Country Energy Gas Networks

Access Arrangement Information for the Wagga Wagga Natural Gas Distribution Network

1 July 2010

Gas Networks

countryenergy

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1 INTRODUCTION

1.1 Basis for Access Arrangement Information

This *Access Arrangement Information* has been prepared by Country Energy *Gas* Pty Limited ACN 083 199 839 (*Country Energy Gas Networks*) in accordance with the requirements of the *National Gas Law (NGL)* and the *National Gas Rules (NGR)* and applies to *Country Energy Gas Networks'* natural *Gas Distribution System* serving Wagga Wagga, Uranquinty and the surrounding areas (the *Network*).

This *Access Arrangement Information* should be read in conjunction with the accompanying *Access Arrangement*.

1.2 Content of this Access Arrangement Information

The purpose of this document is to set out such information as is necessary to enable *Users* and *Prospective Users* to understand the background to and basis and derivation of the *Access Arrangement*.

In accordance with *NGR* 48 this *Access Arrangement Information* includes the categories of information required. However, in accordance *with NGR 43(2)* some sensitive information has been aggregated or generalised to ensure that it is not unduly harmful to *Country Energy Gas Networks'* legitimate business interests.

This document is structured as follows:

- Section 2 provides background to the *Network*, the operation of the *Network* and the *Access Arrangement* in the period to 30 June 2010
- Section 3 outlines the services to be offered to *Users* and *Prospective Users* and provides background to the proposed *Terms and Conditions* that will apply to the provision of *Services*
- Section 4 summarises *Country Energy Gas Networks'* forecast demand for services in the *Access Arrangement*
- Section 5 provides information on how the *Capital Base* has been calculated and how the return on capital and return of capital elements have been calculated
- Section 6 provides information regarding forecast *Operating Costs*
- Section 7 explains how the total revenue requirement has been calculated
- Section 8 outlines how total costs have been allocated to services to determine *Reference Tariffs*, and the operation and rationale behind the *Reference Tariff Variation Mechanisms* that will apply
- Section 9 sets out the length of the *Access Arrangement* and the manner in which *Capacity* and *Extensions* or *Expansions* will be managed across this *Access Arrangement*, and
- Section 10 sets out the key performance indicators for the *Network* across this *Access Arrangement.*

1.3 Interpretation

In this *Access Arrangement Information* where a word or phrase is italicised the term has the meaning set out in the *NGL* and *NGR*, unless the word or phrase is defined in the Glossary which forms part of the *Access Arrangement*. In such a case the word or phrase has the meaning given to that word or phrase in the Glossary.

Further, in this *Access Arrangement Information* headings are for convenience only and do not affect interpretation unless the context indicates a contrary intention:

- A reference to any party includes that party's executors, administrators, successors, substitutes and assigns, including any person taking by way of novation
- A reference to this Access Arrangement Information, the Access Arrangement or to any other agreement, deed or document (including, without limitation any standard, code, guidelines or rule) includes, respectively, this Access Arrangement Information, Access Arrangement or that other agreement, deed or document as amended, novated, supplemented, varied or replaced from time to time
- Words importing the singular include the plural (and vice versa), words denoting a given gender include all other genders, and words denoting individuals include corporations (and vice versa)
- Unless the context indicates otherwise, a reference to a section is a reference to a section of this Access Arrangement Information
- References to currency are references to Australian currency unless otherwise specifically provided
- Reference to any legislation or to any section or provision thereof includes any statutory modification or re-enactment or any statutory provision substituted for it, and ordinances, by-laws, regulations, and other statutory instruments issued thereunder, and
- References to capital expenditure are references to net capital expenditure, exclusive of *Capital Contributions*, unless otherwise stated.

1.4 Contact Details

Inquiries regarding this *Access Arrangement Information* can be directed to:

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2 BACKGROUND TO THE NETWORK

2.1 Country Energy Gas Networks' Wagga Wagga Network

Gas has been available in Wagga Wagga since the late 1880s. Manufactured *Gas* was provided from this time until 1981 when supplies from the Cooper Basin became available. *Gas Supply* was managed by the Wagga Wagga City Council until the system was acquired by Great Southern Energy in June 1997.

Great Southern Energy, along with Advance Energy and NorthPower, were merged together to form Country Energy on 1 July 2001. As part of this merger *Country Energy Gas Networks* became the owner and operator of the Wagga Wagga *Gas Network*.

At present the Network serves around 18,300 predominately domestic and small commercial *Customers*, although several large *Contract Customers* account for around 43 per cent of total *Gas* sales.

2.2 The previous Access Arrangement

The previous *Access Arrangement* was drafted and approved by the *Independent Pricing and Regulatory Tribunal (IPART)* and came into effect on 1 January 2006. In order to align the current *Access Arrangement* with financial *years*, it was designed to operate for the four and a half *year* period ending 30 June 2010. Revisions were required to be submitted by 1 July 2009.

2.3 Expenditure, revenue and volume outcomes

The tariffs and other arrangements set out in *IPART's* final approval of the current *Access Arrangement* were based upon a number of factors, including forecasts of capital and operating expenditure, and *Gas* sales. A brief summary of the outcomes of the current *Access Arrangement* are set out below.

2.3.1 Volume of *Gas* Sold

Gas sales to *Contract Customers* have progressively increased above what was forecast in the previous *Access Arrangement*, due mainly to the gain of one major *Customer*. This increase is despite the loss of a significant proportion of load from one major *Customer* from 2007.

Volume Customer consumption was above levels forecast in the previous *Access Arrangement*. This occurred as a result of substantial growth in the Wagga Wagga housing market combined with seasonal variations that caused considerable fluctuations in volume consumption. For example, the 2005/06 financial year experienced very cold winter temperatures and therefore high consumption, however milder temperatures in the 2006/07 financial year saw consumption levels drop significantly from 2005/06 financial year levels.

Customers (No), Volume (*GJ*)	2005-06	2006-07	2007-08	2008-09 estimate	2009-10 forecast
Volume load					
Small *Customers*	17,084	17,188	17,811	17,954	18,099
Medium *Customers*	178	181	178	183	188
Large *Customers*	10	9	10	12	12
Total volume Customers*	***17,272***	***17,378***	***17,999***	***18,149***	***18,299***
Small Load	692,708	607,920	642,068	653,255	656,872
Medium Load	186,854	163,983	173,194	176,178	177,154
Large Load	44,542	39,090	41,286	56,285	56,491
Total volume load	***924,104***	***810,992***	***856,547***	***885,718***	***890,517***
Contract load (Bomen, Central & Fringe *Zones*)					
Total Contract Customers	***15***	***16***	***17***	***15***	***15***
Total contract load	***627,876***	***628,662***	***705,879***	***682,043***	***681,694***
Total load	**1,551,980**	**1,439,654**	**1,562,426**	**1,567,761**	**1,572,211**

* The total volume *Customer* numbers in Table 1 represent a decrease in reported *Customer* numbers compared to those included in the previous *Access Arrangement.* The variance is the result of a change of systems used for calculating *Customer* numbers. The original *Customer* numbers were derived from an internal database, however more accurate *Customer* numbers are derived from the billing system, which dynamically accounts for vacant premises and *Disconnections* providing a more overall annual average.

Table 1 – Actual and forecast *Customers* and consumption for the previous *Access Arrangement*

The average, maximum and minimum demands for the previous *Access Arrangement* are shown in Table 2 below.

GJ/Day	Jan to Jun 2006	2006-07	2007-08	2008-09 estimate	2009-10 forecast
Minimum Demand	1,102	1,131	1,100	1,852	1,166
Maximum Demand	10,351	9,475	10,523	10,223	10,622
Average Demand	4,022	3,979	4,305	6,219	4,307

Table 2 – Average, maximum and minimum demands for the previous *Access Arrangement*

2.3.2 Capital Expenditure

In aggregate capital expenditure was substantially higher than forecast. The main areas where expenditure exceeded forecast in the previous *Access Arrangement* are as follows:

- The cast iron and galvanised iron steel refurbishment program has increased in scope because of integration with a 10 *year* program to upgrade the system pressures in a large number of suburbs within the *Network*. These areas are presently supplied at low pressure (< 7 *kPa*) and medium low pressure (20-40 *kPa*). Due to *Supply* pressure problems caused by long term demand growth these areas are being progressively converted to medium high pressure (80-250 *kPa*) through extensive pipe rehabilitation and *Network* reinforcement. Consequently costs associated with the refurbishment program have increased substantially because of the necessity to install extra system valves, upgrade all *Meter* installations and regulators and install additional *Network* pipe inter-connectors. Increased costs have also occurred because of compliance with new safety standards. The total additional expenditure is approximately $1.5 million for the previous *Access Arrangement*.
- In the period to November 2008, the *Gas* pressure in the main APA transmission pipeline supplying Wagga Wagga was increased from 3,000-5,500 *kPa* to 8,500-10,000 *kPa* because of the progressive commissioning of the 640MW Uranquinty *Gas* fired power station from August 2008. As a consequence *Country Energy Gas Networks* were required to completely rebuild the Bomen receipt point at a cost of approximately $1.5 million, as the new pressure requirements were above its original design specifications.
- A major *Meter* replacement program commenced in 2007/08 in order to comply with regulatory requirements. This has resulted in a 25 per cent increase in *Meter* replacement costs, increasing capital expenditure by approximately $0.2 million above regulatory allowances.
- Unforeseen growth in new *Customer Connections* over the previous *Access Arrangement* that have contributed to new an approximate 64 per cent increase in new *Customer Connections* above the levels forecast in the previous *Access Arrangement* (approximately $1.9 million in additional capital expenditure).
- The Rail Infrastructure Corporation completed major repairs to the Murrumbidgee rail bridge in 2007 which required the complete removal of the critical high pressure *pipeline* from the bridge and replacement with an under-bore of the Murrumbidgee River at a cost of $0.8 million.

- Material and labour cost increases have been strong in the current *Access Arrangement* and this is expected to continue into the future. *Country Energy Gas Networks* engaged *Competition Economists Group* (CEG) to research and provide escalation trends in labour and materials for the previous and this *Access Arrangement*.
- In the previous *Access Arrangement,* gas network management costs were classified as operating expenditure. However, the actual costs were split between operating and capital expenditures consistent with the method adopted for allocation of corporate costs. This has meant an increase in actual capital expenditure against the IPART approved allowances of approximately $1.4 million.

Table 3 sets out *Country Energy Gas Networks*' actual and estimated capital expenditure over the previous *Access Arrangement*.

$,000 (nominal)	Jan to Jun 2006	2006-07	2007-08	2008-09 estimate	2009-10 forecast	Total
Regulatory Allowance	827	1,603	1,692	1,909	2,089	8,120
Actual/Estimated Expenditure	1,727	2,191	3,816	3,594	4,225	15,554
Difference	(900)	(588)	(2,124)	(1,685)	(2,136)	(7,434)

Table 3 – Actual vs regulatory allowances for total capital expenditure for the previous *Access Arrangement*

2.3.2.1 Asset replacement and refurbishment

Mains Rehabilitation

The major component of the mains rehabilitation capital expenditure relates to a long term pressure upgrade program that began in 2006/07 to address *supply* pressure problems and an increasing number of *Gas Leaks* caused by ageing assets in Wagga Wagga which have new growth areas connected to them. Historically these areas have been supplied at low (<7 *kPa*) or medium-low (20-40 *kPa*) pressure however load growth has seen *supply* pressures fall to critically low levels in periods of high demand. Complete sections of streets are being progressively converted to medium-high pressure (80-250 *kPa*) which entails refurbishing a large percentage of the existing mains, consumer services and *Metering Installations*. *Country Energy Gas Networks has* significant lengths of cast iron or galvanised steel pipes that prevent the supply of significantly higher pressures as a result of leakages of joints and possible corrosion spots under high pressures.

Total costs associated with the rehabilitation program increased substantially and were higher than expected because of the necessity to:

- install extra system valves
- upgrade all *Meter* installations and regulators to cope with the upgraded pressures and deliver 1.5 *kPa* to 2.75 *kPa* to the *Customer*

- replace the *Meter* installation piping as necessary to conform with modern construction standards
- comply with new safety standards
- comply with new construction and operating practices that prohibit working on live *Gas*, and
- reinforce the *Network* with some existing inter-connectors being increased in *Capacity* and the construction of new inter-connectors.

At 30 June 2008 *Country Energy Gas Networks* operated approximately 112 kilometres of galvanised steel, the majority being constructed between 1950 and 1980. Field data and engineering forecasts suggest that a median asset life of 50 *years* for these distribution mains is likely, and probability analysis suggests that a growing proportion of the *Network* will require replacement during this *Access Arrangement*. *Country Energy Gas Networks* proposes to replace 2 per cent of the galvanised steel/cast iron mains each *year* over the course of the *Access Arrangement*.

At 30 June 2008 *Country Energy Gas Networks* operated approximately 35 kilometres of cast iron mains first installed in 1950. The last of the cast iron mains were laid in the early 1990s with a proportion of the original system having already been rehabilitated, mainly due to the previously described pressure upgrade projects. A section of cast iron mains will be replaced primarily where leak survey information indicates it is prudent to replace a section of mains compared to repairing individual leaks, or where insufficient *Capacity* on the mains is available. This program is planned to continue in the *Access Arrangement*.

The total expenditure on mains rehabilitation is shown below in Table 4.

$,000 (nominal)	Jan to Jun 2006	2006-07	2007-08	2008-09 estimate	2009-10 forecast	Total
Regulatory Allowance	233	514	557	611	656	2,571
Actual/Estimated Expenditure	332	647	547	910	1,650	4,087
Variation	(99)	(133)	10	(298)	(995)	(1,515)

Table 4 – Actual vs regulatory allowances for Mains Refurbishment for the previous *Access Arrangement*

Meter Replacement

The *Gas Supply* (*Gas Meter*s) Regulation 2002 requires m*eter*s to be replaced when they reach 15 *year*s of age. In the period from July to September 2007 a full field audit was conducted of all Wagga Wagga domestic m*eter* installations to accurately record installation dates. Following finalisation of an initial 3 *year* replacement tender a long term replacement program commenced in November 2007, and is planned to continue for 5 *year*s. Most of this program has been tendered out to external contractors, however approximately 20 to 25 per cent of the programmed replacement m*eter*s are complex installations caused by a combination of the m*eter*'s position or the condition of the *meter* pipes and regulators. This adds significant extra costs as these more complex *meter* changes normally require a full replacement and possible relocation of the full m*eter* installation.

*Country Energy Gas Network*s' *meter* replacement costs are set out in Table 5 below.

$,000 (nominal)	Jan to Jun 2006	2006-07	2007-08	2008-09 estimate	2009-10 forecast	Total
Regulatory Allowance	46	108	161	211	222	747
Actual/Estimated Expenditure	17	27	718	317	460	1,539
Variation	29	81	(557)	(107)	(238)	(792)

Table 5 – Actual vs regulatory allowances for *meter* Replacements for the previous *Access Arrangement*

2.3.2.2 Growth Related

Growth related expenditure includes expenditure on new *Connection*s and new mains. Expenditure on *Customer Connection*s is greater than forecast due to total *Customer Connection*s being significantly higher than forecast for the previous *Access Arrangement*.

The expenditure on *Network* reinforcement was also higher primarily because of the unplanned upgrade of the *Bomen Receipt Point* in 2007/08 and 2008/09 at a cost of approximately $1.5 million. This major reconstruction was forced by an increase in transmission pipe pressures supplying the Wagga Wagga *Network* from 5,000 *kPa* to 10,000*kPa*. The *Bomen Receipt Point* was only design rated for 7,000 *kPa* and therefore had to be totally reconstructed to operate with the higher pressure.

$,000 (nominal)	Jan to Jun 2006	2006-07	2007-08	2008-09 estimate	2009-10 forecast	Total
Small *Customers*	699	1,107	926	633	488	3,853
Medium/Large *Customers*	16	62	33	15	15	140
Expansion Mains	457	226	388	311	1,116	2,498
Network Reinforcement	206	123	1,204	1,409	495	3,437
Total	**1,379**	**1,517**	**2,551**	**2,367**	**2,114**	**9,928**
Regulatory Allowance	437	744	726	824	950	3,681
Variation	(942)	(773)	(1,825)	(1,543)	(1,164)	(6,247)

Table 6 – Actual real capital expenditure for New *Connections* for the previous *Access Arrangement*

2.3.2.3 Non-system assets

Non-system assets includes direct expenditure on IT systems and hardware, telephones, furniture and fittings and instruments, which are required to support the *Gas* distribution business. While IPART approved specific allowances for direct expenditure on each category of non system assets, *Country Energy Gas Networks'* financial system captures and reports these costs as part of the corporate allocation that is distributed to the *Network,* consistent with the AER approved cost allocation method.

Therefore, the actual costs for non system assets for the current *Access Arrangement* are not individually identifiable, and the current *Access Arrangement* allowances have been added to total regulatory allowances in Table 3 above.

2.3.3 Operating Expenditure

The regulatory regime provided *Country Energy Gas Networks* with a strong incentive to ensure operating expenditure was at efficient levels, as additional expenditure above levels approved in an *Access Arrangement* cannot be recouped from *Customers*.

2.3.3.1 Comparison of Allowed Operating and Maintenance Expenditure

Table 7 shows *Country Energy Gas Networks'* allowed level of operating costs over the previous *Access Arrangement* compared to the actual and estimated expenditure.

$,000 (nominal)	Jan to Jun 2006	2006-07	2007-08	2008-09 estimate	2009-10 forecast	Total
Network Operations & Maintenance	340	1,272	1,213	1,202	1,242	5,270
Advertising, Marketing & Promotions	3	0	90	109	141	342
Direct Gas Network Management	218	243	355	308	394	1,517
Corporate Allocation	129	530	223	184	509	1,576
Total Operating Expenditure	**691**	**2,045**	**1,882**	**1,803**	**2,286**	**8,706**
Regulatory Allowance	1,111	2,297	2,346	2,444	2,504	10,702
Variation	421	252	464	641	219	1,997

Table 7 – Actual and estimated operating expenditure vs regulatory allowances for the previous *Access Arrangement*

Operating expenditure, in aggregate, was lower than levels forecast in the previous *Access Arrangement*. The lower spending levels have occurred largely as a result of actual direct *Gas Network* management costs being allocated to both capital and operating expenditure, rather than the approach approved in the previous *Access Arrangement* of classifying all direct gas network management costs as operating expenditure.

The lower spending was achieved despite increased costs occurring as a result of events that largely have been outside *Country Energy Gas Networks'* control, with input costs a major driver. The major cost increases outside of the control of *Country Energy Gas Networks* are:

- Substantial staff training costs being incurred as a result of the necessity to comply with the competent persons criteria in the *Network* Management Plan CEM7090
- Corrective mains works increased substantially above forecast because of *gas leaks* identified in the annual leak survey
- Increases in workplace safety costs because of major changes in internal operating procedures to eliminate working with live *Gas*
- Increased costs due to internal and external environmental compliance policy and procedure changes
- Increased maintenance costs due to ageing of the *Network*
- Material and labour cost increases have been strong in the *current Access Arrangement* and this is expected to continue into the future. *Country Energy Gas Networks* engaged Competition Economists Group (CEG) to research and provide escalation trends in labour and material costs for the current and next *Access Arrangement Periods*
- Higher than forecast growth in the Network and number of *Customers* served. This has resulted in higher system operating and maintenance costs
- The introduction of a number of legislative instruments relating to the management and operation of the *Network*, including those set out in section 2.3.4 below
- Additional costs associated with the operations within the NSW *Gas* Market

- Increased workplace health and safety related standards, and
- Increased security costs.

As the majority of these events are not one-off items, but rather have created a 'step' increase in expenditure, they are reflected in operating expenditure for this *Access Arrangement*. The 2009/10 budget is an accurate representation of operating expenditure with no abnormal expenditure occurring during the year, and as such has been used as a base *year* for future projections.

Expenditure on advertising and marketing has increased progressively during the previous *Access Arrangement* due to the *Country Energy Gas Network*s appliance incentive program, and the participation in a state based generic marketing campaign, under the "natural *Gas* natural choice" program run by the New South Wales natural *Gas Network*s industry group.

2.3.4 Operation of the previous *Access Arrangement*

The previous *Access Arrangement* has proven to be relatively robust with:

- *Transportation Agreement*s signed with 2 new *User*s
- No queues for access to services formed
- No requests for trading of *Capacity* made, and
- The Associate Contract with Country Energy Retail being revised and approved by *IPART*.

Since the commencement of the previous *Access Arrangement* on 1 January 2006, a number of additional compliance and other regulatory obligations have been imposed on NSW *Gas* distribution businesses. These include obligations imposed by statutory and regulatory bodies, and cover matters including:

- The introduction of the *NGL, NGR* and National *Gas* Regulations on 1 July 2008
- The revision of the NSW *Gas Supply* (Safety and Network Management) Regulation 2008, and
- Compulsory membership of Dial Before You Dig.

2.3.5 Material Changes compared to the Previous *Access Arrangement*

Due to the robustness of the previous *Access Arrangement*, the next *Access Arrangement* does not incorporate any major changes, however a number of amendments have been incorporated, with key differences including:

- Amendments to the *Access Arrangement,* and particularly the standard *Terms and Conditions* to ensure consistency with the new *NGL*, *NGR* and Codes noted above
- Reintroduction of provisions relating to queuing

- Introduction of a *Deactivation Service* to the list of *Additional Service*s. The *Deactivation Service* has been included to cover the costs of removing our assets from disconnected premises
- A change from a Reference Service *Agreement* to separate *Terms and Condition*s
- A change from a pre tax framework to a post tax framework consistent with AER practice
- A change in the naming of volume *Reference Tariff*s from residential, commercial and industrial to small, medium and large to reduce confusion between definitions and naming conventions for *User*s
- The merger of the Central and Fringe contract *zone*s. With a detailed cost of supply study indicated roughly equal costs to s*upply* each of the central and fringe *zone*s and in order to minimise the number of contract *zone*s it was considered equitable to merge these *zone*s; and
- A change in reporting of the *Capital Base* from physical classes to asset classes. This allows easier management by pressure *zone*s and is consistent with standard industry practice.

2.3.6 Physical Characteristics of the *Network*

2.3.6.1 *Network* Description

Gas enters the *Network* through *Receipt Point*s (located at Bomen and Uranquinty) where it is preheated to approximately 35°C. The pressure at each city gate is reduced from approximately 3,000-10,000 *kPa* to approximately 1000 *kPa*. The *Bomen Receipt Point* incorporates twin streams of two stage pressure reduction regulators with monitor override and over pressure protection. The Uranquinty *Receipt Point* comprises a single stream single stage pressure reduction using an active/monitor configuration with over pressure protection.

The *Gas* is then supplied from the *Receipt Point*s via steel mains (API 5L) to the various *Supply* districts in Wagga Wagga. Each district is supplied through a district regulator. The small volume metering pressure in Wagga Wagga is predominately 1.5 *kPa*, however 2.75 *kPa* can be found in some districts. Medium & Large volume metering pressures will vary from 7 *kPa* to 100 *kPa*. *Contract Customer*s are typically supplied from the high pressure steel mains.

A schematic diagram of the *Network* is set out in Appendix 3 of the *Access Arrangement*.

2.3.6.2 *Network* Operation

Country Energy Gas Networks operates the *Network* at various pressures depending on the location and the piping medium. As set out in section 5, a rehabilitation program is in place targeting pipe with a condition score of poor or less. Typically these pipes are galvanised steel and cast iron which are inserted with polyethylene, and where this is not possible, new pipe is laid. System pressures will be increased as the rehabilitation program is progressed. The reticulation system operates under the following pressure regime:

- High Pressure (400-1050 kPa)
- Medium High Pressure (80-250 kPa)
- Medium Low Pressure (20-40 kPa)
- Low Pressure (<7 kPa)

2.3.6.3 *Network Capacity*

Peak flows within the system generally occur during normal *Business Day*s at around 8 - 10am. Hourly flow rates of up to 20,000 standard cubic *Meter*s per hour have been registered at various winter peak times over the past several *year*s. Coincident peak demand is driven by the temperature sensitive volume load and hence occurs in winter for the *Network*.

3 SERVICES TO BE OFFERED

NGR 48 requires *Country Energy Gas Networks* to describe the distribution *Pipeline* services that will be made available to *Users* or *Prospective Users*, including:

- specifying the *Reference Services*, and
- specifying for each *Reference Service*:
    - the *Reference Tariff*; and
    - the other *Terms and Conditions* on which the *Reference Service* will be provided.

Consistent with the previous *Access Arrangement*, *Country Energy Gas Networks* proposes to offer a *Contract Transportation Service* and a *Volume Transportation Service* to *Users*. These services are likely to be sought by a significant part of the market and will be *Reference Services* attracting a *Reference Tariff*.

Country Energy Gas Networks also proposes to offer seven non-transportation *services* in the next *Access Arrangement Period*, known as *Additional Services.* Although the *Additional Services* are defined in the *Access Arrangement*, they are not *Reference Services.* In time, *Country Energy Gas Networks* will examine whether *Additional Services* are contestable services or services not sought by a significant part of the market and should therefore be withdrawn from the *Access Arrangement*.

As in the previous *Access Arrangement, Country Energy Gas Networks* will continue to offer *Negotiated Services* to *Users*.

3.1 Reference Services

As noted above, *Country Energy Gas Networks* will continue to offer the same *Transportation Reference Services* as in the previous *Access Arrangement*. *Country Energy Gas Networks* has not received any requests for other forms of *Reference Services*, and is not aware of any changes in circumstances or future developments that suggest that these services will not continue to be sought by a significant part of the market during the *Access Arrangement Period*.

3.1.1 *Contract Transportation Service*

The *Contract Transportation Service* is provided to the *User* in respect of the *Delivery Point* of a *Contract Customer* and consists of:

- Receiving natural *Gas* at a *Receipt Point*
- Transporting the natural *Gas* from a *Receipt Point* through the *Network*
- Delivering the natural *Gas* to the *Delivery Point*
- Installing, maintaining and repairing *Metering Facilities* at the *Delivery Point*

- Reading the *Metering Facilities* at the *Delivery Point* at a frequency of every 24 hours
- Providing data, including metering data, to the *User* and other entities in accordance with the requirements of the *Retail Market Procedures*, and
- In the case of a *Customer* who is not connected to the *Network*, the provision of a distribution *pipeline* from the *Network* to the nearest point on the *Customer's* property, where the provision of such a distribution *pipeline* is consistent with the *Extensions/Expansions* Policy set out in section 7 of the *Access Arrangement* and satisfies the new capital expenditure criteria of *NGR* 79.

A *Contract Customer* is a *Customer* who has (or is reasonably expected by *Country Energy Gas* to have) an annual consumption of 10TJ or greater at a single *Delivery Point* provided that after the *Contract Customer* is connected, their annual consumption is less than 10TJ for a period of two consecutive *years*, the *Contract Customer* will remain a *Contract Customer* for that period. *Country Energy Gas* may at the end of the period of two consecutive *years* classify the *Contract Customer* as a *Volume Customer* upon providing the *User* with written notice.

If *Country Energy Gas Networks* classifies a *Customer* as a *Volume Customer, Country Energy Gas Networks* may remove the *Communications Equipment* from the *Customer's Metering Facilities.*

3.1.2 Volume *Transportation Service*

The *Volume Transportation Service* is provided to the *User* in respect of the *Delivery Point* of a *Volume Customer* and consists of:

- Receiving natural *Gas* at a *Receipt Point*
- Transporting the natural *Gas* from a *Receipt Point* through the *Network*
- Delivering the natural *Gas* to the *Delivery Point*
- Installing, maintaining and repairing *Metering Facilities* at the *Delivery Point*
- Reading the *Metering Facilities* at the *Delivery Point* at a frequency of at least quarterly
- Providing data, including metering data, to the *User* and other entities in accordance with the requirements of the *Retail Market Procedures*; and
- In the case of a *Customer* who is not connected to the *Network*, the provision of a distribution *pipeline* from the *Network* to the nearest point on the *Customer's* property, where the provision of such distribution *pipeline* is consistent with the arrangements set out in section 7 of the next *Access Arrangement* and satisfies the new capital expenditure criteria of *NGR* 79.

A *Volume Customer* is a *Customer* who has (or is reasonably expected by *Country Energy Gas Networks* to have) an annual consumption of less than 10*TJ* at a single *Delivery Point*.

3.2 Additional Services

The *Additional Services* offered in the previous *Access Arrangement* will continue to be offered in the next *Access Arrangement*, with the addition of the *Deactivation Service*. *Country Energy Gas Networks* will examine whether these *Additional Services* should be withdrawn from the next *Access Arrangement* if they are found to be a contestable service or a service that is not sought by a significant part of the market. The *Additional Services* are as follows:

1) a *Residential Meter Testing Service*;
2) a *Special Meter Reading Service*;
3) a *Reconnection Service*;
4) a *Disconnection Service*;
5) a *Business Disconnection/Reconnection Service*;
6) an *After Hours Reconnection Service*; and
7) *a Deactivation Service*.

These services will be provided consistent with the requirements of the relevant regulatory Law and *Rules*.

3.3 Negotiated Services

Country Energy Gas Networks will continue to offer *Negotiated Services* in the *Access Arrangement Period*. A *Negotiated Service* is a service that is different from a *Reference Service*. As required by the *NGL and NGR*, *Country Energy Gas Networks* will negotiate in good faith with a *User* or *Prospective User* to provide a *Negotiated Service*.

3.4 Service Standards and Quality

Country Energy Gas Networks will provide services in accordance with the service standards and the *Terms and Conditions* set out in:

- the *Access Arrangement*
- the *NGL*, as amended from time to time
- the *NGR,* as amended from time to time
- the *National Gas Regulations*, as amended from time to time
- the *Network Code*, as amended from time to time
- the *Retail Market Procedures*, as amended from time to time, and
- the standard *Terms and Conditions*, as amended by *Country Energy Gas Networks*, from time to time.

4 FORECAST DEMAND FOR SERVICES

NGR 72 requires *Country Energy Gas Networks* to provide information on matters including volume forecasts and *Customer* numbers.

The forecast of operating costs, capital costs and projected revenues set out in this *Access Arrangement Information* are based upon the demand forecasts prepared for *Country Energy Gas Networks* by Infrastructure and Regulation Services (IRS).

4.1 Overview of Gas Demand in Wagga Wagga

The Wagga Wagga system serves over 18,300 *Customers* who collectively purchase approximately 1.57 PJ of *Gas* each *year*, which is transported through 680km of pipes/mains. The vast majority of the *Gas* consumers are *Volume Customers*, each using less than 10 *TJ* of *Gas* per *year*. The small volume market represents approximately 42 per cent of the total load, and about 200 medium and large volume *Customers* represent approximately 15 per cent.

There are also a small number (currently 15) of *Contract Customers*, who consume the remaining 43 per cent of the total load. These *Customers* are concentrated in two *zones*:

- the Bomen *Zone*, covering all the area serviced by the *Network* that is north of the Murrumbidgee River
- the Central *Zone*, covering the main area of the City of Wagga Wagga and *Extensions* of the *Network* to the Kapooka and Forest Hills areas

The Bomen *Zone* is closest to the northern city gate, and historically, *Customers* in the Bomen *Zone* have been most susceptible to bypass.

Around 95 per cent of domestic households are connected to the *Network*. Commercial uses of *Gas* include wool combing, hospital services, plywood manufacture and asphalt production. *Gas* is also used by large army and air force establishments, and by educational institutions.

4.2 Forecast Capacity and Utilisation

NGR 72 (1)(d) requires *Country Energy Gas Networks* to provide a forecast *Pipeline Capacity* and utilisation to the extent possible. The Wagga Wagga *Network* is a meshed network and *Country Energy Gas Networks* is not able to provide this information.

4.3 Forecast

Details of the key drivers behind the demand forecasts and the methodology used to support the demand forecasts have been developed by Infrastructure and Regulation Services (IRS). A detailed report has been included on a confidential basis as Appendix A.

The *load* forecast for the *Network* is summarised below in Table 8.

Customers (No), Volume (*GJ*)	2010-11	2011-12	2012-13	2013-14	2014-15
Volume load forecasts					
Volume Customers	***18,449***	***18,599***	***18,749***	***18,899***	***19,049***
Total volume load	***895,278***	***900,925***	***904,682***	***909,326***	***913,929***
Contract load forecasts					
Contract Customers	***15***	***15***	***15***	***15***	***15***
Bomen *zone* load	496,372	496,193	496,013	495,834	495,655
Central/Fringe *zone* load	184,972	184,802	184,632	184,461	184,291
Total contract load	***681,344***	***680,995***	***680,645***	***680,295***	***679,946***
Total load	**1,576,622**	**1,581,920**	**1,585,327**	**1,589,621**	**1,593,875**
Contract *MDQ*					
Bomen *zone MDQ*	3,099	3,099	3,099	3,099	3,099
Central/Fringe *zone MDQ*	1,084	1,084	1,084	1,084	1,084

Table 8 – Total forecast load for the *Access Arrangement*

The forecast average, maximum and minimum demands for the *Access Arrangement* are shown in Table 9 below.

GJ	2010-11	2011-12	2012-13	2013-14	2014-15
Minimum Demand	N/A	N/A	N/A	N/A	N/A
Maximum Demand	10,922	10,928	10,981	11,010	11,039
Average Demand	4,429	4,431	4,453	4,464	4,476

Table 9 – Average, maximum and minimum demands for the *Access Arrangement*

5 CAPITAL COSTS

Part 9 Division 4 of the *NGR* requires *Country Energy Gas Networks* to provide information on matters including asset values, depreciation and planned capital investment.

5.1 The Opening Capital Base

Consistent with standard regulatory practice and the provisions of the *NGR 77(2)*, the opening value of the *Capital Base* at 1 July 2010 reflects:

- The opening *Capital Base* as at the commencement of the previous *Access Arrangement* (adjusted for any difference between estimated and actual *Capital Expenditure* included in that opening *Capital Base*)
- **plus** *conforming Capital Expenditure* made, or to be made, during the previous *Access Arrangement*
- **plus** any amounts to be added to the *Capital Base* under *Capital Contributions* by *Users* to new *Capital Expenditure* (*NGR* 82), speculative capital expenditure account (*NGR* 84) and re-use of redundant assets (*NGR* 86) during the previous *Access Arrangement*
- **less** *depreciation* over the previous *Access Arrangement*
- **less** redundant assets identified during the course of the previous *Access Arrangement*
- **less** the value of distribution *pipeline* assets disposed of during the previous *Access Arrangement*.

Country Energy Gas Networks has excluded *Capital Contributions* from the value of the *Capital Base.*

5.1.1 Initial *Capital Base*

The initial *Capital Base* of $44.54m as at 1 January 2006 was determined by IPART when the previous *Access Arrangement* was approved in December 2005.

5.1.2 System Capital for the previous *Access Arrangement*

$,000 (nominal)	Jan to Jun 2006	2006-07	2007-08	2008-09 estimate	2009-10 forecast	Total
Asset replacement & refurbishment	349	674	1,266	1,227	2,111	5,626
Growth related	1,379	1,517	2,551	2,367	2,114	9,928
Total	**1,727**	**2,191**	**3,816**	**3,594**	**4,225**	**15,554**

Table 10 – Actual and estimated real New Expenditure for the previous *Access Arrangement*

Figures in the table exclude *Capital Contributions* by third parties. All capital expenditure proposed has been assessed to ensure that it conforms to the new capital expenditure criteria as per *NGR* 79.

5.1.3 Regulatory Depreciation for the previous *Access Arrangement*

The amount used for *Depreciation* in rolling forward the *Capital Base* is the allowed *Depreciation* from the previous *Access Arrangement*, adjusted for actual CPI.

$,000 (nominal)	Jan to Jun 2006	2006-07	2007-08	2008-09	2009-10
Total	564	1,225	1,318	1,460	1,555

Table 11 – Regulatory depreciation in the previous *Access Arrangement*

5.1.4 Redundant Capital and Asset Disposals

Country Energy Gas Networks is not aware of any material assets that have become redundant or re-used over the previous *Access Arrangement*. Therefore no redundant capital has been deducted or removed in rolling forward the *Capital Base*.

No material assets are expected to be disposed of during the course of this *Access Arrangement*.

5.1.5 Speculative Capital Expenditure Account

Country Energy Gas Networks does not maintain a speculative capital expenditure account nor does it propose to create a speculative capital expenditure account. All capital expenditure conforms with *NGR* 79 (2).

5.1.6 Opening *Capital Base*

The *Capital Base* as at 30 June 2010 has therefore been calculated in Table 12 below.

$,000 (nominal)	Jan to Jun 2006	2006-07	2007-08	2008-09 est	2009-10 forecast
Opening value	44,515	46,280	48,922	52,606	57,108
Capex/Additions (net of cap cons)	1,727	2,191	3,816	3,594	4,225
Depreciation	564	1,225	1,318	1,460	1,555
Disposals	0	0	0	0	0
Indexation	602	1,676	1,186	2,368	1,466
Difference Between Actual and Forecast Net Capex	0	0	0	0	(25)
Return on Difference - Net Capex	0	0	0	0	(13)
Closing value	**46,280**	**48,922**	**52,606**	**57,108**	**61,205**

Table 12 – Calculation of the *Capital Base* as at 30 June 2010

Indexation of the *Capital Base* has taken place using the following CPI adjustment factors. These factors are based on the index number for the weighted average of eight capital cities as published by the Australian Bureau of Statistics (ABS).

CPI (per cent)	Jan to Jun 2006	2006-07	2007-08	2008-09	2009-10
Total	1.33%	3.54%	2.33%	4.35%	2.47%

Table 13 – CPI indexation of *Capital Base*

The CPI figure for June 2006 is the half *year* CPI, whilst the remainder are full financial *year* figures. The *Capital Base* of $61.205m at 1 July 2010 represents a 37 per cent increase in value since 2006.

5.2 The Projected Capital Base

The projected *Capital Base* over the *Access Arrangement* reflects:

- the opening *Capital Base* as at 1 July 2010, as determined above
- **plus** forecast Conforming Capital Expenditure for the *Access Arrangement*
- **less** forecast *Depreciation* for the *Access Arrangement*
- **less** the forecast value of distribution *pipeline* assets to be disposed of or made redundant in the course of the *Access Arrangement,*
- **plus** adjustments for CPI.

5.2.1 Forecast System Capital Expenditure for the *Access Arrangement*

Capital expenditure is assessed to ensure that it complies with the provisions of *NGR* 79. *Country Energy Gas Networks* engaged Sinclair Knight Mertz (SKM) to provide an independent assessment of the reasonableness of proposed unit rates for gas system network asset expenditure (refer to Appendix B). SKM concluded that the *Country Energy Gas Networks'* unit rate estimates were reasonable cost estimates for the assets as described in the report. *Country Energy Gas Networks* also tenders and outsources capital expenditure where appropriate, for example for the meter replacement program, thereby achieving the lowest cost for providing reference services.

Projects under each category of capital expenditure are assessed under *NGR* 79(2). Mains replacement capital expenditure is necessary to maintain the safety and integrity of services, satisfying *NGR* 79(2)(c)(i) and 79(2)(c)(ii). Meter replacement capital expenditure is necessary to ensure compliance with *Gas Supply* (*Gas Meters*) Regulation 2002, satisfying *NGR* 79(2)(c)(iii). Growth related capital expenditure is necessary to maintain Country Energy Gas Networks' capacity to meet the growth in customer demand detailed in Appendix A, satisfying *NGR* 79(2)(c)(iv).

Table 14 sets out *Country Energy Gas Networks'* forecast conforming capital expenditure for the *Access Arrangement.*

$,000 (real 2009-10)	2010-11	2011-12	2012-13	2013-14	2014-15	Total
Asset replacement & refurbishment	2,016	1,715	1,874	1,928	1,446	8,978
Growth related	1,715	2,193	1,866	1,496	1,763	9,034
Total	**3,731**	**3,908**	**3,741**	**3,424**	**3,208**	**18,012**

Table 14 – Forecast conforming capital expenditure for the *Access Arrangement*

5.2.1.1 Asset replacement and refurbishment related expenditure

The major component of the asset and refurbishment capital expenditure relates to a long term pressure upgrade program. This program commenced in 2006/07 to address *supply* pressure problems and *gas leaks* caused by ageing assets in Wagga Wagga which have new growth areas connected to them. Historically these areas have been supplied at low (<7 *kPa*) or medium-low (20-40 *kPa*) pressure, however load growth has seen *supply* pressures fall to critically low levels in periods of high demand. Large areas are being progressively converted to medium-high pressure (80-250 *kPa*), which entails refurbishing a large percentage of the existing mains, consumer services and *Metering Installations*.

Some of the localities within Wagga Wagga that are programmed to have pressure upgrades over the *Access Arrangement* are:

- Lake Albert pressure increase stage 6
- Glenfield pressure increase stage 2
- Ashmont pressure increase stages 1, 2 & 3
- CBD Fitzmaurice St low pressure increase to 240 *kPa*, and
- Kooringal pressure increase.

In order to deliver sufficient *Gas* volumes into the upgraded pressure areas some existing inter-connectors will have to be increased in *Capacity* and new inter-connectors constructed.

The forecast expenditure for these projects is depicted in Table 15 below:

$,000 (real 2009-10)	2010-11	2011-12	2012-13	2013-14	2014-15
Refurbishment Cost	1,612	1,481	1,659	1,535	938

Table 15 – Forecast Mains Refurbishment expenditure for the *Access Arrangement*

In order to comply with *Gas Supply* (*Gas Meter*s) Regulation 2002, *Country Energy Gas Network*s has forecast to replace *meter*s when they reach 15 *year*s of age. In the first quarter of the 2007/08 financial year, all Wagga domestic *meter* installations were audited to accurately record installation dates. This data has been used to structure a long term replacement program, which commenced in November 2007. The projected *meter* replacement costs of the program are shown in Table 16 below.

$,000 (real 2009-10)	2010-11	2011-12	2012-13	2013-14	2014-15
Meter replacement cost	404	234	215	393	508

Table 16 – Forecast *Meter* Replacement expenditure for the *Access Arrangement*

5.2.1.2 Growth related expenditure

Growth related expenditure includes expenditure on new *Connection*s and new mains.

New *Connection* expenditure is based upon the number of new *Connection*s to the system set out in *Country Energy Gas Network*s demand forecast including expenditure on the *Connection* to the main, the service *pipeline* and the cost of a *meter*. It is assumed that a proportion of the new *Connection*s will be funded through *Capital Contribution*s from *Customer*s or *Developer*s, and hence forecast expenditure is adjusted to take this into account.

With respect to growth related capital expenditure, the major expenditure areas are:

- New mains associated with the previously described pressure upgrade program in various parts of Wagga Wagga
- Various *Extension*s or upgrades to cater for system growth
- Wagga Wagga critical line valve installation program
- Mains *Extension*s to *Supply* new *Connection*s and system augmentations, and
- *Connection* of 150 new *Customer*s per *year* and the accompanying mains *Extension*s, based upon a forecast of 25 metres of mains per new *Customer Connection*.

$,000 (real 2009-10)	2010-11	2011-12	2012-13	2013-14	2014-15
Small *Customer*s	527	531	533	534	535
Medium/Large *Customer*s	15	15	15	15	15
Expansion Mains	217	219	220	220	220
Network Reinforcement	956	1,429	1,099	727	992
Total	**1,715**	**2,193**	**1,866**	**1,496**	**1,763**

Table 17 – Forecast New *Connection* expenditure for the *Access Arrangement*

5.2.1.3 Forecast Non System Capital Expenditure for the *Access Arrangement*

Country Energy Gas Networks' financial system captures and reports non system capital expenditure as part of the corporate allocation that is distributed to the *Network*. This corporate allocation is consistent with the approved cost allocation method contained in the *AER's* New South Wales distribution determination 2009-10 to 2013-14 (the electricity distribution determination).

Therefore, the actual costs for non system assets for the *Access Arrangement* are not individually identifiable, but are included in the forecast system capital expenditure categories above.

5.2.2 Asset Sales and Redundant Capital

No redundant capital or material asset disposals are forecast over the *Access Arrangement*.

5.2.3 Depreciation

Consistent with the approach adopted in the previous *Access Arrangement*, *Depreciation* has been calculated on a straight line basis utilising economic asset lives applied to the opening regulatory asset value at the beginning of each *year*. However, *Country Energy Gas Networks* has made a change in reporting of the *Capital Base* from physical classes to asset classes. This change was made as it allows easier management by pressure *zones* and is consistent with standard industry practice. A reconciliation between the previous and new classes is attached at Appendix C.

NGR 88 and 89 outline the method for deriving the depreciation schedule. In accordance with these *Rules Country Energy Gas Networks* has used the following principles in designing the depreciation schedule:

- The assets are only depreciated once over their economic life
- It reflects changes in the economic lives of the assets
- It allows for *Reference Tariffs* to vary over time in a way that promotes efficient growth in the market

The economic asset lives, remaining lives and written down values for each asset category as at 30 June 2010 are shown in Table 18 below. The remaining lives of each asset category were calculated on 30 June 2010 as the sum of the written down values multiplied by the remaining lives, divided by the sum of the written down values.

Asset Category	Economic Life (yrs)	Remaining Life (yrs)	WDV ($,000 nominal)
System Assets			**60,224**
High Pressure	80	59	9,205
Medium-High Pressure	50	35	11,661
Medium-Low Pressure	50	25	17,937
Low Pressure	50	31	142
Services	50	30	15,288
Meters & Regulators	15	8	2,000
District Regulators	40	18	746
Gate Stations	50	45	3,150
SCADA & Telemetry	20	12	95
Non System Assets	**5**	**1**	**982**

Table 18 – Economic asset lives, remaining lives and written down values as at 30 June 2010

Table 19 below shows the opening regulatory written down values, weighted average regulatory economic lives, weighted average remaining lives, and the calculated depreciation amounts forecast for the *Access Arrangement* for each asset class. Land & buildings have not been included in the depreciation calculation.

$,000 (nominal)	Total Economic Life (yrs)	Average Remain. Life	WDV 30/06/10	2010-11	2011-12	2012-13	2013-14	2014-15
System Assets	53.3	33.8	60,224	2,136	2,286	2,439	2,596	2,762
Non-System Assets	5.0	1.0	982	232	0	0	0	0
Total			**61,205**	**2,367**	**2,286**	**2,439**	**2,596**	**2,762**

Table 19 – Forecast depreciation for the *Access Arrangement*

5.2.4 Equity Raising Costs

Country Energy Gas Networks believes that equity raising costs are a legitimate cost that form part of the *Capital Base* calculation. *Country Energy Gas Networks* has not included any equity raising costs due to the immaterial level calculated, based on the *Access Arrangement* building blocks.

5.2.5 The Projected *Capital Base*

The *Capital Base* forecast by *Country Energy Gas Networks* for the *Access Arrangement* is as follows:

$,000 (nominal)	2010-11	2011-12	2012-13	2013-14	2014-15
Opening value	61,205	64,330	67,903	71,332	74,428
Capex/Additions (net of cap cons)	3,976	4,268	4,187	3,927	3,771
Depreciation	2,367	2,286	2,439	2,596	2,762
Disposals	0	0	0	0	0
Indexation	1,515	1,592	1,681	1,765	1,842
Closing value	**64,330**	**67,903**	**71,332**	**74,428**	**77,278**

Table 20 – Forecast *Capital Base* as at 30 June for each *year* of the *Access Arrangement*

5.3 Cost of Capital

NGR 87 requires that the rate of return on capital is to be commensurate with prevailing conditions in the market for funds and the risks involved in providing *Reference Services*. The appropriate weighted average cost of capital (WACC) to apply to *Country Energy Gas Networks' Capital Base* is intended to reflect the commercial rate of return that an investor in the *Network* would require, at a minimum, to commit to investing capital into the business.

The rate of return has been determined using the Capital Asset Pricing Model (CAPM) to establish the Weighted Average Cost of Capital (WACC). The WACC has been expressed in nominal vanilla terms.

5.3.1 Nominal Risk Free Rate

The nominal risk free rate has been determined by *Country Energy Gas Networks* on a moving average basis from the annualised yield on Commonwealth Government bonds with a maturity of 10 *years* using the indicative mid rates published by the Reserve Bank of Australia. *Country Energy Gas Networks* has adopted a nominal risk free rate of 4.94 per cent observed over the 15 day averaging period ending on 20 May 2009.

5.3.2 Inflation

Country Energy Gas Networks has utilised the inflation rate from the electricity distribution determination of 2.47 per cent.

5.3.3 Market Risk Premium

Country Energy Gas Networks engaged Competition Economists Group (CEG) to advise on the best approach to calculate the market risk premium (refer to Appendix D). CEG has demonstrated in its report that the market risk premium lies within a range of 6.6 per cent to 11.2 per cent for *Country Energy Gas Networks*. *Country Energy Gas Networks* has adopted a conservative value towards the lower bound of the range of 7 per cent.

5.3.4 Debt Risk Premium

Country Energy Gas Networks has calculated the debt risk premium with reference to the same averaging period that was adopted in determining the risk free rate. *Country Energy Gas Networks* has also used an average of Bloomberg and CBASpectrum data observations in calculating a debt risk premium of 4.7 per cent, based on the approach recommended by CEG (refer to Appendix E).

5.3.5 Equity Beta

Country Energy Gas Networks engaged CEG to advise on the best approach to calculate the equity beta (refer to Appendix D). CEG has demonstrated in its report that the equity beta for *Gas* distribution networks are on balance likely to be higher than the market as a whole. Based on this conclusion and the analysis presented in the CEG report, *Country Energy Gas Networks* has adopted an equity beta of 1.10.

5.3.6 Summary of WACC parameters

Table 21 summarises the WACC parameters adopted by *Country Energy Gas Networks*, resulting in a nominal vanilla WACC of 10.84 per cent.

WACC Parameter	Parameter Value (%)
Nominal risk free rate	4.94%
Inflation	2.47%
Real risk free rate	2.41%
Market risk premium	7.00%
Debt risk premium	4.70%
Debt to total assets	60.00%
Equity Beta	1.10
Nominal vanilla WACC	**10.84%**

Table 21 – WACC parameters adopted for the *Access Arrangement*

5.4 Return on Capital

The return on capital component of the building block has been calculated as follows:

$,000 (nominal)	2010-11	2011-12	2012-13	2013-14	2014-15
Return on *Capital Base*	6,635	6,973	7,361	7,732	8,068

Table 22 – Forecast return on capital calculation for the Access Arrangement

6 OPERATING EXPENDITURE

6.1 Overview

NGR 72 requires *Country Energy Gas Networks* to provide information on matters including Operating Expenditure – which includes operating, maintenance and other costs of a non-capital nature.

In accordance with *NGR* 91 forecast costs are consistent with the operating expenditure that would be incurred by a prudent Service Provider to efficiently operating the *Network*, in accordance with accepted and good industry practice to achieve the lowest sustainable cost of delivering *Reference Services.*

6.2 Forecast Operating and Maintenance Expenditure

Country Energy Gas Networks has used the 2009/10 budget as the base for projecting forecast operating expenditure over the *Access Arrangement*.

Country Energy Gas Networks recognises that operating and maintenance requirements change during an *Access Arrangement Period* for a range of reasons including growth in new *Customer Connections*, *Maximum Daily Quantity*, pipe length, inflation, real wage growth, and real cost increases in materials and equipment.

The incremental rate of change in operating expenditure expected over the *Access Arrangement*, due to the impact of these factor changes, can be adjusted annually according to the formula:

$$Opex_{t+1} = Opex_t * (1+F+G)$$

Where:

- F is a real wage and material cost growth factor
- G is a network growth factor

Accordingly it is necessary to determine the annual rate of change in expenditure level over the *Access Arrangement Period.*

Demand growth

Most of the forecast operating expenditure is associated with the existing asset base. However, growth related capital expenditure increases the size of the *Network* and the number of assets to be maintained, operated and managed. Accordingly, there is a need to establish a relationship between demand growth and real increases in operating expenditure.

The rate of change should reflect the marginal cost associated with providing that additional output. To be able to quantify this, it is necessary to first identify the measure(s) that are considered important for explaining the anticipated incremental costs to be incurred. The approach taken should be administratively simple and aim to provide the right incentives.

There are a number of appropriate measures including:

- Asset growth
- Energy consumption
- *Maximum Daily Quantity*
- Number of distribution *Customer*s, and
- Length of the *Network*.

*Country Energy Gas Network*s believes the rate of change should be correlated with the growth capital expenditure. *Country Energy Gas Network*s has increased its operating expenditure by the proportion of average annual growth related capital expenditure over the total replacement costs of distribution assets. This ratio is then reduced by 25 per cent to reflect that new assets will not incur condition based asset maintenance.

Real wage and material cost increases

It is necessary to determine a price index relevant to the inputs employed in operating and maintenance activities. IPART adopted CPI only as the cost inflator for the previous *Access Arrangement*, however actual wage and material cost growth has exceeded inflation. For this *Access Arrangement*, *Country Energy Gas Network*s has presented the expenditure forecasts in real terms including market expectations of real wage and material cost increases (refer to Appendix F).

Table 23 below shows *Country Energy Gas Networks'* forecast level of *Operating Expenditure* over the *Access Arrangement.*

$,000 (real 2009-10)	2010-11	2011-12	2012-13	2013-14	2014-15
Network operations and maintenance	1,275	1,303	1,329	1,349	1,372
Marketing	144	148	150	153	155
Direct *Gas Network* management	404	413	421	428	435
Corporate allocation	523	534	545	553	562
Self insurance	127	127	127	127	127
Debt raising costs	30	31	31	32	33
Total non-capital costs	**2,503**	**2,556**	**2,603**	**2,642**	**2,684**

Table 23 – Forecast operating expenditure for the *Access Arrangement*

6.2.1 Network operating and maintenance costs

Network operating and maintenance costs include the direct operating and maintenance costs of operating the *Network*. This category includes such things as *Receipt Point* maintenance, regulator maintenance, leak repairs, inventory and supplies, network engineering, environmental management, technical assurance, training, subscriptions to standards and code preparation bodies, cost of *Gas* control and network planning, design and scheduling.

6.2.2 Marketing costs

Marketing costs includes the cost of *Country Energy Gas Networks'* promotional program, including increases to ensure new properties are connected to the *Network*, and (predominately) the promotion of *Gas* and *Gas* appliances to existing *Connections*. *Country Energy Gas Networks* also participates in a state based generic marketing campaign, under the "natural *Gas* natural choice" program run by the New South Wales natural *Gas* networks industry group.

6.2.3 Direct gas network management

Direct *Gas Network* management costs include the directly attributable costs of managing the *Gas Network*. Relevant functions include asset management functions, network data and billing, and strategic planning and compliance activities.

Country Energy Gas Networks does not have any fuel compressors that use natural *Gas* and therefore the annual value is nil. However, *Country Energy Gas Networks* does utilise natural *Gas* for heating purposes at the gate stations. The annual *Quantity* of natural *Gas* used for this purpose is approximately 4*TJ* and its cost is accounted for in the operating costs of the gas network management category.

Gas Network management costs have been allocated to the *Network* on the basis of its relative share of direct expenditure as a proportion of total *Gas Network* expenditure.

6.2.4 Corporate allocation

Corporate costs are allocated to *Country Energy Gas Networks* consistent with the *AER* approved cost allocation method. The corporate allocation includes *Country Energy Gas Networks'* corporate costs which have been allocated to the *Network* on a causal basis (see below for details). The corporate costs include billing, accounts payable, credit control, call centres, emergency response, finance and accounting, payroll, business development, property management, regulatory affairs, *Customer* relations, and human resources.

The causal basis for allocation means one of the following relationships:

- A directly traceable cause and effect relationship between the item and the provision of the service
- A verifiable relationship between the item and the provision of the services
- A direct relationship with a pool of common costs or revenue, with the allocation of that pool on the basis of a relevant, reliable and verifiable factor.

The manner in which these costs have been allocated to the *Network* is:

- Total corporate costs have been allocated based on the cost allocation method that was approved by the AER as part of the electricity distribution determination, and
- These corporate costs have been allocated between the Network and Country Energy Gas Networks' uncovered Gas distribution networks based on the Network's share of budgeted direct total costs as a proportion of the total direct costs for all Gas distribution networks.

6.2.5 Cost of tax

As part of the post tax nominal framework, a separate allowance must be made in the revenue requirement for corporate income tax, net of the value ascribed to dividend imputation credits. The estimated cost of corporate income tax has been calculated in accordance with the following formula:

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

where:

- ETI_t is an estimate of the taxable income for that regulatory *year* that would be earned by a benchmark efficient entity as a result of the provision of standard control services if such an entity, rather than *Country Energy Gas Networks*, operated the business of *Country Energy Gas Networks*, such estimate being determined in accordance with the post-tax revenue model (*PTRM*)
- r_t is the expected statutory income tax rate for that regulatory *year* as determined by the *AER*, and
- γ is the assumed utilisation of imputation credits, which is 0.3 consistent with that approved by *IPART* in the previous *Access Arrangement*.

Country Energy Gas Networks' evidence relied upon by IPART for the previous *Access Arrangement* stated that gamma lies in a feasible range of zero to 35 per cent[1]. Empirical evidence presented by the Joint Industry Association (JIA) to the recent regulatory WACC review for electricity also provided that the actual value of gamma is less than 0.5[2][3]. Considered in isolation, recent estimates presented by the JIA suggested

[1] Independent Pricing and Regulatory Tribunal, *Final Decision, Revised Access Arrangement for Country Energy Gas Network*, November 2005, p. 66.
[2] Joint Industry Association, *Network industry submission—AER Issues Paper—Review of the WACC parameters for electricity transmission and distribution*, September 2008

that the market distribution rate is 0.71 while updated dividend drop-off studies suggest that the market value of imputation credits is between 0.2 and 0.35. This results in a gamma of between 0.15 and 0.25.

On the basis of this evidence, *Country Energy Gas Networks* has taken a conservative approach by adopting a preferred value of 0.3 for gamma, consistent with the value approved by *IPART* for the previous *Access Arrangement*.

6.2.5.1 Forecast Tax Depreciation for the *Access Arrangement*

In order to move from the pre tax framework of the previous *Access Arrangement* to the *AER*'s post tax framework, it is necessary for *Country Energy Gas Networks* to calculate tax depreciation for the *Access Arrangement*. The *Post Tax Revenue Model* (*PTRM)* provides more information on tax depreciation schedules.

For the purpose of estimating the cost of corporate income tax, *Country Energy Gas Networks* has calculated tax depreciation in accordance with tax law on a straight line basis. Table 24 shows the forecast tax depreciation for the *Access Arrangement*.

$,000 (nominal)	2009-10	2010-11	2011-12	2012-13	2013-14
Forecast tax depreciation	1,967	2,059	2,149	2,240	2,336

Table 24 – Forecast tax depreciation for the *Access Arrangement*

Country Energy Gas Networks has calculated the net tax allowance for the *Access Arrangement* as summarised in Table 25. *Country Energy Gas Networks* has calculated this tax allowance using a PTRM and the tax depreciation allowances discussed above.

$,000 (nominal)	2009-10	2010-11	2011-12	2012-13	2013-14
Tax payable	752	717	776	835	892
Less value of imputation credits	(226)	(215)	(233)	(250)	(267)
Net tax allowance	**526**	**502**	**543**	**584**	**624**

Table 25 – Tax allowance for the *Access Arrangement*

[3] Joint Industry Association, *Network industry submission—AER Proposed Determination—Review of the WACC parameters for electricity transmission and distribution*, February 2009

6.2.6 Self Insurance

Self insurance is a significant cost that needs to be recognised in operating expenditure considerations. It is common for companies like *Country Energy Gas Networks* to carry a level of self insurance to account for situations where self insurance is more cost effective. In order to reflect the efficient costs of achieving the operating expenditure objectives, *Country Energy Gas Networks* has included a cost for self insurance.

Country Energy Gas Networks engaged SAHA International to undertake an actuarial assessment to calculate the self insurance risks, and the corresponding self insurance premium. The total self insurance premium is shown in Table 26 below. The SAHA International report included full details of the amounts, values and other inputs used to calculate this premium and an explanation of the calculations involved (refer to Appendix G).

$,000 (real 2009-10)	2010-11	2011-12	2012-13	2013-14	2014-15
Self insurance	127	127	127	127	127

Table 26 – Self Insurance for the *Access Arrangement*

6.2.7 Debt Raising Costs

Country Energy Gas Networks has adopted a conservative approach and included total debt raising costs of 8.1 basis points per annum for this *Access Arrangement*. The projected debt raising costs for each *year* over the *Access Arrangement* is summarised in Table 27 below.

$,000 (real 2009-10)	2010-11	2011-12	2012-13	2013-14	2014-15
Debt raising costs	30	31	31	32	33

Table 27 – Debt raising costs for the *Access Arrangement*

6.2.8 Incentive Mechanism

Country Energy Gas Networks has not included an incentive mechanism in this *Access Arrangement*.

7 TOTAL REVENUE REQUIREMENT AND X FACTORS

7.1 Total revenue requirement

Table 28 contains the derived elements of the total revenue requirement as set out in the previous sections.

$,000 (nominal)	2010-11	2011-12	2012-13	2013-14	2014-15
Return on Capital	6,635	6,973	7,361	7,732	8,068
Return of Capital	852	694	758	831	921
Operating Expenditure	2,565	2,684	2,801	2,913	3,032
Benchmark Tax Liability	526	502	543	584	624
Total costs	**10,578**	**10,853**	**11,463**	**12,060**	**12,645**

Table 28 – Forecast total revenue requirements for the *Access Arrangement*

7.2 X Factors

Country Energy Gas Networks has adopted the X Factors shown in Table 29 below.

X factor (Real)	2010-11	2011-12	2012-13	2013-14	2014-15
Option 1	(33.6%)	(2.5%)	(2.5%)	(2.5%)	(2.5%)

Table 29 – Real price adjustments for the *Access Arrangement*

8 REFERENCE TARIFFS AND REFERENCE TARIFF VARIATION MECHANISMS

8.1 Calculation of Reference Tariffs

8.1.1 Allocation of Total Revenue Requirement to Services

In order to provide information on the cost of providing services to various *Customer* classes, and to enable tariff levels to be determined, *Country Energy Gas Networks* engaged *IRS* to undertake a cost of supply analysis for the *Network*. The approach adopted in the analysis was as follows:

- All asset related costs and all operating expenses were identified, including corporate overheads. In aggregate these costs equalled the total revenue requirement
- The function that each cost is incurred to perform was determined. These functions generally relate to the services provided by the business, for example metering, high pressure mains and low pressure mains. These functions were chosen to assist in the cost allocation across rate classes. Where some costs are incurred to perform more than one function, additional analysis was undertaken to determine the extent to which a cost can be attributed to each function
- The costs were classified according to the drivers which cause the functionalised costs to vary. Some costs vary by system throughput, some are driven by the number of *Customer*s, and others are driven by the level of peak demand. For example, billing costs are largely driven by *Customer* numbers, while distribution costs may be driven by a combination of a need to meet annual throughput and also to meet peak demand. Some costs, for example high pressure mains, vary through a combination of drivers, and some analysis and judgement was required to ascertain the extent to which each driver causes variability in the relevant cost. This classification process also allowed *Country Energy Gas Networks* to determine the extent to which fixed costs were recovered through fixed *Charge*s, demand-related costs were recovered through demand *Charge*s and volume-based costs were recovered through volumetric *Charge*s
- Costs were then distributed to the various *Customer* classes (and even particular *Customer*s) based on the extent to which those *Customer*s impact the system. For example, the billing function tends to vary by the number of *Customer*s, therefore the largest *Customer* class (Volume small) bore the majority of those costs.

This process allowed the costs associated with providing each service to be determined according to the cost of providing each component of the service. For example, this process ensured that Contract (high pressure) *Customer*s did not bear costs associated with the low pressure system, but that Volume (low pressure) *Customer*s carried a fair share of the costs associated with their use of the high pressure system supplying the low pressure system. This process also enabled the costs assigned to each *Customer* class to be identified, and for *Country Energy Gas Networks* to identify if current revenue levels are consistent with costs.

Country Energy Gas Networks has completed a cost of supply model based on the building blocks calculated as part of this *Access Arrangement*. The table below compares the costs allocated to each *Reference Tariff* class to the revenue received from each class for the 2010/11 financial year. Revenue recovered and allocated costs in Table 30 do not include revenue from metering *Charges* or *Additional Services*. As can be seen from the table, *each Reference Tariff* class differs slightly in terms of cost reflectivity in the first *year* of the *Access Arrangement*.

$,000 *Customer* Type	Revenue Recovered	Allocated Costs
Volume Customers		
Small	9,210	9,719
Medium	359	310
Large	113	99
Contract Customers		
Bomen	302	297
Central	163	152

Table 30 – Comparison of allocated costs to revenue recovered for the *year* ended 30 June 2011

Country Energy Gas Networks proposes to transition each *Customer* class to cost reflective levels throughout the *Access Arrangement*, so that by the 2014-15 financial *year* all *Customer* classes will be at cost reflective levels. The transitioning process will involve several steps, depending on the cost recovery starting point for each *Customer* class. The proposed *Reference Tariff* price paths are designed to minimise price volatility between *year*s, while ensuring that cost reflective levels are achieved for all *Reference Tariff* classes by the end of the *Access Arrangement*.

Country Energy Gas Networks has not included prudent discounts for any customer in this *Access Arrangement.*

8.1.2 *Reference Tariff* Structure

The structure of the *Reference Tariffs* for *Transportation Services* remains fundamentally unchanged from the previous *Access Arrangement*, with the exception of the merging of the central and fringe *zone* tariffs.

The tariff for the *Volume Transportation Service* comprises a *Monthly Fixed Charge* based on the flow rate of the *Metering Facilities*, plus a *Volumetric Charge* based on actual *Gas* deliveries.

The tariff for the *Contract Transportation Service* comprises a *Monthly Capacity Charge* (based on *MDQ*), plus a *Monthly Metering Charge* designed to recover the specific costs associated with *meter* provision, *meter reading* and data handling and provision.

8.1.3 *Overruns*

The *Access Arrangement* proposes to continue the current arrangement for charging for *Overruns*.

Country Energy Gas Networks proposes the following approach for the calculation for *Overruns*:

- *Users* may apply to have *Overruns* authorised (provided that no more than five authorisations have already been granted in that *year*) in which case no *Additional Charge* will apply; and
- where more than three unauthorised *Overruns* occur in a month, or a maximum of five unauthorised *Overruns* occur in any one financial *year*, the *MDQ* will be reset consistent with the highest unauthorised *Overrun*, and hence higher *Capacity Charges* will apply from the month in which the unauthorised *Overruns* occurred.

Country Energy Gas Networks believes this approach is preferable, in that it:

- recognises that single or small *Overrun* events are unlikely to impose additional costs on the system in the short run, and hence there is limited justification for applying higher *Charges*
- recognises repeated *Overruns* indicate that system *Capacity* and security is reduced and hence that additional costs are likely to be incurred in the medium term, and
- is simple and easy to understand and administer.

8.1.4 Unaccounted for *Gas*

Country Energy Gas Networks has defined a percentage of *Gas* that *Users* must add to the *Quantity* withdrawn from *Delivery Points* in order to calculate the volume of *Gas* required to be delivered at the *Receipt Point*. This percentage reflects *Unaccounted for Gas* in the *Network*, and has been reflected in the *Access Arrangement*.

The average of actual *Unaccounted for Gas* from the previous *Access Arrangement* is 5.75%, and it is proposed to continue to use this average for this *Access Arrangement*.

8.2 Reference Tariff Variation Mechanism

8.2.1 Form of Price Control

The *Access Arrangement* proposes that *Reference Tariffs* be adjusted in accordance with a tariff basket approach. *Country Energy Gas Networks'* cost of supply model has been designed to equalise forecast revenue from *Reference Services* and apportion total revenue allocations to *Reference Services*. Under this approach:

- individual tariffs and tariff components can move consistent with a weighted average price cap which defines the overall movement in average prices
- average prices are determined by multiplying tariff components by relevant volumes incurred in the previous *year*
- *Country Energy Gas Networks* takes the risk associated with higher or lower *Gas* usage

8.2.2 *Reference Tariffs*

This section sets out the manner in which *Reference Tariffs* (including *Monthly Metering Charges)* and *Additional Services* will change on 1 July 2010 and 1 July each *year* thereafter throughout the *Access Arrangement Period*. Section 13.5 of the *Access Arrangement* outlines the proposed *Reference Tariff Variation Mechanism* which has been designed to allow the *AER* oversight of the annual price change process.

8.2.2.1 *Reference Tariff* Control Formula

As occurred in the previous *Access Arrangement, Reference Tariffs* (excluding *Monthly Metering Charges*) will change on 1 July each *year* in accordance with the following formula:

$$(1+CPI_t) \times (1-X_t) \quad > \quad \frac{\sum_{i=1}^{n} \sum_{j=1}^{m} P_{ij}^{t} * Q_{ij}^{t-2}}{\sum_{i=1}^{n} \sum_{j=1}^{m} P_{ij}^{t-1} * Q_{ij}^{t-2}}$$

- P^{t}_{ij} is the proposed price for component j of tariff i in the coming *year*;
- P^{t-1}_{ij} is the price currently being charged for component j of tariff i
- Q^{t-2}_{ij} is the *Quantity* of component j of tariff i sold in the previous *year*
- CPI_t is the *Change in the CPI*, (as defined in the Glossary) minus 1
- X_t is the real change in average prices from *year* t-1 to *year* t, as set out in section 7.2 above

Amendments to *Reference Tariffs* as a result of a *Pass Through Event* will not be taken into account when determining compliance with the formula in this section.

8.2.2.2 *Monthly Metering Charges* and *Additional Services*

The fees provided in Appendix 2 for *Monthly Metering Charges* and *Additional Services* will change on 1 July each *year* by the *Change in the CPI*.

8.2.3 Pass Through Events

In principle, a cost pass through should apply to those costs that are beyond the distributor's control and influence, whether they increase or decrease costs. There is likely to be a range of costs that will impact *Country Energy Gas Networks* over the course of the *Access Arrangement* that cannot be included in the foreseeable regulated operating or capital expenditure forecasts.

Section 13.4 of the *Access Arrangement* permits material changes in certain cost items which are beyond *Country Energy Gas Networks'* control and influence to be passed through to *Customers*. These include the following events:

- Regulatory change event
- Service Standard Change event
- Tax change event
- Terrorism or Natural Disaster event
- Force Majeure
- An Insurance event
- Retail Project event, or
- Emissions Trading Scheme event.

Pass through mechanisms are particularly important in respect of the *Network* due to its small size and the reduced opportunity to absorb cost increases simply by accepting a reduction in the return on capital compared to other larger networks.

The proposed approach to pass through events is consistent with sound risk management principles and similar provisions are a feature of other access arrangements. However, *Customers*' interests are protected to the maximum extent possible, in that:

- the *AER* must approve any tariff change and can appoint an auditor to review the effects of the costs
- the provision is symmetric and the *AER* is able to approve a change in tariffs should certain non-controllable costs be reduced or be removed; and
- unless prescribed otherwise by law, tariffs must be adjusted consistent with the basis upon which *Reference Tariffs* were originally determined. This ensures that individual Customers or *Customer* groups do not inappropriately bear the burden of price changes.

To minimise administrative costs and ensure that *Users* do not have to deal with more than one price change each *year*, *Country Energy Gas Networks* proposes that changes to tariffs as a result of the *Pass Through Event* occur at the same time as the annual price changes.

8.2.4 Addition and Deletion of Tariffs

As provided for in the previous *Access Arrangement*, section 13.6 of the *Access Arrangement* enables *Country Energy Gas Networks* to add or delete tariffs over the course of the *Access Arrangement*. *Country Energy Gas Networks* does not have any plans to amend its tariff structure at this time. Nevertheless, such flexibility will enable it to respond in the event that cost structures or demand change during the *Access Arrangement*. The bulk of the provisions in section 13.6 of the *Access Arrangement* clarify the manner in which the tariff basket price control will be complied with in the event that tariffs are added or deleted.

9 OTHER MATTERS

9.1 Revisions and Submission Dates

Country Energy Gas Networks has proposed an *Access Arrangement* of 5 *years* and a *Revisions Submission Date* of 1 July 2014. The *Revisions Commencement Date* will be 1 July 2015.

9.2 Capacity Management

Consistent with existing arrangements in NSW, section 8 of the *Access Arrangement* provides that the *Network* will continue to be managed primarily by requiring *Users* to enter into a contractual arrangement for a specified quantity of service.

9.3 Incentive Mechanism

Country Energy Gas Networks has not included an incentive mechanism in the *Access Arrangement.*

9.4 Extensions/Expansions Policy

Section 7 of the *Access Arrangement* sets out the regulatory arrangements applying to *Extensions* and *Expansions* of the *Network*. It identifies the circumstances under which any *Extensions* to or *Expansions* of the *Network* will be covered and the tariff 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 *Network* as it will exist on 1 July 2010. In general, most *Extensions* and *Expansions* to the *Network* will be covered and prevailing *Reference Tariffs* will apply.

The *Access Arrangement* also contains provisions relating to the *Extension* of the *Network* into *New Developments*. Consistent with proposals to open up *Extensions* of the *Network* and *Connection* of *Customers* to competition, amongst other things the policy provides the ability for *Developers* to arrange for the construction of *Extensions* themselves (subject to compliance with relevant *Laws* and/or documentation issued by *Country Energy Gas Networks*, and by paying for appropriate supervision and commissioning of facilities).

This approach is generally consistent with that adopted in the electricity industry in Wagga Wagga, where *Developer*s are required to construct or pay for new facilities to serve *Customer*s. It will allow capital expenditure to be provided on the most efficient basis and will thus lead to lower tariffs for all Customers over the longer term. Capital expenditure that is constructed or funded by *Developers* will not enter the *Capital Base* consistent with *NGR* 82.

9.5 Capacity Trading

The *Capacity* trading requirements in this *Access Arrangement* are consistent with *NGR* 105.

10 KEY PERFORMANCE INDICATORS

The projected KPIs for the *Network* are set out in Table 31 below.

$ (real 2009-10)	2010-11	2011-12	2012-13	2013-14	2014-15
Operating costs/*Customer*	135.56	137.29	138.74	139.66	140.76
Operating costs/metre	3.60	3.61	3.60	3.59	3.58

Table 31 – Wagga Wagga *Network* KPI's for the *Access Arrangement*

11 APPENDICES

11.1	Appendix A –	IRS Load Forecast - Wagga Wagga Gas Distribution System (Commercial-in-Confidence)
11.2	Appendix B –	SKM Benchmarking of Gas System Network Asset Unit Rates (Commercial-in-Confidence)
11.3	Appendix C –	Asset Class Reconciliation
11.4	Appendix D –	CEG The Market Risk Premium and Relative Risk for Country Energy
11.5	Appendix E –	CEG Estimating the Cost of 10 year BBB+ Debt
11.6	Appendix F –	CEG Escalation Factors Affecting Expenditure Forecasts
11.7	Appendix G –	SAHA International Self Insurance