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| **APA GasNet Australia (Operations)  Pty Ltd** |
| Access Arrangement Information |
| Effective 01 July 2013 – 31 December 2017  Remade to give effect to the decision of the Australian Competition Tribunal No. 2 of 2013  Markup |

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| November 2013 |
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**Contents**

1 Introduction 1

1.1 Structure of this document 2

2 Information relevant to the earlier access arrangement period 4

2.1 Capital expenditure 4

2.2 Operating expenditure 4

2.3 Pipeline usage 5

3 The capital base 7

3.1 Opening capital base 7

3.1.1 Opening capital base for access arrangement period 7

3.2 Projected capital base 8

3.2.1 Forecast conforming capital expenditure for the access arrangement period 8

3.2.2 Forecast depreciation 10

3.2.3 Forecast disposals 11

3.2.4 Forecast redundant assets 11

3.2.5 Projected capital base over the access arrangement period 12

4 Forecast network demand and utilisation 13

4.1 Forecast customer numbers and volumes 13

4.2 Forecast network capacity and utilisation 14

4.3 Forecast demand 15

5 Forecast operating expenditure 17

6 Key performance indicators 18

7 Rate of return 19

8 Taxation 21

9 Historical incentive mechanism 23

10 Approach to tariff setting 24

10.1 Reference services 24

10.2 Allocation of revenue to tariffs 24

10.3 Reference Tariffs 25

10.3.1 Price Control Formula 25

10.3.2 Cost pass-through Reference Tariff adjustment mechanism 31

11 Proposed incentive mechanism 33

12 Total revenue 34

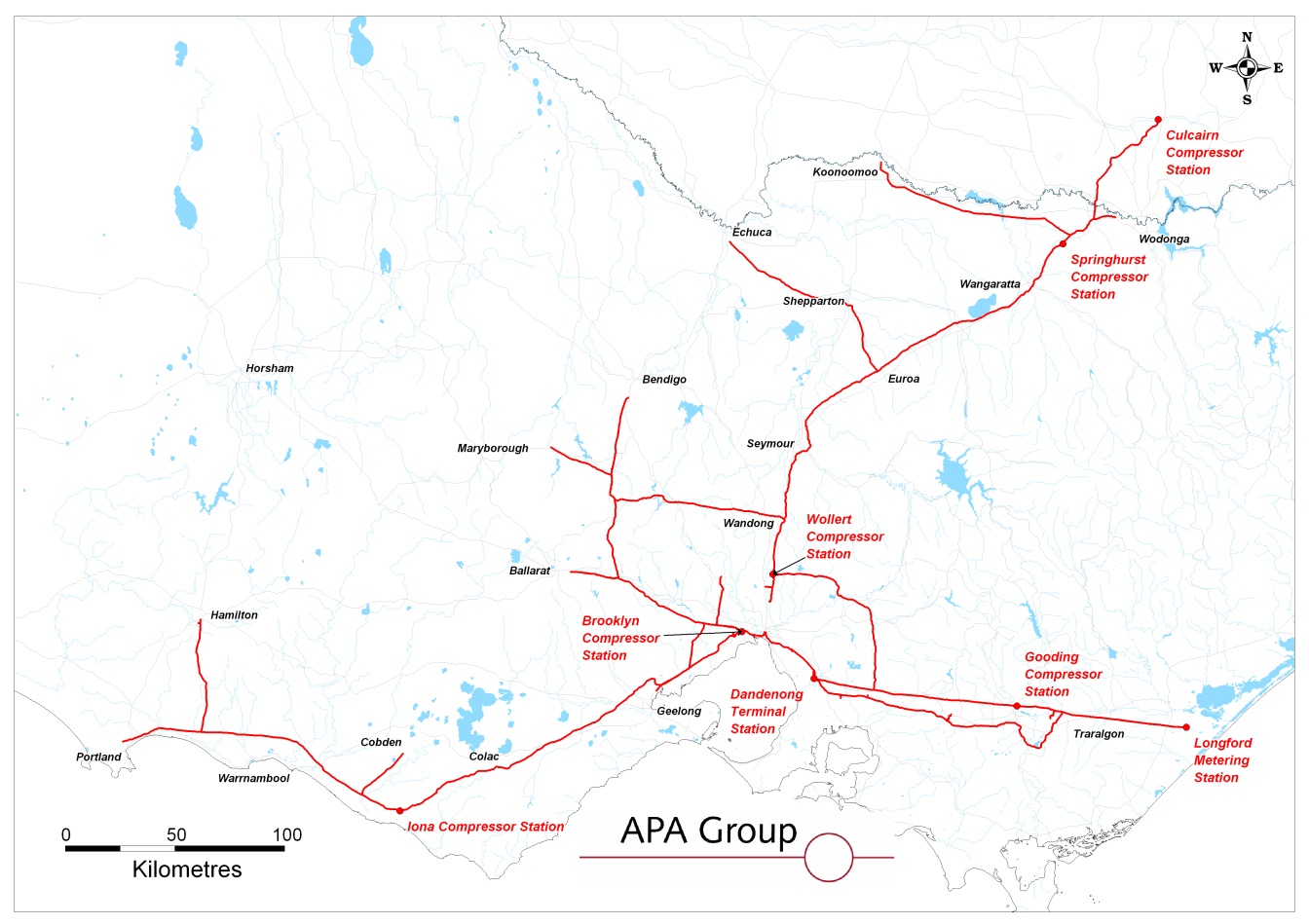
# Introduction

This Access Arrangement Information 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 access arrangement for the Victorian Transmission System (VTS) for the period 1 July 2013 to 31 December 2017. The access arrangement commenced on 1 July 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](http://www.apa.com.au), which shows the general location and key points of the pipeline.

## Structure of this document

This document follows the structure of Rule 72[[1]](#footnote-2) setting out the requirements for content of the access arrangement information for a full access arrangement proposal.

This current access arrangement for the VTS 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 30 June 2013) 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 from 01 January 2008 to 30 June 2013, 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.

# Information relevant to the earlier access arrangement period

## Capital expenditure

Capital expenditure by asset class over the earlier access arrangement period[[2]](#footnote-3) is set out in Table 2.1 below. These costs are based on actual costs for years 2008 to 2012.

Table 2.1 – Capital expenditure by asset class over the earlier access arrangement period (as incurred)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **$m (nominal)** | **2008** | **2009** | **2010** | **2011** |  | **Total** |
| Pipelines | 18.7 | 2.6 | 1.5 | 5.8 | 17.3 | 45.9 |
| Compressors | 3.9 | 2.7 | 3.9 | 39.7 | 28.7 | 78.9 |
| City gates & Field regulators | 14.0 | 3.9 | 0.0 | 4.2 | 4.3 | 26.4 |
| Odourant plants | 0.1 | 0.0 | 0.0 | 0.1 | 0.0 | 0.2 |
| Gas quality | 0.0 | 0.0 | 0.0 | 0.0 | 4.3 | 4.3 |
| Other | 0.5 | 0.5 | 5.1 | 1.6 | 0.1 | 7.8 |
| General buildings | 0.8 | 0.4 | 0.1 | 0.9 | 0.2 | 2.4 |
| General land | 0.0 | 0.0 | 0.0 | 1.2 | 0.0 | 1.2 |
| Equity Raising Costs | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **Total** | **37.8** | **10.2** | **10.6** | **53.6** | **54.9** | **167.1** |

Note: There is also an ‘as commissioned’ capital base which differs from the ‘as incurred’ value by the difference between when the project costs are incurred and when the project is commissioned. For simplicity the as ‘commissioned’ values are not shown.

## Operating expenditure

Operating expenditure by category over the earlier access arrangement period[[3]](#footnote-4) 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** |

## Pipeline usage

Pipeline minimum, maximum and average demand figures over the earlier access arrangement period[[4]](#footnote-5) 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 |

Pipeline customer numbers in total and by tariff class over the earlier access arrangement period[[5]](#footnote-6) 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 |

# The capital base

## Opening capital base

### Opening capital base for access arrangement period

The opening capital base for the access arrangement period[[6]](#footnote-7) is shown in Table 3.1 below.

Table 3.1 – Opening capital base for the access arrangement period (as incurred)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **$m (nominal)** | **2008** | **2009** | **2010** | **2011** | **2012** | **2013\*** |
| Opening capital base | 559.6 | 591.1 | 583.2 | 575.9 | 613.0 | 627.7 |
| Plus capex | 37.8 | 10.2 | 10.6 | 53.6 | 54.9 | 13.1 |
| Plus speculative capex | 0 | 0 | 0 | 0 | 0 | 0 |
| Plus reused redundant assets | 0 | 0 | 0 | 0 | 0 | 0 |
| Less depreciation | 27.0 | 30.7 | 33.4 | 34.3 | 35.5 | 12.6 |
| Plus indexation | 20.6 | 12.5 | 15.5 | 17.9 | 15.3 | 7.9 |
| Less redundant assets | 0 | 0 | 0 | 0 | 0 | 0 |
| Less disposals | 0 | 0 | 0 | 0 | 0.1 | 0.1 |
| Less: Difference between 2007 forecast and actual capex |  |  |  |  | -20.0 |  |
| Closing capital base | **591.1** | **583.2** | **575.9** | **613.0** | **627.6** | **635.9** |
| Opening capital base at 1 July 2013 |  |  |  |  |  | **635.9** |

\*The 2013 values are for the period 1 January 2013 to 30 June 2013.

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

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

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| $m (nominal) | 2008 | 2009 | 2010 | 2011 | 2012 | 2013\* |
| Depreciation | 27.0 | 30.7 | 33.4 | 34.3 | 35.5 | 12.6 |
| Indexation | -20.6 | -12.5 | -15.5 | -17.9 | -15.3 | -7.9 |
| **Net Regulatory Depreciation** | **6.4** | **18.2** | **17.9** | **16.5** | **20.2** | **4.7** |

\*The 2013 values are for the period 1 January 2013 to 30 June 2013.

## 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.

### Forecast conforming capital expenditure for the access arrangement period

Forecast conforming capital expenditure by asset class over the access arrangement period[[7]](#footnote-8) 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 | 2.9 | 45.7 | 16.4 | 9.4 | 5.2 | 79.6 |
| Compressors | 5.7 | 38.8 | 2.2 | 0.5 | 0.5 | 47.7 |
| City gates & Field regulators | 5.7 | 9.3 | 4.5 | 1.7 | 0.6 | 21.8 |
| Odourant plants | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0 |
| Gas quality | 0.0 | 0.4 | 0.1 | 0.1 | 0.0 | 0.6 |
| Other | -0.7 | 0.6 | 1.7 | 2.5 | 3.4 | 7.5 |
| 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 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0 |
| **Total** | **18.2** | **100.7** | **25.4** | **14.4** | **9.6** | **168.3** |

\*The 2013 values are for the period 1 July 2013 to 31 December 2013 (Note: values derived from full year 2013 forecasts with 1 January 2013-30 June 2013 actual expenditure removed).

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 ($2012)** | **2013\*** | **2014** | **2015** | **2016** | **2017** | **Total** |
| Augmentation | 6.1 | 78.9 | 12.4 | 0.0 | 0.0 | 97.4 |
| Refurbishment and upgrade | 8.5 | 15.7 | 11.9 | 12.6 | 6.7 | 55.4 |
| **System Total** | **14.6** | **94.6** | **24.3** | **12.6** | **6.7** | **152.8** |
| Non-system | 3.5 | 6.1 | 1.1 | 1.8 | 3.0 | 15.5 |
| **Total** | **18.2** | **100.7** | **25.4** | **14.4** | **9.6** | **168.3** |

\*The 2013 values are for the period 1 July 2013 to 31 December 2013.

### Forecast depreciation

Forecast depreciation by asset class over the access arrangement period[[8]](#footnote-9) 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** |
| Straight-line depreciation | 12.6 | 26.2 | 30.2 | 31.9 | 30.5 | 133.3 |
| Less: indexation on opening capital base | -7.9 | -16.0 | -18.3 | -18.7 | -18.7 | -80.5 |
| **Regulatory depreciation** | 4.7 | 10.2 | 11.9 | 13.2 | 11.8 | 52.8 |

\*The 2013 values are for the period 1 July 2013 to 31 December 2013.

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 | 29.3 | 20 | 10.6 |
| Compressors | 30 | 23.6 | 20 | 16.4 |
| City gates & Field regulators | 30 | 24.3 | 20 | 14.7 |
| Odourant plants | 30 | 23.0 | 20 | 18.5 |
| Gas quality | 10 | 0.9 | 20 | 4.2 |
| Other | 5 | 4.1 | 7.5 | 6.4 |
| General buildings | 60 | 34.0 | 60 | 49.2 |
| General land | n/a | n/a | n/a | n/a |

\*The remaining asset lives as at 1 January 2013.

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

### 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 |

\*The 2013 values are for the period 1 July 2013 to 31 December 2013.

### 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 |

\*The 2013 values are for the period 1 July 2013 to 31 December 2013.

### Projected capital base over the access arrangement period

The projected capital base for the access arrangement period[[9]](#footnote-10) is shown inTable 3.9 below.

Table 3.9 – Projected capital base for the access arrangement period (as incurred)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **$m (nominal)** | **2013\*** | **2014** | **2015** | **2016** | **2017** |
| Opening capital base | 635.9 | 649.9 | 742.5 | 756.3 | 757.5 |
| Plus capex | 18.7 | 102.9 | 26.0 | 14.7 | 9.8 |
| Plus speculative capex | 0 | 0 | 0 | 0 | 0 |
| Plus reused redundant assets | 0 | 0 | 0 | 0 | 0 |
| Plus indexation | 7.9 | 16.3 | 18.6 | 18.9 | 18.9 |
| Less straight-line depreciation | 12.6 | 26.7 | 30.7 | 32.4 | 30.9 |
| Less redundant assets | 0 | 0 | 0 | 0 | 0 |
| Less disposals | 0 | 0 | 0 | 0 | 0 |
| Closing capital base | **649.9** | **742.5** | **756.3** | **757.5** | **755.4** |

\*The 2013 values are for the period 1 July 2013 to 31 December 2013.

*Note: There is also an ‘as commissioned’ capital base which differs from the ‘as incurred’ value by the difference between when the project costs are incurred and when the project is commissioned. For simplicity this is not shown.*

# Forecast network demand and utilisation

## Forecast customer numbers and volumes

APA GasNet provides two Pipeline Services which are also the Reference Services. These services are:

* Tariffed Transmission Service which 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; and
* AMDQ CC Reference Service .

The legal arrangement of the Tariffed Transmission Service 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.

## Forecast network capacity and utilisation

Forecast network capacity and utilisation for the access arrangement period[[10]](#footnote-11) 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 |

Table 4.2 – Forecast network utilisation for the access arrangement period

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Forecast utilisation (%)** | **2013** | **2014** | **2015** | **2016** | **2017** |
| Longford to Melbourne | 41.2% | 40.9% | 40.5% | 40.3% | 40.2% |
| South West Pipeline (from Iona) | 33.5% | 32.8% | 32.5% | 32.6% | 33.0% |
| South West Pipeline (to Iona) | 11.6% | 11.6% | 7.9% | 7.9% | 7.9% |
| Western Transmission System | 43.7% | 43.1% | 42.7% | 42.4% | 42.5% |
| 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% |

## 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)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **2013\*** | **2014** | **2015** | **2016** | **2017** |
| Maximum demand (TJ/day) | 1167.0 | 1158.1 | 1182.1 | 1177.4 | 1175.5 |
| Average demand (TJ/day) | 574.8 | 574.6 | 588.6 | 586.8 | 587.2 |
| Annual Volume withdrawn (PJ)\*\* | 105.1 | 208.1 | 213.5 | 213.0 | 213.1 |

\*The 2013 value for Annual Volume Withdrawn is for the period 1 July 2013 to 31 December 2013

\*\*The Annual Volume Withdrawn excludes transmission refuels at WUGS, the LNG storage facility, and Murray Valley volumes.

## 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) | 829 | 1,309 | 1,309 | 1,309 | 1,309 |
| **Weather Sensitivity (TJ/EDD)** | 44.7 | 44.7 | 44.7 | 44.7 | 44.7 |

\*The 2013 values are for the period 1 July 2013 to 31 December 2013.

# 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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **$m nominal** | **2013\*** | **2014** | **2015** | **2016** | **2017** |
| Controllable opex | 14.5 | 30.1 | 31.8 | 33.7 | 34.5 |
| Reset costs | 0.6 | 0.0 | 0.0 | 0.0 | 0.0 |
| Other allowances | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 |
| Debt raising costs | 0.2 | 0.4 | 0.4 | 0.4 | 0.4 |
| **Total Operating Expenditure** | **15.3** | **30.7** | **32.4** | **34.3** | **35.1** |

\*The 2013 values are for the period 1 July 2013 to 31 December 2013.

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.

# Key performance indicators

Key performance indicators for the access arrangement period 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 | 7 672 | 15 395 | 16 247 | 17 200 | 17601 |
| Total Operating Costs per mmkm | $/mmkm | 19.91 | 39.95 | 42.16 | 44.63 | 45.67 |

\*The 2013 values are for the period 1 July 2013 to 31 December 2013.

# Rate of return

The rate of return is derived using a nominal vanilla weighted average cost of capital (WACC). The formula it used to derive the nominal vanilla WACC is set out below.

*WACC* = *Ke + Kd *

where:

|  |  |
| --- | --- |
| *Ke* = | the expected rate of return on equity or cost of equity |
| *Kd* = | the expected rate of return on debt or cost of debt |
| = | the market value of equity as a proportion of the market value of equity and debt, which is 1 – |
| = | the market value of debt as a proportion of the market value of equity and debt |

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

Ke =Rf + βe x MRP

where:

|  |  |
| --- | --- |
| *Rf*  = | the nominal risk free rate of return |
| *βe* = | the equity beta |
| *MRP* = | the expected market risk premium |

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

Kd = Rf + DRP

where:

|  |  |
| --- | --- |
| *Rf* = | 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[[11]](#footnote-13).

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 | 6.00% |
| Equity beta | 0.80 |
| Nominal post-tax cost of equity | 8.02% |
| Gamma | 25% |
| Nominal post-tax WACC | 7.22% |

# Taxation

APA GasNet’s revenue requirement for the access arrangement period is derived using a post tax framework.[[12]](#footnote-14) 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 (ETCt) is calculated in accordance with the following formula:

ETCt = (ETIt × rt) (1 – γ)

Where:

|  |  |
| --- | --- |
| ETIt | 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 |
| rt | 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 assumed to be 0.25 |

Asset class standard lives (in years) or the Australian Tax Office statutory cap were 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[[13]](#footnote-15) | 37.8 | 10.2 | 10.6 | 53.6 | 54.9 |
| Less tax depreciation | -17.4 | -19.3 | -19.9 | -19.9 | -22.4 |
| Closing TAB | **186.1** | **177.0** | **167.7** | **201.4** | **233.9** |

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 | 233.9 | 226.6 | 328.9 | 331.5 | 319.6 |
| Capital expenditure[[14]](#footnote-16) | 10.3 | 120.5 | 26.5 | 13.5 | 10.9 |
| Less tax depreciation | -17.6 | -18.2 | -24.0 | -25.4 | -26.2 |
| Closing TAB | **226.6** | **328.9** | **331.5** | **319.6** | **304.4** |

\*The 2013 values are for the period 1 January 2013 to 31 December 2013. This is because the PTRM, which calculates the change in the TAB, operates on a yearly basis.

# 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.[[15]](#footnote-17)

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: [[16]](#footnote-18)

Table 9.1 – Incremental EBSS savings

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| $’000 (2006) | 2008 | 2009 | 2010 | 2011 | Total |
| Annual Efficiency | 972 | -1,623 | -2,026 | -1,721 | -4,379 |

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

Table 9.2 – Efficiency carry over

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| $’000 | 2013\* | 2014 | 2015 | 2016 | 2017 |
| $2006 | 0 | 0 | 0 | 0 | 0 |
| $ of day | 0 | 0 | 0 | 0 | 0 |

\*The 2013 values are for the period 1 July 2013 to 31 December 2013

# Approach to tariff setting

## Reference services

APA GasNet provides two Pipeline Services:

* Tariffed Transmission Service; and
* AMDQ CC Reference Service.

##### Tariff structure

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

## 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 10.1Table 10.1 below.

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **$m (nominal)** | **2013\*** | **2014** | **2015** | **2016** | **2017** |
| Forecast Reference Service revenue requirement | 44.5 | 92.5 | 101.7 | 106.0 | 104.7 |

\*The 2013 values are for the period 1 July 2013 to 31 December 2013

The forecast revenue stream for the access arrangement period is shown in Table 10.1 below.

Table 10.2 – Forecast Reference Tariff revenue stream

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **$m (nominal)** | **2013\*** | **2014** | **2015** | **2016** | **2017** |
| Forecast Reference Service revenue | 51.1 | 93.5 | 98.5 | 100.6 | 103.2 |

\*The 2013 values are for the period 1 July 2013 to 31 December 2013

The net present value of the forecast Reference Tariff revenue stream when discounted at the nominal WACC of 7.22% is $358 million, which is equal to the present value of the Reference Service revenue requirement.

## 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:

application 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.

### 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.

(e) Separately report contracted AMDQ CC volume and actual injection volume under of the price control model.

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

For the price control formula, the target revenue (TR) for 2013 is $50.22m in nominal 2013 dollars. Further, the total volume withdrawn from the VTS for 1 July 2013 to 31 December 2013, excluding NRRV, is 105.1 PJ.

-

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



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



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 for 2014 to 2017 is the measure of annual EDD as expected in a calendar year as set out in Table 4.4 of the access arrangement information

Target EDD for 2013 is 829 and is the measure of EDD as expected for the period from 1 July 2013 to 31 December 2013

Actual EDD for 2014 to 2017 is the actual measured EDD for a calendar year, as reported in the AEMO APR or otherwise made available by AEMO

Actual EDD for 2013 is the actual measured EDD for the period from 1 July 2013 to 31 December 2013, as reported in the AEMO APR or otherwise made available by AEMO

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:



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:



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.

### 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 |

\*The 2013 values are for the period 1 July 2013 to 31 December 2013

# Proposed incentive mechanism

APA GasNet’s earlier access arrangement included an incentive mechanism with a methodology for calculating the efficiency benefit sharing allowance to apply in the forecast period.[[17]](#footnote-19)

APA GasNet has retained this mechanism in the forecast period, subject to minor amendment.

Under the incentive mechanism, 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 calculation of the efficiency benefit for each year is incremental, 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 (2012 real)** | **2011** | **2012** | **2013** | **2014** | **2015** | **2016** |
| **Controllable Opex** | **27,500.8** | **27,935.2** | **14,095.0** | **28,683.9** | **29,533.6** | **30,488.8** |

# 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 | 22.7 | 46.9 | 53.6 | 54.6 | 54.7 |
| Depreciation | 4.8 | 10.4 | 12.2 | 13.5 | 12.0 |
| Tax allowance | 1.8 | 3.8 | 3.5 | 3.6 | 2.9 |
| Incentive mechanisms | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Operating expenditure | 15.3 | 30.7 | 32.4 | 34.3 | 35.1 |
| Adjustment for incremental revenues lost in 2013 |  | 0.6 |  |  |  |
| Total revenue requirement | **44.5** | **92.5** | **101.7** | **106.0** | **104.7** |
| Smoothed forecast revenue | **51.1** | **93.5** | **98.5** | **100.6** | **103.2** |
| X factor | – | 10.4% | 3.0% | 0.0% | 0.0% |

\*The 2013 values are for the period 1 July 2013 to 31 December 2013.

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. [↑](#footnote-ref-2)
2. As required by Rule 72(1)(a)(i) [↑](#footnote-ref-3)
3. As required by Rule 72(1)(a)(ii) [↑](#footnote-ref-4)
4. As required by Rule 72(1)(a)(iii)(A) [↑](#footnote-ref-5)
5. As required by Rule 72(1)(a)(iii)(B) [↑](#footnote-ref-6)
6. As required by Rule 72(1)(b) [↑](#footnote-ref-7)
7. As required by Rule 72(1)(c)(i) [↑](#footnote-ref-8)
8. As required by Rule 72(1)(c)(ii) [↑](#footnote-ref-9)
9. As required by Rule 72(1)(c) [↑](#footnote-ref-10)
10. As required by Rule 72(1)(d) [↑](#footnote-ref-11)
11. As required by Rule 72(1)(g) [↑](#footnote-ref-13)
12. As required by Rule 72(1)(h) [↑](#footnote-ref-14)
13. As commissioned [↑](#footnote-ref-15)
14. As commissioned [↑](#footnote-ref-16)
15. APA GasNet 2008-12 Access Arrangement clause 7.2 [↑](#footnote-ref-17)
16. As required by Rule 72(1)(i) [↑](#footnote-ref-18)
17. APA GasNet 2008-12 Access Arrangement clause 7.2 [↑](#footnote-ref-19)