

# **TUBRIDGI PIPELINE SYSTEM ACCESS ARRANGEMENT INFORMATION**

## **Tubridgi Parties**

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Origin Energy Amadeus NL (ACN: 010 137 121)  
Pan Pacific Petroleum NL (ACN: 000 749 799)  
Tubridgi Petroleum Pty Ltd (ACN: 076 850 881)

Submitted to the  
Gas Access Regulator  
Office of Gas Access Regulation, Western Australia

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## **DISCLAIMER**

This document has been prepared solely for the purpose of compliance with the *Gas Pipelines Access (WA) Act 1998* and the National Third Party Access Code for Natural Gas Pipeline Systems ('the Code').

It is designed solely to enable Pipeline Users and Prospective Pipeline Users to understand the derivation of elements in the accompanying Access Arrangement and to form an opinion as to the compliance of that Access Arrangement with the provisions of the Code.

This document is not intended for any other purpose and should not be relied upon as the basis for any decision to transport or retail gas through the Tubridgi Pipeline System or to buy or sell, or otherwise deal in, securities of the companies which form the Tubridgi Joint Venture, or for any other purpose.

## **1. INTRODUCTION**

### **1.1. Purpose of this document**

This document is the Access Arrangement Information in relation to the Access Arrangement for the Tubridgi Pipeline System, which is comprised of the Tubridgi Pipeline (WA PL16) and the Griffin Pipeline (WA PL19). These two transmission pipelines run from the Tubridgi Gas Plant, 25 kilometres south of Onslow, to Compressor Station No.2 (CS2) on Epic Energy's Dampier to Bunbury Natural Gas Pipeline (DBNGP).

This Access Arrangement Information has been submitted by the Tubridgi Parties to the Gas Access Regulator of the Western Australian Office of Gas Access Regulation ('the Regulator') in accordance with section 2 of the National Third Party Access Code for Natural Gas Pipeline Systems ('the Code').

The purpose of this document is to set out such information as is necessary to enable Pipeline Users and Prospective Pipeline Users to understand the derivation of the elements of the Access Arrangement and to form an opinion as to the compliance of the Access Arrangement with the provisions of the Code.

### **1.2. Background**

The Tubridgi Pipeline System is owned by the Tubridgi Joint Venture, an unincorporated joint venture which, in addition to transporting gas, also produces gas from the Tubridgi gas field. Appendix B gives further details of the Tubridgi Parties.

SAGASCO South East Inc is currently the Tubridgi Operator and operates the Tubridgi Pipeline System on behalf of the Tubridgi Joint Venture. Functions of the Tubridgi Operator are contracted to Origin Energy Resources Limited (OERL). The Tubridgi Pipeline System Access Arrangement has been prepared on behalf of the Tubridgi Parties and all of the Tubridgi Parties will comply with the provisions of section 10.1 of the Code.

The Tubridgi Pipeline, built in 1991, has a diameter of 150 millimetres and a nominal maximum wall thickness of 4.7 millimetres. Approximately 87 kilometres long, the Tubridgi Pipeline currently transports gas from the Tubridgi gas field to CS2 on the DBNGP for sale to AlintaGas.

All current proven natural gas reserves in the Tubridgi gas field are dedicated to AlintaGas. The contract expires in late 2001 at which time it is expected there may be some tail gas recoverable from the Tubridgi gas field.

The Griffin Pipeline was built in 1993 and became operational in 1994. It has a diameter of 250 millimetres and a nominal maximum wall thickness of 6.2 mm. The Griffin Pipeline is the same length and is located in the same easement as the Tubridgi Pipeline. The Griffin Pipeline has a nominal capacity of 90 TJ per day with a maximum operating pressure (MAOP) of 12 MPa. Both the Griffin and Tubridgi pipelines are rated to pipeline specification AS 2885.

There are currently two sources of Gas transported by the Griffin Pipeline. Firstly, Gas produced by the Griffin Joint Venture (BHP Petroleum (Australia) Pty Ltd, Mobil Exploration and Producing Australia Pty Ltd and Inpex Alpha Ltd). This Gas, sourced from the Griffin offshore gas field, is purchased by the Tubridgi Parties after it has been processed at the Griffin Gas Plant, which is adjacent to the Tubridgi Gas Plant. Griffin Gas is transported to the DBNGP where it is on-sold to Alcoa of Australia Ltd. Griffin Gas is owned by the Tubridgi Parties and is transported on their own behalf.

The other source of Gas is from Thevenard Island, which is tolled on behalf of CMS Gas Transmission of Australia as the Producers' Representative for the Thevenard Producers.

Gas transportation agreements cover the contractual arrangements of transporting Thevenard Island gas.

### **1.3. The Pipeline**

A map showing the route of the Tubridgi Pipeline and the Griffin Pipeline is provided as Annexure A to the Access Arrangement.

Additional technical details in relation to the Tubridgi Pipeline System are included in section 12 of this Access Arrangement Information.

### **1.4. Interpretation**

Unless otherwise defined in the Access Arrangement (see section 10 of the Access Arrangement), terms used in the Access Arrangement and this document have the same meaning as they have in the Code. Terms which are defined in the Code or in section 10 of the Access Arrangement commence with capital letters.

### **1.5. Commencement Date**

The Access Arrangement will come into effect on the date on which its approval takes effect under section 2 of the Code.

### **1.6. Contact Details**

The Regulator waived certain ring fencing obligations contained in the Code as a result of the Tubridgi Parties entering into a Management Agreement with Origin Energy Asset Management. The contact person for further details in relation to this Access Arrangement Information and the Access Arrangement to which it relates is therefore:

Peter Gayen  
Network Services Manager  
Origin Energy Asset Management Limited  
Level 6  
1 King William Street  
ADELAIDE SA 5000

Telephone: 08 8217 5697  
Facsimile: 08 8217 5690  
Email: peter.gayen@originenergy.com.au

All Requests for Pipeline Services must be made on the official application form endorsed by the Tubridgi Parties. Copies of this form will be available from the above-mentioned contact.

## **2. CONTENT OF THE ACCESS ARRANGEMENT AND ACCESS ARRANGEMENT INFORMATION**

### **2.1. General Content**

Section 2.5 of the Code establishes a minimum level of content for an Access Arrangement. Furthermore, sections 2.2 and 2.6 of the Code together mandate that Access Arrangement Information must be submitted and must contain such information as, in the opinion of the Regulator, would enable Users and Prospective Users to:

- understand the derivation of the elements in the Access Arrangement; and
- form an opinion as to the compliance of the Access Arrangement with the provisions of the Code.

The Tubridgi Pipeline System Access Arrangement includes each of the elements that are required to be included in an Access Arrangement.

In accordance with the Code, some information required to be included in this Access Arrangement Information has been categorised, aggregated, or provided to the Regulator on a confidential basis where necessary to prevent undue harm to the legitimate business interests of Pipeline Users, Prospective Pipeline Users and the Tubridgi Parties.

### **2.2. 'Attachment A' Requirements**

Section 2.7 of the Code states that the Access Arrangement Information may include any relevant information, but must include at least the categories of information described in Attachment A to the Code. These information requirements are listed below, together with a reference to where the information can be found in this document.

#### **Category 1: Information Regarding Access & Pricing Principles**

- (a) Tariff determination methodology (section 5.2).
- (b) Cost allocation approach (section 5).
- (c) Incentive structures (section 6.2).

#### **Category 2: Information Regarding Capital Costs**

- (a) Asset values for each pricing zone, service or category of asset (section 4.1.1).
- (b) Information as to asset valuation methodologies (section 4.1.2).
- (c) Assumptions on economic life of asset for depreciation (section 4.1.1.1).
- (d) Depreciation (section 4.1.3.).
- (e) Accumulated depreciation (section 4.1.3.).
- (f) Committed capital works and capital investment (section 4.1.5).
- (g) Description of nature and justification for planned capital investment (section 4.1.5).

- (h) Rates of return – (section 4.1.2 and Appendix A).
- (i) Capital structure – debt/equity split assumed (Appendix A).
- (j) Equity returns assumed – (Appendix A).
- (k) Debt costs assumed – (Appendix A).

### **Category 3: Information Regarding Operations & Maintenance**

- (a) Fixed versus variable costs (section 4.1.4.3).
- (b) Cost allocation between zones, services or categories of asset and between regulated/unregulated (section 4.1.4.1).
- (c) Wages and salaries – by pricing zone, service or category of asset (section 4.1.4.2).
- (d) Cost of services by others including rental equipment (section 4.1.4.2).
- (e) Gas used in operations – unaccounted for System Use Gas to be separated from compressor fuel (section 4.1.4.2).
- (f) Materials and supply (section 4.1.4.2).
- (g) Property taxes (section 4.1.4.2).

### **Category 4: Information Regarding Overheads & Marketing Costs**

- (a) Total Service Provider costs at corporate level (section 4.1.4.2).
- (b) Allocation of costs between regulated/unregulated segments (section 4.1.4.2).
- (c) Allocation of costs between particular zones, services or categories of asset (section 4.1.4.2).

### **Category 5: Information Regarding System Capacity & Volume Assumptions**

- (a) Description of system capabilities (section 12).
- (b) Map of piping system – pipe sizes, distances and maximum delivery capability (section 12 and Annexure A of the Access Arrangement).
- (c) Average daily and peak demand at current Transmission Delivery Point defined by volume and pressure (section 12)
- (d) Total annual volume delivered – existing term and expected future volumes (section 12).
- (e) Annual volume across each pricing zone, service or category of asset (section 12).
- (f) System load profile by month in each pricing zone, service or category of asset (section 12).
- (g) Total number of customers in each pricing zone, service or category of asset (section 12).

### **Category 6: Information Regarding Key Performance Indicators**

- (a) Industry KPIs used by the Service Provider to justify ‘reasonably’ incurred costs (section 4.1.4.4).
- (b) Service Provider’s KPIs for each pricing zone, service or category of asset (section 4.1.4.4).



### **3. SERVICES POLICY**

Section 3.1 of the Code provides that an Access Arrangement must include a policy on the Service or Services to be offered. Section 3.2 of the Code establishes principles with which the Services Policy must comply.

#### **3.1. Services to be offered**

Section 2 of the Access Arrangement sets out the Services Policy for the Tubridgi Pipeline System. It includes a description of the Pipeline Services available to Pipeline Users and Prospective Pipeline Users. The Pipeline Services fall into two categories:

- the Haulage Reference Service; and
- Negotiated Services.

In accordance with section 3.2(b) of the Code, section 2.1 of the Access Arrangement provides that, to the extent practicable and reasonable, a Pipeline User or Prospective Pipeline User may obtain a Pipeline Service that includes only those elements that the Pipeline User or Prospective Pipeline User wishes to be included in the Pipeline Service.

In accordance with section 3.2(c) of the Code, section 2.1 of the Access Arrangement also provides that, to the extent practicable and reasonable, the Tubridgi Parties will provide a separate Tariff for an element of a Pipeline Service if this is requested by a Pipeline User or Prospective Pipeline User.

##### **3.1.1. Haulage Reference Services**

The Haulage Reference Service comprises:

- accepting a quantity of Gas at a Transmission Receipt Point;
- the physical forward haulage of Gas from that Transmission Receipt Point to a Transmission Delivery Point; and
- the delivery of an equivalent quantity of Gas at a Transmission Delivery Point;
- the provision and maintenance of Metering Equipment at Transmission Delivery Points;
- readings of Metering Equipment at Transmission Receipt Points once each Pipeline Day, with readings provided to Pipeline Users on a daily basis;

on, and subject to the terms and conditions referred to in section 4.1 of the Access Arrangement. These terms and conditions are discussed further in section 7 of this Access Arrangement Information.

Details of Transmission Delivery Points and Transmission Receipt Points are included in section 12 of this Access Arrangement Information.

The Haulage Reference Service is the Service that is likely to be sought by a significant part of the market during the Access Arrangement Period.

The Reference Tariff applicable to the Haulage Reference Service is set out in Annexure C of the Access Arrangement. The methodology adopted by the Tubridgi

Parties in developing the Reference Tariff is set out in section 5.1 of this Access Arrangement Information.

### **3.1.2. Negotiated Services**

In addition to the Haulage Reference Service described in section 2.2 of the Access Arrangement, the Tubridgi Parties will make available other Pipeline Services on the basis of commercially negotiated terms and conditions (including Tariffs). These Services, referred to as Negotiated Services, will be provided subject to their provision being reasonable on a technical, practical and commercial basis.

Examples of a Negotiated Service include an interruptible haulage service and an interconnection service.

A Negotiated Service will be provided in accordance with the terms and conditions referred to in section 4 of the Access Arrangement where appropriate and applicable (as determined by the Tubridgi Parties). Where the terms and conditions referred to in section 4 of the Access Arrangement are neither appropriate nor applicable to the provision of a particular Pipeline Service, they will be agreed on a case-by-case basis to reflect the circumstances applying to the provision of the Pipeline Service.

Negotiated Services are Rebatable Services. Due to the uncertainty regarding future revenue from the provision of Negotiated Services no revenue has been forecast from the provision of these Services.

Should Negotiated Services revenue exceed \$350,000 in a financial year then the excess will be shared equally between the Tubridgi Parties and the Users of the Reference Service, including the Tubridgi Parties as Pipeline Users as applicable.

Amounts rebated to Pipeline Users of the Reference Service will take the form of a reduction in bills from the second month (and if necessary, any subsequent months) of the subsequent financial year. The amount exceeding \$350,000 will be rebated between Pipeline Users according to the volume of Gas transported on behalf of the Pipeline User in the preceding financial year, as a proportion of the total Quantity of Gas transported on behalf of all Pipeline Users receiving the Reference Service.

The rebate mechanism will only operate, however, where the Tubridgi Parties have received in a year the total revenue as shown in Table 1a of this Access Arrangement. This provision protects the Tubridgi Parties from suffering financial loss where existing Pipeline Users take up the Negotiated Service with Tubridgi Parties in preference to the Haulage Reference Service.

### **3.1.3. Service Standards and Quality**

In addition to the terms and conditions applicable to the provision of a Pipeline Service (ie those referred to in section 4 of the Access Arrangement or otherwise negotiated), the Tubridgi Parties will provide Pipeline Services in accordance with certain minimum service standards and quality levels.

Section 2.7 of the Access Arrangement provides that the Tubridgi Parties will provide each Pipeline Service in accordance with the provisions in any Pipeline Licence or applicable law.

## 4. TOTAL REVENUE

Section 8.4 of the Code provides that Total Revenue can be calculated according to one of three approaches – the Cost of Service, Internal Rate of Return, and Net Present Value methods. The Tubridgi Parties have adopted the Cost of Service approach.

### 4.1. Total Revenue

Total Revenue for the Tubridgi Pipeline System will comprise:

- revenue from the provision of the Haulage Reference Service. This revenue comprises a return on the assets attributable to the provision of the Haulage Reference Service, depreciation on those assets, plus Non-Capital Costs; and
- revenue from the provision of Negotiated Services.

The revenue to be derived from the provision of the Haulage Reference Service is based on:

- a real pre-tax rate of return of 8.75% ;
- an Initial Capital Base of \$23.76 million as at 1 July 1999, which has been arrived at through the Depreciated Optimised Replacement Cost methodology, which is further explained in section 4.1.1. Revenue for the Access Arrangement Period is based on a Capital Base that adjusts annually to:
  - include forecast New Facilities Investment (see section 4.1.5);
  - reflect depreciation (see section 4.1.3);
  - take account of inflation, which, for the purposes of preparing the Access Arrangement has been assumed at 2.5%; and
  - forecast Non-Capital Costs (section 4.1.4).

**Note that the Regulator and the Tubridgi Parties have since agreed to a figure of 8.2% for the real pre-tax rate of return and an Initial Capital Base (ICB) of \$18.471 million.**

Each of these matters is discussed in more detail below.

#### 4.1.1. Determination of Initial Capital Base

The Code requires that an initial Capital Base be established for the first Access Arrangement for a Covered Pipeline. Sections 8.10 and 8.11 of the Code address the valuation of Covered Pipeline assets that were in existence when the Code became operative. The Tubridgi Pipeline System is such an asset. Section 8.10 provides a number of factors that should be considered when establishing the initial Capital Base for the Tubridgi Pipeline System.

##### 4.1.1.1. Approaches to Asset Valuation

The Tubridgi Parties considered a number of different approaches to the valuation of system assets. They have elected to use the Depreciated Optimised Replacement Cost (DORC) methodology, which results in an Initial Capital Base, as at 1 July 1999, of \$23.76 million.

The Regulator reviewed the ICB in his Draft Decision and it has been agreed, with the Tubridgi Parties, to change the ICB to \$18.471 million. The ICB comprises a DORC value of \$18.341 million and working capital of \$0.130 million.

The methodology used to determine the DORC valuation of the Tubridgi Pipeline System is discussed below.

### Depreciated Optimised Replacement Cost (DORC)

A DORC asset valuation essentially involves establishing the cost of a new modern equivalent asset (using current technology) that is optimally sized and configured to deliver existing levels of service (ie to replace the existing system and service existing customers at existing locations), less an allowance for depreciation to reflect the remaining economic life of the asset.

In practice this involves:

- 'optimising' assets by scaling them down in size (eg to take advantage of optimum pressures) or removing them from the asset base and reducing the value of the asset base where assets are redundant;
- assessing the replacement cost of each asset, based on what each asset would be replaced with at the time of the valuation; and
- depreciating assets to reflect the proportion of their estimated useful life that remains.

A valuation of the Tubridgi Pipeline System (as at 1 July 1999) based on the DORC methodology has been undertaken. The DORC valuation was performed by engineering staff of Oil Company of Australia. The valuation was then reviewed by consulting engineers, Gutteridge Haskins & Davey Pty Ltd, which confirmed the DORC valuation.

Appendix B provides a more detailed description of the methodology followed by the Tubridgi Parties in assessing a DORC valuation for the Tubridgi Pipeline System.

The asset values resulting from applying the DORC methodology are set out in Table 1 below.

<b>Asset Category</b>	<b>Optimised Replacement Cost (\$m)</b>	<b>Accumulated Depreciation (\$m)</b>	<b>Depreciated Optimised Replacement Cost (\$m)</b>
Transmission Pipe	22.900	1.861	21.039
Meter Stations	2.989	0.388	2.601
SCADA and Communications	0.203	0.088	0.115
<b>Total</b>	<b>26.092</b>	<b>2.337</b>	<b>23.755</b>
<b>Agreed Revised Pipeline Value</b>	<b>24.476</b>	<b>6.135</b>	<b>18.341</b>

Table 1: Depreciated Optimised Replacement Cost (DORC)

**The Regulator and the Tubridgi Parties have agreed to change the ORC value to \$24.476 million. The resulting DORC value as at 30 June 1999 is therefore \$18.341 million.**

### **Alternative Asset Valuations**

Section 8.10(a) of the Code requires consideration to be given to the value that would result from taking the actual capital cost of the Covered Pipeline and subtracting the accumulated depreciation for those assets charged to Users (or thought to have been charged to Users) prior to the commencement of the Code. However, the Code does not provide guidance on how this value might be calculated.

The Tubridgi Pipeline became fully operational in 1992 and the Griffin Pipeline in 1994. Assuming a useful economic life of 80 years for both pipelines, depreciating the actual construction cost of the Tubridgi Pipeline System produces a Depreciated Actual Cost (DAC) figure of \$22.57 million as at 1 July 1999. This compares closely with DORC valuation.

### **Other Considerations Required by the Code**

#### *International Best Practice*

There are considerable differences in regulatory best practice between countries, implying that it is difficult to define international best practice. For example, North American regulators tend to use historic costs and nominal returns. UK values are based on float values or DORC values. In Australia, regulators have tended to use DORC.

#### *Historic Tariffs, Economic Depreciation and Returns*

The Tubridgi Parties have not calculated Economic Depreciation on the Tubridgi Pipeline System. The Tubridgi Parties are of the view that the use of many arbitrary assumptions required to make such a calculation render the resulting figure of little value in assessing the value of the pipeline system.

#### *Reasonable Expectations of Persons under the Existing Regulatory Regime*

Different parties will have different expectations in relation to future Tariffs. While it is almost impossible to predict precisely the expectations of others, the proposed Reference Tariff is commensurate with the tolling charge which applies for the existing third party user.

#### *Impact on Economically Efficient Utilisation of Gas Resources*

Gas resources will be used efficiently if prices reflect the cost of providing services. A DORC valuation is consistent with the outcome that a competitive market would deliver and the actual costs likely to be incurred in the future in renewing or replacing the Tubridgi Pipeline System. For these reasons, DORC is considered the best valuation measure for ensuring that prices are set at efficient levels, which will facilitate the efficient use of gas resources.

#### *Compatibility of Cost Structures with New Pipelines*

The DORC valuation for the Tubridgi Pipeline System is consistent with the stand-alone cost of new pipelines that may compete with any existing pipelines. Use of the

DORC approach will also assist in avoiding uneconomic bypass. It is therefore considered to be the valuation method that is most compatible with the cost structure that would be incurred for new pipelines.

#### *Price Paid for other Recently Purchased Assets*

The Tubridgi Parties do not own any other transmission pipelines.

SAGASCO South East Inc, Origin Energy Petroleum Pty Ltd and Origin Energy Amadeus NL collectively acquired Devex Limited's 56.65% share of the Tubridgi Joint Venture and assumed operatorship in December 1995. The acquisition price reflected not only the value of the Tubridgi Pipeline System, but also the value of the available reserves in the Tubridgi gas field. No specific component of the purchase price paid was attributable to the value of the Tubridgi and Griffin transmission pipelines.

#### **Summary of Approach to Asset Valuation**

The DORC valuation approach is the most appropriate basis for valuing the initial Capital Base for the Tubridgi Pipeline System for a number of reasons:

- it meets the requirements of the Code, including:
  - it is explicitly recognised in section 8 of the Code and has been adopted in a number of regulatory decisions to date;
  - it reflects the economic cost of providing Pipeline Services and hence will ensure that Tariffs are set at efficient levels and will reflect long-term market equilibria;
  - it is consistent with the valuation methodology that would apply to any efficient new entrant and its new pipelines; and
- it has a number of practical advantages, including:
  - it allows the benefits of technological improvements to be transferred to Users;
  - it ensures non-optimal assets are not included in the asset base and are not paid for by Users;
  - it values all assets on a consistent basis, regardless of the operating and accounting policies applying at the time they were constructed;
  - it provides a fair and appropriate basis on which to allocate costs amongst Users and avoids rate shocks when assets are replaced; and
  - it provides the appropriate base upon which to add New Facilities Investment and subsequently depreciate it.

The Tubridgi Parties note that recent experience with the DORC valuation of infrastructure assets in Australia has resulted in its application being improved and refined so that the level of subjectivity involved in its use has been significantly reduced. The Tubridgi Parties also note that the DORC valuation of the Pipeline is very similar to the DAC valuation.

#### **4.1.2. Weighted Average Cost of Capital**

Section 8.30 of the Code requires that the Rate of Return used in determining a Reference Tariff provide a return that is commensurate with market conditions for funds and the risk of delivering the Reference Service.

The Tubridgi Parties have adopted a real pre-tax Weighted Average Cost of Capital (WACC) of 8.75%. It has been calculated using a WACC/Capital Asset Pricing Model (CAPM) approach, in line with that adopted in recent regulatory decisions in the Gas industry.

A summary of the approach and assumptions used in arriving at the WACC of 8.75% is provided in Appendix A.

**The Regulator in his Draft Decision reviewed the real pre-tax WACC and the Regulator and the Tubridgi Parties have agreed to a revised figure of 8.2%.**

#### 4.1.3. Depreciation

Section 8.33 of the Code establishes principles for depreciating the Capital Base for the purposes of determining a Reference Tariff.

As noted in the DORC report which is at Appendix B to this Access Arrangement Information, there is evidence to suggest that there will be a long-term requirement for a gas haulage Service on the Tubridgi Pipeline System. Accordingly, the Tubridgi Parties have adopted an economic life for the Tubridgi Pipeline of 80 years.

However, forecast demand over the initial Access Arrangement Period is for relatively low, and declining, usage. Whilst the Tubridgi Parties accept the market's view that there will be ongoing demand for the pipeline system, firm offers for material levels of gas transportation beyond the initial Access Arrangement Period have yet to be received. A risk exists that the Tubridgi Pipeline System may lie idle for a period of time or even become redundant beyond this time.

In order to reduce this risk, the Tubridgi Parties believe that it is appropriate to provide for an accelerated rate of depreciation over the initial Access Arrangement Period. This is consistent with accepted economic and regulatory practice, and is in line with recent statements by the ACCC in respect of assets at risk of becoming stranded in the electricity transmission industry.

The Tubridgi Parties have elected to accelerate the depreciation rate to 5% per annum on transmission pipelines and meter stations. The depreciation rate for SCADA and Communications assets, which is 6.7% on a straight-line basis, will not change.

This is shown in Table 2 below.

<i>Asset Type</i>	<i>Useful Economic Life (years)</i>	<i>Implied 'Straight-Line' Depreciation Rate</i>	<i>Depreciation Rate for first Access Arrangement Period</i>
Transmission Pipelines	80	1.25%	5%
Meter Stations	50	2%	5%
SCADA and Communications	15	6.7%	6.7%

Table 2: Asset Lives and Depreciation Schedule for Pipeline System Assets

**The Regulator and the Tubridgi Parties have agreed to revise the economic life of the Tubridgi Pipeline System to 26.5 years for the major assets, with 15 years for SCADA and communication equipment and 10 years for the minor assets.**

On this basis, depreciation for each year of the Access Arrangement Period will thus be as follows:

	1999/00 \$m	2000/01 \$m	2001/02 \$m	2002/03 \$m	2003/04 \$m
Depreciation	1.31	1.34	1.37	1.41	1.44

Table 3: Depreciation (1999/2000 – 2003/04)

The choice of 5% as the accelerated depreciation rate is necessarily somewhat arbitrary. However, it has the advantage of resulting in tariff levels, which are aligned with the tolling charge which applies for the existing third party user.

As provided for in section 9.3 of the Access Arrangement, the Tubridgi Parties will submit to the Regulator revisions to the Access Arrangement if halfway through the Access Arrangement period throughput is 5,000 TJ per annum more than the forecast demand. Any change to the Reference Tariff will apply from the date it is approved by the Regulator. This review will also include reassessment of the depreciation rates, which will be reduced where such demand is identified.

In any event, if revisions to the Access Arrangement are not triggered, depreciation rates will be reviewed at the commencement of the next Access Arrangement Period.

**The Regulator has revised the depreciation schedule as per the table below, with the agreement of the Tubridgi Parties:**

	1999/00 \$m	2000/01 \$m	2001/02 \$m	2002/03 \$m	2003/04 \$m	2004/05 \$m	2005/06 \$m
Transmission Pipe	0.786	0.786	0.786	0.786	0.786	0.786	0.786
Meter Stations	0.113	0.113	0.113	0.113	0.113	0.113	0.113
SCADA & comm.	0.023	0.023	0.023	0.023	0.023	0.023	0.023
Other costs	0.022	0.022	0.022	0.014	0.006	0.006	0.006
Total	0.944	0.944	0.944	0.936	0.928	0.928	0.928

Table 3a: Revised Depreciation (1999/2000 – 2005/06) (\$'s 30 June 1999)

#### 4.1.4. Non-Capital Costs

Sections 8.36 and 8.37 of the Code provide that Reference Tariffs may provide for the recovery of forecast Non-Capital Costs except for those that would not be incurred by a prudent Service Provider, acting efficiently, in accordance with accepted and good industry practice, and to achieve the lowest sustainable cost of delivering Reference Services. Forecasts for Non-Capital Costs must represent best estimates arrived at on a reasonable basis.

##### 4.1.4.1. Regulated versus Unregulated Non-Capital Costs

As mentioned in section 1.2, SAGASCO South East Inc is designated as the operator of the Tubridgi Pipeline System (the 'Tubridgi Operator'). Many day-to-day



operational activities are performed by Origin Energy Resources Limited (OERL). OERL prepares monthly statements which record 100% joint venture expenditure. This expenditure covers the activities of the Tubridgi Parties, being:

- the operation of the Tubridgi Pipeline;
- the operation of the Griffin Pipeline;
- gas production activities, which involves producing raw gas from the Tubridgi reservoir and processing it through the Tubridgi Gas Plant.

Total expenditure incurred by the Tubridgi Parties has been allocated between 'regulated' activities (ie those associated with the provision of Services by the Tubridgi Pipeline System) and 'unregulated activities' (ie gas production activities) on a 'stand-alone' basis with the resultant quantum of unregulated Non-Capital Costs as follows:

	1998/99 \$'000	1999/00 \$'000	2000/01 \$'000	2001/02 \$'000	2002/03 \$'000	2003/04 \$'000
Consumables/Spares	185	180	175	50	-	-
Maintenance	400	390	375	110	-	-
Contract & Services	800	780	760	200	-	-
Operator Overhead & Salaries	280	270	260	80	-	-
Administration & Marketing	235	230	220	60	-	-
<b>Total Unregulated Non-Capital Costs</b>	<b>1,900</b>	<b>1,850</b>	<b>1,790</b>	<b>500</b>	<b>-</b>	<b>-</b>

Table 4: Unregulated Non-Capital Costs (1998/99 – 2003/04)

#### 4.1.4.2. Non-Capital Costs for the Tubridgi Pipeline System

The Non-Capital Costs associated with the Tubridgi Pipeline System have been categorised as follows:

- **Overheads**  
A monthly overhead charge is applied to cover the administration (predominately wages and salaries) and offices expenses of OERL staff in carrying out activities associated with the maintenance, operation, and commercial activities of the Tubridgi Pipeline System.
- **Operational Costs**  
Operational costs include costs specifically related to maintaining the Tubridgi Pipeline System in good working order, and include such activities as cathodic protection, gas testing and inspection, instrument maintenance and the communication, spares and consumables. Costs associated with maintaining the pipeline licences, and direct wages of the Operator's staff on operational issues are also allowed for.

As there is no appreciable gas loss incurred in the transportation of gas through the Tubridgi Pipeline System and no regular venting or purging of gas, no System Use Gas (SUG) has been forecast. To the extent that any occurs, it will be provided and funded by the Tubridgi Parties.

- Pipeline Marketing Costs

Pipeline marketing costs involve the costs of OERL's commercial staff in attending to the commercial arrangements which govern the operation of the Tubridgi Pipeline System and its Access Arrangement.

Table 5 below summarises Non-Capital Costs for the Tubridgi Pipeline System

<b>Non-Capital Costs</b>	<b>98/99 \$000's</b>	<b>99/00 \$000's</b>	<b>00/01 \$000's</b>	<b>01/02 000's</b>	<b>02/03 \$000's</b>	<b>03/04 \$000's</b>
<b>Overheads</b>	20	23	23	24	25	25
<b>Operational Costs</b>						
Wages and salaries	40	40	41	42	43	44
Leasehold Licences & Rates	40	40	41	42	43	44
Contract Operations and Consultants	220	221	228	233	239	245
Other Operational Costs	150	150	154	158	162	166
<b>Pipeline Marketing Costs</b>	25	21	20	21	22	22
<b>Total Non-Capital Costs</b>	<b>495</b>	<b>495</b>	<b>507</b>	<b>520</b>	<b>534</b>	<b>546</b>

Table 5: Forecast Non-Capital Costs (1998/99 – 2003/04)

**The Regulator reviewed Forecast Non-Capital Costs, and with the agreement of the Tubridgi Parties, made the following changes:**

<b>Non-Capital Costs</b>	<b>98/99 \$000's</b>	<b>99/00 \$000's</b>	<b>00/01 \$000's</b>	<b>01/02 000's</b>	<b>02/03 \$000's</b>	<b>03/04 \$000's</b>	<b>04/05 \$000's</b>	<b>05/06 \$000's</b>
<b>Overheads</b>	20	20	20	20	20	20	20	20
<b>Operational Costs</b>								
Wages and salaries	40	40	40	40	40	40	40	40
Leasehold Licences & Rates	40	40	40	40	40	40	40	40
Contract Operations and Consultants	220	220	220	220	220	220	220	220
Other Operational Costs	150	150	150	150	150	150	150	150
<b>Pipeline Marketing Costs</b>	25	25	25	25	25	25	25	25
<b>Regulatory Costs</b>	41	209	136	48	60	54	54	54
<b>Total Non-Capital Costs</b>	<b>536</b>	<b>704</b>	<b>631</b>	<b>543</b>	<b>555</b>	<b>549</b>	<b>549</b>	<b>549</b>

Table 5a: Revised Forecast Non-Capital Costs (1998/99 – 2003/04)(\$'s 30 June 1999)

#### 4.1.4.3. Fixed Versus Variable Costs

The Tubridgi Parties have reviewed operational costs and concluded that the proportion of these costs that vary with incremental usage or throughput is negligible.

#### 4.1.4.4. Performance Indicators

The KPIs presented in Table 6 below have been prepared using information set out by the Gas utilities in Access Arrangement documentation that has been provided as part of recent regulatory processes. All figures in the table are expressed in 1999 dollars.

<b>Benchmark Indicators 1998/99</b>	<b>Tubridgi Pipeline System</b>	<b>AGL Central West Pipeline</b>	<b>TPA Entire System</b>	<b>Epic Moomba to Adelaide Pipeline</b>	<b>EAPL Moomba to Sydney Pipeline</b>	<b>CMS Parmelia Pipeline</b>
<b>Pipeline Details</b>						
Length (km)	87.3	255	1,609	1,056	2,024	416
Predominant External Diameter (mm)	168 & 273	168 & 219	various	559	864	350
Construction Date	1991-1993	1998	various	1969	1976	1970
Total Non-Capital Costs excluding SUG (\$'000)	495	724	19,597	14,972	11,004	3,860
<b>Performance Indicators</b>						
Non-Capital Costs per 1000km (\$'000)	5,670	2,837	12,181	14,181	5,437	9,256
Non-Capital Costs per mm per 1000km (\$'000)	25.8	14.6	na	25.4	6.3	26.4

Table 6: Key Performance Indicators – comparison with other Service Providers

The Tubridgi Pipeline System is physically smaller and shorter than all of the other pipelines and pipeline systems compared above. Given the differences between the pipelines (with respect to size, length, capacity, usage, compression levels, remoteness, etc) it is difficult to draw any meaningful conclusions based on these indicators.

Table 7 below provides time-series KPI information over the Access Arrangement Period.

<b>Indicator</b>	<b>1998/99 cents/GJ</b>	<b>1999/00 cents/GJ</b>	<b>2000/01 cents/GJ</b>	<b>2001/02 cents/GJ</b>	<b>2002/03 cents/GJ</b>	<b>2003/04 cents/GJ</b>
Overheads per GJ	0.20	0.20	0.23	0.39	0.90	2.32
Operational Costs per GJ	3.92	3.88	4.44	7.69	17.69	45.56
Pipeline Marketing Costs per GJ	0.17	0.17	0.20	0.34	0.78	2.02
<b>Total Non-Capital Costs per GJ</b>	<b>4.29</b>	<b>4.25</b>	<b>4.87</b>	<b>8.42</b>	<b>19.37</b>	<b>49.90</b>

Table 7: Key Performance Indicators – time series analysis

In line with the declining demand by current gas sources for the Tubridgi Pipeline System and the generally fixed nature of costs, the table above indicates that Non-Capital Costs per unit of gas transported will trend upwards towards the end of the Access Arrangement Period.

#### 4.1.5. **New Facilities Investment**

Section 8.20 of the Code provides that Reference Tariffs may reflect the value of New Facilities Investment forecast to occur within the Access Arrangement Period. In order to do so, this investment must reasonably be expected to pass the requirements of section 8.16(a) and (b) of the Code when it is forecast to occur.

At this point in time, the Tubridgi Parties are not forecasting any New Facilities Investment on the Tubridgi Pipeline System.

#### 4.1.6. **Total Revenue Outcome**

The key elements of the Total Revenue equation for the Tubridgi Pipeline System result in the following revenue requirement over the Access Arrangement Period:

	99/00 \$m	00/01 \$m	01/02\$m	02/03 \$m	03/04 \$m
Return on Capital Base	2.021	1.955	1.884	1.808	1.727
Depreciation	1.305	1.337	1.371	1.405	1.440
Non-Capital Costs	0.495	0.507	0.520	0.533	0.546
<b>Total</b>	<b>3.821</b>	<b>3.799</b>	<b>3.775</b>	<b>3.746</b>	<b>3.713</b>

Table 8: Elements of the Total Revenue Outcome (1999/2000 to 2003/04)

As outlined earlier in this section, the entire amount of Total Revenue will be recovered from the Reference Service.

## 5. REFERENCE TARIFFS

The Code requires a Reference Tariff to be established for at least one Service that is likely to be sought by a significant part of the market. Reference Tariffs must comply with the Reference Tariff Principles described in section 8 of the Code.

### 5.1. Basis for Tariffs

The Tubridgi Parties have allocated the entire amount of Total Revenue to the Haulage Reference Service, as discussed in section 4.1 above.

The Tubridgi Parties considered a number of structures for the Reference Tariff for the Reference Service including Tariffs based on booked capacity, throughput, a fixed charge, and a combination of these approaches.

The Tubridgi Parties have elected to adopt a structure whereby 80% of the Haulage Reference Service tariff is based on MDQ booked capacity, and the remaining 20% of the tariff is based on daily throughput.

A tariff structure which apports a greater weight to MDQ rather than throughput is common place throughout the Australian pipeline industry and is consistent with the

designation of the Tubridgi Pipeline System as a Contract Carriage Pipeline. Use of a predominately MDQ based Reference Tariff will also encourage less 'peaky' use of the Pipeline and is consistent with the high proportion of fixed costs associated with operating the pipeline. However, the Tubridgi Parties also recognise that current utilisation of the Tubridgi Pipeline System is low, and hence there is some value in incorporating a throughput component in the Tariff. For these reasons the Tubridgi Parties believe an 80:20 split between MDQ and throughput is the most appropriate basis for the structure of the Haulage Reference Tariff.

## 5.2. Revenue Smoothing

Because current forecast demand for the Tubridgi Pipeline declines in each year of the Access Arrangement Period, the resultant total price per gigajoule for the Reference Service rises in order to achieve the Total Revenue for that year, as shown below:

	99/00	00/01	01/02	02/03	03/04
Total Revenue (\$m's)(real 1999)	3.820	3.706	3.592	3.478	3.364
Forecast Demand (TJ)	11,654	10,445	6,178	2,751	1,095
Average Price \$/GJ (real 1999)	0.3278	0.3548	0.5814	1.2642	3.0722

Table 9: Real Tariffs based on Total Revenue and Forecast Demand

**As part of his Draft Decision, the Regulator reviewed both the forecast demand and the Total Revenue for the Access Arrangement Period. The Regulator has issued the revised figures, agreed to by the Tubridgi Parties, shown in the table below:**

	99/00	00/01	01/02	02/03	03/04	04/05	05/06
Total Revenue (\$m's)(real 1999)	3.931	4.038	2.835	2.431	2.114	1.945	1.945
Forecast Demand (TJ)	32.3	33.2	23.3	20.0	17.3	16.0	16.0

Table 9a: Total Revenue and Forecast Demand as determined by the Regulator and agreed with the Tubridgi Parties.

The NPV of the Total Revenue for the Access Arrangement Period is \$15.37 million

Establishing Reference Tariffs on the basis shown in this table would have the effect of encouraging use of the pipeline system at times when existing usage is relatively high, and deterring usage when spare capacity is at its greatest. It would also result in Reference Tariffs reaching commercially unrealistic levels in the later years of the Access Arrangement. This tariff structure, at low forecast demand levels, acts as a disincentive, rather than encouraging the use of the pipeline system during times when its spare capacity is at its greatest.

The Tubridgi Parties believe a better outcome is achieved by adopting an approach to establishing tariffs, which earns the same NPV of revenue, but 'smooths' the price

path of the tariff so it is constant in real terms throughout the Access Arrangement Period. This will enable Pipeline Users to avoid the significant price shocks that they would otherwise experience.

The resultant 'smoothed' tariff is:

Price per MDQ: \$0.322/GJ  
Price per Throughput: \$0.105/GJ

This smoothed tariff structure produces the following Total Revenue results:

	99/00 \$m's	00/01 \$m's	01/02 \$m's	02/03 \$m's	03/04 \$m's
Revenue from MDQ Component (escalated)	4.878	4.482	2.717	1.240	0.506
Revenue from Throughput Component (escalated)	1.224	1.124	0.682	0.311	0.127
Total Revenue (escalated)	6.102	5.606	3.399	1.551	0.633

Table 10: Total Revenue from NPV Smoothed Tariff Approach

The NPV for the original Total Revenue stream created by the smoothed tariff structure is \$15.37 million, which is the same as under the previous method.

The revenue smoothing approach to tariff setting has been used and endorsed by regulators both in Victoria (by the Office of the Regulator General (ORG) in respect of the Victorian Gas distribution Access Arrangements) and in NSW, where Independent Pricing and Regulatory Tribunal (IPART) insisted on its use in respect of the Access Arrangement for the Wagga Wagga Gas distribution network. Furthermore, it is consistent with the principles outlined in section 8 of the Code.

**Changes made by the Regulator and agreed to by the Tubridgi Parties to a number of key parameters in the Access Arrangement have had a consequential impact on the Haulage Reference Tariff. The revised Haulage Reference Tariff is as follows:**

	GST Exclusive \$/GJ	GST \$/GJ	GST Inclusive \$/GJ
Price per MDQ	0.203	0.020	0.223
Price per Throughput	0.067	0.007	0.074
Total Price	0.270	0.027	0.297

Table 10a: Haulage Reference Tariffs

### 5.3. Notification of Tariffs

Tariffs for the Haulage Reference Service are set out in the Tariff Schedule which is Annexure C to the Access Arrangement.

Whenever the Reference Tariffs are adjusted in accordance with the Access Arrangement and the Code, the Tubridgi Parties will send a revised Tariff Schedule to:

- (a) the Regulator;
- (b) each Pipeline User;
- (c) each Prospective Pipeline User whose name appears in the queue established pursuant to section 7 of the Access Arrangement; and
- (d) any person who, during the preceding six months, requested a copy of the Information Package maintained by the Tubridgi Parties in relation to the Tubridgi Pipeline System pursuant to the Code.

A copy of the revised Tariff Schedule will also be included in the Information Package whilst that revised Tariff Schedule remains in effect.

The revised Tariff Schedule will specify the period during which it is to be in effect and will be effective as the Tariff Schedule during that period, unless it is superseded by another revised Tariff Schedule which is distributed pursuant to the Access Arrangement.

## **6. REFERENCE TARIFF POLICY**

Section 3.5 of the Code states that an Access Arrangement must include a Reference Tariff Policy. This Policy is designed to address all of the principles that govern any movement in Reference Tariffs during an Access Arrangement Period. These principles may also influence Reference Tariffs for subsequent Access Arrangement Periods.

The Reference Tariff Policy must, in the Regulator's opinion, comply with the Reference Tariff Principles set out in section 8 of the Code.

### **6.1. Elements of the Reference Tariff Policy**

Section 3.2 of the Access Arrangement sets out the proposed Reference Tariff Policy. Each of the elements of the Reference Tariff Policy is discussed below.

#### **6.1.1. Reference Tariff Adjustments**

Section 3.2.1 of the Access Arrangement provides that the Reference Tariff for the Haulage Reference Service, and the Overrun Rate charge, will be adjusted on 1 July each year by the percentage change in the CPI, taking effect from 1 July 2000. The CPI increase for 2000/01 will be net of 2.5% to account for the impact of GST.

As noted above, constant real tariffs over the initial Access Arrangement Period were adopted in order to give Users a stable price path and to prevent steep fluctuations in prices associated with the potential reduced demand in the later years of the Access Arrangement Period.

#### **6.1.2. New Facilities Investment**

Section 3.2.2 of the Access Arrangement provides that Reference Tariffs will vary in accordance with the Extensions and Expansions Policy in section 8 of the Access

Arrangement. Section 8.2 of the Access Arrangement addresses how Haulage Reference Tariffs are to be determined following any extension or expansion to the Tubridgi Pipeline System (that is included as part of the Tubridgi Pipeline System) that satisfies the requirements of section 8.16 of the Code. The Extensions and Expansions Policy is discussed in section 11 of this document.

Consistent with section 8 of the Code, section 3.2.2 of the Access Arrangement also provides that where only part of any New Facilities Investment (ie any extensions and/or expansions of the Capacity of the Tubridgi Pipeline System) that is included as part of the Pipeline satisfies the requirements of section 8.16 of the Code, then:

- only that part of the New Facilities Investment that satisfies section 8.16 of the Code (the Recoverable Portion) will be included in the Capital Base; and
- Reference Tariffs for Haulage Reference Services for that part of the New Facilities Investment included in the Capital Base are to be determined in accordance with the provisions of section 8.2 of the Extensions/Expansions Policy in the Access Arrangement.

Where any New Facilities Investment that forms part of the Tubridgi Pipeline System (ie for the purposes of being a Covered Pipeline under the Code) does not satisfy the requirements of section 8.16 of the Code, section 3.2.2 of the Access Arrangement allows for the application of a Surcharge or agreement with a Pipeline User to a Capital Contribution, subject to the requirements of section 8 of the Code being met.

As noted in section 4.1.5, no New Facilities Investment is forecast for the Access Arrangement Period.

## **6.2. Incentive Mechanisms and Related Principles**

The Tubridgi Parties understand that an important objective of regulation is to find the appropriate balance between providing an incentive to reduce costs and ensuring Pipeline Users (and ultimately customers) benefit from any cost reductions over a reasonable period of time. The two Incentive Mechanisms discussed below are designed to meet this objective.

### **6.2.1. No Adjustments**

Section 3.2.3.1 of the Access Arrangement establishes the principle that within an Access Arrangement Period there will be no adjustment to Total Revenue or Tariffs to reflect any differences between actual and forecast levels of Non-Capital Costs and revenue. This principle of 'no adjustments' applies both to differences that arise because of matters that are within and outside the control of the Tubridgi Parties (ie controllable and non-controllable factors).

Section 3.2.3.1 of the Access Arrangement also establishes that the amount of any gains or losses accruing to the Tubridgi Parties as a result of this principle will not be used to adjust the Total Revenue requirement for any future Access Arrangement Period.

This principle is symmetrical. It provides the Tubridgi Parties with the appropriate incentives to reduce costs and maximise deliveries of Gas within an Access Arrangement Period.



In order to ensure the legitimate interests of Pipeline Users are protected, the mechanism is subject to the Tubridgi Parties operating and managing the Tubridgi Pipeline System in accordance with accepted industry practice.

### **6.2.2. *Glide Path***

Section 3.2.3.2 of the Access Arrangement contains a Fixed Principle that any reductions in Non-Capital Costs achieved by the Tubridgi Parties over an Access Arrangement Period will be shared with Pipeline Users through the application of a 'glide path' over the whole of the subsequent Access Arrangement Period.

This principle will ensure that the Tubridgi Parties have a strong incentive to achieve efficiencies throughout all of the Access Arrangement Period. The application of this principle to all reductions in Non-Capital Costs eliminates the difficulties and costs associated with trying to determine whether savings are primarily endogenous or exogenous to the actions of the Tubridgi Parties. This is understood to be the approach adopted by the ORG in reviewing network tariffs for the Victorian electricity distributors.

When determining the glide path to be applied to Non-Capital Costs, the Tubridgi Parties envisage that the starting point for the glide path will reflect the level of Non-Capital Costs forecast for the last year of the previous Access Arrangement Period.

### **6.2.3. *Rebate of Revenue from Negotiated Services***

There is substantial uncertainty regarding demand for, and revenue from, the provision of Negotiated Services. In accordance with section 8.40 of the Code, Negotiated Services have therefore been designated by the Tubridgi Parties as Rebateable Services and no revenue has been forecast from the provision of these Services.

Section 3.2.5 of the Access Arrangement describes the rebate mechanism that will apply to the provision of Negotiated Services. It states that any amount of revenue received in a financial year from the sale of Negotiated Services in excess of \$350,000 will be shared equally between the Tubridgi Parties and the Users of the Reference Service, including the Tubridgi Parties as Pipeline Users as applicable.

The structure of this rebate mechanism provides the Tubridgi Parties with the incentive to promote the sale of Negotiated Services and to retain, up to point, the full benefits of doing so. The maximum amount of \$350,000 provides the Tubridgi Parties with the incentive to encourage the use of Negotiated Services, and also allows the recovery of direct costs of establishing and negotiating such Services. However, where the sale of Negotiated Services generates more than a significant amount of revenue (\$350,000 represents approximately 10% of the Tubridgi Pipeline System's original annual Total Revenue), it is proposed that this revenue be rebated equally with Users of the Reference Service.

Revenue will be directly rebated to Pipeline Users in the form of a reduction in bills from the second month (and if necessary, any subsequent months) of the subsequent financial year. It will be rebated between Pipeline Users according to the Quantity of Gas transported on behalf of the Pipeline User in the financial year, as a proportion of the total volume of Gas transported on behalf of all Pipeline Users of the Reference Service. The Tubridgi Parties have adopted this approach on the basis that it will be simpler, in administrative terms, than the alternative contemplated in section 8.40 of the Code whereby the rebate is made through a reduction in the Reference Tariff.

The rebate mechanism will only operate, however, where the Tubridgi Parties have received in a year the total revenue as shown in Table 10 of this Access Arrangement Information. This provision protects the Tubridgi Parties from suffering financial loss where existing Pipeline Users take up the Negotiated Service with the Tubridgi Parties in preference to the Haulage Reference Service.

#### **6.2.4. Redundant Capital Policy**

Section 3.2.6 of the Access Arrangement provides for a review of the Capital Base prior to the revision of the current regulatory period. A trigger point will exist for the removal of Redundant Capital. Should the forecast average throughput for the next Access Arrangement Period be less than 20.5 TJ/day, then Redundant Capital will be removed from the written down value of the Capital Base which is calculated at the end of this initial Access Arrangement Period. However, if the average throughput is forecast to be greater than or equal to 20.5 TJ/day, then Redundant Capital will be zero.

Section 3.2.6 of the Access Arrangement also contains provision for Redundant Capital which has been previously removed to be re-instated. This is to allow for the event where demand for Services increases such that the capacity deemed to have been removed is required once again. This capital will be treated as a New Facility in accordance with the provisions of clause 6.1.2 of the Access Arrangement Information. This capital component will be escalated by the real pre-tax rate of return from the time the Redundant Capital Value was removed from the Capital Base.

### **7. TERMS AND CONDITIONS**

Section 3.6 of the Code provides that an Access Arrangement must include the terms and conditions on which the Reference Service will be supplied. The terms and conditions must, in the Regulator's opinion, be reasonable.

#### **7.1. The Agreement**

The terms and conditions applicable to the provision of the Reference Service are dealt with in section 4 and Annexure B of the Access Arrangement. In order to obtain a Pipeline Service a Prospective Pipeline User must enter into an Agreement with the Tubridgi Parties for the provision of that Service. The term 'Agreement' is defined in the Access Arrangement and means the entering into of a binding contractual arrangement between the Tubridgi Parties and a Prospective Pipeline User.

The Access Arrangement provides that the Agreement for the provision of a Haulage Reference Service will comprise the terms and conditions set out in Annexure B to the Access Arrangement, together with Specific Terms and Conditions. Section 4 of the Access Arrangement lists the contents of these Specific Terms and Conditions.

A Pipeline User who is seeking a Service with different terms and conditions to those for the Haulage Reference Service will be seeking a Negotiated Service. The terms and conditions for an Agreement in respect of a Negotiated Service will be negotiated between the Tubridgi Parties and the Prospective Pipeline User, however, where the Tubridgi Parties determine it to be appropriate and applicable, relevant terms and conditions will be the same as those for the Haulage Reference Service.

## 7.2. Pre-conditions

Section 4 of the Access Arrangement establishes a number of pre-conditions that the Prospective Pipeline User must satisfy before any Pipeline Service is to be provided.

These pre-conditions are designed to ensure that:

- the Prospective Pipeline User has sufficient financial capacity to meet its present and future obligations to the Tubridgi Parties; and
- the Prospective Pipeline User has sufficient technical capacity and arrangements in place to enable the Pipeline Service to be provided and to enable appropriate metering, gas balancing and apportionment procedures to be carried out.

The Tubridgi Parties submit that these pre-conditions are reasonable in that they protect the legitimate rights of the Tubridgi Parties and the operational integrity of the Tubridgi Pipeline System while at the same time not imposing any unreasonable barriers to entry.

## 7.3. Terms and Conditions

Annexure B to the Access Arrangement sets out the terms and conditions which are to apply to the provision of each Reference Service.

The terms and conditions address such matters including:

- obligations of the Tubridgi Parties and Pipeline Users in respect of capacity management (which is also addressed by section 4.5 of the Access Arrangement);
- daily overrun charges;
- procedures for meter reading, maintenance, accuracy and testing;
- the specification of gas quality and receipt and delivery pressures;
- responsibility for and title to Gas;
- arrangements to apply where supply is to be curtailed;
- procedures for charging, invoicing and payment;
- the basis for determining delivered quantities;
- provisions relating to the pass-through of taxes;
- the provision of a bank guarantee by Users;
- termination of the Agreement;
- decommissioning of Receipt and Delivery Points;
- liability and indemnities;
- non-performance in cases of Force Majeure;
- the treatment of confidential information;
- amendment of the Agreement; and
- other miscellaneous provisions.

The obligations, duties and responsibilities of the Tubridgi Parties and any Pipeline User described in Annexure B are in addition to those established in law or by any relevant regulatory documents.

Where the terms and conditions described in Annexure B are amended, the default position is that the terms and conditions applying to an existing Agreement will also change accordingly.

However, a Pipeline User and the Tubridgi Parties may agree that all or some of the terms and conditions applicable to their Agreement will not change during the Term of an Agreement, regardless of any amendments to Annexure B. Both parties are therefore free to agree to arrangements that reflect their preferred risk profile at a point in time.

The terms and conditions applying to the provision of the Haulage Reference Service are consistent with good industry practice and, where relevant, reflect existing Users' contractual terms. They are 'reasonable' in that they:

- are sufficiently well defined, so that the likelihood of a dispute over the terms and conditions of access is minimised; and
- protect the legitimate business interests of the Tubridgi Parties, as well as Pipeline Users and Prospective Pipeline Users, without imposing unnecessary barriers to entry.

#### **7.4. Credit Policy**

Section 4.4 of the Access Arrangement establishes minimum criteria which Pipeline Users must satisfy prior to the Tubridgi Parties providing a Pipeline Service. Amongst other things, these criteria require the Pipeline User to have an acceptable credit rating and not to be an externally-administered body corporate or an insolvent under administration (or similar). The minimum credit rating is defined as a BBB for long-term unsecured counterparty obligations, as rated by Standard and Poors (Australia) Pty. Ltd.

The criteria in the Credit Policy are designed to provide the Tubridgi Parties with comfort regarding the ability of the Pipeline User to meet its obligations under the Agreement, but at the same time are not so onerous as to present a barrier to entry to legitimate industry participants. Accordingly, the Tubridgi Parties consider them to be 'reasonable'.

#### **7.5. Pre-existing Rights**

Section 4 of the Access Arrangement identified two agreements under which the Tubridgi Parties are bound ie the Griffin Pipeline Agreement (between the Tubridgi Parties and the Griffin Parties) and the Thevenard Gas Transportation Agreement (TGTA) (between the Tubridgi Parties, the Griffin Parties, the Griffin Operator and the Thevenard Producers). These contractual provisions placed certain restrictions on the ability of the Tubridgi Parties to offer Pipeline Services. The Griffin Pipeline Agreement is still in effect, but the TGTA has expired since the first submission of the Access Arrangement to the Regulator.

The agreement with the Griffin Parties underwrote the development of the Griffin Pipeline. The gas transportation agreement with CMS as Producers' Representative for the Thevenard Producers resulted in the Griffin Pipeline being sized above the

capacity required to carry Griffin gas. Gas from the Thevenard Producers has been the only third party tolling arrangement on the Tubridgi Pipeline System, but as noted above, this arrangement has since expired.

Section 4.6 of the Access Arrangement provides that no provision of the Access Arrangement will deprive any person of a contractual right in existence prior to the date that Access Arrangement was submitted (or required to be submitted), other than an Exclusivity Right which arose on or after 30 March 1995. This is consistent with section 2.25 of the Code which prevents the Regulator from approving an Access Arrangement that would, if applied, deprive any provision of a contractual right in existence prior to the date that Access Arrangement was submitted (or required to be submitted), other than an Exclusivity Right which arose on or after 30 March 1995.

## **8. CAPACITY MANAGEMENT AND TRADING**

Section 3.7 of the Code requires that an Access Arrangement must state whether the Covered Pipeline is a Contract Carriage or Market Carriage Pipeline. Section 3.9 of the Code requires that an Access Arrangement for a Contract Carriage Pipeline must include a Trading Policy which explains the rights of a User to trade its right to obtain a Service to another person.

### **8.1. Capacity Management**

Section 5 of the Access Arrangement provides that the Tubridgi Pipeline System is to be a Contract Carriage Pipeline.

The Tubridgi Parties will enter into legally enforceable contracts, in the form of Agreements with Pipeline Users. These contracts will specify the quantity of capacity (on an MDQ basis) in the Tubridgi Pipeline System to which the Pipeline User is entitled. Accordingly, Reference Tariffs have been established primarily on an MDQ basis.

The Tubridgi Parties will ensure sufficient capacity is available to meet MDQ requirements (subject to, among other things, technical, practical and commercial limitations).

### **8.2. Trading**

Because the Tubridgi Pipeline System is to be a Contract Carriage Pipeline, the Code requires that a Trading Policy be established which sets out the right that Users have to trade their Contracted Capacity.

Given the existing and forecast level of spare capacity in the short term in the Tubridgi Pipeline System, the Tubridgi Parties do not expect that there will be a high level of trading in the initial Access Arrangement Period.

#### **8.2.1. Bare Transfers**

Section 6.1 of the Access Arrangement deals with Bare Transfers. It provides for a Pipeline User to transfer or assign all or part of its Contracted Capacity without the consent of the Tubridgi Parties if:

- the Pipeline User's obligations under the contract with the Tubridgi Parties remain in full force and effect after the transfer; and

- the terms of the contract with the Tubridgi Parties are not altered as a result of the transfer or assignment.

A Bare Transfer will only be possible where the trade involves the use of the same Transmission Delivery Points and Transmission Receipt Points. The rights of Pipeline User's so far as changes to Transmission Delivery and/or Transmission Receipt Points are concerned are set out in section 6.3 of the Access Arrangement and are discussed below.

Section 6.1 of the Access Arrangement also states that the transferee of the Contracted Capacity subject to a Bare Transfer must provide notice to the Tubridgi Parties (prior to utilising that Contracted Capacity) of:

- the identity of the transferee including an address and facsimile number where notices may be given;
- the identity of Pipeline User that made the transfer or assignment;
- the amount of MDQ that has been transferred or assigned;
- the location of the User Delivery Point which is the subject of the transfer; and
- any other information which the Tubridgi Parties reasonably require concerning the nature of the Contracted Capacity that is the subject of the Bare Transfer.

This is consistent with section 3.10(a) of the Code.

### **8.2.2. Other Transfers**

Section 6.2 of the Access Arrangement deals with transfers or assignments other than by way of a Bare Transfer. Pursuant to section 6.2, a Pipeline User is permitted to transfer or assign all or part of its Contracted Capacity (other than by way of a Bare Transfer) with the prior written consent of the Tubridgi Parties where the transfer or assignment is commercially and technically reasonable.

Section 6.2 of the Access Arrangement also provides that the Tubridgi Parties will not withhold their consent, other than on reasonable commercial and technical grounds. In addition, section 6.2 provides that the Tubridgi Parties may make their consent subject to conditions, but only if those conditions are reasonable on commercial and technical grounds. Examples of the reasonable commercial or technical grounds upon which the Tubridgi Parties will withhold their consent or make their consent subject to conditions are provided in the Access Arrangement and include:

- where there is insufficient Capacity at any point in the Tubridgi Pipeline System (either before or as a result of the transfer) to enable the proposed Contracted Capacity to be transferred or assigned to the proposed User Delivery Point;
- where the Tubridgi Parties would receive less revenue as a result of the proposed transfer or assignment of Contracted Capacity; and
- where the proposed transferee is unable to satisfy the Tubridgi Parties that it is able to satisfy the conditions precedent set out in section 4.3.

These commercial and technical grounds are reasonable in that they ensure the Tubridgi Parties' ability to provide Pipeline Services to other Pipeline Users is not compromised, and that the Tubridgi Parties do not suffer commercial disadvantage as a consequence of the transfer. The requirements that there be sufficient Capacity

available to permit the transfer, and that the transferee meet the pre-conditions in section 4.3 are also consistent with other parts of the Access Arrangement.

This is consistent with section 3.10(b) of the Code.

### **8.2.3. User Delivery Point and User Receipt Point Changes**

Section 6.3 of the Access Arrangement deals with changes in User Delivery Points and User Receipt Points. It provides that a Pipeline User is permitted to change the User Delivery Point and/or User Receipt Point from that specified in a contract for a Pipeline Service with the prior written consent of the Tubridgi Parties, where the change is commercially and technically reasonable.

Section 6.3 of the Access Arrangement also states that the Tubridgi Parties will not withhold their consent, other than on reasonable commercial and technical grounds, and that the Tubridgi Parties may make their consent subject to conditions, but only if those conditions are reasonable on commercial and technical grounds.

As with other transfers and assignments the Access Arrangement also provides examples of the reasonable commercial or technical grounds upon which the Tubridgi Parties will withhold their consent or make their consent subject to conditions, which include:

- where there is insufficient Capacity at any point on the Tubridgi Pipeline System (either before or as a result of the transfer) to enable the proposed User Delivery Point or User Receipt Point to be changed; and
- where the Tubridgi Parties would receive less revenue as a result of the proposed change of User Delivery Point or User Receipt Point;

Again, these grounds ensure the Tubridgi Parties' ability to provide Pipeline Services to other Pipeline Users is not compromised, and that the Tubridgi Parties do not suffer commercial disadvantage as a consequence of the change. Accordingly, this section of the Access Arrangement is consistent with section 3.10 of the Code.

### **8.2.4. Procedure**

Section 6.4 of the Access Arrangement specifies a procedure that needs to be followed in order to obtain the Tubridgi Parties' consent for a transfer/assignment of contracted Capacity (other than a Bare Transfer) or change of User Delivery Point and/or User Receipt Point. The procedure is:

- any party requesting a transfer/assignment of Contracted Capacity or a change to a User Receipt Point and/or User Delivery Point must submit a request to the Tubridgi Parties in writing, setting out the applicable details of the proposal; and
- the Tubridgi Parties will undertake the necessary analysis to determine whether the request is both feasible and reasonable on commercial and technical grounds. The Tubridgi Parties will charge a fee, based on a fixed charge of \$150 plus \$150 per hour per person to carry out the assessment. Costs will be agreed in advance with the party making the request and will be borne by the party making the request.

## 9. QUEUING POLICY

Section 3.12 of the Code states that an Access Arrangement must include a Queuing Policy for determining the priority that a Prospective User has to obtain access to Spare Capacity and Developable Capacity. The Queuing Policy must be sufficiently detailed to enable Users and Prospective Users to understand in advance how the Queuing Policy will operate. It must accommodate, to the extent reasonably possible, the legitimate business interests of the Service Provider, Users and Prospective Users and generate, to the extent reasonably possible, economically efficient outcomes.

### 9.1. Compliance and Derivation

Section 7 of the Access Arrangement sets out the Queuing Policy for the Tubridgi Pipeline System.

The general principle underlying the Queuing Policy is that where insufficient capacity exists to satisfy the Request of a Prospective Pipeline User, a queue will be formed and Requests will be considered in the order in which they are received. This principle will be observed in all circumstances, except that:

- All Requests in the queue for the Reference Service will rank higher in priority to Requests for a Negotiated Service. To the extent that the Reference Tariff is likely to be greater than the Tariff for most Negotiated Services, such an approach is in the legitimate business interests of the Tubridgi Parties. Furthermore, to the extent that this higher Tariff is likely to reflect a greater utilisation of the Tubridgi Pipeline System and a greater willingness to pay and hence value of the Service to a Prospective User, it will also generate economically efficient outcomes; and
- the Tubridgi Parties may at any time undertake an investigation into Developable Capacity options, in which case the Tubridgi Parties have the ability to consider other Prospective Pipeline Users' Requests in the investigation and any subsequent augmentations. This approach is designed to enable the Tubridgi Parties to take into account all relevant Requests when considering expansions of the Tubridgi Pipeline System. This will enable economies of scale to be achieved, thereby satisfying the requirement for economically efficient outcomes in section 3.13(c) of the Code.

The Queuing Policy also details the manner in which the queue will be formed and operated. The Queuing Policy:

- requires the Tubridgi Parties to provide certain information to Prospective Pipeline Users regarding the queue; and
- requires Prospective Pipeline Users to confirm to the Tubridgi Parties that they wish to remain on the queue; and
- establishes timeframes by which Prospective Pipeline Users must respond to offers of capacity.

These information flows and timeframes will enable the queue to be operated efficiently, which is in the legitimate business interest of both the Tubridgi Parties and the Prospective Pipeline User.



The Queuing Policy also protects the rights and meets the legitimate interests of Prospective Pipeline Users in that:

- it provides where a Request cannot be fully met, but can be partially satisfied, the Tubridgi Parties will offer any Spare Capacity available to a Prospective Pipeline User to partially satisfy its Request;
- a Prospective Pipeline User may assign its Requests to a purchaser of its business or assets; and
- a Prospective Pipeline User may decrease the amount of capacity sought in its Request without altering its position in the queue.

There is forecast to be a relatively high level of spare capacity on the Tubridgi Pipeline System over the initial Access Arrangement Period. Queues are therefore considered unlikely during this time, but may occur in later periods as new gas fields are brought on-line.

## **10. EXTENSIONS AND EXPANSIONS POLICY**

Section 3.16 of the Code states that an Access Arrangement must include an Extensions and Expansions Policy that sets out, amongst other things, the method for determining whether an extension or expansion is to be Covered and how an extension or expansion will affect Reference Tariffs.

As noted in section 4.1.5, no extensions or expansions are forecast for the Tubridgi Pipeline System in the initial Access Arrangement Period.

### **10.1. Coverage**

Section 8 of the Access Arrangement sets out the Extensions and Expansions Policy for the Tubridgi Pipeline System. It identifies the circumstances under which any extensions to or expansions of the Tubridgi Pipeline System will be treated as part of the Tubridgi Pipeline System (ie as the Covered Pipeline System under the Code) and the tariffing arrangements to apply to any extension or expansion.

In the Access Arrangement, references to extensions or expansions are references to extensions or expansions to the Tubridgi Pipeline System on or after 1 July 1999.

The Extensions and Expansions Policy provides that all extensions and expansions will be automatically treated as part of the Tubridgi Pipeline System from the time the expansion or extension comes into service, unless it is a significant extension. A significant extension is an extension with an estimated capital cost in excess of \$75,000, and/or that involves the construction of more than 1km of transmission pipeline.

In the case of a significant extension, the Tubridgi Parties will have the option of either treating the extension as:

- part of the Tubridgi Pipeline System for the purposes of being a Covered Pipeline under the Code; or
- a stand-alone Pipeline, in which case the Tubridgi Parties will provide written notice to the Regulator prior to the extension entering into service. In this case, the Tubridgi Parties will also have the option of including the stand-alone Pipeline

as part of the Tubridgi Pipeline System for the purposes of being a Covered Pipeline at any subsequent review of the Access Arrangement applicable to the Tubridgi Pipeline System.

## 10.2. Tariff Arrangements

In respect of extensions and expansions that are included as part of the Tubridgi Pipeline System, sections 8.1 and 8.2 of the Access Arrangement provide that Tariff arrangements will be determined as follows:

- the Prevailing Tariffs will be charged for the Haulage Reference Service where the extension or expansion meets the economic feasibility test in section 8.16 of the Code;
- where the extension or expansion does not pass the economic feasibility test, but has system-wide benefits that justify a higher Haulage Reference Tariff for all Pipeline Users, the Tubridgi Parties will seek the Regulator's approval of a higher Reference Tariff for all Pipeline Users;
- where an extension or expansion does not pass the economic feasibility test or have system-wide benefits that justify a higher Reference Tariff for all Pipeline Users, but is necessary to maintain the safety, integrity or Contracted Capacity of Pipeline Services, the Tubridgi Parties may seek revisions to the Access Arrangement, in accordance with the procedures specified in section 2 of the Code, to provide for new Tariff arrangements; and
- as provided for in section 3.2.2 of the Access Arrangement, to the extent that an extension or expansion does not satisfy any of the requirements of section 8.16 of the Code, the Tubridgi Parties may apply to the Regulator to impose a Surcharge in relation to that New Facilities Investment, or agree a Capital Contribution with a Pipeline User in accordance with section 8 of the Code.

Consistent with regulatory principles, the Tubridgi Parties will not have the option of treating a significant extension as a stand-alone Pipeline if the extension was assumed and included in the calculation of Reference Tariffs.

This approach to Coverage and Tariff arrangements for any extension or expansion of the Tubridgi Pipeline System is appropriate, as it:

- minimises the number of Access Arrangements that will apply to the Tubridgi Pipeline System, thereby making it easier for Pipeline Users and Prospective Pipeline Users to understand the terms and conditions of access; and
- avoids delays to access, that may occur as a result of having to go through the Coverage process in the Code for extensions and expansions of the Tubridgi Pipeline System.

## 11. REVIEW OF ACCESS ARRANGEMENT

Section 3.17 of the Code states that an Access Arrangement must include a Revisions Submission Date (by which the Service Provider must submit revisions to the Access Arrangement) and a Revisions Commencement Date (by which the next revisions to the Access Arrangement are intended to commence)

## 11.1. Revisions Commencement Date

Section 9.1 of the Access Arrangement provides for the Tubridgi Parties to submit revisions to the Access Arrangement if transported volumes change materially from those forecasts used to determine the Haulage Reference Tariff.

As outlined above, current forecasts of demand are relatively low during the initial Access Arrangement Period. However, if new fields appear likely to come on line earlier than anticipated and greater demand than currently forecast appears likely, the Tubridgi Parties believe that Reference Tariffs and other elements of the Access Arrangement should be reviewed in light of these new forecasts. This would include such things as the approach to depreciation over the initial Access Arrangement Period.

If, halfway through the Access Arrangement period, the actual annual throughput of the Tubridgi Pipeline System increases materially from the forecast demand by a minimum of 5,000 TJ, then the Tubridgi Parties will submit Access Arrangement revisions to the Regulator within three months of that result having been obtained.

The Extensions and Expansions Policy also provides that, in certain circumstances, the Tubridgi Parties may seek revisions to Tariff arrangements.

## 12. ROUTE, SYSTEM CAPACITY AND FORECAST DEMAND

### 12.1. Route

The Tubridgi Pipeline and the Griffin Pipeline both start adjacent to the Tubridgi Gas Plant and are located in the same easement. The Tubridgi Gas Plant is approximately 25 kilometres from Onslow and 5 kilometres from the coast. The two transmission pipelines run in a south-easterly direction for approximately 87 kilometres where they interconnect with EPIC Energy's DBNGP at Compression Station No. 2.

A map showing the route of the Tubridgi Pipeline and Griffin Pipeline is at Annexure A of the Access Arrangement.

### 12.2. Technical Specifications

Technical specifications for the Tubridgi Pipeline are as follows:

<b>Length of Pipeline</b>	87.3 kilometres
<b>Maximum allowable operating pressure (MAOP)</b>	12,800 kPa
<b>External Diameter</b>	168.3 millimetres
<b>Wall thickness</b>	4.7 millimetres
<b>Pipeline material</b>	Steel
<b>Joints</b>	Welded
<b>Mainline Valves</b>	None
<b>Transmission Receipt Point</b>	The Blending Manifold on the Griffin Pipeline
<b>Transmission Delivery Point</b>	Upstream flange located at the discharge point of the Tubridgi Parties' facilities at Epic Energy's

	Compressor Station 2 for metering the quantity of commingled gas delivered in to the DBNGP from the Tubridgi Pipeline as specified in Annexure D.
<b>Maximum Delivery Capability</b>	30 TJ/day
<b>Compressors</b>	None

Table 11: Technical Specifications for the Tubridgi Pipeline

Technical specifications for the Griffin Pipeline are as follows:

<b>Length of Pipeline</b>	87.3 kilometres
<b>Maximum allowable operating pressure (MAOP)</b>	12,000 kPa
<b>External Diameter</b>	273.1 millimetres
<b>Wall thickness</b>	5.2 mm to 6.2 mm
<b>Pipeline material</b>	Steel
<b>Joints</b>	Welded
<b>Mainline Valves</b>	None
<b>Transmission Receipt Point</b>	The Blending Manifold on the Griffin Pipeline
<b>Transmission Delivery Point</b>	Upstream flange located at the discharge point of the Tubridgi Parties' facilities at Epic Energy's Compressor Station 2 for metering the quantity of commingled gas delivered in to the DBNGP from the Griffin Pipeline as specified in Annexure D.
<b>Maximum Delivery Capability</b>	90 TJ/day
<b>Compressors</b>	None

Table 12: Technical Specifications for the Griffin Pipeline

### 12.3. Forecasts of Demand

As previously explained, gas transported through the Griffin Pipeline is currently sourced from two separate fields. The Tubridgi Parties purchase gas from the Griffin Joint Venture which is sourced from the Griffin offshore gasfield at its entry into the Griffin Pipeline. Gas transported on behalf of CMS Gas Transmission is also tolled through the pipeline to the DBNGP.

Demand forecasts in table 10 below are based on written forecasts of likely throughput for the Reference Service in the Access Arrangement period provided by the Griffin Joint Venture and CMS Gas Transmission, following requests by the Tubridgi Parties.

	98/99	99/00	00/01	01/02	02/03	03/04
Number of Users	3	3	3	3	3	3
Total Annual Volume (TJ)	11,517	11,653	10,445	6,178	2,751	1,095
Average Daily Flow Rate (TJ)	31.55	31.93	28.62	16.93	7.53	3.00
Peak Day Flow Rate (TJ)	53.87	40.00	35.00	20.00	10.00	5.00

Table 13: Customer and load numbers for the Tubridgi Pipeline System

The Regulator and the Tubridgi Parties have agreed to revise the gas throughput forecast and these are outlined in Table 9(a) of section 5.2 of this document.

The system load profile for the Tubridgi Pipeline System is as follows:

<b>Month 1998/99</b>	<b>Percentage of Total Load for 12 months</b>
July 1998	10.1
August	11.2
September	10.1
October	11.4
November	12.2
December	9.0
January 1999	8.8
February	6.7
March	4.4
April	3.8
May	6.3
June	6.0

Table 14: System Load Profile by month, 1998/99

Fluctuations in monthly load are generally attributable to production factors, as distinct from seasonal or other matters.