Access Arrangement Information

Envestra's South Australian Gas Distribution Network

8 July 2011 – 30 June 2016

July 2011

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1. INTRODUCTION

1.1 Purpose of this Document

This document is the Access Arrangement Information (AAI) in relation to the Access Arrangement (AA) for the Envestra Limited (ABN 19 078 551 685) South Australian gas distribution network (the Network) for the period 8 July 2011 to 30 June 2016 (AA period).

The purpose of this document is to set out such information as is necessary to enable users and prospective users to understand the derivation of the elements of the AA for the AA period.

1.2 The Network

The main centres served by the Network are Adelaide, Mt Gambier, Whyalla, Pt Pirie, Barossa Valley, Murray Bridge and Berri. Maps outlining the areas covered by the Network are available from Envestra's website: www.envestra.com.au.

Table 1.1 below describes the composition of the Network by location with respect to length of mains. As indicated below, the assets used to service metropolitan Adelaide constitute the major part of the Network.

Table 1.1: Network Composition by Location as at 30 June 2010

Location	Km	%
Adelaide	7,112	93.0%
South East	201	2.6%
Whyalla	102	1.3%
Port Pirie	126	1.6%
Murray Bridge	32	0.4%
Nuriootpa	27	0.4%
Berri	19	0.2%
Other	26	0.3%
Total	**7,645**	**100%**

The Network is characterised by four pressure tiers - low, medium, high and transmission. The term 'transmission' in this context refers to distribution mains operating in the pressure range of 1,050 kPa to 1,750 kPa.

1.3 Interpretation

Terms used in this AAI have the same meaning as they have in the AA (see clause 2 of the AA).

In this document:

- Numerical values in tables may not tally due to arithmetic rounding
- A reference to opex is a reference to operating expenditure, and a reference to capex is a reference to capital expenditure
- A reference to the earlier AA period is a reference to the access arrangement period from 1 July 2006 to 30 June 2011.

In the AAI, unless the context otherwise requires, where a word or meaning is capitalised it has:

- the meaning given to that word or phrase in the National Gas Rules (NGR); or
- the meaning given to that word or phrase in the glossary contained in the AA.

2. PIPELINE SERVICES

2.1 Haulage Reference Services

The Haulage Reference Services for the AA period are:

- Demand Haulage Reference Service – this service provides for the forward haulage of Gas to Delivery Points (DPs) with an annual consumption that exceeds 10TJ per year;
- Commercial Haulage Reference Service – this service applies to all DPs that are not Demand DPs or Domestic DPs; and
- Domestic Haulage Reference Service – this service provides for the haulage of Gas to DPs where Gas is used typically for domestic purposes.

The Haulage Reference Services are the haulage Services that are likely to be sought by a significant part of the market during the AA period.

Refer to chapter 2 of the AER's final decision for further information.

2.2 Ancillary Reference Services

The Ancillary Reference Services for the AA period are:

(a) Special Meter Reading – a meter reading for a DP and provision of the associated meter reading data, that is in addition to the scheduled meter readings that form part of the Haulage Reference Service;

(b) Disconnection – installing locks or plugs at the Metering Installation of a Domestic DP in order to prevent the withdrawal of Gas at the DP;

(c) Reconnection – restoring the ability to withdraw Gas at a Domestic DP, following previous Disconnection, i.e. the removal of any locks or plugs used to isolate supply, performance of a safety check and the lighting of appliances where necessary.

2.3 Non-Reference Services

Users may require services that are different from the Reference Services. Envestra will negotiate such services on a case-by-case basis. Where the same non-reference service is provided to more than one Network User, Envestra will not discriminate between Network Users.

The tariff for a Reference Service takes into account the corresponding service levels and business risks associated with providing the service in accordance with the agreed terms and conditions. Users are able to negotiate different service levels or different terms and conditions, and the delivery of such a service will be priced accordingly (as a Negotiated Service).

3. OPERATING EXPENDITURE

3.1 Forecast operating expenditure

The table below summarises the forecast operating expenditure (including debt raising costs) for the AA period.

Refer to chapter 8 of the AER's final decision for further information regarding the basis on which the opex forecast has been derived.

Table 3.1: Forecast Opex ($m, 2010-11)[1]

	2011-12	2012-13	2013-14	2014-15	2015-16	Total
Operating & maintenance[a]	34.9	34.5	34.2	33.9	33.5	**171.0**
Admin & General	8.1	7.9	7.8	7.7	7.6	**39.0**
UAG	12.9	12.0	10.6	9.0	7.3	**51.9**
Network Development	7.4	6.9	7.0	7.3	7.0	**35.5**
Total opex	**63.2**	**61.2**	**59.6**	**57.9**	**55.4**	**297.3**
Debt raising costs	0.6	0.6	0.7	0.7	0.7	**3.2**
Total opex (inc. debt raising costs)	**63.8**	**61.9**	**60.2**	**58.6**	**56.1**	**300.6**

(a) Includes full retail contestability costs.

3.2 Escalators

The following table sets out the escalators to apply to Envestra in the AA period.

Table 3.2 Labour and Materials Escalators

	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
EGW Labour	3.2%	1.5%	0.7%	0.2%	-0.4%	-1.3%
General Labour	4.5%	0.3%	-0.4%	-0.5%	-0.8%	-1.5%
N/W Materials	0%	0%	0%	0%	0%	0%
General Materials	0%	0%	0%	0%	0%	0%
Construction (capex only)	-	1.2%	1.2%	1.1%	0.2%	-0.7%

[1] The figures in this table differ from those presented in the AER's final decision of 17 June 2011 due to the effect of the errors identified in the AER's further final decision of 7 July 2011.

Forecast costs were split into the above categories in accordance with an average of historical breakdown of spend where that data was available. Depending on the available data, the average was taken over a two or three-year period. For example, the historical opex spend on odorisation activities was split into respective labour and materials components for each of the last two years, and the average for each category used in splitting the forecast cost, with the relevant escalator then applied to each category. The same process was used in respect of the capex forecast. Where historical data was not available, component splits were made by reasonable estimation.

3.3 Operating expenditure in the earlier AA period

Information about operating expenditure in the earlier AA period can be found in Table 3.3 in the revised access arrangement information.

4. CAPITAL EXPENDITURE

4.1 Forecast capital expenditure

Table 4.1 summarises the forecast capital expenditure which complies with the NGR.

Table 4.1: Forecast capex for the AA period ($m, 2010-11)

	2011–12	2012–13	2013–14	2014–15	2015–16	Total
Mains replacement	19.4	48.2	48.5	48.7	48.3	213.1
Meter replacement	2.9	3.1	4.2	5.1	5.3	20.5
Augmentation	14.1	5.4	1.3	5.5	0.1	26.3
Telemetry	0.4	0.4	0.7	0.4	0.4	2.2
Regulators and valves	0.8	0.8	0.8	0.8	0.8	4.0
IT	3.8	2.0	2.7	2.0	0.4	10.8
Growth assets	45.5	30.6	28.6	27.8	30.3	162.8
Other distribution system	10.0	11.1	8.6	8.7	8.6	47.0
Other non-distribution system	2.5	1.3	1.3	0.9	0.9	6.9
Total capex	**99.3**	**102.9**	**96.9**	**99.7**	**95.0**	**493.8**

Refer to chapter 3 of the AER's final decision for further information on the basis and reasoning for the forecast capex.

4.2 Capital expenditure in the earlier AA period

Information about capital expenditure in the earlier AA period can be found in Table 3.5 in the revised access arrangement information.

5. CAPITAL BASE

5.1 Summary

The capital base at 1 July 2011 is $1,023.9 million ($ nominal) and is forecast to be $1,514.4 million ($ nominal) at 30 June 2016 as shown below.

Table 5.1: Forecast capital base as at 30 June 2016

	$m
Closing Value of Capital Base (nominal)	$1514.4
Closing Value of Capital Base (real $2010-11)	$1335.3

5.2 Opening Capital Base for the earlier AA period

The 30 June 2006 closing capital base is $815.9 million (in $December 2005) and becomes the revised opening capital base for the earlier AA period.

This 1 July 2006 opening capital base of $815.9 million (in $December 2005) has been converted to a nominal amount as at 1 July 2006 using an inflation adjustment multiplier of 1.0149. This adjustment multiplier is based on half the change in the CPI from March 2005 to March 2006. The purpose of this conversion is to inflate the values which were expressed as at 31 December 2005 for six months of inflation.

Envestra's opening capital base as at 1 July 2006 is therefore $828.0 million in nominal terms.

5.3 Opening capital base

The capital base is adjusted in accordance with rule 77(2) of the NGR.

The closing capital base for the earlier AA period is set out in table 5.2.

Table 5.2: Roll-forward of the Capital Base 2006-07 to 2010-11 ($m, nominal)

	2006–07	**2007–08**	**2008–09**	**2009–10**	**2010–11**
Opening Capital Base	828.0	859.4	909.9	942.5	975.1
Less Depreciation	19.5	21.9	24.4	26.5	28.4
Plus Conforming Capital Expenditure	30.6	35.9	34.6	31.9	44.7
Plus Indexation	20.2	36.5	22.4	27.2	32.5
Closing capital base	**859.4**	**909.9**	**942.5**	**975.1**	**1023.9**

5.4 Projected Capital Base in the AA period

The projected capital base in the AA period has been determined by adjusting the closing value at 30 June 2011 for forecast capex, depreciation and inflation in the AA period. A summary table is presented below.

Table 5.3: Projected capital base for the AA period ($m, nominal)

	2011-12	2012-13	2013-14	2014-15	2015-16
Opening capital base	1023.9	1128.1	1227.4	1321.3	1419.2
plus capital expenditure	105.3	112.0	108.1	114.1	111.4
add indexation	26.1	28.8	31.3	33.7	36.2
less depreciation	-27.3	-41.5	-45.5	-49.8	-52.4
less forecast disposals	-	-	-	-	-
less forecast redundant assets	-	-	-	-	-
Closing capital base	**1128.1**	**1227.4**	**1321.3**	**1419.2**	**1514.4**

6. RATE OF RETURN

6.1 Introduction

This section sets out the rate of return to apply for the AA period.

6.2 Rate of Return

The rate of return on capital determined by the AER is based on the cost of equity plus the cost of debt weighted by the respective proportions of equity and debt in the benchmark capital structure. This is commonly referred to as the weighted average cost of capital (WACC).

The details of how the WACC parameters have been established are set out in the rate of return chapter 5 of the AER final decision. The input parameters and the calculated rate of return are summarised below:

Table 6.1: WACC Parameters

WACC Parameters	Estimate
Risk Free Rate	5.56%
Inflation Forecast	2.55%
Equity Beta	0.80
Market Risk Premium	6.00%
Debt Risk Premium	3.81%
Cost of Equity	10.36%
Cost of Debt	9.37%
Value of Imputation Credits	0.25
Gearing	60.00%
Benchmark Credit Rating	BBB+
Nominal vanilla WACC	**9.77%**

6.3 Other Parameter Values

6.3.1 Gearing

The AER has applied a benchmark gearing of 60% debt for Envestra's regulated assets.

6.3.2 The Value of Imputation Credits

The AER has applied a value of 0.25 for the assumed utilisation of imputation credits, or gamma (γ). Refer to Section 7.5 for further information.

6.3.3 Inflation

The AER has estimated the annual rate of inflation to be 2.55% for the AA period.

6.3.4 Debt Raising Costs

The AER has approved an allowance of 9.5 basis points per annum as the benchmark level of debt raising costs in the operating expenditure forecasts.

6.4 Derivation of the WACC

The nominal vanilla WACC of 9.77% has been derived from the formula below. In this formulation of the WACC corporate taxes are dealt with in the forecast cash flows.

$$\text{WACC} = R_e \times \frac{E}{V} + R_d \times \frac{D}{V}$$

The cost of equity is calculated using the CAPM formula set out below:

$$R_e = R_f + \beta_e \times MRP$$

The cost of debt is calculated using the formula set out below:

$$R_d = R_f + DRP$$

where

R_e	10.36%, which is the risk adjusted post-tax cost of equity required by investors derived from the Capital Asset Pricing Model (CAPM)
E	40%, which is the benchmark level of equity expressed as a percentage of V
D	60%, which is the benchmark level of debt expressed as a percentage of V
V	Sum of assumed debt level plus assumed equity level (V = D + E)
R_f	5.56%, nominal risk free rate of return
DRP	3.81%, debt risk premium
R_d	9.37%, cost of debt (R_f + DRP)
MRP	6.00%, the market risk premium
β_e	0.80, the equity beta for the benchmark service provider

7. COST OF TAX

7.1 Introduction

A post-tax regulatory framework has been used to derive the revenue requirement for the Access Arrangement.

7.2 Calculating the Cost of Tax

The forecast cost of tax (FCT) for each year of the next AA period is calculated in accordance with the following formula:

$$FCT = (RTI_t x STR_t)(1 - \gamma)$$

where:

RTI_t is an estimate of the regulatory taxable income for regulatory year *t* that would be earned by a benchmark efficient distributor as determined by the AER post-tax revenue model;

STR_t is the expected statutory tax rate for regulatory year *t*; and

γ is the assumed utilisation of imputation credits.

The determination of RTI is based on the same inputs used to determine the regulatory revenue requirement. Specifically, RTI is calculated as the regulatory revenue requirement less operating expenditure that is deductible for tax purposes, tax depreciation and interest expense. The STR is set at 30 per cent while the value of imputation credits (γ or gamma) is set at 0.25.

The benchmark tax liability for Envestra is calculated as total tax payable (RTI multiplied by STR) adjusted for the value of imputation credits (gamma).

7.3 Setting the Tax Asset Value

The opening Tax Asset Base (TAB) was $276.0 million ($ nominal) as at 1 July 2011. The TAB is discussed in the AER's draft and final decisions.

7.4 Tax Losses Carried Forward

There was no tax loss carried forward.

7.5 Value of Imputation Credits (Gamma)

Gamma is the factor used to adjust tax payable for the value attributed to imputation credits. Gamma is the product of two components, known as "the distribution rate" (the proportion of created franking credits that are distributed to shareholders by attaching them to dividends) and "theta" (the value to the relevant shareholder of each franking credit that is distributed to them).

In the regulatory context, the higher (lower) the value of gamma the lower (higher) the revenue and cash flow available to the regulated business. Consequently, the value of gamma affects the revenue and cash flow available to support the business's operations and credit rating, and to provide the required return to its investors.

A gamma value of 0.25 has been adopted, consistent with the decision of the Australian Competition Tribunal.

7.6 Benchmark Cost of Tax

The cost of tax calculation, applying the approach and parameters set out in this section, is shown in table 7.1.

Table 7.1: Benchmark Cost of Tax Calculation, 2011-12 to 2015-16 ($m, nominal)[2]

	2011-12	2012-13	2013-14	2014-15	2015-16
Total Revenue	187.7	201.2	211.4	220.5	228.8
less opex	65.4	65.1	65.0	64.8	63.6
less interest	57.6	63.4	69.0	74.3	79.8
less depreciation	14.9	20.9	26.9	33.0	39.2
less tax losses carried forward	0.0	0.0	0.0	0.0	0.0
Taxable Income	49.8	51.8	50.5	48.4	46.2
Tax payable	**14.9**	**15.5**	**15.1**	**14.5**	**13.9**
Value of Imputation Credits	3.7	3.9	3.8	3.6	3.5
Benchmark Cost of Tax	**11.20**	**11.65**	**11.35**	**10.90**	**10.40**

[2] The figures in this table differ from those presented in the AER's final decision of 17 June 2011 due to the effect of the errors identified in the AER's further final decision of 7 July 2011.

8. INCENTIVE MECHANISM

8.1 Summary

This section sets out the incentive mechanism to apply for the access arrangement period as well as the carryover amounts arising from the earlier access arrangement period.

The relevant parts of Envestra's earlier access arrangement are as follows.

Section 5.1.2 sets out the guiding principles for incentive arrangements that are to apply to cost-related efficiencies achieved by Envestra. Specifically, this section states that:

(1) The incentive arrangements that are to apply to cost-related efficiencies achieved by Envestra, and the adjustment to preserve the incentive to meet efficient growth in demand, are a combination of:

- a tariff basket form of price control; and
- the carryover that would result in Envestra retaining the reward associated with an efficiency-improving initiative for five years after the year in which the gain was achieved, ie. a reward (being the net amount of the efficiency gains (or losses) relating to capital and operating expenditure) earned in one year of the earlier access arrangement period would be added to the Total Revenue and carried forward into the access arrangement period if necessary, until it has been retained by Envestra for a period of five years.

(2) There will be no claw-back of gains that have already been made (or losses that have been incurred) during the earlier access arrangement period. However, this principle should not be construed as a constraint on the operation of the efficiency carryover mechanism.

(3) Subject to clause 5.1.3(2), efficiency gains (or losses) related to capital expenditure in any year will reflect the difference between the actual expenditure and the original forecast (or benchmark) expenditure level, as follows:

$$Efficiency\ Gain = WACC * (Capex_t^{Forecast} - Capex_t^{Actual})$$

where:

WACC is the prevailing regulatory WACC, expressed in pre-tax terms.

(4) Subject to clause 5.1.3(1), for operating expenditure the annual efficiency gain (or loss) in Financial Year t will be calculated as:

$$Efficiency\ Gain = Underspending_t - Underspending_{t-1}$$

where:

$$Underspending_t = Opex_t^{Forecast} - Opex_t^{Actual}$$

(5) The costs associated with an Impost or complying with any retailer of last resort requirements will be excluded from the operation of the efficiency carryover mechanism.

(6) Any other activity that Envestra and the Regulator agree to exclude from the operation of the efficiency carryover mechanism will be so excluded.

(7) For the avoidance of doubt, the forecast expenditure amounts that are used as the basis for measuring efficiencies relate to the expenditure benchmarks approved by the Regulator.

Section 5.1.3 sets out the mechanism for carrying over efficiency gains. Specifically, this section states that:

(1) For operating expenditure, it will be assumed that Envestra does not achieve more than the forecast productivity gain between the penultimate and last years of the earlier access arrangement period. As a result, if Envestra makes an efficiency gain in the last year of the earlier access arrangement period, there would be no carryover in respect of that year.

(2) For capital expenditure, it will be assumed that the actual expenditure in the last year of the earlier access arrangement period was equal to the forecast for that year. As a result, if Envestra makes an efficiency gain in the last year of the earlier access arrangement period, there will be no carryover in respect of that year. However, the regulatory asset base (and thus the return on assets) would be higher than otherwise over the next period. This would imply that the "return on assets" included in the revenue benchmarks would be higher, and provide Envestra with precisely the same reward as the carryover had the expenditure level in the last year been known.
At the following review, the regulatory asset base would be adjusted to take account of the difference between the forecast and actual capital expenditure for the last year of the earlier access arrangement period.

(3) There will be no adjustment to the original expenditure benchmarks against which the assessment of the efficiency gains in excess of the forecast would be measured, with the following exception:

- the carryover of cost-related efficiency gains will be calculated in a manner that takes account of any change in the scope of the activities which form the basis of the determination of the original benchmarks, but only where the scope changes arise from exogenous factors and where they impose material additional costs to Envestra. Any adjustment will be made following the provision of relevant information to the Regulator and the assessment of that information by the Regulator.

(4) To the extent that the application of this clause results in a positive efficiency carryover at the end of the earlier access arrangement period, the reward earned in the earlier access arrangement period is to be added to the Total Revenue and carried forward into the access arrangement period, until it has been retained by Envestra for a period of five years, in accordance with this clause.

To the extent that the application of this clause results in a negative efficiency carryover amount, the treatment of that amount (i.e. whether it will be carried over) will be determined by the Regulator at the time of the next review.

8.2 Incentive Mechanism Outcomes for the earlier access arrangement period

The incentive mechanism carryover amounts from the earlier access arrangement period are set out below. These carryover amounts have been carried forward into the access arrangement period in accordance with section 5.1.2 of the earlier access arrangement and r. 98(2) of the NGR.

Capex

Efficiency gains (losses) and carryover amounts related to capex in the earlier access arrangement period are set out in table 8.1. For further details refer to chapter 7 of the AER's final decision.

Table 8.1: Capex efficiency gains (losses) and carryover amounts for the earlier access arrangement period

	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Net Capex Benchmark $m (Dec 05)	42.0	44.0	37.4	35.5	35.9					
Adjustments to Capex $m (Dec 05) [Specified Event]	-	-	4.5	3.8	3.8					
Adjusted Capex Benchmark $m (Dec 05)	42.0	44.0	41.9	39.3	39.7					
Capex Actual $m (MOD)	30.2	35.4	34.1	31.4						
Capex Actual $m (Dec 05)	29.3	33.6	31.0	27.9	39.7					
Capex Underspend $m (Dec 05)	12.6	10.5	10.9	11.4	-					
Capex Incremental Gain $m (Dec 05)	1.0	0.8	0.9	0.9	-					
Carry-Over - Year 2006-07		1.0	1.0	1.0	1.0	1.0				
Carry-Over - Year 2007-08			0.8	0.8	0.8	0.8	0.8			
Carry-Over - Year 2008-09				0.9	0.9	0.9	0.9	0.9		
Carry-Over - Year 2009-10					0.9	0.9	0.9	0.9	0.9	
Carry-Over - Year 2010-11						-	-	-	-	-
Capex Efficiency Carry-Over $m (Dec 05)						**3.6**	**2.6**	**1.8**	**0.9**	**-**

Opex

Efficiency gains (losses) and carryover amounts related to opex in the earlier access arrangement period are set out in table 8.2. For further details refer to chapter 7 of the AER's final decision.

Table 8.2: Opex efficiency gains (losses) and carryover amounts for the earlier access arrangement period

	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
O&M Benchmark $m (Dec 05)	50.4	50.6	50.5	50.9	50.9					
Adjustments to O&M $m (Dec 05) [Licence Fee]	-	0.6	0.5	0.5	0.4					
Adjusted O&M Benchmark $m (Dec 05)	50.4	51.3	51.0	51.3	51.3					
O&M Actual including NMF $m (MOD)	49.6	52.2	54.0	57.0						
NMF $m (MOD)	3.9	4.1	4.3	4.3						
O&M Actual excluding NMF $m (MOD)	45.8	48.1	49.7	52.6						
O&M Actual $m (Dec 05)	44.5	45.6	45.2	46.7	46.7					
O&M Underspend $m (Dec 05)	5.9	5.6	5.8	4.6	4.6					
O&M Incremental Gain $m (Dec 05)	5.9	(0.3)	0.2	(1.2)	-					
Carry-Over - Year 2006-07		5.9	5.9	5.9	5.9	5.9				
Carry-Over - Year 2007-08			(0.3)	(0.3)	(0.3)	(0.3)	(0.3)			
Carry-Over - Year 2008-09				0.2	0.2	0.2	0.2	0.2		
Carry-Over - Year 2009-10					(1.2)	(1.2)	(1.2)	(1.2)	(1.2)	
Carry-Over - Year 2010-11						-	-	-	-	-
O&M Efficiency Carry-Over $m (Dec 05)						**4.6**	**(1.3)**	**(1.0)**	**(1.2)**	**-**

8.3 Incentive Mechanism for the access arrangement period

The AER approved a rolling carryover incentive mechanism which will operate during the access arrangement period in accordance with r. 98 of the NGR. Details regarding the operation of this incentive mechanism are set out in section 5 of the access arrangement. For further information regarding the basis on which the incentive mechanism was approved for the AA period refer to chapter 7 of the AER's final decision.

9. TOTAL REVENUE

Envestra's total revenue requirement was determined using a building block approach (in accordance with Rule 76 of the NGR).

The building block components are:

- a return on the projected capital base.
- depreciation of the projected capital base.
- a forecast of opex.
- efficiency carryover amounts.
- a forecast of the Cost of Tax.

Envestra's total required revenues for each year of the AA period are calculated using the Post Tax Revenue Model and summarised in the following table.

Table 9.1: Annual revenue requirement and X factors ($m, nominal)[3]

	2011-12	2012-13	2013-14	2014-15	2015-16
Return on capital	100.0	110.2	119.9	129.0	138.6
Return of capital	1.2	12.7	14.2	16.2	16.2
plus operating and maintenance	65.4	65.1	65.0	64.8	63.6
plus benchmark tax liability	11.2	11.7	11.4	10.9	10.4
Carryover amounts	10.0	1.6	1.0	-0.4	0.0
Revenue requirement	**187.7**	**201.2**	**211.4**	**220.5**	**228.8**
less: ancillary services	1.8	1.8	1.9	1.9	2.0
Total haulage services revenue	**186.0**	**199.3**	**209.5**	**218.6**	**226.9**
Smoothed haulage services revenue	**172.2**	**191.1**	**210.7**	**231.3**	**242.4**
X factors					
Haulage services (%)	-12.44	-8.00	-8.00	-7.00	-1.75
Ancillary Services (%)	0.00	0.00	0.00	0.00	0.00

[3] The figures in this table differ from those presented in the AER's final decision of 17 June 2011 due to the effect of the errors identified in the AER's further final decision of 7 July 2011.

10. DEMAND FORECASTS

10.1 Network Usage for the earlier access arrangement period

Distribution network customer numbers by tariff class, minimum, maximum and average demand figures over the earlier access arrangement period are set out in Table 10.1 below. These figures are based on actual demand for financial years 2006-07 to 2008-09, and forecast demand for financial years 2009-10 to 2010-11.

Table 10.1: Network customer numbers, minimum, maximum and average demand over the earlier AA period

	2006-07	**2007-08**	**2008-09**	**2009-10F**	**2010-11F**
Tariff R customer numbers	364805	371503	378249	385816	393155
Tariff C customer numbers	9434	9603	9772	9812	9930
Tariff D customer numbers	150	151	151	146	146
Total customer numbers	**374389**	**381257**	**388172**	**395773**	**403231**
Minimum Demand (TJ/d)	59.0	61.7	64.5	57.4	60.1
Maximum Demand (TJ/d)	162.5	160.0	154.0	150.2	146.0
Average Demand (TJ/d)	**106.1**	**104.4**	**105.1**	**102.0**	**101.5**

10.2 Forecast customer numbers and demand

Forecast customer numbers and demand by tariff class for the access arrangement period are set out in Table 10.2 below.

Table 10.2 Forecast customer numbers and demand for the AA period

	2011-12	**2012-13**	**2013-14**	**2014-15**	**2015-16**
Tariff R customer numbers	400952	407857	415073	422642	430824
Tariff R consumption (TJ)	7675	7565	7442	7348	7282
Tariff V customer numbers	10098	10329	10561	10641	10772
Tariff V consumption (TJ)	3197	3291	3280	3308	3366
Tariff D customer numbers	149	151	150	151	153
Tariff D MDQ (GJ)	68766	68528	67174	67455	68327

11. REFERENCE TARIFFS

11.1 Introduction

Envestra recovers its regulated revenue by charging tariffs to customers for Haulage Reference Services and Ancillary Reference Services. The Haulage Reference Tariffs apply to three categories of customers:

1. Residential Volume Tariff (Tariff R);

2. Commercial and small industrial Volume Tariff (Tariff C); and

3. Demand Tariffs (Tariff D).

Customers are assigned to each of these tariffs based on the type of connection (ie residential/non-residential) and their usage profile (i.e. Tariff C versus Tariff D). The charging parameters for the Volume Tariffs (Tariffs R and C) are structured as "declining block tariffs" and also comprise a supply charge. The same price applies irrespective of geographic location.

Tariff D is also structured as a "declining block tariff", however, the quantity charged reflects a capacity signal, the Maximum Daily Quantity (MDQ) agreed between Envestra and the customer. Tariff D is also location specific, with different rates applying dependent on the geographical zone in which a Delivery Point is situated.

11.2 Haulage Reference Service Tariff Classes

Table 11.1 details the South Australian Tariff Classes. Tanunda represents a new tariff region for residential, commercial and demand tariffs.

Table 11.1 – South Australian Tariff Classes

Tariff Class	Haulage Reference Service	Geographical Zone
Tariff R – Residential	Domestic	N/A
Tariff C – Commercial	Commercial	N/A
Tariff D – Northern	Demand	Adelaide North
Tariff D – Central	Demand	Adelaide Central
Tariff D – Southern	Demand	Adelaide South
Tariff D – Peterborough	Demand	Peterborough
Tariff D – Port Pirie	Demand	Port Pirie
Tariff D – Riverland	Demand	Riverland
Tariff D – South East	Demand	South East
Tariff D – Whyalla	Demand	Whyalla
Tariff D - Tanunda	Demand	Tanunda

11.2.1 Volume Tariff Classes – Tariff R (Residential) and Tariff C (C&I)

Volume Tariff Classes comprise two categories – Tariff R (Residential) and Tariff C (Commercial). Tariff R relates directly to the Domestic Haulage Reference Service while Tariff C relates directly to the Commercial Haulage Reference Service. Each constitutes its own reference tariff.

Both Tariff R and Tariff C comprise the following charging parameters:

- Supply charge (in dollars per day); and
- Banded actual volume charges (in dollars per GJ per day).

These are discussed in turn below.

Supply Charge

The supply charge is a fixed daily charge that applies to all Delivery Points. Different supply charges apply to Domestic and Commercial Delivery Points, and are designed to:

- provide signals to customers about their connection costs, having regard for the size, location and type of network user; and

- inform a customer's decision to connect to Envestra's network by providing a constant and foreseeable cost.

Banded Actual Volume Charges

Both Tariff R and Tariff C consist of a number of volumetric consumption charging parameters (in dollars per GJ per day). These charging parameters have been designed to recover any residual allocated costs that are relative to the "size" of the customer but not specifically their network demand.

Tariff R will shift to three volumetric consumption bands in the AA Period. Tariff R currently has two volumetric consumption bands.

- a charge for the first 0.0274GJ of Gas Delivered ($/GJ);
- a charge for the next 0.0219GJ of Gas Delivered ($/GJ); and
- a charge for Additional Gas Delivered ($/GJ).

Tariff C will maintain its current four volumetric consumption bands.

- a charge for the first 0.9863GJ of Gas Delivered ($/GJ);
- a charge for the next 4.274GJ of Gas Delivered ($/GJ);
- a charge for the next 11.178GJ of Gas Delivered ($/GJ); and
- a charge for Additional Gas Delivered ($/GJ).

Tariff R and Tariff C are structured as "declining block tariffs". The volumetric charging parameters apply to the actual gas consumed during the read cycle. The declining block structures reflect the declining unit costs to Envestra of customers increasing their gas consumption.

11.2.2 Demand Tariff Classes – Tariff D

The structure of the Demand Tariff Classes consist of a number of banded Maximum Daily Quantity (MDQ) charging parameters (in dollars per GJ of MDQ per day), with the first band effectively representing a fixed charge as a minimum chargeable MDQ applies. Consistent with the volume tariffs, Tariff D is a "declining block tariff", whereby the charges become smaller as MDQ increases.

The MDQ charges are capacity charges intended to reflect the demands on the network assets. The structure provides economic signals to customers of a preferred usage profile. The locational aspect of Tariff D reflects the cost of service and incentivises customers to connect to these parts of the network that will impose the least costs on Envestra and customers.

For each of the Demand Tariff classes in the Adelaide Region (Northern, Central and Southern), Tariff D contains four MDQ bands as follows:

- MDQ of 50GJ or less;
- next 50GJ of MDQ;
- next 900GJ of MDQ; and
- additional GJ of MDQ

For each of the Demand Tariff classes in the other South Australian Regions, Tariff D contains five MDQ bands as follows:

- MDQ of 50GJ or less;
- next 50GJ of MDQ;
- next 400GJ of MDQ;
- next 500GJ of MDQ; and
- additional GJ of MDQ

11.3 Ancillary Reference Services

Reference Tariffs for Ancillary Reference Services will be maintained in real terms over the AA period. The tariffs reflect a continuation of charges in the earlier AA period, with increases reflecting inflation only.

11.4 Avoidable and Stand-Alone Costs

The tariffs are between stand alone and avoidable costs. Refer to chapter 11 of the AER's final decision for discussion on this matter.

11.5 Long Run Marginal Costs

Envestra's tariffs are consistent with rule 94(4) of the NGR, which requires long run marginal costs to be taken into account when designing tariffs. See chapter 11 of the AER's final decision for an analysis of this issue.

11.6 Grouping of Reference Tariffs on an Economically Efficient Basis

Envestra has developed its tariff classes in recognition of the need to group together network users on an economically efficient basis. See chapter 11 of the AER's final decision for further information on this issue.

11.7 Transaction Costs

Envestra has taken into account transaction costs when determining tariffs, charging parameters and tariff classes.

11.8 Response to Price Signals

Envestra has developed its tariffs and the charging parameters that constitute each tariff in such a manner that customers are able or likely to respond to price signals. The way in which the Tariff D, Tariff R and Tariff C tariffs, and their associated charging parameters, have been developed is set out below.

11.8.1 Demand Tariffs

Tariff D has been structured so that customers can respond to pricing signals whilst providing certainty to customers on the amount of their annual charge. This is because the Tariff D tariffs are structured as "declining block tariffs" based only on an agreed MDQ, not the actual consumption of gas consumed on any given day. Consequently, the Tariff D tariff structure incentivises customers to manage their actual gas consumption within the constraints of their agreed MDQ. This promotes better capacity utilisation of Envestra's network.

11.8.2 Domestic and Commercial Tariffs

The variable nature of the volume charge for Tariff R and Tariff C implies that customers are able to and can respond to price signals. Furthermore, the Tariff R threshold that defines the step between the first, second and third tariff bands has been set with regard to the spread of appliance penetrations across domestic network users in South Australia.

Tariff R and Tariff C are structured as declining block tariffs, which provides a strong incentive for customers to increase consumption, thereby shifting consumption towards the higher tariff bands where the volumetric rates are lower.

Envestra's proposed Reference Tariffs for 2011-12 are set out in Annexure B of the AA.

12. TARIFF VARIATION MECHANISM

The formulae for annual routine adjustment of tariffs are described in section 4.4 of the AA and set out in Annexure E of the AA. Those formulae are unchanged from those that currently apply.

12.1 Haulage Reference Services

12.1.1 Tariff Variation Mechanism

A tariff basket annual tariff variation mechanism in the form of a weighted average price cap (WAPC) formula applies to haulage reference services in the AA period.

The Tariff Control Formula is detailed in Box 1 and is consistent with the formula applied in the earlier AA period, other than updated values of X.

BOX 1 TARIFF CONTROL FORMULA

The following formula applies separately to each of Tariff R, C and D:

$$(CPI_t)(1 - X_t) \geq \frac{\sum_{i=1}^{n}\sum_{j=1}^{m} p_t^{ij} \bullet q_{t-2}^{ij}}{\sum_{i=1}^{n}\sum_{j=1}^{m} p_{t-1}^{ij} \bullet q_{t-2}^{ij}}$$

where:

CPI_t is calculated as the CPI for the year ending 31 March immediately preceding the start of year t, divided by the CPI for the year ending 31 March immediately preceding the start of year t-1;

X_t is -0.08 for 20012/13;

X_t is -0.08 for 20013/14;

X_t is -0.07 for 20014/15;

X_t is -0.0175 for 20015/16;

n is the number of different Reference Tariffs;

m is the different components, elements or variables ("components") comprised within a Reference Tariff;

p_t^{ij} is the proposed component j of Reference Tariff ***i*** in year ***t***;

p_{t-1}^{ij} is the prevailing component j of Reference Tariff ***i*** in year ***t – 1*** ; and

q_{t-2}^{ij} is the audited quantity of component j of Reference Tariff *i* that was sold in year ***t – 2*** (expressed in the units in which that component is expressed (eg, GJ)).

The Rebalancing Control Formula is detailed in Box 2.

BOX 2 REBALANCING CONTROL FORMULA

$$(CPI_t)(1-X_t)(1+Y_t) \geq \frac{\sum_{j=1}^{m} p_t^j \bullet q_{t-2}^j}{\sum_{j=1}^{m} p_{t-1}^j \bullet q_{t-2}^j}, i = 1,...n$$

where:

CPI_t is calculated as the CPI for the year ending 31 March immediately preceding the start of year t, divided by the CPI for the year ending 31 March immediately preceding the start of year t-1;

X_t is -0.08 for 20012/13;

X_t is -0.08 for 20013/14;

X_t is -0.07 for 20014/15;

X_t is -0.0175 for 20015/16;

Y_t is 0.02;

m is the components comprised within Reference Tariff ;

p_t^j is the proposed component j of Reference Tariff in year ***t***;

p_{t-1}^j is the prevailing component j of Reference Tariff in year ***t – 1***;

q_{t-2}^j is the audited quantity of component j of Reference Tariff that was sold in year ***t – 2*** (expressed in the units in which that component is expressed (eg, GJ)); and

n is the number of different Reference Tariffs.

12.1.2 Tariff Variation Process

Envestra is required to submit an annual reference tariff proposal to the AER for approval at least 50 business days prior to the relevant financial year in which the proposed tariffs are to apply.

12.2 Ancillary Reference Services

Reference Tariffs for Ancillary Reference Services will increase by inflation (CPI) in each year of the AA period.

12.2.1 Ancillary Reference Tariff Variation Mechanism

Reference Tariffs for Ancillary Reference Services will be varied annually on the basis of the following Reference Tariff Control Formula:

$$ART_t = ART_{t-1} \times CPI_t$$

where:

ART_t is the Reference Tariff that will apply to an Ancillary Reference Service in year $_t$;

ART_{t-1} is the Reference Tariff that applied to that Ancillary Reference Service in year $_{t-1}$; and

CPI_t is calculated as the CPI for the year ending 31 March immediately preceding the start of year t, divided by the CPI for the year ending 31 March immediately preceding the start of year t-1.

12.2.2 Ancillary Tariff Variation Process

The tariff variation process will follow Envestra's Haulage Reference Tariff Variation Process.

12.3 Cost Pass Through Events and Process

In accordance with Rule 97(c) of the NGR, Envestra has proposed a number of defined events or Cost-Pass Through Events for the AA period. These events are defined in section 4.5 of the AA. The AER has approved the events, and the process for assessment of Cost Pass Through Events in chapter 12 of its final decision for Envestra.

The process for assessment of Cost Pass Through Events is defined in section 4.6.2 of the AA.

12.3.1 Materiality Threshold

All Cost Pass Through Events are subject to a materiality threshold. The threshold is defined in section 4.5 of the AA. Refer to chapter 12 of the AER's final decision for further discussion of the materiality threshold.

13. NON-TARIFF COMPONENTS

13.1 Capacity Trading

The capacity trading policy is outlined in section 7 of the AA. Refer to chapter 13 of the AER's final decision for further information.

13.2 Network Extensions and Expansions

The extensions and expansions policy is outlined in section 8 of the AA. Refer to chapter 13 of the AER's final decision for further information.

13.3 Terms and Conditions

13.3.1 Overview of Terms and Conditions

The terms and conditions (T&C) applicable to the provision of Reference Services are dealt with in section 6 of the AA. The detailed T&C are contained in Annexure G to the AA.

The following summary of the T&C may assist Prospective Users in understanding aspects of the terms of access:

(1) Pursuant to section 6 of the AA, it is a condition that a Prospective Network User enter into an Agreement with Envestra for the provision of any Network Service. The term 'Agreement' is defined in the AA and means the entering into of a binding contractual arrangement between Envestra and a Network User. Prior to entering into an Agreement, a Prospective Network User must satisfy Envestra that it:

- has the necessary financial capacity to meet its obligations to Envestra; and
- has adequate arrangements in place to ensure it can keep Gas deliveries into and out of the Network in balance.

(2) Annexure F allows for the details pertaining to the specific circumstances of the parties entering into the agreement.

(3) Annexure G sets out the terms and conditions that are to apply, as a minimum, to the provision of each Reference Service. It describes terms and conditions which are applicable to both Haulage and Ancillary Reference Services (Part IV of the terms and conditions), as well as those terms and conditions which apply specifically to each type of Reference Service (Part II – Haulage Reference Services, and Part III – Ancillary Reference Services).

(4) The clauses applying to Haulage Reference Services (Part II) address matters including:

- procedures for classifying Delivery Points;
- meter accuracy and reading;
- minimum Gas quality and delivery pressures;

- possession of Gas and responsibility;
- warranties and title to Gas; and
- supply curtailment.

(5) Part III applies only to the Ancillary Reference Services. This part only consists of one clause because the Retail Market Procedures deal extensively with the obligations surrounding these services.

(6) (Part IV) applies both to Haulage Reference Services and Ancillary Reference Services. These clauses address matters including:

- invoices and payment arrangements;
- procedures for determining delivered quantities;
- termination;
- liability and indemnities;
- Force Majeure;
- assistance;
- access to premises;
- confidentiality;
- notices;
- assignment by the Network User;
- amendment of the Agreement; and
- other miscellaneous provisions.

The obligations, duties and responsibilities of Envestra and any Network User described in the T&C are in addition to those established in law or by any relevant regulatory instrument.