

Access Arrangement Information for the Dampier to Bunbury Natural Gas Pipeline

22 December 2011

Economic Regulation Authority

WESTERN AUSTRALIA

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Contents

Access Arrangement Information	1
Introduction (section 1)	1
Basis on which financial information is provided (section 2)	1
Capital expenditure over the 2005 to 2010 access arrangement period (section 3)	1
Operating expenditure over the 2005 to 2010 access arrangement period (section 4)	2
Pipeline utilisation over the 2005 to 2010 access arrangement period (section 5)	2
Capital Base for the 2005 to 2010 access arrangement period (section 6)	4
Projected Capital Base for the 2011 to 2015 access arrangement period (section 7)	8
Forecast pipeline utilisation over the 2011 to 2015 access arrangement period (section 8)	13
Forecast operating expenditure (section 9)	14
Key Performance Indicators (section 10)	15
Rate of return (section 11)	15
Taxation (section 12)	16
Incentive Mechanism (section 13)	17
Tariff setting approach (section 14)	17
Reference tariff variation mechanism rationale (section 15)	19
Un-used section (section 16)	21
Total Revenue (section 17)	21
Interpretation (section 18)	22

List of Tables

Table 1	Actual (2005 to 2010) and forecast (2011 to 2015) December values of the Consumer Price Index (All groups, Weighted Average of Eight Capital Cities) and implied inflation rates.	1
Table 2	Conforming capital expenditure for the 2005 to 2010 access arrangement period (real \$ million at 31 December 2010)	2
Table 3	Operating expenditure for the 2005 to 2010 access arrangement period (real \$ million at 31 December 2010)	2
Table 4	Min, Max and Average demand over the Prior Access Arrangement Period (TJ/d) for Full Haul Pipeline Service inlet and outlet points	3
Table 5	Min, Max and Average demand over the Prior Access Arrangement Period (TJ/d) for Part Haul Pipeline Service inlet and outlet points	3
Table 6	Min, Max and Average demand over the Prior Access Arrangement Period (TJ/d) for Back Haul Pipeline Service inlet and outlet points	3
Table 7	Shipper number for each inlet and outlet point	3
Table 8	Calculation of the opening capital base for the 2011 to 2015 access arrangement period (real \$ million at 31 December 2010)	6
Table 9	Conforming capital expenditure for the 2005 to 2010 access arrangement period (real \$ million at 31 December 2010)	7
Table 10	Capital contributions in the 2005 to 2010 access arrangement period (real \$ million at 31 December 2010)	7
Table 11	Depreciation allowances for the 2005 to 2010 access arrangement period (real \$ million at 31 December 2010)	7
Table 12	Value of asset disposals in the 2005 to 2010 access arrangement period (real \$million at 31 December 2010)	8
Table 13	Forecast conforming capital expenditure for the 2011 to 2015 access arrangement period (real \$ million at 31 December 2010)	10
Table 14	Asset lives applied in calculation of depreciation allowances	12
Table 15	Values of depreciation allowances for the 2011 to 2015 access arrangement period (real \$ million at 31 December 2010)	12
Table 16	Projected capital base for the 2011 to 2015 access arrangement period (real \$ million at 31 December 2010)	13
Table 17	Forecast of pipeline capacity	14
Table 18	Forecast of pipeline capacity	14
Table 19	Forecast of operating expenditure for the 2011 to 2015 access arrangement period (real \$ million at 31 December 2010)	14
Table 20	Parameter values applied in determination of the rate of return	16
Table 21	Total revenue for the 2011 to 2015 access arrangement period (real \$ million at 31 December 2010)	22

Access Arrangement Information

Introduction (section 1)

1. INTRODUCTION

- 1.1. This document comprises the Access Arrangement Information (**AAI**) for the revised Access Arrangement for the Dampier to Bunbury Natural Gas Pipeline proposed and given effect from 1 January 2012 by the Economic Regulation Authority (the Authority) pursuant to rule 64 of the National Gas Rules 2009 (**NGR**).

Basis on which financial information is provided (section 2)

2. BASIS ON WHICH FINANCIAL INFORMATION IS PROVIDED

- 2.1. Unless otherwise stated, financial information in this AAI is provided on a calendar year basis and in real terms with values expressed at dollar values of 31 December 2010.
- 2.2. Where necessary to express financial values in dollar values of 31 December 2010, the financial values have been escalated at the rate of inflation as measured by the Consumer Price Index (All Groups, Weighted Average of Eight Capital Cities) as published by the Australian Bureau of Statistics (**CPI**), or de-escalated at a forecast rate of inflation. Actual and forecast values of the CPI and year on year percentage changes are as shown in Table 1.

Table 1 Actual (2005 to 2010) and forecast (2011 to 2015) December values of the Consumer Price Index (All groups, Weighted Average of Eight Capital Cities) and implied inflation rates.

Year	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
CPI	150.6	155.5	160.1	166.0	169.5	174.0	178.8	183.7	188.8	193.9	199.3
Infl.	2.80%	3.25%	2.96%	3.69%	2.11%	2.65%	2.75%	2.75%	2.75%	2.75%	2.75%

Capital expenditure over the 2005 to 2010 access arrangement period (section 3)

3. CAPITAL EXPENDITURE OVER THE PRIOR ACCESS ARRANGEMENT PERIOD

- 3.1. Conforming Capital Expenditure (by asset class) made during the Prior Access Arrangement Period is shown in Table 2.

Table 2 Conforming capital expenditure for the 2005 to 2010 access arrangement period (real \$ million at 31 December 2010)

Year	2005	2006	2007	2008	2009	2010	Total
Pipeline	8.589	257.230	1.246	517.327	-	489.960	1,274.351
Compression	47.620	171.988	0.148	132.939	-	52.261	404.956
Metering	-	-	-	-	0.078	4.756	4.834
Other depreciable	4.067	0.879	2.336	3.650	-1.696	73.060	82.296
Other non-depreciable	-	-0.134	1.950	1.484	0.679	0.666	4.645
Total	60.277	429.962	5.680	655.399	-0.939	620.703	1,771.082

Operating expenditure over the 2005 to 2010 access arrangement period (section 4)

4. OPERATING EXPENDITURE OVER THE PRIOR ACCESS ARRANGEMENT PERIOD

4.1. Operating Expenditure for the Prior Access Arrangement Period is shown in Table 3.

Table 3 Operating expenditure for the 2005 to 2010 access arrangement period (real \$ million at 31 December 2010)

Year	2005	2006	2007	2008	2009	2010	Total
Costs other than fuel gas	43.248	44.227	46.397	59.455	82.189	55.158	330.674
Fuel gas	27.870	23.985	33.249	15.877	19.119	12.552	132.653
Total	71.118	68.212	79.647	75.332	101.308	67.710	463.327

Pipeline utilisation over the 2005 to 2010 access arrangement period (section 5)

5. PIPELINE UTILISATION OVER THE PRIOR ACCESS ARRANGEMENT PERIOD

5.1. Outlined below are the total minimum, maximum and average demand for inlet and outlet points used for the following Pipeline Services:

- (a) Full Haul Services (see Table 4)
- (b) Part Haul (Forward Haul) Services (see Table 5)
- (c) Back Haul Services (see Table 6)

Table 4 Min, Max and Average demand over the Prior Access Arrangement Period (TJ/d) for Full Haul Pipeline Service inlet and outlet points

Year	2005 – 2010
Minimum quantity	560.37
Maximum quantity	894.03
Average quantity	627.04

Table 5 Min, Max and Average demand over the Prior Access Arrangement Period (TJ/d) for Part Haul Pipeline Service inlet and outlet points

Year	2005 – 2010
Minimum quantity	52.27
Maximum quantity	137.24
Average quantity	77.23

Table 6 Min, Max and Average demand over the Prior Access Arrangement Period (TJ/d) for Back Haul Pipeline Service inlet and outlet points

Year	2005 – 2010
Minimum quantity	0
Maximum quantity	136.67
Average quantity	93.80

5.2 The information contained in the above tables is aggregated information. It is aggregated because, pursuant to Rule 43(2) of the NGR, it contains elements of information which are sensitive information, the public disclosure of which could cause undue harm to the legitimate business interests of the service provider, a Shipper or a Prospective Shipper.

5.3. Table 7 contains details of:

- (a) The number of Shippers for each Inlet Point;
- (b) The number of Shippers for all Outlet Points (in aggregate form) downstream of Compressor Station 9; and
- (c) The number of Shippers for all Outlet Points (in aggregate form) to which Part Haul Services are provided.

Table 7 Shipper number for each inlet and outlet point

Year	Number of customers
Inlet (Receipt point)	
DOMGAS Dampier Receipt	19
Griffin	1
Harriet Group Receipt	16
MLV7 Interconnect	7
Outlet (Delivery point)	

Full Haul Outlet Points	14
Part Haul Outlet Points	9
Back Haul Outlet Points	6

- 5.4. The information contained in the above table for Outlet Points is aggregated information. It is aggregated because, pursuant to Rule 43(2) of the NGR, it contains elements of information which are sensitive information, the public disclosure of which could cause undue harm to the legitimate business interests of the service provider, a Shipper or a Prospective Shipper.

Capital Base for the 2005 to 2010 access arrangement period (section 6)

6. OPENING CAPITAL BASE FOR THE 2011 to 2015 PERIOD

Calculation of Opening Capital Base for the 2011 to 2015 Access Arrangement Period

- 6.1. In accordance with Rule 77(2) the Opening Capital Base for the 2011 to 2015 Access Arrangement Period (i.e. the closing Capital Base as at 31 December 2010 or opening Capital Base 1 January 2011) has been determined by the following formula:
- (a) The Opening Capital Base as at the commencement of the Prior Access Arrangement Period (adjusted, if at all, for the difference between estimated and actual Capital Expenditure made in the access arrangement period that preceded the Prior Access Arrangement Period and included in that Opening Capital Base) (the amount is in Table 8);
- plus:
- (b) Conforming Capital Expenditure made, or to be made, during the Prior Access Arrangement Period (the amounts are in Table 9); and
 - (c) Capital Contributions by Shippers added to the Capital Base under rule 82(3) of the NGR (the amounts are in Table 10);
- less:
- (d) Depreciation over the Prior Access Arrangement Period (Depreciation is set out in Table 11); and
 - (e) The value of pipeline assets disposed of during the Prior Access Arrangement Period.
- 6.2. The Opening Capital Base at the commencement of the Prior Access Arrangement Period (**PAAP Opening Capital Base**) did not need amending for any expenditure incurred during the access arrangement period that preceded the Prior Access Arrangement Period because the PAAP Opening Capital Base was determined using only actual capital expenditure during that period (as opposed to forecast capital expenditure).
- 6.3. The Opening Capital Base for the 2011 to 2015 Access Arrangement Period has not been amended for any amounts in any of the following categories because there are

no amounts during the Prior Access Arrangement Period that fall within these categories:

- (a) Amounts to be added to the Capital Base under rule 84 of the NGR.
 - (b) Amounts to be added to the Capital Base under rule 86 of the NGR.
 - (c) Amounts to be subtracted from the Opening Capital Base, being for redundant assets identified during the course of the Prior Access Arrangement Period.
- 6.4. The Opening Capital Base as at the commencement of the Prior Access Arrangement Period (i.e. 31 December 2004) was \$1,922.162 million (real dollar values as at 31 December 2010).
- 6.5. The following Table 8 demonstrates how the Capital Base during the Prior Access Arrangement Period changed and how the Opening Capital Base for the Access Arrangement Period is calculated.

Table 8 Calculation of the opening capital base for the 2011 to 2015 access arrangement period (real \$ million at 31 December 2010)

Year ending 31 December	2005	2006	2007	2008	2009	2010
<u>Total Capital Base</u>						
Capital Base at 1 January	1,922.162	1,925.979	2,317.192	2,275.456	2,867.059	2,794.740
<i>plus</i>						
Conforming Capital Expenditure	60.277	429.962	5.680	655.399	-0.939	620.703
Forecast Capital Contributions	2.995	14.081	8.425	1.060	-	-
Correction for over-depreciation	-	-	-	-	-	32.669
<i>less</i>						
Redundant and disposed assets	6.964	-	0.035	0.026	0.085	0.011
Depreciation	52.490	52.830	55.806	64.830	71.295	72.987
Capital base at 31 December	1,925.979	2,317.192	2,275.456	2,867.059	2,794.740	3,375.114
<u>DBNGP assets</u>						
Capital Base at 1 January	1,922.162	1,922.984	2,300.117	2,249.956	2,840.498	2,768.179
<i>plus</i>						
Conforming Capital Expenditure	60.277	429.962	5.680	655.399	-0.939	620.703
Correction for over-depreciation	-	-	-	-	-	32.669
<i>less</i>						
Redundant and disposed assets	6.964	-	0.035	0.026	0.085	0.011
Depreciation	52.490	52.830	55.806	64.830	71.295	72.987
Capital base at 31 December	1,922.984	2,300.117	2,249.956	2,840.498	2,768.179	3,348.553
<u>Shipper-funded assets</u>						
Capital Base at 1 January	-	2.995	17.076	25.501	26.560	26.560
<i>plus</i>						
Capital contribution	2.995	14.081	8.425	1.060	-	-
Correction for over-depreciation	-	-	-	-	-	-
<i>less</i>						
Redundant and disposed assets	-	-	-	-	-	-
Depreciation	-	-	-	-	-	-
Capital base at 31 December	2.995	17.076	25.501	26.560	26.560	26.560

6.6. The amounts for each of the line items in Table 8 are broken down in the following tables:

Table 9 Conforming capital expenditure for the 2005 to 2010 access arrangement period (real \$ million at 31 December 2010)

Year	2005	2006	2007	2008	2009	2010	Total
Pipeline	8.589	257.230	1.246	517.327	-	489.960	1,274.351
Compression	47.620	171.988	0.148	132.939	-	52.261	404.956
Metering	-	-	-	-	0.078	4.756	4.834
Other depreciable	4.067	0.879	2.336	3.650	-1.696	73.060	82.296
Other non-depreciable	-	-0.134	1.950	1.484	0.679	0.666	4.645
Total	60.277	429.962	5.680	655.399	-0.939	620.703	1,771.082

Table 10 Capital contributions in the 2005 to 2010 access arrangement period (real \$ million at 31 December 2010)

Year	2005	2006	2007	2008	2009	2010	Total
Pipeline	0.749	5.085	-	-	-	-	5.835
Compression	-	-	5.508	-	-	-	5.508
Metering	2.113	8.996	2.914	1.014	-	-	15.307
Other depreciable	0.133	-	0.003	0.045	-	-	0.181
Other non-depreciable	-	-	-	-	-	-	-
Total	2.995	14.081	8.425	1.060	-	-	25.560

Depreciation Schedule for the Prior Access Arrangement Period

6.7. The depreciation schedule setting out the basis on which the pipeline assets constituting the capital base during the Prior Access Arrangement Period are depreciated is in Table 11.

Table 11 Depreciation allowances for the 2005 to 2010 access arrangement period (real \$ million at 31 December 2010)

Year ending 31 December	2005	2006	2007	2008	2009	2010	Total
Pipelines	32.535	32.611	32.709	37.022	41.671	43.089	219.636
Compression	14.894	14.972	17.695	22.339	23.939	23.955	117.795
Metering	0.708	0.734	0.764	0.767	0.767	0.767	4.507
Other depreciable	4.354	4.512	4.638	4.701	4.918	5.176	28.300
Non depreciable	-	-	-	-	-	-	-
Total	52.490	52.830	55.806	64.830	71.295	72.987	370.238

Disposal of Assets during the Prior Access Arrangement Period

- 6.8. The value of pipeline assets disposed of during the Prior Access Arrangement Period and relevant categories of assets that these disposals relate to are in Table 12.
- 6.9 The revised access arrangement proposal should be amended so that the calculation of total revenue and reference tariffs reflects a treatment of asset disposals that comprises:
- (a) adjustment of the capital base by deduction (as “accelerated depreciation”) of the value of the disposed-of assets from the relevant asset classes in the asset account of the initial capital base; and
 - (b) addition of the amount of accelerated depreciation to total revenue to compensate for the reduction in the capital base.

Table 12 Value of asset disposals in the 2005 to 2010 access arrangement period (real \$million at 31 December 2010)

Year ending 31 December	2005	2006	2007	2008	2009	2010	Total
Pipelines	-	-	-	-	-	-	
Compressors	4.465	-	-	-	-	-	4.465
Meters	-	-	-	-	-	-	
Other depreciable	0.080	-	0.035	0.026	0.085	0.011	0.237
Non depreciable	2.420	-	-	-	-	-	2.420
Total	6.964	-	0.035	0.026	0.085	0.011	7.122

Projected Capital Base for the 2011 to 2015 access arrangement period (section 7)

7. PROJECTED CAPITAL BASE

- 7.1. The Projected Capital Base for the Access Arrangement Period is calculated, in accordance with rule 78 of the NGR, by way of the following formula:
- (a) the Opening Capital Base for the Access Arrangement Period;
- plus
- (b) forecast conforming capital expenditure for the Access Arrangement Period (including forecast capital expenditure to which Shippers are expected to have contributed) – Table 13 summarises this forecast expenditure;
- less
- (c) forecast of depreciation for the Access Arrangement Period.

- 7.2. There is no forecast value of pipeline assets to be disposed of during the Access Arrangement Period.
- 7.3. Applying the formula in clause 7.1 above, the Projected Capital Base for each year of the Access Arrangement Period is outlined in Table 16.
- 7.4. The derivation of the values for each element of the formula in clause 7.1 for establishing the Projected Capital Base is explained in the remainder of this section of the AAI.

Forecast Conforming Capital Expenditure 2011 to 2015

- 7.5. Forecast conforming capital expenditure for the Access Arrangement Period is summarized in Table 13.

Table 13 Forecast conforming capital expenditure for the 2011 to 2015 access arrangement period (real \$ million at 31 December 2010)

Year ending 31 December	2011	2012	2013	2014	2015	Total
Expansion						
Pipelines	13.476	-	-	-	-	13.476
Compression	27.219	-	-	-	-	27.219
Metering	0.141	-	-	-	-	0.141
Other depreciable assets	45.174	-	-	-	-	45.174
BEP Capacity	17.840	-	-	-	-	17.840
Non-depreciable assets	-	-	-	-	-	-
Sub-total	103.689	-	-	-	-	103.689
Stay-in-business						
Pipelines	7.903	3.850	4.155	0.515	0.715	17.138
Compression	8.582	6.565	2.052	2.792	5.982	25.972
Metering	0.409	0.485	2.655	2.655	0.155	6.359
Other depreciable assets	32.985	2.490	1.900	4.500	3.900	45.775
BEP Capacity	-	-	-	-	-	-
Non-depreciable assets	-	-	-	-	-	-
Sub-total	49.879	13.390	10.762	10.462	10.752	95.245
Shipper funded assets						
Pipelines	15.166	-	-	-	-	15.166
Compression	2.683	-	-	-	-	2.683
Metering	3.713	2.718	1.473	-	-	7.905
Other depreciable assets	-	-	-	-	-	-
BEP Capacity	-	-	-	-	-	-
Non-depreciable assets	-	-	-	-	-	-
Sub-total	21.562	2.718	1.473	-	-	25.754
Total						
Pipelines	59.663	3.850	4.155	0.515	0.715	68.898
Compression	38.484	6.565	2.052	2.792	5.982	55.875
Metering	4.262	3.204	4.128	2.655	0.155	14.404
Other depreciable assets	55.042	2.490	1.900	4.500	3.900	67.832
BEP Capacity	17.679	-	-	-	-	17.679
Non-depreciable assets	-	-	-	-	-	-
Total	175.290	16.108	12.235	10.462	10.752	224.848

Forecast Depreciation Schedule - 2011 to 2015

7.7. A separate depreciation schedule has been determined for each of the 4 classes of physical assets that form the DBNGP, these 4 asset classes are:

- (a) pipeline assets;

- (b) compressor station assets;
 - (c) metering assets; and
 - (d) other assets.
- 7.8. The depreciation schedule has been designed:
- (a) so that reference tariffs will vary, over time, in a way that promotes efficient growth in the market for reference services;
 - (b) so that each asset or group of assets is depreciated over the economic life of that asset or group of assets;
 - (c) so as to allow, as far as reasonably practicable, for adjustment reflecting changes in the expected economic life of a particular asset, or a particular group of assets;
 - (d) so that (subject to the rules about capital redundancy), an asset is depreciated only once (i.e. that the amount by which the asset is depreciated over its economic life does not exceed the value of the asset at the time of its inclusion in the capital base (adjusted for inflation)); and
 - (e) so as to allow for the service provider's reasonable needs for cash flow to meet financing, non-capital and other costs.
- 7.9. For the assets in each of the 4 asset classes, depreciation has been determined using the straight-line method with the life of assets in each class as shown in Table 14.
- 7.10. The depreciation on each class of assets for the period 1999 to 2004 was the depreciation used in the determination of the reference tariff applicable during that period. Similarly, the depreciation on each class of assets for the period 2005 to 2010 was the depreciation used in the determination of the reference tariff applicable during that period.
- 7.11. The depreciation, for the Access Arrangement on the initial Capital Base as at 1 January 2000 and on Conforming Capital Expenditure made from 2000 to 2004, is determined using the straight line method with the following assumptions as to asset lives:
- (a) In the case of the initial Capital Base as at 1 January 2000 – using the remaining asset lives for the four asset classes as follows:
 - (i) Pipeline assets – 54.50 years;
 - (ii) Compression assets – 19.34 years;
 - (iii) Meter station assets – 39.98 years;
 - (iv) Other assets – 16.85 years; and
 - (b) In the case of Conforming Capital Expenditure made from 2000 to 2004 – using lives in each class of asset as shown in Table 14.
- 7.12. The depreciation, for the Access Arrangement Period, on Conforming Capital Expenditure made in 2005 to 2010 has been determined using the straight line method with the lives in each class of asset as shown in Table 14.

7.13. The depreciation for the Access Arrangement Period on forecast Conforming Capital Expenditure for that period has been determined using the straight line method with the lives in each class of asset shown in Table 14.

Table 14 Asset lives applied in calculation of depreciation allowances

Asset	Asset Life (years)
Pipeline assets	70
Compression assets	30
Metering assets	50
Other depreciable assets	30
BEP Capacity asset	57

7.14 Table 15 shows the depreciation schedule for each class of assets comprising the Capital Base. It sets out the basis on which the pipeline assets constituting the capital base are to be depreciated for the purpose of determining the Reference Tariff.

Table 15 Values of depreciation allowances for the 2011 to 2015 access arrangement period (real \$ million at 31 December 2010)

Year ending 31 December	2011	2012	2013	2014	2015	Total
Pipelines	51.113	51.635	51.690	51.749	51.756	257.942
Compression	29.101	30.384	30.603	30.671	30.764	151.522
Metering	1.133	1.219	1.283	1.365	1.418	6.419
Other depreciable	7.038	9.644	9.727	9.790	9.940	46.139
BEP Capacity	-	0.313	0.313	0.313	0.313	1.252
Non depreciable	-	-	-	-	-	-
Total	88.385	93.194	93.615	93.888	94.192	463.273

Projected Capital Base Calculation

7.15. Table 16 is the application of the formula for the establishment of the Projected Capital Base for each year of the Access Arrangement Period, as outlined in section 7.1.

Table 16 Projected capital base for the 2011 to 2015 access arrangement period (real \$ million at 31 December 2010)

Year	2011	2012	2013	2014	2015
<u>Total capital base</u>					
Capital Base at 1 January	3,375.114	3,462.019	3,384.933	3,303.554	3,220.128
<i>plus</i>					
Forecast Conforming Capital Expenditure	153.728	13.390	10.762	10.462	10.752
Forecast Capital Contributions	21.562	2.718	1.473	-	-
<i>less</i>					
Redundant and disposed assets	-	-	-	-	-
Depreciation	88.385	93.194	93.615	93.888	94.192
Capital Base at 31 December	3,462.019	3,384.933	3,303.554	3,220.128	3,136.688
<u>DBNGP assets</u>					
Capital Base at 1 January	3,348.553	3,414.521	3,335.723	3,253.931	3,171.594
<i>plus</i>					
Conforming Capital Expenditure	153.728	13.390	10.762	10.462	10.752
<i>less</i>					
Redundant and disposed assets	-	-	-	-	-
Depreciation	87.760	92.188	92.555	92.799	93.102
Capital base at 31 December	3,414.521	3,335.723	3,253.931	3,171.594	3,089.243
<u>Shipper-funded assets</u>					
Capital Base at 1 January	26.560	47.498	49.210	49.624	48.534
<i>plus</i>					
Forecast Capital Contributions	21.562	2.718	1.473	-	-
<i>less</i>					
Redundant and disposed assets	-	-	-	-	-
Depreciation	0.625	1.006	1.060	1.089	1.089
Capital base at 31 December	47.498	49.210	49.624	48.534	47.445

Forecast pipeline utilisation over the 2011 to 2015 access arrangement period (section 8)

8. FORECAST PIPELINE CAPACITY AND UTILISATION

8.1. Table 17 details the forecast of the Pipeline Capacity over the 2011 to 2015 Access Arrangement Period.

Table 17 Forecast of pipeline capacity

Year	2011	2012	2013	2014	2015
<i>Full haul</i>					
Pipeline capacity (TJ/day)	869	888	888	888	888

8.2. Table 18 outlines the forecast of the Capacity of the DBNGP that remains contracted for certain pipeline services during the 2011 to 2015 Access Arrangement Period, and forecasts of the volumes of Contracted Capacity expected by the Operator to be used by Shippers of these pipeline services.

Table 18 Forecast of pipeline capacity

Year	2011	2012	2013	2014	2015
<i>Full haul</i>					
Contracted capacity (TJ/day)	851.3	860.3	860.3	860.3	860.3
Throughput (TJ/day)	703.1	718.8	719.7	725.8	732.5
<i>Part haul (forward haul)</i>					
Contracted capacity (TJ/day)	215.4	215.4	215.4	215.4	215.4
Throughput (TJ/day)	191.5	189.7	189.7	189.7	189.7
<i>Part haul (forward haul)</i>					
Contracted capacity (TJ/day)	130.0	130.0	130.0	130.0	130.0
Throughput (TJ/day)	112.3	112.3	112.3	112.3	112.3

Forecast operating expenditure (section 9)

9. FORECAST OPERATING EXPENDITURE

9.1 Forecast operating expenditure over the Access Arrangement Period is shown in Table 19.

Table 19 Forecast of operating expenditure for the 2011 to 2015 access arrangement period (real \$ million at 31 December 2010)

Year ending 31 December	2011	2012	2013	2014	2015	Total
Fuel gas	20.385	21.538	21.446	21.842	22.285	107.496
Costs other than fuel gas	73.008	78.231	83.495	85.562	86.676	406.971
Total	93.393	99.769	104.940	107.404	108.961	514.467

Key Performance Indicators (section 10)

10. KEY PERFORMANCE INDICATORS

- 10.1. One key performance indicator supports the expenditure to be incurred during the Access Arrangement Period. That indicator is to compare the forecast operating expenditure for each year against the actual forecast operating expenditure (except for the expenditure items listed below) for that same year of the Access Arrangement Period:
- (a) forecast expenditure for System Use Gas; and
 - (b) forecast expenditure for government imposts.
- 10.2. The reasons for why it is relevant to include this KPI as stated in clause 10.2 are:
- (a) the firm full haul capacity of the DBNGP is fully contracted for the Access Arrangement Period under Access Contracts for non reference services;
 - (b) the tariffs payable under these non reference service Access Contracts are structured in such a way that the Operator is incentivised to reduce its operating expenditure to the lowest sustainable costs;
 - (c) the non reference services are structured in a way that the Operator has limited control of the throughput on the DBNGP and therefore, expenditure for System Use Gas will be largely driven by the throughput requirements of Shippers; and
 - (d) there has been a significant increase in government imposts since 2005 and the Operator is forecasting a continued steep increase in this type of expenditure during the Access Arrangement Period. Operator has limited control over the level of government imposts imposed on it.

Rate of return (section 11)

11. RATE OF RETURN

- 11.1. The Rate of Return used to determine the Total Revenue, and therefore the Reference Tariff, has been set in accordance with the requirements of Rule 87 of the NGR.
- 11.2. The Rate of Return to be used in determining Total Revenue for each year of the Access Arrangement Period is 5.74% (real, pre-tax).
- 11.3. The Rate of Return has been established as a real pre-tax weighted average of the cost of equity and the cost of debt.
- 11.4. The cost of equity has been determined from the capital asset pricing model (CAPM).
- 11.5. The cost of debt has been determined from observations of implied yields on traded corporate bonds with credit ratings of BBB- to BBB+.
- 11.6. Parameter values applied in determining the rate of return are set out in Table 20.

Table 20 Parameter values applied in determination of the rate of return

Parameter	Value
Nominal Risk Free Rate (R_f)	3.80%
Real Risk Free Rate (R_f^r)	1.02%
Inflation Rate π_e	2.75%
Debt Proportion (D)	60%
Equity Proportion (E)	40%
Cost of Debt: Debt Risk Premium (DRP) (BBB+)	3.082%
Cost of Debt: Debt Issuing Cost (DIC)	0.125%
Cost of Debt: Risk Margin (RM)	3.207%
Australian Market Risk Premium (MRP)	6%
Equity Beta (β_e)	0.8
Corporate Tax Rate (T_c)	30%
Franking Credit (γ)	25%
Nominal Cost of Debt (R_d^n)	7.01%
Real Cost of Debt (R_d^r)	4.14%
Nominal Pre Tax Cost of Equity ($R_e^{n,pre-tax}$)	11.10%
Real Pre Tax Cost of Equity ($R_e^{r,pre-tax}$)	8.12%
Nominal After Tax Cost of Equity ($R_e^{n,post-tax}$)	8.60%
Real After Tax Cost of Equity ($R_e^{r,post-tax}$)	5.69%

Taxation (section 12)

12. METHOD FOR DEALING WITH TAXATION

- 12.1. An implicit allowance is made for the cost of corporate income tax through the use of a value for the Rate of Return that is determined on a pre-tax basis.

Incentive Mechanism (section 13)

13. EFFICIENCY CARRYOVER [R. 72 (1)(i)]

13.1. The forecast Total Revenue also makes allowances in 2011 and 2012 for amounts as a result of the application of the incentive mechanism under the Prior Access Arrangement.

These amounts are as follows:

- (a) 2011 - \$11.938 million; and
- (b) 2012 - \$11.938 million.

Tariff setting approach (section 14)

14. TARIFF SETTING APPROACH [R. 72 (1)(j)]

14.1. Subject to clause 14.3, the Reference Tariffs (being the T1 Tariff, P1 Tariff and B1 Tariff) has been designed to recover from Shippers using the Reference Services that portion of the Total Revenue that reflects:

- (a) those costs (including capital costs) which are directly attributable to the provision of the Reference Services; and
- (b) a share of those costs (including capital costs) which are attributable to provision of the Reference Services jointly with Pipeline Services provided to other Shippers with contractual rights existing prior to the commencement of this Access Arrangement Period and other Pipeline Services which Operator considers are reasonably foreseeable to be offered during the Access Arrangement Period.

14.2. 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 Access Arrangement Period, as if those Shippers had been provided with the respective Reference Services.

14.3. In accordance with section 12 of the Access Arrangement, the Operator and Nominees will not benefit, through increased revenue, from each amount of Funded Capital Expenditure that has been rolled into the Capital Base. So, subject to clause 12.4(b) of the Access Arrangement, the portion of the Total Revenue for each year of the Access Arrangement that equals the sum of the return on the Funded Capital Expenditure and the depreciation of the Funded Capital Expenditure will not be allocated to any pipeline service, including the Reference Tariffs.

14.4. The Reference Tariffs are designed:

- (a) to generate from the provision of the Reference Services the portion of Total Revenue attributable to provision of the Reference Services;
- (b) to generate from a Shipper or class of Shippers to which a Reference Service is provided, the portion of Total Revenue referable to providing the Reference Service to the Particular Shipper or class of Shippers; and
- (c) consistently with the pricing and revenue principles in the NGL.

14.5. For the purpose of recovery of costs from Shippers and of earning the portion of Total Revenue attributable to the Reference Services, each of the Reference Tariffs are divided into a two part tariff structure:

- (a) Capacity Reservation Tariff; and
- (b) Commodity Tariff.

Capacity Reservation Tariff

14.6. 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.

14.7. In accordance with the terms of the Access Contract Terms and Conditions for each Reference Service:

- (a) the Shipper must pay a Capacity Reservation Charge for each Gas Day during the Period of Supply regardless of whether the Shipper provides Gas at any Inlet Point and regardless of whether the Shipper takes Gas at any Outlet Point; and
- (b) the Capacity Reservation Charge is the aggregate of the Shipper's Contracted Capacity for the Reference Service at each Outlet Point multiplied by the Capacity Reservation Tariff.

14.8. The Capacity Reservation Tariff is a number of dollars per GJ of Contracted Capacity for the T1 Service and per GJ of Contracted Capacity per kilometre for the P1 Service and B1 Service and is:

- (a) as at the commencement of the Access Arrangement Period - as specified in the Access Arrangement;
- (b) otherwise varied in accordance with clause 11 of the Access Arrangement.

Commodity Tariff

14.9. The Commodity Tariff for each Reference Service, when applied to determine the Commodity Charge, recovers from the Shipper a proportion of the cost of the System Use Gas used on the DBNGP and a proportion of the forecast cost of carbon tax.

14.10. In accordance with the terms of the Access Contract Terms and Conditions, the Shipper must pay a Commodity Charge for each Gas Day during the Period of Supply by calculating the multiple of the Commodity Tariff and each GJ of Gas Delivered to the Shipper up to Contracted Capacity for the relevant Service at all Outlet Points by the Operator on that Gas Day.

14.11. The Commodity Tariff is:

- (a) for the T1 Service, a number of dollars per GJ of gas actually Delivered to any Outlet Point on the DBNGP; and
- (b) for the P1 Service and B1 Service, a number of dollars per GJ of gas actually Delivered to any Outlet Point per kilometre.

Other tariff matters

- 14.12. The Shipper using a Reference Service is required to pay Other Charges as required by the Access Contract Terms and Conditions;
- 14.13. The Capacity Reservation Charge, the Commodity Charge and all Other Charges, as determined in accordance with the Access Contract Terms and Conditions, are exclusive of GST.

Reference tariff variation mechanism rationale (section 15)

15. REFERENCE TARIFF VARIATION MECHANISM RATIONALE

- 15.1. Rule 92 of the NGR requires inclusion of a Reference Tariff Variation Mechanism in the Access Arrangement.
- 15.2. Rule 97 of the NGR provides that a Reference Tariff Variation Mechanism may provide for variation of a Reference Tariff:
- (a) in accordance with a schedule of fixed tariffs;
 - (b) in accordance with a formula set out in the Access Arrangement; or
 - (c) as a result of a cost pass through for a defined event (such as a cost pass through for a particular tax).
- 15.3. The Access Arrangement contains a Reference Tariff Variation Mechanism that is made up of 4 parts – see section 11 of the Access Arrangement:
- (a) CPI Formula Variation;
 - (b) Tax Changes Variation;
 - (c) New Costs Pass Through Variation; and
 - (d) Any variation mechanism that is otherwise included in the Reference Service Access Contract Terms and Conditions.
- 15.4. Rule 92(2) of the NGR requires that the Reference Tariff Variation Mechanism be designed to equalize (in terms of present values):
- (a) forecast revenue from Reference Services over the Access Arrangement Period; and
 - (b) the portion of Total Revenue allocated to Reference Services for the Access Arrangement Period.
- 15.5. Rule 97 of the NGR also sets out criteria that the Reference Tariff Variation Mechanism must meet. They are that the Reference Tariff Variation Mechanism has regard to:
- (a) the need for efficient tariff structures;
 - (b) the possible effects of the reference tariff variation mechanism on the administrative costs of the regulator, the service provider, and users or potential users;

- (c) the regulatory arrangements (if any) applicable to the relevant reference services before the commencement of the proposed reference tariff variation mechanism;
 - (d) the desirability of consistency between regulatory arrangements for similar services (both within and beyond the relevant jurisdiction); and any other relevant factor.
- 15.6. Accordingly, each part of the Reference Tariff Variation Mechanism is justified against these criteria as follows:
- 15.7. In relation to the CPI Formula Variation formula:
- (a) The Reference Tariff in the Access Arrangement is set using real, December 2009 values. Therefore, if the tariff components are not periodically varied for the effects of inflation during the Access Arrangement Period, the Operator will not have the opportunity of recovering its efficiently incurred – nominal - costs of providing Reference Services.
 - (b) The Access Arrangement provides for annual inflation adjustment of the reference tariff using the CPI, All Groups, Weighted Average of Eight Capital Cities.
 - (c) The formula will not impact on the administrative costs of the Regulator.
 - (d) The formula is consistent with the variation mechanism in the Prior Access Arrangement Period and with variation mechanisms in access arrangements for other covered pipelines.
- 15.8. In relation to the Tax Change Variation formula:
- (a) The Access Arrangement contains amounts for certain types of Taxes that are likely to be incurred by the Operator but does not contain amounts:
 - (i) where the precise quantum of the costs is not certain; and
 - (ii) where those uncertain costs are expected to be significant in their quantum.
 - (b) Therefore there is a significant risk that without this formula:
 - (i) if an amount is not included or an insufficient amount is included, the Operator would be adversely affected and not be able to recover its costs; or
 - (ii) if an amount is included and this amount is significantly larger in quantum than the actual expenditure for this item, the Operator would recover more than its costs for providing the Reference Services.
 - (c) So, this formula will ensure that forecast revenue from Reference Services over the 2011 to 2015 Access Arrangement Period will be equalised (in terms of present values) with the portion of Total Revenue allocated to the Reference Service for the 2011 to 2015 Access Arrangement Period.
 - (d) In the case of other Taxes, there is a requirement for a review to be undertaken of the fees payable to the State under the Dampier to Bunbury Pipeline Act 1998 in relation to rights granted to the Operator for the use of the DBNGP corridor. The State has issued invoices to the Operator for a revised fee although these are previously under review by the State.

- (e) It is therefore appropriate that a formula be included to ensure there is no under recovery or over recovery of amounts for such Tax Changes and that Shippers are reimbursed for any over recovery.

15.9. In relation to the New Costs Pass Through Variation:

- (a) It allows the Operator to recover certain costs which are beyond its control, and which could not be predicted with any great certainty prior to the time at the revisions to the Access Arrangement was approved but which relate to defined events.
- (b) This is an efficient tariff structure as the Operator will neither over-recover nor under-recover, and the Shipper will pay a Reference Tariff that reflects the costs of providing the Reference Service.
- (c) This formula is largely consistent with regulatory arrangements in place for other transmission pipelines.
 - (i) In Western Australia, there is no other provider of services similar to the Reference Services provided by the Operator. There is, therefore, no issue of consistency between the Reference Tariff Variation Mechanism and regulatory arrangements for similar services.

Un-used section (section 16)

16. NOT USED

This has been left intentionally blank

Total Revenue (section 17)

17. TOTAL REVENUE

17.1. Calculation of Total Revenue

- (a) The Total Revenue for each year of the Access Arrangement Period has been calculated using the building block approach described in Rule 76 of the NGR.
- (b) The Total Revenue for each year of the Access Arrangement Period has been calculated as the sum over the Access Arrangement Period of the costs in each year of the Access Arrangement Period that comprise the sum in each year of:
 - (i) a return on the projected capital base for the year;
 - (ii) depreciation on the projected capital base for the year;
 - (iii) (if any) increments or decrements for the year resulting from the operation of the incentive mechanism that existed in the Prior Access Arrangement; and
 - (iv) a forecast of operational expenditure for the year.

17.2. There are no amounts included in the Total Revenue calculation for each year of the 2011 to 2015 Access Arrangement Period for the estimated cost of corporate income tax.

17.3. The Total Revenue for each year of the 2011 to 2015 Access Arrangement Period is indicated in Table 21.

Table 21 Total revenue for the 2011 to 2015 access arrangement period (real \$ million at 31 December 2010)

Year ending 31 December	2011	2012	2013	2014	2015
Return on capital base	192.046	195.829	191.310	186.619	181.897
Depreciation	87.760	92.188	92.555	92.799	93.102
Incentive mechanism	11.938	11.938	-	-	-
Correction for over-depreciation	-34.543	-	-	-	-
Operating expenditure	93.393	99.769	104.940	107.404	108.961
Total	350.594	399.724	388.805	386.822	383.960
Total for access arrangement period	1,909.905				

Interpretation (section 18)

18. INTERPRETATION

18.1. Unless the context otherwise requires, terms used in capitals in this AAI have:

- (a) the meaning given in this section 18;
- (b) if no meaning is given in this section 18, the meaning given in the Access Arrangement or the Access Contract Terms and Conditions; and
- (c) if no meaning is given in this section 18 or in the Access Arrangement or the Access Contract Terms and Conditions, the meaning given in the NGA.

18.2. In this AAI:

AAI has the meaning given in clause 1.1.

Back Haul means a Pipeline Service where the Inlet Point is downstream of the Outlet Point on the DBNGP.

CAPM means a model used to determine the cost of equity known as the (Sharpe-Lintner) capital asset pricing model.

Full Haul means a Pipeline Service where the Outlet Point is downstream of Compressor Station 9, regardless of the location of the Inlet Point, but does not include Back Haul.

KPI means key performance indicator.

Pipeline Capacity means the capacity to deliver pipeline services immediately downstream of Compressor Station 9 on the DBNGP.

Prior Access Arrangement Period means the period to which the Prior Access Arrangement applied.

Rate of Return means the rate, identified in clause 11.2 of this AAI, required for the purposes of establishing the Total Revenue and as determined under Rule 87 of the NGR.

Reference Tariff means a reference tariff for a Reference Service and as outlined in the Access Arrangement, and as varied in accordance with the Access Arrangement.

Total Revenue means the total revenue as determined for each regulatory year of the Access Arrangement Period by applying the formula in Rule 76 of the NGR.

WACC means the weighted average cost of capital approach.