APA Group

APT Allgas Energy Pty Limited

Access Arrangement Information

Effective
01 July 2011 – 30 June 2016

March 2011

Contents

1 Introduction

This Access Arrangement Information (AAI) document has been prepared, in accordance with Rule 43(1) of the National Gas Rules 2008 (NGR), to provide Users and Prospective Users with sufficient information to understand the derivation of the Access Arrangement and its compliance with the NGR.

This Access Arrangement Information accompanies APT Allgas' access arrangement for the Queensland Natural Gas Network. The revised access arrangement is expected to commence on 1 July 2011.

The APT Allgas network supplies Natural Gas to End Users in Brisbane (south of the river), South Coast (extending into northern New South Wales), Toowoomba and Oakey through over 2,900 km of distribution mains. A more detailed description of the Network, including a map, is available on APA Group's website at www.apa.com.au, which shows the general location and key points of the Network (such as intersections with transmission pipelines).

1.1 Structure of this document

This document follows the structure of Rule 72[1] setting out the requirements for content of the access arrangement information for a full access arrangement proposal.

APT Allgas' access arrangement proposal commences at the end of an earlier access arrangement period, and therefore contains information relevant to the earlier access arrangement period (in this case spanning from 1 July 2006 to 30 June 2011) as required under the NGR. This information is included in Part 2 of the AAI. The remaining parts of this AAI are as follows:

- Part 3 establishes the capital base for the access arrangement period (in this case proposed to span 1 July 2011 to 30 June 2016), including forecast capital expenditure for the access arrangement period;
- Part 4 discusses forecast utilisation for the network, including forecast customer numbers and volumes used to derive tariffs;
- Part 5 outlines forecast operating expenditure for the access arrangement period;
- Part 6 sets out key performance indicators for the network;
- Part 7 sets out the rate of return used in the access arrangement;

[1] All references to Rules or a particular Rule in this document refer to the National Gas Rules 2008, or part thereof, unless an alternative meaning is expressly stated.

- Part 8 outlines the approach to taxation and how the tax asset base has been calculated;
- Parts 9 and 11 discuss historical and proposed incentive mechanisms;
- Part 10 describes the reference services, approach to tariff setting and reference tariff variation mechanism; and
- Part 12 sets out the total revenue requirement for the network for each year of the access arrangement.

2 Information relevant to the earlier access arrangement period

2.1 Capital expenditure

Capital expenditure by asset class over the earlier access arrangement period[2] is set out in Table 2.1 below. These costs are based on actual costs for financial years 2006/07 to 2009/10, and forecast costs for financial year 2010/11.

Table 2.1 – Capital expenditure by asset class over the earlier access arrangement period

($000 Nominal)	2006/07	2007/08	2008/09	2009/10	2010/11 F	Total
HP Steel Mains	1,734	964	1,854	151	272	4,975
Other Mains	8,057	7,151	7,996	10,183	8,598	41,984
HP Steel Services	40	75	165	151	50	481
Other Services	3,507	4,801	4,327	7,877	9,002	29,514
Regulator Stations	1,187	214	3,104	3,289	2,187	9,982
Metering Stations	3,877	3,085	5,157	2,748	3,597	18,464
System Total	**18,402**	**16,289**	**22,603**	**24,400**	**23,706**	**105,400**
Non System	5,807	2,007	1,474	819	927	11,034
Total	**24,209**	**18,296**	**24,078**	**25,219**	**24,632**	**116,434**

2.2 Operating expenditure

Operating expenditure by category over the earlier access arrangement period[3] is set out in Table 2.2 below. These costs are based on actual costs for financial years 2006/07 to 2009/10, and forecast costs for financial year 2010/11.

[2] As required by Rule 72(1)(a)(i)

[3] As required by Rule 72(1)(a)(ii)

Table 2.2 – Operating expenditure by category over the earlier access arrangement period

($000 Nominal)	2006/07	2007/08	2008/09	2009/10	2010/11 F
Controllable Costs					
Network Operations & Maintenance	8,196	5,462	5,147	8,161	9,357
Marketing	0	2,553	3,012	1,309	1,047
Admin & Strategic Planning	577	979	1,646	1,394	1,336
Total Controllable Costs	**8,773**	**8,994**	**9,805**	**10,864**	**11,740**
Non-Controllable Costs					
Customer Services	1,010	50	7	1,090	860
UAG	1,877	1,961	2,263	2,178	2,439
Government Charges	241	440	286	378	480
Metering & Billing	1,556	1,588	1,708	1,410	1,177
Corporate Costs	732	1,365	1,266	995	1,426
Total Non-Controllable Costs	**5,417**	**5,404**	**5,531**	**6,051**	**6,383**
Total Operating Costs	**14,190**	**14,398**	**15,336**	**16,915**	**18,122**

2.3 Network usage

Distribution network minimum, maximum and average demand figures over the earlier access arrangement period[4] are set out in Table 2.3 below. These figures are based on actual demand for financial years 2006/07 to 2009/10, and forecast demand for financial year 2010/11.

[4] As required by Rule 72(1)(a)(iii)(A)

Table 2.3 – Network minimum, maximum and average demand over the earlier access arrangement period

	2006/07	2007/08	2008/09	2009/10	2010/11 F
Minimum Demand (TJ/d)	12.28	12.77	14.38	13.24	12.14
Maximum Demand (TJ/d)	42.29	42.15	41.72	40.15	38.52
Average Demand (TJ/d)	29.60	30.22	29.87	30.12	27.99

Distribution network customer numbers in total and by tariff class over the earlier access arrangement period[5] are set out in Table 2.4 below. These figures are based on actual customer numbers for financial years 2006/07 to 2009/10, and forecast customer numbers for financial year 2010/11.

Table 2.4 – Customer numbers in total and by tariff class

	2006/07	2007/08	2008/09	2009/10	2010/11 F
Volume Class	73,656	76,522	79,483	81,722	84,311
Demand Class	108	109	114	102	101
Total	**73,764**	**76,631**	**79,597**	**81,824**	**84,391**

[5] As required by Rule 72(1)(a)(iii)(B)

3 The capital base

3.1 Opening capital base

3.1.1 Opening capital base for access arrangement period

The opening capital base for the access arrangement period[6] is shown in Table 3.1 below.

Table 3.1 – Opening capital base for the access arrangement period

($000 Nominal)	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Opening capital base	302,687	327,120	350,720	373,966	399,415	423,844
plus capex	25,206	19,215	25,070	26,304	26,361	
plus speculative capex	-	-	-	-	-	
plus re-used redundant assets	-	-	-	-	-	
less depreciation	8,158	9,486	10,441	11,438	11,998	
plus indexation[7]	7,386	13,870	8,663	10,808	10,065	
less redundant assets	-	-	-	-	-	
less disposals and transfers	-	-	46	225	-	
Closing capital base	**327,120**	**350,720**	**373,966**	**399,415**	**423,844**	

3.2 Projected capital base

The projected capital base for the access arrangement period is made up of the following components:

- Opening capital base; plus
- Forecast conforming capital expenditure; less

[6] As required by Rule 72(1)(b)

[7] 2005/06 numbers include allocation difference of $1,768,000 as per the Allgas 2005/06 regulatory accounts, Schedule E.

- Forecast depreciation; less
- Forecast disposals.

These components are described in the following sections, and the projected capital base is provided in section 3.2.5 below.

3.2.1 Forecast conforming capital expenditure for the access arrangement period

Forecast conforming capital expenditure by asset class over the access arrangement period[8] is set out in Table 3.2 below.

Table 3.2 – Forecast capital expenditure by asset class over the access arrangement period

($000 Nominal)	2011/12	2012/13	2013/14	2014/15	2015/16	Total
HP Steel Mains	1,505	1,804	3,607	2,924	3,223	13,064
Other Mains	7,826	8,345	8,689	9,241	9,772	43,874
HP Steel Services	60	65	68	73	78	345
Other Services	9,160	9,829	10,334	11,066	11,810	52,199
Regulator Stations	1,283	986	946	994	1,037	5,245
Metering Stations	3,707	3,755	4,288	5,218	5,014	21,982
System Total	**23,542**	**24,785**	**27,932**	**29,516**	**30,934**	**136,710**
Non System	3,349	2,156	1,541	711	557	8,314
Total	**26,891**	**26,940**	**29,473**	**30,228**	**31,492**	**145,024**

APT Allgas' capital expenditure forecast is derived based on purpose in categories as follows:

- Customer initiated capital expenditure – expenditure required to meet growth in customer numbers and demand;
- Network augmentation capital expenditure – expenditure required to maintain capacity to meet current customer demand and to provide additional capacity to meet future customer demand;

[8] As required by Rule 72(1)(c)(i)

- Network renewal capital expenditure – expenditure necessary for renewal and replacement of ageing network assets and compliance requirements relating to safety and reliability.

Non-system capital expenditure is related to IT systems and software, motor vehicles, and plant and equipment which are not part of the distribution network, but which are otherwise required to deliver pipeline services.

Forecast conforming capital expenditure by category over the access arrangement period in shown in Table 3.3 below.

Table 3.3 – Forecast conforming capital expenditure by category over the access arrangement period

($000 Nominal)	2011/12	2012/13	2013/14	2014/15	2015/16	Total
Customer requested	15,810	17,001	17,909	19,210	20,563	90,494
Network Augmentation	1,680	1,630	3,335	2,646	2,909	12,200
Network renewal	6,052	6,154	6,687	7,660	7,462	34,015
System total	**23,542**	**24,785**	**27,932**	**29,516**	**30,934**	**136,710**
Non-system	3,349	2,156	1,541	711	557	8,314
Total	**26,891**	**26,940**	**29,473**	**30,228**	**31,492**	**145,024**

3.2.2 Forecast depreciation

Forecast depreciation by asset class over the access arrangement period[9] is shown in Table 3.4 below.

Table 3.4 – Forecast depreciation over the access arrangement period

($000 Nominal)	2011/12	2012/13	2013/14	2014/15	2015/16
Depreciation	403	3,762	3,793	4,572	5,015

APT Allgas has adjusted the economic lives of its assets to bring them in line with industry practice and ensure sufficient cash flow for the business. Table 3.5 sets out APT Allgas' previous and revised asset economic lives. The revised economic lives

[9] As required by Rule 72(1)(c)(ii)

have been used to derive the depreciation forecast of the access arrangement period.

Table 3.5 – Asset economic lives (years)

	Previous economic life	Revised economic life
HP Steel mains	105	80
HP Services	105	50
Distribution mains and services	PVC – 30 PE – 80 Steel – 45 Copper – 85 Cast iron – 80	50
District Regulators	50	40
Contract Meters	30	15
Tariff Meters	25	15

APT Allgas has applied a straight-line methodology in determining future depreciation.

3.2.3 Forecast disposals

Forecast disposals for the access arrangement period are set out in Table 3.6 below.

Table 3.6 – Forecast disposals over the access arrangement period

($000 Nominal)	2011/12	2012/13	2013/14	2014/15	2015/16
Disposals	-	-	-	-	-

3.2.4 Forecast redundant assets

The forecast of assets that will be made redundant in the access arrangement period in set out in Table 3.7 below.

Table 3.7 – Forecast redundant assets over the access arrangement period

($000 Nominal)	2011/12	2012/13	2013/14	2014/15	2015/16
Redundant assets	-	-	-	-	-

3.2.5 Projected capital base over the access arrangement period

The projected capital base for the access arrangement period[10] is shown in Table 3.8 below.

Table 3.8 – Projected capital base for the access arrangement period

($000 Nominal)	2011/12	2012/13	2013/14	2014/15	2015/16
Opening capital base	423,844	450,332	473,510	499,189	524,845
plus forecast capex	26,891	26,940	29,473	30,228	31,492
less forecast depreciation	403	3,762	3,793	4,572	5,015
less forecast disposals	-	-	-	-	-
less forecast redundant assets	-	-	-	-	-
Closing Capital Base	**450,332**	**473,510**	**499,189**	**524,845**	**551,322**

[10] As required by Rule 72(1)(c)

4 Forecast network demand and utilisation

4.1 *Forecast customer numbers and volumes*

Forecast customer numbers and volumes by customer class for the access arrangement period are set out in Table 4.1 below.

Table 4.1 – Forecast customer numbers and volumes by customer class over the access arrangement period

	2011/12	2012/13	2013/14	2014/15	2015/16
Volume class customer number	87 213	90 178	93 215	96 327	99 533
Demand class customer number	102	103	104	105	106
Total customer number	**87,315**	**90,281**	**93,319**	**96,432**	**99,639**
Volume class (TJ)	2 883	2 926	2 969	3 013	3 058
Demand class (TJ)	6,970	6,985	7,000	7,015	7,030
Total customer volume (TJ)	**9,853**	**9,911**	**9,969**	**10,028**	**10,088**

4.2 *Forecast network capacity and utilisation*

Forecast network capacity and utilisation for the access arrangement period[11] is shown in Table 4.2 below. Network capacity has been calculated using aggregated gate station maximum daily quantities and dividing them by aggregated gate station capacity for each year.

Table 4.2 – Forecast network capacity and utilisation for the access arrangement period

	2011/12	2012/13	2013/14	2014/15	2015/16
Network capacity (TJ/d)	53.86	54.40	54.94	59.06	59.65
Utilisation of network capacity (%)	71.8	71.8	71.7	67.3	67.1

[11] As required by Rule 72(1)(d)

4.3 *Forecast demand*

Forecast maximum and average demand for the network over the access arrangement period is shown in Table 4.3 below.

Table 4.3 – Forecast maximum and average demand for the network over the access arrangement period

TJ/day	2011/12	2012/13	2013/14	2014/15	2015/16
Maximum Demand	37.05	37.77	37.59	37.81	37.93
Average Demand	26.92	27.15	27.31	27.47	27.56

5 Forecast operating expenditure

Forecast operating expenditure by category over the access arrangement period is set out in Table 5.1 below.

Table 5.1 – Forecast operating expenditure by category over the access arrangement period

($000, Nominal)	2011/12	2012/13	2013/14	2014/15	2015/16
Controllable Costs					
Network Operations & Maintenance	10,841	11,151	11,540	11,902	12,213
Marketing	1,086	1,136	1,189	1,235	1,275
Admin & Strategic Planning	765	801	840	1,080	1,116
Total Controllable Costs	**12,692**	**13,089**	**13,569**	**14,217**	**14,603**
Non-Controllable Costs					
Customer Services	925	1,003	1,086	1,168	1,246
UAG	4,109	4,211	4,319	4,430	4,540
Government Charges	530	551	576	599	619
Metering & Billing	1,239	1,311	1,387	1,459	1,525
Corporate Costs	1,469	1,528	1,596	1,660	1,715
Total Non-Controllable Costs	**8,271**	**8,604**	**8,964**	**9,314**	**9,645**
Debt Raising Costs	275	292	307	323	340
Total Operating Costs	**21,238**	**21,985**	**22,840**	**23,855**	**24,588**

APT Allgas' forecast of operating expenditure for the access arrangement period has been prepared using the base year methodology. This methodology involves the following steps:

- Selection of an appropriate base year in which to measure costs;

- Modification of the base year costs to ensure that all costs required for future operation of the network are added to the base year costs, and all costs in the base year costs which are not relevant to future operation of the network are subtracted from the base year costs;

- Modification of base year costs as required to reflect changed consumer numbers, additional network facilities required to supply gas to these additional consumers, and increased loads from existing consumers;

- Modification of the base year costs to reflect changes in input costs anticipated over the access arrangement period; and

- Modification of the base year costs to reflect appropriate productivity improvements.

6 Key performance indicators

Key performance indicators for the access arrangement period[12] are shown in Table 6.1 below.

Table 6.1 – Key Performance indicators ($2010/11)

Indicator	Unit	2011/12	2012/13	2013/14	2014/15	2015/16
Total Operating Costs per km Mains	$/km	6,436	6,509	6,540	6,554	6,506
Total Operating Costs per Customer	$/Cust	223	222	220	217	212

[12] As required by Rule 72(1)(f)

7 Rate of return

APT Allgas has calculated a nominal vanilla weighted average cost of capital (WACC). The formula in is used to derive the nominal vanilla WACC is set out below.

$$WACC = K_e \frac{E}{V} + K_d \frac{D}{V}$$

where:

K_e = the expected rate of return on equity or cost of equity

K_d = the expected rate of return on debt or cost of debt

$\frac{D}{V}$ = the market value of debt as a proportion of the market value of equity and debt

$\frac{E}{V}$ = the market value of equity as a proportion of the market value of equity and debt, which is $1 - \frac{D}{V}$

The cost of equity, K_e, is calculated with the following formula:

$K_e = R_f + \beta_e \times MRP$

where:

R_f = the nominal risk free rate of return

β_e = the equity beta

MRP = the expected market risk premium

The cost of debt, K_d, is calculated with the following formula:

$K_d = R_f + DRP$

where:

R_f = the nominal risk-free rate of return

DRP = the debt risk premium.

Table 7.1 below sets out proposed input parameters and the calculated rate of return used to derive APT Allgas' revenue requirement for the access arrangement period[13].

[13] As required by Rule 72(1)(g)

Table 7.1 – Proposed weighted average cost of capital for the access arrangement period

Parameter	Estimate
Risk-free rate	5.71%
Debt to value	60%
Debt risk premium	4.69%
MRP	6.5%
Gamma	0.2
Equity beta	1.1
Cost of equity	12.86%
Cost of debt	10.40%
Nominal vanilla WACC	**11.38%**

8 Taxation

APT Allgas is using a post tax framework to derive its revenue requirement for the access arrangement period[14]. This requires APT Allgas to establish a tax asset base (TAB).

The estimated cost of corporate income tax for each year of the access arrangement period (ETC_t) is 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 regulatory year t that would be earned by a benchmark efficient entity as a result of the provision of regulated services if such an entity, rather than the service provider, operated the business of the service provider, such estimate being determined in accordance with the AER's post-tax revenue model

r_t is the expected statutory income tax rate for that regulatory year assumed to be 30 per cent

γ (gamma, the assumed utilisation of imputation credits) is deemed to be 0.2

The estimate must take into account the depreciation of the TAB for tax purposes.

APT Allgas has calculated its TAB in a manner consistent with the guidelines set out by the AER's June 2007 *Transition of energy businesses from pre-tax to post-tax regulation* released issues paper, in particular by:

- establishing its opening tax asset base by reconstructing the APT Allgas tax base as at 30 June 2001;
- using the opening tax values as at 30 June 2001; APT Allgas has utilised the National Tax Equivalent Regime (NTER) values associated with the Allgas entity;
- determining a TAB applying tax rates to the written down values using the diminishing value method;
- deriving tax asset values from asset registers, tax working papers and other supporting documentation and ensuring that the standard tax and remaining tax life inputs to the post tax revenue model were consistent with relevant source material;

[14] As required by Rule 72(1)(h)

- treating past additions based on actual capital expenditure in a manner consistent with generally accepted accounting principles;[15]
- adding additions to the TAB using the same rates and maturity profiles as actual additions to the APT Allgas TAB;
- including capital contributions in its TAB, net of contributions, and treating depreciation on contributed assets consistent with other distribution assets;
- adjusting for disposals in line with regulatory financial statements;
- applying an appropriate method to separate Regulatory Asset Base (RAB) and non-RAB components; and
- not including work in progress derived from the audited regulatory financial statements in its opening tax asset base for the next regulatory control period.

Asset class standard lives (in years) or the Australian Tax Office statutory cap used to prepare the APT Allgas TAB are set out in Table 8.1 below.

Table 8.1 Historical and statutory tax asset lives (years)

Category	Statutory Tax Life	Statutory Cap	Remaining Tax Life
TRS & DRS - Valves & Regulators	40	20	15.7
HP Steel Mains and services	50	20	9.2
Distribution Mains and services	50	20	8.1
Meters - Tariff	15	n/a	6.1
IT Systems	2.5	n/a	0.1
Land and Building	25	n/a	18.7

APT Allgas' tax asset base roll forward for the access arrangement period is shown in Table 8.2 below.

[15] As the Allgas cost allocation and capitalisation methodology was developed during its ownership by Energex, APT Allgas has applied the same methodology adopted by Energex.

Table 8.2 – Tax asset base roll forward for the access arrangement period

($000 Nominal)	2011/12	2012/13	2013/14	2014/15	2015/16
Opening TAB	112,952	118,466	123,824	129,821	134,582
Forecast capex	20,122	19,997	22,074	22,262	22,629
Tax depreciation	14,608	14,639	16,077	17,501	18,048
Closing TAB	**118,466**	**123,824**	**129,821**	**134,582**	**139,163**

9 Historical incentive mechanism

There was no incentive mechanism operative in the earlier access arrangement period giving rise to increments or decrements that need to be included in the revenue requirement for the access arrangement period[16].

[16] As required by Rule 72(1)(i)

10 Approach to tariff setting

10.1 Reference services

The Reference Tariffs offered by APT Allgas are designed to meet the requirement of Rule 101 in the NGR in that services that are likely to be sought by a significant part of the market.

The Reference Services derived for application under the Access Arrangement are as follows:

- Volume Customer Service
- Demand Customer Service
- Reference Ancillary Services

APT Allgas also provides prudent discount and negotiated services.

Table 10-1 sets out the customer classes adopted and the definitions of the Reference Services, as defined in the revised Access Arrangement. Note that the information in Table 10-1 shows the customer class and customer numbers as at 30 June 2010.

Table 10-1 Customer Groups

Customer Group	Description/Reference Service	Number of Customers
Volume	The Volume Service is available where the End User is reasonably expected to withdraw a quantity of Natural Gas less than 10TJ per year.	81,722
Demand	The Demand Service is available where the End User is reasonably expected to withdraw a quantity of Natural Gas of at least 10TJ per year.	102

Transaction Costs

These Reference Services were chosen to represent reasonably homogeneous groupings of End Users taking into account the consumption patterns and quantities, the connection and Metering types and End User locality while also considering pricing constraints. APT Allgas considers it would be inefficient to charge smaller End Users on capacity given the significant additional cost of interval metering required to facilitate charging. These extra costs would severely impact the competiveness of natural gas in the market and would lead to lower utilisation of

services. In addition capacity charging of smaller customers would have negligible impact on network savings arising from any demand response.

Demand customers are charged based on capacity as well as location and have interval metering systems installed. These larger customers have significant impact on the network design and are better able to respond to price signals on location and utilisation.

Volume Class

APT Allgas proposes a single reference tariff for all regions which includes a standing charge and stepped throughput charge. The stepped throughput charge is structured as a decreasing block tariff with the second step starting at a consumption of 1.7GJ/day and tariff reducing to approximately 73% of the first step and the third step starting at 10 GJ/day and the tariff reducing to approximately 53% of the first step.

This tariff structure has been designed to minimise administrative cost required for multiple zones and reflect the relatively high fixed cost component of providing the meter and service whilst enabling the End User to respond to price signals on consumption behaviour. For typical residential consumers the fixed component of their tariff is approximately 70% of their network charge with each incremental extra gigajoule of consumption per annum resulting in a network charge increase of approximately of 3% (or in FY11 8.06/GJ/a +GST). This tariff structure encourages low consumption End Users to increase consumption by adding more appliances such as cooker only customers converting to gas hot water. The stepped throughput charge in turn provides incentives for business class customers to increase consumption at reduced average charges whilst reflecting their cost to serve.

Demand Class

APT Allgas has a unique situation in that the transmission pipeline is relatively close to many of its largest End Users and hence physical bypass is a real consideration. Calculations show that using average prices for the Demand Customer Service will result in some End Users receiving prices above stand-alone cost of supply, whereas others will receive prices well below the stand-alone costs. These inefficient pricing outcomes are not desirable for either APT Allgas or the End Users as APT Allgas is at risk of physical bypass and the End Users are paying an unacceptably high cost of supply. APT Allgas has therefore established pricing zones for the Demand Customer Service based on distance from the transmission pipeline:

- Brisbane – 3 Zones;
- Toowoomba – 2 Zones;
- Oakey – 2 Zones; and

- South Coast – 3 Zones.

The pricing zone Reference Tariffs for the Demand Customer Service were developed using a number of stand-alone Networks. These stand alone Networks were used to calculate the portion of the allocated costs attributable to the Demand Customer Service group in a particular supply area. This process involved:

- identifying the location of each End User within the Demand Customer Service with respect to the transmission pipeline;
- identifying the costs of an efficient stand-alone Network to supply End Users from the transmission pipeline. This involved the grouping of End Users to provide efficient infrastructure to that group of End Users; and
- computing the required revenue for each End User resulting from this efficient stand-alone Network.

The tariff structure has been designed to reflect the cost to provide the service with the base charge reflecting fixed meter and telemetry charges according to meter capacity and location and the stepped MDQ charge reflecting network capacity reservation requirements for each group. This tariff structure encourages End Users to reduce their load factors and hence their MDQ charges providing the most efficient usage of the network.

Reference Ancillary Services

APT Allgas has proposed tariffs for Reference Ancillary Services that reflect the cost to provide the service based on a building block cost methodology. The tariff unit costs have been built up from contractor costs, internal processing labour and overhead allowances. Contractor costs are based on rates tendered from suitable contractors through competitive tender processes as discussed in the AA proposal. Quantities have been based on historical actuals forecast to allow for changes in total customer base. In the absence of more detailed information being available APT Allgas consider this methodology provides the best available forecast.

By adopting cost reflective pricing for ancillary services APT Allgas is signalling to Users and End Users the true cost to provide services and as these are responsive services Users and End Users are in apposition to adjust usage behaviour to account for these prices.

Capital Contributions have been forecast utilising actual FY10 contributions adjusted for CPI and customer connection numbers over each year of the AA. Given the variability of new connection requirements this methodology utilises the most recent information available and appropriately adjusts for future customer growth. Again given the variability in individual customer connection requirements APT Allgas consider this methodology provides the best available forecast.

10.2 Revenue and Cost Allocation Process

In the 2006-11 AA submission APT Allgas assigned the Total Revenue to the customer service groups using a cost allocation process. This process involved the following main steps:

- determine Total Revenue for each year using the PTRM;
- capital, operating and maintenance costs relating to the Network assets are divided into cost pools based on defined asset groups;
- customer groups (and thus the tariff categories) are defined based on consumption levels, allocated connection infrastructure and location;
- the costs for the End Users from the Demand Customer Service group are deducted based on stand-alone pricing principles; and
- the remaining costs are allocated based on asset usage.

Analysis of the network configuration and customer profile indicates that the network has remained largely the same as when this analysis was completed and approved and as such APT Allgas has relied on this analysis and escalated tariff evenly across classes.

Reference Tariffs are designed to recover the Total Revenue allocated to each customer service group based on the forecast utilisation and customer growth and as such no shortfall in revenue is proposed under Rule 94(5).

This Total Revenue apportionment and cost allocation approach ensures that the revenue derived from the application of the Reference Tariffs (modelled using the forecast load and customer growth) is equal to the Total Revenue should the assumptions regarding costs and demand growth hold.

10.3 Revenue Requirement

The total revenue requirement derived from the building block approach using the PTRM is shown in Table 10-2:

Table 10-2: APT Allgas Forecast Revenue Requirement

($000 Nominal)	2011-12	2012-13	2013-14	2014-15	2015-16
Return on capital	48,250	51,266	53,904	56,828	59,748
Return of capital	403	3,762	3,793	4,572	5,015
O&M	21,238	21,985	22,840	23,855	24,588
Benchmark Tax liability	759	2,219	2,126	2,312	2,674
APT Allgas Building Block Revenue Requirement	**70,650**	**79,231**	**82,664**	**87,566**	**92,026**
Less Forecast Reference Ancillary Service Revenue	686	727	770	816	864
Less Forecast Capital Contribution Revenue	583	611	642	674	712
Reference Tariff Revenue Requirement	**69,381**	**77,893**	**81,252**	**86,076**	**90,449**

The net present value of the reference tariff revenue stream when discounted at the nominal vanilla WACC of 11.38% is $292.6 million.

Table 10-3 details the proposed revenue expected from each customer class at expected load and demand forecasts.

Table 10-3 APT Allgas Proposed Reference Tariff Revenue Stream

($000 Nominal)	2011-12	2012-13	2013-14	2014-15	2015-16
Demand Class Revenue	18,193	20,953	23,570	26,046	27,574
Volume Class Revenue	43,477	51,445	59,281	67,090	72,490
Proposed Reference Tariff Revenue	**61,670**	**72,397**	**82,851**	**93,136**	**100,064**

Note: The Demand Class revenue forecasts include prudent discount and negotiated service revenues as submitted to the AER in Confidential Attachment 9.1

The net present value of the reference tariff revenue stream when discounted at the nominal vanilla WACC of 11.38% is $292.6 million which is equal to the revenue requirement.

10.3.1 Stand alone and Avoidable Costs

Approach

Stand alone and marginal costs together must equate to the total revenue requirement. APT Allgas have estimated the stand alone cost of the Demand Class customer group based on an engineering assessment of the optimised bypass costs required to supply this class and we assume that the balance to the total revenue requirement is the avoidable cost of serving the Volume customer class.

In accordance with Rule 94 of the NGR, the revenue expected to be recovered must lie between the standalone cost of providing the reference and the avoidable cost of not providing the service.

Demand class stand alone costs

APT Allgas had 102 Demand customers in 2010. APT Allgas' engineering assessment for the network assets needed to supply these customers is as follows:

- on a pure stand-alone cost basis total asset value is 545.4 million; and
- the group stand-alone cost basis total asset value is 181.7 million.

To set the maximum revenue to be collected from the Demand customers, the group stand-alone cost asset value is used. This approach assumes the optimised network construction cost to supply groups of Demand Class customers based on location and results in the lowest capital cost required to supply all customers in that class. The asset value is then converted to an annuity using a nominal vanilla WACC of 11.38%, and standard asset lives for each category of asset. An estimate of annual operating and maintenance costs is then derived by applying a rate of 3% to the capital cost. For 2011-12, the maximum amount of revenue to be earned from the Demand customer group on a standalone cost basis is 25.3million.

Volume class avoidable cost

APT Allgas has assumed that the Volume Class avoidable cost is the difference in total revenue requirement and the Demand Class standalone cost which for 2011-12 equals 36.4 million.

Demand class avoidable costs

The avoidable costs for the Demand Class customer group is taken to be the operating and metering telemetry cost associated with this customer group which are forecast at 0.3 million for 2011-12. This assumes that the cost saving from downsizing the steel section of the network to supply Volume Class customers only is negligible.

Volume class stand alone cost

APT Allgas has assumed that the Volume Class standalone cost is the difference in total revenue requirement and the Demand Class avoidable cost which for 2011-12 equals 58.4 million.

Outcome

Table 10-4 shows that the expected revenue for 2011-12 complies with Rule 94.

Table 10-4 APT Allgas Avoidable and Standalone Costs 2011-12

($000 Nominal)	Avoidable Cost	Expected Revenue	Standalone Cost
Demand Class Revenue	337	18,193	25,297
Volume Class Revenue	36,373	43,477	61,333

It should be noted that the expected revenue for 2011-12 does not fully reflect the WACC assumption used in determining the standalone costs due to revenue smoothing and X factor increases in subsequent years.

10.3.2 Long Run Marginal Costs

Rule 94 of the NGR requires long run marginal costs to be taken into account when designing tariffs. Long run marginal costs include the incremental capital and operating costs required to connect a new customer. APT Allgas has analysed the proposed capital expenditure for customer requested and augmentation over the 2012-16 AA period and compared the tariff revenue from the incremental new connections and capital contributions to the required payment using a net present value analysis. The resulting analysis shows that on an overall basis the revenue derived from forecast new connections over the 2012-16 AA period exceeds the costs required to meet the capital and maintenance required to connect these customers. This analysis assumes a rate of return equal to the nominal vanilla WACC of 11.38%, assumed operating costs of 3% of capital and an analysis period of 20 years.

The NGR requirements also call for individual tariff components to reflect the long run marginal costs associated with provision of that service component. In carrying out this analysis APT Allgas has focused on the Volume Class as new connections for Demand Class are few, have very specific demand requirements and are location specific. As such capital contributions are analysed on a case by case basis at the time of connection to ensure that capital and operating costs for each individual connection are recovered over a suitable period.

In order analyse the individual Volume tariff components APT Allgas has analysed the indicative long run marginal cost to connect typical customer groups in the Volume Class using FY12 estimates of connections costs and calculated the required return by applying a rate of return assumed to be the nominal vanilla WACC of 11.38% and an analysis period of twenty years. This analysis considers the incremental connection costs of the meter and service and makes no provision for mains and upstream augmentation costs. The following table details the results of this analysis and the forecast revenue associated from these customer groups.

Table 10-5: APT Allgas Volume Class LRMC

Customer Group	Consumption	LRMC (Meter & service)	Expected Revenue
Low Usage Residential Customer	3 GJ/a	89.74/GJ/a	81.39/GJ/a
Average Residential Customer	10 GJ/a	26.92/GJ/a	31.20/GJ/a
Average Business Customer	423 GJ/a	4.40/GJ/a	10.20/GJ/a

Based on this analysis it can be seen that new connections for both residential and business class customers at expected average volumes generate a revenue stream greater than that required to service the capital cost of the meter and service along with associated maintenance costs and in addition contribute to upstream augmentation costs. This reflects the minimal increase in upstream capacity required to service residential customers and the proportionally higher costs required to increase business consumers.

Lower consumption customers (cooker only) consuming around 3 GJ/a are shown to generate revenue slightly below their LRMC. APT Allgas has been progressively addressing this issue by increasing the standing charge component of the Volume tariff at a higher rate than the overall tariff to minimise the impact on existing lower consumption customers which would result in them disconnecting from the network and lead to higher overall tariffs for this class of customer. APT Allgas also discourage new connection of cooker only customers by applying a capital contribution to such new connections to ensure they are economically viable.

The Volume tariff structure has been designed to reflect the fixed cost component of service and meter costs as well as fixed non capital costs such with the throughput component contributing to upstream network augmentation required to service the higher throughputs.

As stated previously the long run marginal cost for connecting demand customers is dependent on the specific customer details of load, location and usage pattern. APT Allgas has analysed the long run marginal cost for connecting new customers based on the forecast capital cost to connect new customers in 2011-12 and the expected revenue from these customers assuming a demand zone 1 tariff. This analysis resulted in a LRMC of $19,729 compared to an expected revenue of $56,398 indicating that revenue exceeds LRMC. This analysis does not include new mains or upstream augmentation to support the new load. Each new connection will be assessed on a case by case basis to ensure that revenue exceeds long run marginal connection costs.

10.4 Prudent Discounts

APT Allgas currently has a number of prudent discount and negotiated service End Users. Details of these have been submitted to the AER for approval in confidential attachment 9.1

10.5 Ancillary services

APT Allgas offers three Reference Ancillary Services based on User requirements. APT Allgas costed Reference Ancillary Services on a cost recovery basis and forecast activity levels based on historical analysis. Forecasts of customer contributions have been escalated in line with CPI and forecast connection rates and Reference Ancillary Service volumes escalated in accordance with overall customer numbers. Table 10-6 details the proposed charges and revenues for these activities;

Table 10-6 Reference Ancillary Service and Customer Contribution Revenue Forecasts

($000 nominal)	2011-12	2012-13	2013-14	2014-15	2015-16
Inlet Disconnection	40	43	45	48	51
Inlet Reconnection	72	76	81	85	91
Special Meter Read	574	608	644	683	723
Total Reference Ancillary Services	**686**	**727**	**770**	**816**	**864**
Customer Contributions	**583**	**611**	**642**	**674**	**712**

10.6 Reference Tariffs

Tariffs for reference services are set out in Appendix B of the access arrangement. Tariffs are published for 2011/12 (in $2011/12) and are exclusive of goods and services tax (GST).

10.6.1 Reference tariff variation mechanism

Reference Tariffs are varied in later years of the access arrangement period through the operation of the reference tariff variation mechanism, made up of:

- an Annual Scheduled Reference Tariff Adjustment Formula Mechanism - which applies in respect of each year during the access arrangement period; and
- Cost Pass-through Reference Tariff Variation Mechanism - under which APT Allgas may seek to vary one or more of the reference tariffs as a result of a cost pass-through event.

10.6.2 Annual reference tariff adjustment formula mechanism

The annual tariff variation adjustment formula adjusts tariffs on each 1 July of the access arrangement period as follows:

- Volume Customer Service and Demand Customer Service will be varied by CPI and an X factor; and
- Reference Ancillary Services will be varied by CPI only.

There is scope under the tariff variation mechanism to adjust the weighting of fixed and variable demand charges.

These annual adjustments are intended to ensure efficient tariffs over the access arrangement period. Relevant values and formulae for the above parameters are set out in section 4.5 of the access arrangement.

10.6.3 Cost pass-through reference tariff variation mechanism

A cost pass through reference tariff variation mechanism is included in the access arrangement to allow tariffs to be adjusted to recover incremental costs resulting from defined events.

Defined cost pass-through events are:

- a carbon pricing event
- an insurance cap event
- an insurer credit risk event
- a natural disaster event
- a network user failure event
- a regulatory change event
- a service standard event
- a tax change event
- a terrorism event

A materiality threshold of one per cent of the smoothed forecast revenue specified in the final decision applies to annualised costs arising from a cost pass through event.

Part 4.5 of the access arrangement sets out the tariff variation process.

11 Proposed incentive mechanism

The access arrangement does not include an incentive mechanism of the type described under the Rules[17], however APT Allgas faces incentives to reduce costs and increase demand over the access arrangement period compared with the forecast on which the access arrangement is based, as total revenue will not be adjusted to reflect differences between forecast and actual gas deliveries and/or business costs.

[17] See Rule 98

12 Total revenue

The total revenue requirement to be derived from pipeline services over the access arrangement period is shown in Table 12.1 below.

Table 12.1 – Total revenue to be derived from pipeline services over the access arrangement period

($000 Nominal)	2011-12	2012-13	2013-14	2014-15	2015-16
Return on capital	48,250	51,266	53,904	56,828	59,748
Return of capital	403	3,762	3,793	4,572	5,015
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APT Allgas Building Block Revenue Requirement	**70,650**	**79,231**	**82,664**	**87,566**	**92,026**
Less Forecast Reference Ancillary Service Revenue	686	727	770	816	864
Less Forecast Capital Contribution Revenue	583	611	642	674	712
Reference Tariff Revenue Requirement	**69,381**	**77,893**	**81,252**	**86,076**	**90,449**

The net present value of the reference tariff revenue stream when discounted at the nominal vanilla WACC of 11.38% is $292.6 million.