



**REVISED ACCESS ARRANGEMENT
INFORMATION**

[\[Amended or added to in response to draft decision\]](#)

PUBLIC VERSION

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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, approved by the ERA pursuant to the requirements of the National Gas Access (WA) Act 2009 (**NGA**), the National Gas Access (Western Australia) Law (**NGL**) and National Gas Rules 2009 (**NGR**).
- 1.2. It revises the access arrangement information for covered pipeline services on the DBNGP that was drafted by the ERA on 15 December 2005 (**Prior Access Arrangement Information**).
- 1.3. In accordance with Rule 42 of the NGR, this AAI contains the information that is necessary for Shippers and Prospective Shippers:
 - (a) to understand the background to the access arrangement proposal; and
 - (b) to understand the basis and derivation of the various elements of the access arrangement proposal.
- 1.4. The following table outlines the provisions of the NGR and NGL that outline what must be included in an AAI (**NGR Requirements**) and where in the AAI each NGR Requirement is addressed:

NGR Reference	NGR Requirement	AAI Section
r. 72(1)(a)(i)	capital expenditure (by asset class) over the earlier access arrangement period;	3
r. 72(1)(a)(ii)	operating expenditure (by category) over the earlier access arrangement period;	4
r. 72(1)(a)(iii)(A)	for a transmission pipeline, minimum, maximum and average demand for each receipt or delivery point;	5.1
r. 72(1)(a)(iii)(B)	for a transmission pipeline, user numbers for each receipt or delivery point;	5.4 <u>5.3</u>
r. 72(1)(b)	how the capital base is arrived at and, if the access arrangement period commences at the end of an earlier access arrangement period, a demonstration of how the capital base increased or diminished over the previous access arrangement period;	6
r. 72(1)(c)(i)	a forecast of conforming capital expenditure for the period and the basis for the forecast;	7.5
r. 72(1)(c)(ii)	a forecast of depreciation for the period including a demonstration of how the forecast is derived on the basis of the proposed depreciation method;	7.14 <u>7.14</u>
r. 72(1)(d)	to the extent it is practicable to forecast pipeline capacity and utilisation of pipeline capacity over the access arrangement period, a forecast of pipeline capacity and utilisation of pipeline capacity over that period and the basis on which the forecast has been derived;	8
r. 72(1)(e)	a forecast of operating expenditure over the access	9

	arrangement period and the basis on which the forecast has been derived;	
r. 72(1)(f)	the key performance indicators to be used by the service provider to support expenditure to be incurred over the access arrangement period;	10
r. 72(1)(g)	the proposed rate of return, the assumptions on which the rate of return is calculated and a demonstration of how it is calculated;	11
r. 72(1)(h)	the proposed method for dealing with taxation, and a demonstration of how the allowance for taxation is calculated;	0 ¹²
r. 72(1)(i)	if an incentive mechanism operated for the previous access arrangement period—the proposed carry-over of increments for efficiency gains or decrements for efficiency losses in the previous access arrangement period and a demonstration of how allowance is to be made for any such increments or decrements;	N/A ¹³
r. 72(1)(j)(i)	the suggested basis of reference tariffs, including the method used to allocate costs and a demonstration of the relationship between costs and tariffs;	14 ^{Table 23}
r. 72(1)(j)(ii)	a description of any pricing principles employed but not otherwise disclosed under this rule;	N/A
r. 72(1)(k)	the service provider's rationale for any proposed reference tariff variation mechanism;	15
r. 72(1)(l)	The service provider's rationale for any proposed incentive mechanism;	N/A
r. 72(1)(m)	the total revenue to be derived from pipeline services for each regulatory year of the access arrangement period.	17

2. BASIS ON WHICH FINANCIAL INFORMATION IS PROVIDED [R. 73]

- 2.1. Unless otherwise stated, financial information in this AAI relating to the calendar years from 2005 to 2010 is provided in real terms with all values expressed at December ~~2009~~2010 prices.
- 2.2. Where necessary, to express financial values at December ~~2009~~2010 prices, the values have been escalated at the rate of inflation as measured by the Consumer Price Index (All Groups, Perth). Year on year percentage changes in the December quarter Consumer Price Index (All Groups, Perth) are as shown in Table 1.

Table 1 Year on year percentage changes in the Consumer Price Index (All Groups Perth) 2005 to 2010

2005	2006	2007	2008	2009	2010
3.98%	4.36%	3.02%	3.75%	2.11%	2.50 <u>2.59</u> %

Source for 2005 – ~~2009~~2010 values: <http://www.abs.gov.au>

~~2010 value is an estimate~~

- 2.3. Unless otherwise stated, financial information in this document relating to the calendar years 2011 to 2015 is provided in real terms with all values expressed at December ~~2009~~2010 prices.
- 2.4. Financial data are provided on a calendar year basis.

3. CAPITAL EXPENDITURE OVER THE PRIOR ACCESS ARRANGEMENT PERIOD [R. 72(1)(a)(i)]

- 3.1. Conforming Capital Expenditure (by asset class) made ~~(and in the case of the 2010 calendar year — made or to be made)~~ during the Prior Access Arrangement Period is shown in Table 2.

Table 2 Capital Expenditure 2005 to 2010							
Year ending 31 December	2005	2006	2007	2008	2009	2010	Total
Nominal \$million (dollar values at end of year)							
Pipeline	0.65 <u>8.08</u>	2.72 <u>232.76</u>	230.70 <u>2.81</u>	493.38 <u>49.35</u>	9.78 <u>0.00</u>	450.00 <u>48.99</u>	1,187.23 <u>1.227.16</u>
Compression	0.00 <u>4.12</u>	50.45 <u>153.70</u>	153.66 <u>0.14</u>	116.33 <u>12.68</u>	9.53 <u>5.07</u>	171.70 <u>52.26</u>	501.67 <u>379.21</u>
Metering	1.94 <u>1.83</u>	0.05 <u>3.12</u>	0.08 <u>4.91</u>	0.00 <u>1.50</u>	11.66 <u>1.25</u>	14.74 <u>5.72</u>	28.43 <u>18.35</u>
Other	0.04 <u>3.64</u>	3.18 <u>0.79</u>	2.15	5.56 <u>5.64</u>	8.23 <u>0.54</u>	67.24 <u>75.36</u>	86.39 <u>88.11</u>
Total	2.63 <u>54.76</u>	56.39 <u>390.38</u>	386.58 <u>10.01</u>	615.27 <u>62.75</u>	39.20 <u>6.87</u>	703.65 <u>62.33</u>	1,803.73 <u>1.712.82</u>
Real \$million (\$ values at December 20092010)							
Pipeline	0.74 <u>9.44</u>	2.97 <u>260.61</u>	244.38 <u>3.05</u>	503.77 <u>51.70</u>	9.78 <u>0.00</u>	439.02 <u>48.99</u>	1,200.66 <u>1.280.06</u>
Compression	0.00 <u>4.06</u>	55.06 <u>172.09</u>	162.77 <u>0.15</u>	118.78 <u>13.28</u>	9.53 <u>5.20</u>	167.52 <u>52.26</u>	513.65 <u>40.66</u>
Metering	2.24 <u>2.14</u>	0.06 <u>3.50</u>	0.08 <u>5.34</u>	0.00 <u>1.58</u>	11.66 <u>1.29</u>	14.35 <u>5.72</u>	28.36 <u>19.56</u>
Other	0.04 <u>0.07</u>	3.47 <u>0.88</u>	2.28 <u>2.30</u>	5.68 <u>5.88</u>	8.23 <u>0.47</u>	65.60 <u>75.35</u>	85.29 <u>84.95</u>
Total	3.00 <u>55.71</u>	61.54 <u>437.07</u>	409.51 <u>10.84</u>	628.23 <u>65.73</u>	39.20 <u>6.96</u>	686.48 <u>62.32</u>	1,827.96 <u>1.791.18</u>

- 3.2. ~~The values for 2010 in the above table are made up of actual Conforming Capital Expenditure made during the period from 1 January 2010 to 30 June 2010 and the Operator's forecast of Conforming Capital Expenditure to be made for the period from 1 July 2010 to 31 December 2010.~~

4. OPERATING EXPENDITURE FOR THE EARLIER PERIOD [R. 72(1)(a)(ii)]

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

Table 3 Operating Expenditure 2005 to 2010							
Year ending 31 December	2005	2006	2007	2008	2009	2010	Total
Nominal \$million, dollar values at end of year							
Other Operating Expenditure	6.27 37.33	39.41 39.53	44.40 42.69	52.46 55.88	65.60 77.78	66.42	304.56 319.63
Fuel-gas System Use							
Gas	24.12	21.43	30.59	15.15	18.62	21.51	131.42
Total	9.39 61.45	60.84 60.96	74.99 73.28	67.61 71.03	84.22 96.40	87.93	435.97 451.05
Real \$million, dollar values at 31 December 2010							
Other Operating Expenditure	1.31 43.62	43.01 44.26	47.03 46.39	53.56 58.54	65.60 79.80	64.80 66.42	315.31 339.02
Fuel-gas System Use							
Gas	7.47 28.18	23.39 23.99	32.40 33.24	15.47 15.87	18.62 19.10	20.99 21.51	138.34 141.90
Total	8.78 71.80	66.40 68.25	79.44 79.64	69.03 74.41	84.22 98.91	85.78 87.93	453.65 480.93

4.2. It is important to note that making reference to historical Operating Expenditure as a benchmark for assessing the appropriate level of forecast Operating Expenditure is particularly inappropriate in the case of the Current Access Arrangement Period for the DBNGP. This is so for the following key reasons:

(a) ~~4.2. It is important to note that given the~~ There has been a significant and continued expansion program during the Prior Access Arrangement Period, ~~the~~ The DBNGP is a much larger, but also a very different pipeline system to what it was in 2005. As at the commencement of the current access arrangement period, it has 50% more compressor units than in 2005 and has been almost 85% looped since 2005. Accordingly, the Operating Expenditure required to operate the DBNGP as it is presently configured is very different to that required in 2005.

~~4.3. Accordingly, the Operating Expenditure required to operate the DBNGP as it is presently configured is very different to that required in 2005, thus making the reference to historical Operating Expenditure inappropriate.~~

(b) The DBNGP will be reaching half its assumed asset life (for regulatory purposes at least) during this Access Arrangement Period. This will mean that the maintenance requirements for the asset will increase and, accordingly, the costs associated with that increase will be more than were the case in 2005.

5. PIPELINE UTILISATION FOR THE EARLIER PERIOD [R. 71(1)(a)(iii)]

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

	2005 – 2010
Minimum quantity	572.5 560.37
Maximum quantity	894.0 894.03
Average quantity	625.4 627.04

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

	2005 – 2010
Minimum quantity	52.27
Maximum quantity	137.24
Average quantity	79.6 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

	2005 – 2010
Minimum quantity	0
Maximum quantity	136.67
Average quantity	93.9 93.80

~~5.2. — 2010 figures are accurate up to 28 February 2010 inclusive.~~

~~5.3.~~ 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.

~~5.4.~~ 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

	Number of customers
<i>Inlet (Receipt point)</i>	
DOMGAS Dampier Receipt	19
Griffin	1
Harriet Group Receipt	16
MLV7 Interconnect	7
<i>Outlet (Delivery point)</i>	
Full Haul Outlet Points	14
Part Haul Outlet Points	9
Back Haul Outlet Points	6

5.4. ~~5.5.~~—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.

6. CAPITAL BASE FOR THE CURRENT PERIOD [R. 72(1)(b)]

Calculation of Opening Capital Base for Current Access Arrangement Period

6.1. In accordance with Rule 77(2) the Opening Capital Base for the Current Access Arrangement Period (ie the Opening Capital Base as at 1 January 2010) 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 Current 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.

~~(d) Amounts to be subtracted from the Opening Capital Base, being for the value of pipeline assets disposed of during the Prior Access Arrangement Period.~~

6.4. The Opening Capital Base as at the commencement of the Prior Access Arrangement Period (ie 31 December 2004) was \$~~1,893.35~~1,942.44 million (real dollar values as at 31 December ~~2009~~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 Current Access Arrangement Period is calculated.

Table 8 Opening Capital Base (Real \$million, dollar values at 31 December 2009 2010)

Year ending 31 December	2005	2006	2007	2008	2009	2010
Capital Base at 1 January	1893.3519 42.45	1844.04194 2.21	1852.882 325.10	2206.742280. 81	2770.332 873.28	2738.45 2807.99
Plus						
Conforming Capital Expenditure	0.7860.96	61.54430.21	409.425. 68	628.23657.24	17.931.3 1	672.196 22.96
Capital Contributions	2.243.03	0.006.73	0.087.15	0.001.58	21.276.4 1	14.301.0 1
Less						
<u>Disposed Assets</u>	10.53	0.00	0.04	0.03	0.09	0.01
Depreciation	52.3453.6 9	52.6754.04	55.6457. 08	64.6466.32	71.0972. 93	72.7774. 66
Total value of the Capital Base at 31 December	1844.0419 42.21	1852.88232 5.10	2206.742 280.81	2770.332873. 28	2738.452 807.99	3352.16 3357.29

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

Conforming capital expenditure in Prior Access Arrangement Period

Table 9 Conforming Capital Expenditure 2005 to 2010 (Real \$million, dollar values at 31 December 2009 2010)

Year ending 31 December	2005	2006	2007	2008	2009	2010	Total
Pipelines	0.748.69	2.97257. 38	244.381. 25	503.775 17.00	0.170.00	439.024 89.96	1191.051 274.27
Compression	0.0048.1 6	55.0617 2.09	162.770. 15	118.781 32.86	9.530.00	167.525 2.26	513.6540 5.51
Metering	0.00	0.060.00	0.00	0.00	0.08	0.054.76	0.184.83
Other <u>depreciable</u>	0.044.11	3.470.88	2.282.34	5.685.90	8.150.56	65.6075. 32	85.2289. 10
<u>Non depreciable</u>	0.00	-0.13	1.95	1.48	0.68	0.67	4.64
Total	0.7860.9 6	61.54430 21	409.425. 68	628.2365 7.24	17.931.3 1	672.1962 2.96	1790.101 778.36

Capital Contributions in Prior Access Arrangement Period

Table 10 Capital Contributions broken down by year (Nominal \$Million)

Asset to which a capital contribution related	2005	2006	2007	2008	2009	2010
Total	1.943.03	0.006.73	0.087.15	0.001.58	21.276.4 1	14.661.0 1

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 Opening Capital Base Depreciation Schedule 2005 to 2010 (Real \$million, dollar values at 31 December ~~2009~~2010)

Year ending 31 December	2005	2006	2007	2008	2009	2010	Total
Pipelines	32.40 <u>33.24</u>	32.40 <u>33.25</u>	32.40 <u>33.26</u>	32.40 <u>33.26</u>	32.40 <u>33.27</u>	32.40 <u>33.28</u>	194.41 <u>99.55</u>
Compression	15.80 <u>16.21</u>	15.80 <u>16.25</u>	15.80 <u>16.46</u>	15.80 <u>16.67</u>	15.80 <u>16.76</u>	15.80 <u>15.24</u>	94.79 <u>97.60</u>
Metering	0.64 <u>0.65</u>	0.64 <u>0.65</u>	0.64 <u>0.66</u>	0.64 <u>0.66</u>	0.64 <u>0.66</u>	0.64 <u>0.72</u>	3.83 <u>4.01</u>
Other	3.95 <u>4.06</u>	3.95 <u>4.30</u>	3.95 <u>4.54</u>	3.95 <u>4.81</u>	3.95 <u>5.04</u>	3.95 <u>4.45</u>	23.72 <u>27.20</u>
Total	52.79 <u>54.16</u>	52.79 <u>54.46</u>	52.79 <u>54.91</u>	52.79 <u>55.40</u>	52.79 <u>55.73</u>	52.79 <u>53.69</u>	316.75 <u>328.36</u>

6.8. As outlined in the Current Access Arrangement, for the purposes of rule 84 of the NGR, the amount of any Non-Conforming Capital Expenditure is, to the extent that expenditure is not to be recovered through a Surcharge on Shippers or a Capital Contribution, to be added to a notional fund and dealt with in accordance with rule 84(2) and rule 84(3) of the NGR.

Disposal of Assets during the Prior Access Arrangement Period

6.9. 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.

Table 12 Assets disposed of during the period 2005 to 2010 (Real \$million, dollar values at 31 December 2010)

7.

<u>Year ending 31 December</u>	<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>Total</u>
<u>Pipelines</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>
<u>Compression</u>	<u>4.10</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>	<u>4.10</u>
<u>Metering</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>
<u>Other depreciable assets</u>	<u>4.17</u>	<u>0.00</u>	<u>0.04</u>	<u>0.03</u>	<u>0.09</u>	<u>0.01</u>	<u>4.34</u>
<u>Non depreciable assets</u>	<u>2.26</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>	<u>2.26</u>
<u>Total</u>	<u>10.53</u>	<u>0.00</u>	<u>0.04</u>	<u>0.03</u>	<u>0.09</u>	<u>0.01</u>	<u>10.70</u>

PROJECTED CAPITAL BASE [R. 72(1)(c)]

7.

7.1. The Projected Capital Base for the Current 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 Current Access Arrangement Period;
- plus
- (b) forecast conforming capital expenditure for the Current Access Arrangement Period (including forecast capital expenditure to which Shippers are expected to have contributed) – Table ~~42~~13 summarises this forecast expenditure;
- less
- (c) forecast of depreciation for the Current Access Arrangement Period.

7.2. There is no forecast value of pipeline assets to be disposed of during the Current Access Arrangement Period.

7.3. Applying the ~~above~~ formula in clause ~~7.1~~7.1 above, the Projected Capital Base for each year of the Current Access Arrangement Period is outlined in Table ~~45~~16.

7.4. The derivation of the values for each element of the ~~above~~ 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 Current Access Arrangement Period is summarized in Table ~~42~~13.

Table 13 ~~Table 12~~ Forecast Conforming Capital Expenditure by asset class 2011 to 2015

Year ending 31 December	2011	2012	2013	2014	2015	Total
Pipelines	15.40 <u>13.0</u> <u>2</u>	8.39 <u>3.95</u>	3.88 <u>4.26</u>	4.62 <u>0.62</u>	7.81 <u>0.82</u>	40.11 <u>22.6</u> <u>6</u>
Compression	8.27 <u>36.51</u>	0.49 <u>7.27</u>	2.66 <u>2.76</u>	2.66 <u>3.50</u>	0.16 <u>6.69</u>	14.22 <u>56.7</u> <u>3</u>
Metering	5.57 <u>32.09</u> 40.86 <u>75.1</u>	4.35 <u>0.49</u>	4.71 <u>2.66</u>	0.62 <u>2.66</u>	0.82 <u>0.16</u>	16.06 <u>38.0</u> <u>4</u>
Other depreciable assets	<u>0</u>	4.74 <u>4.75</u>	4.15 <u>4.16</u>	6.75 <u>6.76</u>	6.15 <u>6.16</u>	<u>1</u>
Non-depreciable assets	0.00	0.00	0.00	0.00	0.00	0.00
Sub Total	70.11 <u>156.</u> <u>72</u>	17.97 <u>16.4</u> <u>5</u>	15.39 <u>13.8</u> <u>3</u>	14.64 <u>13.5</u> <u>3</u>	14.93 <u>13.8</u> <u>2</u>	133.06 <u>214</u> <u>34</u>
Capital Expenditure contributed by Shippers						
Pipelines	0.00 <u>15.17</u>	0.00	0.00	0.00	0.00	0.00 <u>15.17</u>
Compression	0.00 <u>2.68</u>	0.00	0.00	0.00	0.00	0.00 <u>2.68</u>
Metering	0.23 <u>3.71</u>	2.66 <u>2.72</u>	1.44 <u>1.47</u>	0.00	0.00	4.32 <u>7.90</u>
Other depreciable assets	0.00	0.00	0.00	0.00	0.00	0.00
Sub Total	0.23 <u>21.56</u> <u>21.56</u>	2.66 <u>2.72</u> <u>2.72</u>	1.44 <u>1.47</u> <u>1.47</u>	0.00	0.00	4.32 <u>25.75</u> <u>4.32</u>
TOTAL	70.34 <u>178.</u> <u>178.</u>	20.63 <u>19.1</u> <u>19.1</u>	16.84 <u>15.3</u> <u>15.3</u>	14.64 <u>13.5</u> <u>13.5</u>	14.93 <u>13.8</u> <u>13.8</u>	137.38 <u>240</u> <u>240</u>

	<u>28</u>	<u>7</u>	<u>0</u>	<u>3</u>	<u>2</u>	<u>09</u>
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- 7.6. The basis of this forecast of conforming capital expenditure is:
- (a) There will be no expansion of the capacity of the DBNGP during the Current Access Arrangement Period;
 - (b) The forecast expenditure relating to the overhauls of gas turbines that form part of the DBNGP will be capitalised;
 - (c) The amounts contained in this forecast are the minimum amounts required to ensure the Operator:
 - (i) Maintains and improves the safety of pipeline services;
 - (ii) Maintains the integrity of pipeline services;
 - (iii) Complies with the regulatory obligations or requirements applicable to the DBNGP; or
 - (iv) Maintains its capacity to meet levels of demand for pipeline services existing at the time the capital expenditure is forecast to be incurred (as distinct from projected demand that is dependent on an expansion of pipeline capacity). In this regard, the forecast demand is outlined in section 8 of this AAI.

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 13~~ [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 Current 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 13~~[Table 14](#).

7.12. The depreciation, for the Current 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 13~~[Table 14](#).

7.13. The depreciation for the Current 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 13~~[Table 14](#).

[Table 14](#) ~~Table 13~~ Asset Lives

Asset	Asset Life (years)
Pipeline assets	70
Compression assets	30
Metering assets	50
Other depreciable assets	30

7.14. Table ~~14~~[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](#) ~~Table 14~~ Depreciation Schedule 2011 to 2015

Year ending 31 December	2011	2012	2013	2014	2015
Real \$million, dollar values at 31 December 20092010					
Pipeline assets	49.59 51.5	49.81 51.9	49.93 52.0	49.98 52.0	50.05 52.0
	<u>6</u>	<u>7</u>	<u>2</u>	<u>8</u>	<u>9</u>
Compression assets	33.47 30.3	33.74 31.6	33.76 31.8	33.85 31.9	33.94 32.0
	<u>2</u>	<u>3</u>	<u>7</u>	<u>6</u>	<u>8</u>
Metering assets	1.25 1.09	1.37 1.81	1.54 1.87	1.63 1.95	1.64 2.01
Other depreciable assets	7.79 7.91	9.15 10.41	9.34 10.57	9.45 10.71	9.67 10.93
Total	92.10 90.88	94.07 95.81	94.50 96.33	94.94 96.71	95.30 97.11

Projected Capital Base Calculation

7.15. Table ~~15~~16 is the application of the formula for the establishment of the Projected Capital Base for each year of the Current Access Arrangement Period, as outlined in section 7.1.

Table 16 ~~Table 15~~ Projected Capital Base

Year	2011	2012	2013	2014	2015
Capital Base (as at 1 Jan)	3352.16 <u>3335</u> <u>7.29</u>	3330.41 <u>344</u> <u>4.68</u>	3256.97 <u>336</u> <u>8.04</u>	3179.30 <u>328</u> <u>7.01</u>	3099.03 <u>320</u> <u>3.82</u>
<i>Plus</i>					
Forecast Conforming Capital Expenditure	70.11 <u>156.7</u> <u>2</u>	17.97 <u>16.45</u>	15.39 <u>13.83</u>	14.64 <u>13.53</u>	14.93 <u>13.82</u>
Forecast Capital Contributions	0.23 <u>21.56</u>	2.66 <u>2.72</u>	1.44 <u>1.47</u>	0.00	0.00
<i>Less</i>					
Forecast Depreciation	92.10 <u>90.88</u>	94.07 <u>95.81</u>	94.50 <u>96.33</u>	94.91 <u>96.71</u>	95.30 <u>97.11</u>
Forecast Asset Disposals	0.00	0.00	0.00	0.00	0.00
Projected Capital Base (as at 31 Dec)	3330.41 <u>344</u> <u>4.68</u>	3256.97 <u>336</u> <u>8.04</u>	3179.30 <u>328</u> <u>7.01</u>	3099.03 <u>320</u> <u>3.82</u>	3018.67 <u>312</u> <u>0.53</u>

8. FORECAST PIPELINE CAPACITY AND UTILISATION [R. 72 (1)(c)(ii)]

8.1. Table ~~16~~17 details the forecast of the Pipeline Capacity over the Current Access Arrangement Period.

Table 17 ~~Table 16~~ Forecast of Pipeline Capacity

Year ending 31 December	2011	2012	2013	2014	2015
Full Haul					
Pipeline capacity (TJ/day)	869	888	888	888	888

8.2. The Pipeline Capacity of the DBNGP is determined based on the following assumptions:

- (a) For delivery of Full Haul pipeline services
- (b) The gas composition is as follows:
 - A. Higher Heating Value – 37.0 MJ/m³;
 - B. Wobbe Index - 46.5MJ/m³ ;
 - C. the percentage content of Inert Gases of no greater than 6.39%;
 - D. no LPG content;
- (c) the ambient conditions on the DBNGP from Compressor Station 1 to Compressor Station 9 are average conditions for the month of January;
- (d) gas is being delivered for receipt into the DBNGP at existing inlet points;
- (e) the designed inlet pressure at the inlet point known as I1-01 is 8MPa; and
- (f) all compressor units are operating.

8.3. However, it is important to note that the Pipeline Capacity is not an indication of:

- (a) the actual Capacity of the DBNGP on any given day;
- (b) the available firm Full Haul capacity of the DBNGP during the Current Access Arrangement Period; or
- (c) the available Part Haul Forward Haul capacity of the DBNGP during the Current Access Arrangement Period.

8.4. Table ~~17~~18 outlines the forecast of the Capacity of the DBNGP that remains contracted for certain pipeline services during the Current 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 ~~Table 17~~ Forecast of Demand for Services

Year ending 31 December	2011	2012	2013	2014	2015
Full Haul					
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
Part Haul (forward haul)					
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
Back Haul					
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

- 8.5. The firm Full Haul capacity of the DBNGP is fully contracted for the duration of the Current Access Arrangement Period.
- 8.6. The amount of Part Haul capacity varies with distance along the DBNGP and cannot, in general, be forecast. Whether the Part Haul capacity of the DBNGP is fully contracted for the duration of the Current Access Arrangement Period will depend on a number of factors, including the specific location of delivery points. ~~So it is not practical to forecast it in this AAI.~~

9. FORECAST OPERATING EXPENDITURE [R. 71(1)(e)]

9.1. Forecast operating expenditure over the Current Access Arrangement Period is shown in Table ~~18.19.~~

Table 19 ~~Table 18~~ Forecast Operating Expenditure 2011 to 2015

Year ending 31 December	2011	2012	2013	2014	2015
Nominal \$million, dollar values at end of year					
Recurrent costs					
Wages & Salaries	27.0	28.3 <u>28.9</u>	29.5 <u>31.0</u>	30.9 <u>33.1</u>	32.3 <u>34.8</u>
Non-Field Expense	18.4	18.9	19.4	20.5	21.0
Field Expense	19.1	19.6	20.1	20.6	21.1
Government Charges	20.0 <u>11.2</u>	21.3 <u>15.2</u>	22.1 <u>19.3</u>	23.3 <u>19.8</u>	24.5 <u>20.4</u>
Reactive Maintenance	1.2	1.2	1.3	1.3	1.3
Fuel gas <u>System Use Gas</u> (full haul)	20.9	22.7	23.1	26.1	27.3
Total OPEX	106.8 <u>98.0</u>	112.0 <u>106.6</u>	115.5 <u>114.2</u>	122.6 <u>121.6</u>	127.4 <u>126.0</u>

9.2. There are six categories of operating expenditure used in the forecast:

- (a) Wages & Salaries
- (b) Non-Field Expenditure
- (c) Field Expenditure
- (d) Government Charges
- (e) Reactive Maintenance
- (f) ~~Fuel gas~~System Use Gas

9.3. Each Category is explained as follows:

- (a) Salaries and Wages covers salaries of the Operator's employees and contractors.
- (b) Non Field Expenditure covers expenditure in connection with fees payable under the operating services agreement, IT expenses, insurance costs, office and administration, an allowance for self insurance costs and forecast regulatory expenditure.
- (c) Field Expenditure covers motor vehicle expenses, repairs and maintenance to all field equipment, training and development expenses, travel and accommodation and compressor turbine and GEA overhauls.
- (d) Government Charges cover the expenditure to be levied by government and statutory agencies under such legislation as the ~~proposed CPRS~~proposed carbon pricing regime, the Dampier to Bunbury Pipeline Act, Council rates and charges and various environmental legislation.
- (e) Reactive Maintenance covers expenditure for unplanned ~~and unbudgeted~~ repairs and maintenance for plant and equipment.
- (f) ~~Fuel gas~~System Use Gas covers expenditure to be incurred by the Operator in purchasing ~~fuel gas requires~~Gas required to operate and maintain the pipeline in a manner that ensures the forecast demand for pipeline services, as outlined in section 8, can be supplied in the most efficient fashion.

- 9.4. The forecast operating expenditure for recurrent items has been derived from the Operator's internal business planning and budgeting processes which are conducted annually and have a 5 yearly focus. The forecast represents the lowest sustainable cost of providing pipeline services by a prudent service provider acting efficiently.
- 9.5. The forecast for ~~fuel gas~~System Use Gas expenditure is based on:
- (a) gas prices Operator pays for the supply of system use gas to enable it to maintain and operate the DBNGP; and
 - (b) the ~~system use gas~~System Use Gas required to operate and maintain the pipeline in a manner that ensures the forecast demand for pipeline services, as outlined in section 8 (assuming that the demand is for the Reference Service), can be supplied in the most efficient fashion.
- 9.6. The forecast for reactive maintenance expenses is an average of Operator's actual expenditure incurred for unplanned ~~and unbudgeted~~ repairs and maintenance for plant and equipment.

10. KEY PERFORMANCE INDICATORS [R. 72(1)(f)]

- 10.1. One key performance indicator supports the expenditure to be incurred during the Current 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 Current Access Arrangement Period:
- (a) forecast expenditure for ~~fuel gas~~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 Current 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 ~~fuel gas~~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 Current Access Arrangement Period. Operator has limited control over the level of government imposts imposed on it.

11. RATE OF RETURN [R. 72 (1)(g)]

Rate of Return

- 11.1. The Rate of Return used to determine the Total Revenue₂ and therefore the Reference Tariff₂ 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 Current Access Arrangement Period is ~~10.76~~10.03% (real, pre-tax).

Assumptions on which the Rate of Return is calculated

- 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. Both the cost of equity and the cost of debt are commensurate with prevailing conditions in the market for funds and the risks involved in providing reference services. The Rate of Return therefore satisfies the criteria of rule 87(1).

Assumptions on which the cost of equity was based

- 11.5. The cost of equity ~~was~~has been determined from:
- (a) the results ~~obtain from four~~obtained from a well accepted financial model being the CAPM:
 - (b) the results obtained from three other well accepted financial models; and
 - (c) ~~(b)~~ an examination of equity analysts' dividend yield forecasts for the period 2010 to 2012 for comparable Australian infrastructure businesses.
- 11.6. The ~~four~~estimate of the cost of equity which is obtained using the CAPM is set out in Table 20.
- 11.7. The three other well accepted financial models, and the estimates of the cost of equity which ~~were~~are obtained from them are set out in Table ~~19-21.~~
- 11.8. ~~11.7.~~ EachThe CAPM, and each of the three other well accepted financial models, incorporates only a limited characterisation of risk and may not, therefore, provide an estimate of the cost of equity which is commensurate with prevailing conditions in the market for funds and the risks involved in providing reference services. That is, the estimate of the cost of equity from each of the models may not satisfy the criteria for the Rate of Return established in rule 87(1). To ensure that the criteria of rule 87(1) are satisfied, regard must be had to evidence as to the current market conditions and risks.

Table 20 ~~Table 19 Estimates~~ Estimate of the cost of equity using the CAPM

<u>Parameter</u>		<u>Value</u>
Cost of equity (nominal): CAPM		
<u>Nominal risk free rate of return</u>	r_{rf}	<u>5.71%</u>
<u>Equity beta</u>	β	<u>0.80</u>
<u>Market risk premium</u>	MRP	<u>6.50%</u>
<u>Cost of equity (nominal): CAPM</u>	$E_{CAPM}(r_e) = r_{rf} + \beta \times MRP$	<u>10.91%</u>

Table 21 Estimates of the cost of equity using other financial models

<u>Parameter</u>		<u>Value</u>
Cost of equity (nominal):		
CAPM	$E_{CAPM}(r_e)$	8.79%
Black's CAPM	$E_{Black}(r_e)$	11.98 <u>12.21%</u>
Fama-French three factor model	$E_{FF}(r_e)$	11.57 <u>11.72%</u>
Zero beta Fama-French three factor model	$E_{ZBFF}(r_e)$	14.36 <u>14.56%</u>
Cost of debt (nominal)	$E(r_d)$	9.73%
Gearing (debt to total value)	DAV	60.00%
Tax rate	t	30.00%
Gamma	γ	0.2
Expected inflation	π^e	2.52%
Real pre-tax WACC		
Model used for estimating cost of equity:		
CAPM		7.75%
Black's CAPM		9.38%
Fama-French three factor model		9.17%
Zero beta Fama-French three factor model		10.60%

11.9 ~~11.8~~—Evidence on current market conditions and risks is provided by equity analysts' forecasts of dividend yields. The average of equity analysts' dividend yield forecasts for comparable Australian infrastructure businesses over the period 2010 to 2012 was ~~10.59~~0%. Equity investors investing in the benchmark service provider would, in these circumstances, be expecting to earn a return of at least ~~10.59~~0%. Those investors would also expect some share price appreciation. The current expectation of inflation, ~~2.52~~in the range 2.5% to 3.5%, is a conservative estimate of this appreciation. ~~With the likely improvement in market conditions following the global financial crisis, an expectation of further real growth in the yields from infrastructure businesses, of at least 1.00%, is reasonable.~~—Accordingly, current market information indicates a cost of equity between ~~13.0~~11.5% and ~~14.0~~12.5%.

11.10 ~~11.9~~—A cost of equity which is commensurate with prevailing conditions in the market for funds and the risks involved in providing reference services is in these circumstances:

- (a) not as low as the cost of equity estimated using the CAPM; and
- (b) higher than the cost of equity estimated using Black's CAPM and the Fama-French model; and
- (c) ~~is~~ likely to be in the range ~~13.0~~11.5% to ~~14.4~~12.5%.

11.11. ~~11.10.~~ The cost of equity to be used in establishing the Rate of Return ~~was~~ is therefore set at ~~13.50~~ 12.5%.

Assumptions on which the cost of debt was based

11.12. ~~11.11.~~ The cost of debt ~~used in establishing the Rate of Return was 9.73%.~~ has been determined from:

- (a) the results obtained by applying the methodology adopted by the Australian Energy Regulator (AER) in its October 2010 Final Decision in connection with the revenue proposals for the Victorian electricity distribution businesses;
- (b) advice obtained from a senior debt advisor as to the costs which a benchmark service provider (with gearing of around 60% of the regulated asset base and a credit rating in the BBB range) was likely to incur in sourcing debt finance from a range of senior debt markets which a prudent service provider would be likely to use.

AER methodology

- 11.13. The AER estimates the cost of debt as the sum of two components: the nominal risk free rate of return, and a debt risk premium. The debt risk premium is calculated as a weighted average of the premium for BBB bond issues implied by fair value curves available from the Bloomberg service, and the premium on a bond recently issued by APT with credit rating of BBB and maturing in approximately 10 years. In the AER's October 2010 Final Decision on the Victorian electricity distribution revenue proposals, the two premiums were weighted 75%:25%. Using updated data inputs for the period of 20 business days to 28 February 2011 (with the exception of Bloomberg's 10-year AAA vs 7-year AAA spreads which is the 20 business days up to 22 June 2010) this delivers a debt risk premium of 4.24% and a total cost of debt of 9.95%.
- 11.14. The AER methodology gives no regard for upfront fees incurred by the business to establish and issue the bonds it assess. These fees have risen considerably since the Global Financial Crisis.

Debt Advisory Methodology

- 11.15. An experienced debt markets advisor, AMP Capital Investors, was asked to estimate the cost of debt for a benchmark service provider with gearing of around 60% of the regulated asset base and a credit rating in the BBB range.
- 11.16. ~~11.12. This estimate of the cost of debt was built up from the costs which a benchmark service provider (with credit rating in the BBB range) was likely to incur in sourcing debt finance from.~~ After reviewing Australian and international capital market conditions, AMP Capital Investors concluded that the benchmark service provider was likely to source debt finance from the 5 year Australian Bank Market (~~28.6~~26.2%), the 7 year Australian Bank Market (9.5%), the ~~75~~ year Australian Bond Market (~~9.5~~23.8%), the 10 year US Public Market (~~33.3~~28.6%), and the 10 year US Private Placement Market (~~19.0~~11.9%). The cost of debt ~~has been~~was estimated ~~as the~~using the approach taken by market practitioners: as a bank bill swap rate (BBSW) plus lender's margin~~lenders' margins in each market~~, and transaction and other costs, some of which may be specific to particular markets.
- 11.17. ~~11.13.~~ Build up of the cost of debt, in the same way that that cost is built up by lenders, using current market data for a benchmark service provider, provides an estimate which is commensurate with prevailing conditions in the market for funds and the risks involved in providing reference services.

- 11.18. The cost of debt estimated by AMP Capital Investors was 9.52%.

Cost of debt

- 11.19. The AER methodology provides an imprecise estimate of the cost of debt for four reasons.
- 11.20. First, although it uses a current nominal risk free rate of return, and a current estimate of the debt risk premium, the AER methodology otherwise ignores current market conditions affecting the issue of debt.
- 11.21. Second, use, in the AER methodology, of the premium obtained from the Bloomberg fair value curves is imprecise. This is because the premium for bonds with a term to maturity of 10 years is estimated as the premium on bonds with a term of 7 years (for which data are available), adjusted for the difference between the premiums on AAA bonds with a term to maturity of 10 years, and AAA bonds with a term of 7 years. The premium obtainable from

the Bloomberg curves is not for bonds rated BBB with a term to maturity of 10 years because such bonds are not currently traded.

11.22. Third, in the AER methodology all risk is taken into account via the assumed credit rating, but a credit rating is an imprecise measure of risks. (Lenders do not rely solely on credit ratings, and look more closely at the riskiness of businesses to which they might provide finance.)

11.23. Fourth, the averaging, in the AER methodology, of a premium estimated from the Bloomberg fair value curves, and a premium on a particular (APT) bond is inherently arbitrary.

11.24. The debt advisory methodology, in contrast, provides a cost of debt based on consideration of all factors affecting the issue of debt in current market conditions (including quantitative limits on borrowers in specific markets), and on a closer examination of the costs and risks associated with financing the borrower.

11.25. The cost of debt to be used in establishing the Rate of Return is therefore set at 9.5%.

Other assumptions for calculation of a real pre-tax WACC

11.26. ~~11.14.~~ Other assumptions made for the calculation of a real pre-tax weighted average cost of capital (WACC) were:

- (a) gearing of 60% debt (~~the assumption made by Australian regulators setting access prices for regulated assets in the energy sector,~~ an assumption which is consistent with the Operator's long term view of an appropriate financial structure);
- (b) tax rate of 30% (the statutory tax rate, ~~consistent with the ERA's past practice~~); and
- (c) expected inflation of ~~2.52~~2.57% (a geometric average of Reserve Bank of Australia forecasts of inflation for the next 10 years).

~~11.15. Only a proportion of the market equilibrium return to equity investors is provided by the business issuing equity. The remainder of the equity return is provided, through the taxation system, from imputation credits. If the value of those credits were set at 0.65, then, with a tax rate 30%, some 22% of the return to equity investors would be in the form of imputation credits. This would mean that non-resident investors, unable to use those credits, would receive a return that is 22% below the market equilibrium required return. In the current market for funds, non-resident investors provide a material amount of the equity which funds regulated infrastructure assets including gas transmission pipelines. Providing those investors with a return that is 22% below the market equilibrium required return is not commensurate with prevailing conditions in the market for funds. Therefore, no value has been assigned to imputation credits (the factor gamma has been assigned a value of zero) for the purpose of calculating a real pre-tax WACC~~

11.27. Gamma, the value to be attributed to franking credits, was set at zero. This is consistent with setting the value of cash dividends at 1 for the purpose of estimating the required return on equity.

11.28. Furthermore, the dominant market practice is to make no adjustment for franking credits when estimating a WACC: setting gamma at zero is also consistent with market practice.

Demonstrating the way in which the Rate of Return has been calculated

11.29 ~~11.16~~-The way in which the Rate of Return has been calculated is set out in Table ~~20.22~~.

Table 22 ~~Table 20~~ Demonstration of calculation of the Rate of Return

$WACC_{\text{nominal post-tax}} = E(r_e) \times ((1 - t)/(1 - t \times (1 - \gamma))) \times E/V + E(r_d) \times (1 - t) \times D/V$
 $E(r_e)$ is the nominal post-tax expected rate of return on equity - the cost of equity
 $E(r_d)$ is the nominal pre-tax expected rate of return on debt - the cost of debt
 E/V is the proportion of equity in the total financing (which comprises equity and debt)
 D/V is the proportion of debt in the total financing
 t is the tax rate
 γ (gamma) is the value of imputation credits
 Divide by $1 - t$ to convert to nominal pre-tax:
 $WACC_{\text{nominal pre-tax}} = E(r_e) \times (1/(1 - t \times (1 - \gamma))) \times E/V + E(r_d) \times D/V$
 Apply Fisher equation to obtain real pre-tax WACC:
 $WACC_{\text{real pre-tax}} = (1 + WACC_{\text{nominal pre-tax}})/(1 + \pi^e) - 1$
 π^e is expected inflation

Parameter	Estimate
Cost of equity	13.50 <u>12.50</u> %
Cost of debt	9.73 <u>9.52</u> %
Gearing: equity to total value	40.00%
Gearing: debt to total value	60.00%
Tax rate	30.00%
Value of imputation credits (gamma)	0
Expected inflation	2.52 <u>2.57</u> %
WACC	
Nominal pre-tax WACC	13.55 <u>12.85</u> %
Real pre-tax WACC	10.76 <u>10.03</u> %



12. METHOD FOR DEALING WITH TAXATION [R. 72 (1)(h)]

- 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.

13. ~~NOT USED~~ EFFICIENCY CARRYOVER [R. 72 (1)(i)]

~~This section is left intentionally blank~~

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 (which are included in the values in Table 3), are as follows:

- (a) 2011 - \$12.53 million; and
- (b) 2012 - \$12.22 million.

13.2. A demonstration of how these amounts have been calculated is shown in Table.23.

Table 23 Incentive Mechanism

14.

<u>Year ending 31 December</u>	<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>
<u>Forecast OPEX (in Nominal \$s)</u>	<u>41.73</u>	<u>41.12</u>	<u>55.58</u>	<u>54.87</u>	<u>53.18</u>
<u>Actual OPEX (in Nominal \$s)</u>	<u>37.33</u>	<u>39.53</u>	<u>42.69</u>	<u>55.88</u>	<u>77.78</u>
<u>Underspend</u>	<u>4.40</u>	<u>1.59</u>	<u>12.89</u>	<u>0.00</u>	<u>0.00</u>
<u>Year ending 31 December</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>
<u>Financial gain in Nominal \$</u>	<u>12.85</u>	<u>12.85</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>
<u>Financial Gain in 2010 \$s</u>	<u>12.53</u>	<u>12.22</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>

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

- 14.1. Subject to clause 14.3, the Reference Tariff (being the R1 Tariff) has been designed to recover from Shippers using the Reference Service that portion of the Total Revenue that reflects:
- (a) those costs (including capital costs) which are directly attributable to the provision of the Reference Service; and
 - (b) a share of those costs (including capital costs) which are attributable to provision of the Reference Service jointly with Pipeline Services provided to other Shippers with contractual rights existing prior to the commencement of this Current Access Arrangement Period and other Pipeline Services which Operator considers are reasonably foreseeable to be offered during the Current Access Arrangement Period.
- 14.2. In determining the Reference Tariff for the R1 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 Reference Service.
- 14.3. In accordance with section 12 of the Current 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 Current Access Arrangement, the portion of the Total Revenue for each year of the Current 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 Tariff.
- 14.4. The Reference Tariff is designed:
- (a) to generate from the provision of the Reference Service the portion of Total Revenue attributable to provision of the Reference Service;
 - (b) to generate from a Shipper or class of Shippers to which the 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 Service, the Reference Tariff is divided into a two part tariff structure:
- (a) R1 Capacity Reservation Tariff; and
 - (b) R1 Commodity Tariff.

R1 Capacity Reservation Tariff

- 14.6. The R1 Capacity Reservation Tariff for the Reference Service, when applied to determine the R1 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:
- (a) the Shipper must pay a R1 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 R1 Capacity Reservation Charge is the aggregate of the Shipper's Contracted Capacity for the Reference Service at each Outlet Point multiplied by the R1 Capacity Reservation Tariff.
- 14.8. The R1 Capacity Reservation Tariff is a number of dollars per GJ of Contracted Capacity for the Reference Service and is:
- (a) as at the commencement of the Current Access Arrangement Period - as specified in the Current Access Arrangement;
 - (b) otherwise varied in accordance with clause 11 of the Access Arrangement.

R1 Commodity Tariff

- 14.9. The R1 Commodity Tariff for the Reference Service, when applied to determine the Commodity Charge, recovers from the Shipper a proportion of the cost of the ~~fuel~~ gas System Use Gas used on the DBNGP.
- 14.10. In accordance with the terms of the Access Contract Terms and Conditions, the R1 Shipper must pay a R1 Commodity Charge for each Gas Day during the Period of Supply by calculating the multiple of the R1 Commodity Tariff and each GJ of Gas Delivered to the Shipper up to Contracted Capacity for R1 Services at all Outlet Points by the Operator on that Gas Day.
- 14.11. The R1 Commodity Tariff is a number of dollars per GJ of gas actually Delivered to any Outlet Point on the DBNGP; ±

Other tariff matters

- 14.12. The R1 Shipper is required to pay Other Charges as required by the Access Contract Terms and Conditions;
- 14.13. The R1 Capacity Reservation Charge, the R1 Commodity Charge and all Other Charges, as determined in accordance with the Access Contract Terms and Conditions, are exclusive of GST.
- 14.14. Table 24~~24~~ shows the cost allocation to be recovered by the R1 Capacity Reservation and R1 Commodity components of the Reference Tariff.

Table 24 ~~Table 21~~ Cost Allocation derived by each component of the Reference Tariff (Real \$million at 31 December ~~2009~~2010)

Year ending 31 December	2011	2012	2013	2014	2015
Fuel <u>System Use</u> Gas	49.94 <u>20.40</u>	21.04 <u>21.55</u>	20.95 <u>21.46</u>	23.08 <u>23.63</u>	23.54 <u>24.07</u>
Other Components of Total Revenue	539.99 <u>512.03</u>	540.64 <u>527.60</u>	523.65 <u>512.53</u>	517.23 <u>506.56</u>	510.14 <u>499.47</u>
Total	559.90 <u>532.43</u>	561.65 <u>549.15</u>	544.60 <u>533.99</u>	540.31 <u>530.19</u>	533.65 <u>523.53</u>
Present Value of Costs Recovered (discounted at the rate of return)					
by R1 Capacity Reservation Tariff	472.82 <u>461.96</u>	432.36 <u>425.25</u>	389.29 <u>385.44</u>	351.47 <u>350.32</u>	317.32 <u>318.39</u>
by R1 Commodity Tariff	19.04 <u>19.61</u>	17.58 <u>18.25</u>	15.84 <u>16.56</u>	14.42 <u>15.17</u>	13.13 <u>13.91</u>
Total	491.83 <u>481.57</u>	449.94 <u>443.50</u>	405.13 <u>402.00</u>	365.89 <u>365.49</u>	330.45 <u>332.30</u>

15. REFERENCE TARIFF VARIATION MECHANISM RATIONALE [R. 72(1)(k)]

- 15.1. Rule 92 of the NGR requires inclusion of a Reference Tariff Variation Mechanism ~~to be included~~ in the Current Access Arrangement.
- 15.2. Rule 97 of the NGR provides that a Reference Tariff Variation Mechanism may provide for variation of a Reference Tariff:
- in accordance with a schedule of fixed tariffs;
 - in accordance with a formula set out in the Current 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).
- 15.3. The Current Access Arrangement contains a Reference Tariff Variation Mechanism that is made up of 4 parts – see section 11 of the Current Access Arrangement:
- CPI Formula Variation;
 - Tax Changes Variation;
 - New Costs Pass Through Variation; and
 - 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 ~~each~~that the Reference Tariff Variation Mechanism ~~to~~ be designed to equalize (in terms of present values):
- forecast revenue from Reference Services over the Current Access Arrangement Period; and
 - the portion of Total Revenue allocated to Reference Services for the Current 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:
- the need for efficient tariff structures;
 - the possible effects of the reference tariff variation mechanism on the administrative costs of the regulator, the service provider, and users or potential users;
 - the regulatory arrangements (if any) applicable to the relevant reference services before the commencement of the proposed reference tariff variation mechanism;
 - 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:
- The Reference Tariff in the Current 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 Current Access Arrangement Period, the Operator will not have the opportunity of recovering its efficiently incurred – nominal - costs of providing Reference Services.

- (b) The Current Access Arrangement provides for annual inflation adjustment of the reference tariff using the CPI, All Groups for Perth. This is appropriate given that most of the Operator's costs are incurred in Western Australia.
- (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 Current Access Arrangement contains amounts for certain types of Taxes and Carbon Costs 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 Current Access Arrangement Period will be equalised (in terms of present values) with the portion of Total Revenue allocated to the Reference Service for the Current Access Arrangement Period.
- (d) In the case of Carbon Costs, at the time of approval of the Current Access Arrangement, the federal government has tabled a series of bills in the national parliament to give effect to an emissions trading scheme. Under the proposed legislation, the Operator (or Related Body Corporate of the Operator) will be subject to liability in relation to greenhouse gas emissions from the operation of the DBNGP. So, there is a very high likelihood that Carbon Costs will need to be included in operating expenditure.
- (e) 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.
- (f) 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 Current 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) The Operator has recently experienced a situation where it was asked to pay a significant increase in the price of system use gas it needs to operate and maintain the DBNGP. Such a mechanism is efficient in that it would:
 - (i) avoid the risk that these expenses could not be passed on to Shippers;
 - (ii) reduce the consequences to the Operator and Shippers that could arise as a result of the adverse financial impact on the Operator; and
 - (iii) avoid the costs involved in renegotiating contracts with Shippers that would be required to otherwise allow the pass through of the increased expenses.
- (d) 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.

16. NOT USED

This has been left intentionally blank

17. Total Revenue [r. 72(1)(m)]

17.1. Calculation of Total Revenue

- (a) The Total Revenue for each year of the Current 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 Current Access Arrangement Period has been calculated as the sum over the Current Access Arrangement Period of the costs in each year of the Current 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 Current Access Arrangement Period for the estimated cost of corporate income tax.

17.3. The Total Revenue for each year of the Current Access Arrangement Period is indicated in Table [22-25](#).

Table 25 ~~Table 22~~ Value of Total Revenue (Real \$million at 31 December ~~2009~~2010)

Year ending 31 December	2011	2012	2013	2014	2015
Return on Projected Capital Base	356.66 <u>33</u>	354.37 <u>34</u>	346.25 <u>33</u>	337.82 <u>32</u>	329.27 <u>31</u>
Depreciation on the Projected Capital Base	4.04	0.70	2.84	4.66	6.42
Incentive Mechanism	94.39 <u>90.3</u>	93.36 <u>94.8</u>	93.74 <u>95.3</u>	94.12 <u>95.6</u>	94.51 <u>96.0</u>
Forecast Operating Expenditure	3	8	4	9	9
	40.22 <u>12.5</u>	9.97 <u>12.22</u>	0.00	0.00	0.00
	101.64 <u>95</u>	103.96 <u>10</u>	104.60 <u>10</u>	108.37 <u>10</u>	109.87 <u>11</u>
Total	559.90 <u>53</u>	561.65 <u>54</u>	544.60 <u>53</u>	540.31 <u>53</u>	533.65 <u>52</u>
Present Value (discounted at the rate of return)	2.43	9.15	3.99	0.19	3.53
	505.51 <u>48</u>	457.82 <u>45</u>	400.79 <u>40</u>	359.00 <u>36</u>	320.13 <u>32</u>
	3.91	3.62	0.90	1.77	4.67

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

BBSW means the Australian Financial Markets Association's bank-bill reference rate, published daily on the Reuters monitor system.

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, based on the assumptions outlined in paragraph 8.2.

Prior Access Arrangement Information has the meaning given to it in clause 1.2 of this AAI.

Prior Access Arrangement Period means the period to which the Prior Access Arrangement applied as indicated in Table 2 in clause 3.1 of this AAI.

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

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

WACC means the weighted average cost of capital approach.