

# Access Arrangement Information for the Dampier to Bunbury Natural Gas Pipeline

Economic Regulation Authority

 WESTERN AUSTRALIA

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## 1. INTRODUCTION

This document comprises the Access Arrangement Information for the Dampier to Bunbury Natural Gas Pipeline pursuant to the requirements of the *Gas Pipelines Access (Western Australia) Act 1998*, which incorporates the *National Third Party Access Code for Natural Gas Pipeline Systems* (“Code”).

## 2. ACCESS AND PRICING PRINCIPLES

### 2.1 Reference Services

Section 3.3 of the Code requires the Access Arrangement for the DBNGP to offer a Reference Tariff for at least one Service sought by a significant part of the market (“Reference Service”).

Reference tariffs are provided for three Reference Services:

- Full Haul T1 Service (T1 Service)
- Part Haul T1 Service (P1 Service)
- Back Haul T1 Service (B1 Service)

### 2.2 Non-Reference Services

The following Non-Reference Services are available to a Prospective Shipper subject to availability of Capacity:

- Spot Capacity Service;
- Park and Loan Service; and
- Seasonal Service

The following Non-Reference Services are available to a Prospective Shipper subject to Operational Availability:

- Peaking Service;
- metering information service;
- pressure and temperature control service;
- odourisation service; and
- co-mingling service.

The Operator is prepared to negotiate to provide a Prospective Shipper with any other Service that is not a Reference Service.

In addition to the above Non-Reference Services, the Operator will provide services to shippers with Gas transportation contracts entered into before the commencement of the Access Arrangement Period.

### **3 TARIFF DETERMINATION METHODOLOGY**

#### **3.1 Tariff Structure**

The Reference Tariff for each of the Reference Services is a two-part tariff as follows:

(a) Capacity Reservation Tariff

The Capacity Reservation Tariff is a number of dollars per GJ of Contracted Capacity for the Reference Service.

Each Reference Service Shipper is to pay the Operator a Capacity Charge, which is to be calculated for each Gas Day by multiplying the aggregate of the Shipper's Delivery Point MDQs by the Capacity Reservation Tariff for the relevant Reference Service.

(b) Commodity Tariff

The Commodity Tariff is a number of dollars per GJ of gas actually Delivered to any Delivery Point on the DBNGP.

Each Reference Service Shipper is to pay the Operator a Commodity Charge, which is to be calculated for each Gas Day by multiplying the aggregate of the quantity of gas delivered to the Shipper at a Delivery Point or Delivery Points by the Commodity Tariff for the relevant Reference Service.

The Capacity Reservation Tariff recovers from each Reference Service Shipper a proportion of the return and depreciation on, and a proportion of the non capital costs incurred in operating and maintaining, the DBNGP. The Capacity Reservation Tariff essentially recovers the fixed costs of the DBNGP. The levels of these costs are determined by the total requirement for capacity to provide the Reference Service, and they are to be recovered on the basis of Reference Service Shippers' contracted capacity requirements.

The Commodity Tariff recovers from each Reference Service Shipper a proportion of the cost of the fuel gas used on the DBNGP. Fuel gas costs are the only variable costs associated with operation of the DBNGP. They are recovered from Reference Service Shippers on the basis of the quantity of gas delivered to those shippers.

#### **3.2 Cost Allocation and Distance-Based Tariffs**

The Reference Tariffs have been determined under an assumption that all Shippers using Full Haul, Part Haul and Back Haul Services are users of the respective Reference Services.

The Reference Tariffs for the P1 Service and B1 Service are determined as a proportion of the Reference Tariff for the T1 Service according to the following formula.

$$F \times \frac{D}{1399}$$

where

- F* is the value of the charge that would apply if the Service were the full haul Reference Service
- D* is the distance in kilometres of pipeline between the relevant Receipt Point and the relevant Delivery Point.

### 3.3 Incentive structures: price path

The Reference Tariff Policy set out in the Access Arrangement provides for Reference Tariff adjustment in accordance with a predetermined price path. The Reference Tariff will be adjusted annually during the Access Arrangement Period by 100 per cent of the increase in the CPI.

Price path regulation provides Operator with an incentive to minimise the costs of delivering the Reference Service. With the Reference Tariff constrained to increasing at 100 per cent of the increase in CPI, reductions in the cost of delivering the Reference Service increase profits, and these increases in profits are retained at least until the end of the Access Arrangement Period.

If Operator is able to increase demand for the Reference Service above the forecast quantities used in tariff determination, its revenue from sales will exceed the forecast revenue. To the extent that the increase in demand can be accommodated without a proportionate increase in cost, the Operator will generate higher than expected profits. These higher profits are retained at least until the end of the Access Arrangement Period.

### 3.4 Incentive structures: efficiency carryover

Additional incentives for efficiency improvement are provided by the inclusion of an efficiency carryover mechanism in the Reference Tariff Policy of the Access Arrangement. That mechanism provides, in accordance with section 8.44 of the Code, for a sharing of any returns to the Operator from the sale of Full Haul, Part Haul and Back Haul Services in an Access Arrangement Period that exceeded the level of returns that were expected during that Access Arrangement Period for the sale of such Services. This sharing is effected through inclusion of any efficiency gains in the current Access Arrangement Period in the Total Revenue from which the Reference Tariff for the following Access Arrangement Period is to be determined. If efficiency gains are made in the current Access Arrangement Period, the Operator is rewarded with a higher Reference Tariff in the following Access Arrangement Period.

## 4 INFORMATION REGARDING CAPITAL COSTS

### 4.1 Initial Capital Base

The Initial Capital Base has been established at a value of \$1,550.00 million as at 31 December 1999.

The allocation of the Initial Capital Base to asset classes as at 31 December 1999 is in accordance with the allocation made for determination of the Reference Tariff applicable during the initial Access Arrangement Period. Asset values by class of assets as at 31 December 1999, and escalated to 31 December 2004, are shown in Table 1.

**Table 1: Initial Capital Base by asset class**

Asset	Percentage of total asset value	Asset value at 31 Dec 1999 (\$million, at 31 Dec 1999)	Asset value at 31 Dec 1999 (\$million, at 31 Dec 2004)
Pipeline	81.49	1,263.15	1,491.15
Compression	13.65	211.60	249.80
Metering	1.12	17.35	20.49
Other			
Depreciable	3.07	47.66	56.26
Non depreciable (land and linepack)	0.66	10.24	12.09
<b>Total</b>	<b>100.00</b>	<b>1,550.00</b>	<b>1,829.77</b>

### 4.2 New Facilities Investment 2000 to 2004

The actual New Facilities Investment during the initial Access Arrangement Period is shown in Table 2.

**Table 2: Actual New Facilities Investment 2000 to 2004**

Year ending 31 December	2000	2001	2002	2003	2004	Total
<b>Nominal \$million (dollar values at end of year)</b>						
Pipeline	1.39	0.03	0.06	0.00	0.62	<b>2.10</b>
Compression	18.62	1.33	0.08	-0.11	0.18	<b>20.10</b>
Metering	0.57	0.54	0.36	-0.03	1.67	<b>3.11</b>
Other	5.10	1.37	0.75	0.92	0.90	<b>9.04</b>
<b>Total</b>	<b>25.68</b>	<b>3.27</b>	<b>1.26</b>	<b>0.77</b>	<b>3.38</b>	<b>34.35</b>
<b>Real \$million (\$ values at 31 December 2004)</b>						
Pipeline	1.55	0.03	0.07	0.00	0.62	<b>2.27</b>
Compression	20.78	1.44	0.09	-0.12	0.18	<b>22.37</b>
Metering	0.64	0.58	0.38	-0.03	1.67	<b>3.24</b>
Other	5.69	1.48	0.79	0.94	0.90	<b>9.80</b>
<b>Total</b>	<b>28.65</b>	<b>3.54</b>	<b>1.32</b>	<b>0.79</b>	<b>3.38</b>	<b>37.67</b>

The following components of forecast New Facilities Investment associated with the Stage 3A expansion of the DBNGP were included in the value of the Initial Capital Base and have consequently been deducted from the value of actual New Facilities Investment for the purposes of determining the Capital Base at 31 December 2004:

- construction and commissioning of compressors at CS2 and CS7 at a cost of \$18.855 million (dollar values of 31 December 1999); and
- final payments for CS10 of \$632,000 (dollar values of 31 December 1999).

This value in dollar values of 31 December 2004 is \$23.004 million.

The values of New Facilities Investment applied in the roll forward of the Capital Base in the period 2000 to 2004 are shown in Table 3.

**Table 3: New Facilities Investment Rolled into the Capital Base 2000 to 2004**

Year ending 31 December	2000	2001	2002	2003	2004	Total
<b>Nominal \$million (dollar values at end of year)</b>						
Pipeline	1.39	0.03	0.06	0.00	0.62	<b>2.10</b>
Compression	-2.00	1.33	0.08	-0.11	0.18	<b>20.10</b>
Metering	0.57	0.54	0.36	-0.03	1.67	<b>3.11</b>
Other	5.10	1.37	0.75	0.92	0.90	<b>9.04</b>
<b>Total</b>	<b>5.06</b>	<b>3.27</b>	<b>1.26</b>	<b>0.77</b>	<b>3.38</b>	<b>34.35</b>
<b>Real \$million (\$ values at 31 December 2004)</b>						
Pipeline	1.55	0.03	0.07	0.00	0.62	<b>2.27</b>
Compression	-2.23	1.44	0.09	-0.12	0.18	<b>22.37</b>
Metering	0.64	0.58	0.38	-0.03	1.67	<b>3.24</b>
Other	5.69	1.48	0.79	0.94	0.90	<b>9.80</b>
<b>Total</b>	<b>5.65</b>	<b>3.54</b>	<b>1.32</b>	<b>0.79</b>	<b>3.38</b>	<b>37.67</b>

#### 4.3 Depreciation 2000 to 2004

Values of depreciation applied in determination of Reference Tariffs for the 2000 to 2004 Access Arrangement Period are shown in Tables 4 and 5.

**Table 4. Initial Capital Base Depreciation 2000 to 2004 (Real \$million, dollar values at 31 December 2004)**

Year ending 31 December	2000	2001	2002	2003	2004	Total
<b>Applied in Reference Tariff Determination (2000 to 2004)</b>						
Pipelines	27.36	27.36	27.36	27.36	27.36	<b>136.80</b>
Compression	13.34	13.34	13.34	13.34	13.34	<b>66.70</b>
Metering	0.54	0.54	0.54	0.54	0.54	<b>2.70</b>
Other	3.34	3.34	3.34	3.34	3.34	<b>16.69</b>
<b>Total</b>	<b>44.58</b>	<b>44.58</b>	<b>44.58</b>	<b>44.58</b>	<b>44.58</b>	<b>222.90</b>

**Table 5. New Facilities Investment Depreciation 2000 to 2004  
(Real \$million, dollar values at 31 December 2004)**

Year ending 31 December	2000	2001	2002	2003	2004	Total
<b>Applied in Reference Tariff Determination (2000 to 2004)</b>						
Pipelines	0.00	0.01	0.01	0.01	0.02	<b>0.05</b>
Compression	0.00	0.04	0.21	0.38	0.46	<b>1.09</b>
Metering	0.00	0.00	0.00	0.00	0.00	<b>0.01</b>
Other	0.00	0.20	0.40	0.62	0.81	<b>2.03</b>
<b>Total</b>	<b>0.00</b>	<b>0.24</b>	<b>0.62</b>	<b>1.02</b>	<b>1.29</b>	<b>3.18</b>

**4.4 Roll-forward of the Capital Base 2000 to 2004**

The Capital Base has been rolled forward to 31 December 2004 as follows:

- (a) commencing with the Initial Capital Base of \$1,550.00 million on 31 December 1999;
- (b) the Initial Capital Base has been escalated, at the rate of inflation as measured by the Consumer Price Index (All Groups, Weighted Average of Eight Capital Cities), and expressed in 31 December 2004 prices;
- (c) actual New Facilities Investment during the initial Access Arrangement Period has been escalated and expressed in 31 December 2004 prices, and added to the Initial Capital Base; and
- (d) depreciation applied in determination of Reference Tariffs for the 2000 to 2004 Access Arrangement Period has been subtracted.

The roll forward of the Capital Base to 31 December 2004 is shown in Table 6.

**Table 6. Roll Forward of the Capital Base 2000 to 2004  
(Real \$million, dollar values at 31 December 2004)**

Year ending 31 December	2000	2001	2002	2003	2004
<b>Opening Capital Base</b>	1,829.77	1,790.84	1,749.55	1,705.67	1,660.86
<b>New Facilities Investment</b>	5.65	3.54	1.32	0.79	3.38
<b>Depreciation</b>	44.58	44.82	45.20	45.60	45.87
<b>Closing Capital Base</b>	1,790.84	1,749.55	1,705.67	1,660.86	1,618.37

**4.5 New Facilities Investment 2005 to 2010**

New Facilities Investment forecast to occur during the Access Arrangement Period is reasonably expected to pass the requirements of section 8.16 of the Code when that New Facilities Investment is forecast to occur.

The value of New Facilities Investment for the Access Arrangement Period is shown in Tables 7 and 8.



**Table 7. Forecast New Facilities Investment by asset class 2005 to 2010**

Year ending 31 December	2005	2006	2007	2008	2009	2010	Total
<b>Nominal \$million (dollar values at end of year)</b>							
Pipelines	4.62	6.06	275.28	304.62	95.42	169.53	<b>855.54</b>
Compression	3.79	72.53	127.02	44.93	0.47	0.72	<b>249.47</b>
Metering	1.16	1.30	0.17	0.00	0.00	0.00	<b>2.62</b>
Other depreciable assets	4.12	3.35	1.72	6.09	7.44	7.08	<b>29.80</b>
Non-depreciable assets	0.00	0.00	0.00	0.00	0.00	0.00	<b>0.00</b>
<b>Total</b>	<b>13.69</b>	<b>83.24</b>	<b>404.19</b>	<b>355.64</b>	<b>103.33</b>	<b>177.34</b>	<b>1137.43</b>
<b>Real \$million (dollar values at 31 December 2004)</b>							
Pipelines	4.50	5.74	254.23	273.96	83.57	144.59	<b>766.59</b>
Compression	3.69	68.79	117.31	40.41	0.41	0.62	<b>231.22</b>
Metering	1.13	1.23	0.15	0.00	0.00	0.00	<b>2.51</b>
Other depreciable assets	4.01	3.18	1.59	5.48	6.51	6.04	<b>26.81</b>
Non-depreciable assets	0.00	0.00	0.00	0.00	0.00	0.00	<b>0.00</b>
<b>Total</b>	<b>13.33</b>	<b>78.94</b>	<b>373.28</b>	<b>319.84</b>	<b>90.50</b>	<b>151.25</b>	<b>1027.14</b>

**Table 8. Forecast New Facilities Investment by investment category 2005 to 2010**

Year ending 31 December	2005	2006	2007	2008	2009	2010	Total
<b>Nominal \$million (dollar values at end of year)<sup>1</sup></b>							
<b>Expansion</b>							
Pipeline looping	0.51	0.00	272.34	302.11	93.20	167.97	836.13
Compression	0.00	69.23	124.52	44.48	0.00	0.00	238.23
<b>Stay-in-business</b>	13.17	14.00	7.33	9.05	10.13	9.37	63.06
<b>Total</b>	<b>13.69</b>	<b>83.24</b>	<b>404.19</b>	<b>355.64</b>	<b>103.33</b>	<b>177.34</b>	<b>1137.43</b>
<b>Real \$million (dollar values at 31 December 2004)</b>							
<b>Expansion</b>							
Pipeline looping	0.50	0.00	251.51	271.70	81.62	143.26	748.59
Compression	0.00	65.66	115.00	40.00	0.00	0.00	220.66
<b>Stay-in-business</b>	12.83	13.28	6.77	8.14	8.87	7.99	57.89
<b>Total</b>	<b>13.33</b>	<b>78.94</b>	<b>373.28</b>	<b>319.84</b>	<b>90.50</b>	<b>151.25</b>	<b>1027.14</b>

#### 4.6 Depreciation 2005 to 2010

A separate depreciation schedule has been determined for each of the four groups of physical assets that form the DBNGP. These four groups are:

- (a) pipeline assets;

<sup>1</sup> Nominal values are derived from the real values with an assumed inflation rate of 2.74 per cent per annum. The nominal values differ slightly from values indicated in the Access Arrangement Information due to a different assumed inflation rate. Total Revenue is determined on the basis of the real values.

- (b) compressor station assets;
- (c) metering assets; and
- (d) other assets.

For the assets in each of the four groups, depreciation during the Access Arrangement Period has been determined by applying the straight-line method.

Assumptions for asset lives for new assets, and remaining lives as at 31 December 2004 for assets in the Initial Capital Base as at 31 December 1999, are shown in Table 9.

New assets, created by New Facilities Investment, have been depreciated over the appropriate asset lives for new assets from Table 9.

Compressor station assets existing at 31 December 1999 have been depreciated at a single weighted average asset life. This life is the weighted average of the remaining lives of each of the existing compressor stations at that date (as determined in the 23 May 2003 Final Decision of the Independent Gas Pipelines Access Regulator). In calculating the weighted average, each individual compressor station asset life has been weighted by the value assigned to the compressor station in the initial Capital Base.

Metering assets existing at 31 December 1999 have, similarly, been depreciated at a single weighted average asset life.

**Table 9. Asset Lives**

Asset	Asset Life (years)	Average Remaining Asset Life at 31 December 2004 (years)
Pipeline assets	70	49.50
Compression assets	30	19.60
Metering assets	50	38.50
Other depreciable assets	30	11.85

Table 10 shows the depreciation schedule for each class of assets comprising the Capital Base.

**Table 10. Depreciation Schedule 2005 to 2010**

Year ending 31 December	2005	2006	2007	2008	2009	2010
<b>Real \$million, dollar values at 31 December 2004</b>						
Pipeline assets	27.39	27.46	27.54	31.17	35.08	36.28
Compression assets	12.54	12.61	14.90	18.81	20.16	20.17
Metering assets	0.60	0.62	0.64	0.65	0.65	0.65
Other depreciable assets	3.67	3.80	3.91	3.96	4.14	4.36
<b>Total</b>	<b>44.19</b>	<b>44.48</b>	<b>46.99</b>	<b>54.58</b>	<b>60.03</b>	<b>61.45</b>

#### 4.7 Roll Forward of the Capital Base 2005 to 2010

The Capital Base has been rolled forward to 31 December 2004 as follows:

- (a) commencing with the Capital Base of \$1,618.37 million on 31 December 2004;
- (b) forecast New Facilities Investment during the initial Access Arrangement Period has been expressed in 31 December 2004 prices, and added to the Capital Base; and
- (d) depreciation for the 2005 to 2010 Access Arrangement Period has been subtracted.

The roll forward of the capital base to 31 December 2010 is shown in Table 11.

**Table 11. Projected Roll-Forward of the Capital Base**

Year ending 31 December	2005	2006	2007	2008	2009	2010
<b>Real \$million, dollar values at 31 December 2004</b>						
Capital Base at beginning of year	1,618.37	1,587.51	1,621.97	1,948.26	2,213.52	2,243.99
New Facilities Investment	13.33	78.94	373.28	319.84	90.50	151.25
Depreciation	44.19	44.48	46.99	54.58	60.03	61.45
Capital Base at end of year	1,587.51	1,621.97	1,948.26	2,213.52	2,243.99	2,333.78

#### 4.8 Rate of Return

The Rate of Return for the Access Arrangement Period has been established as a pre-tax real weighted average of the returns applicable to debt and equity.

A pre-tax real weighted average cost of capital of 7.24 per cent has been used in calculation of Total Revenue.

## 5. INFORMATION REGARDING NON CAPITAL COSTS

### 5.1 Fixed versus variable costs

The costs associated with the operation and maintenance of a gas transmission pipeline system are predominantly fixed. For a given pipeline configuration, capital costs, pipeline operating and maintenance costs and, to a lesser extent, compressor maintenance costs, do not vary materially with the volume of gas delivered to shippers. The only truly variable costs are the costs of fuel gas.

When the capacity of the DBNGP is expanded (implementing a new pipeline configuration), the level of these fixed costs will rise.

### 5.2 Forecast Non Capital Costs

Forecast Non Capital Costs for the Access Arrangement Period are shown in Table 12.

**Table 12. Forecast Non Capital Costs 2005 to 2010**

Year ending 31 December	2005	2006	2007	2008	2009	2010	Total
<b>Nominal \$million, dollar values at end of year</b>							
Wages and salaries	5.38	5.63	5.89	6.17	6.46	6.76	<b>36.29</b>
Materials and services	35.83	34.33	47.94	46.44	44.82	46.69	<b>256.05</b>
Corporate overheads	0.00	0.00	0.00	0.00	0.00	0.00	<b>0.00</b>
Fuel gas	19.84	20.38	30.04	32.24	33.07	33.98	<b>169.54</b>
<b>Total</b>	<b>61.05</b>	<b>60.34</b>	<b>83.87</b>	<b>84.85</b>	<b>84.35</b>	<b>87.43</b>	<b>462.26</b>
<b>Real \$million, dollar values at 31 December 2004</b>							
Wages and salaries	5.24	5.34	5.44	5.55	5.66	5.77	<b>32.99</b>
Materials and services	34.90	32.56	44.27	41.76	39.25	39.82	<b>232.57</b>
Corporate overheads	0.00	0.00	0.00	0.00	0.00	0.00	<b>0.00</b>
Fuel gas	19.32	19.32	27.74	28.99	28.96	28.98	<b>153.32</b>
<b>Total</b>	<b>59.45</b>	<b>57.22</b>	<b>77.46</b>	<b>76.31</b>	<b>73.87</b>	<b>74.57</b>	<b>418.88</b>

### 5.3 Total costs at corporate level

The DBNGP business is a stand-alone entity. The Non Capital Costs in Table 12 are, therefore, the total service provider costs at corporate level.

The business of the DBNGP is the provision of gas transportation services. There is, therefore, no allocation of costs between regulated and unregulated segments.

### 5.4 Gas used in operations

The cost of fuel gas is derived from estimates of the quantity of gas used in operations. The quantity of gas used in operations in each year of the Access Arrangement Period is an estimate of the quantity of gas used as compressor fuel during the year assuming steady state flow, plus an allowance of 5% for:

- (a) additional compressor fuel used in accommodating variable flow rates;
- (b) Gas used as fuel in gas engine alternators and heaters;
- (c) Gas which is vented during maintenance activities; and
- (d) Gas which is lost from the DBNGP.

## 6 TOTAL REVENUE

### 6.1 Calculation Methodology

The Total Revenue has been calculated by the Cost of Service methodology as described in section 8.4 of the Code, wherein the Total Revenue is equal to the cost of providing all Services (some of which may be the forecast of such costs), and with this cost to be calculated on the basis of:

- a return (Rate of Return) on the value of the capital assets that form the Covered Pipeline or are otherwise used to provide Services (Capital Base);
- depreciation of the Capital Base (Depreciation); and
- the operating, maintenance and other non capital costs incurred in providing all Services (Non Capital Costs).

The methodology has been applied on a real basis as described in section 8.5A(b) of the Code under which the Capital Base, Depreciation and all costs and revenues are expressed in constant prices and a real Rate of Return is allowed.

The Total Revenue for the Access Arrangement Period is indicated in Table 13.

**Table 13. Value of Total Revenue derived by the Authority  
(Real \$million at 31 December 2004)**

Year ending 31 December	2005	2006	2007	2008	2009	2010
Return on Assets	117.13	114.90	117.39	141.01	160.21	162.41
Depreciation	44.19	44.48	46.99	54.58	60.03	61.45
Non Capital Costs	59.45	57.22	77.46	76.31	73.87	74.57
<b>Total</b>	<b>220.78</b>	<b>216.60</b>	<b>241.84</b>	<b>271.90</b>	<b>294.10</b>	<b>298.43</b>
<b>Present Value (Real discount rate of 7.24 per cent)</b>	<b>1,199.53</b>					

Total Revenue is recovered from Reference Tariffs, the Capacity Reservation tariff component recovers all costs except for Fuel Gas cost, which is intended to be recovered by the application of the Commodity tariff component. The Fuel Gas cost represents 9.9 per cent of the Present Value of the Total Revenue determined by the Authority.

Table 14 shows the cost allocation to be recovered by the Capacity Reservation and Commodity components of the Reference Tariff.

**Table 14. Cost Allocation derived by the Authority  
(Real \$million at 31 December 2004)**

Year ending 31 December	2005	2006	2007	2008	2009	2010
Capacity Reservation	201.46	197.27	214.09	242.90	265.14	269.45
Commodity (Fuel Gas)	19.32	19.32	27.74	28.99	28.96	28.98
<b>Total</b>	<b>220.78</b>	<b>216.60</b>	<b>241.84</b>	<b>271.90</b>	<b>294.10</b>	<b>298.43</b>
<b>Present Value (Real discount rate of 7.24 per cent)</b>						
Capacity Reservation	1,080.81					
Commodity (Fuel Gas)	118.72					
<b>Total</b>	<b>1,199.53</b>					

## 7 INFORMATION REGARDING VOLUME ASSUMPTIONS

### 7.1 Forecast of Contracted Capacities and Volumes

Table 15 indicates the forecasts of capacity to be contracted during the Access Arrangement Period, and forecasts of the volumes of gas expected to be delivered using that contracted capacity. Part Haul and Back Haul volumes have been weighted by distance in relation to Full Haul distance to enable their representation as Full Haul Equivalents.

**Table15. Forecast of Demand for Services**

Year ending 31 December	2005	2006	2007	2008	2009	2010
<b><i>Full Haul</i></b>						
Contracted capacity (TJ/day)	593.22	613.22	688.96	743.87	761.11	798.74
Throughput (TJ/day)	571.97	590.68	658.52	712.45	729.02	763.56
<b><i>Part Haul (forward haul)</i></b>						
Contracted capacity (TJ/day)	73.88	73.80	73.45	62.70	62.70	62.70
Throughput (TJ/day)	54.57	54.46	54.09	43.84	43.84	43.84
Capacity Reservation, Full Haul Equivalent [TJ/day]	15.27	14.47	13.53	12.97	12.97	12.97
Throughput, Full Haul Equivalent [TJ/day]	13.98	13.16	12.20	11.65	11.65	11.65
<b><i>Back Haul</i></b>						
Contracted capacity (TJ/day)	66.08	109.20	112.20	112.20	112.20	112.20
Throughput (TJ/day)	62.65	109.20	112.20	112.20	112.20	112.20
Capacity Reservation, Full Haul Equivalent [TJ/day]	5.97	10.05	10.30	10.30	10.30	10.30
Throughput, Full Haul Equivalent [TJ/day]	5.69	10.05	10.30	10.30	10.30	10.30
<b><i>Total Full Haul Equivalent</i></b>						
Capacity Reservation [TJ/day]	614.46	637.74	712.79	767.14	784.37	822.01
Throughput [TJ/day]	591.64	613.89	681.03	734.40	750.97	785.51

## 8 INFORMATION REGARDING REFERENCE TARIFFS

The Reference Tariff is derived so that the Present Value of the forecast Annual Revenues equals the Present Value of the Total Revenue (Cost of Service) of \$1,119.53 million.

Reference Tariffs for 2005 are as follows:

**Table 16. Reference Tariffs derived by the Authority**

Service and Charge	Tariff Charges 2005
<b>Full Haul</b>	
Capacity reservation charge (\$/GJ MDQ)	0.899899
Commodity charge (\$/GJ)	0.103122
Indicative total at 100% load factor (\$/GJ)	1.003021
<b>Part Haul and Back Haul</b>	
Capacity reservation charge (\$/GJ MDQ/km)	0.000643
Commodity charge (\$/GJ/km)	0.000074
Indicative total at 100% load factor (\$/GJ/km)	0.000717

For the years 2006 to 2011, the values of the Capacity reservation charge and Commodity charge are escalated by full CPI in accordance with clause 7.11 of the Access Arrangement.

The forecast expected Annual Revenues based on forecast capacity to be contracted during the Access Arrangement Period and forecasts of the volumes for the Access Arrangement Period is shown in Table 17.

**Table 17. Forecast Annual Revenue derived by the Authority  
(Real \$million at 31 December 2004)**

Year ending 31 December	2005	2006	2007	2008	2009	2010
Capacity Reservation	196.44	203.88	227.87	245.92	250.76	262.79
Commodity (Fuel Gas)	21.67	22.49	24.95	26.98	27.51	28.78
<b>Total</b>	218.11	226.37	252.82	272.90	278.27	291.57
<b>Present Value (Real discount rate of 7.24 per cent)</b>						
Capacity Reservation	1,080.81					
Commodity (Fuel Gas)	118.72					
<b>Total</b>	1,199.53					

**ANNEXURE 1**

**DBNGP SYSTEM:**

**DESCRIPTION OF THE GAS TRANSMISSION SYSTEM**

(Note: Annexure 1 has been issued as a separate document)