APA GasNet Australia (Operations) Pty Ltd

Access Arrangement Information

Effective
01 January 2013 –
31 December 2017

November 2012

Contents

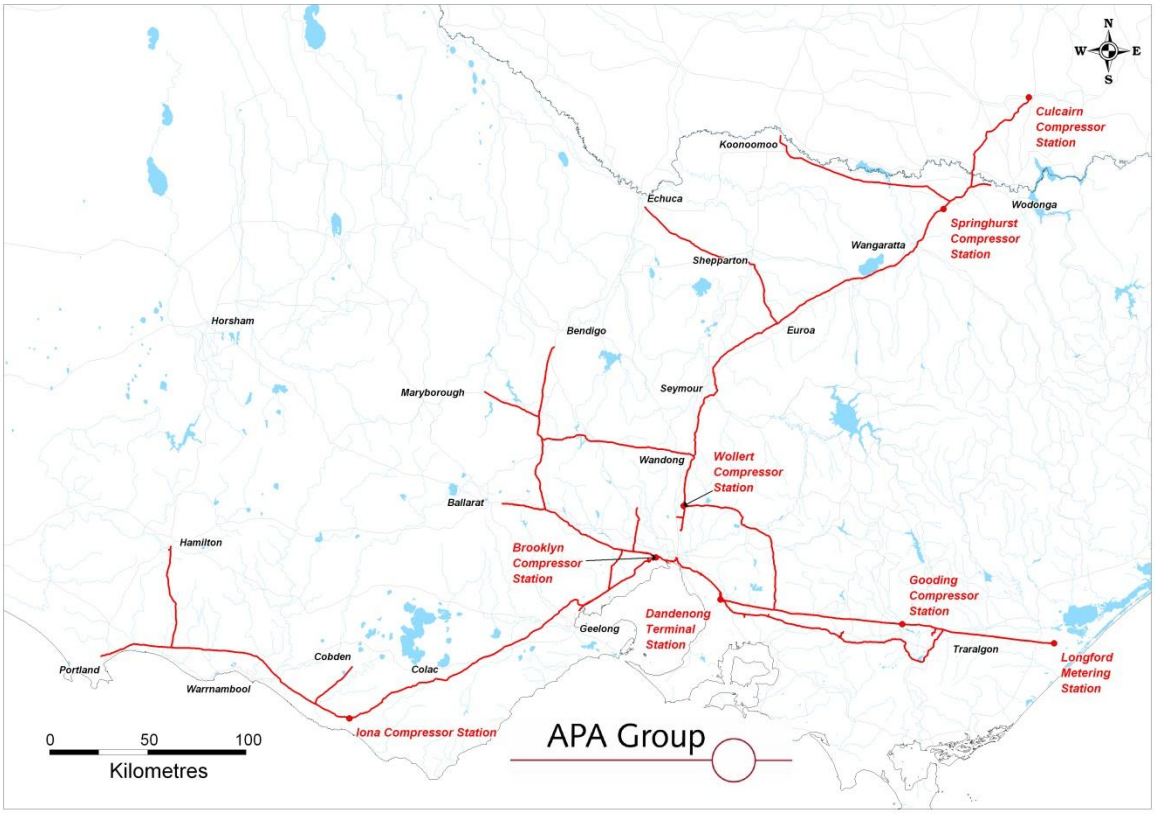
1 Introduction

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 the APA GasNet Australia (Operations) Pty Ltd (APA GasNet) access arrangement for the Victorian Transmission System (VTS). The revised access arrangement is expected to commence on 01 January 2013.

Pipeline Overview

The Victorian Transmission System (VTS) consists of 45 licensed pipelines and associated facilities supplying the Melbourne metropolitan area, country Victoria and supply to New South Wales and South Australia. The VTS also transports gas across the system and into NSW at Culcairn. A map of the VTS is shown below.



Gas enters and exits the system in the West via the SeaGas connection point and Western Underground Storage (WUGS) facility at Iona, to the North via the APA GasNet Northern Lateral Pipeline at Culcairn and to the East from Longford, VicHub and Bass Gas.

Pipelines

The VTS comprises 45 different pipelines of differing lengths, diameters, ages and construction materials and methodologies. The pipeline is protected by pipeline coating (of various types and quality) and cathodic protection.

Pipeline assemblies include scraper assemblies (pig traps), mainline, isolating and branch valve assemblies and are generally designed to the same life as the pipeline.

Stations

The broad category of 'Stations' encapsulates the gas facilities that allow for control, measurement, storage or pressure maintenance of pipeline fluids within the VTS including compressor stations, odourisation stations, pressure regulation and metering facilities.

Compression facilities

The VTS comprises compressor stations at Gooding, Brooklyn, Iona, Wollert, Euroa and Springhurst. AEMO remotely operate the compressor stations in accordance with the SEA.

Plant and operational assets

Plant and operational assets include mobile plant and emergency response tools and equipment such as emergency portable lighting, vehicles, vent systems and emergency vent equipment.

A more detailed description of the Pipeline, 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 pipeline.

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.

APA GasNet's 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 01 January 2008 to 31 December 2012) as required under the NGR. This information is included in Part 2 of the AAI. The remaining parts of this AAI are as follows:

[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 3 establishes the capital base for the access arrangement period from 01 January 2008 to 31 December 2012, including forecast capital expenditure for the previous access arrangement period;
- Part 4 discusses forecast utilisation for the pipeline, including forecast customer numbers, reserved capacity 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 pipeline;
- Part 7 sets out the rate of return used in the access arrangement;
- 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 pipeline for each year of the access arrangement.

Financial information in this document is presented on a calendar year basis.

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 2010/11, and forecast costs for financial year 2011/12.

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

$m (nominal)	2008	2009	2010	2011	2012F	Total
Stay in Business	15.3	4.8	5.3	8.0	7.8	41.3
Pipelines and compressors	22.5	5.4	5.4	45.5	50.2	129.1
Total Capex	**37.8**	**10.2**	**10.7**	**53.6**	**58.0**	**170.3**

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 calendar years 2008 to 2011, and forecast costs for calendar year 2012.

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

$'000 (nominal)	2008	2009	2010	2011	2012F
Wages & Salaries	6,577	6,648	7,370	8,443	8,943
APT Other Corporate Costs	6,705	8,620	9,262	9,801	10,434
Operations and Maintenance, Insurance, License Fees and Security	9,977	7,774	6,742	8,587	9,618
Total	**23,259**	**23,042**	**23,374**	**26,831**	**28,995**

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

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

2.3 Pipeline usage

Pipeline 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 calendar years 2008 to 2011, and forecast demand for calendar year 2012.

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

TJ/day	2008	2009	2010	2011	2012F
Minimum	306	273	294	264	275
Average	675	645	648	651	655
Maximum	1,259	1,213	1,224	1,190	1,290

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

Pipeline 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 calendar years 2008 to 2011, and forecast customer numbers for calendar year 2012.

Table 2.4 – Customer numbers

	2008	2009	2010	2011	2012F
Total users	14	16	20	21	21

[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

$m (nominal)	2008	2009	2010	2011	2012
Opening capital base	559.6	591.1	583.2	575.9	613.0
Plus capex	37.8	10.2	10.6	53.6	58.0
Plus speculative capex					
Plus reused redundant assets					
Less depreciation	-27.0	-30.7	-33.4	-34.3	-35.5
Plus indexation	20.6	12.5	15.5	17.9	15.3
Less redundant assets					
Less disposals					
Closing capital base	**591.1**	**583.2**	**575.9**	**613.0**	**650.8**
Less: Difference between 2007 forecast and actual capex					-20.0
Opening capital base at 1 January 2013					**630.8**

The regulatory depreciation for the previous access arrangement period is shown in Table 3.2 after adjusting for the impacts of inflation.

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

Table 3.2 – Outturn depreciation and indexation over the earlier access arrangement period

$m (nominal)	2008	2009	2010	2011	2012
Depreciation	-27.0	-30.7	-33.4	-34.3	-35.5
Indexation	20.6	12.5	15.5	17.9	15.3
Net Regulatory Depreciation	**-6.4**	**-18.2**	**-17.9**	**-16.5**	**-20.2**

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
- 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[7] is set out in Table 3.3 below.

Table 3.3 – Forecast capital expenditure by asset class over the access arrangement period

$m (nominal)	2013	2014	2015	2016	2017	Total
Pipelines	7.5	45.9	16.5	9.5	5.2	84.6
Compressors	10.7	38.9	2.2	0.5	0.5	52.8
City gates & Field regulators	6.4	11.5	4.5	1.7	0.6	24.7
Odourant plants	0.0	0.0	0.0	0.0	0.0	0.0
Gas quality	0.2	0.4	0.1	0.1	0.0	0.8
Other	1.7	0.6	1.7	2.5	3.4	9.9

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

General buildings	4.8	5.9	0.2	0.2	0.0	11.1
General land	0.0	0.0	0.3	0.0	0.0	0.3
Equity Raising Costs	1.1	0.0	0.0	0.0	0.0	1.1
Total	**32.4**	**103.1**	**25.6**	**14.5**	**9.7**	**185.4**

APA GasNet's capital expenditure forecast is derived based on purpose, in the following categories:

- Augmentations, which are required to increase the capacity of transmission assets to ensure that the VTS can continue to supply services as demand changes (for example growth or change in flow paths);
- Refurbishments and upgrades, which are required to maintain the service potential of existing facilities as they age and deteriorate over time, as well as expenditure to upgrade and improve assets because of obsolescence, to deal with changed operating requirements (such as a wider gas specification), to meet new regulatory or legislated obligations, or to meet higher environmental or safety standards over time; and
- Non-system, which is required to augment, maintain or replace capital facilities that are essential for the delivery of pipeline services, but which do not make up part of the pipeline system itself. Types of expenditure include buildings, vehicles, office equipment and IT and SCADA systems.

Forecast conforming capital expenditure by category over the access arrangement period is shown in Table 3.4 below.

Table 3.4 – Forecast conforming capital expenditure by category over the access arrangement period

$m (nominal)	2013	2014	2015	2016	2017	Total
Augmentation	12.3	79.1	12.5	0.0	0.0	104.0
Refurbishment and upgrade	13.7	18.0	12.0	12.7	6.7	63.1
System Total	**26.1**	**97.1**	**24.5**	**12.7**	**6.7**	**167.1**
Refurbishment and upgrade	6.4	6.1	1.1	1.8	3.0	18.4
Total	**32.4**	**103.1**	**25.6**	**14.5**	**9.7**	**185.4**

3.2.2 Forecast depreciation

Forecast depreciation by asset class over the access arrangement period[8] is shown in Table 3.5 below.

Table 3.5 – Forecast depreciation over the access arrangement period

$m (nominal)	2013	2014	2015	2016	2017	Total
Depreciation	24.7	25.5	28.8	29.6	27.6	136.3

Table 3.6 sets out APA GasNet's asset economic lives.

Table 3.6 – Asset economic lives (years)

Asset Class	Standard life	Remaining life	Tax Statutory Life	Remaining tax life
Pipelines	55	29.4	20	10.8
Compressors	30	23.7	20	16.5
City gates & Field regulators	30	24.1	20	14.3
Odourant plants	30	23.0	20	18.5
Gas quality	10	0.9	20	4.2
Other	5	4.1	7.5	6.5
General buildings	60	34.4	60	49.5
General land	n/a	n/a	n/a	n/a

APA GasNet has applied a straight-line methodology in determining future depreciation.

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

3.2.3 Forecast disposals

Forecast disposals for the access arrangement period are set out in Table 3.7 below.

Table 3.7 – Forecast disposals over the access arrangement period

$m (nominal)	2013	2014	2015	2016	2017	Total
Disposals	0	0	0	0	0	0

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 3.8 below.

Table 3.8 – Forecast redundant assets over the access arrangement period

$m (nominal)	2013	2014	2015	2016	2017	Total
Redundant Assets	0	0	0	0	0	0

3.2.5 Projected capital base over the access arrangement period

The projected capital base for the access arrangement period[9] is shown in Table 3.9 below.

Table 3.9 – Projected capital base for the access arrangement period

$m (nominal)	2013	2014	2015	2016	2017
Opening capital base	630.8	639.4	719.8	717.3	702.5
Plus capex	33.3	105.9	26.3	14.9	10.0
Plus speculative capex					
Plus reused redundant assets					
Less depreciation	-24.7	-25.5	-28.8	-29.6	-27.6
Less redundant assets					
Less disposals					
Closing capital base	**639.4**	**719.8**	**717.3**	**702.5**	**684.9**

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

4 Forecast network demand and utilisation

4.1 Forecast customer numbers and volumes

APA GasNet provides a single Pipeline Service which is also the Reference Service. This is a bundled service called the Tariffed Transmission Service and comprises the transportation of gas in accordance with the National Gas Rules for a declared transmission system. This service is provided to AEMO, who is the only User of the pipeline under the National Gas Law definition.

This legal arrangement arises from the Market Carriage Model set out in the National Gas Law and Rules. Under these arrangements, AEMO operates the VTS. Shippers (registered Market Participants of the Victorian Declared Wholesale Gas Market) access the Reference Service through AEMO in accordance with the National Gas Law and Rules. The only relationship between APA GasNet and Shippers is through the Transmission Payment Deed, key terms of which make up part of the access arrangement (Schedule F). For clarity, APA GasNet does not provide any service directly to Shippers on the pipeline.

4.2 Forecast network capacity and utilisation

Forecast network capacity and utilisation for the access arrangement period[10] is shown in Table 4.1 below. Pipeline capacity has been calculated using aggregated contracted maximum daily quantities.

Table 4.1 – Forecast pipeline capacity for the access arrangement period

Forecast capacity (TJ/day)	2013	2014	2015	2016	2017
Longford to Melbourne	1030	1030	1030	1030	1030
South West Pipeline (from Iona)	353	353	414	414	414
South West Pipeline (to Iona)	129	129	190	190	190
Western Transmission System	28	28	28	28	28
New South Wales Interconnect (to Vic)	92	92	110	110	110
New South Wales Interconnect (from Vic (summer))	83	83	90	90	90
New South Wales Interconnect (from Vic (winter))	38	38	68	68	68

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

Table 4.2 – Forecast network utilisation for the access arrangement period

Forecast utilisation (%)	2013	2014	2015	2016	2017
Longford to Melbourne	43.3%	43.3%	43.2%	43.2%	43.4%
South West Pipeline (from Iona)	32.6%	31.1%	34.3%	33.8%	33.5%
South West Pipeline (to Iona)	11.6%	11.6%	7.9%	7.9%	7.9%
Western Transmission System	43.4%	42.8%	42.5%	42.2%	42.2%
New South Wales Interconnect (to Vic)	3.0%	3.0%	2.5%	2.5%	2.5%
New South Wales Interconnect (from Vic (summer))	22.7%	22.7%	36.7%	36.7%	36.7%
New South Wales Interconnect (from Vic (winter))	68.8%	68.8%	67.3%	67.3%	67.3%

4.3 Forecast demand

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

Table 4.3 – Forecast maximum and average demand for the pipeline over the access arrangement period (TJ/d)

TJ/day	2013	2014	2015	2016	2017
Maximum demand	1,218.4	1,213.2	1,242.0	1,245.6	1,254.5
(TJ/day)	571.0	566.0	580.0	577.0	579.0

4.4 Forecast weather

Forecast standard weather and sensitivity to changes in weather for the pipeline over the access arrangement period is shown in Table 4.4 below.

Table 4.4 – Effective Degree Days (EDD) and temperature sensitivity for the pipeline over the access arrangement period

	2013	2014	2015	2016	2017
Effective Degree Days (EDD)	1,309	1,309	1,309	1,309	1,309
Weather Sensitivity (TJ/EDD)	44.7	44.7	44.7	44.7	44.7

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)	2013	2014	2015	2016	2017
Labour	8,630.6	9,075.4	9,752.2	10,935.9	11,102.6
Materials	565.9	580.0	594.5	609.4	624.6
Outside Services	2,533.4	2,635.2	2,746.5	2,852.7	2,966.0
Other Operating Costs	7,385.1	7,753.1	8,341.2	8,563.7	8,777.7
Corporate Costs	10,951.6	11,401.6	11,894.3	12,363.6	12,864.6
Operating Costs	**30,066.6**	**31,445.4**	**33,328.8**	**35,325.3**	**36,335.5**
EBSS Allowance	995.9	-1,704.9	-2,181.2	-1,899.1	0.0
Debt Raising Costs	376.3	390.9	451.1	460.8	462.6
Other Allowances	207.5	212.7	219.7	225.7	231.3
Total Operating Expenditure	**31,646.3**	**30,344.1**	**31,818.4**	**34,112.6**	**37,029.4**

APA GasNet's 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 pipeline are added to the base year costs, and all costs in the base year costs which are not relevant to future operation of the pipeline are subtracted from the base year costs;
- Modification of base year costs as required to reflect changed consumer numbers, additional pipeline 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[11] are shown in Table 6.1 below.

Table 6.1 – Key Performance indicators

Indicator	Unit	2013	2014	2015	2016	2017
Total Operating Costs per km	$/km	16,336	17,628	18,749	19,337	19,3380
Total Operating Costs per mmkm	$/mmkm	42.39	45.74	48.65	50.18	50.18

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

7 Rate of return

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

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 APA GasNet's revenue requirement for the access arrangement period[12].

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

Parameter	Estimate
Risk free rate	3.22%
Forecast inflation	2.50%
Real risk free rate	0.70%
Gearing (debt to value)	60%
Debt risk margin	3.46%
Nominal pre-tax cost of debt	6.68%
Market risk premium	8.72%
Equity beta	0.80
Nominal post-tax cost of equity	10.20%
Gamma	25%
Nominal post-tax WACC	**8.09%**

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

8 Taxation

APA GasNet is using a post tax framework to derive its revenue requirement for the access arrangement period.[13] This has been calculated based on the Tax Asset Base (TAB) established by the ACCC in the last AA review.

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 a manner consistent 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 0.25

Asset class standard lives (in years) or the Australian Tax Office statutory cap used to prepare the APA GasNet TAB are set out in Table 3.6 above.

APA GasNet's tax asset base roll forward for the previous access arrangement period is shown in Table 8.1 below.

Table 8.1 – Tax asset base roll forward for the previous access arrangement period

$m (nominal)	2008	2009	2010	2011	2012
Opening TAB	165.7	186.1	177.0	167.7	201.4
Capital expenditure[14]	37.8	10.2	10.6	53.6	58.0
Tax depreciation	-17.4	-19.3	-19.9	-19.9	-22.4
Total	**186.1**	**177.0**	**167.7**	**201.4**	**237.0**

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

[14] As commissioned

APA GasNet's tax asset base roll forward for the access arrangement period is shown in Table 8.2 below.

Table 8.2 – Tax asset base roll forward for the access arrangement period (as commissioned)

$m (nominal)	2013	2014	2015	2016	2017
Opening TAB	237.0	230.6	329.3	330.2	317.2
Capital expenditure[15]	11.3	117.1	24.8	12.4	9.7
Tax depreciation	-17.7	-18.4	-24.0	-25.3	-26.0
Total	**230.6**	**329.3**	**330.2**	**317.2**	**300.9**

[15] As commissioned

9 Historical incentive mechanism

APA GasNet's earlier access arrangement included Efficiency Benefit Sharing Scheme (EBSS) with a methodology for calculating the efficiency benefit sharing allowance to apply in the forecast period.[16]

Under the EBSS, APA GasNet retains any benefits (or penalties) for a period of five years after the year in which it was realised. This means that the benefits carry over into the next access arrangement period. The EBSS only applies to the first four years of an access arrangement period as the final year has not been completed when the calculation is made.

The calculation of the efficiency benefit for each year is cumulative, ie, benefits in a year accrue only to the extent that the savings in that year are greater than those already identified in prior years. This means that, especially in the later years of an access arrangement period, a saving from the originally approved operating and maintenance forecast can still generate a negative efficiency benefit.

The proposed carry-over of increments for efficiency gains or decrements for efficiency losses in the previous access arrangement period is shown below: [17]

Table 9.1 – Incremental EBSS savings

$'000 (2006)	2008	2009	2010	2011	Total
Annual Efficiency	-2,634	-4,204	-4,905	-2,984	-14,726

The forecast revenue requirement in Table 12.1 includes an allowance for any these increments or decrements as follows:

Table 9.2 – Efficiency carry over

$'000	2013	2014	2015	2016	2017
$2006	823	-1,374	-1,715	-1,457	0
$ of day	996	-1,705	-2,181	-1,899	0

[16] APA GasNet 2008-12 Access Arrangement clause 7.2

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

10 Approach to tariff setting

10.1 Reference services

APA GasNet provides a single Pipeline Service which is also the Reference Service. This is a bundled service called the Tariffed Transmission Service and comprises the transportation of gas in accordance with the National Gas Rules for a declared transmission system. This service is provided to AEMO, who is the only User of the pipeline under the National Gas Law definition.

This legal arrangement arises from the Market Carriage Model set out in the National Gas Law and Rules. Under these arrangements, AEMO operates the VTS. Shippers (registered Market Participants of the Victorian Declared Wholesale Gas Market) access the Reference Service through AEMO in accordance with the National Gas Law and Rules. The only relationship between APA GasNet and Shippers is through the Transmission Payment Deed, key terms of which make up part of the access arrangement (Schedule F). For clarity, APA GasNet does not provide any service directly to Shippers on the pipeline.

Tariff structure

The Tariffed Transmission Service is a zonal-distance-based volume tariff, with no capacity component.

10.2 Allocation of revenue to tariffs

Reference tariffs are designed to recover the total revenue allocated to the Reference Service based on costs allocated to the Reference Service. This approach equalises revenue derived from the application of reference tariffs with the total Reference Service revenue requirement, assuming that assumptions regarding costs and demand hold.

The Forecast Revenue Requirement for the access arrangement period is shown in Table 10.1 below.

Table 10.1 – Forecast Reference Service revenue requirement for the access arrangement period

$m (nominal)	2013	2014	2015	2016	2017
Reference Service revenue requirement	**116.9**	**117.2**	**128.7**	**131.5**	**130.2**

The net present value of the reference tariff revenue stream when discounted at the nominal WACC of 9.06% is $586 million.

Table 10.2 – Proposed Reference Tariff Revenue Stream

$m (nominal)	2013	2014	2015	2016	2017
Forecast Reference Service revenue	**122.2**	**121.1**	**126.4**	**126.2**	**126.5**

The net present value of the reference tariff revenue stream when discounted at the nominal WACC of 9.06% is $586 million, which is equal to the present value of the Reference Service revenue requirement.

10.3 Reference Tariffs

Tariffs for reference services are set out in the access arrangement. Tariffs are published for 2013 (in $2013) and are exclusive of goods and services tax (GST).

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

- aplication of the Price Control Formula - which applies in respect of each Year during the Access Arrangement Period; and
- a Cost Pass-through Reference Tariff Adjustment Mechanism - under which Service Provider may seek to vary one or more of the Reference Tariffs as a result of a Cost Pass-through Event.

10.3.1 Price Control Formula

The price Control Formula is specified in Schedule D of the access arrangement as follows:

D.1 Revenue control principles

(a) The revenue control model permits individual components of the Transmission Tariffs to be adjusted up or down for a given Regulatory Year after the first Regulatory Year provided that:

(i) the NPV of the actual revenues (AR) (determined in accordance with clause D.2 below) achieved is to be no greater than the NPV of the adjusted target revenues (ATR) (determined in accordance with clause D.3 below); and

(ii) no component of the Transmission Tariffs can be increased by more than (CPI - X)* (1 + Y) for any Regulatory Year, where:

(A) X is the tariff path factor prescribed for that Transmission Tariff component in the access arrangement; and

(B) Y is 2%.

(b) All monetary calculations and figures used in calculations in this Schedule D are to be expressed in real dollar values using a CPI indexed at December 2012, and using the best estimate of the CPI at

December of each year of the Fourth Regulatory Period and in respect to target revenues, the forecast CPI used in the access arrangement.

(c) All calculations and figures used in Schedule D of the access arrangement for determination of any price control formula component at any particular time must be the best estimate of that component at the relevant time using reported or actual (as the case may be) values where available and the best estimates of forecast values where required. For the purposes of this paragraph (c), the price control formula components include revenues, volumes, CPI, EDDs, costs passed through under the Cost Pass-through Reference Tariff Adjustment Mechanism, etc).

(d) The NPV is to be calculated using a discount rate equal to the real WACC as approved for the Fourth Access Arrangement Period.

D.2 AR

Each determination of AR will be equal to the best estimate of the actual revenues received for the whole of the Fourth Access Arrangement Period at the time of calculation, using both actual data (Actual Revenues) (where available) and best estimates of forecast revenues (Forecast Revenues) where required.

For example, for a determination of AR in November 2014, the best estimate of actual revenues will be the Actual Revenues in 2013 and the Forecast Revenues expected for the remainder of the Fourth Access Arrangement Period. A determination of AR in subsequent years will use the Actual Revenues received where available, and the best revised forecasts for the remaining years, where the revised forecasts may differ from those forecasts made at earlier determinations.

D.3 ATR

$$\mathrm{ATR} = \mathrm{VATR} + \mathrm{PTA} + \mathrm{CFA}$$

Where:

VATR is volume adjusted target revenue calculated in accordance with clause D.4;

PTA is the Pass Through Adjustment; and

CFA is, for the Regulatory Year 2014 only, the amount target revenue NPV shortfall or over recovery calculated for 2012 in accordance with schedule 4 of the Third Access Arrangement.

Notes:

1. The best estimates of the CFA costs are included in the Non-Capital Costs (as defined in the Code) for the Fourth Access Arrangement Period, but the correct values for these factors will not be known until the first year of the Fourth Access Arrangement Period.
2. CFA and PTA may be positive or negative.

D.4 VATR

$$\text{VATR} = \frac{\text{TR}}{\text{TV}} \times \text{WAAV}$$

Where:

TR is the target revenue as set out in Table 12.1 of this Access Arrangement Information, excluding NRRV;

TV is the total volume withdrawn from the VTS as set out in section 2 in this Access Arrangement Information, excluding NRRV;

WAAV is the weather adjusted actual volume, calculated in accordance with clause D.5; and

NRRV is, for the purposes of TR, the target revenue and for the purposes of TV, the volume, associated with:

(i) any transmission refills at WUGS or the LNG Storage Facility; and

(ii) the incremental Murray Valley tariff.

D.5 WAAV

$$\text{WAAV} = \left(\text{VW} + \text{TS} \times \left(\text{Target EDD} - \text{Actual EDD}\right)\right)$$

Where:

VW is the actual volume withdrawn from the PTS excluding:

(i) any transmission refills at WUGS or the LNG Storage Facility; and

(ii) forecast volumes for the incremental Murray Valley tariff;

TS is the target temperature sensitivity, being the increase in annual gas volumes for an increase of one in the annual EDD, as set out in Table 4.4 of this Access Arrangement Information;

Target EDD	the measure of annual EDD as expected in a standard year as set out in Table 4.4 of this Access Arrangement Information; and
Actual EDD	is the actual measured EDDs for a Regulatory Year, as reported in the VENCorp APR or otherwise made available by VENCorp.

D.6 First Carry-Forward Amount FCA

The first carry forward amount (FCA) will be calculated in the last year of the Fourth Access Arrangement Period. It will be included as a building block component in the first year of the Fifth Access Arrangement Period.

FCA will be determined according to the following formula:

$$\text{FCA} = \text{ATR} - \text{AR}$$

Where AR and ATR are to be calculated using the best estimates and available data at the time of the determination of FCA.

For inclusion in the building block calculation for 2018, the FCA will be escalated for inflation from December 2012 to December 2018.

D.7 Second Carry-Forward Amount SCA

The second carry forward amount (SCA) will be calculated in the first year of the Fifth Access Arrangement Period as a correction to the determination of the FCA, using the correct actual values of all factors required in the determination of FCA. It will be included as a CFA in the determination of tariffs for 2019.

SCA will be determined according to the following formula:

$$\text{SCA} = \text{Recalculated FCA} - \text{FCA}$$

Where Recalculated FCA is the same calculation as for FCA, except that it is to use the actual values for AR, ATR, AV, EDD, CPI and PTA.

For inclusion in the building block calculation for 2019, the SCA will be escalated for inflation from December 2012 to December 2019.

10.3.2 Cost pass-through Reference Tariff adjustment mechanism

A symmetrical cost pass through reference tariff variation mechanism is included in the access arrangement to allow the reference tariff to be adjusted to recover (or return) material incremental costs resulting from defined cost pass through events.

Part 4.7 of the access arrangement sets out the tariff variation process the materiality threshold for cost pass-through events.

The cost pass through events defined in section 4.7.2 of the access arrangement are:

- a carbon cost event;
- an insurance cap event;
- an insurer credit risk event;
- a natural disaster event;
- a regulatory change event;
- a service standard event;
- a tax change event; and
- a terrorism event.

Forecast carbon costs, for the purpose of the carbon cost event included in clause 4.7.2 of the access arrangement, are as shown below:

Table 10.3 – Forecast carbon costs

$'000 (2012 real)	2013	2014	2015	2016	2017
Forecast carbon costs	0	0	0	0	0

11 Proposed incentive mechanism

APA GasNet's earlier access arrangement included Efficiency Benefit Sharing Scheme (EBSS) with a methodology for calculating the efficiency benefit sharing allowance to apply in the forecast period.[18]

APA GasNet has retained this mechanism in the forecast period.

Under the EBSS, APA GasNet retains any benefits (or penalties) for a period of five years after the year in which it was realised. This means that the benefits carry over into the next access arrangement period. The EBSS only applies to the first four years of an access arrangement period as the final year has not been completed when the calculation is made.

The calculation of the efficiency benefit for each year is cumulative, ie, benefits in a year accrue only to the extent that the savings in that year are greater than those already identified in prior years. This means that, especially in the later years of an access arrangement period, a saving from the originally approved operating and maintenance forecast can still generate a negative efficiency benefit.

Operating and maintenance costs for the purposes of the EBSS in Section 8.2(f) of the access arrangement are as shown below:

Table 11.1 – Forecast operating expenditure for EBSS purposes over the access arrangement period

$000 (nominal)	2013	2014	2015	2016	2017
Labour	8,630.6	9,075.4	9,752.2	10,935.9	11,102.6
Materials	565.9	580.0	594.5	609.4	624.6
Outside Services	2,533.4	2,635.2	2,746.5	2,852.7	2,966.0
Other Operating Costs	7,385.1	7,753.1	8,341.2	8,563.7	8,777.7
Corporate Costs	10,951.6	11,401.6	11,894.3	12,363.6	12,864.6
Operating Costs	**30,066.6**	**31,445.4**	**33,328.8**	**35,325.3**	**36,335.5**

[18] APA GasNet 2008-12 Access Arrangement clause 7.2

Table 11.2 – Forecast capital expenditure by project over the access arrangement period

$000 (nominal)	2013	2014	2015	2016	2017
Augmentation					
Stonehaven CS - now Winchelsea	7,596	31,133	0	0	0
Warragul Looping	0	2,688	0	0	0
Anglesea Pipeline Extension	0	1,362	12,547	0	0
Wollert to Clonbinane Looping	3,932	36,365	0	0	0
MAOP Upgrade - Euroa to Springhurst	813	7,544	0	0	0
Refurbishments and upgrades					
Pipeline integrity	1,365	1,113	2,272	7,233	4,768
Capacity management	219	2,944	986	0	0
Replacement	3,448	2,673	2,069	1,413	698
Facilities integrity	6,831	3,666	4,772	1,913	687
Risk mitigation	986	6,414	1,603	1,721	0
Emergency	877	1,152	265	410	574
Non-system capex					
General Non-system	5,115	6,095	1,075	1,846	2,984
Corporate IT system	118	0	0	0	0
Equity raising costs	1,142	0	0	0	0
Total	**32,442**	**103,150**	**25,590**	**14,536**	**9,712**

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

$m (nominal)	2013	2014	2015	2016	2017
Return on capital	51.0	51.7	58.2	58.0	56.8
Depreciation	24.7	25.5	28.8	29.6	27.6
Tax allowance	9.5	9.6	9.9	9.7	8.8
Incentive mechanisms	1.0	-1.7	-2.2	-1.9	0.0
Operating expenditure	30.7	32.0	34.0	36.0	37.0
Total revenue requirement	**116.9**	**117.2**	**128.7**	**131.5**	**130.2**