FORECASTS OF DEMAND

for the

SOUTH AUSTRALIAN
REGULATED NATURAL GAS DISTRIBUTION NETWORK

September 2005

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1 INTRODUCTION

Envestra has formulated its forecasts of natural gas demand for the South Australian regulated network using a forward looking methodology that takes into consideration projections of macroeconomic activity, microeconomic behaviour, government policy initiatives and trends in weather. The key drivers of natural gas demand in South Australia were identified, quantified and developed into forecasts of gas demand by tariff zone for the 2005/06 – 2010/11 period. The *National Institute of Industry & Economic Research*, an independent economic forecasting consultancy, provided estimates of the macroeconomic parameters used in developing the forecasts. We believe the resultant forecasts satisfy the requirements of the Code, in that they represent best estimates arrived at on a reasonable basis for use in setting Reference Tariffs (section 8.2(e)).

With the exception of the new townships, the demand forecasts relate to the established distribution network allowing for the usual incremental expansions. The forecasts relating to the new townships are different in that they are discrete projects that will receive targeted business development activities in order to ensure projected Users numbers and volumes are achieved. The specifics of the forecasting method are described in detail in the following sections of the document. Section 2 outlines the method used in forecasting demand for Large Industrial Users (greater than 10 TJ per annum). Section 3 summarises the process used in quantifying the warming trend in the weather and its impact on gas demand over the Access Arrangement Period. Section 4 describes the derivation of the demand forecasts for the Commercial segment. Section 5 describes the derivation of the forecasts of demand Domestic Users segment. Section 6 provides the forecasts of demand for the new townships to be reticulated in the Access Arrangement Period. Section 7 summarises the projected gas demand and consumer numbers by segment and tariff zone. Historical data for the 1997/98 – 2004/05 period is provided in Appendix 1.

2 LARGE INDUSTRIAL DEMAND

Large Industrial consumers use the Demand Haulage Service and consume greater than, or equal to, 10 TJ of natural gas in a Metering Year. MDQ is used as the basis for charging for the Demand Haulage Service. Hence, for the purposes of the Access Arrangement we have forecast MDQ by tariff zone by building it up by MDQ for each User.

Large Industrial demand and MDQ is difficult to forecast, both in quantum and timing. Moreover, MDQ is poorly correlated with macroeconomic drivers such as Gross State Product and disposable income making redundant an econometric approach to forecasting. Large increases and decreases in MDQ occur as the result of relocation, expansion or shutdown of businesses. Prime examples of this are the loss of 6,500 GJ of MDQ at Lonsdale due to the shutdown of the Mobil oil refinery, the shutdown of the Ion Automotive plant at Wingfield and the relocation and expansion of the Coopers brewery to Regency Park. All of these were not incorporated into the forecasts of MDQ for the Demand Haulage Service in the current Access Arrangement Period.

Given these difficulties we have taken a pragmatic approach to forecasting MDQ for Demand Haulage Services over the 2006/07 – 2010/11 period. Using MDQ by User as at 30 June 2005 we have projected this forward over the five years of the Access Arrangement Period adjusting only for known expansions, shutdowns or curtailments to existing demand. Envestra is not aware of any major expansions in the regulated network, hence no additional MDQ has been incorporated into the projections over the forecast period. The known curtailments and shutdowns are listed below along with the resulting impact on MDQ for the forecast period:

(i) Mitsubishi's Lonsdale foundry: 1,900 GJ of MDQ has been deducted from the Southern zone

(ii) Ion Automotive – Wingfield: The Administrator has advised that this facility will be shutdown[1]. 519 GJ of MDQ has been deducted from the Northern zone MDQ.

(iii) Ion Automotive – Plympton: The Administrator has advised that production at this facility will be scaled back due to the loss of the contract with Holden[2]. MDQ in the Central zone has been scaled back from 1,300 GJ to 881 GJ.

To account for the natural loss and addition of Users in any year we have assumed that the net increment to MDQ is zero - additions equal losses. Further, Industrial demand is largely insensitive to the weather which negates the need to weather normalise the forecasts. Forecasts of MDQ for the Access Arrangement Period are presented in Table 2.1 below.

Forecasts of Demand: Large Industrial Users	30 June 2005	2006/07	2007/08	2008/09	2009/10	2010/11
Maximum Daily Quantity (TJ)						
Adelaide	67	64	64	64	64	64
Peterborough	0.1	0.1	0.1	0.1	0.1	0.1
Port Pirie	4	4	4	4	4	4
Riverland/Murray Bridge	1	1	1	1	1	1
South East	1	1	1	1	1	1
Whyalla	0.1	0.1	0.1	0.1	0.1	0.1
TOTAL MDQ - TJ	73	70	70	70	70	70

Table 2.1

3 WEATHER NORMALISATION

The demand for gas is influenced by the prevailing weather conditions. Fluctuations in daily weather conditions explain most of the variation in daily gas demand for the Domestic segment and to a lesser extent in the Commercial segment. This reflects the fact that heating is a significant component of gas consumption for these segments. Industrial demand is insensitive to variations in weather.

Weather conditions vary from day to day and year to year. What would be considered a cold winter one year can be followed by a relatively warm winter the next. The effect being that gas demand will be lower in the second year, relative to the first, holding all other variables constant. The implication being that before an estimate of gas demand can be made an accurate forecast of the weather conditions over the Access Arrangement period is necessary. This is an impossible task. Therefore, to accommodate weather variation in the forecasts we have assumed the weather in each year of the Access Arrangement Period is "normal".

[1] Ion Automotive Appointed Administrators Media Release dated 30 March 2005
[2] Ion Automotive Appointed Administrators Media Release dated 30 August 2005

A common tool used for normalising weather conditions is the heating degree day index ('HDD'), which measures the coldness of a day and therefore allows us to estimate the impact of temperature on gas demand. A simple, but common formulation of the HDD index is:

$$HDD = 18 - T \text{ if } T < 18 \quad \text{or} \quad \text{if } T \geq 18, \text{ then } HDD = 0$$

'T' is the mean of the temperature[3], expressed in degrees centigrade for the day. The value of 18 represents the threshold temperature (in degrees centigrade) below which space heating tends to occur. This is a common 'rule of thumb' used in Australia and in international gas markets. The lower the average daily temperature measured in degrees centigrade ('T') the higher the HDD value and the higher the gas demand. If T is equal to or above 18, the HDD is zero and there is no impact on gas demand due to weather/temperature. Summing the number of HDD's across a year provides a method for estimating the annual gas demand attributable to space heating.

Figure 3.1 shows HDD's each year from 1977/78 to 2004/05. As can be seen the HDD's in any year can fluctuate quite markedly. 2004/05 was the warmest year over the period recording only 870 HDD's, a decline of 109 HDD's from the previous year. This volatility in weather patterns can obscure the underlying trends in annual gas consumption. Furthermore, there is a discernable downward trend in the number of HDD's each year, which demonstrates the well-publicised phenomenon of global warming. This warming trend must be incorporated into the Access Arrangement demand forecasts in order to satisfy the *best estimates arrived at on a reasonable basis* test required under section 8.2(e) of the Code.

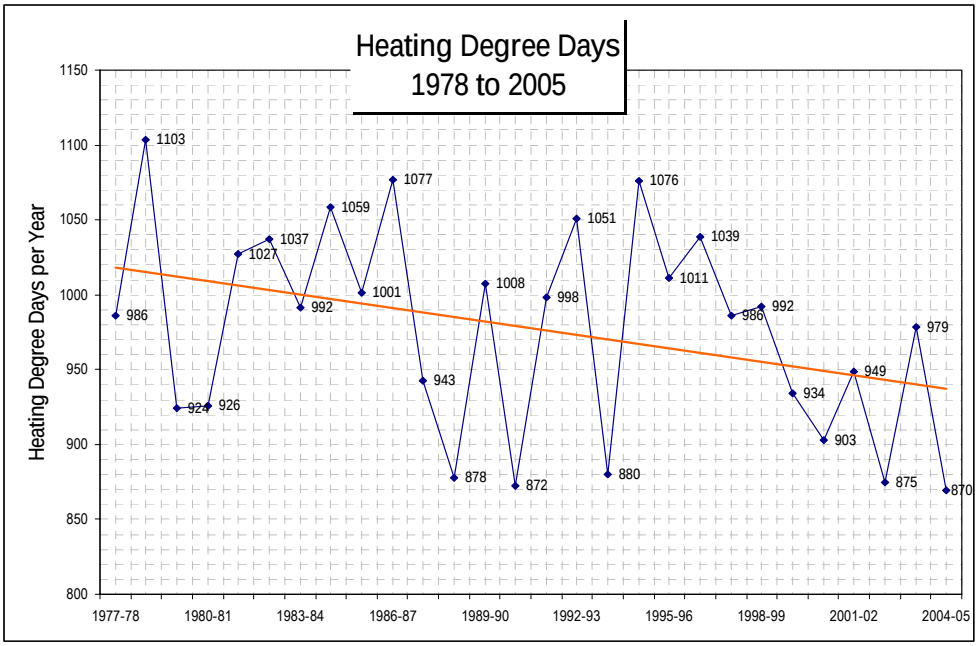

Figure 3.1

The HDD index is used as the basis for forecasting demand in a "normal" year. That is, we set the number of HDD's expected in each year of the forecast period then adjust the demand estimates to account for the HDD impact on demand. To quantify this relationship we specified

[3] mean temperature = maximum + minimum ÷ 2

an equation that linearly relates gas demand for the temperature sensitive Users in the Adelaide region to HDD's and an overall trend in gas demand. This equation in shown below:

$$Y = b + m_1X_1 + m_2X_2 + m_3X_3 + m_4X_4 + m_5X_5 + m_6X_6$$

Where,

Y = daily <10 TJ/a User gas demand (dependent variable);
b = constant
X_1 = 365 day daily rolling average of weather sensitive gas demand
X_2 = Dummy variable to account for the Sunday affect on gas demand
X_3 = Dummy variable to account for the Saturday affect on gas demand
X_4 = Dummy variable to account for the Friday affect on gas demand
X_5 = Dummy variable to account for the Monday affect on gas demand
X_6 = HDD's in the year
m_i = coefficients corresponding to each x-value.

The dummy variables capture non-weather related effects on gas demand. For example, weekends and public holidays (typically Monday's and Friday's) tend to have different demand characteristics not related to weather. The summary outcomes from the regression are shown in Table 3.1.

HDD Equation Summary	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05
HDD coefficient	4.6	4.7	4.6	4.6	4.4	4.9	4.4	4.9
R-Squared	0.88	0.86	0.83	0.88	0.84	0.86	0.83	0.86

Table 3.1

As can be seen the R-Squared statistic is quite high, averaging 0.86 over the period. This indicates that 86% of the variation in the Y-variable is explained by the X variables and gives us a high level of confidence that the HDD coefficient (range 4.4 – 4.9 and average 4.6) provides a reasonable approximation of the weather sensitivity of gas demand. Therefore, as a rule of thumb we can say that for every one HDD above (below) normal reduces (increases) gas demand in South Australia by 4.6 TJ on average. A different index/function could have been used instead of the HDD index. However, there are no *a priori* reasons to expect it would provide a better-quality estimate of the weather effect. For example, if the Victorian VENCorp EDD index was to be used the sunshine, wind and temperature sensitivity coefficients would need to be re-estimated to fit the to SA data. This would be a time consuming activity with nothing to suggest a superior outcome would result.

In normalising gas consumption for each of the previous eight years we have applied the following formula to actual Domestic and Commercial gas consumption:

$$\text{Normalised gas consumption}_t = \text{Actual consumption}_t - (\text{HDD coefficient}_t \times (\text{actual HDD}_t - \text{'normal' HDD}_t))$$

Due to daily metering data not being available for Domestic and Commercial Users it has not been possible to separately identify daily gas consumption for these segments of the market in Adelaide. To accommodate this the HDD coefficient has been pro-rated across these two segments to proxy the higher share of weather sensitive consumption (approximately 90%) attributable to the Domestic segment (ie. space heating and cooking). This normalisation process allows for improved comparability across years and provides a better understanding of underlying trends in gas demand for use in the forecasts over the Access Arrangement Period.

4 DEMAND FORECASTS FOR COMMERCIAL USERS

The Commercial Haulage Service is defined in the Access Arrangement as the haulage of Gas to a Commercial Delivery Point. A Commercial Delivery Point is a Delivery Point that is not a Demand Delivery Point or Domestic Delivery Point. Charges for the Commercial Haulage Reference Service consist of a daily fixed charge plus a declining step tariff. The Commercial Haulage Reference Tariff is levied on all Users that are neither Domestic nor Large Industrial.

Given the consumption range for the Commercial Haulage Service is relatively large (up to 9.99 TJ p.a.) the Commercial segment has been stratified into the following groups to focus on the key drivers of demand and improve the quality of the forecasts:

(i) Commercial[4]: Non-domestic Users consuming less than 1 TJ per annum;

(ii) Small Industrial: Users consuming greater than 1 TJ and less than 10 TJ per annum.

4.2 Non-domestic Users consuming less than 1 TJ per annum

The method used to forecast demand for the less than 1 TJ per annum non-domestic 'Commercial' segment was to estimate the total gas volume for each region using estimates of economic output, demand response to change in output (ie. output elasticity) and the change in the average temperature adjusted volumes per meter. Then to estimate the net number of Users in each year over the 2005/06 – 2010/11 period the average temperature adjusted volume per meter is divided by total volume for that year.

Average volumes per meter were calculated for 1998/99 - 2004/05 by dividing the number of meters by the temperature adjusted volume. The trend in the historical average volume per meter was then projected over the 2005/06 – 2010/11 period. This trend incorporates the declining number of HDD's, increasing appliance efficiency and the effect of fuel substitution. Forecasts of 'Commercial' demand for the Access Arrangement Period are presented in Table 4.2.1 below. Demand is increases over the period to around 1.01 PJ per year, and the Users increase from 7,880 in 2006/07 to 8,459 in 2010/11.

[4] Within Envestra the non-domestic Users consuming less than 1 TJ per annum are commonly referred to as 'Commercial' consumers

Forecasts of Demand - Commercial	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11
Consumption by Region (TJ)						
Adelaide	929	943	943	942	938	944
Peterborough	1	1	1	1	1	1
Port Pirie	15	15	15	15	15	15
Riverland/Murray Bridge	8	8	8	9	9	9
South East	31	31	31	31	30	30
Whyalla	14	14	14	14	14	15
TOTAL - TJ	999	1,012	1,013	1,012	1,007	1,014
Number of Users by Region						
Adelaide	7,113	7,343	7,477	7,604	7,710	7,906
Peterborough	15	15	15	15	15	15
Port Pirie	140	140	141	141	141	142
Riverland/Murray Bridge	28	29	29	30	30	31
South East	253	257	260	263	265	269
Whyalla	95	96	96	96	97	97
TOTAL - USERS	7,644	7,880	8,018	8,149	8,258	8,459

Table 4.2.1

4.3 Small Industrial Users

Gas demand for Small Industrial Users is not sensitive to the temperature, hence we do not normalise for weather. Apart from this difference a similar method to that applied for the 'Commercial' segment is used to forecast demand for the Small Industrial segment. An estimate of the total gas volume for each region is generated using estimates of economic output and an assumed demand response to the change in output (ie. output elasticity). Then to estimate the net number of Users in each year over the 2005/06 – 2010/11 period the average volume per meter is divided by estimated total volume for that year.

Average volumes per meter over the 2005/06 – 2010/11 period are assumed to be those that occurred in 2004/05. The reason for this assumption is that average volumes per meter have fluctuated between 1,946 and 2,078 GJ per annum. There is no reason to expect average volume of the incremental Small Industrial User will be greater or less than the previous years average. Forecasts of Small Industrial demand for the Access Arrangement Period are presented in Table 4.3.1 below. Demand increases over the forecast period, from 1.88 PJ in 2006/07 to 1.91 PJ in 2010/11, but at a lower rate than history. This reflects our view that competition from imports will constrain demand from small scale local manufacturing operations thereby reducing the rate of growth.

Forecasts of Demand - Small Industrial	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11
Consumption by Region (TJ)						
Adelaide	1,784	1,791	1,801	1,805	1,809	1,816
Peterborough	-	-	-	-	-	-
Port Pirie	11	12	12	12	12	12
Riverland/Murray Bridge	18	18	18	18	18	18
South East	46	46	46	46	46	46
Whyalla	16	17	17	17	17	17
TOTAL - TJ	1,875	1,882	1,893	1,897	1,901	1,908
Number of Users by Region						
Adelaide	904	907	913	915	917	920
Peterborough	-	-	-	-	-	-
Port Pirie	5	5	5	5	5	5
Riverland/Murray Bridge	7	7	7	7	7	7
South East	23	23	23	23	23	23
Whyalla	7	7	7	7	7	7
TOTAL - USERS	946	949	955	957	959	962

Table 4.3.1

5 DEMAND FORECASTS FOR DOMESTIC USERS

The demand for natural gas by Domestic Users is function of:

- Weather conditions (ie. HDD's);
- The stock of gas appliances;
- The rate of change in efficiency of appliances;
- The number of new dwellings;
- Home improvements, redevelopments and on line of main connections;
- Disposable income; and
- The price of natural gas,

To assist with the forecasting process estimates of the following macroeconomic drivers over the 2005/06 – 2010/11 period were obtained from of the *National Institute of Industry & Economic Research*:

(i) The number of dwellings in total and split out by tariff region;

(ii) SA Population numbers;

(iii) Household disposable income.

5.2 Forecasting Method

Domestic User forecasts were split into two categories (a) established dwellings and (b) new dwellings. The delineation is necessary to capture the effects of increasingly efficient appliances, substitution away from natural gas heating, government policy initiatives and

changes to building regulations. Gas demand from established dwellings will decline overtime due to the warming trend and increased appliance efficiency (ie. as appliances are replaced the new appliance will consume less gas than the old one). However, this trend decrease will be at a slower rate than new dwellings.

The average volume of gas consumed in new dwellings is significantly less than existing dwellings due to:

(i) Higher efficiency gas appliances;
- For example, instantaneous water heaters are replacing storage hot water units.

(ii) Higher thermal efficiency of dwellings;
- More stringent building standards are implemented by the Government and building industry;
- The South Australian Government has already adopted 4-star thermal efficiency criteria for all new dwellings. In mid-2004, the Government announced the introduction of the 5-Star standard from July 2006. The 6-Star standard is also a possibly in the future;
- These building standards are likely to widen the difference between the thermal efficiency of new dwellings and established dwellings.

(iii) Lower number of gas consuming appliances;
- Low cost reverse cycle air-conditioning is causing substitution away from the key space heating market for natural gas.

(iv) Policy initiatives:

(a) Solar hot water
- Some developers have mandated solar hot water (eg. Mawson Lakes & Aldinga) plus State and Commonwealth Government are providing incentives, such as cash rebates, to subsidise the capital cost of solar hot water services these units.
- SA Government requires that from 1 July 2006 all new homes or homes undergoing a major renovation in areas where gas is available must have solar or gas powered, or electric heat pump hot water systems. Given the high level of gas hot water use in new dwellings this policy may result in downward pressure on forecast gas volumes as increased focus on solar and heat pump appliances may move consumers away from gas or alternatively leads to an increase in the percentage of gas boosted solar units being installed.
- Substituting a gas boosted solar hot water heater for a conventional gas hot water service reduces gas demand from approximately 15 GJ/a to 6 GJ/a.

(b) Water conservation
- Water restrictions and higher prices;
- Low volume water saving shower heads reduce flow of water and subsequent demand for gas to heat the lower volume of water.

(c) The introduction of Minimum Efficiency Performance Standards (MEPs) for gas appliances.

These factors all need to be captured in the forecasts of demand in order to satisfy the *best estimates arrived at on a reasonable basis* test as per section 8.2(e) of the Code.

5.3 Established Dwellings

Average volumes per meter were forecast over the 2005/06 – 2010/11 period by using the temperature adjusted actual average volume for 2004/05 and incorporating trends in HDD's, increasing appliance efficiency and an income response. For each year of the forecast period the average volume per meter is then multiplied by the actual number of meters/Users in 2004/05 adjusted for disconnections. This provides the temperature adjusted forecast volume for the Established Dwelling segment of the Domestic market, which is provided in Table 5.3.1 below.

Forecasts of Demand - Domestic: Established Dwellings	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11
Consumption by Region (TJ)						
Adelaide	7,636	7,553	7,372	7,215	7,050	6,902
Peterborough	1	1	1	1	1	1
Port Pirie	74	74	73	73	72	72
Riverland/Murray Bridge	1	1	1	1	1	1
South East	170	169	168	167	165	164
Whyalla	47	46	46	46	45	45
TOTAL - TJ	7,929	7,844	7,661	7,502	7,334	7,184
Number of Users by Region						
Adelaide	333,228	331,613	329,996	328,385	326,769	325,151
Peterborough	33	33	33	33	33	33
Port Pirie	4,651	4,646	4,641	4,636	4,631	4,626
Riverland/Murray Bridge	62	62	62	62	62	62
South East	6,220	6,195	6,170	6,145	6,120	6,095
Whyalla	3,000	2,995	2,991	2,982	2,978	2,977
TOTAL - USERS	347,193	345,543	343,893	342,243	340,593	338,943

Table 5.3.1

5.4 New Dwellings

New Dwelling demand is comprised of volume from (a) new houses and (b) new connections to existing dwellings. The *National Institute of Industry & Economic Research* provided the estimated number of new dwellings in each region for 2005/06 – 2010/11. The year on year percentage change in dwelling numbers were multiplied by the previous years number of Users/meters to give an estimate of the number of meters attributable to new dwellings. New connections to existing dwellings were input to align the projections with historic trend.

Average temperature adjusted volumes per meter were forecast over the 2005/06 – 2010/11 period taking into account the appliance mix, trends in appliance efficiency and changes in government policy. For each year of the forecast period the number of new meters forecast to be connected is multiplied by the average volume per meter. This provides the temperature adjusted forecast volume for the New Dwelling segment of the Domestic market. These volume forecasts are provided in Table 5.4.1 below. Table 5.5.1 provides the sum of the New and Established Dwelling volume forecasts. This represents the total volume forecasts for Domestic Users.

Forecasts of Demand - Domestic: New Dwellings	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11
Consumption by Region (TJ)						
Adelaide	105	217	314	402	495	588
Peterborough	-	-	-	-	-	-
Port Pirie	0	0	1	1	1	1
Riverland/Murray Bridge	0	0	0	0	0	0
South East	3	7	10	13	17	20
Whyalla	-	-	-	-	-	-
TOTAL - TJ	108	224	325	416	512	610
Number of Users by Region						
Adelaide	7,608	15,771	24,129	31,858	40,134	48,612
Peterborough	-	-	-	-	-	-
Port Pirie	16	38	61	77	100	127
Riverland/Murray Bridge	2	4	5	7	9	11
South East	186	386	591	790	1,005	1,230
Whyalla	-	-	-	-	-	-
TOTAL - USERS	7,812	16,199	24,786	32,732	41,248	49,981

Table 5.4.1

Forecasts of Demand - Domestic	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11
Consumption by Region (TJ)						
Adelaide	7,741	7,770	7,687	7,617	7,545	7,490
Peterborough	1	1	1	1	1	1
Port Pirie	74	74	74	73	73	73
Riverland/Murray Bridge	1	1	1	1	1	1
South East	174	176	178	180	182	184
Whyalla	47	46	46	46	45	45
TOTAL - TJ	8,037	8,068	7,987	7,918	7,846	7,793
Number of Users by Region						
Adelaide	340,836	347,384	354,125	360,243	366,903	373,763
Peterborough	33	33	33	33	33	33
Port Pirie	4,667	4,684	4,702	4,713	4,731	4,753
Riverland/Murray Bridge	63	65	67	69	71	73
South East	6,406	6,580	6,760	6,934	7,125	7,325
Whyalla	3,000	2,995	2,991	2,982	2,978	2,977
TOTAL - USERS	355,005	361,742	368,678	374,974	381,841	388,924

Table 5.5.1

6 NEW TOWNSHIPS

Three townships, Tanunda, Montaro and McLaren Vale, have been identified for natural gas reticulation over the 2006/07 – 2010/11 period. The forecast capital and operating costs have been incorporated into the New Facilities Investment and Non-Capital Costs in the Access Arrangement. The volume forecasts are provided in Table 6.1 and have been formulated based on their expectations about volume, timing and mix of connections.

Forecasts of Demand: New Townships	2006/07	2007/08	2008/09	2009/10	2010/11
Consumption by Category (TJ)					
Domestic	-	3	8	14	20
Commercial	-	3	9	28	33
Small Industrial	-	-	-	-	-
TOTAL - TJ	-	6	17	42	53
Number of Users by Region					
Domestic	-	165	291	507	694
Commercial	-	12	20	45	51
Small Industrial	-	-	-	-	-
TOTAL - USERS	-	177	311	552	745

Table 6.1

7 SUMMARY OF DEMAND FORECASTS FOR THE SA NETWORK

Table 7.1 provides a summary of the weather-normalised forecasts of demand for the Commercial Haulage Service and Domestic Haulage Service segments (ie. consumption < 10 TJ p.a.) of the South Australian market. Table 7.2 provides the MDQ forecasts for the Demand Haulage Service segment of the South Australian market. Table 7.3 provide the forecasts for Tanunda, Monarto and McLaren Vale (new townships).

The forecasts presented below represent best estimates of the demand for natural gas in the SA network over the 2006/07 – 2010/11 regulatory period. The forecasts were arrived at on a reasonable basis because they take into consideration the key macroeconomic drivers of demand, trends in appliance efficiency, impacts of government policy initiatives and developments in dwelling design and construction. Hence, they are suitable for use in setting Reference Tariffs under section 8.2 (e) of the Code.

Forecasts of Demand: < 10 TJ p.a. Users	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11
Consumption by Category (TJ)						
Domestic	8,037	8,068	7,987	7,918	7,846	7,793
Commercial	999	1,012	1,013	1,012	1,007	1,014
Small Industrial	1,875	1,882	1,893	1,897	1,901	1,908
TOTAL - TJ	10,911	10,963	10,892	10,827	10,755	10,715
Number of Users by Region						
Domestic	355,005	361,742	368,678	374,974	381,841	388,924
Commercial	7,644	7,880	8,018	8,149	8,258	8,459
Small Industrial	946	949	955	957	959	962
TOTAL - USERS	363,596	370,570	377,651	384,080	391,058	398,346

Table 7.1

Forecasts of Demand: Large Industrial Users	30 June 2005	2006/07	2007/08	2008/09	2009/10	2010/11
Maximum Daily Quantity (TJ)						
Adelaide	67	64	64	64	64	64
Peterborough	0.1	0.1	0.1	0.1	0.1	0.1
Port Pirie	4	4	4	4	4	4
Riverland/Murray Bridge	1	1	1	1	1	1
South East	1	1	1	1	1	1
Whyalla	0.1	0.1	0.1	0.1	0.1	0.1
TOTAL MDQ - TJ	73	70	70	70	70	70
Number of Users by Region						
Adelaide	140	138	138	138	138	138
Peterborough	1	1	1	1	1	1
Port Pirie	2	2	2	2	2	2
Riverland/Murray Bridge	2	2	2	2	2	2
South East	5	5	5	5	5	5
Whyalla	1	1	1	1	1	1
TOTAL - USERS	151	149	149	149	149	149

Table 7.2

Forecasts of Demand: New Townships	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11
Consumption by Category (TJ)						
Domestic	-	-	3	8	14	20
Commercial	-	-	3	9	28	33
Small Industrial	-	-	-	-	-	-
TOTAL - TJ	-	-	6	17	42	53
Number of Users by Region						
Domestic	-	-	165	291	507	694
Commercial	-	-	12	20	45	51
Small Industrial	-	-	-	-	-	-
TOTAL - USERS	-	-	177	311	552	745

Table 7.3

APPENDIX 1 – ACTUAL VOLUME & USER NUMBERS FOR THE SA NETWORK

Historic Data

The history was extracted from the billing databases such that Users were counted in a particular financial year if they had a meter read in that year. This data is consistent with the block analysis used in the annual tariff adjustment process and therefore appropriate for demand forecasting purposes. This does give rise to some minor differences to the accrual-based information provided in the Annual Report. For example, if a User was connected on 1 June 2002 and has their first meter read was on 31 July 2002 then they would be reported as a User in the 2001/02 Annual Report. However, in the historical data below this User would be included in the 2002/03 numbers because the first meter read occurred in that year.

Domestic Users

Actual Demand: Domestic	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05
Consumption by Region (TJ)								
Adelaide	7,453	7,344	7,164	7,377	7,597	7,435	7,812	7,450
Peterborough	0.5	0.5	0.5	0.5	0.7	0.6	0.6	0.6
Port Pirie	84	79	77	80	83	77	76	75
Riverland/Murray Bridge	1	1	1	1	1	1	1	1
South East	140	146	144	153	158	166	177	172
Whyalla	57	56	51	51	52	49	48	47
TOTAL - TJ	7,735	7,627	7,438	7,662	7,893	7,729	8,114	7,745
Number of Users by Region								
Adelaide	296,155	300,928	306,351	312,205	317,969	323,964	329,560	334,840
Peterborough	30	32	31	33	35	35	35	33
Port Pirie	4,527	4,544	4,582	4,599	4,620	4,627	4,623	4,656
Riverland/Murray Bridge	38	41	43	43	44	51	55	62
South East	5,044	5,229	5,366	5,499	5,611	5,784	6,015	6,245
Whyalla	2,951	2,968	2,975	2,968	2,981	2,990	2,995	3,008
TOTAL - USERS	308,745	313,742	319,348	325,347	331,260	337,451	343,283	348,843

Commercial Users

Actual Demand: Commercial	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05
Consumption by Region (TJ)								
Adelaide	1,063	989	947	920	883	862	911	970
Peterborough	1	2	2	2	2	2	2	1
Port Pirie	18	17	14	15	14	14	14	15
Riverland/Murray Bridge	7	6	4	4	5	5	6	8
South East	36	33	35	34	33	31	32	31
Whyalla	23	17	14	15	15	14	13	14
TOTAL - TJ	1,147	1,063	1,016	990	951	928	979	1,039
Number of Users by Region								
Adelaide	6,440	6,472	6,567	6,582	6,665	6,684	6,706	7,038
Peterborough	11	12	12	12	12	12	12	15
Port Pirie	143	138	140	140	136	139	140	140
Riverland/Murray Bridge	14	14	16	17	20	24	29	28
South East	250	250	251	253	248	251	251	249
Whyalla	104	103	101	100	101	100	95	95
TOTAL - USERS	6,962	6,989	7,087	7,104	7,182	7,210	7,233	7,565

Small Industrial

Actual Demand: Small Industrial	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05
Consumption by Region (TJ)								
Adelaide	1,536	1,573	1,557	1,556	1,645	1,673	1,787	1,781
Peterborough	-	-	-	-	-	-	-	-
Port Pirie	13	12	12	12	11	12	11	11
Riverland/Murray Bridge	14	14	16	14	16	16	14	18
South East	57	58	58	53	51	59	48	46
Whyalla	12	11	9	14	17	16	16	16
TOTAL - TJ	1,631	1,667	1,651	1,649	1,738	1,776	1,877	1,872
Number of Users by Region								
Adelaide	758	783	805	822	840	860	860	902
Peterborough	-	-	-	-	-	-	-	-
Port Pirie	4	4	5	4	5	4	5	5
Riverland/Murray Bridge	5	5	5	5	5	5	6	7
South East	22	23	23	23	23	23	23	23
Whyalla	7	7	7	7	7	7	7	7
TOTAL - USERS	796	822	845	861	880	899	901	944

Large Industrial

Actual Demand: Large Industrial	2001/02	2002/03	2003/04	2004/05
Maximum Daily Quantity (TJ)				
Adelaide	66	70	70	68
Whyalla	0	0	0	0
Port Pirie	3	3	4	4
Riverland	0	0	0	1
Peterborough	0	0	0	0
South East	1	2	3	1
TOTAL - MDQ	70	77	76	73
Number of Users by Region				
Adelaide	143	145	145	140
Whyalla	2	2	1	1
Port Pirie	2	2	2	2
Riverland	1	2	2	2
Peterborough	1	1	1	1
South East	5	5	5	5
TOTAL - USERS	154	157	156	151