in that year (excluding the effect from capital contributions revenue);
  - (e) Operating expenditure is immediately and fully deductible in the year incurred (except for GEAs and overhaul expenditure from 2005 onwards which has been adjusted to reflect related expenditure being capitalised for regulatory purposes);
  - (f) Interest tax is deductible in the year incurred, calculated at 60% of debt at WACC;

- (g) Tax depreciation is based on actual tax data used in lodged tax returns and includes old compressor sale & leaseback adjustments, excludes depreciation of assets built from capital contributions, accounts for disposals and includes the depreciation of the BEP Lease costs as per regulatory treatment;
- (h) Tax depreciation is calculated using straight line deprecation and effective lives are consistent with tax life rulings and the statutory effective life cap from 2000/2001 which has been calculated from the time assets were installed ready for use;
- (i) No tax deductions are claimed for the cost of raising equity.

### Independent review

- 5.10 DBP engaged KPMG to review the basis and assumptions used in its estimate for corporate tax.
- 5.11 The key question asked of KPMG is whether the DBP has estimated corporate tax as required by NGR 87A in a way that meets the requirement of forecast and estimates under NGR 74.
- 5.12 In answering the question above DBP has asked KPMG two additional sub questions:
  - (a) Are the various assumption employed in the calculation of the opening Written Down Value (WDV) of the Tax Asset Base (TAB) consistent with:
    - (i) The National Gas Law & Rules
    - (ii) Australian Income Tax law
  - (b) Are the various assumption employed in the calculation of the opening tax loss position (if any) is consistent with:
    - (i) The National Gas Law & Rules
    - (ii) Australian Income Tax law
- 5.13 In providing its opinion KPMG were also asked to consider:
  - (a) ERA regulatory tax assumptions applied in the post-tax regulatory decisions; and
  - (b) Assumptions applied in post-tax regulatory decisions applied in Australia.
- 5.14 KPMG's review found that based on the assumptions and the methodology adopted by DBP:
  - (a) the opening written down tax value of the assets used for reference services calculated as at 1 January 2016 is estimated as \$1,238,432,632; and
  - (b) the opening written down value of tax losses which could be applied to the calculation of the regulatory tax allowance as at 1 January 2016 is estimated to be \$nil.
- 5.15 DBP notes that KPMG also concludes that following components required in the estimation of the cost of corporate income tax result in an estimate that has been arrived at on a reasonable basis and represents the best estimate in the circumstances:
  - (a) Tax calculation methodology applied;
  - (b) Calculation of the opening tax asset base as at 1 January 2016; and
  - (c) The calculation of the value of tax losses applicable as at 1 January 2016.
- 5.16 KPMG's report is provided as Appendix C: .

## 6. REFERENCE TARIFF MODEL

- 6.1 NGR 87(4)(b) requires that the allowed rate of return is determined on a nominal vanilla basis that is consistent with the estimate of the value of imputations credits referred to in NGR 87(A).
- 6.2 DBP interprets this to mean that the Allowable Rate of Return must be determined on a post-tax nominal basis requiring a change in the way the reference tariff model is developed.
- 6.3 While DBP's reference tariff model has previously been developed on a pre-tax real basis to conform to the new NGR 87 DBP has built a new nominal post tax reference tariff model from scratch.
- 6.4 DBP has also used the Australian Energy Regulatory (AER) Post Tax Revenue Model (PTRM) model as a guide in developing its own complying model.
- 6.5 DBP's believes this is consistent with the ERA's *Rate of Return Guidelines* where the ERA states that:

*The Authority will apply an explicit nominal post tax modelling approach for it future decisions.*

*The Authority considers that the Australian Energy Regulator's Post Tax Revenue Model (PTRM), or similar model, will provide a basis for future access arrangement determinations. The PTRM will enable the Authority to utilise a nominal vanilla rate of return.*

*The PTRM deals with tax explicitly through operating cash flows, this is therefore consistent with the use of the nominal vanilla rate of return.<sup>1</sup>*

- 6.6 DBP engaged KPMG to review the nominal post tax reference tariff model. DBP's asked KPMG to perform the following checks:
- (a) Test the capital maintenance principle (or NPV test) and any other reconciliations including the roll forward of the asset base, depreciation calculation and inflation, and report findings;
  - (b) Test the model for embedded data and inconsistent logic through the use of model review tools, mapping software and investigate issues identified; and
  - (c) Perform a detailed cell by cell analysis of the final model, examining each unique formula in the model.
- 6.7 DBP notes that the results of the Capital Maintenance Principle test demonstrated, when discounted by the weighted average cost of capital, that there was no difference between:
- (a) the Net Present Value (NPV) of the returns on and of capital for the period 1 January 2016 to 31 December 2020; and
  - (b) the NPV of the investment in assets over the same period,
- 6.8 Having performed a cell mapping process to identify the nature of the contents of the cells in the reference tariff model, no embedded values or inconsistent logic was identified could not be adequately.
- 6.9 KPMG's individual cell-by-cell check of the reference tariff model examined each unique cell formula, and testing resulted in no issues, queries or errors remaining in the final version of the model.
- 6.10 KPMG's report is provided as Appendix F: .
- 6.11 DBP's confidential version reference tariff model is contained in Appendix D: and public version of the reference tariff model is contained in Appendix E: .

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<sup>1</sup> Page 10 of the ERA's *Rate of Return Guidelines* (16 December 2013)



## APPENDIX A: PIPELINE DISTANCES [CONFIDENTIAL]



## APPENDIX B: ESTIMATED COST OF CORPORATE INCOME TAX - WORKSHEET





## APPENDIX C: KPMG REIVEW OF TAX APPROACH



## APPENDIX D: REFERENCE TARRIF MODEL [CONFIDENTIAL]



## APPENDIX E: REFERENCE TARIFF MODEL [PUBLIC]

## APPENDIX F: KPMG REFERENCE TARIFF MODEL REVIEW



## APPENDIX G: CONFIDENTIALITY TABLE