30 March 2012

Gas Access Arrangement Review January 2013-December 2017 Access Arrangement Information

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Introduction

This Access Arrangement Information (AAI) is the first submitted by Multinet to the Australian Energy Regulator (AER) in accordance with the National Gas Rules (NGR) and the National Gas Law (NGL). However, it relates to the fourth access arrangement period since Multinet was privatised in 1999. It provides detailed explanation and justification for the revisions that Multinet is seeking to its Access Arrangement, which accompanies this submission.

Multinet distributes gas to more than 665,000 customers throughout the south and east areas of metropolitan Melbourne, Yarra Ranges and South Gippsland Towns. Our customers are primarily concerned that gas is distributed safely and reliably at reasonable prices. Customers also understand that network investment and efficient operation and maintenance are essential ingredients to achieving these objectives.

Proposed revenue and average price outcomes

Multinet's total revenue requirements are summarised below. It shows that Multinet's proposed overall price increase is modest.

Multinet's Revenue Requirements ($m, real 2012)

	Year Ending 31 December					
	2011	2012	2013	2014	2015	Total
Return on capital base	68.6	70.6	71.7	72.2	73.2	356.5
Depreciation	52.6	58.1	61.3	64.0	67.7	303.7
O&M Expenditure	69.4	72.2	72.7	74.1	74.4	362.7
Efficiency carryover	0.0	0.0	0.0	0.0	0.0	0.0
Tax Wedge	11.1	9.6	9.4	9.9	10.7	50.6
Total revenue	**201.6**	**210.5**	**215.1**	**220.3**	**226.0**	**1,073.5**

Multinet's Proposed Price Increase

	Year Ending 31 December				
	2011	2012	2013	2014	2015
Price Path	14.7%	0.0%	0.0%	0.0%	0.0%
Smoothed Price path	4.8%	4.8%	4.8%	4.8%	4.8%

Based on the total revenues and X factors set out above, the table on the following page provides an indication of the pricing outcomes under the proposed Access Arrangement, for a typical residential customer.

Analysis of 'typical' residential bill (assume 60Gj pa)

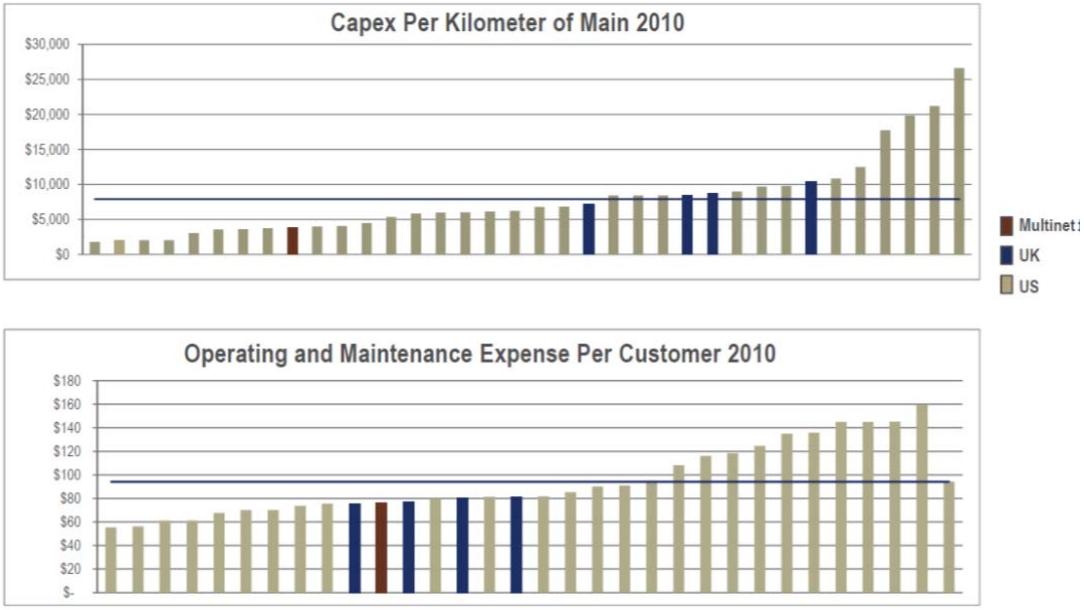
	Current invoice (2012)	New invoice (2013)	% Change
Cost of Gas (incl Retail).	$474.64	$474.64	0.0
Transmission	$56.67	$56.67	0.0
Distribution	$273.71	$314.94	14.7
Total Gas Invoice	**$805.02**	**$845.25**	**5.0**

Multinet's efficient cost performance

In recent years, the cost (and price) of transporting energy has increased substantially because increased capital expenditure is required to renew ageing networks, and to expand existing networks to meet growing demand. Multinet also faces these cost pressures, especially as the company owns the largest and oldest low pressure network in Australia. Despite these cost pressures, Multinet continues to achieve a level of efficiency performance that is well above average compared to its national and international peers.

It is sometimes argued that the Australian networks do not compare favourably with international peers. Multinet therefore asked Marchment Hill to conduct an international benchmarking study examining Multinet's costs compared to those of gas distributors in the UK and US. The analysis by Marchment Hill (summarised in the charts below) shows that Multinet's capital expenditure and operating expenditure compare very favourably with companies in the UK and US. Marchment Hill's study confirms various earlier reports and findings that show Multinet to be an efficient cost performer.

Multinet's expenditure performance compared to UK and US gas utilities



Source: Marchment Hill

Customers have continued to benefit from Multinet's strong performance since its formation.

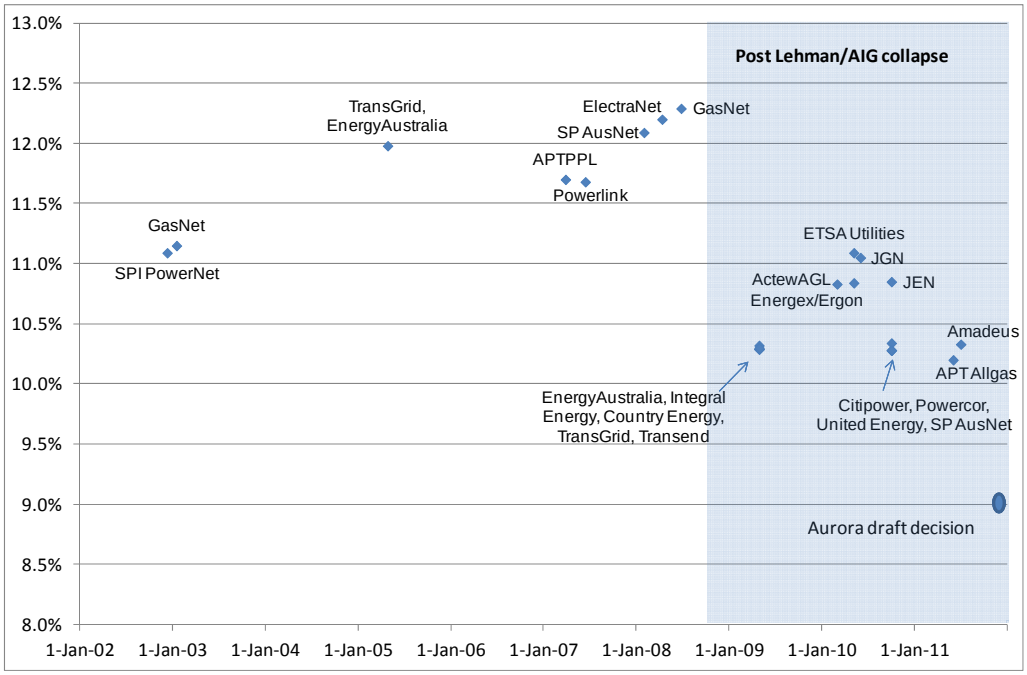
In contrast to many other energy network businesses in Australia, the Gas and Fuel Corporation of Victoria established a very successful outsourcing strategy. At the time of privatisation, this outsourcing strategy meant that the newly formed Multinet had no 'blue collar' workers. The early adoption of outsourcing by the Gas and Fuel Corporation and Multinet's subsequent efficiency improvements are reflected in Multinet's strong efficiency performance, as demonstrated by the Marchment Hill study.

Cost of capital

A key challenge for all companies in the current economic climate is to secure finance for investment. Regulated utilities such as Multinet are no different. It is sometimes forgotten that investors have a choice as to where funds should be invested. While Multinet has an obligation to deliver safe and reliable services to its customers, there is no obligation on investors to provide funding – and nor can there be. For this reason, the regulatory framework requires the AER to err on the side of caution in estimating the required rate of return, and to provide Multinet with a reasonable opportunity to recover at least the efficient cost - including the cost of capital - of providing network service. The National Gas Law requires this approach to be applied because policy makers understand that the consequences of setting the rate of return too low puts future investment in jeopardy, and this in turn is contrary to the long-term interest of customers.

In this context, the AER's recent decisions in relation to the cost of equity are raising concerns. The figure below shows that while the financial crisis deepens and investors become more risk averse, the AER's decisions on the cost of equity have moved progressively *lower*. This analysis signals clearly that something is wrong with the AER's estimation method.

AER cost of equity decisions for regulated energy networks



Source: CEG

Multinet believes that there is a clear and compelling reason why the AER's recent decisions are producing historically low estimates of the cost of equity. The AER's uses the Capital Asset Pricing Model to combine:

- An estimate of the market risk premium that is based on historic data over various periods from 1883 to the present day

- A current-day estimate of the nominal risk free rate, which is at a 50 year low.

In normal market conditions, combining a long-term average of one variable with today's rate for another variable would not matter. In current market conditions, however, it produces an estimate of the cost of equity that does not reflect capital market reality.

Multinet sought evidence from a number of independent experts to determine an appropriate estimate the cost of equity, given the current market conditions. Multinet adopted two broad approaches to estimate the cost of equity:

- Combining a 20 year average of the nominal risk free rate with the AER's historic measure of the market risk premium; and
- Combining a current estimate of the nominal risk free rate with a genuinely forward looking estimate of the market risk premium.

Both approaches indicate that a cost of equity of 10.8% is appropriate. It is important to note that Multinet's estimated cost of equity of 10.8% is among the lowest determined by the AER, but materially above the AER's most recent draft decision for Aurora Energy. The parameter values using the first of the two approaches described above are summarised in the table below.

The table below shows that Multinet has adopted a cost of debt estimate (derived using the Bloomberg fair value curve) of 7.91%, in accordance with independent expert opinions from PWC and CEG.

Combining these estimates of the cost of debt and equity, Multinet's estimate of the nominal vanilla WACC is 9.1%, as shown below.

WACC parameters proposed by Multinet

WACC parameter	Values
Cost of equity	
Nominal risk-free rate	5.99%
Market Risk Premium	6.0%
Equity beta	0.8
Cost of equity	**10.80%**
Cost of debt	
Nominal risk-free rate	3.99%
Benchmark credit rating	BBB+
Debt Risk Premium	3.92%
Cost of debt	**7.91%**
Benchmark Gearing	60%
Nominal vanilla WACC (%)	**9.1%**

A new business model to deliver sustainable and low cost services

While Multinet has achieved strong cost performance, it must ensure that it is well equipped to address future challenges.

As already noted, Multinet inherited an outsourced business model from the Gas and Fuel Corporation. By 1999, at the time Multinet was privatised, a number of alliance style contracts were in place with third parties to maintain and construct the network. From 2003, Multinet's business model has centred on a single outsourcing agreement with Jemena Asset Management (JAM). Multinet's review of this business model has raised serious questions regarding its sustainability and its longer term efficiency. In particular:

- The business model does not provide Multinet with sufficient control and capability to make strategic decisions to drive long-term sustainable cost efficiencies and service improvements. Examples of the strategic challenges ahead include the renewal of ageing infrastructure and managing change from Government-led policy initiatives, such as the introduction of the carbon tax.
- A single service provider model precludes Multinet from contracting directly with 'best of breed' contractors for specialist services. It also creates a culture of dependency between Multinet and the service provider, which ultimately leads to inefficiency and greater risk exposure for Multinet.
- The fixed fee structure for operations and maintenance creates an incentive for JAM to reduce costs to unsustainably low levels. As the current agreement expires on 30 June 2013, changes to existing terms and conditions are unavoidable.

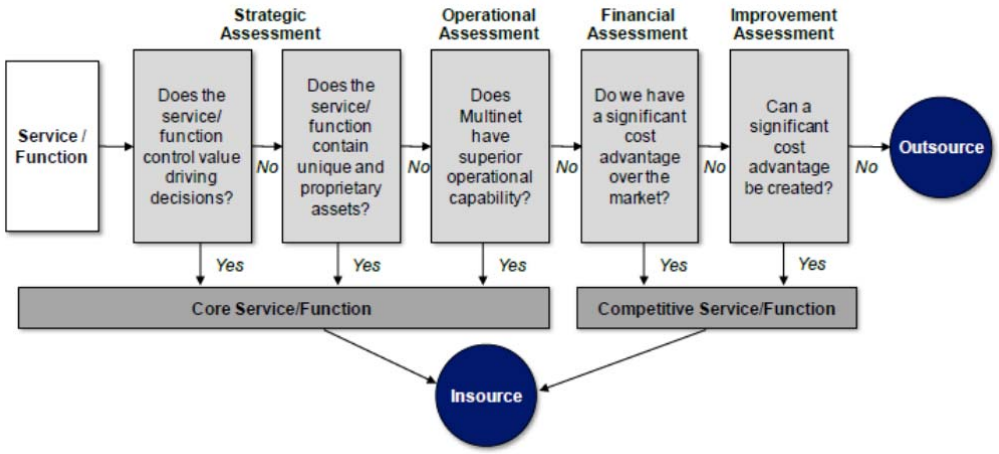
Multinet's decision to adopt a new business model builds from the recent experience of United Energy in designing and successfully implementing its new business model. United Energy's new business model is now operational and is delivering significant benefits by exposing external service providers to competitive pressure. In light of this experience, Multinet concluded it should seek expert advice from consultants, AT Kearney, on the design of its business model. Multinet also concluded that outsourced contracts should be subject to a competitive tender process supported by an independent probity plan and audit.

The overarching purpose of Multinet's new business model is to:

- Ensure that the company's cost and service performance are maintained at sustainable, industry leading levels
- Provide high levels of service that accord with the needs and preferences of customers
- Ensure that the company's cost structure and resourcing arrangements are efficient and flexible.

With these objectives established, AT Kearney provided a disciplined approach (illustrated in the diagram below) to determine which services should be outsourced, and which services should be provided in-house.

Decision framework to outsource or in-source services



The application of this "buy" or "make" framework led Multinet to conclude that core functions should be brought back in-house. An opportunity arose for Multinet to share resources with United Energy and to commence changes to its business model in advance of the expiry of the existing outsourcing agreements. As a result, key corporate functions, asset management and IT strategy have already been re-established by Multinet as in-house activities. Multinet and United Energy currently share more than 140 in-house staff located in new offices at Pinewood, Mt Waverley.

For outsourced services, Multinet conducted a comprehensive tender exercise that was focused on maximising competition between bidders and adopting a business model and contracting structure that would deliver the lowest sustainable costs to our customers. To illustrate the range of issues that were examined, it is useful to comment briefly on the choice of business model for outsourced Network Operations.

Multinet considered whether Network Operations, which comprises approximately 50% of Multinet's total operating expenditure, should be outsourced to a single service provider or two service providers, one operating in each of Multinet's North and South regions.

Evidently, transitioning to a new service provider for the entire Multinet network would create significant risks and transitional costs. On the other hand, it would provide some savings in terms of co-ordination and management effort.

Multinet concluded that a two-region model for Network Operations should be adopted because of the following benefits:

- Efficiently managing risk, by reducing Multinet's reliance on a single provider of Operations Services
- Creating a more competitive model under which there is benchmark competition on price and service performance, and actual competition for medium and large capital works, and other yet-to-be-priced activities
- Providing tangible, continuous competitive pressure on contractors, by enabling Multinet to amend the scope of work between the competing contractors in response to relative changes in cost and / or service performance
- Reducing barriers to entry and exit, and thereby minimising the risk and cost to Multinet of changing its service providers in future, in the event, for instance of unacceptable contractor performance.

A range of similarly complex judgments and business decisions were made in relation to the provisions of Customer and Market Services and IT Services, which are also subject to new outsourcing arrangements. While decisions of this kind cannot be reduced to spreadsheet analysis, Multinet is confident that its new business model will achieve a level of operating and capital expenditure which is consistent with the NGR and the ordinary commercial imperatives facing the company. Specifically, Multinet is confident that its new business model positions the company as a prudent service provider acting efficiently, in accordance with accepted good industry practice, to achieve the lowest sustainable cost of delivering pipeline services. Multinet's competitive tender process is the most thoroughly tested and comprehensive process ever presented to the AER.

Operating expenditure

Multinet's operating expenditure forecasts for the forthcoming Access Arrangement Period fully reflect the outcomes of the competitive tender exercise and Multinet's decision to bring corporate and strategic functions back in-house. To adopt a forecasting methodology that ignored the changes to Multinet's business model would be inconsistent with the Rules requirement that forecasts:

- Must be arrived at on a reasonable basis
- Must represent the best forecast or estimate possible in the circumstances.

Multinet's operating expenditure forecasts are presented in the following categories:

- **Network Operations:**
  - Field services, which includes network maintenance, asset surveillance and monitoring, fault and emergency response
  - Operational management
  - Emergency management
  - SCADA maintenance and repair
  - Control room and dispatch
  - Asset strategy; compliance; and risk management.
- **Customer and Market Services:**
  - Customer call centre
  - Meter data management and billing
  - Meter reading.
- **IT Services:**
  - Strategy
  - Service management
  - Application management
  - Infrastructure management.
- **Corporate Services:**
  - Office of CEO
  - Corporate support services
  - Legal
  - Finance
  - Human resources
  - Regulation
  - Office rental and insurance.

The following table provides a summary of Multinet's operating expenditure for the forthcoming access arrangement period.

Overview of Multinet's forecast operating expenditure ($m, real 2012)

	YEAR ENDING 31 DECEMBER					Total
	2013	2014	2015	2016	2017	
Network Operations	35.7	38.5	38.9	39.3	39.6	192.0
Customer and Market Services	10.8	10.6	10.6	10.6	10.6	53.2
IT Services	8.0	8.3	8.1	8.1	8.1	40.6

	YEAR ENDING 31 DECEMBER					Total
Corporate Services and Other Internal Costs	14.8	14.8	15.1	16.2	16.1	77.0
Total	**69.3**	**72.2**	**72.7**	**74.1**	**74.4**	**362.7**

While Multinet's operating expenditure forecasts increases only very modestly over the next 5 years, there is a step increase in operating expenditure in 2013 compared to the most recent year's data.

There are a number of scope changes that explain part of this increase in operating expenditure. These changes include:

- Increases in meter testing and refurbishment in accordance with Multinet's Distribution Code obligations
- New obligations relating to customer connection that arise as a result of the new National Energy Customer Framework
- Introduction of a network development plan initiative which aims to improve the utilisation of the network and exploit technological developments
- Additional costs associated with the administration of the carbon tax and other Government initiatives aimed at energy efficiency
- Additional compliance reporting requirements.

In addition to these scope changes, Multinet faces increased costs as outsourced service providers require competitively-determined contract prices that cover their costs. At present, JAM does not fully recover its costs in its fee for services, which was established a number of years ago. As already explained, however, the costs of outsourced services have been fully tested in the market place and therefore can be regarded as efficient and prudent.

Multinet's forecasts also include its own internal costs. As already explained, staff costs are shared with United Energy and there are already 140 staff shared between the two network businesses. Substantial efficiencies in sharing costs are reflected in Multinet's forecast operating expenditure.

Multinet's operating expenditure forecast reflects the costs that would be incurred by a prudent service provider acting efficiently, in accordance with accepted good industry practice, to achieve the lowest sustainable cost of delivering pipeline services.

Capital expenditure

In general terms, Multinet's new business model will provide benefits in keeping downward pressure on unit costs. To understand Multinet's capital expenditure plans in detail, however, it is helpful to focus on the following expenditure categories:

- **Customer initiated**. This capital expenditure is required to meet the needs of new or existing customers. The capital expenditure includes mains extensions; customer installation capacity upgrades; new services and meter installations; and service alterations and meter alterations/relocations. This category also includes third-party funded recoverable works.
- **Pipeworks**. This program replaces the very old low pressure mains with high pressure mains. The program reduces the risk of asset failure and provides improved operational flexibility and service performance.
- **Replacement capital expenditure**. These projects replace network assets that have reached the end of their economic life; demonstrate poor reliability; raise safety concerns; or are no longer

supportable. Asset replacement projects include the upgrading or replacement of pipelines, mains, meters, pressure reduction facilities and associated ancillaries, and replacement of cathodic protection infrastructure as well as valves, kiosks and cabinets.

- **Metering**. This capital expenditure relates to the replacement of meters, and is driven by regulatory requirements set out in the Gas Distribution System Code and the need to sample test each family of meters in accordance with the AS/NZS 4944 standard.
- **Demand-related capital expenditure**. This capital expenditure is required to augment the system to meet forecast increases in network load that cannot be attributed to individual customers. The capital expenditure is required to maintain standards of safety and service across the network. Demand capital projects may also be combined with customer initiated projects where there is an efficiency gain in doing so.
- **Performance improvement projects**. These projects are aimed at improving the performance of the gas network to deliver operational efficiency improvements.
- **Non-network capital expenditure**. This capital expenditure includes all capital work associated with assets other than network assets. Non-network capital expenditure is comprised of two components:
  - Non-network – IT and SCADA capital expenditure
  - Non-network – Other, which includes activities such as building and property capital works, the purchase of gas specific equipment and other specialist equipment.

The table below provides a summary of Multinet's capital expenditure forecast for the forthcoming access arrangement period.

Multinet's financial modelling indicates that the company will require both a new debt facility and an additional equity injection in order to fund its proposed capital expenditure program. Multinet is confident that the required funding can be raised, and the capital expenditure program delivered, provided that the company's WACC proposal is accepted by the AER. Multinet notes that any reduction in its proposed WACC or any other important building block parameter (such as operating expenditure) would affect the company's ability to raise the capital required to fund the proposed works, and would therefore unavoidably require the company to revisit its capital expenditure forecasts.

Categories of capital expenditure and overview of expenditure forecast (real 2012 $M)

	YEAR ENDING 31 DECEMBER					Total 2013-17
	2013	2014	2015	2016	2017	
Customer initiated	26.3	24.5	22.4	22.5	22.5	118.3
Pipeworks	18.2	21.1	18.9	18.4	19.6	96.2
Replacement	9.4	8.4	6.9	8.2	9.6	42.5
Metering	3.7	3.5	2.5	2.4	2.5	14.7
Demand-related	9.6	8.2	7.4	7.7	8.5	41.5
Performance	2.0	2.8	4.3	6.6	4.8	20.4
IT and SCADA	20.6	8.8	6.9	12.4	3.5	52.2
Non network – Other	4.1	0.0	0.0	0.0	0.0	4.1

	YEAR ENDING 31 DECEMBER					Total 2013-17
	2013	2014	2015	2016	2017	
Total (Gross)	**93.9**	**77.3**	**69.3**	**78.2**	**71.0**	**389.7**
Less contributions	11.3	4.1	1.6	1.6	1.6	20.0
Net capital expenditure	**82.6**	**73.1**	**67.7**	**76.6**	**69.4**	**369.7**

Multinet recognises that, for some expenditure categories, future capital expenditure will be materially different from recent expenditure levels. Importantly, Multinet's future capital expenditure requirements are derived from an Asset Management Plan (AMP). The AMP is focused on managing and renewing Multinet's network assets to achieve the long-term objectives of maintaining asset integrity and levels of service and safety at the lowest life cycle cost.

In broad terms, Multinet's proposed capital expenditure is necessary to:

- Renew ageing elements of the network
- Manage and reduce levels of risk
- Deliver the necessary infrastructure to maintain the present high service levels and meet customer growth.

The asset management process, and investment decision and capital governance frameworks employed by Multinet ensure that all capital investment and asset management decisions are consistent with those that would be made and executed by a prudent service provider acting efficiently, in accordance with accepted good industry practice, to achieve the lowest sustainable cost of providing services.

Multinet has obtained an independent expert opinion from engineering consultants GHD which states that Multinet's forecast capital expenditure can reasonably be expected to conform with the criteria set out in Rule 79, and should therefore be incorporated into the projected capital base for the forthcoming period.

Capital base

Multinet's opening capital base and its projected capital base for the forthcoming Access Arrangement Period have been calculated in accordance with the applicable requirements of the National Gas Rules. In particular, Multinet has obtained an independent expert opinion from GHD which states that Multinet's capital expenditure during the current period conforms to the criteria set out in Rule 79, and can therefore be added to the capital base. Multinet's projected capital base is set out in the table below.

Projected capital base for the forthcoming Access Arrangement Period ($m, real 2012)

	Period Ending 31 December				
	2013	2014	2015	2016	2017
Opening capital base	1,072.9	1,105.3	1,122.4	1,130.9	1,145.9
Conforming capital expenditure	96.9	79.8	71.5	80.7	73.2
Forecast depreciation	52.6	58.1	61.3	64.0	67.7
Disposals and surcharges	11.9	4.6	1.7	1.7	1.7
Closing capital base	**1,105.3**	**1,122.4**	**1,130.9**	**1,145.9**	**1,149.7**

Unaccounted for gas (UAFG)

Unaccounted for gas (UAFG) is the difference between the quantities of gas measured into a pipeline system and the quantities of gas measured out of the same system with allowance made for any change in the volume of gas held in the system between the start and the end of the measurement period. UAFG figures would not be zero even if there were no leaks in the pipeline system. This is because the measurements associated with the metering of gas into and out of the system have uncertainties associated with them.

Under AEMO's Wholesale Market Metering Uncertainty Limits and Calibration Requirements Procedures, meter installations supplying distribution systems can have between ±1.0% and ±2.5% volume measurement uncertainty, depending on meter size. Meters measuring delivery of gas from the distribution system can have similar levels of measurement uncertainty. Other known contributors to metering uncertainty are the accuracy of gas heating value (HV) allocation and barometric and ambient temperature effects. In addition, the total uncertainty of gas measurement due to all of the above factors will change with time and situation (as gas loads and meter populations change) and will cause fluctuations in UAFG determinations.

It is therefore clear that changes in UAFG do not necessarily relate to changes in losses or leakage from the system. It is also evident that the existing system of setting UAFG benchmarks slightly lower than the actual past determined UAFG to provide a business with incentives to replace deteriorating pipelines is inappropriate. There are too many uncertain factors that drive the actual UAFG.

Multinet's actual UAFG has not declined since 2003, even though the company has replaced approximately 800 km of low pressure pipe since 2003. Given that there is no empirical evidence to establish a link between the replacement of cast iron pipes and a decline in actual UAFG, Multinet proposes to set a forecast of UAFG using the latest available (2010) actual data. Multinet is not proposing to adjust the UAFG benchmark for the forecast Multinet proposes the UAFG benchmarks shown in the table below

Multinet's proposed UAFG benchmarks

	Period Ending 31 December				
	2013	2014	2015	2016	2017
Class A	0.3%	0.3%	0.3%	0.3%	0.3%
Class B	4.4%	4.4%	4.4%	4.4%	4.4%
Non- PTS	3.0%	3.0%	3.0%	3.0%	3.0%

Demand forecasts

Multinet engaged the National Institute of Economic and Industry Research (NIEIR) to assist in preparing Multinet's forecasts for the forthcoming period. NIEIR's association with Multinet dates back to 1999 when Multinet was privatised. NIEIR therefore has a good understanding of Multinet's business, and the factors that drive customer numbers and domestic and commercial gas usage.

NIEIR is also engaged by AEMO to prepare State-wide forecasts of gas consumption. The approach adopted by NIEIR for Multinet essentially replicates the approach adopted in preparing the AEMO 2011 forecast, and the forecasts for Multinet can be reconciled to AEMO's forecasts for Victoria. NIEIR is therefore exceptionally well-placed to advise Multinet on the appropriate customer and usage forecasts for the forthcoming Access Arrangement Period.

NIEIR's methodology recognises the key drivers of future gas consumption and the growth in the customer base, including:

- Economic growth and new housing activity
- The effect of trend warming in winter temperatures on gas demand
- Differences in average consumption for new and existing gas customers, which reflects the characteristics of new dwellings, which are predominantly apartments or higher density, infill housing with lower average levels of gas usage
- The impact of more efficient appliances, including storage water heaters with instantaneous heaters or solar heaters, appliance stock efficiency improvements, and reverse cycle air conditioning replacing gas heating
- Federal and State Government initiatives – including the introduction of a carbon tax, 6-star housing, solar hot water incentives, and energy efficiency measures – which are all designed to lower energy usage, including gas.

Forecast gas volumes for the forthcoming Access Arrangement Period are set out in the table below.

Annual forecast of gas volumes, 2013 to 2017

Category	Year Ending 31 December				
	2013	2014	2015	2016	2017
Tariff V – residential (GJs)	39,074	38,753	38,592	38,519	38,446
Tariff V – commercial (GJs)	5,564	5,515	5,487	5,472	5,457
Tariff L (GJs)	192	235	276	317	359
Total energy (GJs)	44,830	44,503	44,354	44,308	44,262
Tariff D and L (MHQs)	**3,546**	**3,509**	**3,482**	**3,466**	**3,451**

Forecast customer numbers for the forthcoming Access Arrangement Period are provided in the table below.

Multinet's forecast customer numbers, 2013 to 2017

Category	Year Ending 31 December				
	2013	2014	2015	2016	2017
Opening	679,027	684,660	690,201	695,786	701,063
Plus new connections	8,797	8,809	8,768	8,439	8,323
Less abolishments	3,164	3,269	3,182	3,162	3,200
Closing balance	**684,660**	**690,201**	**695,786**	**701,063**	**706,187**

Reference Services

Reference Services are services that are likely to be sought by a significant proportion of the market. Multinet proposes to continue to offer three classes of Reference Services:

- Residential Haulage Reference Services
- Non-Residential Haulage Reference Services
- Ancillary Reference Services.

Multinet is not proposing to change the manner in which it provides Reference Services. However, it is proposing to introduce one new Ancillary Reference Service in the forthcoming Access Arrangement Period. This new service relates to new connections and is a result of Multinet now being responsible to provide connections services as part of the new National Energy Customer Framework (NECF) arrangements.

Reference tariffs and tariff variation mechanisms

Multinet's proposed reference tariffs are consistent with those contained in its current access arrangement. The proposed tariffs meet all applicable requirements of the National Gas Rules.

Multinet proposes to maintain the current tariff basket annual tariff variation mechanism in the form of a weighted average price cap formula. This tariff variation mechanism satisfies the requirements of the National Gas Rules.

The regulatory framework recognises that a distribution business cannot accurately forecast costs that depend on particular uncertain events occurring. The framework therefore allows the costs of uncertain events (termed "pass through events") to be recovered separately, rather than providing a fixed allowance in the price control for the expected costs of such events. Accordingly, Multinet has proposed number of pass through events, the costs of which will be recovered separately if those pass though events occur.

Efficiency incentive mechanisms

Multinet proposes the continuation of the efficiency incentive mechanisms for operating expenditure and capital expenditure which are set out in its current access arrangement.

Terms and Conditions

In the process of preparing this access arrangement proposal, Multinet engaged with Users directly to inform itself of any User concerns, and where possible it amended the default Terms and Conditions to accommodate their views. During the consultation process it was not always clear that all stakeholders agreed with all the proposed changes. As a general rule, where agreement between Users was either unclear or not forthcoming, Multinet has not made changes to its default set of Terms and Conditions.

Consistent with the Access Code, Multinet remains prepared to negotiate individual Terms and Conditions with Users that reflect individual circumstances.

The key issues and proposed material changes to the current Terms and Conditions are explained in section 17.5 of this Access Arrangement Information. For convenience, Multinet has provided a change-marked version and a clean copy of its proposed Terms and Conditions for the forthcoming Access Arrangement Period.

Review submission date and revision commencement date

Multinet proposes that the length of the forthcoming Access Arrangement Period will be five years. The revision commencement date will therefore be 1 January 2018. In accordance with the requirements of rule 49(1)(i)(b), Multinet's access arrangement does not contain an expiry date.

The proposed review submission date is 31 December 2016.

1. Introduction

1.1 Purpose of this Document

On 30 March 2012, Multinet Gas (DB No 1) Pty Ltd and Multinet Gas (DB No 2) Pty Ltd trading as Multinet Gas Distribution Partnership ('Multinet' or 'Service Provider') submitted to the Australian Energy Regulator (AER) a revision to the Access Arrangement approved by the Essential Services Commission in May 2008.

In accordance with clause 42(1) of the National Gas Rules (the Rules), this Access Arrangement Information (AAI) sets out further information to support the proposed revisions to the Access Arrangement. In particular, the AAI provides information that is reasonably necessary for users and prospective users:

- To understand the background to the access arrangement proposal for the regulatory period commencing on 1 January 2013
- To understand the basis and derivation of the various elements of the access arrangement proposal.

1.2 Multinet's gas distribution network

Multinet distributes gas to more than 665,000 customers throughout the south and east areas of metropolitan Melbourne, Yarra Ranges and South Gippsland Towns. The area serviced by Multinet's distribution network is shown in the figure below.

Figure 1-1: Multinet Distribution Territory

Multinet's network covers an area of 1,790 km^2 and our network assets consist primarily of:

- 165 km of licensed transmission pipelines
- 9,815 km of distribution mains
- Five City Gate stations and 279 Supply Regulator sites that facilitate the reduction and management of gas pressure throughout the network.

The majority of Multinet's service territory is urban and fully developed, including many predominantly residential suburbs. Multinet's territory encompasses the Yarra Ranges, parts of which present environmental challenges in terms of meeting stakeholder expectations for new construction, even within existing road reserves.

1.3 Structure of Documentation

The documentation for this Access Arrangement revision comprises the Access Arrangement and this Access Arrangement Information.

1.3.1 Access Arrangement

The Access Arrangement comprises of three sections:

- Part A – The Principal Arrangements. This part sets out the principal policy statements in relation to pipeline services; capacity management; and network extensions and expansion. It also includes review and expiry arrangements and a glossary, which is applicable to both the Access Arrangement and the AAI.
- Part B – Reference Tariffs and Reference Tariff Policy. This part sets out the details of the reference tariffs and the basis for their annual adjustment. Part B also sets out Fixed Principles that are binding on the AER and the service provider for a specified period.
- Part C – Terms and Conditions. This Part sets out the terms and conditions on which Multinet will supply each Reference Service.

1.3.2 Access Arrangement Information

This Access Arrangement Information (AAI) fully complies with the information requirements specified in clause 72(1) of the Rules. In particular, the AAI provides:

- A comprehensive explanation of Multinet's forecast costs for the forthcoming Access Arrangement Period. For each material forecast or assumption, Multinet provides detailed evidence and analysis to demonstrate that its approach is prudent, efficient and fully satisfies the Rules requirements.
- A description of Multinet's proposed pipeline services, the guaranteed service levels and key performance indicators which together ensure that customers obtain the service performance they expect.
- An explanation of Multinet's approach to setting tariffs, including the application of the pricing principles and the arrangements for annual tariff adjustments.
- Multinet's proposed incentive mechanisms, which are designed to ensure that customers share the benefits of any future cost efficiencies.

In addition to the information requirements set out in the Rules, the AER has also issued a Regulatory Information Notice (RIN) which requires Multinet to provide additional specified information. The majority of the AER's information request has been addressed in the completed AER spread sheet templates that accompany this submission. Where the information request is better addressed in a document (as opposed to spread sheet) format, it is provided in Appendix A-3 of this AAI. To demonstrate compliance with the RIN, Appendix A-3 indicates where each element of the RIN has been addressed in Multinet's submission.

1.4 Contact details

Information on the pipeline to which this Access Arrangement Information relates is available from Multinet's website at: www.multinetgas.com.au

The contact officer for further details on this Access Arrangement Information is:

Andrew Schille

General Manager Regulation

Multinet Gas (DB No. 1) Pty Ltd and Multinet Gas (DB No. 2) Pty Ltd

Level 1, Pinewood Corporate Centre

43-45 Centreway Place

Mount Waverley VIC 3149

Telephone: 03 8846 9860

Email: andrew.schille@ue.com.au

2. Multinet's current performance and business model

2.1 Introduction

This chapter provides an overview of Multinet and its cost and service performance since the company was established in 1997. Understanding Multinet's performance over an extended period provides essential background information for assessing the reasonableness of Multinet's expenditure forecasts (as set out in chapters 4 and 5) for the forthcoming Access Arrangement Period.

This chapter demonstrates that Multinet continues to perform very strongly when compared to its national and international peers. Multinet's historic cost performance shows a very rapid reduction in operating expenditure immediately following privatisation. Further cost reductions were achieved in the second Access Arrangement Period, albeit at a less dramatic rate. During the current Access Arrangement Period, Multinet's operating cost performance has levelled off, which reflects the limited opportunities to deliver further cost efficiencies.

The remainder of this chapter is structured as follows:

- Section 2.2 provides a background summary of Multinet's ownership history
- Section 2.3 describes Multinet's cost performance compared to our peers. It also compares Multinet's cost performance against the regulator's expenditure allowances for the current period
- Section 2.4 describes Multinet's service performance against the key performance indicators and service targets since 1998
- Section 2.5 explains that Multinet has reviewed its current business model, and concluded that the business model is no longer sustainable, despite Multinet's strong cost and service performance in recent years.

2.2 Background: Ownership history

Multinet was created when the Government-owned Gas and Fuel Corporation was corporatised in the 1990s. Multinet was subsequently privatised in 1999 when a consortium of AMP Capital Investors (formerly AMP Henderson) and Aquila (formerly UtiliCorp United) purchased the business.

In 2003, following Aquila's sale of its Australian assets, Multinet's ownership was restructured with Diversified Utility and Energy Trust (DUET) and Alinta Ltd purchasing the business. DUET acquired a 79.9% interest in Multinet with the remaining 20.1% owned by Alinta Ltd.

In August 2007, a consortium comprising Singapore Power International Pte Ltd, Babcock and Brown, Babcock & Brown Infrastructure, Babcock & Brown Power, and Babcock & Brown Wind, acquired Alinta Limited. As a result of this transaction, Babcock & Brown Infrastructure (later Prime Infrastructure) acquired Alinta Limited's 20.1% interest in Multinet.

In August 2010, Brookfield Infrastructure increased its ownership interest in Prime Infrastructure from 40% to 100%. In July 2011, DUET increased its shareholding in Multinet to 100%.

DUET is an ASX-listed owner of energy utility assets in Australia. DUET is managed jointly by AMP Capital Investors Limited and Macquarie Funds Group. DUET entities now hold majority-ownership interests in three regulated Australian energy utility businesses – 80% of Dampier Bunbury Pipeline; 100% of Multinet and 66% of United Energy, as illustrated in in Figure 2-1.

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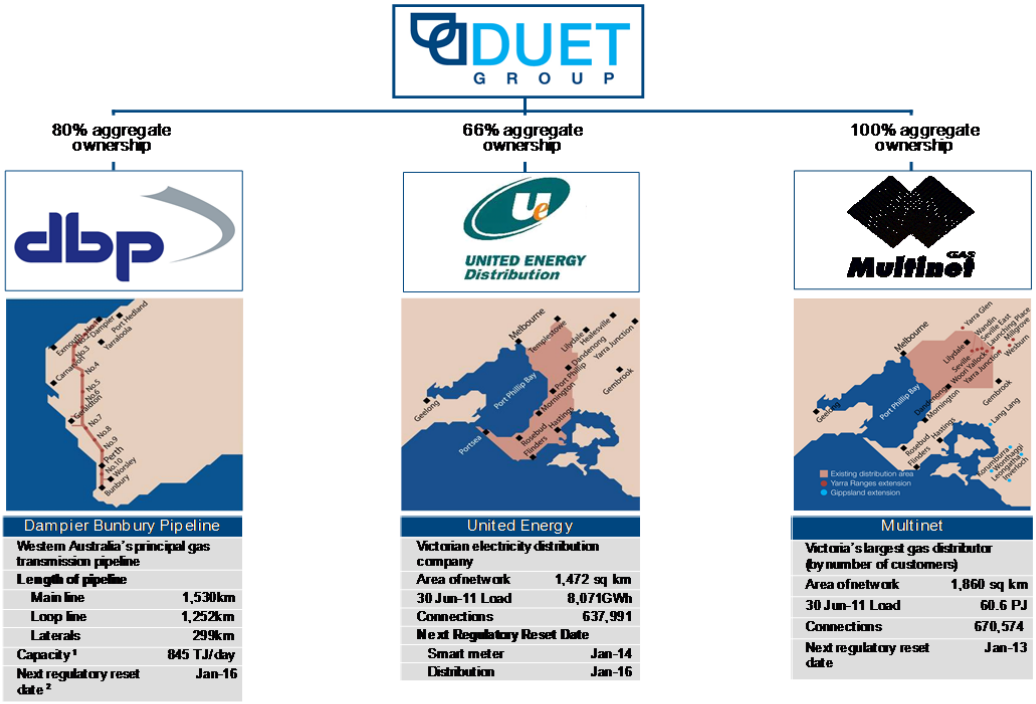
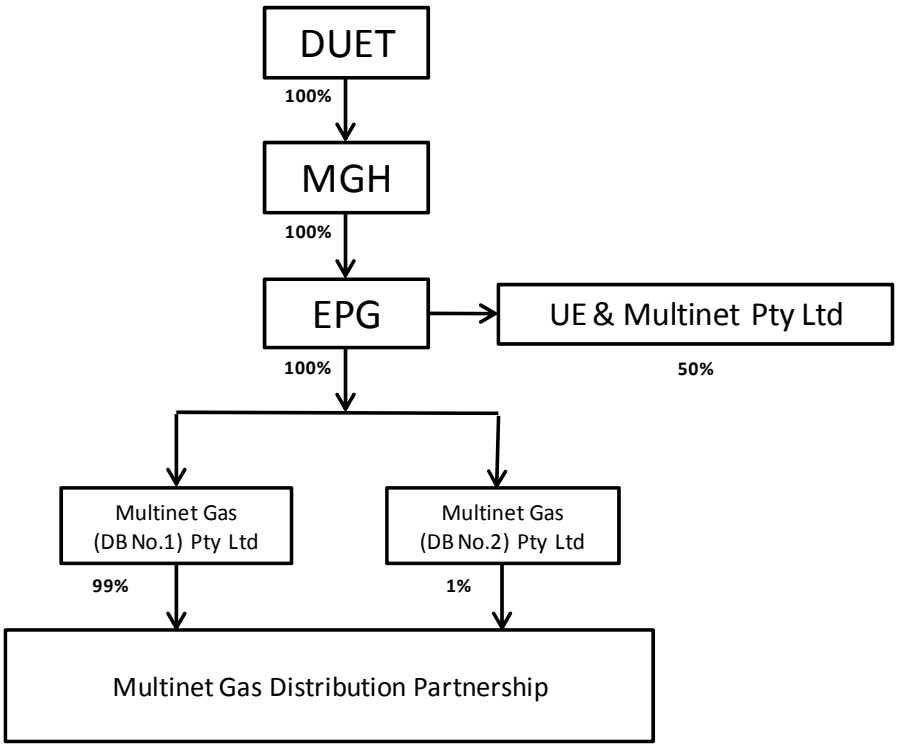
Figure 2-1: DUET's shareholding in Australian energy networks



1. Average contracted full-haul capacity per day
2. DBP's regulatory tariff (reference tariffs) adjustment was scheduled to be effective on 1 January 2011. Due to delays in the Economic Regulation Authority's final decision for DBP, the final decision is expected to be published in the October 2011 quarter. Note that the reference tariffs do not presently apply to the existing gas transportation contracts. On 1 January 2016 the tariffs will revert to the regulated tariff for the shippers other than Alcoa

Jemena Limited's wholly-owned subsidiary, Jemena Asset Management (JAM), currently provides a wide range of services to Multinet through an Operating Services Agreement (OSA). Jemena was formed from the sale of Alinta Ltd in 2007 and is 100% owned by Singapore Power. As Multinet is 100% owned by DUET, neither JAM nor its parent company has any ownership interest in Multinet.

Figure 2-2: Multinet's ownership structure



The parties identified in the diagram are described below.

- Multinet Gas (DB No. 1) Pty Ltd and Multinet Gas (DB No. 2) Pty Ltd are the partners of the Multinet Gas Distribution Partnership ("Multinet"). The gas distribution licence is held by Multinet Gas (DB No. 1) Pty Ltd and Multinet Gas (DB No. 2) Pty Ltd trading as the Multinet Gas Distribution Partnership. Multinet carries out the gas distribution function in accordance with all legal and regulatory requirements.
- Multinet Group Holdings Pty Ltd ('MGH') is the ultimate holding Company of Multinet and the vehicle for holding of the equity interest. It manages the provision of corporate services to Multinet by itself, Energy Partnership (Gas) Pty Ltd ('EPG'), and other parties.
- EPG is a Company which facilitates the ownership of Multinet, as Multinet's immediate parent. As the parent it provides management and corporate services to Multinet's licensed gas distribution business. EPG is also the funding vehicle for the group.

EPG owns 50% of UE Pty Ltd& Multinet Pty Ltd; the remaining 50% is owned by United Energy Distribution. Internal resources, including labour, office accommodation and related costs, are provided jointly by UE & Multinet Pty Ltd and then allocated to each regulated network in accordance with cost sharing arrangements. UE & Multinet Pty Ltd only recovers its costs and does not earn any profit margin. It is a vehicle established to facilitate cost sharing between UE and Multinet; the customers of those two businesses are the ultimate beneficiaries of the synergies arising from cost sharing. The cost sharing arrangements are consistent with the cost allocation methodology that applied in the recent EDPR for United Energy.

2.3 Cost performance

Multinet has demonstrated a long history of very good cost performance since its establishment in 1997. For instance:

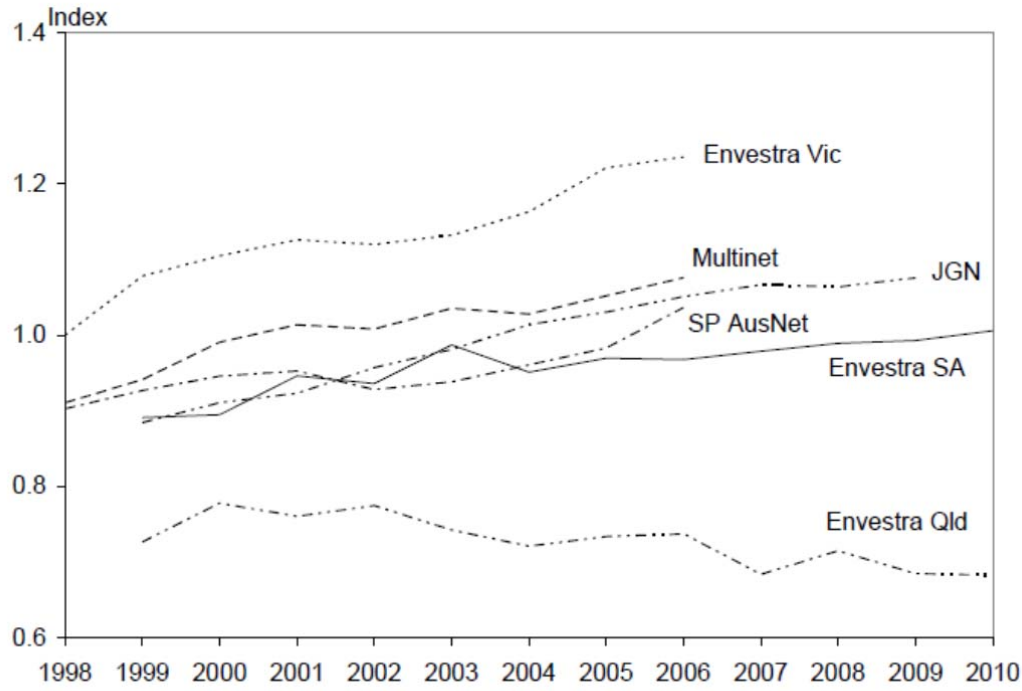
- In 1999, IPART published a research paper titled 'Benchmarking the Efficiency of Australian Gas Distributors'. Eight Australian distributors were benchmarked against a sample of 51 US local distribution companies. IPART concluded that Multinet's performance was best practice.
- In 2001, Pacific Economics Group benchmarked Multinet and the other Victorian gas distributors against 43 distributors in the United States using an econometric model. Pacific Economics Group found that Multinet's operating expenditure was significantly better than the model's prediction, making Multinet a superior performer compared to the sample of US utilities.
- In 2004, Meyrick & Associates undertook a comparative benchmarking study of Australian and New Zealand gas transmission and distribution pipeline businesses for the New Zealand Commerce Commission. In this study, Multinet was also among the most efficient performers after allowing for operating environment differences.
- In 2007, Meyrick & Associates completed an independent expert report for Multinet's 2008 gas access arrangement review (GAAR) process. Meyrick & Associates found that Multinet's operating expenditure performance had been particularly impressive considering that Multinet has a high proportion of cast iron and other low pressure pipelines.

More recently, Envestra commissioned Economic Insights Pty Ltd to examine the productivity performance of its South Australian and Queensland gas distribution businesses compared to the three Victorian gas distribution businesses and Jemena Gas Networks in NSW[1]. In this type of analysis, a higher or steeper sloping line indicates higher levels of productivity or more rapid productivity improvement.

Figure 2-3 reproduces Economic Insights' analysis for Envestra. It shows that Multinet improved its productivity in absolute terms, and maintained its relative performance compared to its peers.

[1] Economic Insights Pty Ltd, *The Productivity Performance of Envestra's South Australian and Queensland Gas Distribution Systems, Report for Envestra Ltd, 30 September 2010.*

Figure 2-3: Measure of absolute and relative total factor productivity[2]

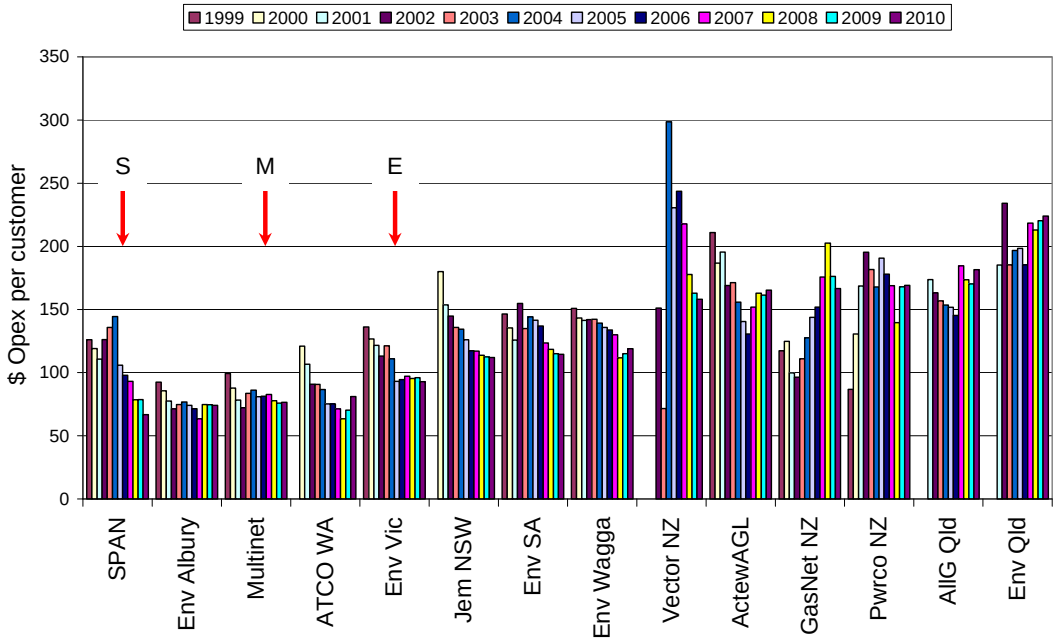


Source: Economic Insights GDB database

For the purposes of this review, the Victorian gas distributors commissioned Economic Insights to conduct a broader benchmarking study examining gas distribution companies across Australia. The figure below presents Economic Insights' analysis of operating expenditure over the period from 1999 to 2010. It shows that Multinet's operating expenditure per customer remains amongst the lowest of gas distributors in Australia.

[2] Ibid, page 34.

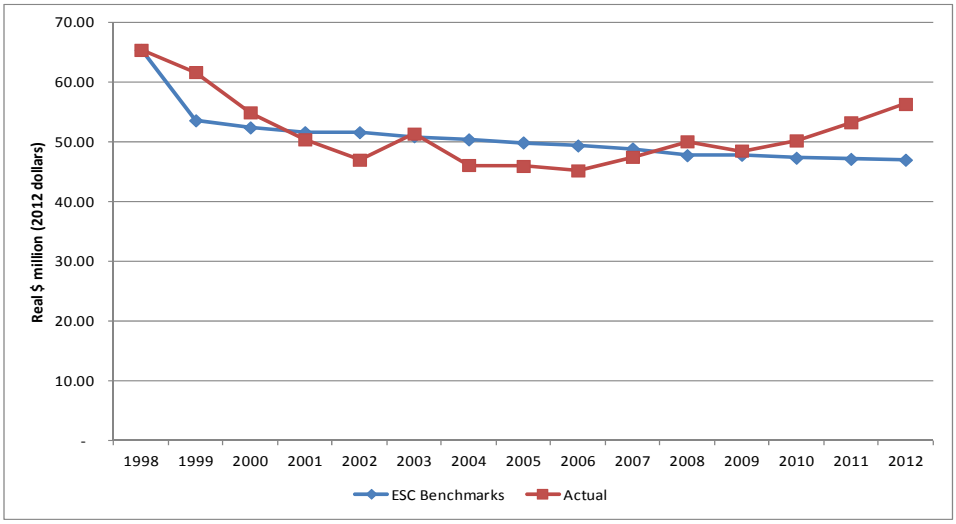
Figure 2-4: Benchmark operating expenditure per customer 1999-2010



The numerous and wide-ranging studies described above consistently provide the same conclusions: Multinet is an efficient company when compared to its peers. This illustrates that the company has continued to respond positively to the commercial incentives provided by the regulatory framework.

It is also instructive to compare Multinet's operating expenditure performance with the benchmarks set by the Essential Services Commission, as shown in **Figure 2-5**. It shows that Multinet's costs have not been able to keep pace with the reductions assumed by the Essential Services Commission.

Figure 2-5: Multinet's operating expenditure performance relative to ESC benchmarks



While Multinet has continued to face strong commercial pressures to improve cost performance, and continues to perform well compared to its peers, the following observations can be drawn from **Figure 2-5**:

- the rapid reduction in operating expenditure achieved in the 1998 to 2002 has proven to be unsustainable; and
- the expenditure benchmarks set by the Essential Services Commission in 2007 wrongly assumed that Multinet could continue to find efficiency improvements to offset expected increases in costs.

Multinet's unsustainably low operating expenditure is underscored by the fact that Multinet has the largest and oldest low pressure network in Australia, so it would be reasonable to expect Multinet to exhibit relatively high costs compared to its peers. However, in spite of the age and characteristics of its network, Multinet consistently benchmarks well against its local peers. In submissions to the Essential Services Commission during the 2008 GAAR process[3], Multinet foreshadowed difficulties in sustaining the low level of costs it had achieved during the previous regulatory period:

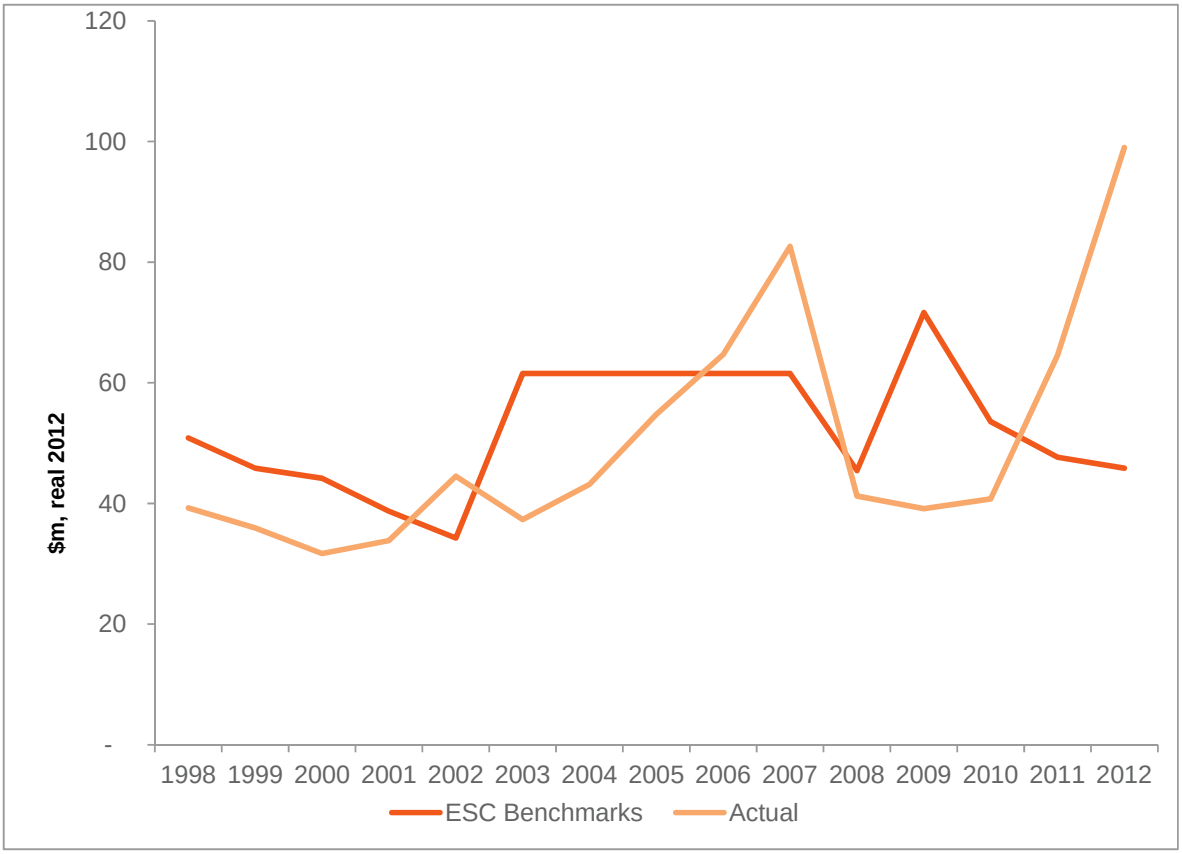
> *"Multinet is in a situation whereby it already has the lowest cost per customer, [made] the biggest cost reduction of any business, and despite other businesses forecasting an increase of costs [the Commission has] imposed cost reductions such as those in the draft decision. These forecasts will be unattainable...."*

Multinet's actual operating expenditure in the current Access Arrangement Period has borne out the concerns expressed by Multinet in the 2008 review process. In these circumstances, Multinet regards the national and international benchmarking as a more reliable yardstick for assessing Multinet's cost performance.

Before turning to the results of the latest international benchmarking study commissioned by Multinet, it is instructive to examine Multinet's performance against the capital expenditure benchmarks set in previous regulatory decisions. It is important to note that Multinet's actual capital expenditure was affected because Multinet and capital markets were unprepared for the unexpected reduction in the equity beta from 1 to 0.8 in the 2008 GAAR. That regulatory decision, combined with the impact of the Global Financial Crisis, adversely affected the availability and cost of funding. As a consequence, Multinet had no choice but to defer a proportion of the pipeworks replacement program.

[3] Essential Services Commission, Gas Access Arrangement Review 2008-2012 Final Decision, 7 March 2008, page 564.

Figure 2-6: Multinet's capital expenditure performance relative to ESC benchmarks



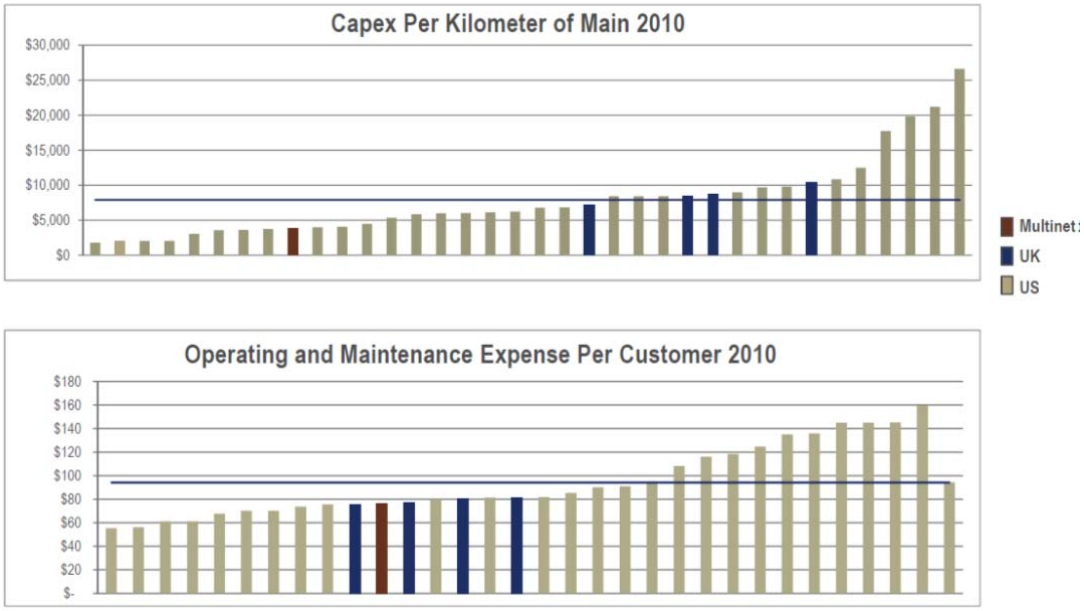
Nevertheless, Figure 2-6 shows that Multinet has consistently managed its capital expenditure to levels that are below the benchmarks set by the ESC. It is worth recalling that customers benefit from this under-spend by virtue of a lower regulatory asset base, and therefore, lower prices than would otherwise be the case.

For the purpose of this review, Multinet commissioned Marchment Hill to examine Multinet's present capital and operating expenditure performance against UK and US gas distributors.

Marchment Hill's international benchmarking study shows that in relation to both capital and operating expenditure, Multinet continues to benchmark very favourably compared to its UK and US peers. Capital expenditure is especially low on a per km basis, while operating expenditure is also favourable on a per customer basis. Marchment Hill's study confirms the earlier reports and findings that show Multinet to be an efficient cost performer.

The results of Marchment Hill's benchmarking study are summarised in the figure below.

Figure 2-7: Multinet's expenditure performance compared to UK and US gas utilities

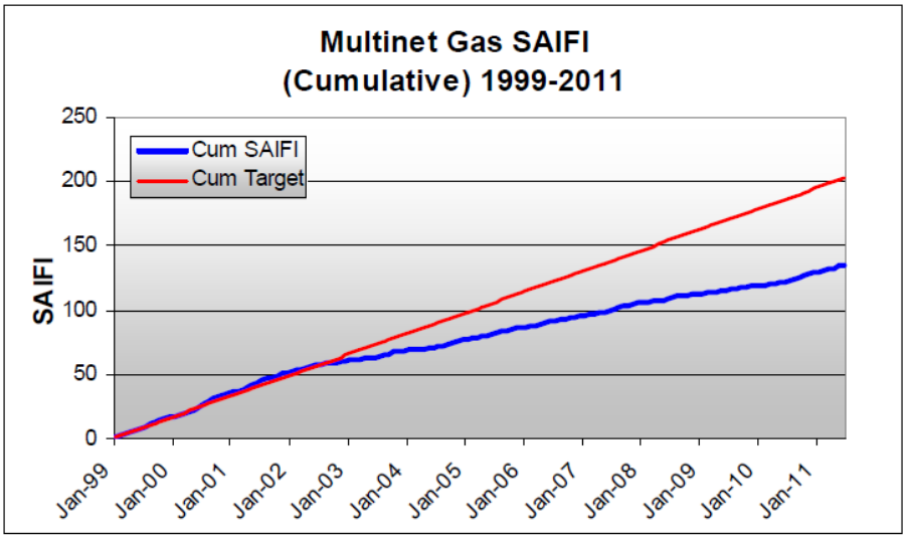


2.4 Service performance

Although Multinet has the largest and oldest low pressure network in Australia, the company continues to demonstrate exceptional reliability. This partly reflects the high engineering standards of the Victorian Gas Industry (from the 1970s onwards), together with the inherent reliability of underground, meshed gas supply networks. It also indicates that Multinet is delivering high value, low cost pipeline services to our customers.

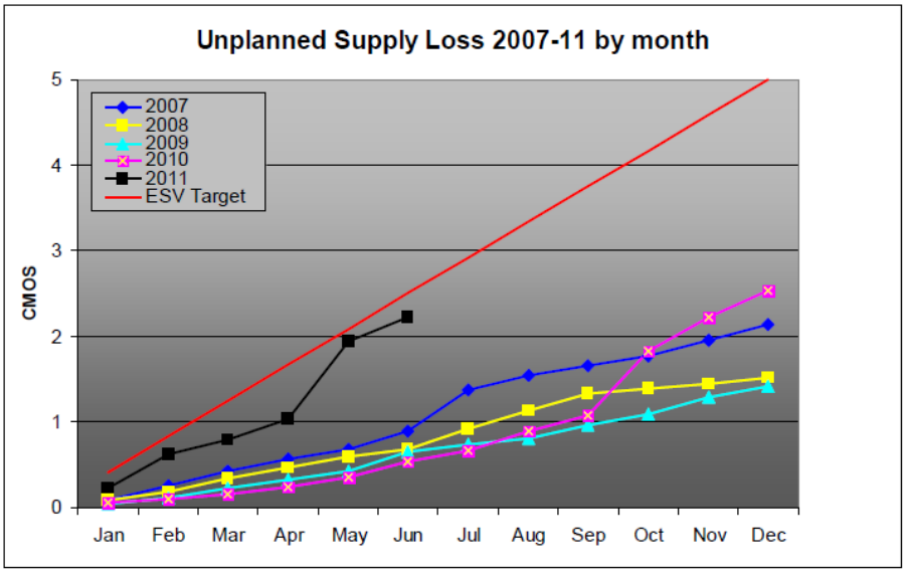
The System Average Interruption Frequency Index (SAIFI) measures the average frequency of unplanned interruptions per 1000 customers per year. The figure below shows that SAIFI performance has been consistently close to or better than target, with significant improvement since mid-2002.

Figure 2-8: Multinet's SAIFI performance



The figure below shows the unplanned loss of supply, known as SAIDI. It shows that Multinet has performed better than the target set by energy safety regulator, Energy Safe Victoria (ESV), between 2007 and 2011[4]. As discussed below, increased recent rainfall has affected performance adversely, particularly in 2011.

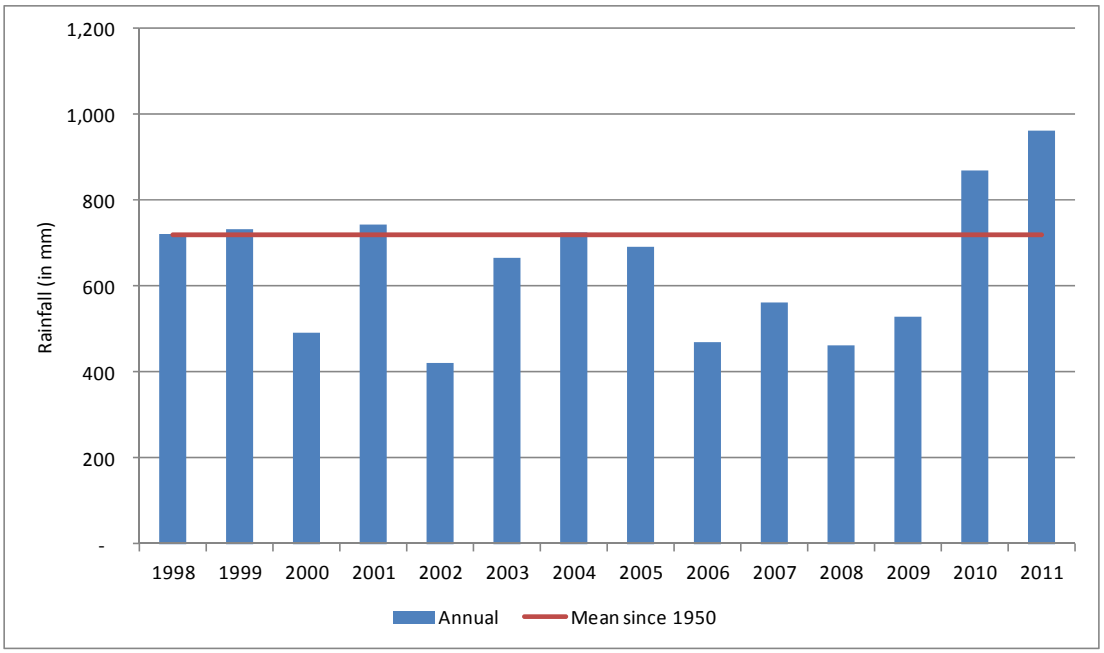
Figure 2-9: Multinet's SAIDI performance



[4] The y-axis shows 'CMOS', which means 'customer minutes off supply.'

Water in low pressure networks has been a significant focus for Multinet throughout 2010 and 2011 due to the return of at least average rainfall conditions after 13 years of drought, as shown in **Figure 2-10** below.

Figure 2-10: Annual rainfall, Moorabbin Airport, from 1998 to 2010



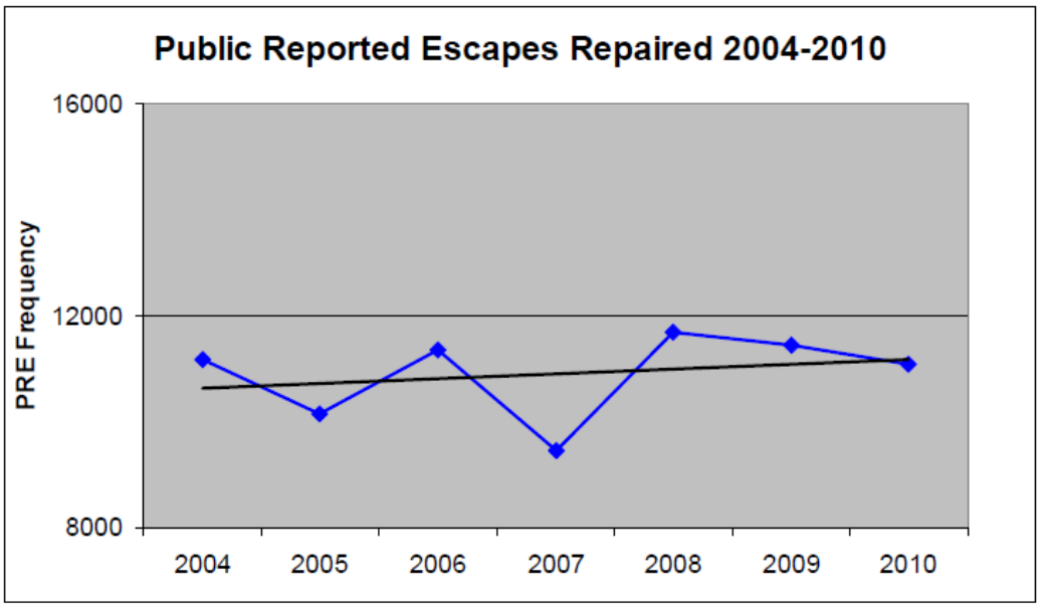
The weather conditions through winter/spring have resulted in higher than desirable levels of multiple interruptions and complaints. Water ingress to the low pressure system is being dealt with by a combination of targeted pipe replacement (the "Pipeworks" program) and maintenance (tracing water and leak repair). The use of a new insertion camera has been beneficial in improving the efficiency of tracing water ingress. However, the return to more moist conditions following the prolonged drought is expected to lead to increased maintenance requirements over the next access arrangement period compared to the current period.

Energy Safe Victoria audits Multinet and its contractors twice per year. The audits generally involve auditing of Multinet's Safety Management Systems and review work actually completed. Overall, Multinet's performance for 2011 in relation to work practises has been assessed as being good, with the auditors being satisfied with the level of adherence to standards and professionalism of Multinet contractors and supervisors.

During its most recent safety audit, Energy Safe Victoria reported a total of 19 observations, one recommendation and no instances of non-conformance.

Figure 2-11 shows publicly reported gas escapes by year for seven years from 2004. It illustrates a reasonably flat profile of the frequency of reported escapes, with minimal variance. Over the period shown the majority (55%) of the confirmed escapes are meter escapes.

Figure 2-11: Reported gas escapes in Multinet's service area from 2004 to 2010



The immediate major threats to security of gas supply to Multinet's customers are incidents upstream of Multinet's network, and third party damage to Multinet assets. Upstream supply diversification, in recent years has reduced, (but not eliminated), the risk of insufficient supply to the Multinet network.

Over the medium term, lack of network capacity could adversely affect levels of service unless adequate and timely investment in reinforcements and upgrading are made at the appropriate time.

A major project is underway to construct a strategic pipeline link from APA GasNet Australia's outer ring main to Multinet's Croydon to Lilydale pipeline. This link will ease the gas supply constraints to the Lilydale area as well as providing long-term security of supply to most of the Multinet inner ring main. The initiation of this major project demonstrates Multinet's commitment to maintaining security of supply of the network.

2.5 Review of current business model

Since 2003, Multinet's business model has centred on:

- A small management structure that conducts strategic management and corporate governance activities both within the distribution business and through services provided by its parent entity, DUET
- A single outsourcing agreement (the Operating Services Agreement or "OSA") with JAM for much of Multinet's direct business operations and a number of corporate and back office functions.

The services provided by JAM under the OSA included:

- **Network services:** including network maintenance, asset surveillance and monitoring, fault and emergency response, new connections and augmentations, operational management, emergency management, SCADA maintenance and repair, construction project management and delivery, meter procurement and management, network information management and provision of dispatch services as required.
- **Asset management services:** including asset strategy, asset investments, asset programs, network planning, network communications, network security, technical compliance and risk management.
- **Customer and market services:** including metering and meter data management, AEMO market systems interfaces, call centre and meter reading services.

- **IT services:** applications management for real time system (RTS) applications used for the Network Control Centre; infrastructure management for legacy infrastructure jointly owned by UE, Multinet and Jemena; provision of the data centre facility at Tally Ho, Melbourne; maintenance of the Tally Ho and Burwood data centre facilities; and project delivery.
- **Control room and dispatch services:** encompassing provision of 24/7 network control and monitoring and SCADA Real Time Systems support as well as provision of 24/7 dispatch services.
- **Corporate functions:** including aspects of regulation, finance, legal services, corporate affairs, human resources, stakeholder relations, revenue & debtor management, and IT management services.

The benefits of an outsourced business model are evidenced by Multinet's strong cost and service performance already described. Nonetheless, Multinet has conducted a review of its business model, with the primary focus relating not to its past performance, but to its future sustainability. Multinet's management, Board and advisors have concluded that the current model is not sustainable for the following reasons:

- A single service provider, operating through a fixed price contract, inevitably creates a dependency between the parties that ultimately creates inefficiencies and risk. As a result, initial cost efficiencies become swamped by concerns regarding operational and contractual flexibility; transparency in cost and service performance; risk management; and value for money.
- There is some evidence of 'cost overshooting', where costs are cut to unsustainably low levels. Cost overshooting occurs in any fixed price contract, like the OSA, where the scope of services cannot be defined with total precision. A solution that focuses on increasingly detailed scope definitions will lead ultimately to uncommercial contract prices to compensate for risk and/or exclusion clauses that allow for 'extras' to be claimed by the service provider.
- A consequence of the low overhead structure and cost overshooting is that the business is unable to change direction as the need arises. In particular, Multinet does not have sufficient control and capability to make strategic decisions to drive long-term sustainable cost efficiencies and service improvements. Instead, the business model 'locks-in' the current service provider, its low cost structure and its working practices. As a consequence, it becomes increasingly difficult to innovate or find smarter ways of delivering customer-focused outcomes.
- The current outsourcing model is ill-equipped to address the challenges ahead, which include the renewal of ageing infrastructure and managing change from Government-led policy initiatives such as the introduction of the carbon tax. The traditional core distribution business functions of planning, strategy and risk management must be brought back in-house.
- Reliance on a single service provider precludes Multinet from contracting directly with 'best of breed' contractors for specialist activities such as, pipeline construction, meter reading or applications management. Opportunities to drive cost efficiencies or service improvements through competitive pressure are currently not available to Multinet.
- Despite incentives to drive costs to unsustainably low levels, the current OSA does not provide JAM with sufficient revenue to cover costs. Even if the current business model were sustainable (which it is not), the existing OSA fee structure is unsustainable. The AER's approach to regulation demands that contracts are subject to an open and transparent competitive tender.

Multinet has concluded that continuing with the current business model would not be prudent or efficient. With the assistance of advisers, AT Kearney, Multinet has examined alternative options for its business operations when the current OSA expires on 30 June 2013. Multinet's decision to adopt a new business model builds from the recent experience of United Energy in successfully restructuring its business.

In its 7/11 project, United Energy took the necessary steps in reforming its business model to better equip it to deal with the challenges ahead. Like Multinet, United Energy recognised that although the OSA provided very strong incentives for JAM to reduce its costs, the OSA did not provide sufficient control to best manage future operational and performance risks from the owners' perspective. United Energy was also concerned

that incentives under the OSA encouraged JAM to "over-shoot" – that is, to reduce costs and to increase risks to United Energy, as owner of the distribution network, to unsustainable levels.

United Energy's new business model is now operational and is delivering significant benefits by exposing external service providers to competitive pressure. For example, better price information has enabled United Energy to challenge prices for vegetation management to avoid cost blow-outs that would otherwise have occurred if the OSA had continued. Increased numbers of internal staff – more than 140 staff are currently shared with Multinet – are also delivering significant benefits in terms of improved control, planning and strategic decision making.

Part of United Energy's new business model included moving away from Jemena for IT services and insourcing the stakeholder relations, revenue and debtor management and outsourced CMS management functions. In mid-2011, United Energy executed new agreements with Logica Australia Pty Ltd and Enterprise Business Services (Australia) Pty Ltd for IT services. Multinet was also made a party to these agreements given it operates from infrastructure it shares with United Energy. It was also decided that when the stakeholder relations, revenue and debtor management and outsourced CMS management functions returned to United Energy in June 2011 that these functions also be returned for Multinet thus ensuring operational synergies could be maintained. These in-house functions are further detailed in section 3.2 below.

In light of the above discussion, it is evident that:

- Multinet's current business model is not sustainable for the forthcoming Access Arrangement Period, despite the fact that Multinet has maintained superior cost and service performance for more than 10 years.
- Continuing with the existing business model would expose Multinet to unacceptable risks and deny customers longer term opportunities for cost efficiencies and service improvements.
- Even if the current business model were sustainable (which it is not), maintaining the existing OSA terms and conditions is not a feasible option from a commercial or regulatory perspective.

Multinet also recognises that a competitive tender exercise provides the best method of selecting outsourced service providers and establishing terms and conditions that satisfy the Rules requirements. The next chapter discusses the design of the competitive tender exercise that has recently been completed, and the positive outcomes that the process has identified.

3. Multinet's new business model: sustainable and efficient

3.1 Key points

This chapter explains Multinet's decision to adopt a new business model, which is underpinned by expert advice and a competitive tender exercise. The main points are:

- As explained in section 2.5 above, Multinet's review of its current business model concluded that it is no longer sustainable, despite Multinet's strong cost and service performance to date.
- In advance of the expiry of the OSA in June 2013, a number of corporate and other management functions that were previously provided by JAM have already been re-established as in-house activities, focusing on corporate and other key functions such as asset management and IT strategy. Multinet and United Energy currently share more than 140 in-house staff located in new offices at Pinewood, Mt Waverley.
- Multinet's decision to adopt a new business model builds from the recent experience of United Energy in designing and successfully implementing its new business model. Multinet's tender process for outsourced services was designed to maximise the competitive pressure between prospective bidders, to achieve the most efficient cost and service outcomes.
- Multinet's selection of outsourced service providers followed a competitive tender and evaluation process that examined capability, price, service quality and business risk. The efficient and sustainable delivery of services is underpinned by new terms and conditions that align the interests of Multinet and the outsourced service providers.
- Multinet's approach carefully examined opportunities to engage more than one service provider where it is efficient to do so. For information technology and customer and market service functions, Multinet concluded that inter-region competition would be impractical and would not provide an overall benefit. For network operations, Multinet accepted the advice of its consultants, AT Kearney, that a two region model would achieve the lowest sustainable costs.
- The specific benefits of a two-region model for Network Operations are:
  - Efficient risk management, by reducing Multinet's reliance on a single provider of operations services
  - Creating a more competitive model under which there is benchmark competition on price and service performance, and actual competition for medium and large capital works, and other yet-to-be-priced activities
  - Providing tangible, continuous competitive pressure on contractors, by enabling Multinet to amend the scope of work between the competing contractors in response to relative changes in cost and/or service performance
  - Reducing barriers to entry and exit, and thereby minimising the risk and cost to Multinet of changing its service providers in future, in the event, for instance of unacceptable contractor performance.
- In its decision to adopt a two region model, Multinet also considered the benefits recently achieved by United Energy through its new two region model. The model enabled United Energy to compare the service providers' proposed charges for vegetation management. As a result, United Energy was able to obtain the lowest priced bid from both service providers in a way that would have been impossible in a single service provider model. This experience reinforced the advice of our consultants that a two region model for Network Operations should be adopted as the preferred model.
- It is normal business practice to include a contingency amount to a contract offer from an external service provider. This reflects the commercial reality that outturn costs are typically higher than the service provider's forecast as a result of cost overruns or scope changes. In a two region model, however, Multinet is willing to back itself to deliver to the service providers' forecast costs. Multinet regards this commitment as a further tangible benefit of the two region model.

- Multinet's new operating structure is aimed at:
  - Ensuring that the company's cost and service performance are maintained at sustainable, industry leading levels
  - Providing high levels of service that accord with the needs and preferences of customers; and
  - Ensuring that the company's cost structure and resourcing arrangements are efficient and flexible.
- Multinet is confident that its new business model will achieve a level of operating and capital expenditure consistent with that incurred by a prudent service provider acting efficiently, in accordance with accepted good industry practice, to achieve the lowest sustainable cost of delivering pipeline services.

The remainder of this chapter is structured as follows:

- Section 3.2 describes Multinet's new business model
- Section 3.3 describes the competitive tender exercise and the selection of outsourced service providers for the new business model
- Section 3.4 provides concluding comments.

3.2 Multinet's new business model

Section 2.5 explained why Multinet concluded that its current business model is unsustainable. Multinet's decision to implement a new business model follows the successful business restructuring initiatives commenced by United Energy in early 2009 (through its "Project 7/11"). Multinet's business restructuring leverages off the experience and benefits already achieved by United Energy.

In advance of the expiry of Multinet's OSA in June 2013, a number of corporate functions that were previously provided by JAM have already been re-established as in-house activities. These in-house functions, described below, are shared with United Energy in order to minimise the costs for both companies:

- **Regulation**. Management of all matters relating to economic regulation is a key strategic function which is now undertaken by in-house resources.
- **Finance**. In line with more conventional utilities, Multinet is now responsible for financial accounting, budgeting and forecasting, financial control, tax, back office treasury functions and accounts payable.
- **Legal/Commercial**. Multinet and United Energy were previously supported by a small commercial function with general legal support (i.e. execution of leases and easements) provided by the outsourced supplier. Multinet now has a stronger capability to negotiate commercial outcomes and to manage commercial processes for ongoing competitive procurement of outsourced services.
- **Corporate Affairs**. Corporate, Media and Government Affairs is a core in-house function. Multinet considers that it must manage its own relationships and communications with the Government, industry and customers.
- **Human Resources**. The increase in internal resources necessitates a greater focus on Human Resources. A strong HR capability allows Multinet to better manage its people and drive for better outcomes.
- **Stakeholder Relations**. Multinet is taking greater responsibility for customer outcomes by ensuring that stakeholder relations and issues are managed in-house.
- **Revenue & Debtor Management**. This is a core function for most conventional utilities. The customer aspects of this function require that Multinet performs this function in-house.
- **IT Management Services**. Distribution businesses are increasingly reliant on information technology. By establishing an in-house IT management capability (with routine processing and support still being outsourced), Multinet is developing its own sovereign IT environment which will enable the company to adapt its IT systems efficiently and flexibly in response to its changing needs.

In view of the substantial progress made by United Energy in its business transformation initiatives, as well as its own experience in managing outsourcing arrangements, Multinet has examined alternative options for its business operations beyond the current contracted period. Throughout this review process, Multinet has sought the assistance of AT Kearney as its principal advisors on outsourcing arrangements. At a high level, Multinet's objectives for the new business model are:

- Ensuring performance at industry leading levels through efficient and flexible service delivery and innovative asset management solutions
- Providing high-performance customer service
- Ensuring that cost structure and resourcing arrangements of the business are efficient.

At the same time, Multinet is fully aware that its new business model must satisfy the regulatory criteria governing capital and operating expenditure, as set out in rules 79(1) and 91(1) of the National Gas Rules. These rules require that capital and operating expenditure:

> *"must be such as would be incurred by a prudent service provider acting efficiently, in accordance with accepted good industry practice, to achieve the lowest sustainable cost of delivering pipeline services"*

The AER has established a framework for examining contracts with outsourced service providers. The presumption of this framework is that only contracts that have been let through competitive tender can be relied upon by the AER for the purposes of establishing operating or capital expenditure forecasts. Multinet has therefore been conscious of the importance of ensuring that its new business model and its selection of outsourced service providers satisfies the AER's requirements in addition to the ordinary commercial standards expected of a company's management and Board.

In light of the above commercial and regulatory requirements, AT Kearney developed a three step approach to guide the design of Multinet's new business model, as described below.

- Step 1 – Develop a functional model for the business

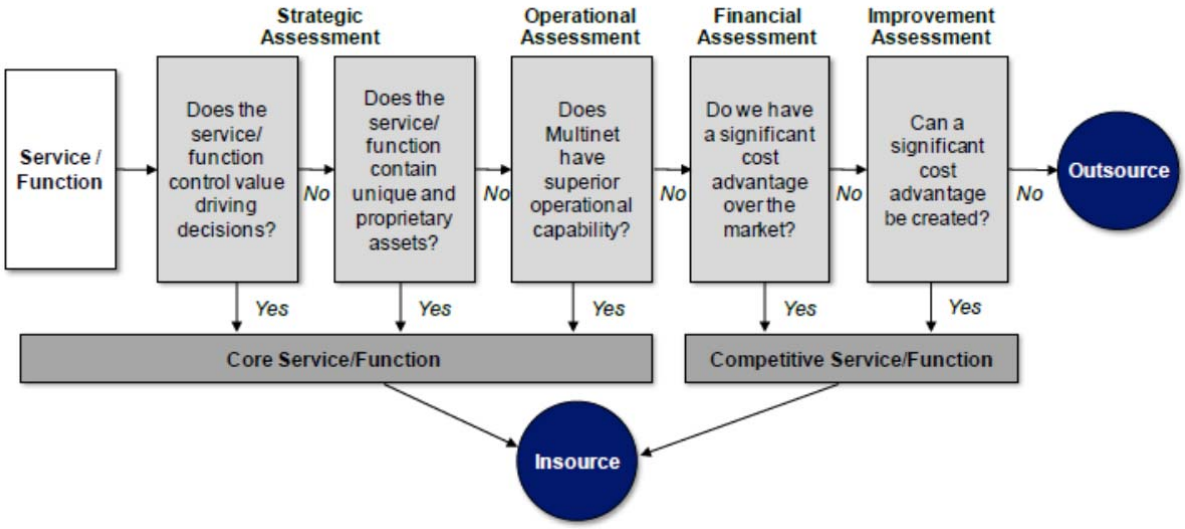
The development of Multinet's functional model considered all the activities of the business, independent of current sourcing arrangements. These fall into four major groupings:

  - Corporate Services
  - Network Operations
  - Customer and Market Services
  - Information Technology.

- Step 2 – Determine which functions should be performed in-house or outsourced

Figure 3-1 depicts the decision framework that Multinet applied to determine which services should be brought in-house or outsourced.

Figure 3-1: Decision framework to outsource or in-source services



This is the same "buy" or "make" framework that was employed in United Energy's 7/11 project. However, it is important to apply the framework specifically to Multinet, especially as the nature and volume of its work is materially different from United Energy's.

- Step 3 – Determine the number of suppliers for outsourced services

Through facilitated workshops, the third step determines how many suppliers should be asked to deliver the "buy" components. For each outsourced service, this design decision considered the:

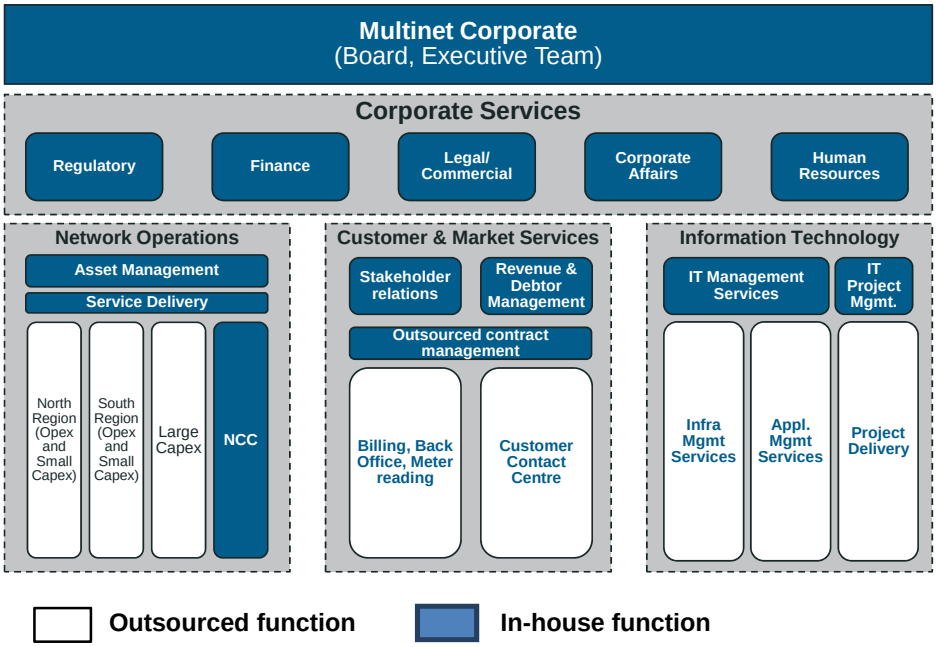
  - Potential benefits from exploiting economies of scale or scope
  - Potential benefits from enhanced competitive tension, including comparative cost and performance data
  - Risk management issues arising from reliance on a single outsourced service provider
  - Any operational issues or risks arising from a multiple region operating model.

In conducting the three step process described above, Multinet also adopted the following overarching principles to guide the development of its new business model:

- Multinet will retain a predominantly outsourced business model.
- Multinet will determine its strategic direction in relation to asset performance risk management, with active input from well-informed service providers.
- Multinet will retain full control of all things necessary to efficiently manage and operate its business, including intellectual property; data; and critical hardware.
- The outsourcing arrangements will incorporate commercial frameworks that align the interests of Multinet and its service providers, and enable ongoing refinement without imposing excessive risk on any one party.
- Multinet's outsourcing arrangements will cause its service providers to act in the interests of Multinet's gas customers via incentives to progressively reduce costs whilst maintaining or enhancing network performance and customer service.
- The outsourcing arrangements will meet all regulatory requirements including access to information and demonstrated efficiency.
- Following a detailed application of the three step design process, and guided by the principles noted above, Multinet determined its preferred end-state business model, which is depicted in Figure 3-2.

As explained Section 0, the preferred model was tested and subsequently confirmed through a competitive tender process and analysis of the feasible, alternative business models.

Figure 3-2: Multinet's end-state new business model



In broad terms, the new business model maintains a strong focus on outsourcing, with the aim of building on the cost efficiencies that outsourcing has so far delivered, and improving the financial and operational performance of the business. Particular areas of improvement under the new model include:

- Providing Multinet with strengthened internal management resources and greater strategic management capability
- Enabling Multinet to contract with specialist service providers directly
- Internalising the asset management and IT strategy functions, thereby further strengthening Multinet's capabilities in these core areas of the business
- Enabling Multinet to share the costs of these in-house functions with United Energy.

It is important to note that Figure 3-2 depicts Multinet's view that a two region model for network operations will maximise long-term benefits by; enabling more efficient and effective management of business risk; and delivering savings to Multinet and its customers via continuous competition (for operating and capital expenditure). Further information on Multinet's assessment of the feasible alternative delivery models for Network Operations is provided in section 3.3.

In relation to IT and customer and market service functions, Multinet concluded that inter-region competition would either be impractical or would fail to deliver benefits compared to a single service provider. Multinet's approach focused on securing the best available service providers to deliver these functions for the entire business.

3.3 Competitive tendering for outsourced services

3.3.1 Overview

While Multinet has made its own decisions regarding its future business structure, it has necessarily been influenced by, and benefitted from United Energy's experience in its restructuring and competitive tendering exercise, known as Project 7/11, and the potential benefits of sharing costs. In Project 7/11, United Energy sought a Turnkey Service Provider to manage a consortium of specialist service providers and their subcontractors. In July 2014, the consortium was planned to be disaggregated and United Energy would then operate individual contracts with each of the consortium members. United Energy also decided to adopt a 2 region model for Network Operations Services in order to create competitive pressure between the appointed service providers.

United Energy has successfully implemented the 2 region model for Network Operations Services. As discussed in further detail below, the model has already delivered substantial benefits. Rather than appoint a Turnkey Service Provider, however, United Energy and Multinet identified an opportunity to contract jointly with specialist service providers in relation to Customer and Market Services and IT Services. The decision jointly to conduct competitive tender process and appoint successful bidders will maximise the available synergies for United Energy and Multinet. These synergies are fully reflected in Multinet's expenditure forecasts for the forthcoming Access Arrangement Period. Multinet is conducting its own tender process in relation to Network Operations.

Each competitive tender has been designed to maximise the competitive pressure between prospective bidders to achieve the most efficient cost and service outcomes. In particular, the tender process incorporates the following design principles:

- Minimise the entry barriers to potential respondents
- Adhere to best practise probity protocols
- Avoid inappropriate or inefficient risk transfers to service providers
- Create the foundations for a positive future relationship in which service providers will be incentivised to act in the best interests of Multinet and its customers.

By leveraging off United Energy's experience in Project 7/11, Multinet was able to achieve the following improvements in terms of the tender process and documentation:

- The tender process, documentation requirements and probity arrangements were well understood by management and therefore executed more efficiently.
- Multinet's tender evaluation teams were very well equipped and well trained to analyse bids and negotiate with prospective service providers.
- The residual regulatory issues (relating to substantiation of expenditure forecasts) raised by the AER in United Energy's recent electricity distribution price review were addressed through improved documentation and analysis, including through independent expert reports.
- Multinet adopted the contractual terms and conditions developed by United Energy with the assistance of AT Kearney. These contractual arrangements align the interests of the external service providers and the network business to deliver efficient cost and service performance, and provide full openness and transparency in relation to cost and service performance.

In addition to leveraging directly from United Energy's experience, Multinet also benefited indirectly from the market credibility that United Energy established during Project 7/11. In particular, the introduction of United Energy's new contracting arrangements (including the elimination of JAM's previously dominant position) encouraged prospective service providers to commit significant resources throughout the bidding and evaluation process. This commitment was reflected in the quality of the bids received and the strength of the competition between bidders.

Dench McClean Carlson Corporate Advisory (DMC) was engaged by Multinet to provide probity advice in respect of the tendering process. DMC is a member of the Victorian Government's probity panel administered by the Department of Treasury and Finance and has extensive experience in assessing and advising on the probity of procurement processes. Reports from DMC in relation to the tendering process are provided as appendix to this submission.

In accordance with the advice from DMC, Multinet adopted probity protocols throughout the tender process, which were based on the following principles:

- Integrity and impartiality – treating bids and potential bidders in a fair and even handed manner
- Effective competition – aiming to maximise value for money
- Consistency and transparency of process – objective evaluation against identified criteria
- Security and confidentiality
- Identification and resolution of conflicts of interest.

Multinet's tender process for network operations comprised three stages:

- Expression of Interest (EOI)
- Request for Proposals (RFP)
- Target Cost Establishment (TCE).

A two stage process (EOI followed by RFP) was adopted for Customer and Market Services; and IT Services.

The purpose of the EOI stage was to identify all potential service providers that have the capacity, capability and expertise to provide the services requested jointly by Multinet and United Energy. The responses to the EOI would also inform the final scope of outsourced services to ensure that Multinet and United Energy obtain the best value for money in terms of price and service delivery. As noted above, the decision of Multinet and United Energy to tender jointly ensured that any opportunities for synergies were maximised.

EOI responses were assessed against the following pre-determined criteria:

- Financial stability as evidenced by audited financial statements and commercial credit checks
- Capability in performing the services sought by Multinet
- Bid supported by reference sites and referee checks.

For each of the tenders, in order to ensure that bids were objectively assessed, each of Multinet's EOI Evaluation Teams participated in training sessions. The training session ensured that all team members understood the evaluation methodologies and key protocols set out in each of the EOI Evaluation Plans prior to undertaking the evaluation of EOI submissions.

For Network Operations, EOI responses were also assessed against experience of collaborative contracts, partnering agreements and alliances, and effective management of safety, environmental and stakeholder issues. These criterion were not relevant for the Customer and Market Services and the IT services.

In order to ensure that bids were objectively assessed, Multinet's EOI Evaluation Team participated in training sessions. The training sessions ensured that all team members understood the evaluation methodologies and key protocols set out in the EOI Evaluation Plan prior to undertaking the evaluation of EOI submissions.

The RFP Stage was designed to short-list respondents that demonstrated the greatest ability to deliver the required services and the capability to work cooperatively with Multinet. The following objectives were specifically highlighted to short-listed bidders for Network Operations:

- Outstanding outcomes in service delivery
- Achieving financial and non-financial targets and sharing in under- or over-performance
- Complying with all regulatory requirements
- Achieving industry standard quality and safety performance

- Full co-operation, transparency and openness in the provision and cost of providing the requested services
- Continuous improvement in service performance with the flexibility for Multinet to amend its service delivery model in response to changes in the market and regulatory environment.

Similar objectives were highlighted in the Customer and Market Services and IT Services RFP stages.

Respondents were asked to prepare a qualitative capability submission and quantitative pricing submission. After assessing each of the submissions in response to the RFP, bidders were invited to attend separate workshops to receive feedback on their submissions and to clarify any issues arising. All bidders were provided with an opportunity to revise submissions based on this feedback and to re-submit those submissions for final evaluation.

Importantly from Multinet's perspective, the RFP stage for Network Operations gave bidders an opportunity to provide feedback on Multinet's proposed approach to service delivery in relation to each service package. In addition, bidders were encouraged to propose alternative work volumes and staffing levels based on their own experience. The only exception related to compliance obligations, such as meter testing and refurbishment, where it is appropriate for Multinet to require all bidders to make the same volume assumptions.

It could be argued that bidders for Network Operations have an incentive to bid high work volumes in an attempt to increase profitability. However, the competitive nature of the tender process precludes this possibility. Multinet's evaluation of the bidders focuses on the total costs, which depends on both unit prices and volumes. Therefore, if work volumes are inflated this will lead to an uncompetitive bid, in exactly the same way as inflated unit prices. The competitiveness of each bid therefore depends on submitting efficient prices and efficient volumes, and the bidding process itself is subject to a probity plan and audit. Furthermore, by seeking feedback from bidders, the initial volume forecasts provided by Multinet are effectively subject to independent review.

For Customer and Market Services and the IT Services, the preferred vendors were selected based on the RFP evaluation of Respondent submissions which, as for Network Services, were to required contain qualitative capability and quantitative pricing detail. Contracts were then negotiated with these vendors. Contracts were negotiated with these vendors.

For Network Operations, selected bidders were invited to proceed to the Target Cost Establishment (TCE) stage. The TCE stage focused on developing a

- Detailed proposal to provide the services outlined in the RFP
- Proposal addressing matters relating to the transition of Multinet's business to the desired end-state
- Five-year total target cost for the defined services, in accordance with agreed financial and non-financial incentive arrangements.

This TCE phase was not necessary for Customer and Market Services and IT Services, given the different pricing structures. Refer to section 3.3.2 below.

Multinet's evaluation criteria at the TCE stage included qualitative and quantitative assessments, as shown in the table below.

Table 3-1: Multinet's TCE evaluation framework

Type of assessment	Criteria	Description
Qualitative	Service Delivery Capability	• Capability to fully cover requested scope and meet all of Multinet's requirements in terms of performance and operational compliance
	Transition Capability	• Capability to plan, prepare for and successfully complete the transition from the current service provider
	Cost Transparency and Reasonableness	• Cost transparency • Reasonableness of cost calculations and allocation of costs
	Strategic Fit	• Ability to agree to key commercial terms • Ability to manage the relationship effectively and co-operate with Multinet • Alignment of objectives and outcomes • Ability to meet regulatory requirements
Quantitative	Cost competitiveness	• Completeness/quality of prepared budgets • Reasonableness of costs • Alignment of cost deliverables with Multinet requirements • Overall cost competitiveness

3.3.2 Pricing and Incentive Structures

Network Operations

Multinet has adopted a payment and incentive structure for Network Operations services that employs the following "Three Limb" model:

- Limb 1: Actual cost of service provision, including costs directly incurred in performing and managing the services, and overhead costs directly incurred as a result of performing or supporting the services will be reimbursed on a 100% open book basis
- Limb 2: A margin, generally calculated as a percentage of Limb 1 costs, will be paid to cover pre-existing corporate overheads and provide profit at a level normally made by the service provider on this type of business.
- Limb 3: An incentive regime will operate to reflect actual performance in comparison to various agreed financial and non-financial targets.

The incentive structure anticipates that the upside to the service provider will be capped at a level to be agreed and that the downside will be capped at a value equal to the loss of the Limb 2 margin so that even in the event of very poor performance (leading to full loss of margin) there is no incentive for the service provider to withdraw services). It is important to note that while Multinet has determined the pricing and incentive structure, the competitive tender process will determine the detailed application of each Limb, including the margin in Limb 2.

The central purpose of the pricing and incentive structure is to:

- Provide cost transparency so that Multinet is able to monitor, report and compare costs
- Align the interests of the service provider and Multinet to encourage outcomes that benefit both parties.

Multinet regards the pricing and incentive arrangements as consistent with achieving the lowest sustainable costs whilst maintaining or improving asset performance and service standards for Multinet's gas customers. It reflects the concept of alliance style contracting, which requires a collaborative, incentive driven method of contracting where all the participants work co-operatively to the same end, sharing the risk and rewards in project delivery. This outcome contrasts with the existing business model in which JAM has a strong incentive to minimise short-term operating costs, without sufficient regard to the longer term implications for costs and service standards.

Customer and Market Services

The pricing model Multinet adopted for the CMS Services is as follows:

- Fixed unit rates for meter reading, the fault calls function of the call centre; and
- Full time employee rates plus (fixed) management fees for meter data management (including billing) and call centre functions other than the fault call function.

Given the volume variability, a fixed fee arrangement was not considered appropriate an appropriate pricing structure for any of the CMS Services being tendered.

IT Services

Multinet has adopted a fixed price model for IT Services. This fixed price model is typical of the approach taken in the IT industry and ensures certainty of costs for IT Services.

Multinet did consider whether a time and materials model or fixed price contract would be more appropriate based on the nature of the services and sought responses from the industry during the EOI phase.

3.3.3 Right to match

In the Expressions of Interest document issued in relation to Network Operations services, Multinet stated:

> *"Under the OSA, the current service provider has a right to match an offer Multinet receives from another service provider. This right, however, is only triggered in certain circumstances, namely where Multinet enters into negotiations for and receives an offer from a third party service provider which has the same, or substantially the same, characteristics as the OSA.*
>
> *As noted above, Multinet intends to transform its business and introduce an outsourcing arrangement that is fundamentally different to that contained in the OSA. Accordingly, it is our view that the current service provider's right to match is not applicable to the process that Multinet intends to undertake. The current service provider may, however, choose to participate in the EOI process."*

This approach to the right to match issue ensured that the bidding process remained as competitive as possible without introducing excessive risks into Multinet's transition to the new business model.

The above description illustrates that the design of the tender process has been focused on selecting the most efficient service providers in terms of capability, price and strategic fit. Multinet's new business model reflects the view of management and the Board that this approach is preferable to selecting a single service provider for all outsourced services.

Given that IT Services were removed from the OSA in 2011, JAM's right to match does not apply to IT Services. In relation to Customer and Market Services, JAM declined to participate in any negotiations or bidding process, so the issue of JAM's right to match did not arise.

The remainder of this section examines the tender outcomes for each of the three service packages.

3.3.4 Network Operations tender outcomes

A total of 11 potential suppliers submitted responses to the EOI for Network Operations, of which a total of eight respondents were assessed as being compliant and capable of providing some or all of the services being tendered.

Multinet's Evaluation Team identified five respondents to the Network Operations EOI that should proceed to the next stage of the tender process, the RFP Stage. One bidder withdrew prior to the commencement of the RFP stage.

Commercial confidentiality precludes Multinet from providing a detailed summary of each of the bids in this document. Details are contained in the relevant probity reports.

Multinet's Evaluation Team met on 18 August 2011 to review the outcome of the evaluation and recommended that no more than two respondents – being the highest ranked respondent and either of the two second ranked respondents – should progress to the TCE stage. The Evaluation Team sought guidance from the Decision Team on the relative risks and benefits associated with the two second ranked respondents. Two respondents, including the highest ranked, were selected for the TCE stage.

The TCE stage enabled bidders to revise their proposals following further discussion and exchange of information with Multinet. Comdain provided the lowest cost bid in relation to both the operating and capital elements of the Network Operation service package. The qualitative aspects of Comdain's bid were also acceptable to Multinet. Multinet therefore needed to consider whether it should appoint Comdain for one or both of the two regions; or whether the service provider should be selected for the other region.

At this stage of the tender process, Multinet paused to reconsider its options for delivering Network Operations. The purpose of this reassessment was to examine all feasible options, both in terms of Multinet's future business model and the choice of pricing arrangements. The objective of this further review was to ensure that the selected approach achieved a commercial outcome that provided Multinet and its customers with an optimal outcome and was consistent with the Rules requirement that operating and capital expenditure should be prudent, efficient and deliver services at the lowest sustainable costs.

With the assistance of AT Kearney, Multinet sought a detailed evaluation of the following options for the delivering Network Operations:

- Option 0: Maintain the status quo and employ JAM on a fixed priced contract (i.e. OSA). This option was included because comparisons with the status quo are unavoidable, even though the current model is regarded as unsustainable for the reasons outlined in Section 2.5.
- Option 1: Change existing contracting arrangements with JAM towards a variable pricing arrangement. This option would require the close management of JAM's pricing to ensure that budget overruns are minimised.
- Option 2: Migrate towards Comdain as a single network provider on a variable priced contract. This option would also require the close management of Comdain's pricing to limit budget overruns. In this option, Comdain would require significant support as it gains familiarity with the network.
- Option 3: Transition to two geographic network regions by employing JAM in one region and Comdain in the other. This option attempts to create a competitive environment in order to improve service delivery and pricing.

It should also be noted that 6 other options, comprising different combinations of service providers and contractual arrangements, were considered but not explored in detail because they were not regarded as feasible.

Each option of the four examined options has its own pros and cons. The key findings from AT Kearney's analysis were as follows:

- Option 0 – the status quo – was found to be more expensive than Option 3, and therefore was rejected.
- Options 1 and 2 would result in Multinet continuing to rely on a single outsourced service provider for Network Operations.
- Option 3 entails greater management effort from Multinet, but avoids many of the difficulties associated with a single service provider model. AT Kearney assessed this option as providing the lowest sustainable costs.

It is worth re-capping on the likely benefits of a two region model for Network Operations.

- **Continuous price competition**. Rather than relying solely on an initial tender exercise to deliver competitive costs over a five year period, engaging two parallel service providers on a fully open-book basis will provide continuous visibility of their relative efficiency, and explicit cost benchmarking. This will create an environment of continuous price competition between the providers throughout the term of the contract.

  United Energy's recent experience in relation to vegetation management costs is highly relevant. United Energy operates a two region model and was offered substantially different prices for vegetation management in each of the two regions. The competitive process led to both service providers adopting the lowest quotation, and United Energy avoided significant cost blow-out that would have occurred in a single region model.
- **Flexibility with contractors**. Having two service providers enables Multinet to change contractors with more agility in the future, by removing one of the contractors, or up (or down) sizing the two regions with relative ease dependent on prices. This flexibility also reduces future transition costs in the event that Multinet decides to change one of the regional service providers.
- **Lower capital expenditure**. Having two service providers with full scale operations ensures there are at least two parties with the requisite capabilities and network knowledge to bid for any capital projects. Both parties will be able to price in and leverage synergy benefits from their existing work on the network. This will ensure Multinet can consistently obtain the best possible prices for capital projects. Additionally, Multinet's service contracts minimise explicit exclusivity, enabling very large capital projects to be tendered openly.
- **Lower operational risks**. Multinet would no longer be solely dependent on the operations of one provider to keep the network up and running, and this reduces Multinet's operational and financial exposure to that counterparty. Rather, Multinet will take on the risk of two contractors, but at all times it will have back up capability in the event one of the service providers fails to meet their obligations.
- **Lower contingency**. It is normal business practice to include a contingency amount in budgets to reflect the likelihood that outturn costs will be higher than the service provider's tendered bid price as a result of scope changes and cost overruns. In a competitive contracting arrangement with two service providers, the need for contingency is much reduced as service providers are less able to claim extras. In a two region model, Multinet will back itself to keep contingencies to zero.
- **Reduced future transition risks**. Having two parallel service providers reduces the costs and risks associated with any future transition (for instance, switching service providers) because any such changes can be pursued for a part of the business, rather than the whole of the business, at any one time.

AT Kearney recommended that Option 3 – with JAM and Comdain operating the North and South regions respectively – would provide the most efficient and prudent business model for delivering Network Operations. Multinet's management also concluded that this two region model will deliver the lowest sustainable costs and achieve the best outcome for Multinet's customers.

Multinet concluded that real world experience must be brought to bear in selecting the preferred business model and contracting approach. All bids from service providers must, for example, be examined in the context of the contract terms and conditions and the likely operation of those terms and conditions in practice. Ultimately, Multinet relied on advice from its consultants, AT Kearney, and Multinet's own commercial experience to determine that the two region model should be adopted. Multinet's Board endorsed AT Kearney's recommendation, noting the benefits that have been achieved by United Energy in its two region model.

Multinet is confident that the selection of Comdain and JAM to provide Network Operations under a two region model is the most prudent and efficient outcome in light of Multinet's particular circumstances. Further details of the forecast expenditure for Network Operations are provided in Chapters 4 and 5.

3.3.5 Customer and Market Services tender outcomes

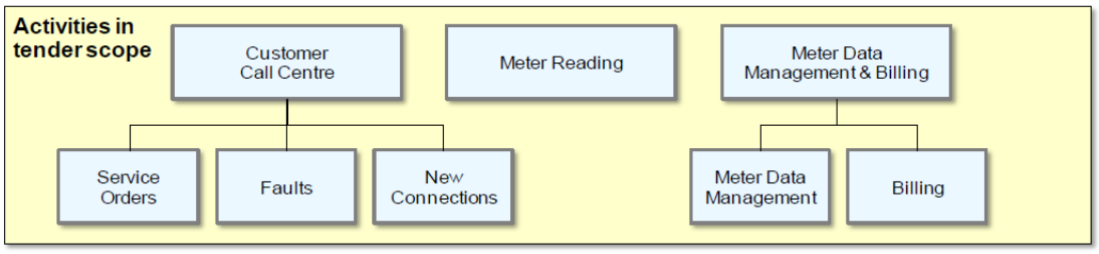
Multinet and United Energy conducted a joint EOI for Customer and Market Services. The joint process commenced in July 2011, immediately following the transfer of some functions from JAM back to Multinet and United Energy. As a consequence of bringing strategic resources back in-house, Multinet and United Energy concluded that the best course of action would be to conduct jointly a competitive tender for Customer and Market Services to secure the best prices and synergies for both United Energy and Multinet.

In the joint tender exercise, Multinet and United Energy sought responses from parties who have the capacity, capability and expertise to supply the following service packages:

- A customer call centre
- Meter data management and billing
- Meter reading.

Figure 3-3 provides an overview of the scope of these activities. A more detailed breakdown of the activities that will be provided by outsourced service providers and by Multinet's in-house staff is provided in section 4.5.3.

Figure 3-3: Scope of outsourced Customer and Market Services activities



A detailed description of each service package was provided in the EOI. To maximise the potential competition between prospective service providers and to minimise barriers to entry, Multinet and United Energy made it clear that respondents were not required to tender for all three service packages.

A total of 12 potential suppliers submitted responses to the EOI for Customer and Market Services, of which a total of 11 respondents were assessed as being compliant and capable of providing some or all of the

services being tendered. Based on the following criteria, four service providers for each function were selected to proceed to the RFP stage:

- Criterion 1 – Stability of the service provider's financial and corporate structure
- Criterion 2 – The service provider's experience and capability in performing the services.

Commercial confidentiality precludes Multinet from publicly disclosing details of individual bids, but the following observations highlight some of the issues that were considered in the evaluation process.

- A number of responses demonstrated a strong track record in delivering the services sought by Multinet.
- A number of bidders for call centre services did not have any inbound call experience for fault management and new connections, which are critical components of this service package.
- Some bidders were unable to demonstrate strong financial stability, and provided evidence of only moderate service performance.

Following Multinet's Evaluation Team's recommendations, four service providers for each service package were shortlisted to proceed to the RFP stage. The four service providers shortlisted to provide the customer call centre service package were also shortlisted to provide meter data management services. Each of these four bidders submitted compliant bids in response to the RFP.

In relation to the meter reading service package only two of the four selected bidders provided compliant bids in response to the RFP.

Commercial confidentiality precludes Multinet from publicly disclosing information on the bids received in response to the competitive tender exercise. Confidential details are contained in the probity reports.

Multinet's evaluation process included detailed negotiations with bidders to explore issues arising from the response to the RFP and opportunities for improving the price-service offering. The negotiation process concluded with a "Best and Final Offer" from selected bidders. The following service providers were selected as providing the best offer in terms of capability, pricing and business risk:

- Aegis was selected as the preferred service provider for the customer call centre and meter data management service packages
- Skilltech was selected as the preferred service provider for the meter reading service package.

A detailed negotiation of final terms and conditions followed the selection of the preferred outsourced service providers. The outcomes of these negotiations are reflected in the operating expenditure forecasts for the forthcoming Access Arrangement Period, as explained in section 4.5.4.

3.3.6 Information Technology tender outcomes

Multinet and United Energy jointly issued the EOI for IT Services on 4 August 2011. The joint procurement process is necessary for IT given that Multinet and United Energy jointly own a number of IT assets.

The EOI sought the following IT Services:

- Service Management (e.g. service desk)
- Application Management
- Infrastructure Management.

The application platform is based around a suite of core business applications which provide the majority of business functionality. There are approximately 10 core corporate applications used by Multinet and United Energy including SAP, webMethods, Vitria, GE Smallworld and Itron. In addition to the core applications, there are approximately 120 other applications, tools and services.

Multinet and United Energy currently utilise products from major infrastructure vendors including Microsoft, Dell, Cisco, VMWare, HDS, Oracle and Symantec. A number of projects are currently underway to update

and relocate existing information technology systems. These projects include the replacement of existing applications and infrastructure. Details of the projects that are scheduled for the forthcoming access arrangement period are provided in Chapters 4 and 5 of this document.

In broad terms, Multinet and United Energy expect that the future technology landscape will consist of a combination of Multinet, United Energy and service provider applications and infrastructure. It is essential that these systems facilitate Multinet's new business model, which outsources service packages to different service providers. For example:

- To provide customer call centre services, the service provider must be able to access outage management systems to handle fault queries; billing information to handle network billing queries; and enterprise resource planning systems to handle new connections and other service orders
- To provide meter data management services, access must be provided to meter data management systems such as Itron IEE/MTS, SAP IS-U and MSATS.

United Energy and Multinet received 20 EOI submissions.

The EOI evaluation team scored each submission with reference to financial stability and service providers capability criteria (in terms of capacity, past experience and performance in providing similar services). The EOI evaluation team recommended that nine service providers should be invited to respond to the service packages in the RFP stage. The selection of service providers represented an optimal mix of large and small players.

Following feedback from bidders, Multinet and United Energy elected to combine the service management and infrastructure management packages into a single package. The RFP document therefore allowed respondents to bid for application management and/or service and infrastructure management.

Multinet and United Energy received three compliant and competitive bids for IT Service Management and Infrastructure Management, and four bids for Application Management. Two of the four bids in relation to Application Management were discounted on the grounds of price and completeness.

As noted in relation to the other outsourced services, commercial confidentiality precludes Multinet from publicly disclosing information on bids received in response to the RFP for IT Services. Detailed information is contained in the probity reports.

Multinet and United Energy undertook a detailed evaluation of the responses to the RFP and engaged in further discussions and negotiations with the bidders. Following this detailed review, the evaluation team concluded that:

- Accenture should be selected as the preferred service provider for the Application Management service package
- Logica should be selected as the preferred service provider for the Service and Infrastructure Management service package.

3.4 Concluding comments

Multinet has recognised the commercial and regulatory limitations of its current business model, which is unsustainable beyond its expiry in July 2013. Multinet's new business model maintains a strong emphasis on outsourcing, but also provides the company with enhanced strategic capability and much improved visibility and control of costs and service performance. The new business model provides a basis for efficient long-term risk management, and reflects advice from industry and outsourcing experts that it will achieve the lowest sustainable costs in accordance with prudent and efficient business practices.

The selection of outsourced service providers reflects the application of a comprehensive competitive tender and evaluation exercise, supported by a sound probity plan and probity audit process. Multinet's competitive tender process is the most thoroughly tested and comprehensive process ever presented to the

AER. Multinet is confident that the new business model will deliver expenditure outcomes that are consistent with the requirements of the National Gas Rules and National Gas Law. The new business model will deliver the most efficient outcome in terms of price, service and risk.

4. Forecast Operating Expenditure

4.1 Introduction

This chapter presents Multinet's operating expenditure forecasts for the forthcoming Access Arrangement Period, as required by rule 76(e) of the National Gas Rules. The criteria governing forecast operating expenditure are set out in rule 91(1), as follows:

> *"Operating expenditure must be such as would be incurred by a prudent service provider acting efficiently, in accordance with accepted good industry practice, to achieve the lowest sustainable cost of delivering pipeline services."*

As explained in Chapter 3 of this AAI, Multinet's new operating structure is designed to deliver performance at industry leading levels; provide high-performance customer service; and ensure that the company's cost structure and sourcing arrangements are efficient and flexible. Furthermore, as part of implementing its new structure Multinet adopted a flexible and rigorous competitive tender process which was designed to ensure that bidders provided the optimal mix of services to achieve the lowest sustainable total costs.

The purpose of this chapter is to explain how Multinet has combined the outcome from the competitive tender process with its forecasts of internal costs in order to derive operating expenditure forecasts for the forthcoming Access Arrangement Period. The remainder of this chapter is structured as follows:

- Section 4.2 describes Multinet's operating expenditure categories and provides an overview of the company's operating expenditure forecasts.
- Section 4.3 provides an overview of Multinet's forecasting methodology for operating expenditure.
- Section 4.4 sets out the forecasts of Network Operations expenditure.
- Section 4.5 sets out Multinet's forecasts of Customer and Market Services expenditure.
- Section 4.6 sets out Multinet's Information technology operating expenditure forecasts.
- Section 4.7 details Multinet's corporate services operating expenditure forecasts.
- Section 4.8 benchmarks Multinet's operating expenditure forecasts.

4.2 Operating expenditure categories and overview of expenditure forecasts

Multinet has adopted the following cost categorisation to present its operating expenditure forecasts:

- Network Operations:
  - Field services, which includes network maintenance, asset surveillance and monitoring, fault and emergency response
  - Operational management
  - Emergency management
  - SCADA maintenance and repair
  - Control room and dispatch
  - Asset strategy; compliance; and risk management.
- Customer and Market Services:
  - Customer call centre
  - Meter data management and billing
  - Meter reading
  - Revenue management
  - Stakeholder relations
  - Customer management.
- IT Services:
  - Strategy

  - Service management
  - Application management
  - Infrastructure management.
- Corporate Services:
  - Office of CEO
  - Corporate support services
  - Legal
  - Finance
  - Human resources
  - Regulation
  - Office rental and insurance.

Table 4-1provides a summary of Multinet's operating expenditure for the forthcoming access arrangement period.

Table 4-1: Overview of Multinet's forecast operating expenditure ($m, real 2012)

	YEAR ENDING 31 DECEMBER					Total
	2013	2014	2015	2016	2017	
Network Operations	35.7	38.5	38.9	39.3	39.6	**192.0**
Customer and Market Services	10.8	10.6	10.6	10.6	10.6	**53.2**
IT Services	8.0	8.3	8.1	8.1	8.1	**40.6**
Corporate Services and Other Internal Costs	14.8	14.8	15.1	16.2	16.1	**77.0**
Total	**69.4**	**72.2**	**72.7**	**74.1**	**74.4**	**362.7**

4.3 Multinet's forecasting methodology for operating expenditure

4.3.1 Overview of methodology

As noted in section 4.1 above, Multinet's operating expenditure forecasts must comply with rule 91(1) of the Rules, and therefore Multinet's forecasting methodology must result in forecast operating expenditure that:

> *"would be incurred by a prudent service provider acting efficiently, in accordance with accepted good industry practice, to achieve the lowest sustainable cost of delivering pipeline services."*

Multinet understands that the Rules require the company to provide a genuine operating expenditure forecast that properly reflects Multinet's efficient costs for the forthcoming Access Arrangement Period. Multinet's selection of its preferred business model and outsourced service providers necessitated the development of a detailed bottom-up operating expenditure forecast. In the context of the Rules and the AER's review process, Multinet considers that the only reasonable approach is to present the same operating expenditure forecasts and methodology that have been used for internal purposes.

In circumstances where a gas distributor's business model is expected to remain essentially unchanged from the current regulatory period, an alternative forecasting operating expenditure approach is known as the 'year 4 method'. This forecasting methodology recognises that the expenditure in the forthcoming

Access Arrangement Period is likely to be closely related to the actual operating expenditure incurred in the most recent year, which is 'year 4' of the current regulatory period. In addition, rule 71(1) allows the AER to infer that the actual operating expenditure is efficient if the service provider has been subject to incentive mechanisms that reward efficiency.

Under this 'year 4' method, forecast operating expenditure is projected forward from the efficient 'year 4' base to reflect any forecast changes in the scope and scale of service outputs and any forecast price escalation for labour and materials. In some cases, it may be appropriate to adopt a 'zero based' budgeting approach for particular operating expenditure categories where it is known that year 4 actual costs do not provide a reasonable basis for forecasting future operating expenditure. The AER has recently explained this type of adjustment as follows[5]:

> *"The AER recognises Powerlink may be subject to changes in regulatory obligations or the operating environment that are not reflected in its base year expenditure. The base opex should therefore be adjusted to account for these 'step changes'."*

In Multinet's case, its operating environment will change radically in the forthcoming Access Arrangement Period to address the unsustainable aspects of its current business model, as explained in Section 2.5, and prepare the businesses for the new challenges ahead. For these reasons, the 'year 4' forecasting methodology would be totally inappropriate for Multinet's circumstances. The methodology would wrongly assume that the existing business model would continue in circumstances where Multinet has concluded that it is unsustainable. The planned changes in Multinet's operations in the forthcoming Access Arrangement Period include:

- A reassessment of the scope and scale of services required to deliver sustainable outcomes for customers in the forthcoming and subsequent Access Arrangement Periods
- Substantial changes to the services provided by outsourced service providers, and the terms and conditions for the provision of those service
- New outsourced service providers and contractual arrangements that require substantially greater strategic and operational engagement from Multinet
- Significant increases in Multinet's in-house capability which is achieved through staff sharing arrangements with United Energy
- An overhaul of the governance and cost reporting arrangements to achieve better control and service delivery for customers.

Such material changes to Multinet's operating environment and cost structure are incompatible with a 'year 4' forecasting method, which implicitly assumes status quo conditions will be maintained. Multinet therefore considers that a 'year 4' forecasting methodology would not satisfy rule 74(2), which states that:

> *"A forecast or estimate:*
>
> *(a) must be arrived at on a reasonable basis*
>
> *(b) must represent the best forecast or estimate possible in the circumstances."*

[5] AER, Powerlink transmission determination 2012/13 – 2016/17, Draft Decision, November 2011, page 186.

In contrast to a year 4 forecasting methodology, the approach adopted in this Chapter reflects the best available information, including:

- Multinet's Asset Management Plan, which seeks to minimise total cycle costs by establishing effective and efficient maintenance and replacement practices, taking into account issues of safety, cost, risk and reliability
- Multinet's requirements for Customer and Market Services, which recognise the changes to Multinet's IT infrastructure and the impact of regulatory changes such as the National Energy Customer Framework
- Multinet's IT strategy, which has been developed with the assistance of Deloitte and in accordance with guiding principles that are focused on delivering the lowest cost, sustainable IT solutions
- Multinet's corporate plan, which reflects a rigorous assessment of those services that are best provided in-house in order to achieve the lowest sustainable cost, whilst providing services that meet the needs of Multinet's customers
- The results from the competitive tenders which have been conducted in accordance with comprehensive probity plans and an evaluation framework designed to drive the lowest cost, sustainable solutions and deliver best practice contractual terms and conditions.

In summary, Multinet's forecasting methodology for operating expenditure is a bottom up assessment of the network and non-network expenditure required to deliver safe and reliable services to customers at the lowest sustainable cost. It is consistent with rule 91 which requires that Multinet's operating expenditure should be such as would incurred by a prudent service provider acting efficiently, in accordance with accepted good industry practice, to achieve the lowest sustainable cost of delivering pipeline services.

The forecasting method adopted by Multinet reflects its specific circumstances and the best available information, both in terms of the required service outcomes and the costs of delivering these outcomes under a competitive market-based business model. Multinet's forecasting methodology therefore also satisfies the requirements of rule 74(2).

4.3.2 Presentation of forecasts

In presenting and explaining the operating expenditure forecasts for the forthcoming Access Arrangement Period, Multinet has focused close attention on the issues previously raised by the AER in United Energy's electricity price determination. The United Energy determination is relevant because, like Multinet, United Energy had embarked upon a project to transform its business model. In United Energy's review, the AER commented that forecast operating expenditure is the product of forecast work volumes and unit prices for in-house and outsourced services. Conceptually, this approach builds the operating expenditure forecasts from four elements:

1. Forecast unit costs for outsourced services
2. Forecast unit volumes for outsourced services
3. Forecast unit costs for in-house services
4. Forecast unit volumes for in-house services

The AER accepted United Energy's forecast unit costs for outsourced services because they were obtained from a competitive tender process. However, in relation to the remaining three elements, the AER concluded that:

- Forecasts of outsourced unit volumes were significantly above historical levels without adequate justification
- Management estimates of in-house costs (that is unit costs and volumes) were not properly substantiated by United Energy.

For the purpose of this AAI, Multinet recognises that examining operating expenditure forecasts in terms of volumes and unit costs has some validity. For example, Multinet has commissioned a Market Remuneration

Report from Geoff Nunn & Associates to estimate salaries for in-house labour (i.e. in-house 'unit costs'). However, analysing operating expenditure forecasts in terms of volumes and unit costs also has a number of limitations. In particular:

- A number of operating expenditure items, such as insurance and rates, cannot readily be analysed in terms of volumes and unit costs.
- An examination of volumes will not recognise the qualitative aspects of output, such as safety and reliability, which are essential aspects of service performance. Specifically, it is difficult – particularly in a time horizon which is much shorter than the relevant asset life – to specify a precise causal relationship between volume of service activity and quality of asset performance or customer experience. For example it is possible to reduce work volumes below sustainable levels with limited visible consequences in the short term, yet still need to restore an asset to good condition for long-term performance outcomes to be recovered.
- Operational improvements in risk management and business systems are further examples of change that are not readily analysed in terms of forecast volumes and unit costs.

More broadly, as noted in Section 4.3.1, the operational requirements of Multinet's gas business are driven by company-wide asset management plans and strategies that are focused on service performance, network reliability and safety; satisfying compliance obligations; and meeting customers' service expectations. In this context, an analysis of operating expenditure based principally on the method of service delivery – whether outsourced or in-house – will not capture the primary expenditure drivers.

In order to provide a comprehensive explanation of its operating expenditure forecasts, Multinet considers that it should explain the rationale for its expenditure plans; highlight changes in scope or volumes; explain the service delivery method; and explain how the forecasts have been derived. Multinet regards this approach as more helpful to the AER and stakeholders than a presentation based on volumes and unit costs for in-house and outsourced services. Therefore, Multinet's operating expenditure forecasts are presented in this chapter as follows:

- Historic and forecast operating expenditure is provided for each expenditure category requested in the RIN.
- For each operating expenditure category, an overall explanation is provided of Multinet's expenditure plans and strategies for the forthcoming Access Arrangement Period to deliver the pipeline services that customers expect. Where possible, differences between forecast and historic requirements are highlighted, including scope changes arising from new obligations; changes to work practices or business processes, technology-driven improvements; increases in customer numbers or network growth; or necessary changes to address service performance or risk management issues.
- For each operating expenditure category, a detailed breakdown is provided showing whether each activity is to be outsourced or provided in-house. This detailed breakdown will assist stakeholders in verifying that activities have been properly identified and allocated to outsourced or in-house service provision.
- For each operating expenditure category or activity, Multinet explains the derivation of its forecast expenditure:
  - Where forecast operating expenditure has been established through a competitive tender, details of the tender are provided (subject to confidentiality).
  - Where forecast operating expenditure has been established by estimating in-house costs, evidence is provided to support the cost estimates. This evidence may include: historic resource levels independent benchmarking of labour volumes and labour rates; material volumes and prices; and forecast escalation rates.
  - A detailed breakdown of cost information from outsourced service providers is not made public in this submission, but will be provided to the AER on a confidential basis. Confidentiality is required in order to ensure that competitive pressure, which is a key feature of Multinet's new business model, continues to apply to the providers of outsourced services.

The information presented in this chapter is supported by reports from suitably credentialed independent experts. These independent expert reports have been included as part of this submission to provide further confidence that Multinet's operating expenditure forecasts and underpinning assumptions are reasonable and comply fully with the Rules requirements.

In addition to the information presented in this Chapter and the RIN, Multinet will also provide the AER with a breakdown of each operating expenditure category by cost source, such as labour, direct costs and outsourced services. This additional information will assist the AER in understanding the relationship between Multinet's new business model and the cost build up for each operating expenditure category. The information will be provided to the AER on a confidential basis.

4.4 Network Operations

4.4.1 Overview of Network Operations forecast operating expenditure

Multinet's forecast operating expenditure for Network Operations is set out in **Table 4-2**.

Table 4-2: Network Operations forecast operating expenditure ($m, real 2012)

	YEAR ENDING 31 DECEMBER					Total
	2013	2014	2015	2016	2017	
Network Operations and Maintenance	29.1	28.1	28.4	28.6	28.7	**142.9**
Asset Management Strategy & Support	6.6	10.4	10.5	10.7	10.9	**49.1**
Total	**35.7**	**38.5**	**38.9**	**39.3**	**39.6**	**192.0**

Table 4-2 shows that the total Network Operations forecast operating expenditure remains flat over the duration of the forthcoming Access Arrangement Period.

It should be noted that the cost incurred by JAM in the current OSA does not necessarily provide a reasonable indication of the lowest sustainable costs for the forthcoming Access Arrangement Period, primarily because:

- JAM has a strong incentive to minimise operating expenditure below a sustainable level – a phenomenon known as cost over-shooting. Therefore, JAM's current costs are not necessarily a good guide to the future costs of delivering sustainable Network Operations.
- It should be noted that JAM has incurred a loss in providing Network Operations to Multinet. Therefore, neither JAM's actual costs nor the OSA fee paid by Multinet provides a reasonable estimate of the future costs of providing Network Operations following the expiry of the OSA in June 2013.
- As discussed in Section 0, JAM's fixed price offer for the forthcoming Access Arrangement Period was not competitive compared to the two region model for Network Operations, which has been adopted by Multinet. It is therefore appropriate to forecast operating expenditure for Network Operations on the basis of the new business model, rather than JAM's fixed fee based on a continuation of the OSA.
- Multinet has identified a number of scope changes for the forthcoming Access Arrangement Period. Therefore, the operating expenditure forecasts for Network Operations should reflect the new scope.

- Costs will be incurred as Multinet transitions to the business model. While these costs are justified with reference to the subsequent savings and service improvements that will be achieved, they are not present in JAM's historic costs. Transition costs are discussed in further detail in Section 4.4.4.

Multinet's forecast operating expenditure for Network Operations is underpinned by Multinet's Asset Management Plan, which is discussed in the next section. An analysis of the differences between historic and forecast operating expenditure is provided in section 4.8 alongside additional benchmarking information which demonstrates that Multinet's forecast operating expenditure is prudent and efficient.

4.4.2 Expenditure plans and strategies for Network Operations

Multinet's Asset Management Plan (AMP) is a six-year plan incorporating Multinet's asset management strategies and operational plans. The AMP details Multinet's plans for achieving appropriate levels of network reliability, capacity and security of supply. Multinet recognises the importance of asset management in ensuring delivery of services that meet the needs of end users and stakeholders. System planning, maintenance and asset replacement are vital components of asset management, with effective asset management having a profound impact on customer service and shareholder value.

Multinet's expenditure plans and strategies for Network Operations determine the volume of work and service outputs for the forthcoming Access Arrangement Period. The following aspects of Multinet's AMP will drive increases in work volumes and service requirements, compared to the current period:

- The recent increase in rainfall (see Section 2.4) has increased the frequency of outages across the low pressure network, due to water ingress. A return to more wet conditions following years of drought has resulted in higher multiple interruptions and complaints. Water ingress to the low pressure system will be dealt with by a combination of targeted pipe replacement (pipeworks) and increased maintenance (tracing water and leak repair).
- The Gas Distribution System Code, AS/NZS 4944 "Gas meters – In service compliance testing" requires sample testing of each family of meters at least once in their initial life. When a meter family fails the acceptance criterion, the family is removed in the next calendar year. These meters are returned to an authorised repairer for refurbishment and re-testing before being returned and installed again. Where meter families are non-repairable the entire family is replaced by purchasing new meters. For meter families that are deemed repairable, generally up to 90% of the meters removed from the field are able to be refurbished. The forecast costs are based on the testing program (which is highly variable) multiplied by the unit rates of the respective contractor.

In relation to the meter program it is worth noting that Multinet has approximately 670,000 installed meters of which 97% were standard small consumer meters with a maximum capacity of $10m^3/h$. Small consumer meters are diaphragm type construction with an expected technical life of approximately 20 to 25 years.

Multinet's meter renewal/replacement program is driven by the regulatory requirements in the Gas Distribution System Code and the need to sample test families of meters at the end of their initial life in accordance with Australian Standard AS4944.

To retain a family of meters in the field after their initial life requires the sampled meters to pass stringent acceptance criteria. Subsequent ongoing in-service compliance periods requires the family to be retested until such time the acceptance requirements are not met, resulting in removal of the whole family in the next calendar year.

In calendar year 2012 Multinet has six families of meters requiring sample testing, this represents a total population of 68,000 domestic meters subject to Field Life Extension testing. Under the current regime of sample testing as per AS4944, total sample population sizes have reduced, as a result of the ongoing in-service compliance period being changed from one year to a maximum of five years depending on the performance of the sample for each family tested.

When a family fails sample testing, the family is removed in the next calendar year. These meters are returned to an authorised repairer for refurbishment and re-testing before being returned and installed again. Tin case meters which are non-repairable are replaced with new meters, while the remaining stock of repairable meters generally equate to approx 90% being repaired with the remaining 10% being purchased as new. There are approximately 5,000 tin case meters still to be removed. The 5,000 tin case meters are made up of a 1987 and a 1988 meter family and are next due to be sample tested in 2012 and 2013 respectively.

The small consumer meter age profile at replacement generally ranges between 15 years and 25 years in the field. Thirty percent of the total population of small consumer meters are between 15 and 25 years old and are a mixture of aluminium and tin case construction, while 70% of the age profile of small meters range between 0 and 15 years. On average a steady number of 30,000 meters are replaced each year in calendar year 2012 this will change to; more than double this figure. This is attributed to all meter families failing their sample testing and the five U6 families with the common leaking fault. A comparable large meter replacement meter program was experienced three years ago.

In the 2013 to 2017 period Multinet has forecast the number of meters to be refurbished to increase significantly based on 2011 data but decrease when compared to 2012 forecast. This is simply a function of the meter age, population mix and meter refurbishment cycle. The spread sheet below provides a summary of the full meter program from 2011 actual to 2017 forecast.

Table 4-3: Meter Profile

	Year Ending 31 December						
	2011	2012	2013	2014	2015	2016	2017
Meter Purchases							
Domestic	15,621	20,142	26,650	12,581	12,275	11,950	13,550
Industrial	786	786	700	600	700	600	700
Total	**16,407**	**20,928**	**27,350**	**13,181**	**12,975**	**12,550**	**14,250**
Meters Refurbished							
Domestic	10,859	55,543	28,980	29,880	31,950	30,150	30,150
Industrial	1,000	880	700	900	700	900	800
Total	**11,859**	**56,423**	**29,680**	**30,780**	**32,650**	**31,050**	**30,950**
Use of Meters							
New Domestic	7,200	5,600	4,900	4,600	5,100	5,600	7,200
New Commercial	184	174	180	180	180	180	180
New Industrial	10	10	10	10	10	10	10

	Year Ending 31 December						
	2011	2012	2013	2014	2015	2016	2017
Repl Domestic	19,280	70,085	50,730	37,861	39,125	36,500	36,500
Repl Industrial	1,592	1,482	1,210	1,310	1,210	1,310	1,310
Total	**28,266**	**77,351**	**57,030**	**43,961**	**45,625**	**43,600**	**45,200**
Refurb/Repl Ratio	**72%**	**75%**	**75%**	**81%**	**82%**	**82%**	**82%**
% Non-Repairable	**28%**	**25%**	**25%**	**19%**	**18%**	**18%**	**18%**

The table above shows the increase in the number of meters that are required in the forecast period. It shows that meter refurbishments increase from approximately 11,000 in 2011 to high of 55,000 in 2012. In the 2013 to 2017 period it remains relatively stable at approximately 30,000 per annum. This figure is based on a rigorous asset management plan that has been assessed by GHD. It is noteworthy that the refurbishment rate has been forecast to increase in the 2013 to 21017 period which has the added benefit of reducing forecast costs.

Multinet has developed its own internal forecasts of volumes for meter testing, meter refurbishment and meter replacement. For all other maintenance activities we have allowed the bidders to bid a price-volume combination based on recent historic volumes. Multinet's decision to establish the meter volume forecast reflects the importance of establishing a robust forecast which is consistent with the compliance obligations in the Distribution Code.

In-house resource requirements were based on an examination of Multinet's previous organisational structure and resource requirements prior to establishing the OSA; FTE requirements of gas networks in Australia and Europe; and JAM's resource levels. These resource requirements are expressed as detailed job descriptions that can be costed according to benchmark industry salaries. To ensure that the outsourced and in-house work volumes reconcile to Multinet's Asset Management Plan, GHD has reviewed both elements.

GHD's report, which is provided as appendix to this document, concludes that:

- Multinet's Asset Management Plan is soundly based and reflects good engineering practice
- Multinet's combination of outsourced and in-house resourcing is efficient and prudent, and reconciles to the work volumes required by the Asset Management Plan
- In accordance with rule 72(2), the volume forecasts have been arrived at on a reasonable basis; and represent the best forecast possible in the circumstances.

4.4.3 Method of service delivery for Network Operations

As explained in Section 3.4, Multinet has applied an analytical framework for determining whether services should be brought in-house or outsourced. In broad terms, Multinet concluded that under its new business model, the following services should be brought in-house:

- All corporate services
- Strategic network management, including asset management and service delivery
- Strategic Customer and Market Services, including revenue and debtor management, stakeholder relations, and outsourced contract management

- Strategic IT management, including strategy and architecture, and management of all aspects of the outsourced IT program.

Table 4-4: Network Operations: Outsourced Service Provision

Outsourced Services	Scope of activities
Network Operations and Maintenance	• Network maintenance • Fault response • New service provisions (customer connections)/disconnects • Operational management • Emergency management – execution • Network information management (data entry, records and drawings) • OH&S management • Operational compliance • Asset Surveillance, Survey, Security and Inspection • SCADA Field RTU and Instrumentation maintenance and repair • Corrosion Protection Services • Fault dispatch (business hours)
Support Activities	• Engineering Support Services • Procurement and logistics execution • Supply chain management • Vehicle fleet management • Maintain gas specific specialist equipment and materials • Dial Before You Dig

Table 4-4 describes the Network Operations services that will be provided in-house by Multinet.

Table 4-4: Network Operations: In-house Service Provision

In-house Services	Scope of activities
Asset Management	• Compliance strategy in all areas • Asset Maintenance and replacement strategy • Network planning and development • Network information management (strategy and analysis) • Development of Asset Management Plans and work programs

In-house Services	Scope of activities
	• Development of asset policies, standards and technical bulletins
Service Delivery Management	• Management of interface with Service Providers for network services • Monitoring of Service Providers operational compliance in all areas • Performance Management • Regulatory Management
Network Control	• Network fault response and after hours fault dispatch • Network Operations pressure management and monitoring • Real time control systems support • Emergency management policy and procedure design

4.4.4 Derivation of Network Operations forecast opex – Outsourced Services

As explained in chapter 3 of this AAI, Multinet's new business model will deliver Network Operations services across two regions.

In analysing the bids from outsourced service providers, operating expenditure forecasts were obtained for the north and south regions separately. Unit rate assumptions and designated FTE numbers were examined to ensure that cost estimates and resources requirements were consistent with the scope of the services to be provided. As explained in section 0, following a detailed evaluation process, Multinet concluded that Comdain and JAM should be selected as the service providers for Network Operations.

The tendered bids from Comdain and JAM cover the outsourced operating expenditure activities described in section 4.4.3. Commercial confidentiality precludes Multinet from publicly disclosing the detailed cost information provided by Comdain and JAM. However, this information will be provided to the AER on a confidential basis.

Multinet's forecast operating expenditure for outsourced Network Operations is set out in table 4-5.

Table 4-5: Network Operations forecast outsourced operating expenditure ($m, real 2012)

	YEAR ENDING 31 DECEMBER					Total[6]
	2013	2014	2015	2016	2017	
Maintenance	10.7	19.9	19.9	20.1	20.1	**90.5**
Network Operations	4.4	8.3	8.4	8.4	8.5	**38.2**

[6] The total is not shown for each sub-category as it relates only to 4.5 years of cost information, and therefore is likely to cause confusion.

	YEAR ENDING 31 DECEMBER					Total[6]
	2013	2014	2015	2016	2017	
OSA Cost (1H2013)	14.0	0.0	0.0	0.0	0.0	**14.0**
Total	**29.1**	**28.2**	**28.4**	**28.5**	**28.7**	**142.9**

Table 4-5 includes Multinet's forecast of operating expenditure for outsourced Network Operations services and the costs of transition to the new arrangements. It is noted that in pursuit of continuous improvement, transition costs may be incurred by any business as it moves to a new operating environment. In Multinet's particular circumstances, transition costs consist of:

- Internal ramp up costs
- JAM transition-out costs, including redundancy costs
- New service provider transition-in costs.

Transition costs will vary for particular categories of services and business models. For example, transition costs would have been substantially higher if Comdain had been selected as the only service provider for Network Operations. As explained in Section 0, however, a single region model would be unlikely to produce the lowest sustainable operating expenditure because it fails to expose the service provider to on-going competitive pressure. It follows that transition costs must be assessed alongside the other costs and service issues that arise from different business options.

Transition costs are also included in the forecasts of other outsourced services (see sections 4.5.4 and 4.6.4). It is noted that these costs comprise approximately 3% of the total operating expenditure forecast, so they are not a significant component of the total forecast.

4.4.5 Derivation of Network Operations forecast opex – In-house Services

As noted in section 4.4.3, Multinet will provide the following Network Operations services on an in-house basis:

- Asset management, including compliance strategies; asset management strategies and planning; and development and maintenance of appropriate asset management policies and standards
- Service delivery management, and managing the delivery of network services by service providers, including monitoring operational compliance; OH&S; public safety and performance management. Multinet's team will relay performance feedback to the service provider as well as manage risks and commercial arrangements
- Network Control, including network fault response and after hours fault dispatch; Network Operations pressure management and monitoring; real time control systems support; and emergency management policy and procedure design.

The operating expenditure forecasts for these services were derived from an assessment of the internal positions that are required to undertake these functions and an estimate of the market remuneration for each position.

In relation to the FTE requirements, Multinet conducted a series of scoping exercises and internal workshops which included input from consultants GHD and AT Kearney based on their experience and international benchmarking studies. Benchmarking studies included an analysis of FTE staff levels of gas networks in Australia and Europe. The scoping exercise also considered all other available comparator information including: Multinet's previous organisational structure and resource requirements prior to establishing the OSA; and JAM's current resource requirements. Importantly, it should be noted that the

FTE analysis recognised that savings would be achieved by jointly resourcing tasks for Multinet and United Energy. The FTE requirements for Multinet fully reflect these savings.

Multinet concluded that its asset management function required specialised FTEs organised in three teams:

- The Asset Strategy and Performance Management team will be responsible for developing the asset strategies and monitoring asset performance to optimise physical asset performance and asset replacement criteria and timing, and deliver network asset and performance improvements.
- The Asset Data Management team will be responsible for the analysis of updated network information stored in the GIS, which provides critical input to the development of asset plans, and strategy and performance management.
- The Network Planning Management Team will be responsible for all planning and evaluation required to: maintain a reliable continuous gas supply to all Multinet's customers; steadily improve network performance (performance capital projects); and develop the network in accordance with customer requirements (customer initiated projects).

These asset management teams require 25 FTEs, comprising the following roles:

- Nineteen dedicated FTEs including Administration Support; Asset Management Administration Support; Asset Manager – Gas; Asset Performance Engineer; Engineer (Graduate); Engineer Network Planning; Metering Engineer; Multinet Asset Manager; Personal Assistant; Procurement - Contract Administrator; Senior Asset Integrity & Performance Analyst; Senior Asset Performance Engineer; Senior Engineer Network Planning; Senior Metering Engineer; Graduate Engineers; and Technical Compliance Engineer.
- Six FTEs for OHSE, technical compliance and risk management functions. These functions are shared across Multinet and United Energy to ensure that both networks can leverage synergies for those functions.

In addition to the asset management functions, Multinet will also provide Service Delivery and Network Control functions on an in-house basis. The internal resource requirements for these activities are:

- Fourteen dedicated FTE for Service Delivery, comprising the following roles: Service Delivery Administration Support; Service Delivery Manager – North; Service Delivery Manager – South; Capex Project Estimator; Contractor Performance Analyst; Contractor Performance Engineer; Contractor Performance Manager; Contractors Performance Analyst; Contractors Performance Engineer; Contractors Performance Manager; Large Capex Manager; Project Performance Engineer; Work Practices officer – Gas.
- Thirteen FTEs for Network Control to manage the operation of the distribution network 24 hours a day, 7 days a week and to respond to network faults and emergencies (Roles include: dispatcher, controller, team leader). The FTE requirements are driven by the expertise that is required to operate a two-shift model '24 hours a day'.

In relation to the remuneration for each position, Multinet commissioned a Market Remuneration Report from Geoff Nunn & Associates. The remuneration rates are based on data from a group of organisations which participated in an April 2011 survey,Market Remuneration in the Power, Water and Utilities Sectors.

Twenty organisations participate in the survey, which has been published annually for more than 10 years. The survey database comprises data on some 200 positions. Geoff Nunn & Associates evaluated each role identified by Multinet using the National Remuneration Centre Jobscore 4.0 system. This system scores each role based on organisation parameters, such as the sector and location; knowledge and skill requirements; and level of accountability. An appropriate salary range for each position was determined by mapping the job score to the survey data and also taking market trends into consideration.

The same approach to remuneration rates has been applied to all in-house functions. Geoff Nunn & Associates conclude that the rates for the positions offer fair and reasonable remuneration based on the

established United Energy and Multinet Gas Remuneration Banded structure and rates payable in like organisations across Australia.

Multinet's forecast operating expenditure for in-house Network Operations is set out in **Table 4-6**. It reflects the FTE resource requirements described above and the remuneration rates assessed by Geoff Nunn & Associates.

Table 4-6: Network Operations – In-house operating expenditure forecast ($m, real 2012)

	YEAR ENDING 31 DECEMBER					Total
	2013	2014	2015	2016	2017	
Asset Management Strategy and Support and network control	6.6	10.3	10.5	10.8	10.9	49.1

Multinet's in-house operating expenditure is comparatively low in 2013 because the OSA continues to operate for the first half of that calendar year. In-house operating expenditure increases slightly in real terms in each year, reflecting modest forecast increases in labour rates.

4.4.6 Summary and conclusions on Network Operations forecast opex

Multinet's forecast operating expenditure for Network Operations shows a step increase of approximately 10% compared to JAM's 2011 costs of providing these services. An important element of this increase is attributable to the increased work volume and enhanced reporting requirements placed on the new service providers. In addition, as Multinet ramps up internal resources to improve its strategic input to Network Operations, it is likely that cost efficiencies and service improvements will be achieved in subsequent regulatory periods.

Multinet has derived the forecast operating expenditure for Network Operations substantially through a rigorous competitive tender exercise. Inevitably, the transition to a two region delivery model leads to higher operating expenditure in the short term. However, the two region model provides significant benefits, as discussed in section 3.4, over the longer term. The two region model is consistent with achieving the lowest sustainable costs in accordance with the requirements of the National Gas Rules.

4.5 Customer and Market Services

4.5.1 Overview of Customer and Market Services forecast operating expenditure

Multinet's forecast operating expenditure for Customer and Market Services is set out in **Table 4-7** below.

Table 4-7: Customer and Market Service forecast operating expenditure ($m, real 2012)

	YEAR ENDING 31 DECEMBER					Total
	2013	2014	2015	2016	2017	
Customer and Market Services	10.8	10.6	10.6	10.6	10.6	53.2

Table 4-7 shows that the forecast operating expenditure for Customer and Market Services is expected to decline slightly over the duration of the forthcoming Access Arrangement Period.

For comparative purposes, the Customer and Market Services operating expenditure incurred by JAM in 2011 was $6.7 million, which is approximately 10% lower than the forecast operating expenditure in 2013. This increase is due to scope change relating to the implementation of the National Energy Customer Framework. Details are provided in the next section.

4.5.2 Expenditure plans and strategies for Customer and Market Services

An important change for Customer and Market Services in the forthcoming Access Arrangement Period relates to the introduction of the National Energy Customer Framework (NECF). NECF will require gas distributors to provide a full range of new connection services to customers, thereby aligning the gas and electricity models. Currently, the receipt and initiation of new connections is a retailer function.

As a consequence, the Customer and Market Services function will need to include the following additional activities in the forthcoming Access Arrangement Period in relation to scheduling and managing new connections:

- Booking the activity as requested by the distribution customer or retailer in relation to new premises connections
- Sending a service order to relevant contractors for any truck appointment commitment
- Liaising between the Distribution Customer and the contractor to confirm arrangements and timing of the booking
- Raising an invoice within SAP or United Energy and Multinet Gas systems and sending this to the Distribution Customer
- Ensuring the work is performed to the standard and timelines required by the Distribution Customer and within industry KPIs
- Recording and completing jobs
- Maintaining an accurate database of all Distribution Customers and recording the details of new connections (including changes to meters)
- Receiving completed field work orders from the field
- Issuing and sending the service order closeout
- Recording any contractor performance issues
- Raising improvement requests as required
- Recording connection activities in United Energy and Multinet Gas systems to enable the distribution billing function to occur.

In addition to these functional changes, a number of important changes are planned to update and relocate Multinet's information technology systems, as follows:

- **Customer and Market Systems Replacement**. This project aims to replace the ageing Multinet Customer Information System (CIS) and Market systems.
- **Real Time Systems Data Centre Relocation**. This project involves the relocation of the existing Real Time Systems data centre.
- **SAP ERP Replacement**. This project will replace the current corporate ERP functionality with a new system.
- **Portal Establishment Project**. This project will establish the infrastructure and application platform for business to employee, business to customer, business to regulator and business to service provider communications.

While these changes will not significantly affect recurrent operating expenditure, transitional costs including training, will need to be factored into the forecast Customer and Market Services operating expenditure for the forthcoming Access Arrangement Period.

An important scope change for the forthcoming access arrangement period relates to the Australian Government's decision (announced In July 2011) to extend the Energy Efficiency Opportunities (EEO)

program to include energy transmission and distribution businesses. The full details of the framework have not been settled, however Multinet expects that the overarching energy efficiency framework and approach, reporting and compliance obligations will remain in place whilst the detail is developed in the regulations.

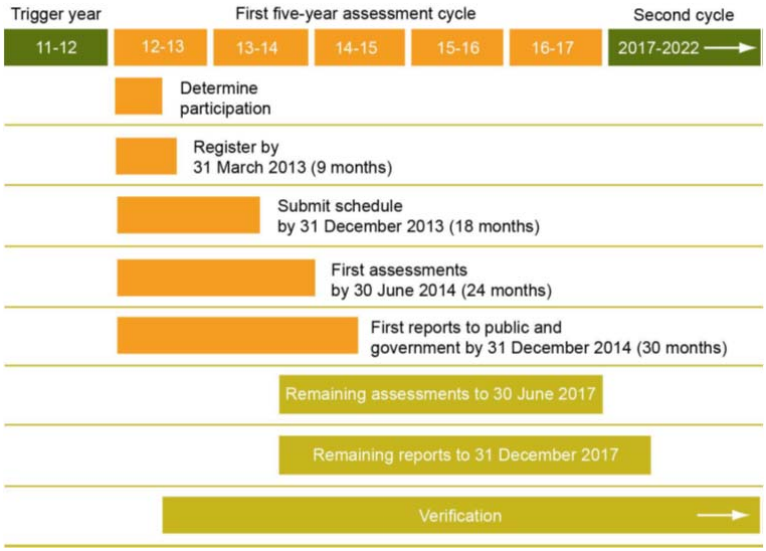
While Multinet already takes into account energy efficiency and UAFG reduction in capital expenditure decisions, the company expects that the application of the EEO will lead to higher expenditure to increase energy efficiency opportunities with certain payback timeframes applicable to gas distributors. There is insufficient information available at this time to include any such additional operating or capital costs in the expenditure forecasts in this AAI.

However, Multinet has identified the additional costs associated with the following EEO program components:

- Determining participation, and registering for the program
- Preparing an assessment plan and submitting this to Department of Energy Resources and Tourism (DRET) within 18 months of the program commencing. This plan will need to baseline energy use and savings data across the business, outline the assessment schedule and how these assessments will be conducted and when Multinet intends to report
- Conducting the assessments on energy uses and identifying cost effective opportunities for improving energy performance with the specified payback. This first assessment will need to cover at least 80% of Multinet's baseline energy use
- Publically reporting activities conducted against the assessment plan and business response, and publishing any other information required by the regulations each 12 month period
- Undertaking re-assessment prior to the commencement of the second five year cycle.

The assessment and reporting framework is shown in the figure below.

Figure 4-1: EEO assessment and reporting framework



Multinet expects that additional costs will be incurred by the company in managing its compliance and reporting against this framework. It is likely that Multinet will use external consulting resources to assist in:

- Developing and implementing the necessary internal systems and processes
- Confirming energy baseline data
- Developing the initial assessment plan
- Undertaking the initial assessment.

A number of regulatory obligations across the business are audited on a regular basis, and Multinet expects that compliance with its EEO obligations would also be subject to regular audit.

The AER will be aware that the Ministerial Council of Energy has been undertaking a national reform process across electricity and gas since around 2004. These reform initiatives include the commencement of the Australian Energy Regulator (AER) as a single national economic regulator and enforcement body for electricity and gas, establishment of the Australian Energy Market Commission (AEMC) as the rule maker and the Australian Energy Market Operator (AEMO) as the single market operator across electricity and gas.

The National Energy Customer Framework (NECF) is one aspect of the national reform process and introduces a national customer protection framework across electricity and gas, and retail and distribution. This transfers most of the remaining distribution and retail regulatory framework from the jurisdictional arrangements with the ESC to national arrangements with the AEMC/AER. There are a number of Victorian arrangements that will continue to be managed in Victoria, e.g. certain clauses of the Gas Distribution Code. Remaining jurisdictional arrangements will be established in a Victorian gap instrument called the Victorian Energy Rules (VER).

The NECF package includes:

- National Energy Retail Law (NERL)
- National Energy Retail Rules
- New connections framework in the National Gas Rules (NGR)
- New retail billing and credit support arrangements in the NGR
- Other consequential amendments in the NGR and the Retail Gas Market Procedures (Victoria).

The legislative package comprising the NERL received Royal Assent in South Australian parliament In March 2011. The Standing Committee of Energy and Resources, formerly the Ministerial Council on Energy,have agreed to target an implementation date of 1 July 2012. At the time of writing this submission, some policy decisions have been consulted in Victoria, however the Application Act and Transitional Acts and underlying instruments such as the VER have yet to be consulted on.

Multinet currently understands that certain transitional arrangement are to be put in place to align key commercial and contractual arrangements with the commencement of the next GAAR period on 1 January 2013. These arrangements were seen as preferable, rather than commencing direct contractual arrangements with customers for connections at a time when the current GAAR caters for a relationship directly between Multinet and the User/Retailer, where the retailer has all the interactions with customers. These provisions all result in additional costs to be incurred by Multinet. These are described below.

- Direct contract with customers

In gas, the retailer is the user of the distribution network and is the only party who contracts with the customer; it is a straight-line relationship. The NECF allows customers to request connection/supply directly from the distributor for both electricity and gas, NECF establishes a triangular contracting arrangement.

- Regulated billing terms and conditions

The Terms and Conditions of the Access Arrangements governs the arrangement between the retailer and distributor in gas and covers billing, payment terms, credit support, customer contracting arrangements and information sharing etc. The NECF replaces some of these agreements with regulated arrangements in the NERR and NGR.

Multinet invoices retailers every two weeks and is able to request credit support where a retailer drops below a certain credit rating. The NECF requires calendar month billing, similar payment terms to current arrangements and a revised risk based approach to credit support.

- National Connections Framework

In gas, the retailer receives all connection requests and paperwork, and requests the distributor to provide the connection offer. Under this arrangement the distributor has minimal involvement with the requesting party unless the connection is complex. The national connections framework allows customers, retailers or developers to request connection/metering and supply from the distributor directly.

The connections arrangements also require a number of connection offer contracts to be developed, including covering new connections and any alterations or additions which underpin a connection inquiry, application, offer and acceptance process.

- Implications of the new Framework

There are a number of implications for the business, ranging from website updates and system and process impacts:

- Implementing new customer classifications for gas will require a schema change to be implemented in Multinet's new IT system
- Billing arrangements will need to cater for monthly calendar billing,with a resultant cash flow impact
- Significant changes to information and potentially outage data for Multinet
- AER approval of basic and standard connection offers for gas, (if adopted)
- AER approval of large customer deemed connection contracts (if adopted)
- Improved customer contract management for Multinet
- Significant ROLR changes for Multinet as NECF accommodates a ROLR event for both 1st and 2nd tier
- Significant changes to compliance regime, significantly more obligations and more frequent reporting.

It is expected that much of the above will be in place in 2012, ready for either a July 2012 commencement or a January 13 commencement. However, industry has yet to establish processes for dealing with customers directly in relation to new connections and connection alterations/additions.

The connections framework covers connection applicant inquiry, connection applicant application process, connection offer for the service sought – basic connection, or negotiated connection and acceptance by the connection applicant. To handle these increased interactions with customers, gas plumbers and real estate developers, Multinet will need to increase the size of its connection team substantially. The fielding of customer calls and missing paperwork is normally handled by retailers, as is the contracting and payment for the service. Multinet is expecting that some of this work handled by retailers in the current access period will in future be handled by Multinet.

A further important scope change for the forthcoming Access Arrangement Period relates to the introduction of a network development plan. This initiative recognises that there are opportunities emerging that would facilitate more efficient gas network utilisation – particularly in the summer months – through the application of new or advanced gas appliance technology, and the provision of price signals that encourage more efficient network usage.

Multinet plans to carry out research and development in relation to these opportunities, focusing on the following areas in particular:

- Conduct feasibility studies on the use of existing electricity AMI infrastructure to enable the integrated reading of gas and electric meters. This would facilitate the introduction of time-of-use tariffs to increase network utilisation by encouraging the take-up of new gas appliances and more efficient usage of existing appliances. The studies would involve: research and

development of technology capability and integration outcomes; development of business cases and identification of possible applications and solutions; and conducting technology trials to determine the feasibility of reading gas and electric meters using AMI infrastructure. The total estimated cost of the studies over the forthcoming access arrangement period is $5 million.

- Conduct feasibility and cost/benefit studies relating to the design of new time-of-use tariffs, and the scope for these to encourage the uptake of new appliance technologies. The studies would involve: conducting industry and stakeholder consultation to consider tariff design criteria; and research into the potential for time-of-use tariffs to encourage the increased penetration of new demand-side technologies such as tri-generation, fuel cells, and gas air-conditioning. The total estimated cost of the studies is $3 million over the forthcoming access arrangement period.
- Develop a detailed customer data warehouse, and use this to assist retailers and appliance manufacturers to target their marketing of gas appliances to residential consumers who do not presently use gas for space and water heating. The total estimated cost of this initiative over the forthcoming access arrangement period is $2 million.

The costs associated with NECF; the changes to the IT systems; and the development plan initiative are scope changes that will be factored into the forecast Customer and Market Services operating expenditure for the forthcoming Access Arrangement Period.

4.5.3 Method of service delivery for Customer and Market Services

The tables below describe those elements of Customer and Market Services that will be provided by outsourced service providers, and by Multinet on an in-house basis, respectively.

Table 4-8: Customer and Market Services: Outsourced Service Provision

Outsourced Services	Scope of activities
Meter reading services	The provision of gas meter reading services including: • Scheduled meter reads (bi-monthly and monthly) • Special meter reads • Disconnections • Special investigations
Meter data management and billing	Distribution of meter data and facilitate market transfers as defined in market rules, including: • Management of meter reading routes and access keys • Meter data validation and substitution • Meter data estimation and forecasting • Provision of meter data to market participants (retailers and AEMO) Provide distribution billing services in line with business requirements including: • Rate maintenance • Charge calculation and generation • Exceptions and error identification • Retailer data files and invoice generation • Billing related query management

Outsourced Services	Scope of activities
Call Centre	Provision of a Service Desk to act as primary point of contact for retailers and end-consumers, including but not limited to: • Billing enquiries • Network tariff re- assignment • Service order requests • Standing data management • Management of planned and unplanned outage notification • Management of Guaranteed Service Levels Provision of a 24 hour, 7 day a week inbound contact service in line with regulatory requirements to receive calls from the general public, record the location of any network (gas and electricity) fault provided by the contacts and initiate orders on the applicable systems. Provision of a network metering connections service to perform the administrative functions associated with the scheduling and processing of service requests for gas and electricity for the following works: • New connections • Connection replacements • Connection alterations and additions

Table 4-9 presents the Customer and Market Services that will be provided by Multinet in-house.

Table 4-9: Customer and Market Services: In-house Services Provision

Outsourced Services	Scope of activities
Customer and stakeholder relations	• Key Customer and Market Relationship Management • Business Development, including the Network Development Plan • Stakeholder Management • Customer Satisfaction Survey
Revenue management	• Finance • Debtor Management • Planning and Analysis
Market services and Interfaces	• Market Services Strategy • Business to Business interface • Management of retailer issues

4.5.4 Derivation of Customer and Market Services forecast opex - Outsourced Services

As explained in section 3.5.5 of this AAI, Multinet undertook an extensive competitive tender exercise to identify the broadest range of prospective service providers that are capable of delivering the outsourced Customer and Market Services. Multinet's evaluation process included detailed negotiations with selected bidders and culminated in "Best and Final Offers" being provided by competing prospective service

providers. Following this extensive tender exercise, the following service providers were selected as preferred bidders in terms of capability, pricing and business risk:

- Aegis was selected as the preferred service provider for the customer call centre and meter data management service packages
- Skilltech was selected as the preferred service provider for the meter reading service package.

In its bid, Aegis identified significant cost savings through the offshore provision of Service Desk back office functions. Importantly, the service quality issues that are often associated with offshore solutions will be mitigated by ensuring that:

- The 'end customer and retailer faced' faults, metering connections and the service desk functions (excluding service desk back office) are all based in Melbourne.
- An Operations and Quality Manager is provided on site to ensure efficient service delivery.
- An offshore operations transition manager will be provided for 12 months to mitigate risks of staged transition.

In addition, data will be maintained in Multinet's data centres and accessed via Multinet's systems, thereby minimising any data security issues. Multinet and United Energy have also undertaken a site visit to gain additional assurance that provision of selected back office services offshore will not compromise service delivery. The expected savings are likely to be approximately $500,000 per annum from 2013 onwards for Multinet.

In addition to identifying these cost saving opportunities, Aegis has been assessed as being a reliable and flexible service provider that has a good understanding of Multinet's business. Multinet is therefore confident that the forecast operating expenditure for customer call centre and meter data management services are the lowest sustainable costs, in accordance with the Rules requirements.

In relation to meter reading services, Skilltech proved to be the strongest bid in terms of capability, pricing and business risk. Skilltech's price advantage reflected its economies of scale in providing meter reading service to numerous clients in the region.

The pricing structure proposed for both the customer call centre (excluding for faults) and meter data management services is FTE rates which are to remain fixed (regardless of ramp up or ramp down) for an initial term of two years and thereafter adjusted each year by CPI. The pricing structure for meter reading and faults includes fixed read and call rates. The negotiated agreements also require Aegis and Skilltech to provide an ongoing 'Best Customer Warranty', which is that pricing is and will continue to be the most economical prices for the services in Australia.

In terms of service performance, Multinet has negotiated Service Level Agreements (SLAs) with both Aegis and Skilltech to ensure that expected performance standards are achieved. SLAs have been split into primary and secondary SLAs based on business criticality. Primary SLA non-compliance invokes a monthly penalty of up to 10% of the monthly invoice. Secondary SLA non-compliance invokes a remediation plan and potential termination if breached consecutively for three months.

Table 4-10 shows Multinet's forecast operating expenditure for outsourced Customer and Market Services.

Table 4-10: Customer and Market Service outsourced operating expenditure forecast ($m, real 2012)

	YEAR ENDING 31 DECEMBER					Total[7]
	2013	2014	2015	2016	2017	
Meter reading services	1.4	2.7	2.6	2.5	2.5	**11.6**
Meter data management and billing	0.1	0.2	0.2	0.2	0.2	**0.9**
Other Costs	0.4	0.4	0.4	0.4	0.4	**2.0**
Customer connections	0.8	1.5	1.5	1.5	1.5	**6.8**
OSA Cost (1H2013)	3.3	0.0	0.0	0.0	0.0	**3.3**
Total	**5.9**	**4.8**	**4.7**	**4.6**	**4.6**	**24.6**

The pattern of operating expenditure for each operating expenditure category is forecast to be stable over the forthcoming Access Arrangement Period. As previously noted, 2013 data is distorted to some extent because the OSA remains in operation until 1 July 2013.

4.5.5 Derivation of Customer and Market Services forecast opex – In-house Services

To determine the internal FTE resource requirements, the Customer and Market Services functions have been grouped into the three areas described below. The identified FTE roles for each function are noted, reflecting the conclusion of Multinet's scoping exercises and workshops.

- **Market Services**: The Market Services function is accountable for the performance of all gas metering for Multinet, all Meter Provision and Meter Data Provision obligations. The function is responsible for the meter asset strategy and performance of the back office.

The identified FTE positions are: Audit compliance controller, Back Office Manager Market Interface, Gas Metering Engineers, Meter and Field Ops Manager, Metering project Manager, Strategy and Technical Manager, Compliance Manager, Gas SME, Market Services Manager.

- **Customer and stakeholder management:** This function includes the activities required to manage key stakeholders, network accounts and customer relations.

[7] The total is not shown for each sub-category as it relates only to 4.5 years of cost information, and therefore is likely to cause confusion.

The identified FTE positions are: Customer & Stakeholder Relations Manager, Customer Relations Manager, Industry Development Manager, Network Account Manager, Retail Account Manager, Stakeholder & Community Relations Advisor, Customer Claims Coordinator, Customer Relations Coordinator.

- **Revenue management**: The Revenue Management function includes the requirement to test and manage tariff strategy and modelling, revenue management, revenue protection and tariff analysis for Gas and Electricity. In addition, the function undertakes broad project management accountabilities across the wider Customer & Market Services and Network Operations activities (as required) to contribute to the delivery of corporate objectives.

The identified FTE positions are: Credit Controller, Credit Manager, Recoverable Works Officer, Revenue Accountant, Revenue Analyst, Revenue Manager, Revenue Support Officer.

In total, Multinet has identified an FTE requirement of 14 staff in order to undertake the above functions. As explained in section 4.8 of this AAI, this level of resources compares favourably with available benchmark data.

In relation to the remuneration for each position, as explained in section 4.4.5, Multinet adopted rates determined by Geoff Nunn & Associates. These remuneration rates reflect market data from 20 companies that participate in a published annual survey, Market Remuneration in the Power, Water and Utilities Sectors. Geoff Nunn & Associates evaluated each Customer and Market Services internal position using the National Remuneration Centre Jobscore 4.0 system. The market remuneration rate for each position was determined by mapping each score to the market data obtained from the annual survey and also taking account of market trends. Geoff Nunn & Associates also ensured that each proposed remuneration rate sits appropriately within the banded structure and rates currently adopted by Multinet.

Table 4-11 shows Multinet's forecast internal operating expenditure for Customer and Market Services.

Table 4-11: Customer and Market Service in-house operating expenditure forecast ($m, real 2012)

	YEAR ENDING 31 DECEMBER					Total
	2013	2014	2015	2016	2017	
Market services, customer and stakeholder management, and revenue management	4.9	5.8	5.9	6.0	6.0	28.6

4.5.6 Summary and conclusions on Customer and Market Services forecast opex

This chapter has explained that Multinet's competitive tender process has secured the following benefits from its new services providers, Aegis and Skilltech:

- significant cost savings through the offshore provision of Service Desk back office functions
- an ongoing 'Best Customer Warranty', which ensures that Multinet enjoys the most economical prices for the services in Australia
- Service Level Agreements which ensure that expected performance standards are achieved.

Multinet's forecast of in-house resource requirements compares favourably with available benchmark data, and adopts remuneration rates determined by Geoff Nunn & Associates from market data. Multinet is confident that the forecast operating expenditure for Customer and Market Services satisfies the requirements of the National Gas Rules and will deliver improved outcomes for customers compared to the current OSA.

4.6 Information technology

4.6.1 Overview of IT Services forecast operating expenditure

Table 4-12 presents Multinet's forecast operating expenditure for Information Technology.

Table 4-12: IT Services forecast operating expenditure ($m, real 2012)

	YEAR ENDING 31 DECEMBER					Total
	2013	2014	2015	2016	2017	
Information Technology	8.0	8.3	8.2	8.1	8.0	40.6

For comparative purposes, the IT operating expenditure incurred by JAM in 2010was more than $11.5 million, which is very substantially more than the forecast for 2013. The significant difference between IT operating expenditure under the OSA and the forecasts for the forthcoming Access Arrangement Period further illustrates the difficulty in making meaningful comparisons with the current business model. The drivers for IT operating expenditure are explained in the next section.

4.6.2 Expenditure plans and strategies for IT Services

Multinet's IT capability will change markedly in the forthcoming Access Arrangement Period. This change will partly be necessary to address several regulatory drivers such as NECF, National Greenhouse Emissions Reporting (NGER), and the Carbon Pricing Mechanism. In addition, there are other regulatory changes which may occur that would affect Multinet's business, and will need to be monitored such as the possible introduction of global settlements.

Apart from the regulatory drivers, an important further catalyst for change is Multinet's new business model. Multinet requires an architecture to support in-house business capabilities such as asset management, finance, and network management. It must also support the outsourcing of other capabilities including works management, schedule/dispatch and mobility to field service providers by defining integration points with third party service providers.

An important design principle in Multinet's IT architecture is "system sovereignty". This principle aims to maintain separate IT environments for Multinet and United Energy, while sharing components where it is feasible to do so. For example, IT infrastructure such as network and storage devices are shared, however the majority of business applications are not shared.

With these objectives in mind, in 2010 Multinet obtained expert advice from Deloitte to develop an IT strategy for Multinet. Multinet adopted the following four objectives to guide development of the IT strategy:

1. Become an innovative and agile utility.
2. Restructure the business delivery model.
3. Prudently manage business risk.
4. Comply with the regulatory framework.

In light of the IT strategy developed with the assistance of Deloitte, Multinet's capital expenditure plans for the forthcoming Access Arrangement Period include significant changes to Multinet IT infrastructure. Details of the proposed capital expenditure are provided in section 5 of this Access Arrangement Information.

For the forthcoming Access Arrangement Period, Multinet's forecast IT operating expenditure must facilitate the changes in Multinet's business model and reflect the IT capital expenditure plans. The competitive tender process described in section 3 of this AAI has ensured that the outsourced services were appropriately scoped to achieve these outcomes.

To support the management of IT systems that are shared between Multinet and United Energy, Deloitte developed a cost sharing model for IT operating costs. The model is based on causal factors that drive IT operating costs, and was approved by the Multinet and United Energy boards in 2010. The IT operating expenditure presented in this Chapter fully reflects the IT strategy and cost allocation developed by Deloitte and approved by the Multinet board.

4.6.3 Method of service delivery for IT Services

Prior to 1 July 2011, JAM provided all IT services for Multinet and United Energy. These services can be generally grouped as follows:

- IT strategy
- Service management
- Application management
- Infrastructure management
- Provision of a data centre facility at Tally Ho, Melbourne
- Maintenance of data centre facilities (including the Burwood data centre owned by UE)
- Project delivery.

From 1 July 2011, Multinet and United Energy agreed with JAM that JAM would only continue to provide the following IT services:

- Application management for real time system (RTS) applications used for the Network Control Centre
- Infrastructure management for legacy infrastructure jointly owned by Multinet and United Energy, and Jemena
- Provision of the data centre facility at Tally Ho, Melbourne
- Maintenance of the Tally Ho and Burwood data centre facilities
- Project delivery.

This arrangement with JAM has left all other IT services to be either brought in-house or outsourced directly by United Energy and Multinet. It should be noted that Multinet and United Energy have outsourced:

- The provision of a data centre facility to EDC at its data centre in Mitcham, Melbourne pursuant to the Facilities Management Services Agreement between United Energy, Multinet and EDC dated 22 December 2010
- The provision of a data centre facility to Primus at its data centre in CBD, Melbourne under the Melbourne Data Centre and "Lights Out" Facility Co-Location Agreement between United Energy, Multinet and Primus dated 17 February 2011.

Each of the data centre arrangements with EDC and Primus are for five years, with an option for Multinet and United Energy to extend for a further five year period.

As part of the proposed target operating model for Multinet and United Energy, key services that are considered to be strategic and necessary to govern outsourced services are to be performed in-house. Multinet and United Energy have therefore elected to have IT strategy undertaken as an in-house function with all other services outsourced to other service providers. Multinet and United Energy also confirmed that real time (field) infrastructure and all legacy infrastructure were outside the scope of outsourced services sought. The table below details the scope of IT services that have been subject to competitive tender.

Table 4-13: IT Services: Outsourced Service Provision

Outsourced Services	Scope of activities
Service and Infrastructure Management	• IT service desk – Management of a 24x7 IT Service Desk that provides a single point of contact for all IT requests and incidents. • Operations/Service Management – Management of the overall IT operational processes in line with ITIL standards. • Desktop Management – Management of all desktop management services including break-fix, IMAC, lifecycle management software deployment, application packaging, and SOE management. • Server management – Management of all server infrastructure including virtual and physical hardware, UNIX, Windows and Linux servers. • Storage management – Management of all storage infrastructure including SAN, NAS, File Servers, Backup and Tape Capacity management – define, manage and maintain the capacity management plan. • Network management – manage, maintain, secure and support Multinet's network. • Voice management – Management of the VOIP network. • Database management – Management of all databases including Oracle and Microsoft SQL Server. • Security management – Management of all security infrastructure including firewalls, intrusion detection, patch management, virus management. • Infrastructure services– Management of all infrastructure services including Active Directory, Email, DNS, WINS, Citrix, Monitoring and Management Tools. • Facilities management – manage the data centre arrangement and manage and maintain small computer rooms/data centres within offices. • IT DR management – coordinate all activities to plan and execute disaster recovery processes. • Third party management – manage and coordinate all third parties required to support the service and infrastructure management services. • Infrastructure project capability.
Application Management	• Application support – Day-to-day support of all Multinet and United Energy corporate applications in accordance with service level agreements. • Application maintenance – delivery corrective maintenance activities, defect management and application maintenance guidelines. Application enhancement – Delivery of full Systems Development Lifecycle (SDLC) for small changes and enhancements to Multinet and United Energy corporate applications in line with an agreed customer budget (with reasonable warranties for the enhancements). This service element

Outsourced Services	Scope of activities
	includes estimation of changes prior to commencement and the capability to develop and modify the applications as required. • Application management – deliver application source code and configurations, licence management and overall application management. • IT DR management – coordinate all activities to plan and execute disaster recovery processes relating to application management services (ultimately overseen by the service and infrastructure management service provider). • Third party management – manage and coordinate all third parties required to support the application management services.

4.6.4 Derivation of IT services opex forecasts – Outsourced Services

As explained in section 3.5.6 of this AAI, Multinet has completed an extensive competitive tender exercise which identified:

- Accenture as the preferred tenderer for the Application Management service package; and
- Logica as the preferred tenderer for the Service and Infrastructure Management service package.

Multinet regards the joint tender process with United Energy as maximising the available synergies for gas distribution customers by:

- Obtaining any economies of scale available through relevant bundling of packages by market participants; and
- Encouraging best of breed service providers to lodge competitive bids for the increased value of the tendered services.

To verify the bids received and to drive further cost efficiencies, shortlisted bidders were offered the opportunity to validate assumptions regarding the services, and to provide updated pricing. The updated pricing was received on 9 December 2011 without significant movements from bidders' initial offers. This outcome provided confirmation that the tender process had successfully explored all reasonable opportunities for further cost efficiencies.

Multinet also obtained pricing for an onshore/offshore model, but it was concluded that an onshore model should be maintained at this stage. Multinet concluded that the risks of moving services off-shore outweighed the possible benefits in terms of direct costs. The operational readiness and maturity of systems and processes made off-shore solutions unfavourable at this point in time.

The table below presents Multinet's forecast operating expenditure for outsourced IT services. It reflects the bids received from the two service providers. It should be observed that the transition costs are relatively modest. As noted previously, operating expenditure forecasts for 2013 include 6 months of the OSA fee and 6 months under the new business model.

Table 4-14: IT Services outsourced operating expenditure forecast ($m, real 2012)

	YEAR ENDING 31 DECEMBER					Total[8]
	2013	2014	2015	2016	2017	
IT Service Management	0.4	0.4	0.4	0.5	0.5	2.2
IT Application Services	4.1	4.2	4.1	4.0	3.9	20.3
IT Infrastructure Services	1.5	1.5	1.5	1.5	1.4	7.4
Other costs	0.1	0.1	0.1	0.1	0.1	0.5
Total	**6.0**	**6.3**	**6.1**	**6.1**	**5.9**	**30.4**

4.6.5 Derivation of IT Services opex forecasts – In-house Services

As noted in section 4.6.3, IT strategy will be undertaken by Multinet on an in-house basis:

The operating expenditure forecasts to provide these services were derived from an assessment of the internal positions that are required to undertake these functions and an estimate of the market remuneration for each position.

With the majority of IT outsourced, it is important for Multinet to retain sufficient in-house expertise to ensure that IT remains aligned with the needs and priorities of the business and that outsourced partners satisfy Multinet's service requirements.

There are three key functions that are represented in Multinet's future IT internal operating model.

- Strategy and Architecture – this function gathers business requirements to ensure that the future direction of Multinet's IT environment is aligned to the business' long-term direction. Development of system architectures ensures that product decisions can be made with the right cost, risk and benefit mix.
- Portfolio Management – this function uses the IT strategy and architecture outputs to develop an annual plan for IT project delivery. As Multinet intends to utilise a panel of external IT service providers to deliver the projects, this function will also ensure that the providers deliver according to budget, scope and schedule.
- Service Delivery / Contracts – this function will ensure that all existing and new IT systems are delivered by the outsourced service providers according to the agreed SLAs and KPIs.

The three functions have interfaces with one another; with Multinet's internal functions and with the outsourced service providers.

Multinet has identified an IT resource requirement of 5 FTEs, which is an allocation of the 13 FTE roles shared across Multinet and United Energy. The 13 FTE roles are: CIO, Personal Assistant, Manager - IT Projects and Portfolio, Manager - IT Risk and Assurance, Manager - IT Service Delivery, Manager - IT Strategy and Planning, IT Operations Analyst – Applications, IT Operations Analyst – Infrastructure, Project

[8] The total is not shown for each sub-category as it relates only to 4.5 years of cost information, and therefore is likely to cause confusion.

Business Analyst, Project Manager, Technical Architect, Business Applications Architect, and Industry Expert.

Multinet's five FTE in IT roles compare favourably with other benchmarks, as discussed in section 4.8 of this AAI. For example, Multinet's proposed team is smaller than the IT strategy and planning function in Multinet's 1999 organisational structure, which had eight FTEs. As explained in relation to Network Operations and Customer and Market Services, the staff costs associated with the proposed internal IT resources have been assessed on the basis of a Remuneration Report from Geoff Nunn & Associates.

Table 4-15 presents Multinet's forecast internal IT operating expenditure.

Table 4-15: IT Services in-house operating expenditure forecast ($m, real 2012)

	YEAR ENDING 31 DECEMBER					Total
	2013	2014	2015	2016	2017	
IT Strategy	2.0	2.0	20.	2.1	2.1	10.2

4.6.6 Summary and conclusions on IT Services forecast opex

Under its new business model, Multinet will outsource the majority of IT, so it is important for the company to retain sufficient in-house expertise to ensure that IT meets the needs of the business, and that outsourced partners satisfy Multinet's service requirements. Multinet's forecast of in-house IT functions is based on an assessment of the internal positions that are required to undertake these functions and an estimate of the market remuneration for each position.

Multinet's internal IT costs compare favourably with other benchmarks, are prudent and efficient, and reflect Multinet's particular circumstances in the forthcoming Access Arrangement Period. The forecasts therefore satisfy the requirements of the Rules.

4.7 Corporate Services and Other Costs

4.7.1 Overview of Corporate Services and Other forecast operating expenditure

Multinet's forecast operating expenditure for Corporate Services and Other Costs is set out in

Table 4-16.

Table 4-16: Corporate Services and Other forecast operating expenditure ($m, real 2012)

	YEAR ENDING 31 DECEMBER					Total
	2013	2014	2015	2016	2017	
Corporate and Other Costs	14.8	14.8	15.1	16.2	16.1	77.0

Corporate and Other operating expenditure is expected to increase slightly over the forthcoming Access Arrangement Period, but is substantially higher than the $12.1 million costs incurred in 2011. Multinet's new business model brings a number of previously outsourced functions back in-house, so the scope of activities falling within this category will change under the business model. It is therefore invalid to compare forecast corporate costs with the costs incurred in the current Access Arrangement Period.

Section 3.4 explained that Multinet adopted a rigorous assessment framework to determine whether particular services should be outsourced or provided in-house. Multinet's application of this framework concluded that corporate services should not be provided by outsourced service providers.

4.7.2 Derivation of operating expenditure forecasts for Corporate Services

Multinet's proposed Corporate Services functions are:

- CEO
- Finance
- Administration
- Strategy and business development
- Internal audit
- Human resources and organisational development management
- Legal and commercial
- Regulatory services.

The corporate functions are shared across Multinet and United Energy. The following FTE resource requirements are derived from Multinet's share of the total corporate staff requirements:

- Eight FTEs from an allocation of time across the following seventeen finance roles: CFO, PA to CFO, Accounts Payable Officer, Assistant Company Secretary, Financial Analyst, Financial Analyst / Modeller, Planning and Analysis Manager, Corporate Accountant, Financial Controller, Fixed Asset Accountant, Graduate Financial Accountant, Management Accountant, Management Accountant (IT focus), Management Accountant (with Treasury Experience), Project Accountant, Tax Manager, Treasury Settlements / Back Office Clerk. These roles are currently filled, and no additional recruitment is required in order to meet Multinet's service requirements.
- 1.1 FTEs allocation from the Internal audit function, involved in management and review of Multinet's risks and contributing to process improvement and business excellence initiatives.
- 0.6 FTE allocation from the Strategy and Business development functions, responsible for coordinating Multinet's strategic planning and developing the plans to address market opportunities, as well as reviewing opportunities identified by management, service providers or the Boards.
- 1.3 FTEs allocation from HR, responsible for the human resources requirements relating to internal staff. The role covers organisation development, HR policy development, coordinating performance management, supporting management with HR issues, HR administration. (Multinet receives an allocation of the costs of the combined roles of: General Manager HR, HR Advisor, Planning and Performance Manager).
- 1.7 FTEs allocation from office management. At Multinet, the office management function is part of the HR function. Roles include: administration manager, junior admin and registry. These roles are currently filled, and no additional recruitment is required in order to meet Multinet's service requirements.
- 3.4 FTEs from the legal and commercial function, responsible for all legal counsel activities, legal and contracting advice and support to the business as well as procurement. Allocations are across the roles of: Commercial Admin Assistant, Commercial Manager (IT), Commercial Manager/General Counsel, Contract Manager, Key Contract Manager, Legal Advisor, Multinet Commercial/Contracts Manager, Procurement / Contracts Manager, Senior Legal Advisor. These roles are currently filled, and no additional recruitment is required.
- Two FTEs from the regulatory function, responsible for all activities required to manage compliance, and maintain a full set of records associated with all regulatory processes that pertain to United Energy and Multinet as well as review, manage and implement price review projects. The function also represents United Energy and Multinet in the development of State and National policy, legislation, regulation and codes/guidelines. Allocations are across the roles of: Administration Support, Compliance Analyst, Manager Market Rules & Governance, Regulatory Analyst, Regulatory

Services Manager. For UED, in 2008 the regulatory activities were brought back in house from Jemena. Active participation and timely responses are the key objectives in regulatory consultation. The Multinet regulatory staff is a shared resource leveraging synergy benefits with electricity.

- 0.6 FTE from the Corporate Affairs function, responsible for all external communications and interacting with stakeholders. Allocations are from the roles of: Communications & Corporate Affairs Manager, Corporate Affairs GM. No additional recruitment is required in the forthcoming Access Arrangement Period.
- 0.8 FTE from the CEO office. The CEO office is an existing function and is shared between UE and MG.

The forecast operating expenditure for Corporate Service has been developed using a combination of existing costs where roles are currently in place, and forecasts based on remuneration costs provided by Geoff Nunn & Associates. It is important to note that in many instances the roles have already been filled, and no additional recruitment is required in order to meet Multinet's service requirements.

Multinet's other corporate costs also includes accommodation and other office expenses and insurance. The accommodation costs are relatively straightforward to forecast because Multinet and United Energy have recently relocated to premises that will accommodate the new staffing levels.

As explained in Section 2.2, EPG is a company which facilitates the ownership of Multinet, as Multinet's immediate parent. As the parent, it provides management and corporate services to Multinet's licensed gas distribution business. EPG is also the funding vehicle for the group. The corporate support services provided by EPG are essential to Multinet's efficient operation.

Multinet's forecast operating expenditure for corporate services is set out in the table below. It reflects Multinet's planned recruitment over the early years of the forthcoming Access Arrangement Period for the new corporate positions.

Table 4-17: Forecast Corporate Services and Other operating expenditure ($m, real 2012)

	YEAR ENDING 31 DECEMBER					Total[9]
	2013	2014	2015	2016	2017	
Legal Costs	1.1	1.2	1.3	1.5	1.5	6.6
Regulatory Costs	0.7	0.8	0.8	1.8	1.6	5.7
Finance Costs	2.6	3.6	3.9	3.7	3.8	17.5
Other Internal Labour and Overheads Costs	2.7	2.9	2.9	3.0	3.0	14.5
Transition costs	2.6	1.6	1.6	1.6	1.6	9.0

[9] The total is not shown for each sub-category as it relates only to 4.5 years of cost information, and therefore is likely to cause confusion.

	YEAR ENDING 31 DECEMBER					Total[10]
	2013	2014	2015	2016	2017	
Corporate support services	4.1	4.1	4.1	4.1	4.1	20.5
OSA costs	0.3	0.0	0.0	0.0	0.0	0.3
Debt raising costs	0.6	0.6	0.6	0.6	0.6	3.0
Total	**14.8**	**14.8**	**15.1**	**16.2**	**16.1**	**77.0**

4.7.3 Summary and conclusions on Corporate Services and Other forecast opex

Multinet's new business model will bring back in-house a number of functions that are presently outsourced. The re-balancing of internal and outsourced services is an important element in achieving Multinet's strategic objective to create the intelligent utility.

Multinet has carefully examined its resourcing requirements for corporate services and its other internal costs, such as office accommodation. The process for adopting the new business model is already well-advanced, and many of the corporate roles have already been filled. As discussed in further detail in section 4.8 below, Multinet's benchmarking of its corporate costs indicates that the resourcing levels compare favourably with its peers.

4.8 Benchmarking total operating expenditure forecasts and historical analysis

Multinet has adopted a 'bottom up' forecasting methodology for operating expenditure. This forecasting methodology is consistent with rule 74(2), which requires that all forecasts or estimates:

- must be arrived at on a reasonable basis
- must represent the best forecast or estimate possible in the circumstances.

As Multinet is implementing a new business model with new service providers and new terms and conditions, it is not appropriate to adopt a 'year 4' forecasting method. A year 4 method implicitly assumes that the status quo is the best starting point from which to forecast future operating expenditure. The significant changes to Multinet's business mean that such an assumption would be invalid and unreasonable, and contrary to the Rules.

In the earlier sections of this chapter, Multinet provided a detailed explanation of its forecasts for each operating expenditure category, including an explanation of how the forecasts have been derived. In the remainder of this section, Multinet provides additional evidence and analysis to demonstrate that its operating expenditure forecasts are prudent, efficient and fully satisfy the Rules requirements. In particular:

- Section 4.8.1 comments on the efficiency of outsourced services
- Section 4.8.2 benchmarks internal costs
- Section 4.8.3 provides actual benchmarking results.

[10] The total is not shown for each sub-category as it relates only to 4.5 years of cost information, and therefore is likely to cause confusion.

4.8.1 Efficiency of outsourced services

The forecast operating expenditure for outsourced services has been derived by:

- Engaging expert advice on the appropriate scope of outsourced services
- Designing a competitive tender exercise to maximise competition between service providers
- Obtaining assurance from suitably qualified independent experts that the proposed work volumes are efficient and prudent
- Testing the scope and volume of outsourced services with third party service providers that face strong incentives to identify cost savings
- Implementing an evaluation framework that weighs price and quality aspects of each bid appropriately
- Ensuring that the competitive tender exercise is conducted in accordance with the highest probity standards
- Obtaining assurance from a suitably qualified independent expert that the forecast operating expenditure for outsourced services accurately reflects the outcome from the tender exercise.

The above process provides assurance that the outsourced operating expenditure satisfies rule 91(1), which requires that Multinet's forecast operating expenditure:

> *"would be incurred by a prudent service provider acting efficiently, in accordance with accepted good industry practice, to achieve the lowest sustainable cost of delivering pipeline services."*

4.8.2 Benchmarking internal costs

As explained in the earlier sections of this chapter, Multinet's forecast of internal operating expenditure has been derived by:

- Scoping the resource requirements through a series of workshops
- Comparing the proposed scope of work with available comparator information including:
  - JAM's current resource levels provided in accordance with the OSA
  - Multinet's previous organisational structure and resource requirements prior to the establishment of the OSA
  - FTEs employed by gas networks in Australia and Europe, normalized by an appropriate scaling factor.
- Applying appropriate remuneration rates, which have been independently assessed by Geoff Nunn and Associates.

The robust nature of the forecasting process ensures that the resulting forecasts are prudent and efficient. AT Kearney undertook a comprehensive benchmarking exercise, which examined the available information for each operating expenditure category. AT Kearney's report is provided as an appendix to this AAI. For the purpose of this section, however, some of AT Kearney's findings in respect of each operating expenditure category are highlighted below.

For Network Operations:

- Multinet's proposed asset management team of 20(0.21FTEs/100km) compares favourably with historical asset management FTEs for United Energy, which was 25 FTEs in 1999 (prior to the OSA) and 25 FTE in the currently outsourced JAM asset management function.
- Multinet's proposed service delivery team of 13(0.2FTEs/100km) is of a similar size to the 12 FTEs for United Energy in 1999 (prior to the OSA). The planned contracting regime from 2013 onwards is however more complex than the subcontracting arrangements in place in 1999. JAM's current resourcing is approximately ten contract management FTEs. However, these roles and responsibilities are lower since the current level of outsourced field services within JAM is lower.
- Multinet's proposed Network Control Centre team of 17(0.18FTEs/100km) is slightly smaller than JAM's current 19 FTEs .

For Customer Market Services, Multinet's proposed team is comparable to the average of European benchmarks as explained in the table below.

Table 4-18: Customer Market Services:European benchmarks of Multinet's FTEs

Company	FTEs estimated for Multinet	FTEs per 100,000 customers estimated for Multinet	Multinet forecast FTEs per 100,000 customers	Comments
European benchmark (utilities)	Average: 14 Best practice:9	Average: 2.1 Best practice:1.4	2.2	Based on the AT Kearney database of European gas distributors, Multinet compares well to the average benchmark. While the function is largely driven by customer volume and requisite expertise, the European gas distributors can leverage synergies and economies of scale for larger networks, a higher automation level of customer processing and outsourcing of call centre functions.

For IT strategy, Multinet's IT team compares favourably with other Australian Gas businesses as explained in Table 4-19.

Table 4-19: IT strategy FTEs: Australian benchmarks of Multinet's in-house costs

Company	FTEs	FTEs/ 100km	MG comparison FTE/100km	Comments
Jemena (JGN)	18	0.08	0.05	Multinet has a 35% lower FTE level after adjusting for network size (0.05 vs. 0.08). The IT FTEs are driven by the complexity of the IT solutions and by the workload that is created by the network size. However, while the European benchmarks indicate economies of scale advantages, there is no sign of this at JGN.
SP AusNet	5	0.05	0.05	SP AusNet's IT FTE level is roughly similar to the proposed Multinet FTE level of 0.05FTEs/100km. SP AusNet's IT management is driven by a similar service provider management workload and strategic planning of the IT solutions and portfolio and similar network size like Multinet.

Multinet's proposed resources for Finance are on a par with the other Australian Gas businesses as explained in
Table 4-20. A similar conclusion applies to non-finance Corporate staffing levels.

Table 4-20: Finance FTEs:Australian benchmarks of Multinet's in-house costs

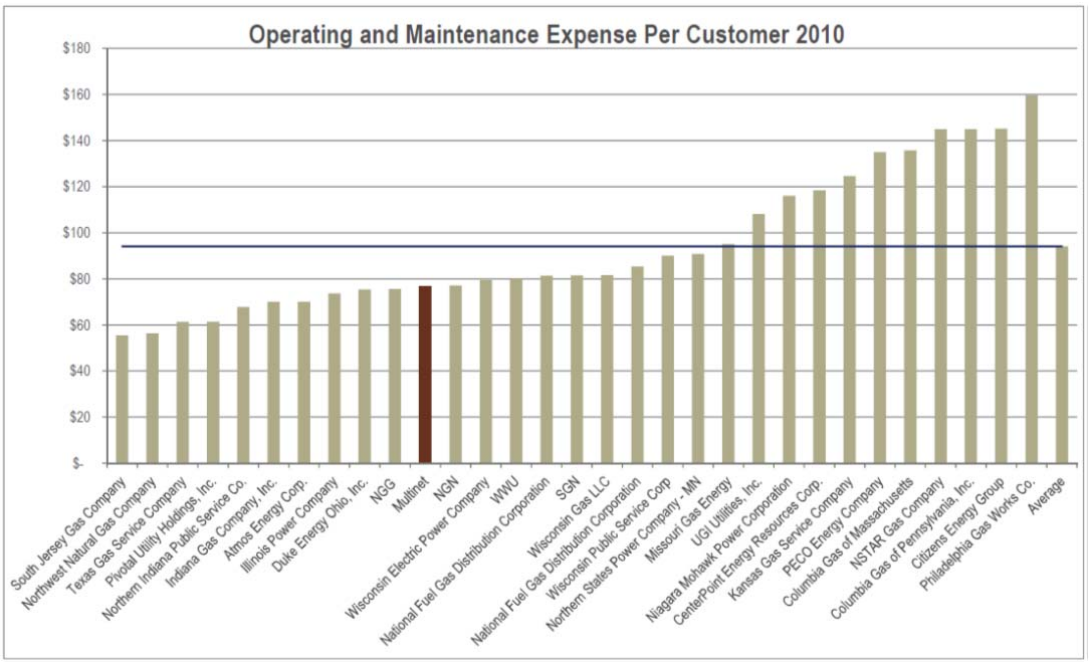
Company	FTEs	FTEs/ 100km	MG comparison FTE/100km	Comments
Jemena JGN	25	0.1	0.08	JGN's larger gas network drives the revenues for JGN, which drives the workload for the finance function. When normalised, Multinet's proposed FTE levels are comparable to JGN's FTE level. Some economies of scale can be expected in Finance functions.
SP AusNet	9	0.09	0.08	SP AusNet and Multinet have similar driver values for the FTE in the finance function, i.e. revenues from gas distribution, similar network size and RAB and similar service provider arrangements. Multinet's finance team of 8 FTEs compares favourably to the estimated 9 FTEs that are allocated to SP AusNet gas network.

The benchmarking information presented above and the more detailed report, which is provided as an appendix, confirms that Multinet's forecast FTE requirements for internal resources is consistent with prudent and efficient staffing levels. In particular, for each operating expenditure category, Multinet's proposed resourcing levels are not materially higher than any of the benchmarks and, in some instances, are materially lower. As noted above, the benchmarking analysis normalises for the effect of scale on FTE requirements to ensure a 'like-for-like' comparison.

4.8.3 Benchmarking results

In examining the reasonableness of the overall operating expenditure, it is worth recapping on the benchmarking information referred to in chapter 2 of this AAI. Table 4-21 shows Multinet's operating expenditure per customer compares favourably to US gas distributors. While this benchmarking uses 2010 data, Multinet is confident that the new business model will ensure that Multinet continues to benchmark well.

Table 4-21: United States benchmarks: Total operating expenditure per customer



5. Forecast Capital Expenditure

5.1 Introduction

This chapter presents Multinet's capital expenditure forecasts for the forthcoming access arrangement period. The criteria governing forecast capital expenditure are set out in rule 79 of the National Gas Rules as follows:

"(1) Conforming capital expenditure is capital expenditure that conforms with the following criteria:

(a) the capital expenditure must be such as would be incurred by a prudent service provider acting efficiently, in accordance with accepted good industry practice, to achieve the lowest sustainable cost of providing services;

(b) the capital expenditure must be justifiable on a ground stated in subrule (2).

(2) Capital expenditure is justifiable if:

(a) the overall economic value of the expenditure is positive; or

(b) the present value of the expected incremental revenue to be generated as a result of the expenditure exceeds the present value of the capital expenditure; or

(c) the capital expenditure is necessary:

(i) to maintain and improve the safety of services; or

(ii) to maintain the integrity of services; or

(iii) to comply with a regulatory obligation or requirement; or

(iv) to maintain the service provider's capacity to meet levels of demand for services existing at the time the capital expenditure is incurred (as distinct from projected demand that is dependent on an expansion of pipeline capacity); or

(d) the capital expenditure is an aggregate amount divisible into 2 parts, one referable to incremental services and the other referable to a purpose referred to in paragraph (c), and the former is justifiable under paragraph (b) and the latter under paragraph (c)."

In accordance with the Rules requirements, Multinet's forecast capital expenditure is based on a detailed, bottom-up assessment of the lowest sustainable level of capital expenditure required to deliver gas distribution network services. More specifically, Multinet's capital expenditure plans are focused on identifying the efficient and sustainable level of investment required to:

- Comply with all regulatory and statutory obligations
- Meet customers' expectations in terms of providing safe and reliable network services and meeting the guaranteed service levels.

In broad terms, forecast capital expenditure may differ from historic levels for one or more of the following reasons:

- Changes in network age, condition or utilisation may lead to changes in the levels of capital expenditure required to maintain service performance
- Forecast capital expenditure may be targeted at addressing specific service performance or safety issues not previously arising or known
- Changes in compliance obligations or customer expectations may drive changes in capital expenditure

- Changes to risk management practices may lead to changes in replacement capital expenditure for network or non-network assets, such as IT systems
- The costs of doing work may change as a result of changes in material and labour rates, or contractor charges.

An additional factor that will affect Multinet's forecast capital expenditure in the forthcoming Access Arrangement Period is its new business model. As explained in Chapter 3, the new business model will provide a greater degree of strategic control, transparency and visibility. In relation to capital expenditure, this is achieved by bringing back in-house gas asset management which includes the planning capability to determine the optimal volume and mix of capital expenditure.

As part of the new business model, Multinet has undertaken a competitive tender exercise to engage with the best available service providers to deliver its capital expenditure program. The outcomes from the competitive tender exercise and Multinet's in-house assessment of its capital expenditure requirements are also explained in this chapter. Where appropriate, additional supporting information, analysis and independent expert reports are referenced in this chapter and provided as attachments to this AAI.

The remainder of this chapter is structured as follows:

- Section 5.2 provides a high level commentary on the challenges to be addressed by Multinet in the forthcoming Access Arrangement Period.
- Section 5.3 provides an overview of the company's Asset Management Plan and investment governance arrangements.
- Section 5.4 provides an overview of the arrangements that Multinet has in place to ensure the efficient delivery of capital investment.
- Section 5.5 describes Multinet's capital expenditure categories, and provides an overview of the capital expenditure forecasts.
- Section 5.6 describes the customer initiated capital expenditure forecasts.
- Section 5.7 sets out the forecast capital expenditure for the Pipeworks upgrade program.
- Section 5.8 sets out Multinet's network replacement capital expenditure forecasts.
- Section 5.9 sets out the forecast meter replacement capital expenditure.
- Section 5.10 details the demand-related capital expenditure forecasts.
- Section 5.11 provides Multinet's performance improvement capital expenditure forecast.
- Section 5.12 describes the forecast of non-network (SCADA) capital expenditure.
- Section 5.13 sets out the forecast of non-network (IT) capital expenditure.
- Section 5.14 sets out the forecast of non-network (other) capital expenditure.
- Section 5.15 presents the results of an international capital expenditure benchmarking study commissioned by Multinet.

5.2 Challenges for the forthcoming regulatory period

During the recent prolonged period of drought, water ingress into the distribution system was reduced, and therefore the frequency of detectable leaks was also reduced. Following the relatively high rainfall which has occurred since the winter of 2011, many areas of the network have now been identified where water ingress into the ageing low pressure system has occurred, resulting in customer interruptions and increased operating costs.

The return to more moist conditions following the prolonged drought is expected to lead to increased maintenance requirements over the next access arrangement period compared to the current period.

Notwithstanding these factors, Multinet is planning to maintain its current high levels of network service, although its ageing assets - in particular gas mains and services constructed before the advent of plastic pipe and cathodic protection on steel pipe - result in a risk that service will deteriorate. To mitigate this risk, and ensure that high service levels are maintained, Multinet will continue to renew the low pressure network.

In terms of asset replacement, an important challenge for Multinet will be the replacement of several large diameter low pressure supply mains that run through major arterial roads and high-density strip shopping centres. These projects are costly and complex. There is significant impact on the local community, which requires significant traffic management planning and coordination with other service authorities. As a consequence, project risks need to be carefully managed through effective project planning and execution in order to minimise the potential for community disruption and legal claims.

The requirement to replace or rehabilitate network backbone assets will increase in future access arrangement periods. Multinet will identify and trial new technologies to assist in the smooth delivery of these complex projects. Multinet must also ensure that the necessary planning, resourcing and skills are in place to manage these projects efficiently.

For some low pressure zones, Multinet will implement like-for-like replacement, as opposed to block upgrade to high pressure. This change in strategy recognises that projects in inner suburban areas with high reinstatement costs, high incidence of multiple unit developments, traffic management issues, and multistorey residential developments typically entail unit costs rates which are triple those incurred in the standard outer suburban nature strip areas. However, like-for-like replacement requires the development of engineering solutions that are not currently implemented during pressure upgrades.

Multinet's capital expenditure plans also include a third party funded pipeline alteration (Highett) and provision for alterations to other licensed pipelines to facilitate intelligent pigging. Depending on the nature of the individual project, stakeholder consultation, environmental, cultural heritage and biodiversity impacts must be assessed and managed, while associated State and possibly Commonwealth regulatory approvals obtained. Managing the specialist nature, complexity, timeframe and costs associated with such projects will be a challenge for Multinet given that few projects of this type have been required in previous periods.

5.3 Multinet's Asset Management Plan and Investment Governance

Forecasts of network capital works volumes are derived from Multinet's Asset Management Plan (AMP)[11], which documents the company's approach to managing its network assets to achieve the long-term objectives of maintaining asset integrity and levels of service and safety at the lowest life cycle cost.

The AMP is a six-year plan incorporating Multinet's asset management strategies and operational plans. The AMP details Multinet's intentions relating to safety, network reliability, capacity and security of supply. Multinet recognises the importance of asset management in ensuring the safe delivery of services that meet the needs of end users and stakeholders. System planning, maintenance, augmentation and asset replacement are vital components of asset management, with effective asset management having a profound impact on safety, customer service and shareholder value.

The AMP establishes the long-term asset management objectives to guide the development of Multinet's strategies and plans. These objectives are summarised on the following page:

[11] A separate IT asset management plan is prepared for information technology assets.

- Ensure that the assets are managed in accordance with all applicable laws; Australian and international standards; and good industry practice
- Ensure that capital investment is efficient and is consistent with Multinet's financial capacity, including any capital constraints
- Ensure all assets owned by Multinet are capable of separate identification and tracked on an ongoing basis
- Ensure that assets are managed to reflect all risks and opportunities arising from changing external circumstances and technological developments
- Maintain and develop the network to avoid deterioration of the assets, and to potentially enhance the overall asset condition
- Strive for sustainable, long-term improvement in network reliability
- Plan and develop the capacity of the network so peak demands can be catered for with standards of safety and reliability consistent with regulatory and community standards
- Establish high standards of health and safety management, and employee focus to eliminate work place accidents
- Comply with all regulatory safety authorities and minimise network incidents through proactive management of recurring root causes
- Ensure that knowledge generated by the organisation is captured and recorded to support a learning organisation.

Multinet's AMP is based on the International Infrastructure Management Manual – Version 3.0 of 2006, so it is structured around the following contributing documents that set out the strategies and plans within the key areas of Multinet's business:

- Life Cycle Management (Maintenance and Replacement Strategies)
- Future Demand (Growth Capital Plan)
- Levels of Service (Network Performance Improvement)
- Risk Management (based on AS/NZS 31000)
- Environment (based on ISO14001)
- Network Safety (based on Multinet's Safety Case).

These contributing documents result in an AMP that is structured around two main categories of expenditure:

- Network replacement expenditure
- Network growth expenditure.

The AMP considers capital expenditure in two broad categories:

- Mandatory. This category is considered as non-discretionary. It covers all work that the business is explicitly obligated to complete under regulation or law
- Good Industry Practice. This category relates to all work that is necessary to operate the network to meet objectives, manage known risks and to maintain service levels.

As explained in the remaining sections of this chapter, the AMP identifies an increased network capital expenditure requirement in the forthcoming Access Arrangement Period, particularly arising from Multinet's asset replacement policies. In broad terms, the proposed capital expenditure is necessary to renew ageing elements of the network; manage and reduce levels of risk; and deliver the necessary infrastructure to maintain the present high service levels and meet customer growth.

A copy of Multinet's AMP has been provided to the AER on a confidential basis. The plan contains price and volume information that if made public has the potential to enable interested parties to infer contract rates; that in turn may distort the market and the prices paid for services.

Within the context of the AMP, Multinet's investment decision making is governed through a robust framework centred around three key factors:

- Regulatory obligations and stakeholder requirements: Multinet's investment decisions explicitly consider regulatory compliance obligations and stakeholder requirements.
- Technical requirements, which are addressed as follows:
  - Performance improvement and asset maintenance and replacement programs are driven by analysis of fault, asset performance and cost data.
  - Maintenance and replacement schedules are devised with the aim of ensuring safe operation of the network and all facilities.
  - Capacity planning is based on network analysis.
  - Scheduled maintenance and replacement programs are based on Reliability Centred Maintenance analysis or applicable Australian or International Standards.
  - Risk analysis is performed to AS/NZS 31000 for significant asset risks.
- Economic requirements: All projects are subject to an appropriate level of economic analysis in accordance with regulatory requirements and prudent investment tests.

The asset management process, and investment decision and capital governance frameworks employed by Multinet ensure that all investment and asset management decisions are consistent with those that would be incurred by a prudent service provider acting efficiently, in accordance with accepted good industry practice, to achieve the lowest sustainable cost of providing services.

5.4 Ensuring efficient delivery of capital investment

As noted in Section 5.3, the AMP provides the foundation for developing forecasts of prudent and efficient volumes of network capital works. A separate IT strategy has also been prepared and is discussed in section 5.13.

Having established prudent and efficient investment plans, the company must execute those plans in the most cost-effective manner to maximise the efficiency of its capital expenditure, and to ensure that all capital expenditure conforms with the requirements of rule 79 of the National Gas Rules.

Chapter 3 explained that Multinet is transitioning to a new business model, which involves the tendering of certain services through a competitive market process. Multinet's tendering process was designed to maximise the competitive pressure between prospective bidders to achieve the most efficient cost and service outcomes.

In relation to capital expenditure delivery, Multinet's new business model distinguishes between two types of capital projects, as follows:

- Core capital works consist of ongoing programs that are of a recurrent nature. These works have been included in the scope of services for outsourced Network Operations services.
- Large projects are contracted separately, to ensure optimum value and 'best-for-network' sourcing.

These procurement and delivery arrangements will maximise overall net benefits in terms of fostering competition; managing business risk; and delivering savings to Multinet and its customers via ongoing competition for capital expenditure.

In addition, Multinet has developed and maintains schedules of materials approved for installation on the network with which all contractors must comply as part of its Health, Safety and Environment systems. This ensures that the integrity of the network assets is maintained and that purchasing and stockholding procedures are streamlined.

5.5 Capital expenditure categories and overview of expenditure forecasts

Multinet's capital expenditure is categorised as follows:

- **Customer initiated**. This capital expenditure is required to meet the needs of new or existing customers. Customer initiated projects may be partly or fully funded by the customer. The capital expenditure will include mains extensions; customer installation capacity upgrades; new services and meter installations; and service alterations and meter alterations/relocations. This category also includes expenditure relating to the relocation of assets undertaken at the request of a customer or some other third-party. These recoverable works are third-party funded.
- **Pipeworks**. This program of capital expenditure replaces the very old low pressure mains with high pressure mains. The replacement of low pressure, aged cast iron and unprotected steel distribution assets reduces the risk of asset failure and provides improved operational flexibility and service performance. The works include:
  - The replacement of mains and services predominantly via insertion utilising high pressure polyethylene pipe
  - The replacement of customer regulator installations and meters (where required) as well as service upstands
  - Abandonment and isolation of the replaced mains and physical isolation from adjoining low pressure network assets.
- **Replacement capital expenditure**. These projects replace network assets that have reached the end of their economic life; demonstrate poor reliability; raise safety concerns; or are no longer supportable. Asset replacement projects include the upgrading or replacement of pipelines, mains, meters, pressure reduction facilities and associated ancillaries, and replacement of cathodic protection infrastructure as well as valves, kiosks and cabinets.
- **Metering**. This capital expenditure relates to the replacement of meters, and is driven by regulatory requirements set out in the Gas Distribution System Code and the need to sample test each family of meters in accordance with the AS/NZS 4944 standard.
- **Demand-related capital expenditure**. This capital expenditure is required to augment the system to meet forecast increases in network load growth that cannot be attributed to individual customers. The capital expenditure is required to maintain standards of safety and service across the network. Demand capital projects will include: the installation of new backbone supply mains; the installation of network reinforcements; the upgrading of city gates, field regulators, district regulators or associated facilities; upgrading or installation of transmission pipelines; and the upgrading of custody transfer meters. These projects may also be combined with customer initiated projects where there is an efficiency gain in doing so.
- **Performance improvement projects**. These projects are aimed at improving the performance of the gas network to deliver operational efficiency improvements. Performance capital projects will include: the installation of field RTUs, surge protection, anode beds, and modifications to assets such as the installation of pig launchers/receivers on pipelines.
- **Non-network capital expenditure**. This capital expenditure includes all capital work associated with assets other than network assets. Non-network capital expenditure is comprised of two components:

- Non-network – IT and SCADA capital expenditure
- Non-network – Other, which includes activities such as building and property capital works, the purchase of gas specific equipment and other specialist equipment.

The table below provides a summary of Multinet's capital expenditure forecast for the forthcoming access arrangement period.

Table 5-1: Categories of capital expenditure and overview of expenditure forecast ($m, real 2012)

	YEAR ENDING 31 DECEMBER					Total 2013-17
	2013	2014	2015	2016	2017	
Customer initiated	26.3	24.5	22.4	22.5	22.5	118.3
Pipeworks	18.2	21.1	18.9	18.4	19.6	96.2
Replacement	9.4	8.4	6.9	8.2	9.6	42.5
Metering	3.7	3.5	2.5	2.4	2.5	14.7
Demand-related	9.6	8.2	7.4	7.7	8.5	41.5
Performance	2.0	2.8	4.3	6.6	4.8	20.4
IT and SCADA	20.6	8.8	6.9	12.4	3.5	52.2
Non-network – Other	4.1	0.0	0.0	0.0	0.0	4.1
Total (Gross)	**93.9**	**77.3**	**69.3**	**78.2**	**71.0**	**389.7**
Less contributions	11.3	4.1	1.6	1.6	1.6	20.0
Net capital expenditure	**82.6**	**73.1**	**67.7**	**76.6**	**69.4**	**369.7**

It is noted that Multinet is planning to increase its capital expenditure in the forthcoming access arrangement period, particularly in asset replacement and customer initiated, compared to the current period. The increased investment is in response to the need to meet customer growth; renew ageing elements of the network; manage and reduce the levels of risk associated with some aged gas infrastructure; develop infrastructure appropriate to the needs of a growing community; and support the continued economic growth and prosperity of south eastern Melbourne.

There are two main reasons why Multinet is forecasting higher capital expenditure in the forthcoming Access Arrangement Period when compared to the current period:

- Increase in pipe works program – As explained below Multinet's pipeworks program did not proceed as forecast. Multinet is proposing to return to the original pipeworks program that begun in 2003. At that time Multinet proposed a 30 year program to replace LP cast iron pipes. During the forthcoming Access Arrangement Period, Multinet is not prosing to "catch up" the shortfall in the current period. Any decision to "catch up" the program or simply extend it will be made at a later time. The forecast expenditure is based on approximately 90kms per annum, applying a similar unit rate experienced in the current period
- Increase in unit rates for customer initiated work. Multinet has explained the detailed process for obtaining market rates for the forthcoming Access Arrangement Period. The market has indicated that the current level of rates obtained in the current contract is not sustainable. Multinet's customers have received the benefit of a contract during the current Access Arrangement Period that can no longer be sustained. Multinet's customers can be assured that the tender process, although an increase on current

costs, will provide them the best possible price. Multinet is proposing a very similar customer number forecast in the forthcoming period as experienced in the current period.

In the 2008 GAAR, Multinet and capital markets were unprepared for the unexpected reduction in the equity beta from 1 to 0.8. That regulatory decision, combined with the impact of the Global Financial Crisis, adversely affected the availability and cost of funding. As a consequence, Multinet had no choice but to defer a proportion of the pipeworks program. It must be remembered that the ESC ensured that distributors could not benefit under the efficiency carryover mechanism from such a deferral because it provided for a true-up mechanism in relation to the pipeworks program. Nevertheless, the commercial reality turned out to be that the regulated cost of capital was insufficient to attract funds for the pipeworks program during the current Access Arrangement Period.

Multinet's current analysis indicates that it may face very similar issues in the forthcoming Access Arrangement Period. In this case, it is the AER's method for estimating the cost of equity – in circumstances where the risk free rate remains at or near 50 year lows and financial markets are fragile – that may again force the deferral of capital expenditure.

Multinet's financial modelling indicates that the company requires both a new debt facility and an additional equity injection to fund the proposed capital expenditure program. In this context, it is emphasised that Multinet's access arrangement proposal is an internally consistent, integrated package because the capital expenditure program; the required debt issuance; and equity raising are all achievable, providing that Multinet's WACC proposal is accepted by the AER. However, the package proposed here is also finely balanced. This means that any reduction in Multinet's proposed WACC or another important building block parameter (such as operating expenditure) would unavoidably require Multinet to revisit its capital expenditure forecasts.

For the reasons set out below, Multinet considers that the capital expenditure forecasts presented in this submission will deliver the best outcome for customers. In particular, the proposed capital expenditure will prudently and efficiently minimise total life cycle costs, while also ensuring that customers continue to receive highly reliable and safe distribution services. Multinet therefore considers that its WACC and capital expenditure proposals are consistent with the National Gas Objective and should be approved by the AER.

Sections 5.6 to 5.14 provide details of Multinet's capital expenditure proposals, by expenditure category. Information presented in the following sections, along with the detailed supporting information accompanying this AAI demonstrates that Multinet's capital expenditure forecasts are consistent with the expenditure that would be incurred by a prudent service provider acting efficiently, in accordance with accepted good industry practice, to achieve the lowest sustainable cost of providing services. An international benchmarking study commissioned by Multinet (summarised in section 5.15) shows that the company is a superior performer in terms of the overall efficiency of its capital expenditure. Taken together, this information demonstrates that Multinet's capital expenditure forecasts meet all of the requirements of the Rules.

5.6 Customer initiated capital expenditure

5.6.1 Overview

Customer Initiated Capital is capital expenditure required to connect new customers to the distribution system. The customers can range from a new residential dwelling to a large industrial site. Customer Initiated Capital also includes recoverable works (asset relocations undertaken at the request of third parties.)

Multinet has consistently prepared detailed growth plans on an annual basis to assist in the preparation of forecasts. A key input into these plans is the engagement of the National Institute of Economic and Industry Research (NIEIR) as an independent expert to assist in the preparation of Multinet's forecast. Chapter 13 provides details of Multinet's demand and customer number forecasts for the forthcoming Access Arrangement Period.

NIEIR is forecasting a reduction in the number of new connections for the forthcoming period compared to the current period. Consequently, the forecast of Customer Initiated Capital expenditure for the forthcoming access arrangement period is slightly lower than that for the current period.

The table below sets out Multinet's forecast of customer initiated capital for the forthcoming Access Arrangement Period.

Table 5-2: Forecast customer initiated capital expenditure 2013 – 2017($m, real 2012)

	YEAR ENDING 31 DECEMBER				
	2013	2014	2015	2016	2017
Domestic	15.0	19.9	20.4	20.4	20.4
Commercial/Industrial	1.7	2.1	2.0	2.2	2.1
Recoverable works	9.7	2.6	0.0	0.0	0.0
Gross customer initiated capital	**26.3**	**24.5**	**22.4**	**22.5**	**22.5**
Less contributions	11.3	4.1	1.6	1.6	1.6
Net customer initiated capital	**15.0**	**20.4**	**20.8**	**20.9**	**20.9**

Detailed information to explain and substantiate Multinet's forecast of customer initiated capital expenditure is provided below. A comparison of actual expenditure in the current access arrangement period and the forecast for the forthcoming period is also provided.

5.6.2 Basis for customer initiated capital expenditure forecast

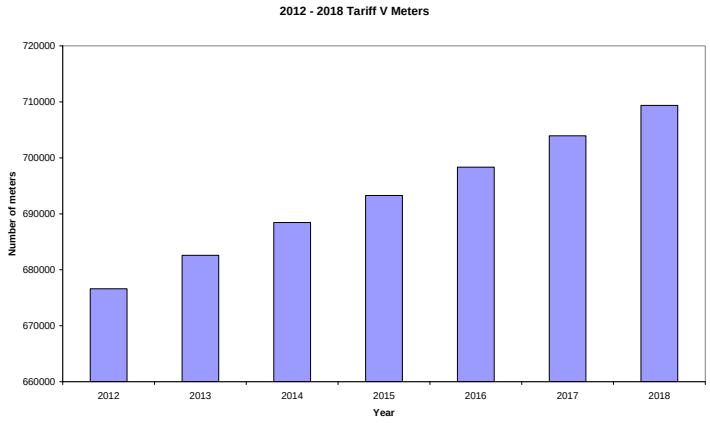
The forecast of customer initiated capital expenditure has been developed from NIEIR's forecast of consumer meter and service numbers, for the medium economic growth scenario.

The limited and reducing amount of land available for new subdivision in Multinet's Melbourne metropolitan area means that an increasing proportion of new housing is redevelopment of existing sites. Government policy to restrict Melbourne's urban sprawl also contributes to more redevelopment of existing sites. For the above reasons, the trend for increasing housing density with less mains extension per unit number of services is likely to continue.

Multinet's forecast of customer initiated capital expenditure is derived by multiplying the unit costs of connection by the forecast number of new connections. Under this approach, it is appropriate to distinguish between Tariff V (predominantly residential) customers and Tariff D (large) customers.

The predominant component of customer initiated capital expenditure relates to Tariff V connections. Figure 5-1 shows the forecast growth in the number of Tariff V meters, which underpins the forecast of Tariff V related customer initiated capital.

Figure 5-1: Forecast of tariff V meter numbers for next access arrangement period



Forecasting Tariff D customer initiated capital on an annual basis is difficult, as growth is typically "lumpy" due to the relatively small number of large new loads connected each year. In view of this, the forecasts contain an annual provision of approximately $550,000 for Tariff D related customer initiated capital. This allowance is consistent with recent actual average levels of Tariff D related customer initiated capital expenditure.

As noted in the overview section, Customer Initiated Capital also includes recoverable works (asset relocations undertaken at the request of third parties.)Highett Outstation contains an 80mm 2,800 kPa licensed pipeline, two large diameter MP Mains, one TPTP limiter, three TP - MP regulators, two TP- HP regulators, and one TP- LP regulator. The gas infrastructure is located on Crown Land which the Department of Treasury and Finance (DTF) are in the process of redeveloping into medium density residential land. The land, including the adjacent Sir William Fry Reserve (the Reserve), was previously a gas manufacturing plant and was contaminated by gas manufacturing wastes. DTF has remediated the site except for a few small areas adjacent to gas facilities and fence lines where access is difficult. The Reserve remains un-remediated.

To maximise the value of DTF's site and to address safety concerns, DTF want to relocate the majority of the gas assets (particularly the facilities) away from the site. The only feasible location for the facilities is in the Reserve which is managed by the City of Kingston.

Agreement has been reached with the City of Kingston to locate the facilities in the Reserve. A small part of the project (Stage 1) comprising construction of a 300mm diameter steel gas main through Sir William Fry Reserve has been completed. DTF has agreed to fund up to $1m for a detailed design for Stage 2 prior to committing to the construction phase. This Design phase was completed in 2010. The forecast costs of relocating the Highett assets are included in the forecast of recoverable works.

5.6.3 Trend analysis: customer initiated capital expenditure

The table below shows the actual customer initiated capital expenditure, broken down into number of connections and average unit rate, for the current period alongside the forecast for the forthcoming period.

Table 5-3 - Customer initiated capital: recent actual and forecast (real 2012)

Category	Actual (2008-2012)	Forecast (2013-2017)
Commercial/Industrial		
Volume Connection	770	979
Unit Price	$4,438	$10,202
Total ($m)	$3.4m	$10.0m
Residential		
Volume Connection	41,529	42,158
Unit Price	$1,573	$2,278
Total ($m)	**$65.3m**	**$96.0m**

The analysis presented above shows that the forecast number of connections remains similar to that experienced in the current period. Multinet's distribution area does not contain large areas where new housing is constructed so you would expect this trend. The analysis does show that the unit rate for the forthcoming period is higher than the current period. The unit rate for residential connections in the forthcoming period is based on a competitive market process and reflects the best possible price Multinet is able to obtain. The market process has been subject to probity. The current contract contained unit rates that were not sustainable for the long-term.

For commercial/industrial connections the unit rates have also been based on the tender process however for his category there will also be a movement based on an assessment on the types of connections – there is a large range of possible unit rates depending on customer specific circumstances. In this case the tenderers have determined this mix in their pricing.

5.7 Pipeworks upgrade program

5.7.1 Introduction and Overview

In 2002, Multinet's Gas Access Arrangement Review submission to the Essential Services Commission (ESC) demonstrated a requirement to replace low pressure mains and associated services in order to maintain system integrity. This was the first tranche of a 30-year program to replace Multinet's low-pressure network. The name "Pipeworks" was given to this project.

The aims of the Pipeworks project are to:

- Minimise repeated consumer outages
- Minimise risk associated with leakage
- Minimise maintenance activities associated with aged assets
- Alleviate the growing demand for gas supply on the low pressure distribution system.

By the conclusion of the 30-year project, practically all the low pressure systems will be removed from Multinet's gas network. The target for mains renewal for the forthcoming period is an average of 90 km per year.

The forecast Pipeworks expenditure for the forthcoming access arrangement period is shown in Table 5-4.

Table 5-4: Forecast Pipeworks upgrade program capital expenditure 2013 – 2017 ($m, real 2012)

	YEAR ENDING 31 DECEMBER				
	2013	2014	2015	2016	2017
Pipeworks	21.8	25.4	25.8	23.3	26.4

Detailed information to explain and substantiate Multinet's forecast of Pipeworks program capital expenditure is provided below. A comparison of actual expenditure in the current access arrangement period and the forecast for the forthcoming period is also provided.

5.7.2 Basis for Pipeworks upgrade program

The earlier phases of the Pipeworks programs were focused principally in the geographic areas abutting the existing high pressure networks, to ensure high pressure supply remained available to the upgraded areas without the need for extensive grid main construction. The condition of assets in some inner suburban areas is such that some grid main construction work must now be programmed over the forthcoming access arrangement period.

Consequently, over the forthcoming period, the Pipeworks project will require work in more difficult (higher population density) areas, and therefore average unit costs will increase. Cost increases will be driven by:

- The additional difficulty and complexity of the work in areas with high vehicular traffic volumes and multi-unit residential developments, including high-rise buildings
- Materials costs have increased substantially for both polyethylene (PE) and steel pipe over the last five years as a result of the resources boom and increases in the price of oil. PE pipe prices are directly linked to the price of oil.

Many of these areas are either distant from high pressure supply or are in inner suburban areas. Earlier trial projects carried out in Hawthorn, Toorak and South Melbourne confirmed that substantially higher unit rates apply in higher density areas than in outer suburban projects.

In the course of preparing its current AMP, Multinet has re-examined the Pipeworks program. Multinet's assessment of Pipeworks renewals requirements uses a uniform distribution between the 'pessimistic' and 'optimistic' asset lives shown in the table below (which is reproduced from Section 5.5.10 of Multinet's AMP).

Table 5-5: Technical lives of assets for assessment of Pipeworks renewals requirements

Material Type	Wall Thickness	Diameter (mm)	Pessimistic Life (years)	Optimistic Life (years)	Reference
Cast Iron	Thin	0-150	60 (70)*	90 (100)*	SSL Report
Lead Joints	Medium	175-450	70 (80)*	140	Table 2
	Thick	500-750	90	140	Gascor

Material Type	Wall Thickness	Diameter (mm)	Pessimistic Life (years)	Optimistic Life (years)	Reference
					Estimate
Cast Iron	Thin	0–150	40	60	SSL Report
Mechanical	Medium	175-450	50	90	Table 2
Joints	Thick	500-750	60	90	Gascor Estimate
Steel -	Thin	25-40	40	90	SSL Report
Coated	Medium	50-80	40	90	Table 3
No CP	Thick		40	90	Gascor Estimate
Steel -	Pre 1930		70	140	
Coated	1930 –49		90	180	SSL Report
With CP	1950 –69		100	220	Table 5
	1970 –79		100	240	Author's Estimate
	1980 -on		115	250	
PVC			37	72	Distribution Spread
PE			50	100	

The asset lives adopted for analytical purposes are consistent with industry-accepted asset lives of pipes. Multinet's analysis uses existing age profile information obtained from the SAP system to derive an estimate of long-term asset renewal requirements.

Multinet's analysis indicates that approximately 90 km per annum of low pressure mains should be replaced for the next 10 years, to appropriately manage network reliability, supply security and safety and to also achieve a smooth replacement works program during this period and subsequent periods.

Multinet's analysis confirms that:

- The renewal rates established under the Pipeworks program in 2002 are sufficient, if maintained over the forthcoming access arrangement period, to ensure a smooth works program, and such that there would be no future increases to the program (to achieve performance and safety standards) if a lower rate was adopted in this period
- In terms of affordability in the context of current financial market conditions and Multinet's proposed WACC, a 90 km per annum replacement rate is appropriate and deliverable

- The proposed level of replacement and capital expenditure under the Pipeworks program for the forthcoming period is prudent, and complies with the requirements of Rule 79 of the National Gas Rules.

It is worth noting that the relatively high rainfall which occurred over the winter of 2011 exposed many areas of the network where water ingress into the ageing low pressure system occurred, resulting in customer interruptions and high operating costs to repeatedly siphon the network. This demonstrates the benefits of continuing to renew the system under the Pipeworks project.

5.7.3 Trend analysis: Pipeworks upgrade capital expenditure

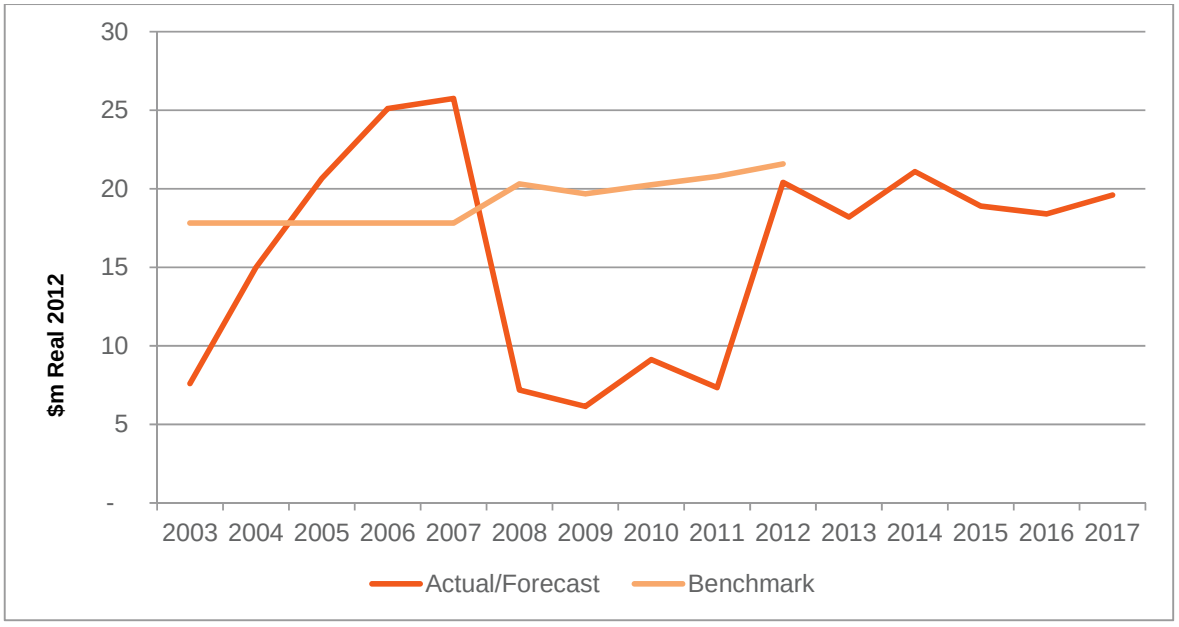
Table 5-6 shows the actual pipeworks capital expenditure for the current access arrangement period alongside the regulatory benchmark for the period.

Table 5-6: Actual and benchmark pipeworks capital expenditure for current period (real $2012)

Category	Actual (2008-2012)	Benchmark (2008-2012)	Variance	% Variance
Volume Connection	241	556	315	56.7%
Unit Price	$224,708	$184,551	($40,157)	(21.8%)
Total ($m)	**54.2**	**102.6**	**48.5**	**47.2%**

The figure below shows Multinet's actual pipeworks capital expenditure, compared to regulatory benchmarks since 2003.

Figure 5-2: Multinet's actual and benchmark pipeworks expenditure since 2003($m, real 2012)



It can be seen that in the current Access Arrangement Period:

- The actual unit rate for pipeworks capital expenditure was greater than the benchmark unit rate determined by the ESC in its 2008 decision.
- However, Multinet's actual Pipeworks expenditure fell short of the forecast, due a reduction in the volume of Pipeworks delivered compared to the regulator benchmark.

There are two main reasons for this:

- As noted earlier, capital expenditure programs will only attract the necessary investment funds if investors have reasonable confidence that the rate of return to be provided over, say, 10 successive regulatory periods (50 years) will be commensurate with the risks involved. In the 2008 GAAR, the ESC made an unprecedented decision to reduce the equity beta from 1 o 0.8, which was out-of-step with all previous regulatory decisions. The ESC also flagged the possibility of a further reduction in the equity beta, which spooked investors and reduced confidence in the regulatory regime. Investors were unwilling to fund capital expenditure to the extent that Multinet had assumed at the time of its regulatory proposal. Effectively, investors downgraded regulated networks and re-assessed their investment priorities. The decision to defer a proportion of the Pipeworks program naturally followed as funding became unavailable.
- Following the global financial crisis in September 2008, Multinet faced further severe capital constraints. The unprecedented shift in perceptions of risk reinforced investors' concerns that followed the 2008 GAAR decision. The pressure for increased capital expenditure in other aspects of Multinet's business – most notably IT capital expenditure – created additional pressure to defer a proportion of the planned Pipeworks program.

Fortunately, the deferral in Pipeworks capital expenditure has been achieved without affecting service performance in the current Access Arrangement Period. In addition, customers will benefit from lower prices in future as Multinet's regulated asset base is lower as a result of the deferral.

It is essential, however, that the funding problems in the current period are not repeated in the next. While financial markets remain unsettled, there remains a possibility of capital constraints and undesirable deferrals of capital expenditure. As discussed in section 8, Multinet regards the determination of a regulated WACC that accords with the requirements of the National Gas Law and Rules as an important element in minimising the risk of capital constraints.

In light of the explanation provided above, Multinet regards its forecast capital expenditure for the Pipeworks program as prudent and efficient, and is achievable in the current financial environment.

5.8 Network replacement capital expenditure

5.8.1 Overview

Multinet's estimates of replacement capital expenditure requirements are derived from the AMP. Analysis of each class of asset is undertaken to identify replacement capital expenditure needs. The most significant renewals expenditure relates to the Pipeworks program (described in section 5.7above). However a number of other renewals projects must be undertaken to ensure that the overall network does not deteriorate, and overall service and safety standards are maintained.

Multinet's forecast network replacement capital expenditure (excluding Pipeworks) is shown below.

Table 5-7: Forecast network replacement capital expenditure 2013 – 2017 ($m, real 2012)

	YEAR ENDING 31 DECEMBER				
	2013	2014	2015	2016	2017
Network replacement	9.4	8.4	6.9	8.2	9.6

Detailed information to explain and substantiate Multinet's forecast of replacement capital expenditure is provided below. A comparison of actual expenditure in the current access arrangement period and the forecast for the forthcoming period are also provided.

5.8.2 Basis for network replacement capital expenditure

Multinet's Maintenance and Replacement Strategies detail the work that is necessary to maintain the capability of the asset base to deliver services at the required standard, while optimising total life cycle costs, for each of the following asset groups:

- Transmission pipelines
- Distribution mains, valves and services
- Supply regulators and water bath heaters
- Equipment enclosures
- Corrosion protection.

Multinet's AMP also addresses replacement requirements relating to the asset groups of large consumer installations and small consumer installations. These asset groups consist primarily of meters.

Multinet's asset replacement plans take into account:

- The present and future asset requirements based on current condition, performance and risk
- Applicable legislative requirements
- The need to ensure the safety of the public, Multinet personnel and the environment
- Customer expectations of reliability, measured on duration and frequency of outages
- Regulatory targets for network reliability
- Internal and external benchmarks that reflect accepted good industry practice.

In broad terms, replacement expenditure projections are based on a combination of forecast expenditure required to address known issues, and anticipated increases in expenditure as the network ages. Projections of asset failure rates are derived from statistical analysis of Multinet's condition inspection data, and more generic data on industry practice.

Further details of Multinet's asset replacement plans for each asset group for the forthcoming access arrangement period are provided below.

5.8.2.1 Transmission Pipelines

Coating fault rates are high on some pipelines, however inspections of representative coating defects on pipelines with high numbers of coating faults have indicated minimal or no evidence of metal loss, showing that the pipeline cathodic protection systems are providing good protection despite the high number of small coating

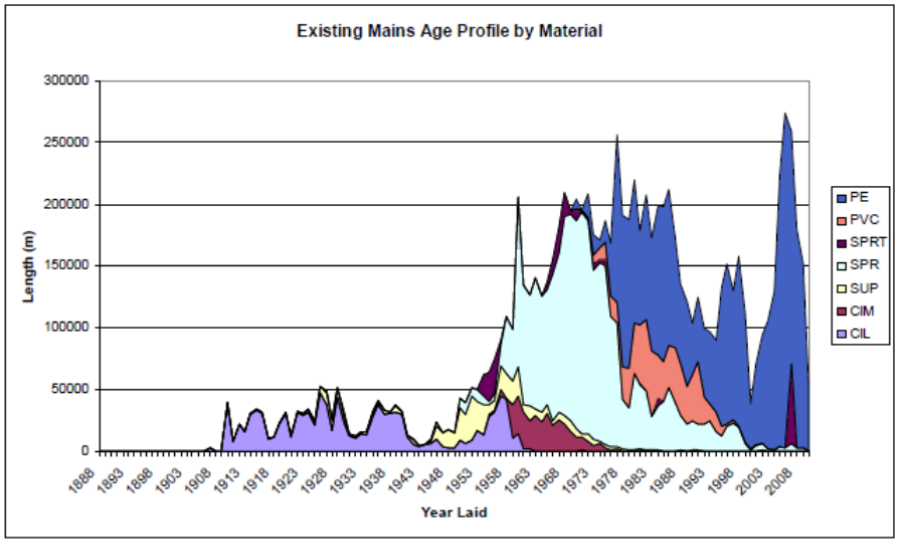
defects. Given these results, there are no planned pipeline replacements within the forthcoming Access Arrangement Period, further inspection and condition monitoring will continue.

5.8.2.2 Distribution mains and services

Multinet's gas distribution network is comprised of approximately 9,800 km of distribution mains and associated services and valves that operate at high, medium and low pressure.

The distribution main age profile encompasses a broad time-span, with some of the older mains dating back to the late 1880s. Cast iron was prominent from the inception of the distribution network up until the late 1960's. Steel, both protected and unprotected, took over in the early 1950s with protected steel still used today. PVC and polyethylene were introduced in the early 1970's with PVC usage declining in the early 1990's. Polyethylene is now the dominant material with over 95% of new Mains constructed from polyethylene in the last 10 years. The age profile of the distribution mains assets is shown in the figure below.

Figure 5-3: Age profile of Multinet's distribution mains

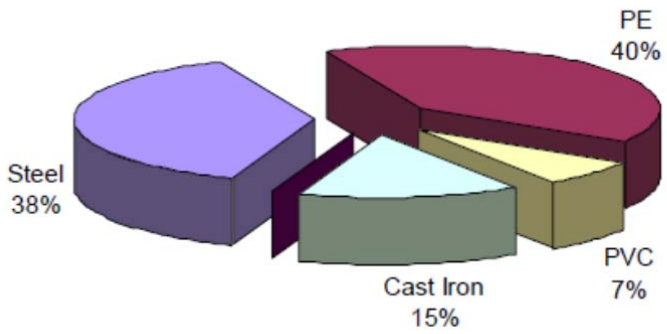


PE=Polyethylene PVC=Polyvinyl Chloride SPRT=Steel Protected Transmission SPR= Steel Protected SUP=Steel Unprotected CIM=Cast Iron Mechanical Jointed CIL=Cast Iron Lead Jointed

It is important to note that 11% of Multinet's distribution network or 1,050 km is at least 60 years old. Assets of this age expose Multinet and its customers to performance risk. The replacement program is focused on the prudent management of this risk.

The composition of the distribution mains assets base by material is shown in the figure below.

Figure 5-4: Composition of Multinet Gas Distribution System by material



All mains constructed of modern materials are assessed to be in good condition or better. Mains constructed of cast iron and uncoated, unprotected steel are in varying states of degradation ranging from good to poor. These materials are the focus of Multinet's replacement programs.

Similarly for services, all those constructed of modern material are assessed to be in good condition or better. Services constructed from cast iron, bare steel and other obsolete materials are generally in poor condition. These services are replaced when the mains to which they are connected are replaced. In addition, ad-hoc replacement of failed services is undertaken.

No replacement is planned for high pressure mains over the next five years because the pipe materials all have lives that extend beyond this period. Replacement of low pressure mains to high pressure standard is being undertaken through the pipeworks program (see Section 5.6). Some large diameter pipe replacement will involve replacing low pressure pipes on a like-for-like basis, and that expenditure falls within the category of distribution mains and services replacement capital expenditure.

Sections of the medium pressure system are considered for replacement where the pipe materials are cast iron, ductile iron, unprotected steel or other materials with inferior safety performance. Large diameter medium pressure mains comprised of these materials are a higher risk in relation to safety. To mitigate this risk, all large diameter cast iron mains operating at medium pressure are leakage surveyed annually.

Large diameter cast iron mains are subject to condition-based replacement on a 'like-for-like' basis. These mains are unable to be upgraded to high pressure easily due to the need to shed downstream load from them. Replacement of these mains cannot be deferred, due to their age and in some cases extremely poor condition.

Physical inspection of a sample of large diameter cast iron mains is carried out based on feedback from field personnel and maintenance history. This inspection comprises a Magnetic Flux examination of sample sites to determine the degree of material degradation and the probability of through wall corrosion occurring somewhere within the mains unit under assessment. These defects drastically increase the risk of mains fracture due to bending and crushing loads. Reports have been compiled for Pickles St, Nepean Hwy, Auburn Rd and Reserve Rd Mains, showing a requirement to replace these mains in the short term.

There are several contributing factors including exposure to high levels of traffic loading due to positioning in roadways. This, in conjunction with a lack of open ground (nature strips) in front of high density dwellings, increases the likelihood for escaped gas to find its way into underground pits and basements where a potentially explosive incident can occur.

The work volumes and unit rates underpinning the forecast capital expenditure for replacement of large diameter cast iron mains for the forthcoming Access Arrangement Period is shown in Figure 5-6.

Table 5-8: Large Diameter Cast Iron Mains replacement program

Project	Length (Dia)	Unit Cost	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18
Provision for ad hoc replacement in LPDZ	200m	$1,000/m	$200k	$200k	$200k	$200k	$200k	$200k
Aughtie Dr to Nepean Hwy St Kilda	2,000m (450 – 600 mm)	$500/ district regulator	$1,000k	$1,000k				
Summerhill Rd Glen Iris (downgrade)	3,100m (225mm)	$225/m			$700k			
The Esplanade St Kilda	3,300m (225mm)	$800/m						$2,600k
Riversdale Rd Hawthorn (downgrade)	800m (225mm)	$620/m					$185k	
Auburn Rd, Hawthorn	3,800m (Various)	$1,400/m					$5,400k	
Wellington Rd Kew	2,500m (225mm)	$320/m				$1,140k		

One of the challenges for Multinet will be managing the replacement of the large diameter low pressure supply mains that run through major arterial roads and high profile strip shopping centres. These projects are costly, complex, have high local community impact, require significant traffic management planning and coordination with other service authorities.

Multinet's capital expenditure forecast for replacement of distribution mains and services (other than Pipeworks) is shown in the table below.

Table 5-9: Forecast distribution mains and services replacement capital expenditure, 2013 – 2017 ($m, real 2012)

	YEAR ENDING 31 DECEMBER				
	2013	2014	2015	2016	2017
Distribution mains and services replacement	7.5	6.6	4.9	5.4	7.9

5.8.2.3 Supply Regulators and water bath heaters

Gas supply regulators are located throughout Multinet's distribution system and include District Regulators, Field Regulators and City Gate Regulators.

The replacement of Supply Regulators and associated components is primarily driven by:

- Availability of serviceable spare parts: As critical replacement parts become unavailable, regulators/components can no longer be maintained to the prescribed scheduled levels and as such must be replaced with suitable units with commercially available spare parts. The basis of Regulator family replacement will be on the forecast availability of spares and the current level of Regulator family exposure.
- Ability to meet operational, safety and regulatory requirements: Supply Regulators installed prior to the formation of the Gas and Fuel Corporation have limited or no regulated by-pass facilities. These sites no longer meet current standards and require re-work/replacement in order to meet current operation requirements. Multinet's Supply Regulator Strategy lists these regulators and their intended replacement date.

In addition, there are a number of existing above ground Supply Regulator sites that currently present a degree of risk, predominately due to the exposed nature of the assets and inherent design, construction, operational and/or locational factors. The principal method of mitigating these risks is to relocate the Supply Regulators below ground. This usually results in complete asset replacement due to physical size constraints when positioning this type of equipment. The sites identified in the Network AMP were originally commissioned several decades ago and currently expose the business to risks relating to:

- Proximity to high density housing and/or public areas
- Vehicular impact and vandalism
- Complaints from the public due to poor aesthetics, noise and smell
- Limited supply capacity (some sites unable to achieve projected loads)
- Limited redundancy and/or bypass capabilities

In relation to city gate regulators and water bath heaters, the City Gate at Dandenong Terminal Station is the most significant supply facility for Multinet. This facility supplies the Inner Ring Main (2,800 kPa) and the De-licensed (1,050 kPa) transmission pipelines which feed most of Multinet. The City Gate Regulators at Seville East and Yarra Glen were installed and commissioned in 2005. These sites are above ground with the Seville East regulators housed within a masonry kiosk. The other City Gate, located at Gembrook was commissioned in 1974 and is housed in an above ground kiosk and has a Water Bath Heater. The water bath heater (WBH) is primarily used to heat the gas (prior to pressure regulation) to prevent low equipment operating temperatures and to maintain ideal distribution gas temperature (of 15°C).

In addition to the expenditure described above, the supply regulator replacement expenditure set out below is also planned for the next access arrangement period:

- Hydraulic regulator replacement
- Environmental noise improvement
- Equipment enclosures
- Obsolete regulator replacement
- District Regulator replacement
- Non-compliant fittings.

The forecast of total replacement capital expenditure for supply regulators and water bath heaters is set out in Table 5-10.

Table 5-10: Forecast supply regulator replacement capital expenditure, 2013 – 2017 ($m, real 2012)

	YEAR ENDING 31 DECEMBER				
	2013	2014	2015	2016	2017
Supply regulator replacement	1.8	1.8	2.0	2.8	1.7

5.8.2.4 Equipment enclosures

There are approximately 2,700 equipment enclosures throughout Multinet's distribution system, with the majority of these subject to regular inspection activity.

The current condition of enclosures across the distribution system is predominately good. Enclosures and components recently refurbished or replaced are in excellent condition with some of the older enclosures and components in poorer condition. Enclosures and components in substandard condition are generally replaced or repaired when items create public or employee safety concerns and/or have reached or exceeded their design life.

5.8.2.5 Corrosion protection

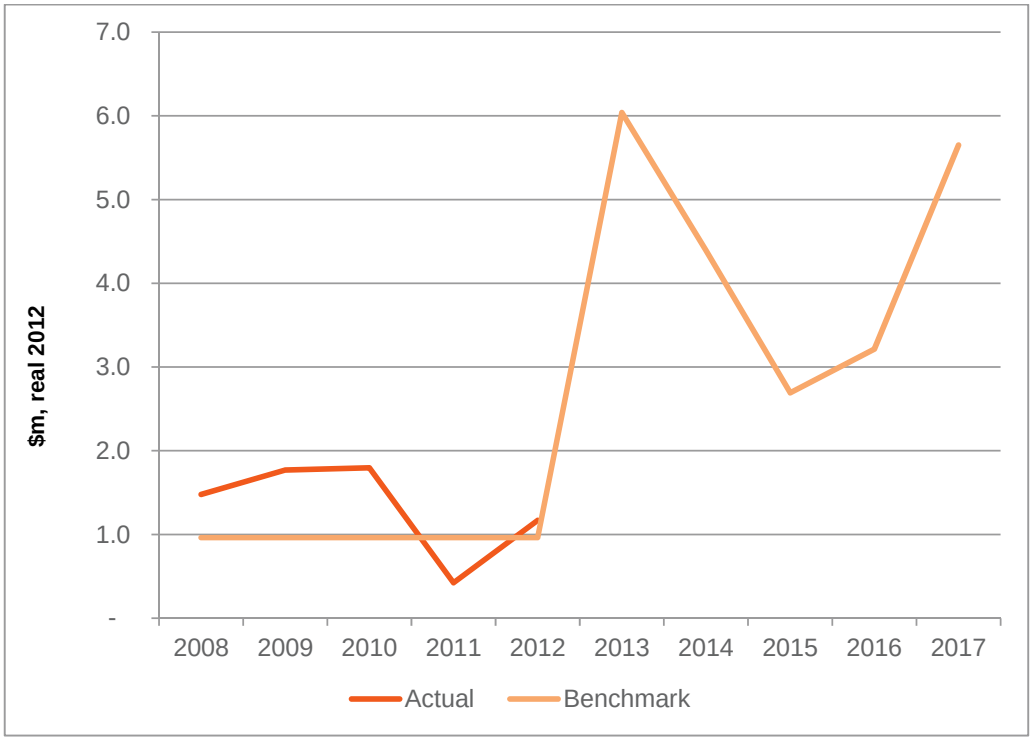
Multinet's metallic pipework is subject to stray current corrosion from the DC railway/tramway traction systems, making an effective protection system and monitoring program essential to maintain the integrity of the gas network. Consequently, all transmission and high pressure steel pipelines as well as some medium pressure steel pipelines (approximately 35% of Multinet's entire network) are cathodically protected. The relevant assets are current cathodic protection units, anode beds and miscellaneous other equipment.

Replacement of corrosion protection equipment will be carried out when corrosion protection monitoring and testing results indicate the stipulated level of protection is no longer able to be provided by the existing installations. At present, there are no means available to predict accurately the replacement requirements. Provision is made in the Corrosion Protection strategy for multiple replacements of each asset type per year.

5.8.3 Trend analysis: network replacement capital expenditure

The figure below shows the actual network replacement for the current access arrangement period alongside the forecast for the forthcoming period.

Figure 5-5: Actual and forecast network replacement capital expenditure



Multinet has spent slightly mode on replacement works than forecast. The forecast increases in the forthcoming period.

5.9 Metering

5.9.1 Overview

Meter renewal/replacement capital expenditure is driven by the regulatory requirements in the Gas Distribution System Code and the need to sample test each family of meters in accordance with the AS/NZS 4944 standard. The table below presents a summary of Multinet's forecast of meter renewal and replacement capital expenditure.

Table 5 15: Forecast meter renewal and replacement capital expenditure ($m, real 2012)

	YEAR ENDING 31 DECEMBER				
	2013	2014	2015	2016	2017
Large consumer installation replacement	0.1	0.2	0.2	0.2	0.2
Small consumer installation replacement	3.6	3.3	2.4	2.3	2.4
Total	**3.7**	**3.5**	**2.6**	**2.5**	**2.6**

Detailed information to explain and substantiate Multinet's forecast of meter renewal and replacement capital expenditure is provided below. A comparison of actual expenditure in the current access arrangement period and the forecast for the forthcoming period is also provided.

5.9.2 Basis for meter replacement capital expenditure

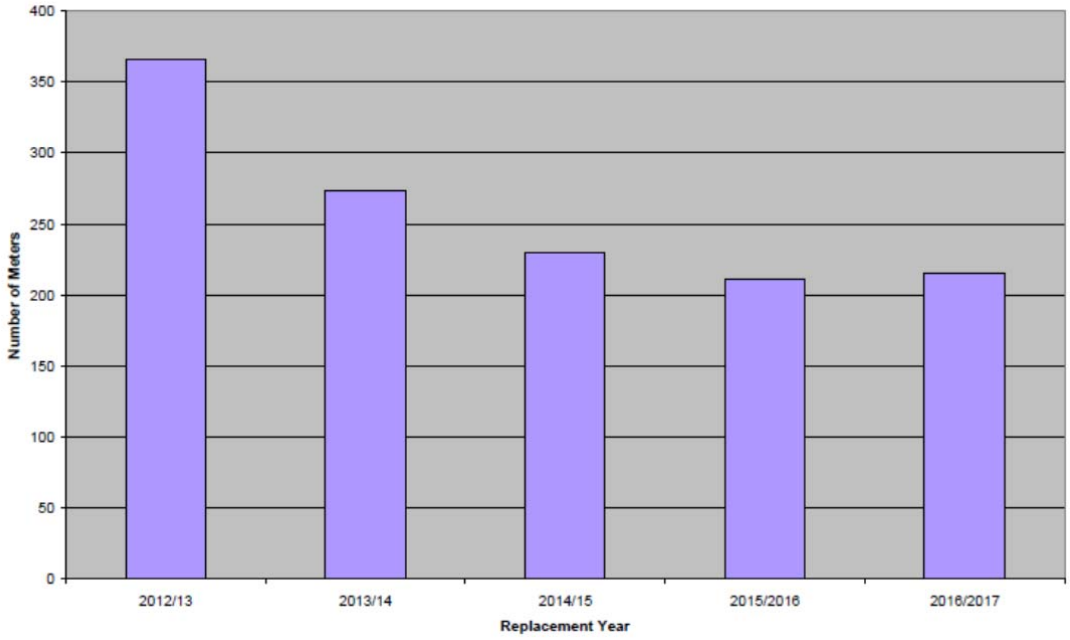
As indicated in the table above, meter replacement capital expenditure is divided into two subcategories, being expenditure associated with large consumer installations, and expenditure associated with small consumer installations. Relevant details are set out below.

5.9.2.1 Large consumer installations

Large consumer Installations are defined as a consumer installation that contains a meter with a capacity greater than 10 Standard cubic metres per hour (Sm^3/h). Large consumer installations consist of three main elements: meters, regulators, and data loggers & flow computers.

Meters are generally replaced at the end of their regulated life or are sample tested in line with AS/NZS 4944. A small percentage of meters are replaced due to defects such as corrosion, impact damage etc. The forecast volume of meter replacements is shown in Figure 5-6.

Figure 5-6: Forecast large consumer meter replacement volumes



The decline in replacement volumes reflects the application of sample testing (in line with AS/NZS 4944) to the more common AL1000 and AL425 meters.

Replacement of Regulators is typically dictated by a change in the consumer's operational/load requirement that is outside of the range of the installed unit. The replacement of particular families of regulators has occurred in the past and is implemented when associated spare parts are not commercially available.

The number of flow correctors or data loggers purchased each year is dependent on demand. The older version of the inline series of data logger and flow computers are obsolete and cannot be repaired. These are replaced upon failure.

Forecasts of replacement capital expenditure for large consumer installations are set out below.

Table 5-11: Forecast large consumer installation replacement capital expenditure 2013 – 2017 ($m, real 2012)

	YEAR ENDING 31 DECEMBER				
	2013	2014	2015	2016	2017
Large consumer installation replacement	0.1	0.2	0.2	0.2	0.2

5.9.2.2 Small consumer installations

A small consumer installation is defined as a consumer billing installation that contains a meter with a capacity equal to or less than 10 Standard cubic metres per hour. Multinet has approximately 640,000 active meters installed in these installations. Each meter is coupled to a single-stage regulator.

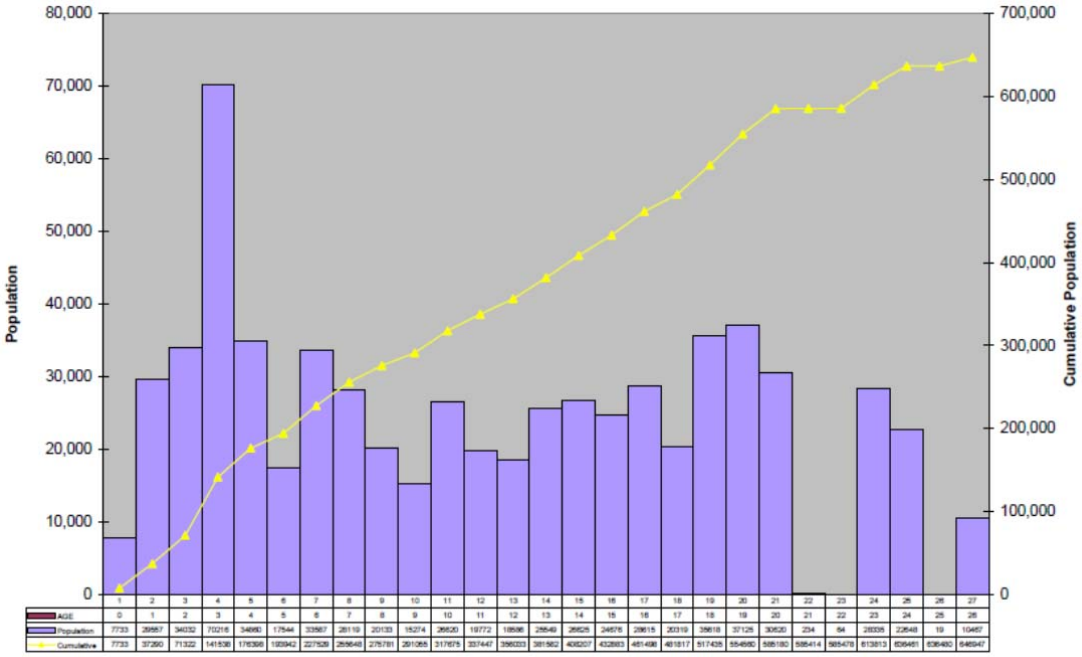
All small consumer meters are of 'diaphragm' type construction with an effective technical life of approximately 35 to 40 years. The meter renewal/replacement program is driven by the regulatory requirements in the Gas Distribution System Code and the need to sample test each family of meters at least once in their initial life as per AS/NZS 4944 "Gas meters – In service compliance testing". To retain a family of meters in the field after their initial life requires the sampled meters to pass stringent accuracy acceptance criterion.

The number of years the meter family can be extended is dependent on the sample meter test results as defined in AS/NZS 4944. After this extension period the family is re-tested to determine whether it can be further extended or requires removal from the field in the following year.

The small consumer meter age profile at replacement generally ranges between 15 years and 22 years in the field. Twenty percent of the total population of small consumer meters are between 15 and 23 years old.

The figure on the following page shows the age profile of the meter population.

Figure 5-7: Age profile of small consumer meters



All forecast meter replacement volumes have been based on the current test criteria of testing meters at 100% and 20% flow rate, leakage test, dial registration test family history of failure. The number of meter families failing sample testing is expected to remain relatively constant for the forecast period. At the 100% capacity test criteria, meters are expected to last approximately 20 years on average before removal from the field. Multinet's replacement plans assume that current meter families in the field life extension program will undergo repair twice, prior to disposal.

The replacement of domestic meters is currently driven by Code requirements. From 2008 replacement strategies have been subject to Australian Standard AS4944 requirements. The life cycle for domestic meter families range between 10 to 25 years, with total field life of each meter dependent on environmental factors, usage and initial material construction. Small consumer meters are replaced when a family (year and model type) fails sample testing. Sample testing is performed at least once in the initial life (15 years) for the family of meters and if the family fails the meter population is replaced the following year.

The table below sets out Multinet's forecast of small consumer meter replacement volumes over the forthcoming access arrangement period.

Table 5-12: Forecast of small consumer meter replacement volumes

Proposed Removal Year	Population *
2012-13 Total	43,357
2013-14 Total	29,000
2014-15 Total	30,000

Proposed Removal Year	Population *
2015-16 Total	30,000
2016-17 Total	30,000
2017-18 Total	30,000

*Represents the number of meters estimated to be removed from service

Replacement of small consumer regulators occurs reactively under the following criteria:

- When the Regulator cannot pass the required/designed flow-rate whilst maintaining a set outlet pressure;
- When the Regulator Lock-up mechanism is tested and fails to operate correctly;
- When the Regulator is leaking or a fault is detected with the relief mechanism;
- When the Regulator is deemed to be of very poor condition with failure imminent (Including but not limited to corrosion and casing damage); and
- During upgrade of Low and Medium pressure networks to High pressure standard

Forecasts of replacement capital expenditure for small consumer installations are set out below.

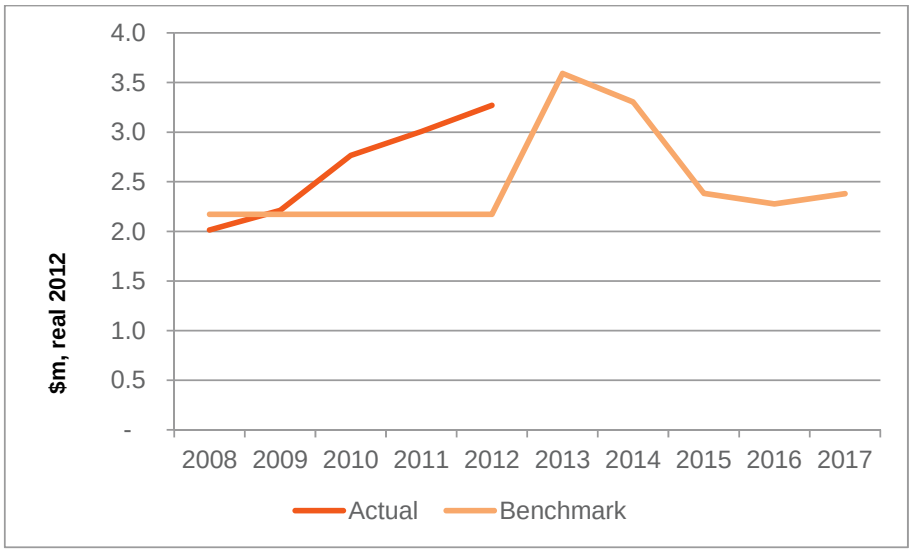
Table 5-13: Forecast small consumer installation replacement capital expenditure, 2013 – 2017 ($m, real 2012)

	YEAR ENDING 31 DECEMBER				
	2013	2014	2015	2016	2017
Small consumer installation replacement	3.6	3.3	2.4	2.3	2.4

5.9.3 Trend analysis: meter replacement capital expenditure

The figure below shows the actual meter replacement for the current access arrangement period alongside the forecast for the forthcoming period.

Figure 5-8: Actual and forecast metering capital expenditure



Increasing trend profile consistent with aging metering infrastructure combined with a higher number of meters that are not repairable and require replacement.

5.10 Demand-related capital expenditure

5.10.1 Introduction and Overview

Demand-related capital expenditure is required to augment the system to meet forecast increases in network load growth that cannot be attributed to individual customers. The capital expenditure is required to maintain standards of safety and service across the network.

Based on demand forecasts provided by the National Institute for Economic and Industry Research (NIEIR), Multinet's analysis indicates that network reinforcement is required during the forthcoming Access Arrangement Period. In addition, Multinet is planning to increase capacity at custody transfer stations (the injection points into the Multinet network) in the next access arrangement period, as this work will provide that most efficient method of increasing capacity of the downstream transmission and distribution assets.

Multinet's demand-related capital expenditure planning examines a range of alternatives when assessing the network's future augmentation requirements, to ensure that the most efficient option for providing additional capacity is selected. Demand-related capital planning is coordinated closely with the Pipeworks program and other asset replacement works to ensure that total capital expenditure is optimised.

Multinet is confident that its demand-related capital expenditure forecast conforms with the requirements of Rule 79 of the National Gas Rules, and is consistent with the expenditure that would be incurred by a prudent service provider acting efficiently, in accordance with accepted good industry practice, to achieve the lowest sustainable cost of providing services.

Multinet's demand-related capital expenditure forecasts are set out in the table below.

Table 5-14: Forecast demand-related capital expenditure 2013 – 2017 ($m, real 2012)

	YEAR ENDING 31 DECEMBER				
	2013	2014	2015	2016	2017
Demand-related capital	9.6	8.4	6.9	8.2	9.6

Detailed information to explain and substantiate Multinet's forecast of demand-related capital expenditure is provided below. A comparison of actual expenditure in the current access arrangement period and the forecast for the forthcoming period is also provided.

5.10.2 Basis for demand-related capital expenditure

Multinet's Gas Capital Growth Plan (prepared within the framework of the AMP) provides the basis for developing the demand-related capital expenditure forecast. The company's demand-related capital expenditure plans aim to ensure that:

- Adequate capacity is provided for consumers' growth requirements
- Loss of supply due to lack of capacity is minimised
- System security standards and reliability of supply are not adversely affected by growth in peak loads
- Provision is made for future upgrading of all distribution Mains to High Pressure standard
- Multinet complies with all applicable requirements of Government Codes and Regulations.

Adequate capacity in the gas network is defined as the capacity to meet peak hour loads that occur for a weather probability of 1 in 2 years when operating at normal pressures. Short term additional system capacity may be available in high pressure networks when higher pressures are used, but this capacity is reserved for colder days (i.e. greater than 1 in 2 year peak hour loads), system emergencies and when upgrade projects cannot be economically justified.

The Distribution System Code requires specified minimum pressures to be maintained at all supply points in the Multinet network. The network has a pronounced winter peak due to the high proportion of domestic heating load. The degree of "peakiness" is forecast to increase due to the increased penetration of central heating and instantaneous appliances such as hot water services and boilers.

Forecast peak hour gas loads in each year, based on a weather probability of 1 in 2 years, have been used as the basis for determining requirements for demand growth projects. These loads have traditionally been estimated, based on forecast peak day loads prepared by the NIEIR using econometric modelling for different economic growth rate scenarios. The demand growth forecasts adopted by Multinet for the purpose of this access arrangement information are set out in Chapter 13.

The program of demand growth projects has been developed for an economic growth scenario with no provision to supply additional gas for embedded electric power generation. Although there has been a recent increase in interest in cogeneration and several small projects have proceeded or are proceeding (NAB Wantirna and Crown Casino), it is very difficult to forecast the size, location, uptake and extent of network reinforcement required for such projects over the forthcoming Access Arrangement Period. For example, Multinet received an enquiry in 2009 for a 2PJ/annum cogeneration load in Port Melbourne. This project has not proceeded and no further information is available from the retailer. For this reason no forecast has been included for new co-generation load.

Similarly, no provision has been included for distributed generation or natural gas vehicles (NGV) in the current forecast. Although it is understood that at least one manufacturer claims to be close to commercialising a fuel cell and one NGV filling station has been connected, it is considered unlikely that the uptake of such technology

will be rapid enough to make a material impact on gas demand within the current planning period. This situation could change if, for example, Government introduced significant initiatives to sponsor or subsidise such installations on a broad scale.

Winter testing provides detailed data as to network fringe pressures during a one in two year winter peak event. Conclusions can be drawn as to the current level of non-utilised network capacity during such peak times. Demand reinforcement capital decisions rely heavily on winter test data.

Winter testing has identified the following principal areas as requiring reinforcement for, in addition to the low pressure network assets being addressed through the Pipeworks program:

- Eastern HP (Sherbrooke Network) at Cockatoo 3781 and Emerald 3782
- Eastern HP (Knox Network) at Mount Waverley 3149
- Tooronga HP
- Mulgrave HP
- Moorabbin HP.

Multinet's AMP provides justifications for each project. It is noted that each project ties into Multinet's longer term strategy for replacement of the low pressure system or decommissioning of cast iron medium pressure mains.

In order to meet service level objectives, Multinet is also planning to increase capacity at custody transfer stations (the injection points into the Multinet network) forthcoming Access Arrangement Period. Augmenting upstream supply by upgrading regulators and/or enlarging outlet pipe work is the most efficient method of increasing capacity of the downstream transmission or distribution assets.

The custody transfer stations targeted for capacity upgrade during the forthcoming Access Arrangement Period are:

- DTS – Lurgi M005
- Malvern M018 (Ewart St)
- Noble Park M015
- Clayton M016.

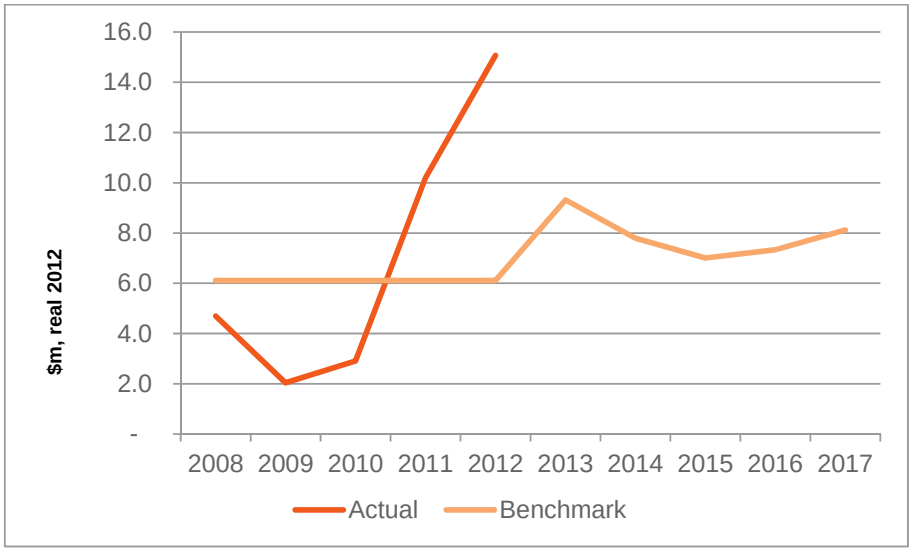
Chapter 4 of the AMP explains that Multinet's demand-related capital expenditure planning investigates a range of alternative strategies to address supply constraints including:

- Upgrading low pressure mains to high pressure by mains renewals
- Augmentation through the construction of additional mains at the given operating pressure
- Raising operating pressure
- Redistribution of supply, achieved through supply pressure biasing, introduction of network isolation valves, permanent sectioning of an area from one network to another, transfer of specific larger consumers to alternative existing or extended mains, introduction of a new source, or better interconnection of existing Mains
- Demand side management (principally, price signals).

5.10.3 Trend analysis: demand-related capital expenditure

The figure below shows the actual network replacement for the current access arrangement period alongside the forecast for the forthcoming period.

Figure 5-9: Actual and forecast demand related capital expenditure



The ESC established benchmarks that were too low. Increasing profile of expenditure as demand increases.

5.11 Performance improvement capital expenditure

5.11.1 Overview

This capital expenditure is aimed at improving the performance of the gas network to deliver operational efficiency improvements. Performance capital projects planned for the forthcoming access arrangement period are:

- Alteration to existing Transmission Pipelines to allow intelligent pigging
- Removal of aged syphons on the de-licensed transmission pipeline system
- SCADA augmentation
- cathodic protection system augmentation.

The table below sets out Multinet's forecast performance improvement capital expenditure for the forthcoming access arrangement period.

Table 5-15: Forecast performance improvement capital expenditure 2013 – 2017 ($m, real 2012)

	YEAR ENDING 31 DECEMBER				
	2013	2014	2015	2016	2017
Performance improvement capital	2.0	2.8	4.3	6.6	4.8

Detailed information to explain and substantiate Multinet's forecast of performance improvement capital expenditure is provided below. A comparison of actual expenditure in the current access arrangement period and the forecast for the forthcoming period is also provided.

5.11.2 Basis for proposed performance improvement capital expenditure

Details of the main areas of performance improvement capital expenditure are set out below.

5.11.2.1 PIG rectification

The process to rectify pipelines for pigging requires the replacement of tight radius bends to swept bends to permit a PIG to pass. The removal of reduced bore valves is also required. A valve configuration at each end of the pipeline to allow a PIG launcher and receiver also needs to be installed.

The pipelines selected for rectification are listed in the table below.

Table 5-16: Pipelines selected for PIG rectification

Description	Pipeline	Lic #	Length (km)	Diameter (mm)	Number of sharp bends	Restrictive Valves
Dandenong to Edithvale	T21	33	11.56	150	18	None
Rowville to FTG	T76	142	6	150	0	0
Murrumbeena to Highett	T07	56	8.31	300	28	None

These pipelines are required to be in operation constantly without interruption to supply and welding on a pipeline is more time consuming than distribution. This and other reasons create any stop off and bypass to allow work on the pipeline an expensive exercise.

The planned rectification work will be undertaken at the rate of one pipeline per year for three years.

5.11.2.2 Siphon removal

The delicensed pipelines have 108 syphons installed. These syphons were used to extract liquid from the pipeline which has not been present since the introduction of natural gas. Generally, these syphons are located in low risk areas, however their height can result in stress on the fitting if roads are built above the syphon as their cover is reduced.

The main concern about these syphons is their likelihood of corrosion defect and the lack of repair methods. Depending on where a leak occurs, cut out is the only option for hot welding may not be safe on aged steel where the wall thickness cannot be guaranteed. For this reason and the obsolete nature of syphons on the delicensed pipelines, a program to remove them from service over a five year period is planned. The priority for removal will be based on location risk factors, depth of cover, maintenance history and ability to obtain cost synergies from multiple removals at one time.

5.11.2.3 SCADA augmentation

SCADA augmentation consists of the addition of new SCADA RTUs and monitoring points to assist with improved network monitoring, the installation of gas detectors at existing pressure reduction sites and the upgrade of existing monitored pressure reduction stations to controlled stations.

Over time the population of installed RTUs is forecast to increase to provide more detailed coverage of the existing service area. Additionally Multinet's geographical boundaries are expected to grow with green field projects and or acquisitions of a similar make-up. Any new service areas shall, from the commencement of operations, be monitored by RTUs or their equivalent (for example Yarra Valley and South Gippsland Towns Projects).

Electronic gas detectors can reduce the risks and improve response, to gas escapes. Three sites per year will have remote electronic gas detection installed.

A number of 'monitored only' sites are proposed to be upgraded to allow solenoid type control from SCADA. These control upgrades are typically performance driven. Projections indicate that approximately 24 sites over 4-5 years would benefit from a monitor to step control upgrade.

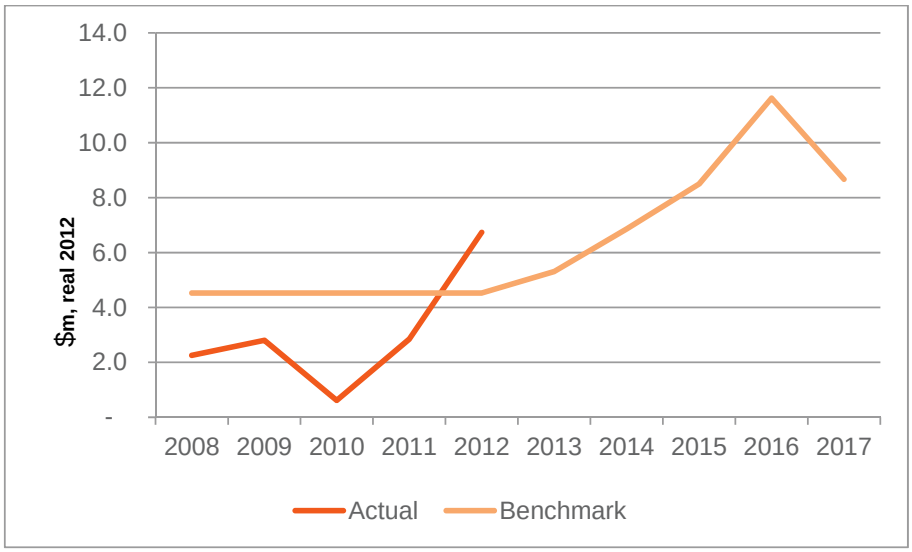
5.11.2.4 Introduction of remotely read Impressed Current Cathodic Protection Units (CPU)

The CPUs control the current and voltage impressed into the cathodic protection system. The 192 CPUs within Multinet are inspected every month to check the electrical current output. Installing telemetry equipment will reduce the inspection costs. Furthermore, if low current and voltage alarms were included in the telemetry equipment this would enhance the present level of monitoring from monthly to real time, thus reducing the amount of time the transmission pipelines or reticulation mains are without cathodic protection in the event of a CPU failure. This system is currently being designed and implemented in NSW and Multinet is actively monitoring developments. The roll out of this mature technology is planned for 2013.

5.11.3 Trend analysis: performance improvement capital expenditure

The figure below shows the actual performance improvement capital expenditure for the current access arrangement period alongside the forecast for the forthcoming period.

Figure 5-10: Actual and forecast performance improvement capital expenditure



Increasing spend in order to allow future pigging of the network.

5.12 Non-network capital expenditure – SCADA

5.12.1 Overview

This category of expenditure includes capital expenditure relating to the replacement and demand-related augmentation of SCADA systems.

The use of SCADA greatly reduces the operating cost and risks associated with operating a gas distribution network.

Multinet's forecast of SCADA and communications replacement capital expenditure is set out in the table below.

Table 5-17: Forecast SCADA and communications replacement capital expenditure, 2013 – 2017 ($m, real 2012)

	YEAR ENDING 31 DECEMBER				
	2013	2014	2015	2016	2017
SCADA and communications replacement	0.5	0.0	0.0	4.5	0.0

Detailed information to explain and substantiate Multinet's SCADA capital expenditure forecast is provided below. A comparison of actual expenditure in the current access arrangement period and the forecast for the forthcoming period is also provided.

5.12.1 Basis for proposed SCADA capital expenditure

A total of 241 Remote Terminal Units (RTUs) at key Multinet sites are actively and continuously managed by a Supervisory Control and Data Acquisition (SCADA) system. Each RTU directly supervises one or more critical assets across the distribution network including regulators, meters and fringe sites. Real time data gathered from these field RTUs are represented graphically on SCADA clients in the control room where the operators can, at a glance, assess the health of the distribution network.

As already noted, the use of SCADA greatly reduces the operating cost and risks associated with running a distribution network. However, for these efficiencies and mitigations to be continuously realised the RTUs, communications networks and SCADA systems need to be kept in effective working order.

Over time the population of installed RTUs are forecast to increase to provide more detailed coverage of the existing service area. Additionally Multinet's geographical boundaries are expected to grow with green field projects and / or acquisitions of a similar make-up. Any new service areas will from the onset be monitored by RTUs or their equivalent (for example South Gippsland Gas Pipeline).

The present population of 241 RTU are ageing and approaching end of life. The oldest of these RTUs are located at Multinet's most critical regulator sites as they were the first deployed. Some of these RTUs have exhibited less than optimal performance with intermittent or momentary faults which has in part been attributed to the age of the equipment and operating environment.

Consequently, a three year project was commenced in 2011 to upgrade and replace the oldest and most critical sites RTUs with a modern new RTU and associated equipment. In particular the radio equipment in selected RTUs will be upgraded from the D to E series, and the Kingfisher RTU's upgraded to the supported Kingfisher Plus unit. Secondary benefits of the replacement project would allow higher level functional programming tools to be deployed for those regulator stations allowing tighter local and remote control systems. Further projects in subsequent years allow for a gradual replacement of the remaining ageing RTUs.

5.12.2 Trend analysis: SCADA capital expenditure

Historic SCADA expenditure is included in IT below.

5.13 Non-network capital expenditure – IT

5.13.1 Overview

As discussed in chapter 3 of this AAI, Multinet has embarked on a journey to transform its business operating model. The new operating model supports Multinet's strategic objective to "create the Intelligent Utility", which requires Multinet to become a more traditional utility with greater strategic capabilities in-house. Given these strategic drivers, Multinet engaged Deloitte to assist in the development of Multinet's IT capital expenditure plan for the forthcoming Access Arrangement Period and beyond.

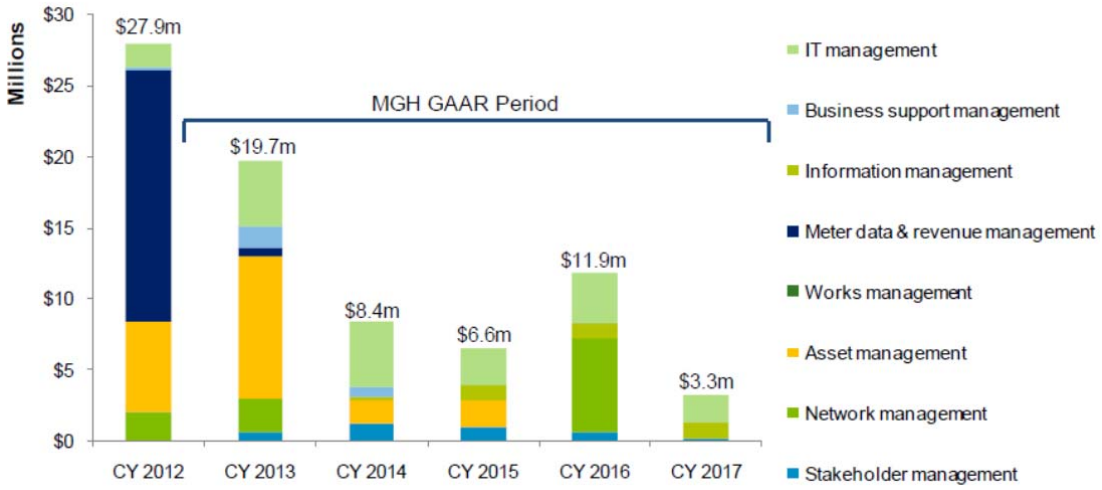
The development of the IT capital plan was based on a structured approach that included a review of the existing IT portfolio and future IT requirements with business stakeholders. The plan considered the commercial, operating and technical relationships that exist between Multinet and United Energy, and areas where services can be shared effectively. The development of the capital plan has also taken the following matters into account:

- A number of Multinet's IT systems are either at "end of life" or will become "end of life" in the next five years and will require replacement (e.g. upgrade or new system).
- Good IT industry practice is to refresh systems and therefore ensure that vendor support is available. This involves major software upgrades every five to seven years, and hardware replacement every three to five years.

- Multinet requires an increased level of automation in order to interface directly with service providers' systems.
- Multinet's IT systems need to be more agile and adapt to the changing needs of the gas regulatory environment (e.g. changing market rules).
- Efficiency and service improvements depend on business decisions being better supported by accurate data (e.g. data analytics).

The figure below presents Multinet's forecast IT capital expenditure for the forthcoming Access Arrangement Period.

Figure 5-11: Forecast IT capital expenditure



Further information to explain and substantiate Multinet's IT capital expenditure forecast is provided below. A comparison of actual expenditure in the current access arrangement period and the forecast for the forthcoming period is also provided.

5.13.2 Basis for proposed IT capital expenditure

Multinet's IT capital plan comprises a total of 32 projects to be implemented during the forthcoming Access Arrangement Period. Table 5-18 details the top ten projects in order of cost.

Table 5-18: IT major projects

#	Project	Capability area	Total Capex[a] ($m)	Total[b] ($m)	Start period	End period
1	CMS SAP Program (CIS+ and OMS Replacement, Cognos, WebMethods)	Meter data & revenue management	$17.7	$ -	Q3 2011	Q4 2012
2	SAP ERP Implementation Total	Asset management	$15.0	$8.7	Q4 2012	Q4 2013

#	Project	Capability area	Total Capex[a] ($m)	Total[b] ($m)	Start period	End period
3	Infrastructure Refresh Total	IT Management	$8.4	$8.4	Rolling	Rolling
4	SCADA Separation (Sovereignty)	Network Management	$3.8	$3.8	Q1 2016	Q4 2016
5	Change Requests	IT Management	$3.4	$2.8	Rolling	Rolling
6	Capitalisable Opex	IT Management	$3.0	$2.5	Rolling	Rolling
7	OMS Lifecycle Upgrade	Network Management	$2.5	$2.5	Q1 2016	Q4 2016
8	SCADA Replacement	Network Management	$2.5	$0.7	Q4 2012	Q1 2013
9	GIS Strategy and GE Smallworld Upgrade Total	Asset Management	$2.3m	$2.3m	Q1 2014	Q4 2015
10	Data Warehouse Enhancement Program	Information Management	$2.3m	$2.3m	Q1 2016	Q4 2017
	Total		**$60.9m**	**$34.0m**		

Note : The IT capital plan for the period CY2012-CY2017 was finalised in November 2011. Since that time Multinet has become aware of a potential increase in expenditure for 2012 in relation to the SAP project. An additional amount of $10m has been forecast for 2012. Multinet will provide more details of the forecast during the consultation period.

Multinet's IT capital plan will deliver the IT system capabilities required by the business to increase efficiency and transparency across business functions. It will support better management across many aspects of the business, including:

- Interoperability with service providers
- Streamlining processes across business functions
- Increasing the capacity to manage, monitor and respond to network issues and disruptions
- Improving the asset management capability.

Failure to deliver this IT capital plan will compromise Multinet's ability to effectively manage and operate the new operating model, which has a much greater demand for information, visibility and control of operations across all business functions and providers. Additionally, if the projects and capabilities outlined in this plan are not implemented it may be difficult for Multinet to respond to market and regulatory changes such as the National Energy Customer Framework (NECF) and any future carbon tax and emissions trading requirements.

There is a potential impact to the operating cost of IT and the business if the projects outlined in this IT capital plan are not delivered. For example, failure to deliver hardware and software upgrades may have a direct impact on the maintenance costs for these systems, since software and hardware vendors tend to increase the cost of maintenance for unsupported systems.

Multinet is currently involved in a shared IT program of work with United Energy, called the Lightyear Program. This program is implementing a number of projects for Multinet and United Energy, including the Data Centre Relocation, the SAP ERP Upgrade, and the CIS (billing system) replacement projects. The structure of the

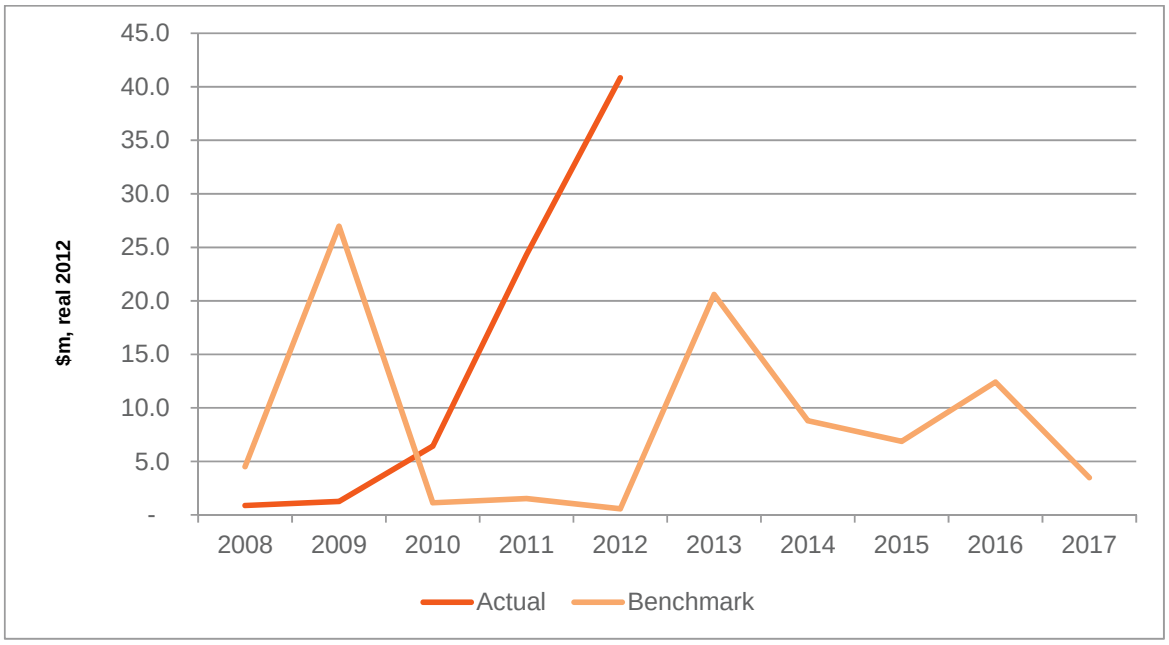
program is intended to reduce the overall costs to both companies, for example by sharing a Project Management Office and testing teams.

Multinet has a high level of confidence in the Lightyear team following the implementation of IT systems to support United Energy's AMI program and smart meter roll out. Multinet intends to continue focusing on improving its IT governance structures and processes with a particular focus on project delivery, to ensure that the IT capital plan for the forthcoming Access Arrangement Period can be delivered efficiently. Multinet also intends to move to a multi-vendor project panel when the Lightyear Program is complete in mid-2013. A well defined and implemented project panel will support Multinet's ability to manage IT capital projects and costs.

5.13.3 Trend analysis: Non-network capital expenditure – IT

The figure below shows the actual IT capital expenditure for the current access arrangement period alongside the forecast for the forthcoming period.

Figure 5-12: Actual benchmark and forecast IT capital expenditure ($m, real 2012)



Delay in the implementation of the billing systems and the bringing forward of the SAP ERP system to replace the current system that was installed over 10 years ago.

Table 5-19: IT Expenditure

Category	Actual (2008-2012)	Benchmark (2008-2012)	Forecast (2013-2017)
IT expenditure	$73.4m	$34.7m	$52.2m

5.13.3.1 Discussion on why expenditure is higher than benchmarks

A number of organisational, regulatory, commercial and technical changes that have occurred during the current regulatory period have imposed change of scope or increased solution complexity resulting in much higher expenditure than originally projected. Scarcity of resources, complexity and depth of customisation of old systems were also a significant contributing factor. However, the expenditure in the current regulatory period will establish core foundation capabilities for Multinet, including separate data centre and new infrastructure, sovereign SAP IS-U system and new SCADA system.

- CIS Project (including market systems replacement) – the complexity of the upgrade from CIS+to SAP IS-U was greater than allowed by the ESC. The ESC did not take into account the full requirements to implement a project of this scale and complexity. In addition the project scope has been expanded to include a number of important requirements such as anew business integration and reporting capability that aligns with the new NECF arrangements.This platform will form the basis of future projects and additional SAP functionality and interface with suppliers. This project is due to complete in mid-2012 to meet regulatory dates (e.g. NECF, Gas CoC).
- SAP Project – the ESC erred in basing the forecast on a small percentage share of an upgrade to the shared SAP system. Multinet is implementing a standalone system that is the most appropriate to manage its business for the forthcoming Access Arrangement Period. SAP builds are complex and require specific configuration to company specific requirements. This approach directly supports sovereignty principle.
- DC Relocation / Infrastructure Projects – expiry of data centre contracts and capability gaps required Multinet to relocate data centres. In December 2011 all applications were relocated to two new data centres and a new shared infrastructure platform was deployed. The full extent of Multinet's requirements was not recognised and the benchmark provided proved to be too low. Multinet was able to share these costs as part of a total project that involved United Energy, therefore the costs were contained and the cost increase was lower than it could have been if Multinet was operating as a stand-alone business. The data centre relocation has delivered highly available infrastructure capability, and therefore minimises the risk associated with system disruptions and outages.
- SCADA/RTS Projects – a project is currently underway to replace the legacy Multinet SCADA system with a new SCADA system that is designed for future separation. The expenditure variation is attributed to the revised costings following consultation with market/vendors and a number of business case iterations which has developed a clearer understanding of requirements, validated the most cost effective approach, and defined the optimal SCADA solution. The revised capital expenditure represents a more accurate estimate of the investment required to support the network management and monitoring requirements of the business. The SCADA system replacement is necessary in order to maintain safety and service integrity and to efficiently manage and deliver natural gas to customers.

5.13.3.2 Discussion on why expenditure is lower in the forecast period

During the current regulatory period a number of organisational, regulatory, commercial and technical changes have occurred that have driven change of scope or increased complexity resulting in much higher expenditure than originally projected. Also, some of the ESC assumptions and modelling have underestimated Multinet's business and technical requirements.

The current regulatory period will establish core foundation capabilities for Multinet, including separate data centre and new infrastructure, sovereign SAP ERP and IS-U system and new SCADA system. Therefore the forthcoming Access Arrangement Period will be focusing on the remaining foundation capabilities that will leverage core foundation capabilities and will be requiring a lesser expenditure.

- GIS Initiative – strategy to validate the upgrade path and upgrade are necessary in order to maintain safety and the integrity of Multinet's services. The GIS provides essential information to Multinet's engineers and field teams and supports Multinet in its asset management planning. Inaccurate geospatial information

could result in field teams being exposed to unnecessary risks or a disruption in supply to certain customers. Due to rapid advancements in geospatial technologies and the importance of accurate geospatial information it reasonable to maintain system currency.

- Data Warehouse and business information related initiatives – in line with the business strategy to focus on "creating the intelligent utility" and imminent change to bring key business functions in-house there will be a significantly larger amount of business data that will be captured and utilised for decision making. This initiative will build on the base foundation that was delivered via core foundation initiatives.
- Refreshes and Lifecycle upgrades – a number of refreshes, upgrades, change requests and enhancements are planned for the forthcoming regulatory period with the intent to maintain currency of the core foundation capabilities delivered during the current regulatory period, hence there will be less expenditure required.

Newly established Multinet internal IT strategy, planning and portfolio management function will enable more even and predictable IT systems planning and therefore more consistent expenditure trends in forthcoming submissions.

5.14 Non-network capital expenditure - other

5.14.1 Overview

Non-network (other) capital expenditure typically includes building and property capital works, the purchase of gas specific equipment and specialist equipment. These non-network assets support the business and facilitate the efficient and safe operation of the gas network and delivery of network services.

Table 5-20: Forecast Other non-network capital expenditure 2013 – 2017 ($m, real 2012)

	YEAR ENDING 31 DECEMBER				
	2013	2014	2015	2016	2017
Other non-network capital	4.1	0.0	0.0	0.0	0.0

Detailed information to explain and substantiate Multinet's forecast of Other non-network capital expenditure is provided below. A comparison of actual expenditure in the current access arrangement period and the forecast for the forthcoming period is also provided.

5.14.2 Basis for proposed Other non-network capital expenditure

Multinet has explained earlier in this submission that it is preparing to change the way in which it delivers services. Part of this restructure is to bring in-house a number of resources in order to deliver services. These resources require the necessary office accommodation in order to function. The 'forecast capital costs' relate to the necessary office refurbishment costs in order to accommodate a large influx of additional resources in line with the business transformation process.

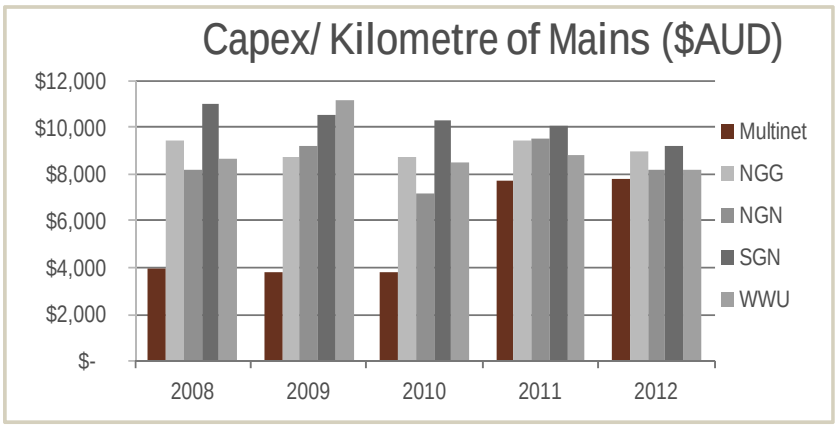
5.15 Capital expenditure benchmarking

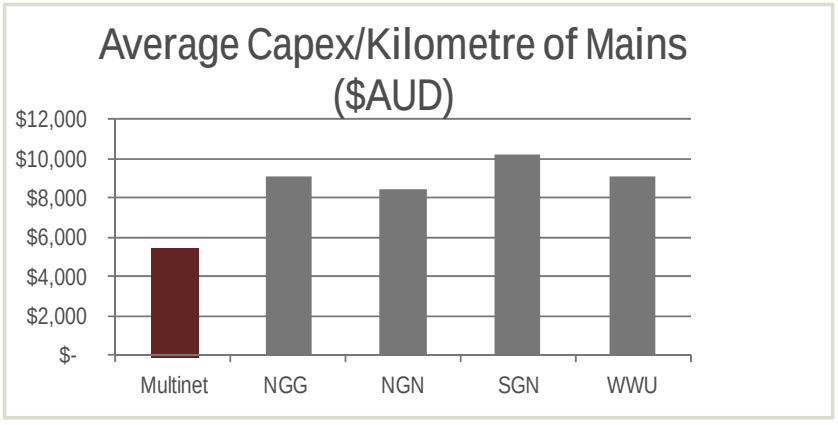
Multinet engaged Marchment Hill Consulting (MHC) to compare its performance against similar international gas distribution businesses, particularly businesses in the United Kingdom (UK) and United States (USA). A copy of MHC's report is provided as an attachment to this AAI.

MHC's studies confirm the efficiency of Multinet's capital expenditure over the current Access Arrangement Period.

The figure below shows Multinet's performance compared to the four main gas utilities in the UK: National Grid Gas (NGG), Northern Gas Networks (NGN), Scotia Gas Networks (SGN) and Wales and West Utilities (WWU).

Figure 5-13: Multinet's capital expenditure performance compared to UK gas utilities

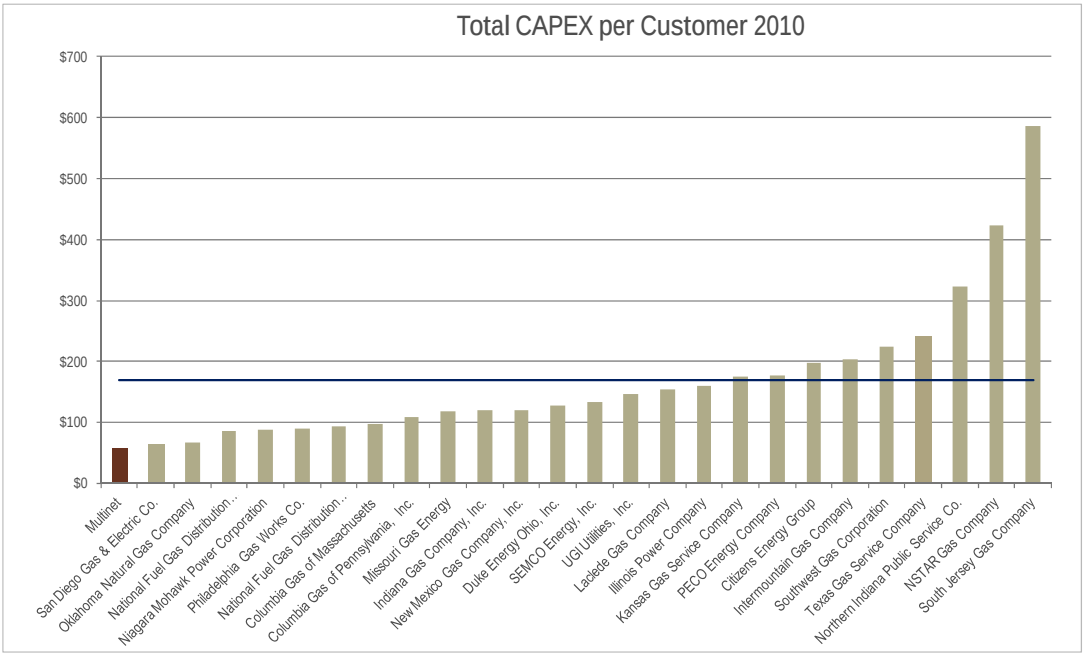


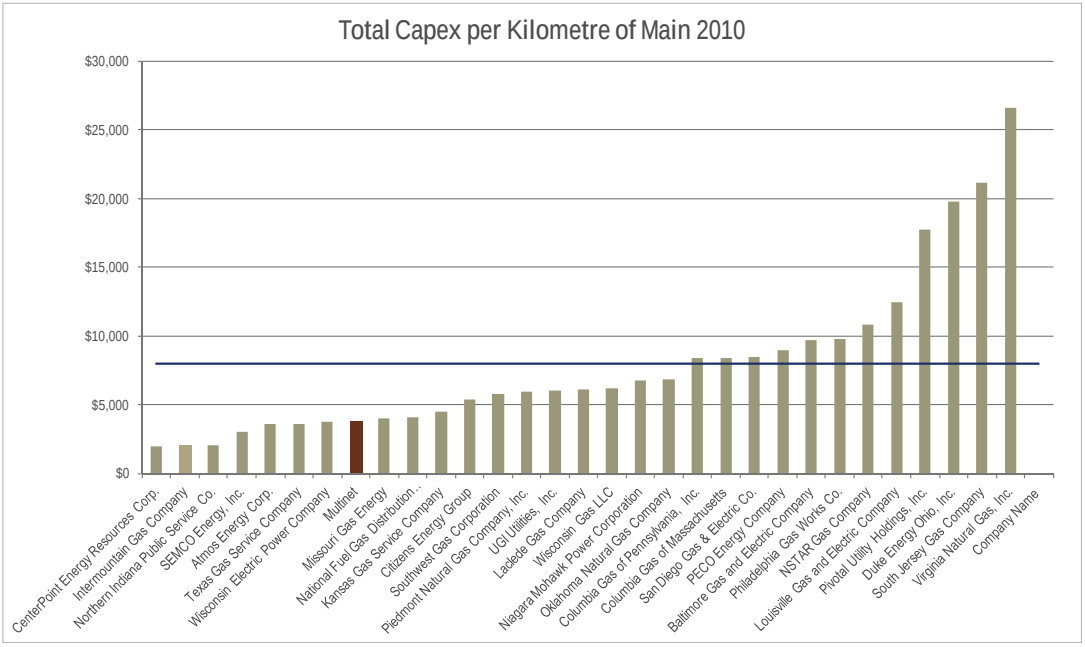


This analysis shows that Multinet's capital expenditure performance is better than the UK peer companies.

The figure on the following page shows Multinet's capital expenditure performance compared to a sample of US gas utilities.

Figure 5-14: Multinet's capital expenditure performance compared to US gas utilities





Based on the results of its benchmarking study, Marchment Hill Consulting concluded that overall, Multinet performs well on capital invested compared to all UK and US gas distribution businesses. The best measure of capital expenditure is capital expenditure per kilometre of main. On this measure, Multinet has a relatively low (that is, efficient) capital expenditure program given the scale of the company in terms of assets managed.

6. Depreciation

6.1 Introduction

This chapter presents Multinet's actual depreciation for the current Access Arrangement Period and forecast depreciation for the forthcoming access arrangement period. Depreciation reflects the diminution in the value of the regulatory asset base. Forecast depreciation forms part of the building block revenue allowance to compensate the distributor for the decline in the regulatory asset base.

The depreciation schedule sets out the basis on which the pipeline assets constituting the capital base are to be depreciated for the purpose of determining a reference tariff. Rule 88(2) explains that the depreciation schedule may consist of a number of separate schedules, each relating to a particular asset or class of assets. Rule 89(1) states that the depreciation schedule should be designed:

(a) so that reference tariffs will vary, over time, in a way that promotes efficient growth in the market for reference services
(b) so that each asset or group of assets is depreciated over the economic life of that asset or group of assets
(c) so as to allow, as far as reasonably practicable, for adjustment reflecting changes in the expected economic life of a particular asset, or a particular group of assets
(d) so that (subject to the rules about capital redundancy), an asset is depreciated only once (i.e. that the amount by which the asset is depreciated over its economic life does not exceed the value of the asset at the time of its inclusion in the capital base (adjusted, if the accounting method approved by the AER permits, for inflation))
(e) so as to allow for the service provider's reasonable needs for cash flow to meet financing, non-capital and other costs.

This chapter is structured as follows:

- Section 6.2 presents the regulatory depreciation for the current Access Arrangement Period.
- Section 6.3 sets out the depreciation methodology, asset lives and remaining life for each asset class.
- Section 6.4 set out the forecast regulatory allowance for depreciation for the forthcoming Access Arrangement Period.
- Section 6.6 explains that Multinet proposes to roll forward the asset base to 1 January 2018 using forecast depreciation.
- Section 6.7 provides the forecast of depreciation for the purpose of calculating regulatory tax.

6.2 Regulatory depreciation for the 2008-2012 period

Rule 77(2) sets out provisions relating to the opening capital base for an access arrangement period that follows immediately on the conclusion of a preceding access arrangement period. Rule 77(2)(d) requires that the depreciation over the earlier access arrangement period must be calculated in accordance with any relevant provisions of the access arrangement governing the calculation of depreciation for the purpose of establishing the opening capital base.

In these circumstances, the relevant provision is Section 8.9 of the National Gas Code which requires that the roll forward of the regulated asset base includes the regulatory allowance for depreciation from the previous regulatory period. Schedule 1, Part 1, 3(14) of the Rules states that:

> *"If total revenue is calculated for the purposes of a transitional access arrangement under sections 8.4 and 8.9 of the Gas Code in accordance with the IRR or NPV methodology as described in those sections, the opening capital base for the first access arrangement period to follow the transitional access arrangement period will be based on*

the value of the capital base at the end of the transitional access arrangement period arrived at in accordance with that calculation."

The effect of the above provisions is to require Multinet to roll forward the regulated asset base value using the depreciation allowance determined by the ESC in the 2008 GAAR decision, as set out in the table below. The allowed depreciation includes an amount to write-off redundant assets as a result of the Pipeworks program.

Table 6-1: Regulatory depreciation 2008 - 2012 period ($m, real 2006)

	Year Ending 31 December				
	2008	2009	2010	2011	2012
Regulatory Depreciation	41.0	43.3	44.8	45.3	45.8

6.3 Depreciation methodology and asset lives

In accordance with the requirements of Rule 89(1) Multinet has adopted a straight-line approach to depreciation based on defined asset categories and asset lives. This approach is consistent with the methodology adopted in the current Access Arrangement and consistent with the requirements of the Rules.

Table 6-2 below sets out the asset lives adopted for the calculation of depreciation.

Table 6-2: Asset lives

Asset class	Economic life (years)	Remaining life (years) As at 1 January 2002
Transmission	50	38
Distribution	50	38
Services	50	38
Cathodic protection	50	38
Meters	30	18
Land and buildings	n/a	n/a
SCADA	7	7
Computer equipment	5	5
Other assets	10	7

6.4 Forecast regulatory depreciation for the 2013-2017 period

Regulatory depreciation for the forthcoming Access Arrangement Period has been calculated using the lives shown in Table 6-2.

The table below sets out the forecast regulatory depreciation for the forthcoming period.

Table 6-3: Regulatory depreciation 2013 - 2017 period ($m, real 2012)

	Year Ending 31 December					
	2013	2014	2015	2016	2017	Total
Depreciation	52.9	58.5	61.7	64.4	68.1	305.6

The calculation of depreciation for the forthcoming Access Arrangement Period differs from the current period's calculations in two material aspects:

- The value of redundant assets
- The use of the AER's Post Tax Revenue Model (PTRM)

These matters are discussed in further detail below.

6.4.1 Removal of redundant assets

The depreciation allowance determined by the ESC in the 2008 GAAR decision included an amount to write-off redundant assets as a result of the pipeworks program. Therefore, in the current access arrangement period Multinet accelerated the lives of those assets that were forecast to be removed during the period. (These assets were distribution mains and services replaced as part of the pipeworks program.) Although Multinet is again forecasting a program to replace ageing assets, the company is proposing to accelerate the lives of these assets.

The reasons reducing the value when compared to the current period are as follows:

- The pipeworks program in the current period was not completed in accordance with the forecast. In effect, Multinet has written off some assets that are still in service. Whilst this does not affect the total revenue collected from customers over the long-term, it does affect the profile of prices over time.
- Accordingly, Multinet proposes to manage the impact of depreciation on prices in the forthcoming Access Arrangement Period, by adopting the proposed approach to depreciation of redundant assets.

In the event that the AER does not accept Multinet's proposed depreciation allowance in full, the company will make further submissions on the issue of redundant assets.

6.4.2 AER's Post Tax Revenue Model

The calculation of depreciation in the current access arrangement period assumes that 50 per cent of capital expenditure that is scheduled to occur within a particular year is undertaken in that year, and the remaining 50 per cent is included in the following year.

The AER's PTRM calculates depreciation for new capital expenditure following the year that it is incurred. Multinet accepts this methodology and has therefore adopted this approach for the forthcoming Access Arrangement Period.

6.5 The use of actual or forecast depreciation

The Rules allow Multinet to adopt actual or forecast depreciation when calculating the opening asset base at 1 January 2018.

Although the use of actual depreciation provides stronger incentives for Multinet to reduce its capital expenditure, the company has chosen to adopt the use of forecast depreciation. This approach limits Multinet's exposure in the event that the AER makes significant adjustments to the company's forecast capital expenditure allowances in a

period (namely, the forthcoming Access Arrangement Period) when the company faces large investment requirements that cannot be deferred.

6.6 Forecast tax depreciation for the 2013-2017 period

The forecast tax depreciation in relation to the regulated asset base has been calculated in accordance with the statutes administered by the Australian Tax Office.

It is noted that while the possibility of some changes in corporate tax rates have been foreshadowed by the Government, these are yet to be incorporated into the statutes. Multinet suggests that any change in the corporate tax rate occurring in the course of the forthcoming Access Arrangement Period should be dealt with through the change in tax pass-through provision, rather than being incorporated into forecasts.

The table below sets out Multinet's regulatory tax depreciation amounts.

Table 6-4: Regulatory tax depreciation 2013 - 2017 period ($m MOD)

	Year Ending 31 December				
	2013	2014	2015	2016	2017
Regulatory tax depreciation	46.1	51.4	54.2	57.0	59.7

7. Capital base

7.1 Introduction

This chapter sets out details of the calculation of Multinet's capital base (or regulatory asset base) for the purpose of the Access Arrangement that will apply for the forthcoming period.

Rule 72(1) states that the access arrangement information must include the following information:

> *"(b) how the capital base is arrived at and, if the access arrangement period commences at the end of an earlier access arrangement period, a demonstration of how the capital base increased or diminished over the previous access arrangement period;*
>
> *(c) the projected capital base over the access arrangement period, including:*
>
> *(i) a forecast of conforming capital expenditure for the period and the basis for the forecast*
>
> *(ii) a forecast of depreciation for the period including a demonstration of how the forecast is derived on the basis of the proposed depreciation method."*

Requirements relating to the establishment of the opening capital base at the commencement of the forthcoming Access Arrangement Period are set out in Rule 77(2), which states that:

> *"(2) If an access arrangement period follows immediately on the conclusion of a preceding access arrangement period, the opening capital base for the later access arrangement period is to be:*
>
> *(a) the opening capital base as at the commencement of the earlier access arrangement period (adjusted for any difference between estimated and actual capital expenditure included in that opening capital base)*
>
> *plus:*
>
> *(b) conforming capital expenditure made, or to be made, during the earlier access arrangement period*
>
> *plus:*
>
> *(c) any amounts to be added to the capital base under rule 82, 84 or 86*
>
> *less:*
>
> *(d) depreciation over the earlier access arrangement period (to be calculated in accordance with any relevant provisions of the access arrangement governing the calculation of depreciation for the purpose of establishing the opening capital base)*
>
> ***Note:** See rule 90.*
>
> *(e) redundant assets identified during the course of the earlier access arrangement period*
>
> *(f) the value of pipeline assets disposed of during the earlier access arrangement period.*
>
> *Rule 78 sets out provisions relating to the projected capital base for the forthcoming Access Arrangement Period, as follows:*
>
> *"The projected capital base for a particular period is:*
>
> *(a) the opening capital base*
>
> *plus:*
>
> *(b) forecast conforming capital expenditure for the period*
>
> *less:*

(c) forecast depreciation for the period; and

(d) the forecast value of pipeline assets to be disposed of in the course of the period."

In light of the Rules requirements, this chapter is structured as follows:

- Section 7.2 sets out the capital base as at the commencement of the current Access Arrangement Period (1 January 2008).
- Section 7.3 provides a comparison of the total capital expenditure undertaken by Multinet in the current access arrangement period, and the benchmark allowance provided for the period, by category.
- Section 7.4 provides details of the conforming capital expenditure undertaken during the current period, which is to be rolled into the capital base.
- Section 7.5 shows the derivation of the capital base as at the start of the forthcoming Access Arrangement Period (1 January 2013).
- Section 7.6 shows the derivation of the projected capital base for forthcoming Access Arrangement Period.

7.2 Capital base at 1 January 2008

The capital base value at the commencement of the current regulatory period was set out in the ESC's 2008 GAAR determination. The opening capital base value at 1 January 2008 is shown in the table below.

Table 7-1: Capital base value at 1 January 2008 ($m, real 2012)

	$M
Value determined by ESC	1,085.0
Less 2007 forecast	78.2
Plus 2007 actual	79.1
Opening Capital Base 2008	1,085.9

7.3 Capital additions during the current period

The table below provides a comparison of the total capital expenditure undertaken by Multinet in the current access arrangement period, and the benchmark allowance provided for the period, by category. An explanation of the main differences between forecast and actual expenditure is also provided.

Table 7-2: Actual and regulatory benchmark capital expenditure for current (2008-12) access arrangement period (real 2012)

Category	Actual	B/mark	Variance	% Variance	Comments
Commercial/Industrial					
Connection volume	770	2,141	(1,371)	(64.0%)	The overall expenditure in the current period is significantly less than the benchmarks established by the ESC. The analysis shows that this is a result of lower new connection volumes. It is noted that the unit rate to connect new customers is within 0.2% of the benchmark unit rate. The lower connection volumes are due to worse-than expected economic conditions being experienced throughout the period.
Unit Price	$ 4,438	$ 4,430	8	0.2%	
Total ($m)	**$ 3.4**	**$ 9.5**	**($6.1)**	**(64.2%)**	
Residential					
Connection volume	41,529	43,415	(1,886)	(43.4%)	Total residential volume connection numbers were 4.3% below forecast, while the achieved unit rate was 2.5% higher than the benchmark. As a result, the total capital expenditure was 1.9% below the regulatory benchmark.
Unit Price	$ 1,573	$ 1,523	50	3.2%	
Total ($m)	**$ 65.3**	**$ 66.1**	**($0.8)**	**(1.2%)**	
Pipeworks					
Volume (km)	302	556	(254)	(45.7%)	The reasons for reduced work volumes are explained in section 5. The difference between the actual and benchmark unit rates has arisen because the mix of work undertaken was more complex than that implied by the average benchmarks allowed by the ESC. The actual work mix has been determined by priority on a needs and risk basis.
Unit Price ('000s)	$ 176,728	$ 184,551	(7,823)	(4.2%)	
Total ($m)	**$ 53.4**	**$ 102.6**	**(49.2)**	**(47.9%)**	
Residential Meters					
Volume	87,930	47,076	40,854	46.5%	It is unclear how the ESC derived the benchmark, however it is noted that the regulatory benchmark for
Unit Price	$ 123.00	$ 150.00	(27)	(18.0%)	

Category	Actual	B/mark	Variance	% Variance	Comments
					residential meters is similar to the new connections forecast. The total number of new meters purchased and installed by Multinet is the sum of the meters associated with the connection of new customers and the replacement of meters in accordance with the regulatory requirements in the Gas Distribution System Code and the need to sample test each family of meters in accordance with the AS/NZS 4944 standard.
Total ($m)	**$ 10.9**	**$ 7.1**	**3.8**	**53.5%**	
Commercial Meters					
Volume	3,441	2,571	870	33.8%	It is unclear how the ESC derived the benchmark, however it is noted that the regulatory benchmark for residential meters is similar to the new connections forecast. The total number of new meters purchased and installed by Multinet is the sum of the meters associated with the connection of new customers and the replacement of meters in accordance with the regulatory requirements in the Gas Distribution System Code and the need to sample test each family of meters in accordance with the AS/NZS 4944 standard.
Unit Price	$ 669	$ 1,472	($809)	(54.6%)	
Total ($m)	**$ 2.3**	**$ 3.8**	**($1.5)**	**(39.5%)**	
IT					
Total ($m)	72.3	30.9	41.4	133.9%	Actual expenditure on the CIS Project (including market systems replacement) exceeded the regulatory allowance by $8.5m. The complexity of the upgrade from CIS+ to SAP IS-U was greater than estimated in the original submission. The project that has been implemented also includes a new business integration and reporting capability that aligns with the new NECF arrangements.

Category	Actual	B/mark	Variance	% Variance	Comments
					Actual expenditure on the SAP Project exceeded the regulatory allowance by $23.8m. The ESC erred in basing the allowance on a small percentage share of an upgrade to the shared Jemena SAP system. Multinet is implementing a standalone system that is the most appropriate to manage its business for the forthcoming Access Arrangement Period. Actual expenditure on Relocation/Infrastructure Projects exceeded the regulatory allowance by $9m. Expiry of data centre (contracts and capability) required Multinet to relocate data centres. The cost increase was related to a percentage share of a full refresh (with United Energy) of the infrastructure environment that underpins all MG applications. Expenditure on SCADA/RTS Projects exceeded the regulatory allowance by $3.6m. The SCADA upgrade project proposed in Multinet's 2008 GAAR submission did not take into account improvements to security and availability management. Other IT expenditure exceeded the regulatory allowance by $6m. The costs of small projects, upgrades and replacements were higher than previously estimated. The current systems in place are old and are no longer supported. This has contributed to higher replacement costs than that allowed by the ESC.
Ad-hoc Pipeworks					
Total ($m)	6.6	4.8	1.8	37.5%	This program is driven by the need to respond to specific issues and matters that require attention. The increase in rainfall – particularly in the latter half of the period - has led to an increase in fault levels. This in turn has led to a

Category	Actual	B/mark	Variance	% Variance	Comments
					requirement to replace parts of the network at a rate higher than the rate implied by the benchmarks set by the ESC.
Augmentation					
Total ($m)	34.4	30.6	3.8	12.5%	This variance is due entirely to the Lilydale project. The unit rate for this work has turned out to be higher than forecast. It is noted that the unit rate that Multinet has paid has been based on a competitive tender.
Other Non-Demand					
Total ($m)	8.8	22.6	(13.8)	(61.1%)	Multinet has been able to efficiently defer projects.
New Towns					
Total ($m)	21.4	16.9	4.5	26.6%	Higher costs have been incurred due to higher-than-forecast costs associated with property owner settlements and easements. The actual amounts paid have been based on negotiations with individual land owners and independent market valuations.
Recoverable Work					
Total	7.6	0	7.6	n/a	
Total Capital	**$ 284.6**	**$ 294.9**	**(16.3)**	**(3.5%)**	

7.4 Conforming capital expenditure during the current period

Expenditure can only be included in the capital base if it conforms with criteria set out in the Rules. Subrule 79(1) defines conforming capital expenditure as follow:

> *"Conforming capital expenditure is capital expenditure that conforms with the following criteria:*
>
> *(a) the capital expenditure must be such as would be incurred by a prudent service provider acting efficiently, in accordance with accepted good industry practice, to achieve the lowest sustainable cost of providing services*
>
> *(b) the capital expenditure must be justifiable on a ground stated in subrule (2)."*

Subrule 79(2) states that:

> *"Capital expenditure is justifiable if:*
>
> *(a) the overall economic value of the expenditure is positive*
>
> *(b) the present value of the expected incremental revenue to be generated as a result of the expenditure exceeds the present value of the capital expenditure or*
>
> *(c) the capital expenditure is necessary:*
>
> *(i) to maintain and improve the safety of services*
>
> *(ii) to maintain the integrity of services*
>
> *(iii) to comply with a regulatory obligation or requirement*
>
> *(iv) to maintain the service provider's capacity to meet levels of demand for services existing at the time the capital expenditure is incurred (as distinct from projected demand that is dependent on an expansion of pipeline capacity)*
>
> *(d) the capital expenditure is an aggregate amount divisible into 2 parts, one referable to incremental services and the other referable to a purpose referred to in paragraph (c), and the former is justifiable under paragraph (b) and the latter under paragraph (c)."*

Multinet engaged two independent experts to determine whether the capital expenditure incurred in the current access arrangement period (noting that 2012 is a forecast amount) conforms to Rule 79. The findings of the independent experts are outlined below.

7.4.1 IT capital expenditure

Multinet engaged Deloitte to provide an opinion on whether IT capital expenditure undertaken by Multinet for the 2007 to 2012 period conforms to Rule 79. Deloitte's report is attached as appendix. The Deloitte reports states:

> We found that all capital expenditure during this period was necessary to either:
>
> 1. Maintain and improve the safety of services
> 2. Maintain the integrity of services

3. Comply with a regulatory obligation or requirement

4. Maintain capacity to meet levels of demand for services existing at the time the capital expenditure was incurred (as distinct from projected demand that is dependent on an expansion of pipeline capacity).

Since the Deloitte review Multinet has amended its IT capital forecast for the 2012 calendar year. Additional expenditure is now forecast to be incurred on the SAP implementation. Multinet will discuss this additional expenditure with Deloitte and provide an updated estimate and report during the consultation phase of the revision process.

7.4.2 Network and other capital expenditure

Multinet engaged GHD to provide an opinion on whether Multinet's Network and Other capital expenditure for the 2007 to 2012 period conforms with Rule 79. GHD's report is attached as appendix. The GHD report states:

> *"GHD is satisfied that the Capital Expenditure for the current Regulatory period from 1 January 2008 to 31 December 2012 satisfy the new Capex criteria, set out in rule 79 which permit expenditure to be included in the opening capital base and subsequently recovered from their customers through tariffs. The expenditure is that of a prudent operator based on performance and generally meeting Levels of Service targets"*

7.4.3 Capital expenditure to be rolled into the capital base

The table below sets out the conforming capital expenditure undertaken by Multinet in the current Access Arrangement Period, which has been included in the capital base. The forecast for 2012 is Multinet's present forecast of actual expenditure for that year.

Table 7-3: Conforming capital expenditure for the period from 1 January 2008 to 31 December 2012 ($m real 2012)

Asset class	YEAR ENDING 31 DECEMBER				
	2008	2009	2010	2011	2012 (forecast)
Mains and Services	37.1	34.2	30.2	37.0	56.4
Meters	3.1	3.6	3.9	3.0	3.2
Land & Building	0.0	0.0	0.0.	0.0.	0.0
SCADA	0.1	0.1	0.0	0.6	0.0
Computer Equipment	0.9	1.3	6.4	23.8	39.4
Other Assets	0.0	0.0	0.2	0.1	0.0
Total Gross Capex	**41.2**	**39.1**	**40.8**	**64.5**	**99.0**

7.5 Capital base at the start of the forthcoming Access Arrangement Period

In accordance with the provisions set out in Rule 77(2), Adopting the opening capital base value at 1 January 2013 has been calculated from:

- The capital base value at the commencement of the current period (1 January 2008), as detailed in section 7.2;
- The conforming capital expenditure set out in section 7.3; and
- The depreciation over the current Access Arrangement Period, as detailed in section 6.2.

The table below sets out the calculation of the capital base value as at 1 January 2013.

Table 7-4: Roll forward of the RAB value from 1 January 2008 to 31 December 2012($m, real 2012)

	YEAR ENDING 31 DECEMBER				
	2008	2009	2010	2011	2012
Opening capital base	1,085.9	1,075.6	1,037.0	1,021.7	1,029.7
Add conforming capital expenditure (less CC)	38.8	13.2	38.3	62.3	98.0
Deduct Depreciation	49.1	51.8	53.6	54.3	54.9
Deduct disposals	0.0	0.0	0.0	0.0	0.0
Closing capital base	**1,075.6**	**1,037.0**	**1,021.7**	**1,029.7**	**1,072.9**

7.6 Projected capital base for forthcoming Access Arrangement Period

In accordance with Rule 78, the projected capital base for the forthcoming Access Arrangement Period has been calculated as:

- The opening capital base as at 1 January 2013, as detailed in section 0; plus
- Forecast conforming capital expenditure for the period, as set out in section 5.5; less
- Forecast depreciation for the forthcoming Access Arrangement Period as set out in section 6.4; less
- The forecast value of pipeline assets to be disposed of in the course of the forthcoming Access Arrangement Period.

Table 7-5: Projected capital base for the forthcoming Access Arrangement Period($m, real 2012)

	YEAR ENDING 31 DECEMBER				
	2013	2014	2015	2016	2017
Opening capital base	1,072.9	1,105.3	1,122.4	1,130.9	1,145.9
Conforming capital expenditure	96.9	79.8	71.5	80.7	73.2
Forecast depreciation	52.6	58.1	61.3	64.0	67.7
Disposals and Surcharges	11.9	4.6	1.7	1.7	1.7
Closing capital base	**1,105.3**	**1,122.4**	**1,130.9**	**1,145.9**	**1,149.7**

8. Cost of capital and taxation

8.1 Introduction

This chapter sets out Multinet's estimate of the weighted average cost of capital (WACC). Multinet is a highly capital intensive business, so the estimation of the WACC is a very important element of the costs and the prices of the services provided by the company. Furthermore, the expected rate of return is the driving force behind any investment decision – if the expected rate of return is not commensurate with the risks involved, then investment funds will be diverted elsewhere.

The National Gas Law requires the AER to adopt a WACC that promotes efficient investment, and provides Multinet with a reasonable opportunity to recover at least the efficient costs of providing pipeline services. The emphasis in the National Gas Law on efficient investment is a deliberate design principle. The National Competition Council explained this design principle in the following terms[12]:

"The ACCC and AER in decisions across a range of industries have accepted the importance of maintaining appropriate commercial returns for investment lest such investment be inefficiently deterred. In any event, the regulator is obliged to allow appropriate commercial returns and to consider investment effects in determining access prices and other terms in any arbitration of an access dispute.

In Re: Application by ElectraNet Pty Limited (No 3) [2008] ACompT 3 (30 September 2008) the Tribunal further emphasised that minimising regulatory risk to promote efficient investment is a central part of the regulatory framework:

> '*Efficient investment in the long term interests of consumers will not be promoted if investors perceive a significant risk that the rules will change and they will not be able to recover the opportunity cost of capital reasonably invested. The minimisation of regulatory risk, consistent with the promotion of efficient investment, is one of the tenets that has driven the development of regulatory regimes in Australia. That tenet is reflected in the objective of the Law and in the revenue and pricing principles embodied in the Law.*'"

In the context of Multinet's proposed capital expenditure for this forthcoming Access Arrangement Period, the issues of regulatory risk and the WACC are highly pertinent. Multinet's capital expenditure forecasts reflect the company's best estimate of the expenditure that is required to satisfy the criteria of prudency and efficiency in the National Gas Rules. In particular, the capital expenditure proposal has been developed with reference to asset management plans that seek to minimise the total life cycle costs to customers. However, as reflected in the comments from the National Competition Council, capital expenditure plans may be inefficiently deferred if the regulated WACC is inadequate.

As already noted, Multinet and capital markets were unprepared for the unexpected reduction in the equity beta from 1 to 0.8 in the ESC's 2008 GAAR. This regulatory decision, combined with the impact of the Global Financial Crisis, adversely affected the availability and cost of funding. As a consequence, Multinet had no choice but to defer a proportion of the pipeworks replacement program. It must be remembered that the ESC ensured that distributors could not benefit from such a deferral because it provided for a true-up mechanism in relation to the

[12] National Competition Council, Coverage, revocation and classification of pipelines. A guide to the function and powers of the National Competition Council under the National Gas Law. Part B – Coverage, revocation of coverage and classification of pipelines, February 2010, paragraphs 5.170 and 5.171.

replacement program. Nevertheless, the commercial reality turned out to be that the regulated cost of capital was insufficient to attract funds for the pipeworks program during the current Access Arrangement Period.

Multinet's current analysis indicates that it may face very similar issues in the forthcoming Access Arrangement Period. In this case, it is the AER's method for estimating the cost of equity – in circumstances where the risk free rate remains at or near 50 year lows and financial markets are fragile – that may again force the deferral of capital expenditure.

Multinet's financial modelling indicates that the company's proposed capital expenditure program requires both a new debt facility and an additional equity injection. In this context, it is emphasised that Multinet's access arrangement proposal is an internally consistent, integrated package because the capital expenditure program; the required debt issuance; and equity raising are all achievable, providing that Multinet's WACC proposal is accepted by the AER. However, the package proposed here is also finely balanced. This means that any reduction in Multinet's proposed WACC or another important building block parameter (such as operating expenditure) would unavoidably require Multinet to revisit its capital expenditure forecasts.

For gas network companies with long-lived assets, customers' interests are best served by ensuring that investment incentives are not damaged by periods of inadequately low rates of return. Multinet is particularly conscious of the need to strike the right balance in estimating the WACC for the forthcoming Access Arrangement Period. For Multinet the 'right balance' recognises that:

- the National Gas Law (NGL) and the Rules establish important principles in relation to the WACC that must be satisfied
- the WACC cannot be measured precisely and attempts to do so are mistaken
- current market conditions are extraordinary and substantially increase the risk that the cost of equity will be materially underestimated
- appropriate regard must be given to regulatory and commercial stability.

The remainder of this chapter is structured as follows:

- Section 8.2 sets a summary of the WACC parameters proposed by Multinet.
- Section 8.3 sets out the regulatory provisions governing the WACC.
- Section 8.4 provides an overview of the WACC methodology adopted by Multinet.
- Section 8.5 examines the problems with the standard regulatory approach to estimating the cost of equity.
- Section 8.6 sets out Multinet's proposed cost of equity estimate, which uses a long term risk free rate combined with an estimate of the MRP based on a long term average.
- Section 8.7 presents an alternative methodology for estimating the cost of equity using a forward looking MRP.
- Section 8.8 explains the theoretical rationale for the Black CAPM and the resulting cost of equity estimate.
- Section 8.9 addresses the equity beta.
- Section 8.10 sets out the capital structure adopted for the purpose of estimating the WACC.
- Section 8.11 sets out SP AusNet's estimate of the cost of debt.
- Section 8.12 presents information on the value of imputation credits (gamma).
- Section 8.13 addresses expected inflation.
- Section 8.14 provides concluding comments.

- Appendix H-1 sets out Multinet's views on a number of issues relating to the market risk premium that have arisen in previous AER or Tribunal decisions. This background material may be relevant if the AER revisits these matters in its assessment of the cost of equity.

8.2 Summary of Multinet's proposed WACC parameters

Multinet's estimate of the nominal vanilla WACC is 9.1%.

One basis of that WACC estimate is an estimate of the cost of equity derived from the Sharp-Lintner capital asset pricing model (CAPM). Multinet's estimate of the cost of equity combines measures of the risk free rate and MRP that are both historic averages. Multinet has obtained independent expert opinion that this approach produces an estimate of the cost of equity that is consistent with the Rules requirements.

Multinet's approach contrasts with the AER's standard regulatory approach, which combines the current nominal risk free rate - presently at or near a 50 year low - with an estimate of the MRP which is based on historic data averaged over various periods from 1883 to the present day. Multinet has obtained independent expert opinion that in the current market conditions, the AER's standard regulatory approach fails to produce an estimate of the cost of equity that meets the Rules requirements.

The WACC parameters proposed by Multinet are set out in the table below.

Table 8-1: WACC parameters proposed by Multinet

WACC parameter	Values
Cost of equity	
Nominal risk-free rate	5.99%
Market Risk Premium	6.0%
Equity beta	0.8
Cost of equity	**10.80%**
Cost of debt	
Nominal risk-free rate	3.99%
Benchmark credit rating	BBB+
Debt Risk Premium	3.92%
Cost of debt	**7.91%**
Benchmark Gearing	60%
Nominal vanilla WACC (%)	**9.1%**

Another basis for the WACC estimate is to employ other approaches for estimating the cost of equity. These approaches comprise Dividend Growth Model (DGM) estimates from a number of independent experts and a regime switching model developed by NERA and reviewed by Professor Stephen Gray of SFG.

The estimates of the cost of equity under these approaches appear in Table 8-2. Multinet's proposed WACC of 9.1% is at the lower end of the estimated range.

Table 8-2: Alternative WACC parameters proposed by Multinet

WACC parameter	Values
Cost of equity	10.14% to 14.6%
Benchmark credit rating	BBB+
Gearing	60%
Cost of debt	7.91%
Nominal vanilla WACC (%)	**8.8% to 10.6%**

Multinet notes that the parameter values derived from the alternative forward looking methodologies are consistent with Multinet's proposed WACC of 9.1%. Multinet therefore also proposes a WACC estimate of 9.1%, which is at the lower end of the estimated range, should the forward looking methodology be adopted in the alternative.

NERA has applied the Black CAPM to provide an additional method for estimating the cost of equity and WACC. NERA's parameters values and WACC estimates using the Black CAPM are shown in the table below.

Table 8-3: WACC estimate obtained by applying the Black CAPM to estimate the cost of equity as a cross-check

WACC parameter	Values
Nominal risk-free rate (%)	3.99%
Inflation (%)	2.51%
Real risk-free rate (%)	1.44%
Annualised zero beta rate (%)	6.99%
Credit rating	BBB+
Debt risk premium (%)	3.92%
Gearing (%)	60%
Equity beta	0.8
Market Risk Premium	8.44%
Excess return over zero-beta rate (%)	1.46%
Cost of debt (%)	7.91%
Cost of equity (%)	12.14%
Nominal vanilla WACC (%)	**9.60%**

The WACC estimate obtained by adopting NERA's cost of equity estimate using the Black CAPM is higher than Multinet's proposed nominal vanilla WACC of 9.1%. It therefore provides a further cross-check and assurance to the AER and other stakeholders that Multinet's proposed WACC is reasonable and accords with the Rules requirements.

8.3 Regulatory provisions governing the WACC

8.3.1 National Gas Law

The AER's functions and powers are set out in the NGL. Section 28(1) of the NGL requires the AER to perform or exercise its regulatory functions or powers in a manner that will or is likely to contribute to the achievement of the National Gas Objective. The National Gas Objective is set out in section 23 of the NGL as follows:

> *"...to promote efficient investment in, and efficient operation and use of, natural gas services for the long term interests of consumers of natural gas with respect to price, quality, safety, reliability and security of supply of natural gas."*

Section 28(2) of the NGL also requires the AER to take into account specific revenue and pricing principles when exercising its discretion or making a determination. The revenue and pricing principles are set out in subsections 24(2) to (7) of the NGL, and are reproduced below.

> "(2) A service provider should be provided with a reasonable opportunity to recover at least the efficient costs the service provider incurs in—
>
> (a) providing reference services
>
> (b) complying with a regulatory obligation or requirement or making a regulatory payment.
>
> (3) A service provider should be provided with effective incentives in order to promote economic efficiency with respect to reference services the service provider provides. The economic efficiency that should be promoted includes—
>
> (a) efficient investment in, or in connection with, a pipeline with which the service provider provides reference services
>
> (b) the efficient provision of pipeline services
>
> (c) the efficient use of the pipeline.
>
> (4) Regard should be had to the capital base with respect to a pipeline adopted—
>
> (a) in any previous—
>
> (i) full access arrangement decision
>
> (ii) decision of a relevant Regulator under section 2 of the Gas Code
>
> (b) in the Rules.
>
> (5) A reference tariff should allow for a return commensurate with the regulatory and commercial risks involved in providing the reference service to which that tariff relates.
>
> (6) Regard should be had to the economic costs and risks of the potential for under and over investment by a service provider in a pipeline with which the service provider provides pipeline services.
>
> (7) Regard should be had to the economic costs and risks of the potential for under and over utilisation of a pipeline with which a service provider provides pipeline services."

Multinet notes that the NGL provisions cited above require that the cost of capital allowance be set so as to:

- promote efficient investment
- provide the service provider with a reasonable opportunity to recover at least the efficient costs of providing pipeline services.

8.3.2 National Gas Rules

Rule 87 sets out provisions relating to the rate of return (or WACC) as follows:

> "(1) The rate of return on capital is to be commensurate with prevailing conditions in the market for funds and the risks involved in providing reference services.
>
> (2) In determining a rate of return on capital:
>
> (a) it will be assumed that the service provider:
>
> (i) meets benchmark levels of efficiency
>
> (j) uses a financing structure that meets benchmark standards as to gearing and other financial parameters for a going concern and reflects in other respects best practice
>
> (b) a well accepted approach that incorporates the cost of equity and debt, such as the Weighted Average Cost of Capital, is to be used; and a well accepted financial model, such as the Capital Asset Pricing Model, is to be used."

Multinet regards rule 87(1) as setting the primary objective for the rate of return, and rule 87(2) as describing the means by which the rate of return must be determined. The primary objective is therefore to ensure that the rate of return on capital is commensurate with prevailing conditions in the market for funds and the risks involved in providing reference services.

8.4 Multinet's approach to estimating the WACC

Having regard to the requirements of rule 87(2) (that a "well-accepted financial model" be applied) Multinet has adopted the following approach to estimating the rate of return:

- The standard approach to computing the WACC will be applied, using the nominal vanilla WACC formulation shown below, and adopting a benchmark capital structure of 60% debt to total capital.

$$WACC = k_e \frac{E}{V} + k_d \frac{D}{V}$$

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

E/V = the market value of equity as a proportion of the market value of equity and debt

D/V = the market value of debt as a proportion of the market value of equity and debt.

- The cost of equity will be estimated using the Sharpe-Lintner CAPM, which has been adopted by the AER in its recent decisions. In addition, Multinet has also asked NERA to consider the application of the Black CAPM, which is presented as a cross-check.

- The cost of debt will be estimated with reference to Bloomberg's fair value curve, which is a well-respected market benchmark for the cost of debt.

NGL and Rules provisions noted in section 8.3 also have important implications for how the above formulation should be applied to estimating the cost of capital. In particular:

- As noted in section 8.1, it must be recognised that the WACC cannot be measured precisely. Therefore, for any plausible WACC estimate it is uncertain whether the actual WACC is higher or lower than the estimated value.
- The NGL requires the estimated WACC to promote efficient investment and provide Multinet with a reasonable opportunity to at least recover the efficient costs of providing pipeline services. Multinet does not regard these provisions as mandating the WACC to be over-estimated. However, the WACC must be estimated in a manner that provides a reasonable degree of confidence that the estimate is not lower than the actual WACC. Unless this latter condition is satisfied, the WACC cannot provide Multinet with a reasonable opportunity to recover at least its efficient costs, as required by the NGL.
- The requirement of the NGL not to underestimate the WACC cannot be satisfied in a formulaic manner. Instead, a judgment must be made regarding the overall level of WACC and, if necessary, its component parameters. It is important, however, that this judgment is exercised in a manner that is reasonable and evidence-based. Multinet's proposals will therefore always explain how it has exercised judgment in estimating the WACC.
- The Rules establish a hierarchy in relation to the WACC.
  - At the top of this hierarchy, the overarching objective is that WACC must be commensurate with prevailing conditions in the market for funds and the risks involved in providing reference services.
  - The next level in this hierarchy is the requirement that a benchmarking approach must be applied to estimate the WACC.
  - The third level in the hierarchy is made up of the financial theories and models, including the various forms of CAPM, which are the tools that may be employed to achieve the overarching objective.

Multinet's strongly held view is that the tools must be applied intelligently if the overarching objective for the WACC is to be satisfied. It is not appropriate to employ a theory, model or data without considering whether the resulting WACC or parameter value satisfies the NGL and the Rules.

The practical application of the above approach will vary depending on the particular market conditions or circumstances that prevail at the time of an access arrangement proposal. In the context of the forthcoming Access Arrangement Period, Multinet notes that the global financial crisis following the collapse of Lehman Brothers in September 2008 continues to affect financial markets. An important consequence of the continuing financial market uncertainty is the 'flight to quality' as investors seek the safe haven of low risk investments. As a result, the yields on all Australian Government bonds are now unprecedentedly low.

Multinet regards it as essential that the cost of equity is not assumed to be lower simply because the yields on Government bonds have fallen. The challenge is to employ the available WACC estimation tools and market information intelligently so that the resulting WACC estimate satisfies the NGL and Rules. With this objective in mind, Multinet obtained an independent expert opinion from Dr Tom Hird of CEG on how the cost of equity should be estimated in today's market conditions. Dr Hird's independent expert report is provided as an appendix to this AAI.

8.5 Problems with the standard regulatory approach to estimating the cost of equity

In estimating the cost of equity using the capital asset pricing model (CAPM), it has become standard AER practice in regulatory decisions to combine:

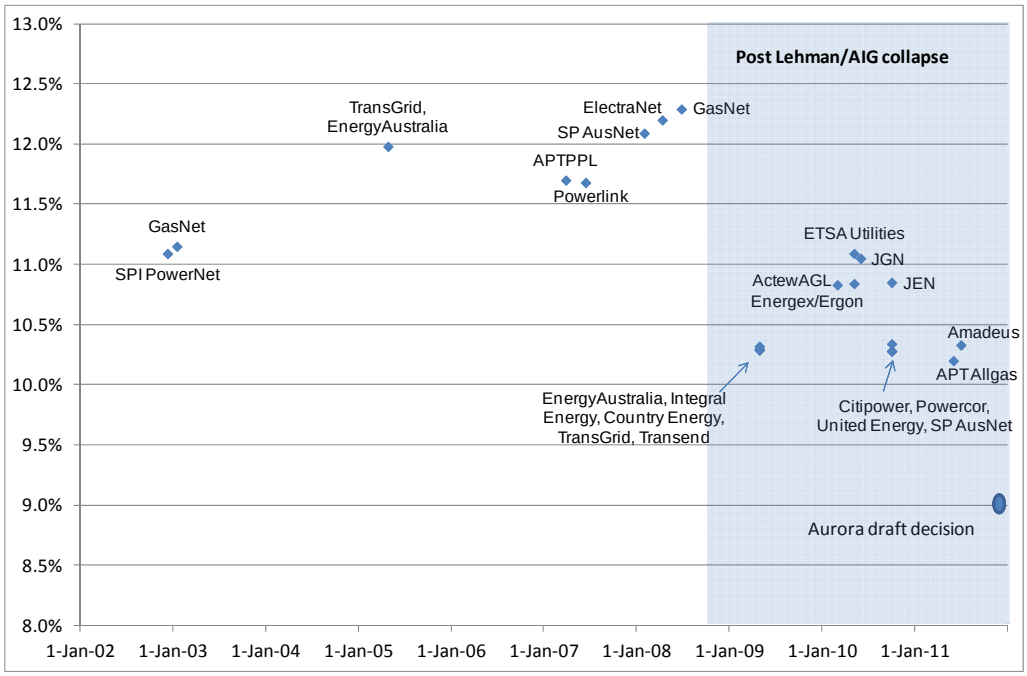
- an estimate of the market risk premium (MRP) based on annual historic data over various periods from 1883 to the present day, adjusted to some extent to reflect current market conditions
- a current-day estimate of the risk free rate, typically based on observed yields on 10 year Government bonds over 15 or 20 trading days immediately prior to the decision.

With yields on Government bonds at unprecedentedly low levels as a result of a global 'flight to quality', Multinet is concerned that the standard regulatory approach to applying the CAPM produces an estimate of the cost of equity that fails to meet the requirements of rule 87(1).

As already noted, Multinet asked Dr Tom Hird of CEG to provide an independent expert opinion[13] on how the cost of equity should be estimated in today's market conditions in accordance with rule 87(1).

Dr Hird explains that the AER's most recent estimate of the cost of equity has been lower than any other estimate, and that the AER's estimates made after the onset of the GFC have been lower than estimates prior to the crisis. These facts are illustrated in the figure below.

Figure 8-1: AER cost of equity decisions for regulated energy networks



Source: CEG

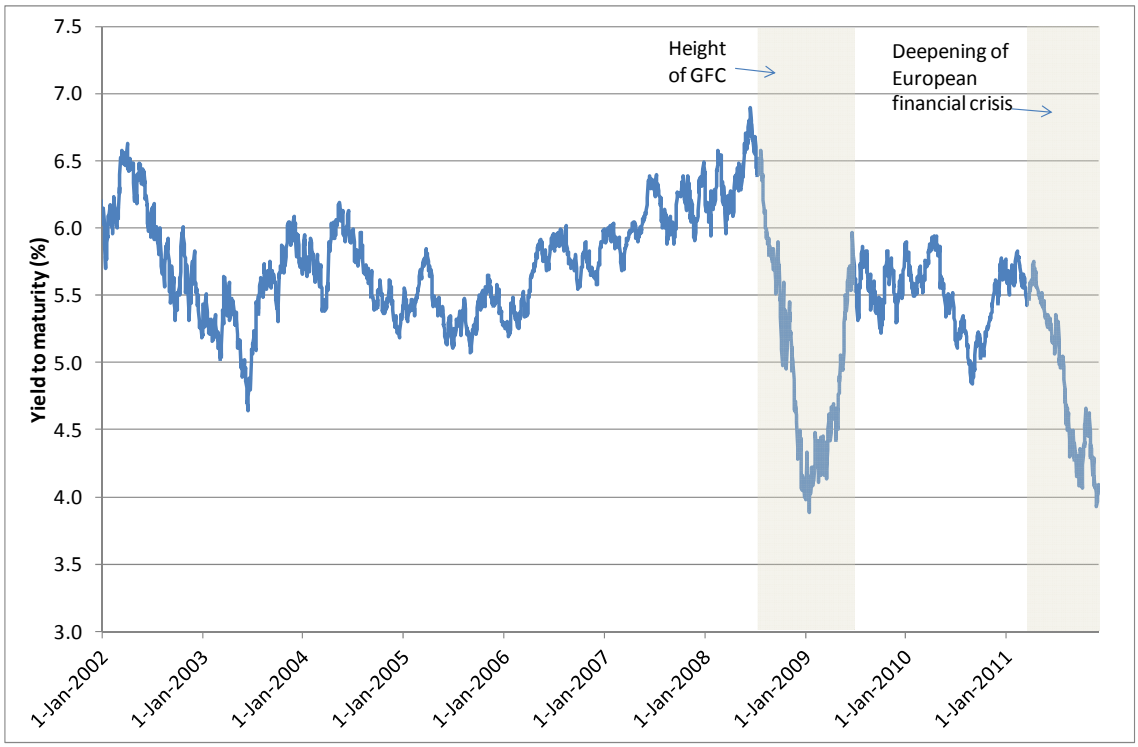
Dr Hird explains that this reflects the AER's methodology which:

- sets the risk free rate in the CAPM equal to the prevailing risk free rate (which is very volatile)
- sets the market risk premium (MRP) primarily based on the AER's estimate of the historical average risk premium earned by Australian equity investors (which is, by its construction, very stable).

[13] CEG, Internal consistency of risk free rate and MRP in the CAPM Prepared for Powercor, SP AusNet and Multinet, March 2012

Under the CAPM, if the risk free rate is volatile and the market risk premium estimate is stable then, for any given beta estimate, the cost of equity estimate will have the same absolute volatility as the risk free rate. The figure below shows that the risk free rate has indeed been very volatile over the last decade.

Figure 8-2: Time series for yields on ten year Commonwealth Government Securities (CGS)



Source: CEG

As indicated in this figure, the largest swings in the risk-free rate were associated with the onset of financial market crises. Firstly, in the aftermath of the collapse of Lehman Brothers and the near collapse of other financial institutions in late 2008, and, secondly, in the subsequent recessions in the US and Europe, which then gave rise to a deepening sovereign debt, banking and currency crisis in the Euro zone.

During both of these financial crises there has been a dramatic fall in 10 year CGS yields in Australia. The decline has left CGS yields at their lowest levels in the last decade and, indeed, over the past 50 years. The standard interpretation of these events is that there has been a flight to the safety and liquidity of AAA rated Government debt.[14]

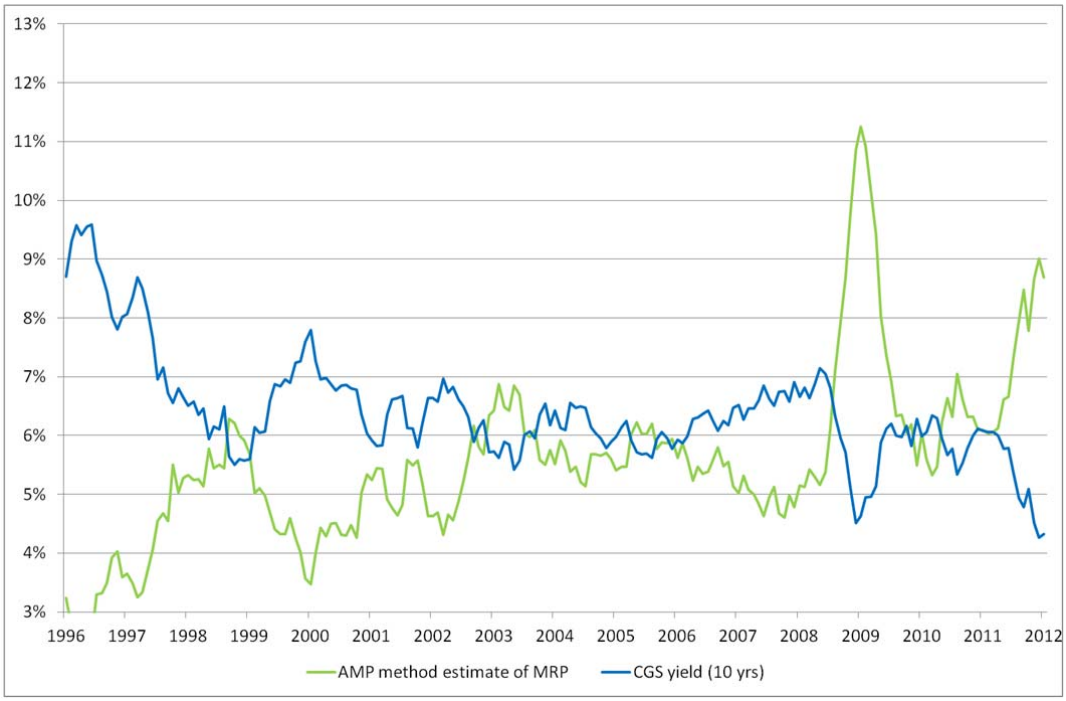
It is evident from the above figure that a regulatory approach that combines stable measures of the MRP with volatile measures of the risk free rate will yield cost of equity estimates that mirror movements in the risk free rate. However, Dr Hird explains that market risk premiums are not constant through time. Rather, risk premiums tend to move in the opposite direction to the risk free rate. Dr Hird quotes the following advice from UK consultants Smithers and Co to the UK regulator.

[14] See the Reserve Bank of Australia's *Statement on Monetary Policy*, February 2012, page 49.

"Given our preferred strategy of fixing on an estimate of the equity return, any higher (or lower) desired figure for the safe rate would be precisely offset by a lower (or higher) equity premium, thus leaving the central estimate of the cost of equity capital unaffected."[15]

Dr Hird comments that the negative relationship between the risk free rate and the market risk premium is factored into regulatory regimes in the UK and the US. Dr Hird also provides the following figure which shows a time series for the equity risk premium for Australian publicly listed equities estimated using the AMP method (previously relied upon by the AER to support its estimate of the MRP) against the 10 year yield on Commonwealth Government Securities (CGS).

Figure 8-3: Risk premiums on listed equities (AMP method) vs. 10 year yield on CGS



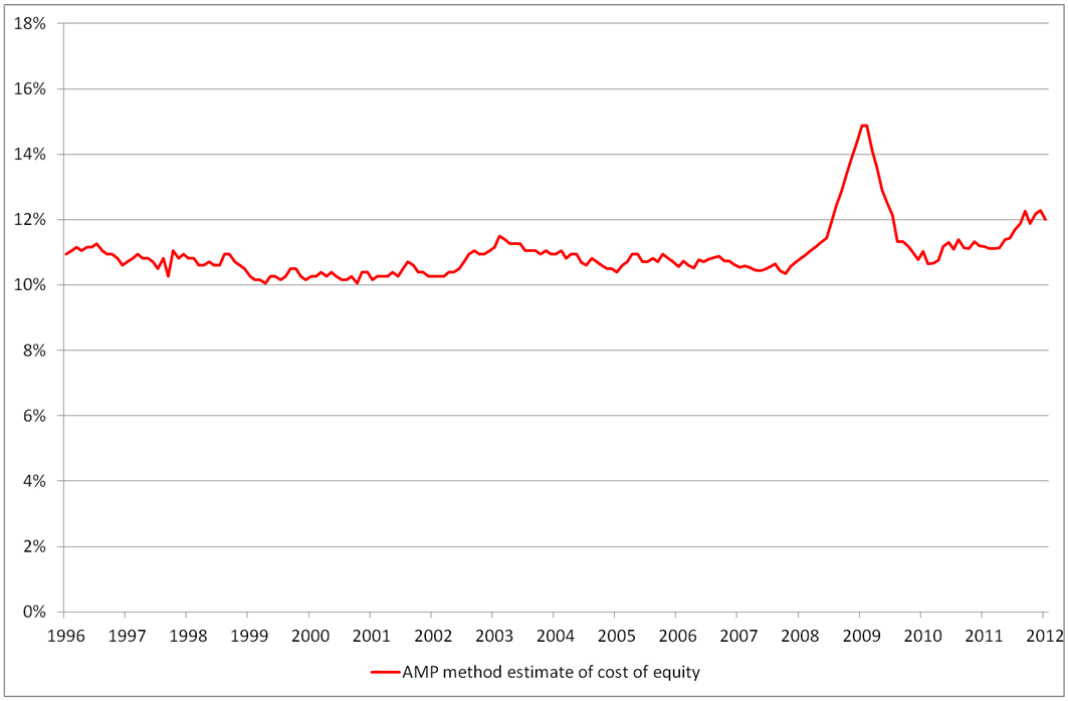
Source: RBA, CEG analysis

Dr Hird notes that the negative relationship between risk premiums and yields on CGS illustrated in the figure above is intuitively easy to understand. In periods of high investor risk aversion there is a flight from risky assets to safe assets. This tends to push up the price and push down the yields on safe assets. For this reason, falling risk free rates tend to be associated with rising investor risk premiums (and vice versa).

Furthermore Dr Hird explains that given the negative relationship between the risk free rate and the risk premiums on listed equities, the cost of equity is much more stable than its constituent parts. The relative stability of the required return on equity is illustrated in the following figure which is reproduced from Dr Hird's report.

[15] Smithers and Co, A Study into Certain Aspects of the Cost of Capital for Regulated Utilities in the U.K., A report commissioned by the U.K. economic regulators and the Office of Fair Trading. (2003), p. 49

Figure 8-4: Total cost of equity (AMP method)



Source: RBA, CEG analysis

The stability of this measure of the cost of equity contrasts sharply with the AER's method of estimation, which produces significantly different cost of equity estimates over time as shown in Figure 8-1 above. The AER's standard regulatory approach would estimate a cost of equity for Multinet of 8.8%, which is approximately 160 basis points lower than the cost of equity determined by the AER only 6 months ago in relation to Envestra's gas networks in South Australia and Queensland.

The expert opinion provided by Dr Hird describes three methods that would be expected to provide a reasonable estimate of the cost of equity in current market conditions:

- Method 1 - Directly estimating the prevailing cost of equity for regulated utilities using the dividend growth model (involving a simultaneous estimate of all parameters of the CAPM).
- Method 2 - Directly estimating the prevailing MRP relative to the prevailing CGS yield being used as the risk free rate. This eliminates potential for error from the AER's methodology where there is no attempt to estimate the MRP relative to the prevailing risk free rate. In this methodology the AER's proposed value of 0.8 for beta is adopted.
- Method 3 - Estimating a 'normal' cost of equity for regulated businesses by, for example, estimating each of the CAPM parameters using a suitable historical time period. This provides a proxy for the prevailing cost of equity if the prevailing cost of equity is relatively stable over time (an assumption supported by the evidence in this report). A departure from this historical norm could be justified if there was some threshold level of evidence to the effect that currently prevailing market conditions were sufficiently different from the normal market conditions. Whether this threshold was satisfied could be assessed by, for example, application of the first and second methods above.

Dr Hird provides estimates of the cost of equity applying each of these methods. As already noted, Dr Hird's report is provided as an appendix to this AAI.

Multinet agrees with Dr Hird's assessment. To give effect to Dr Hird's suggested approach, in Section 8.6 Multinet presents its assessment of the cost of equity with reference to a long term average of the risk free rate (Dr Hird's third method). This is followed in the next two Sections by a discussion and analysis of the issues arising in relation to forward looking measures of the cost of equity. As explained in further detail below, the application of Dr Hird's methods each supports Multinet's proposed cost of equity of 10.8%.

8.6 Cost of equity estimate using a long term averages of the risk free rate and MRP

As explained in the previous section, Multinet concurs with Dr Hird's view that adopting a longer term average measure of the risk free rate in the CAPM may produce a reasonable estimate of the cost of equity. Dr Hird explains that it is most appropriate to adopt the historical average yield on inflation indexed CGS.[16] This yield is, by definition, the required return on these CGS bonds after inflation (which is separately compensated based on actual inflation over the life of the bond). Based on a time series from 1993, the average yield on indexed CGS was 3.40%. Dr Hird notes that this is a conservative estimate because, from late 2008, the AER ceased using indexed CGS as the risk free rate proxy because of evidence that scarcity of supply was biasing down the required yield on these CGS.

Dr Hird explains that combining this historical average real required return on 10 year CGS with a beta of 0.8 and an MRP of 6% gives a real cost of equity of 8.2%. If expected inflation going forward is 2.5% then a 5.99% nominal yield is required to deliver the same 3.40% real yield. Using this nominal CGS yield with a beta of 0.8 and an MRP of 6% gives a nominal cost of equity of 10.8%.

Dr Hird notes that the 6% MRP estimate used above is the estimate most commonly used by Australian regulators over the period in relation to which the yields on CGS have been averaged. If the use of a 6% MRP over this period was, on average, correct then it is consistent and appropriate that an average of CGS yields over this period be added to it. While the genesis of the 6% MRP estimate may be based on the average of a longer time series of historical *ex post* returns on equity relative to CGS, Dr Hird does not consider that this makes it problematic to use a shorter time series for historical average *ex ante* real returns on CGS. In particular:

- The objective is to estimate the *ex ante* real risk free rate (i.e. the expected return for investors after accounting for inflation). This can be estimated with much greater accuracy post 1993 compared with pre 1993 due to the introduction of inflation indexed bonds which allow us to directly estimate the real CGS yield actually required by investors over that period
- The historical average estimates of MRP must be based on very long time periods because the volatility in the observed *ex post* excess return on equities is so large that a long period is required in order to have any confidence in the average reflecting *ex ante* investor expectations. This is not the case with indexed CGS where the promised real yield is the real yield actually delivered. Nor is it the case with nominal CGS in a low and stable inflation environment such as has existed post 1993.

Multinet considers that Dr Hird's opinion in relation to the application of the long term risk free rate in the CAPM provides further justification for the adoption of this methodology. In addition to Dr Hird's comments, Multinet examined the daily averages of the nominal risk free rate over the past 5, 10, 15 and 20 years. The averages fall within a narrow range between 5.36% (5 year average) and 5.99% (20 years average). Multinet notes that Dr

[16] The alternative is to attempt to estimate the expected return on nominal CGS by deducting expected inflation from nominal CGS yields. This is clearly more difficult because it is not possible to directly observe what investors expect inflation to be over the 10 year life of a 10 year CGS. Nonetheless, one possible assumption is that investors have perfect foresight, i.e., that investors expected what actually occurred. With this assumption it is possible to derive an expected real return on historical average nominal CGS.

From 1993 onwards the RBA began inflation targeting. From July 1993 until December 2011, inflation has averaged 2.71% while the yields on 10 year nominal CGS has averaged 6.36%. Deducting 2.71% from the nominal CGS yield of 6.36% using the Fisher equation gives a real yield of 3.55% - which is only slightly above the average indexed CGS yield of 3.40% reported above.

Hird favours a longer averaging period of 20 years. In particular, it is a period of relatively stable inflation and inflationary expectations, which reflects the Reserve Bank of Australia's role in managing inflation within the target range of 2% to 3%. In these circumstances Multinet considers that the 20 year average is an appropriate proxy for the risk free rate, when combined with an MRP estimate of 6%. Applying an equity beta value of 0.8 (in accordance with the reasoning set out in section 8.9 below), the resulting cost of equity is estimated as follows:

$$k_e = r_f + \beta_e \times MRP$$

= 5.99% + (0.8 x 6)

= 10.8%

Multinet therefore adopts a nominal cost of equity estimate of 10.8%, which is consistent with Dr Hird's assessment and also consistent with the AER's cost of equity decisions that pre-dated the recent decline in the risk free rate. For example, in June 2010, the AER determined a nominal cost of equity of for Jemena Gas Network of 11.05%.

8.7 Forward looking estimates of the cost of equity

Section 8.6 explained that the application of Dr Hird's third methodology for estimating the nominal cost of equity produced an estimate of 10.8%. In this section, Multinet summarises the evidence from independent expert reports that employ the first and second methods suggested by Dr Hird. This evidence includes Dr Hird's own estimates using his suggested methods. In summary, the range of cost of equity estimates support the estimate of 10.8% as presented in Section 8.6.

Before turning to the evidence, it is noted that in applying methods that seek to derive an estimate of the forward looking cost of equity, Multinet is aware that a number of issues relating to the market risk premium that have arisen in previous AER or Tribunal decisions. Multinet's views on those issues are set out in Appendix H-1. The material presented in that appendix may be relevant if the AER revisits these matters in its assessment of the cost of equity.

The evidence is contained in the independent expert reports listed below, which are appended to this AAI:

- NERA (2012b), *Prevailing Conditions and the Market Risk Premium,* a report prepared for APA Group, Envestra, Multinet & SP AusNet, prepared by NERA Economic Consulting, 15th March 2012.
- SFG (2012c), *Review of NERA regime-switching framework*, a report prepared for APA Group, Envestra, Multinet Gas, and SP AusNet by SFG Consulting, Strategic Finance Group, 25th March 2012.
- CEG (2012c), *Internal consistency of risk free rate and MRP in the CAPM*, prepared for APA Group, Envestra, Multinet Gas, and SP AusNet, Competition Economists Group, March 2012.
- Capital Research (2012b), *Forward Estimate of the Market Risk Premium: Update,* A report prepared for the Victorian gas transmission and distribution businesses: APA Group, Envestra, Multinet Gas and SP AusNet.

Table 8-4 summarises the evidence provided by the independent experts. The results from dividend growth models applied separately by Capital Research, CEG, and NERA are presented on a like-for-like basis.

Table 8-4: Summary of forward looking cost of equity estimates

Independent Expert	Forecast, grossed-up dividend yield (%)	Projection for growth in DPS (%)	Risk-free rate (%)	*Ex ante* MRP (%)	Cost of equity using SL-CAPM	Comments / Basis of estimate
NERA (DGM using Bloomberg consensus forecasts for DPS, as at 31st Dec. 2011)	6.03	5.65	3.99	7.69	**10.14%** (for equity beta of 0.8)	Calculate the internal rate of return that discounts the dividends that a portfolio is expected to pay back to the current price
NERA (DGM using consensus forecasts for DPS from I/B/E/S, as at 31st Dec. 2011)	6.06	5.65	3.99	7.72	**10.16%** (for equity beta of 0.8)	As above.
CEG, estimate as at 31st Dec. 2011 (dividend yields from the RBA which are then grossed up)	5.68	6.60	3.77 (annualized)	8.52	**10.59%** (for equity beta of 0.8)	Based on the application of a method from AMP Capital Investors, using a net theta of 0.2625
NERA (Using regime switching model)	n/a	n/a	3.99	8.44	**10.74%** (for equity beta of 0.8)	Individual MRP estimates have been calculated for each year of the forecast period.
CEG, DGM for Australian regulated utilities	Multiple	2.5% to 6.6%	4.13% (averaged over period from 9th Feb to 9th March 2012)	An estimate of the equity risk premium	**10.87% - 14.59%** (for Australian regulated utilities)	Range reflects real dividend growth rates ranging from zero to long run GDP growth
Capital Research, estimate as at 31 Dec 2011.	6.29	7.00	3.73	9.56	**11.38%** (for equity beta of 0.8)	Price earnings ratio model (PER), using a net theta of 0.2625
Capital Research, arithmetic mean of monthly values, Oct 2009 to Jan 2012	5.23	7.00	5.08	7.15	**10.80%** (for equity beta of 0.8)	Price earnings ratio model (PER), using a net theta of 0.2625
Bloomberg, estimate as at 10th January 2012	n/a	n/a	n/a	10.52		Bloomberg internally generated estimate.

Notes to the Table: NERA (2012b) did not apply a price-earnings ratio model of the type that was used by Capital Research (2012a). Hence the characterisation, shown in the table, of the approach taken by NERA (2012b) is a simplification for expositional purposes. DPS = Dividends per share. I/B/E/S is the Institutional Brokers' Estimate System. The dividend yield has been grossed up by multiplying by net theta, which is calculated as the product of the franking proportion and the value of

distributed imputation credits. In NERA (2012b), the franking proportion is assumed to be 75% (as per Brailsford, Handley, and Maheswaran, 2008), whilst the value of distributed imputation credits is set at 0.35, based on an amount determined by the Australian Competition Tribunal[17]. The net theta value in NERA (2012b) is therefore 0.2625. However, Hathaway (2012b) has presented results for the implied MRP over net theta values of 0.0, 0.5 and 1.0.

The DGM method that is applied by CEG is described in AMP Capital Investors (2006), "The equity risk premium – is it enough?", Oliver's insights, Edition 13, 4th May.

Bloomberg estimates an MRP by calculating a measure for the market return based on the capital weighted average of the internal rate of return for all major index members. The internal rate of return for each index member is calculated using a dividend discount model (DDM) developed by Bloomberg. Further details are given in CEG (2011l), see paragraph number 239, page 59[18].

The following points are pertinent to the interpretation of the data set out in the table:

- NERA's independent expert report provides estimates of a forward-looking MRP and cost of equity using the DGM and a regime switching model.
- NERA (2012b) obtained an MRP estimate of 7.72%, drawing upon medium term projections of the dividend per share from I/B/E/S. An alternative MRP estimate of 7.69% was derived using medium term consensus forecasts of dividends per share (DPS) from Bloomberg. In both cases, the prediction of long-run growth in real DPS was based on an historical average. NERA also applied inflation forecasts sourced from the Reserve Bank of Australia (RBA). Accordingly, the long-term projection for growth in nominal DPS was 5.65%, a value which is below that used by the AER. Furthermore, the estimate of the long run growth in DPS was below current consensus forecasts of the growth in DPS over the next two years.
- For reasons explained in its report, NERA judges that the MRP estimate of 8.44%, provided by the regime-switching model, is the most suitable indicator of the value of the MRP that is expected to prevail in the market over the five years of the regulatory period. The regime-switching model was developed using a theory outlined by Hamilton (1989) in which the joint distribution of variables can differ across regimes or states, and in which the probability of being in each state is governed by a Markov chain[19].
- In his review report, Stephen Gray has expressed an opinion that the regime-switching approach, which produces an estimate of 8.44%, is an appropriate method for obtaining an estimate of the market risk premium that is commensurate with the prevailing conditions in the market for funds.
- Capital Research has stated that if the MRP for the 2013 to 2017 regulatory period had been set at the end of December 2011, and locked in for the full five-year period (commencing one-year hence), then the most appropriate value to be chosen for the MRP would have been 9.56% (based on net theta of 0.2625). This MRP estimate would have been predicated on a risk-free rate of 3.73%, (or 3.77%, annualised). Thus, the preferred estimate of the forward looking cost of equity provided by Capital Research (for an equity beta of 0.8) would be approximately 11.4%, if the model used were the Sharpe-Lintner CAPM.

As is apparent from

Table 8-4, the grossed up dividend yield reported by Capital Research (2012b) was 6.00% in December 2011, and this is close to the number that NERA appears to have used implicitly, although the exact method applied by NERA

[17] Brailsford, T., J. Handley and K. Maheswaran, Re-examination of the historical equity risk premium in Australia, Accounting and Finance 48, 2008; page 85.

[18] CEG (2011l), Proposed changes to the National Gas Rules, A report for APIA, prepared by Dr Tom Hird, December 2011.

[19] Hamilton, James D., A new approach to the economic analysis of non-stationary time series and the business cycle, Econometrica, 1989, pages 357-384.

(2012b) differed somewhat from the approach taken by Hathaway. Thereafter, differences in the results obtained by NERA (2012b) and by Hathaway (2012b) can be attributed to alternative sets of projections that have been built in for the long-term growth in dividends per share. As noted previously, NERA has used a highly conservative growth rate of 5.65% for its long-term projections. In contrast, Capital Research (2012b) has applied a growth rate of 7.0% for the increase in nominal DPS, with this figure underpinned by the compound annual rate of growth (CAGR) in analyst forecasts of the DPS from February 1999 to January 2012. Analyst forecasts of the DPS are provided on a one-year out basis, in other words for a period which is in 12-months' time. However, analysts also provide medium and long term projections. Importantly, the compound annual rate of growth in analyst forecasts from February 1999 to January 2012 has been well below the reported history of the actual growth in dividends per share. Table 1 of Hathaway (2012b) shows that the arithmetic average of the annual rates of growth in DPS has been 10.34% over the time interval examined by Hathaway.

The range for the nominal cost of equity that is obtained using market-wide DGM estimates varies from 10.1% (NERA) to 11.4% (Capital Research). The Sharpe-Lintner CAPM has been applied using an equity beta of 0.8.

A dividend growth model applied to Australian utilities produces an estimated cost of equity of 14.6%, when plausible forecasts are used for the long-term increase in nominal dividends per share. CEG (2012c) applied the DGM to a select group of regulated Australian utilities.

Multinet's proposed cost of equity of 10.8% sits comfortably within the range of estimates that are shown in table 8-4. It is noted, in particular, that Multinet's estimates cost of equity of 10.8% is:

- practically identical to the cost of equity preferred by NERA, using the regime switching model
- falls below a forward-looking cost of equity that has been calculated using the market risk premium estimated by Capital Research
- at the bottom end of the range assessed by Dr Hird.

In light of this evidence, Multinet remains confident that its estimation method based on the long term average of the risk free rate produces a reliable estimate of the cost of equity. In summary, whichever of the approaches proposed by Dr Hird is adopted, a cost of equity of 10.8% is appropriate.

8.8 The return on equity calculated using the Black CAPM

8.8.1 Theoretical support

Multinet notes that although rule 87(2) refers to the use of a "model", Multinet does not consider that this reference in the singular form prevents the testing of a model against other models so as to ensure that the final result satisfies the criterion of rule 87(1). The use of a multi-model approach serves to ensure that the final, assessed rate of return on capital is fully representative of market conditions.

Multinet's estimates of the cost of equity in the previous section have employed the Sharpe-Lintner CAPM. However, following a consideration of Rules 87(1) and 87(2), Multinet has also calculated its cost of equity using the Black Capital Asset Pricing Model. The results from this empirical investigation have been presented for purposes of comparison.

The Black CAPM is a well accepted financial model, and has been shown, in empirical tests, to perform at least as well as the SL CAPM. The results from this model therefore provide a suitable benchmark for assessing the appropriateness of the cost of equity generated by the use of the SL CAPM in the context of Rule 87.

Professor Bruce Grundy, working in conjunction with CEG, has discussed the evidence that the Black CAPM provides a better fit to the observed data on stock market returns (and risk, measured by asset betas) than the Sharpe-Lintner CAPM[20]. Both experts have also demonstrated convincingly that the conventional, Sharpe-Lintner CAPM gives rise to downwardly biased estimates of the return on equity for firms with estimated equity betas of less than one.

Brennan (1971) shows that if one assumes that investors can borrow at a risk-free rate, R_b, and lend at a risk-free rate $R_l < R_b$, then:

$$\boldsymbol{E(R_j) - E(R_z) = \beta_j[E(R_m) - E(R_z)]}, \qquad \boldsymbol{R_l < E(R_z) < R_b} \qquad \textbf{(3)}$$

Where:

$E(R_z)$ =The mean return to a zero-beta portfolio.

Although three authors contributed to the development of the model, the model is generally known simply as the Black CAPM. For current purposes, Multinet will follow Velu and Zhou (1999) in estimating the Black CAPM, and will assume that the difference between the zero-beta and risk-free rates, which will be described as the zero-beta premium, is a constant through time[21]. Thus, Multinet will examine the model:

$$\boldsymbol{E(R_j) - R_f - z = \beta_j[E(R_m) - R_f - z]}, \qquad \textbf{(4)}$$

Where:

z =The zero-beta premium.

If $z = 0$, then the model collapses to the SL CAPM, illustrating the fact that the Black CAPM is a more general model than the SL CAPM. If $z < 0$, as empirically is the case, then the SL CAPM will under-state the mean returns to low-beta assets. The Black CAPM, by construction, will neither under-estimate the returns to low-beta assets and nor will it over-estimate the returns to high beta assets.

The Black CAPM, like the SL CAPM, predicts that the market portfolio of all risky assets must be mean-variance efficient; the model does not predict that the market portfolio of stocks alone must be mean-variance efficient. Therefore, while the Black CAPM is based on a theory, the empirical version of the Black CAPM, which is used implicitly by many practitioners, is not directly reflective of the theory. The Black CAPM states that the risk of an asset should be measured relative to the market portfolio of all risky assets whereas the empirical version of the model that practitioners implicitly use measures the risk of an asset relative to a portfolio of stocks alone.

8.8.2 Use by practitioners

The tendency of the SL CAPM to under-estimate the returns to low-beta assets and over-estimate the returns to high-beta assets meant that the more general Black CAPM became the most widely accepted pricing model among academics for much of the 1970s and 1980s. There is some evidence that the model has been taken up explicitly by practitioners. Furthermore, there is currently a widespread implicit acceptance of the model by practitioners. This is because many practitioners use Blume-adjusted estimates of beta – either explicitly or implicitly – when

[20] See, for instance: The Calculation of the Cost of Capital, A Report for Envestra by Professor Bruce D. Grundy, 30th September 2010; paragraphs 32 to 37. WACC Estimation, A Report for Envestra, prepared by Tom Hird (PhD), Competition Economists Group, March 2011; paragraph 19 onwards.

[21] Velu, Raja and Guofu Zhou, Testing multi-beta asset pricing models, Journal of Empirical Finance 6, 1999, pages 219-241.

there is no clear rationale for doing so other than to cause estimates of the cost of equity generated by the SL CAPM to move closer to estimates that would be generated by the Black CAPM.

In its report, NERA conclude that[22]:

- the Black CAPM better explains the cross-section of mean returns to Australian stocks than does the SL CAPM. Estimates of the mean excess return to a zero-beta portfolio are of the same order of magnitude as the market risk premium (MRP) and differ significantly from zero
- there is a strong and significant positive relation between past estimates of the zero beta excess return and future estimates of the zero-beta excess return – in other words, past estimates of the zero-beta excess return can predict future estimates of the zero beta excess return
- currently available data indicate that the Black CAPM will provide a better estimate, using MSE as a criterion, of the future mean excess return to a zero-beta portfolio than the SL CAPM
- the evidence indicates that institutions that state that they use the CAPM often use the SL CAPM together with the Black CAPM because they use Blume-adjusted estimates of equity betas when there is little rationale for doing so
- the Black CAPM is a more general model than the SL CAPM – so one cannot conclude that the evidence does not support the Black CAPM but does support the SL CAPM.

NERA's estimated cost of equity using the Black CAPM is summarised in the table below.

Table 8-5: Cost of equity estimate obtained by applying the Black CAPM as a cross-check

WACC parameter	Values
Annualised zero beta rate (%)	6.99%
Credit rating	BBB+
Debt risk premium (%)	3.92%
Gearing (%)	60%
Equity beta	0.8
Market Risk Premium	8.44%
Excess return over zero-beta rate (%)	1.46%
Cost of equity (%)	12.14%

The cost of equity using the Black CAPM is 12.14%. This provides a useful cross-check that Multinet's cost of equity estimate of 10.8% is reasonable and accords with Rule 87.

[22] NERA, The Black CAPM A report for Multinet, Envestra& SP AusNet, 20 March 2012.

8.9 Equity beta

8.9.1 Role of Beta in CAPM

The AER computes the return required on equity using a version of the CAPM of Sharpe (1964) and Lintner (1965)[23]. In the CAPM, no individual invests solely in a single risky asset; rather, investors diversify. In particular, each investor combines risk-free borrowing or lending with a position in the market portfolio of risky assets. Thus, in the CAPM, the return that an investor requires on an individual asset is determined not by how risky the asset would be if held alone, but rather by how much the asset contributes to the risk of the market portfolio. This contribution is measured by the asset's beta. So, in the CAPM, the risk of an individual asset is measured not by the variability of its return, but by its beta. While this is true, there is a link, however, between an asset's beta and the variability of the asset's return. To see this, note that:

$$\beta_j = \frac{\sigma_{jm}}{\sigma_m^2} = \frac{\sigma_j}{\sigma_m}\rho_{jm}, \qquad \textbf{(1)}$$

Where:

β_j=asset *j*'s beta;

σ_{jm}=the covariance between the return to asset *j* and the return to the market portfolio;

σ_j=the standard deviation of the return to asset *j*;

σ_m =the standard deviation of the return to the market portfolio;

ρ_{jm}=the correlation coefficient between the return to asset *j* and the return to the market portfolio.

Equation (1) suggests that an asset with a very volatile return may have a high beta. The correlation coefficient between any two random variables, though, cannot exceed one. Therefore, an asset with a return that is not very volatile is unlikely to have a high beta.

The CAPM implies that:

$$\boldsymbol{E(R_j) = R_f + \beta_j[E(R_m) - R_f]} \qquad \textbf{(2)}$$

Where

$E(R_j)$= is the expected return on asset *j*;

R_f=is the risk-free rate;

β_j=asset *j*'s beta; and

$E(R_m)$=the expected return to the market portfolio of risky assets.

The CAPM states that the return that the market requires on an asset must be the sum of the risk-free rate and a risk premium. If an asset has a beta of zero, it must earn the risk-free rate but no more, even if the return to the asset is uncertain. The risk premium is the product of the asset's beta and the price of risk. The price of risk is

[23] Sharpe, William F., *Capital asset prices: A theory of market equilibrium under conditions of risk*, Journal of Finance 19, 1964, pages 425-442.
Lintner, John, *The valuation of risk assets and the selection of risky investments in stock portfolios and capital budgets*, Review of Economics and Statistics 47, 1965, pages 13-37.

the market risk premium, that is, the difference between the expected return to the market portfolio and the risk-free rate.

The AER assumes that international equity markets are segmented – even though empirically this is untrue. So in the version of the CAPM that the regulator uses the market portfolio of risky assets must be the market portfolio of Australian risky assets. This portfolio should, in principle, include, besides stocks, bonds and real estate. The AER, however, like many others, uses as a proxy for the market portfolio an index of stocks alone.

The AER assumes, in addition, that investors face the same tax rates on capital gains as on dividends and that a representative investor values the imputation credits that companies distribute. Therefore, the regulator measures returns gross of a fraction of the imputation credits that can be attached to dividends.

8.9.2 Proposed value of the equity beta

For the purposes of the forthcoming Access Arrangement Period, Multinet believes that an equity beta of 0.8 is an appropriate value to use in a credible and well-accepted financial model, such as the CAPM.

In its most recent final decision under the NGR, the AER stated:

> *"Consistent with the 2009 WACC review, the AER's draft decision considered that an equity beta of 0.8 would ensure that the service provider has the opportunity to recover at least its efficient costs incurred in providing reference services…*
>
> *The AER maintains its position in the draft decision and considers that an equity beta of 0.8 provides the best estimate commensurate with prevailing conditions in the market for funds and the risks involved in providing reference services, as required under r. 74(2) and r. 87(1) of the NGR."* [24]

Multinet has therefore adopted an equity beta of 0.8 for the purpose of this proposal.

Notwithstanding the above, Multinet also notes that in a submission prepared for Envestra, CEG reported that the approach to implementing the CAPM used by the AER under-estimates the cost of equity for firms with an estimated beta of less than one[25]. The actual cost of equity that is earned by firms with low beta values should be closer to the average of all firms (with beta equal to 1.0). The Sharpe-Lintner CAPM (SL CAPM) that has been implemented by the AER does not predict the returns for low beta firms correctly. There is significant uncertainty surrounding the reasons for the low beta bias.

CEG advised that the AER should tend to favour a cost of equity estimate that is closer to the normal or average market return, associated with a beta of one. Such an approach would be preferable to one that follows on from a mechanical plugging in of the estimated beta into the CAPM formula.

In a report for the New Zealand Commerce Commission, Professors Franks and Myers recommended the use of the 'Blume' adjustment for equity betas, which would tend to drive values towards one. A Blume-adjusted estimate of beta is a weighted average of a least squares estimate and one. According to Myers[26]:

Empirical evidence shows that average returns for low-beta firms are higher than predicted by the classical CAPM.

[24] AER, Final Decision: Envestra Ltd Access arrangement proposal for the Queensland gas network 1 July 2011 – 30 June 2016, June 2011, p. 42.

[25] CEG (2011), WACC Estimation, A report for Envestra, prepared by Tom Hird (Ph.D), March 2011; section 2, page 3.

[26] Franks, J., Lally, M. and Myers, S., Recommendations to the New Zealand Commerce Commission on an Appropriate Cost of Capital Methodology, December 2008, page 27.

The particular advice given to the Commerce Commission was stated as follows:

Recommendation 33: Professors Franks and Myers agree that some form of Bayesian adjustment to beta estimates may be sensible, but do not strongly recommend a specific adjustment method.

8.10 Gearing

The gearing ratio is defined as the ratio of the value of debt to total capital—that is, debt and equity—and is used to weight the costs of debt and equity when formulating the WACC.

In its draft decision on the Queensland and South Australian access arrangement reviews, the AER rejected the 55 per cent gearing ratio put forward by Envestra, claiming that the analysis which resulted in the selection of that value was based on credit rating metrics which were now out-of-date[27].

The AER argued that a gearing ratio of 60 per cent for a benchmark efficient electricity business was supported by recent empirical evidence available, which had been presented during the WACC review[28]. In the analysis undertaken for the review, the AER had included gas businesses as close comparators to the benchmark electricity business. Since gas businesses were reasonably representative of electricity businesses, then the reasoning also applied in reverse, meaning that electricity businesses were suitable proxies for the benchmark efficient gas business. Furthermore, the majority of businesses in the WACC review sample were involved in gas networks. The AER considered that the best estimate arrived at on a reasonable basis of the gearing level for the benchmark efficient gas business is 60 per cent[29]. According to the AER, such a value is consistent with the requirement of Rule 87 of the NGR that the rate of return on capital should be commensurate with prevailing conditions in the market for funds.

Multinet will propose the standard gearing ratio of 60 per cent. Envestra accepted this level of gearing in its revised access arrangement information.

8.11 Cost of debt

Multinet's approach to estimating the cost of debt is outlined below. Multinet has obtained independent expert advice from PwC and CEG in relation to the cost of debt. The expert reports are included as appendices to this AAI. They address, amongst other matters:

- the suitability of Bloomberg fair yield curves (extrapolated to 10 years) in producing cost of debt estimates that meet the NGR requirements
- the implications of recent AER decisions and relevant decisions handed down by the Australian Competition Tribunal
- the question of whether the methodology applied recently by the AER produces estimates of the cost of debt which accord with the NGR requirements
- the possible use of additional information to derive an estimate of the cost of debt that meets the NGR requirements.

[27] AER, Draft Decision, Envestra Ltd., Access arrangement proposal for the SA gas network, 1 July 2011 – 30 June 2016, February 2011; page 97.

[28] Ibid.

[29] Clause 74 (2) of the National Gas Rules stipulates that a forecast or estimate must be arrived at on a reasonable basis, and must represent the best forecast or estimate possible in the circumstances.

Standard regulatory practice is to estimate the cost of debt by summing the current risk free rate (being the yield on 10 year Government bonds) and a forward looking debt risk premium based on a benchmark BBB+, 10 year Australian corporate bond. Multinet adopts this methodology in this proposal. It is noted, therefore, that the risk free rates adopted for the purpose of estimating the costs of equity and debt differ, however, when combined using the nominal vanilla WACC formulation they produce an estimate of the WACC that meets the requirements of rule 87(1).

The independent expert reports from PwC and CEG note that the Australian Competition Tribunal has continued to endorse the extrapolated Bloomberg fair value curve as an appropriate method for estimating the DRP. Importantly, in its most recent decision in an appeal brought by Envestra, the Tribunal found that there was no reason shown from the available material why the use of the extrapolated Bloomberg fair value curve should not be adopted for the purpose of estimating the debt risk premium.[30]

Both PwC and CEG obtain estimates of the debt risk premium using the extrapolated Bloomberg curve. Both independent expert reports comment that the Bloomberg fair value curve is the most comprehensive published embodiment of market opinion about the debt risk premium.

Based on a benchmark BBB+, 10 year Australian corporate bond, PwC and CEG conclude that a debt risk premium of 3.92% should be adopted for the measurement period from 21 November 2011 to 16 December 2011. Combined with the risk free rate of 3.99% over the same measurement period, the cost of debt is estimated to be 7.91%.

Prior to the final decision Multinet will lodge a confidential request with the AER to agree the averaging period that will be used to set the cost of debt allowance for the purpose of the final decision. Multinet will request that the agreed averaging period remains confidential until the AER's final decision is published.

8.12 The value of imputation credits (gamma)

Gamma is a variable which is used in calculations of the benchmark tax allowance. Gamma represents the value of imputation credits to shareholders, and is a component of the return earned by shareholders. In the post-tax revenue model, high gamma values have the effect of reducing the calculated amount of the benchmark tax allowance.

Multinet will apply a gamma value of 0.25, consistent with the ruling of the Australian Competition Tribunal in ACompT9[31].

8.13 Expected inflation

The expected inflation rate is not an explicit parameter within the WACC calculation. However, it is used in the revenue model to forecast nominal allowed revenues and to index the capital base. It is an implicit component of the nominal risk-free rate. In previous decisions made under the Rules:

- The AER has stated that the inflation forecast must be consistent with the ten year investment horizon of the risk free rate.
- The AER has accepted a 10 year inflation forecast derived from the geometric mean of the near-term CPI forecasts published by the Reserve Bank of Australia in its most recent Statement on Monetary Policy (being

[30] Application by Envestra Limited (No 2) [2012] ACompT 3 (11 January 2012), para. 123.

[31] Australian Competition Tribunal, Application by Energex Limited (Gamma) (No 5) [2011]; decision handed down on 12th May 2011.

the February 2012 Statement), and for the remaining years of the 10 year period for which explicit forecasts are not provided, the midpoint (being 2.5%) of the RBA's inflation target of 2% to 3%.

Multinet has derived a forecast of expected inflation in accordance with this methodology. The annual forecast data used for this purpose are set out in Table 8-6 below.

Table 8-6: Annual CPI forecasts

	Year ending December		
	2013	2014	2015-2022
CPI forecast	2.75%	2.5%	2.5%

The geometric mean of this series of annual CPI forecasts is 2.51%. Accordingly, Multinet proposes to adopt a 10-year CPI forecast of 2.51%.

8.14 Concluding comments

The rate of return on capital proposed in accordance with the National Gas Rules is the cost of equity plus the cost of debt weighted by the respective proportions of equity and debt in the benchmark capital structure. Multinet submits that a point estimate for the weighted average cost of capital needs to be established having regard to the following criteria:

i. The cost of equity used in the WACC is within reasonable bounds of the value estimated using a number of different methods.

ii. The cost of debt used in the rate of return formula falls within the bounds of reasonable estimates and is sufficient to attract the volume of debt sufficient to fund the capital base and capital expenditure program.

iii. It is consistent with the other revenue setting parameters (such as benchmark expenditure allowances, the value of imputation credits and gearing).

iv. The expected sustainable cash flows generated by the business are reflective of those required to provide a credit profile consistent with the benchmark BBB+ Standard & Poor's credit rating.

Multinet's estimate of the nominal vanilla WACC is 9.1%.

Multinet's estimate of the cost of equity (10.8%) combines measures of the risk free rate and MRP that are both historic averages. Multinet has obtained independent expert opinion that this approach produces an estimate of the cost of equity that is consistent with the Rules requirements. Multinet has also examined alternative estimates of the cost of equity using the dividend growth model, a regime switching model and the Black CAPM. Each of these measures also indicate that Multinet's cost of equity is appropriate. The estimated cost of debt of 7.91% is derived from the Bloomberg fair value curve, which has been accepted by the Australian Competition Tribunal on a number of occasions. The resulting nominal vanilla WACC is 9.1%.

Multinet notes that Standard & Poor has released its updated criteria for assessing liquidity risk and how it directly impacts an issuer's credit rating. According to Standard & Poor's criteria, in order for a benchmark regulated network service provider to maintain the BBB+ credit rating it must achieve "adequate" levels of liquidity throughout the Access Arrangement period. For the purpose of this AAI, Multinet has not modelled its liquidity requirements in the context of Standard & Poor's criteria. However, Multinet will examine this issue in the coming months and will provide further information to the AER if there is any impact on Multinet's revenue requirements.

9. Efficiency carryover amount for current period

9.1 Introduction

This purpose of this chapter is to apply the efficiency carryover mechanisms (ECM) in relation to Multinet's capital and operating expenditure during the current Access Arrangement Period. The application of the ECM will determine the revenue increments or decrements (if any) to be applied to Multinet's total revenue for the forthcoming period, in accordance with Rule 76(d).

This chapter is structured as follows:

- Section 9.2 sets out the calculation of the ECM in relation to Multinet's capital and operating expenditure.
- Section 9.3 discusses the carry-over of ECM amounts into the forthcoming period.
- Section 9.4 sets out concluding comments.

9.2 Calculation of carryover amounts and adjustments

Tables 9-1 and 9-2 show the efficiency carryover mechanism calculations for the current access arrangement period for capital and operating expenditure, respectively. In both cases, the actual costs are derived from Multinet's regulatory accounts, adjusted to take account of scope changes and growth factors as explained below. The adjustments in relation to operating and capital benchmarks have been made in accordance with the following provisions as required by clause 6.4(b)(3) of Part B of the current access arrangement, as follows:

(A) the carryover of cost-related efficiency gains will be calculated in a manner that takes account of any change in the scope of the activities which form the basis of the determination of the original benchmarks. The Service Provider will provide information in relation to any change in scope, to be assessed by the Regulator, as part of the Access Arrangement Information submitted on 30 March 2012. This information will, without limitation, quantify and substantiate the impact of the scope changes on the original benchmarks.

(B) the carryover in respect of cost-related efficiency gains will be calculated in a manner that takes account of the difference between forecast and actual growth by adjusting the original benchmarks on the basis of the difference between the actual number of Connections in any Calendar Year and the assumed number of Connections for that year multiplied by the capital expenditure per Connection and operating expenditure per Connection.

(C) the carryover in respect of cost-related efficiency gains will be calculated in a manner that takes account of any adjustment to the original benchmark to reflect any difference between the capital replacement works assumed in Reference Tariffs for the Third Access Arrangement Period and the works actually undertaken in the Third Access Arrangement Period.

The forecast incremental change for 2012 is estimated to be zero.

Table 9-1: Capital Expenditure ECM calculations for current access arrangement period ($m, real 2012)

	Year Ending 31 December				
	2008	2009	2010	2011	2012
ESC Capital Benchmarks	45.4	71.6	53.5	47.7	45.8
Adjustments	(10.5)	(10.6)	(15.6)	(20.7)	0.5
Updated Capex Benchmarks	34.9	61.0	38.0	27.0	46.3
Actual Capital Expenditure	41.2	39.1	40.7	64.5	99.0
Under-spend/(Over-spend)	(6.3)	21.9	(2.8)	(37.5)	(52.7)
Efficiency gains/(losses)	(0.4)	1.5	(0.2)	(2.6)	(3.6)

Table 9-2: Operating Expenditure ECM calculations for current access arrangement period ($m, real 2012)

	Year Ending 31 December				
Cary-over amounts years:	2008	2009	2010	2011	2012
ESC Opex Benchmarks	49.3	49.4	48.9	48.7	48.5
Adjustments	0.0	0.0	0.0	0.0	0.0
Updated Opex Benchmarks	49.3	49.4	48.9	48.7	48.5
Actual Opex	53.4	52.3	51.7	59.9	n/a
Under-spend/(Over-spend)	(4.0)	(2.9)	(2.9)	(11.3)	n/a
Incremental efficiency gains/(losses)	(4.0)	1.1	0.1	(8.4)	n/a

9.3 Carry\over of ECM amounts into the forthcoming period

Section 9.2 presented the ECM carryover calculations, which is a negative amount in respect of both operating and capital expenditure. For the purposes of the forthcoming Access Arrangement Period, however, Multinet proposes that no negative amounts should be applied. There are two regulatory decisions that support this conclusion in relation to operating expenditure:

- Statements made by the ESC in the 2008 GAAR
- The decision by the AER not to apply an ECM penalty to United Energy in the recent electricity distribution review.

These issues are discussed on the following pages.

9.3.1 Statements made by the ESC in the 2008 GAAR

The issue of negative carryover amounts or ECM penalties was addressed by the ESC in the 2008-2012 GAAR. The following excerpt from the Multinet determination explains the ESC's proposed approach to the treatment of ECM penalties that arise in the 2008-2012 regulatory period[32]:

> *"In response to the draft decision Multinet proposed a new Fixed Principle which was not included in its March 2007 submission. This proposed Fixed Principle provides that if there is a net negative ECM at the end of the third regulatory period, this amount will not be carried forward to the fourth regulatory period. Multinet has argued that:*
>
> *Multinet is in a situation whereby it already has the lowest cost per customer, [made] the biggest cost reduction of any business, and despite other businesses forecasting an increase of costs [the Commission has] imposed cost reductions such as those in the draft decision. These forecasts will be unattainable, therefore Multinet will be penalised again in the fourth period when it cannot reduce costs to the forecast level. The draft decision as it currently stands will penalise Multinet twice.*
>
> *In the 2003 GAAR the Commission discussed at length and subsequently rejected arguments from the distributors that a 'no net negative carryover' principle should be incorporated in the Access Arrangements. The Commission's reasons included that:*
>
> - *the distributors' proposal was not symmetric in the treatment of efficiency savings and losses*
> - *under the distributors' proposals there would be an incentive for the distributor to defer making efficiency savings in the latter years of a regulatory period in the face of efficiency losses in earlier years of the period.*
>
> *This reasoning still applies and the Commission considers that Multinet's proposal is not consistent with the Code. Incorporating a no negative carryover principle would undermine the effectiveness of the efficiency carryover incentive mechanism and therefore would be inconsistent with sections 8.1(a), (e) and (f).*
>
> *In the 2003 GAAR the Commission determined that it should be able to exercise its discretion (within the constraints of the Code) in relation to whether a negative carryover was carried forward depending upon individual circumstances. The Commission remains of the view that this is the most appropriate way to ensure that the requirements of the Code are met. In the event that the Commission's forecasts are ultimately unattainable, the Commission will take this into account when determining whether a negative carryover should apply.*
>
> *The Commission's final decision is to require removal of this proposed amendment."*

The above discussion is highly relevant to the issue of whether the AER should apply an ECM penalty to Multinet. In particular, Multinet's response to the 2008-2012 GAAR Draft Decision highlighted the company's concern that the ESC's operating expenditure benchmarks were too low and therefore the application of an ECM penalty in these circumstances would be unreasonable.

Multinet also considers that the same proposition applies to capital expenditure. In particular, the ESC imposed a lower capital expenditure benchmark than forecast by Multinet in the 2008 GAAR. As Multinet has faced strong incentives to minimise capital expenditure during the current Access Arrangement Period, it is not appropriate to impose a penalty on Multinet for failing to achieve the benchmark.

[32] Essential Services Commission, Gas Access Arrangement Review 2008-2012 Final Decision, 7 March 2008, page 564.

9.3.2 AER's approach in relation to United Energy

In the recent electricity distribution review for United Energy, the AER concluded that it would not be appropriate to impose an ECM penalty in relation to operating expenditure in circumstances where UED had negotiated a low cost OSA contract with JAM. The AER's reasoning in its Draft Decision is reproduced below[33]:

> *"The AER notes that if United Energy's carryover amount is determined exclusive of related party margins, the carryover amount is reduced to negative $50 million. The AER notes that this negative carryover amount arises because it is based on the actual costs of United Energy's related party service provider (which includes the loss in providing operating services to United Energy). However, the application of a carryover amount for United Energy excluding related party margins would result in an anomalous outcome. That is, United Energy has been receiving an efficiency gain in the form of a lower cost within the current regulatory control period as its related party provider has supplied services at a loss. However, if the carryover amount is determined excluding related party margins, this efficiency gain would register as an efficiency loss for any carryover amounts included in the forthcoming regulatory control period."*

The AER elaborated on its reasoning in the Final Decision as follows[34]:

> *"In making this decision, the AER has had regard to the NEO and the revenue and pricing principles. In particular, the AER considers the non-application of the ECM to United Energy is in the long-term interests of customers given that customers would not share in any 'efficiency benefits' received by United Energy in the 2006–10 regulatory period given United Energy's costs were unsustainable.[35] Alternatively where United Energy's carryover amounts are calculated exclusive of related party margins, this may not promote effective incentives for United Energy to pursue efficiencies given that it will receive unsustainable efficiency gains within the current regulatory period and unsustainable efficiency losses in 2011–15 regulatory control period.*
>
> *The AER is using its discretion to not apply carryover amounts, has taken into account into the revenue and pricing principles of the NEL. The AER considers that this decision is consistent with promoting effective incentives in order to promote economic efficiency and the efficient provision of services consistent with 7A(3) of the NEL and the NEO, given that not applying the negative carryover amounts will remove any detrimental impact on United Energy's incentive to pursue economic efficiencies."*

It is evident from the AER's reasoning in its Final Decision that its primary reason for not applying the ECM is that doing so would not promote effective incentives. In its reasoning, the AER referred to clause 7A(3) of the NEL, which is reproduced below:

> *"A regulated network service provider should be provided with effective incentives in order to promote economic efficiency with respect to direct control network services the operator provides. The economic efficiency that should be promoted includes—*
>
> *(a) efficient investment in a distribution system or transmission system with which the operator provides direct control network services*
> *(b) the efficient provision of electricity network services*
> (c) *the efficient use of the distribution system or transmission system with which the operator provides direct control network services."*

---

[33] AER, Draft Decision, Victorian Electricity Distribution Network Service Providers, price determination 2011-2015, June 2010, page 561.

[34] AER, Final Decision, Victorian Electricity Distribution Network Service Providers, price determination 2011-2015, October 2010, page 595.

[35] *"This will be the case where United Energy's efficiency carryover amounts are calculated inclusive of related party margins. That is a carryover amount inclusive of margins reflects the loss JAM has incurred during the current regulatory period in servicing United Energy' network*."

It should also be noted that the National Gas Law contains provisions that are analogous to those quoted by the AER in its decision not to apply an ECM penalty to UED. In particular, Division 2, clause 24(3) states:

> *"A service provider should be provided with effective incentives in order to promote economic efficiency with respect to reference services the service provider provides. The economic efficiency that should be promoted includes—*
>
> *(a) efficient investment in, or in connection with, a pipeline with which the service provider provides reference services*
> *(b) the efficient provision of pipeline services*
> *(c) the efficient use of the pipeline."*

Furthermore, Multinet's financial performance in relation to operating expenditure is closely aligned with United Energy's circumstances. In particular, Multinet has been receiving an efficiency gain in the form of a lower cost within the current regulatory control period as its service provider has supplied services at a loss. The same anomalies that the AER identified in relation to United Energy apply equally to Multinet. Furthermore, as explained above, in some respects applying a penalty to Multinet would be even more anomalous because Multinet highlighted that the operating expenditure benchmarks set by the ESC were unreasonably low.

9.4 Concluding comments

In light of the information presented above, Multinet submits that the AER should exercise its discretion to not apply the ECM penalty in relation to operating or capital expenditure. Multinet notes that its response to the ESC's 2008-2012 GAAR Draft Decision expressed concern that the expenditure allowances provided by the ESC's decision would be unattainable, and therefore, under the ECM, Multinet will be penalised again in the forthcoming Access Arrangement Period when it cannot reduce costs to the forecast level. The ESC's response to Multinet's submission noted that if that the ESC's forecasts are ultimately unattainable, the ESC will take this into account when determining whether a negative carryover should apply.

The facts indicate that Multinet could not attain the operating and capital expenditure benchmarks set by the ESC, even though it faced strong incentives to do so. It is also important to note that Multinet's cost performance is consistently regarded as superior, according to national and international benchmarking, as explained in chapter 2 of this AAI. In these circumstances, it would not be reasonable to apply any ECM penalties because to do so would not be consistent with the operation of the ECM under the National Gas Code.

The above considerations, coupled with the approach adopted by the AER in relation to United Energy, support the exercise of the AER's discretion to not apply a negative ECM amount to Multinet in the forthcoming access arrangement period. On this basis, Multinet proposes that the ECM is set to zero for operating and capital expenditure.

10. Total revenue, X factor and indicative price outcomes

10.1 Introduction

The purpose of this chapter is to present an overview of Multinet's total revenue and X factor, along with an indication of the pricing outcomes for the forthcoming Access Arrangement Period.

Rule 76 states:

> *"Total revenue is to be determined for each regulatory year of the access arrangement period using the building block approach in which the building blocks are:*
>
> *(a) a return on the projected capital base for the year*
>
> *(b) depreciation on the projected capital base for the year*
>
> *(c) if applicable – the estimated cost of corporate income tax for the year*
>
> *(d) increments or decrements for the year resulting from the operation of an incentive mechanism to encourage gains in efficiency*
>
> *(e) a forecast of operating expenditure for the year."*

This chapter is structured as follows:

- Section 10.2 shows the derivation of Multinet's total revenue in accordance with the requirements of Rule 76.
- Section 10.3 sets out Multinet's proposed X factor;
- Section 10.4 provides analysis that shows the pricing outcomes arising for customers under the proposed Access Arrangement for the forthcoming period.

10.2 Annual building block revenue requirement

In accordance with Rule 76, Multinet's total revenue for the forthcoming Access Arrangement Period is comprised of the following building blocks:

- Return on the projected capital base for each year, being the WACC (detailed in chapter 8) multiplied by the projected capital base (detailed in section 7.6)
- Depreciation on the projected capital base (detailed in section 6.4)
- The estimated cost of corporate income tax
- Increments or decrements for resulting from the operation of the efficiency incentive mechanism during the current Access Arrangement Period (detailed in chapter 9)
- Forecast operating expenditure (detailed in chapter 4).

The table below provides a summary of the derivation of Multinet's total revenue for each regulatory year of the forthcoming Access Arrangement Period, in accordance with Rule 76.

Table 10-1: Total revenue requirements ($m, real 2012)

	Year Ending 31 December					
	2011	2012	2013	2014	2015	Total
Return on capital base	68.6	70.6	71.7	72.2	73.2	356.5
Depreciation	52.6	58.1	61.3	64.0	67.7	303.7
O&M Expenditure	69.4	72.2	72.7	74.1	74.4	362.7
Efficiency carryover	0.0	0.0	0.0	0.0	0.0	0.0
Tax Wedge	11.1	9.6	9.4	9.9	10.7	50.6
Total revenue	**201.6**	**210.5**	**215.1**	**220.3**	**226.0**	**1,073.5**

10.3 X Factor

The X factor is the amount by which Multinet's average revenue is permitted to increase in real terms (in accordance with the proposed reference tariff variation mechanism detailed in chapter 1) for each year of the forthcoming Access Arrangement Period.

The X factors detailed in the table below have been calculated in accordance with Rule 92(2), which states:

"The reference tariff variation mechanism must be designed to equalise (in terms of present values):

(a) forecast revenue from reference services over the access arrangement period; and
(b) the portion of total revenue allocated to reference services for the access arrangement period."

Table 10-2: Annual X Factor amounts

	Year Ending 31 December				
	2011	2012	2013	2014	2015
Price Path	14.7%	0.0%	0.0%	0.0%	0.0%
Smoothed Price Path	4.8%	4.8%	4.8%	4.8%	4.8%

10.4 Analysis of typical customer/pricing outcomes

Based on the total revenues and X factors set out above, the table below provides an indication of the pricing outcomes under the proposed Access Arrangement, for a number of typical customers.

Table 10-3: Analysis of 'typical' residential bill

	Current invoice (2012)	New invoice (2013)	% Change
Cost of Gas (inc Retail)	$474.64	$474.64	0.0%
Transmission	$56.67	$56.67	0.0%
Distribution	$273.71	$313.94	14.7%
Total Gas Invoice	**$805.02**	**$845.25**	**5.0%**

11. Pipeline services

11.1 Introduction

This chapter sets out the following information in relation to the services that Multinet provides, and the terms and conditions under which those services are provided:

- Section 11.2 describes the References Services that Multinet proposes to provide during the forthcoming Access Arrangement Period.
- Section 11.3 explains that there are no Queuing requirements and also explains Multinet's proposed Capacity trading requirements and treatment of Change of receipt or delivery points
- Section 11.4 provides details of Multinet's Extensions and Expansions Policy, in relation to
  - Connections
  - Extensions to currently un-reticulated townships.
- Section 11.5 explains Multinet's proposed changes to the current terms and conditions.
- Section 11.6 sets out Multinet's proposed Guaranteed Service Level scheme.

The relevant Rules requirements in relation to these matters are identified in the sections below. In all cases, Multinet is confident that its proposal satisfies the applicable Rules requirements.

11.2 Reference Services

Reference Services are services that are likely to be sought by a significant part of the market. The Services Policy set out in section 5.1 of Part A of the Access Arrangement proposes three classes of Reference Services:

- Residential Haulage Reference Services
- Non-Residential Haulage Reference Services
- Ancillary Reference Services.

Multinet is not proposing to change the manner in which it provides Reference Services. Multinet is proposing to introduce one new Ancillary Reference Service in the Forthcoming Access Arrangement Period. This new service relates to new connections and is a result of Multinet now being responsible to provide connections services as part of the new NECF arrangements.

Within each class of Haulage Reference Service, tariffs are assigned broadly as follows: for the Residential Haulage Reference Service, a "tariff V" tariff; and for the Non-Residential Haulage Reference Service, a "tariff D, "tariff L" or "tariff V" tariff.

11.2.1 Residential Haulage Reference Service

The Residential Haulage Reference Service is the Haulage Reference Service for allowing the injection, conveyance and withdrawal of Gas by or in respect of a Residential Customer being one who uses Gas primarily for domestic purposes. This Service includes the basic connection service (within the meaning of proposed Part 12A of the NGR),being Expansions or Extensions comprising work on the Main, service pipe, metering Installation and scheduled meter reading.

The costs of basic connection services for Residential Customers are assumed to satisfy the test in proposed rule 119M(1)(a) (i.e. the present value of the expected incremental revenue exceeds the present value of the capital expenditure) and the test in rule 79 (Conforming Capital Expenditure). Forecasts of these costs have been included in the calculation of the Total Revenue and no connection charge will be levied for a basic connection service for Residential Customers.

Multinet will subject the costs of the Connection assets for Residential Haulage Reference Services that do not comprise a basic connection service to the tests in proposed rule 119M and rule 79 of the NGR. Connection charges for these non-Reference Services (Part A (definitions) and Schedule 2 of Part C of the Access Arrangement add a "Tariff V Complex Connection" as a Pipeline Service other than a Reference Service) will be determined in accordance with proposed rule 119M and rule 79 and applied in accordance with the Extensions and Expansions requirements of Part of the Access Arrangement.

11.2.2 Haulage Reference Tariff – Non-Residential Tariff V

The Non-Residential Haulage Reference Service is the Haulage Reference Service for allowing the injection, conveyance and withdrawal of Gas by or in respect of a Non-Residential Customer (being one other than a Residential Customer). Where relevant, Distribution Supply Point is assigned to Haulage Reference Tariff – Non-Residential V. This Service includes the basic connection service (within the meaning of proposed Part 12A of the NGR),(being Expansions or Extensions comprising work on the Main, service pipe, metering Installation) and scheduled meter reading services.

The costs of basic connection services for Non-Residential Tariff-V Customers are assumed to satisfy the test in proposed rule 119M(1)(a) (ie the present value of the expected incremental revenue exceeds the present value of the capital expenditure) and the test in rule 79 (Conforming Capital Expenditure). Forecasts of these costs have been included in the calculation of the Total Revenue and no connection charge will be levied for a basic connection service for Non-Residential Tariff V Customers.

Multinet will subject the costs of the Connection assets for Non-Residential Tariff V Haulage Reference Services that do not comprise a basic connection service to the tests in proposed rule 119M and rule 79 of the NGR. Connection charges for these non-Reference Services (Part A (definitions) and Schedule 2 of Part C of the Access Arrangement add a "Tariff V Complex Connection" as a Pipeline Service other than a Reference Service) will be determined in accordance with proposed rule 119M and rule 79 and applied in accordance with the Extensions and Expansions requirements of Part of the Access Arrangement.

11.2.3 Haulage Reference Tariff – Non-Residential Tariff D

Where the relevant Distribution Supply Point is assigned to Haulage Reference Tariff Non-residential Tariff D, this Non-Residential Haulage Reference Service is for allowing the injection, conveyance and withdrawal of Gas at a Tariff D Distribution Supply Point. This Tariff does not include the provision and maintenance of Connection assets forming a Tariff D Distribution Supply Point.

Connection of a Tariff D Distribution Supply Point is to be provided as a non-Reference Service and the costs of these works and related operations and maintenance are not recovered through the Non-Residential Tariff D Reference Tariff. For these services, a charge is to be levied determined in accordance with proposed rule 119M and rule 79 and applied in accordance with the Extensions and Expansions requirements of Part of the Access Arrangement.

11.2.4 Haulage Reference Tariff – Non-Residential Tariff L

Where the relevant Distribution Supply Point is assigned to Haulage Reference Tariff Non-residential Tariff L, this Non-Residential Haulage Reference Service is for allowing the injection, conveyance and withdrawal of Gas at a Tariff L Distribution Supply Point. This Service does not include the provision and maintenance of Connection assets forming a Tariff L Distribution Supply Point.

Connection of a Tariff L Distribution Supply Point is to be provided as a non-Reference Service and the costs of these works and related operations and maintenance are not recovered through the Non-Residential Tariff L Reference Tariff. For these services, a charge is to be levied determined in accordance with proposed rule 119M

and rule 79 and applied in accordance with the Extensions and Expansions requirements of Part of the Access Arrangement.

11.2.5 Ancillary Reference Services

Ancillary Reference Services are Pipeline Services provided in connection with the injection, conveyance and withdrawal of Gas. Multinet is offering the Ancillary Reference Services set out in Schedule 1 of Part A under the Fourth Access Arrangement.

The Ancillary Reference Services will be different for the Fourth Access Arrangement Period to those currently offered because of the following factors. From I January 2013, Multinet will provide new connection services. Previously these services were only offered by Retailers. As a result of the new NECF arrangements Multinet is now required to offer these services (note that the customer will have a choice whether to use Multinet or a Retailer to provide these services). Multinet connects approximately 7,500 new customers every year. It is appropriate to have a separate ancillary charge for this service on the basis that costs can readily be assigned to the provision of this service rather than be smeared across the entire customer base.

11.2.6 Reference Tariffs and Reference Tariff Policy

Part B of the Access Arrangement sets out Multinet's Reference Tariffs, and how those Reference Tariffs are determined for Reference Services. Information that explains the derivation of Multinet's Reference Tariffs is provided in Section 14 of this Access Arrangement Information.

Part B also continues to include various matters included by Multinet under the Access Code as the Reference Tariff Policy. Whilst such a policy, being one under the Code that which "described the principles to be used to determine a Reference Tariff", is no longer required in those terms under the NGR, Multinet has retained its Reference Tariff Policy as a useful repository for various matters regarded as relevant.

Multinet has updated the Reference Tariff Policy for terminology changes in the move from the Code to the NGR but the substance is unaltered.

These sections together address Division 8 of Part 9 of the NGR.

11.2.7 Non-references services

Pipeline services other than Reference Services (sometimes referred to as "non-Reference Services") will be made available to Users or Prospective Users as agreed or as determined in accordance with Part 12A of the NGR (the new connections framework) and regulatory Instruments.

Multinet proposes that non-Reference Services will be supplied on the reasonable terms and conditions as set out in Part C of the Access Arrangement. In the 'default' terms and conditions forming part of the Access Arrangement, the description of those non-Reference Services (in a schedule to the Terms and Conditions) will include Tariff D Connections. Tariff L Connections and Tariff V Complex Connections downstream of the Main and these non-Reference Services will be agreed by Multinet and the User at the time the actual contract is signed.

The Terms and Conditions also make provision for that schedule to be amended from time to time by agreed notice between the parties or as a result of arbitration. Multinet can easily update the schedule each time a new non-Reference Service is agreed or determined. Multinet considers this to be a sensible and pragmatic approach to finalising contracts that relate to the provision of non-Reference Services.

11.2.8 Fixed Principles

In accordance with Division 10 of Part 9 of the NGR, Multinet has included certain Fixed Principles.

Broadly these simply carry over from the Access Arrangement for the third access arrangement period, with some changes to cater for the move from the Access Code to the NGR.

11.2.9 Terms and Conditions

Reference Services will be provided:

Part A notes that the 'default' Terms and Conditions as set out in Part C of the Access Arrangement are those that apply to the provision of Pipeline Services to retailers, as has been the case since the first Access Arrangement, and that such services sought directly by end use customers will the subject of negotiation.

Details of the rationale for the proposed terms and conditions are set out in section 11.5.

11.3 Queuing requirements, Capacity trading requirements, and Change of receipt or delivery points

There are no queuing requirements for the distribution pipeline as the Regulator has not required them.

The Capacity trading requirements are those that apply to Multinet as a participant in the Victorian wholesale gas market.

As required by rule 106, the Access Arrangement provides for the change of a receipt or delivery point. It does so by recognising that changing the point of delivery of gas is not a matter for Multinet alone but also will have an impact of AEMO, as operator of the Victorian wholesale gas market, and on the owner or operator of the relevant transmission pipeline. The prior approval of these parties is thus specified in advance a condition of consent.

In relation to a change of delivery point, the Access Arrangement recognises the relevance of the connection framework which caters for a connection amendment.

11.4 Extensions and Expansions requirements

Multinet's Extensions and Expansions requirements are set out in Part A of the Access Arrangement and address rules 81 to 84 of the NGR. Together with proposed Part 12A of the NGR, these requirements provide the basis for Connection to Multinet's Distribution System under this Access Arrangement. Charging under these arrangements is discussed above.

Non-conforming capital expenditure will be recovered by way of a capital contribution (that will be rolled into the capital base but which will not be used for calculating reference tariffs) or by way of approved surcharge. The amount of the capital contribution will be determined in accordance with proposed rule 119M of the NGR. Provision is also made for inclusion of non-conforming capital expenditure in a speculative capital expenditure account.

The Extensions and Expansion requirements continue the arrangements for Connection of currently un-reticulated towns that applied during the Third Access Arrangement period.

11.5 Rationale for Terms and Conditions

11.5.1 Introduction

Multinet is required to specify the Terms and Conditions on which it will supply each Reference Service. Multinet's full Terms and Conditions for its revised Access Arrangements, which will apply to Reference Services, Ancillary Reference Services and Services other than Reference Services are set out in Part C of the Access Arrangement.

Multinet engaged with Users directly to inform itself of any User concerns, and where possible it amended the default Terms and Conditions to accommodate their views. During the consultation process it was not always clear that all stakeholders agreed with all the proposed changes. As a general rule where agreement between Users was either unclear or not forthcoming, Multinet has not made changes to its default set of Terms and Conditions.

Multinet remains prepared to negotiate individual Terms and Conditions with Users that reflect individual circumstances.

The key issues and proposed material changes to the current Terms and Conditions are explained below. As required by rule 52(2) of the NGR, Multinet has provided a change-marked version and a clean copy of its proposed Terms and Conditions for the forthcoming Access Arrangement Period. .

11.5.2 GSL Payments

There was no agreement amongst Users regarding changes to the manner in which Multinet makes payment of a GSL to a Customer.

Multinet's current arrangement is that it makes GSL payments directly to the party making the appointment when it misses an appointment. The reason for this is that often a builder or plumber is involved and the payment is made to them rather than the Customers. Multinet makes GSL payments to Customers via the billing systems when it makes a GSL payment relating to reliability thresholds.

Multinet believes that the current arrangements represent an efficient process and the agreed position with a majority of Users and should continue to be the arrangements provided for in its default Terms and Conditions.

11.6 Guaranteed Service Level Scheme

The purpose of the Guaranteed Service Level (GSL) Scheme is to provide additional incentives to the Service Provider to improve service to Customers. Multinet's performance in the current Access Arrangement Period remains high and accordingly the number of payments for breaches of GSLs has been low.

Multinet proposes the GSL scheme in the table below.

Figure 11-1: Proposed Guaranteed Service Levels

Description of Service	Proposed
Late Connection – 1 day	$80
Late Connection – 2 days	$160
Late Connection – 3 days	$240
Available to Tariff V customers only	
Late/Missed Appointment More than 15 minutes late for the appointment type and time agreed with you, we will pay you $50. Specified appointment time for (1) Alter meter position, (2) Perform meter accuracy test and (3) Other appointments as agreed; Two hour appointment window for (1) Meter Reading and (2) Others as agreed; and Four hour appointment window for planned meter replacements Appointments rescheduled by the gas distribution business are counted as missed appointments. Other appointment windows will be at the discretion of the gas distribution business Available to all appointments	$50
Supply Restoration (>12 hours) Available to all customers, excluding force majeure events and third party events affecting more than 50 customers	$80
Unplanned Sustained Interruptions per calendar year	
Number of Interruptions > 5-10	$50
Number of Interruptions > 11-15	$100
Number of Interruptions > 16-30	$150
Number of Interruptions > 30 Available to all customers, excluding force majeure, upstream events and third party events impacting large diameter mains affecting more than 50 end use customers.	$300

12. Unaccounted for gas

12.1 Introduction

Unaccounted for gas (UAFG) is the difference between the quantities of gas measured into and out of a pipeline system, with allowance made for any change of gas held in the system between the start and end of the measurement period. UAFG can be expressed in terms of actual volume or energy, or is more frequently expressed as a percentage of the total quantity measured into the system.

Calculated UAFG figures are very rarely zero even if there are no leaks in the pipeline system. This is principally because there are errors associated with the metering of gas into and out of the system. For instance, meter installations supplying distribution systems that have between ±1.0% and ±2.5% volume measurement uncertainty (depending on meter size) comply with AEMO's Wholesale Market Metering Uncertainty Limits and Calibration Requirements Procedures for Victoria. Similarly, there are errors (typically in the range of +2% to -3%) associated with the measurement of gas delivered from the distribution system.

Given the magnitude of measurement errors at both the upstream and downstream ends of the distribution system, the level of uncertainty in UAFG attributable entirely to meter calibration errors could easily exceed ±2%. Apart from calibration errors, other factors that contribute to metering uncertainty include the accuracy of gas heating value (HV) allocation and barometric and ambient temperature effects. Moreover, the factors affecting UAFG will not be constant over time, especially as gas loads and meter populations change.

It is evident from the above discussion that the level of UAFG at any point in time, as well as changes in the level of UAFG over time, does not necessarily relate to changes in losses or leakage from the system.

The implications of pipeline leakage for UAFG are examined in more detail in section 12.2 below. Section 12.3 then presents a discussion of Multinet's current UAFG Benchmark. Section 12.4 concludes the chapter by presenting Multinet's proposed UAFG Benchmark. It notes that there is no empirical evidence to establish a link between the replacement of cast-iron pipes and a decline in actual UAFG. Multinet therefore proposes to set a constant UAFG benchmark for the forthcoming period using the latest available actual UAFG data.

12.2 Pipeline Leakage

It is widely understood that welded steel and fused polyethylene distribution systems are not expected to leak as much as cast-iron pipelines. It has been noted elsewhere in this AAI that a relatively high proportion of Multinet's distribution network is composed of cast-iron pipes. It has also been noted that Multinet has implemented a program to replace the cast-iron sections of its distribution system.

Whilst cast-iron pipes are expected to leak more than other materials, there is no recognised way of determining accurately the magnitude of gas losses from individual sections of pipeline. It is therefore not valid to estimate reductions in leakages due to cast-iron pipe replacement, based on a fixed "losses per kilometre" rate. Specifically, leakage from individual joints will vary, such that one leak at a single point could be equivalent to the total leakage from the rest of a long continuous section of pipe.

Multinet's cast-iron pipeline systems are many years old and are continuing to deteriorate. Although sections of the cast-iron system are being replaced, the leakage from the cast-iron assets that remain in service can be expected to increase with time. Thus, the net leakage from Multinet's distribution network is unlikely to reduce in proportion to the length of cast-iron pipes that are replaced. In effect, any reduction in leakage from the replaced pipes is likely to be counter-balanced by increased leakage from the remaining cast iron pipes. As already explained, there is significant uncertainty in attempting to measure these countervailing effects because leakage is only one component of UAFG.

12.2.1 Impact of Pipeline Replacement on UAFG

The changing impact of metering uncertainty on UAFG means that the impacts of cast-iron replacement each year are going to be masked by the year-to-year fluctuations in the UAFG determination[36]. Even assuming all UAFG is caused by losses from the cast-iron system (which is not the case) a 3% replacement rate for a typical 3.0% UAFG benchmark system rate would change the figure by less than 0.1 per year. However, as already noted, UAFG is not caused solely by cast-iron pipeline leakage.

The net effect of the tenuous link between actual UAFG and cast-iron pipeline replacement means that the UAFG benchmark figure does not provide a suitable business driver for ensuring on-going system integrity.

The UAFG benchmark figures are also a "trailing indicator" in that they are based on the UAFG figures from past years and thus do not represent the immediate past history. The UAFG figures take time to be finalised and it is necessary to average the UAFG over a number of years to reduce the impact of the year-to-year fluctuations.

12.2.2 Impact of UAFG Benchmarks on Pipeline Replacement

In light of the information set out above, it is evident that the existing system of setting UAFG benchmarks slightly lower than the actual past determined UAFG – to provide a business with incentives to replace deteriorating pipelines – is inappropriate. There are too many uncertain factors that drive the actual UAFG. Moreover, the economic signals for pipeline replacement that a business sees under the current UAFG regime are not commensurate with the cost of pipeline replacement and so do not provide an effective investment driver in themselves. The main driver for pipeline replacement is safety rather than the economic value of the gas lost.

12.2.3 Distribution System Integrity

Distribution UAFG can be used as an indicator of gas distribution system integrity but, as already shown, the UAFG depends on a number of different (and uncertain) factors making it difficult to correlate any particular integrity component to the overall UAFG. This indicator is affected by the accuracy of custody transfer (receipt) and customer metering as well as the leakage and other losses from the system.

Distribution businesses do not have control over the custody transfer (receipt) metering component of distribution UAFG. However, distribution businesses do have control over the components of distribution system integrity such as customer metering and pipeline maintenance, repair and replacement.

Drivers to ensure the continuing integrity of the distribution system should be more directly targeted at the relevant distribution business activities that govern system integrity, rather than relying on an imperfect trailing indicator such as distribution UAFG.

12.3 Multinet's current UAFG Benchmark

For the purpose of its current Access Arrangement, the Essential Services Commission established the UAFG benchmarks set out in the following table. Two benchmarks are determined based on a customer's annual consumption of greater than or less than 250TJ.

Multinet and each User carry out an annual financial reconciliation to settle the difference between the actual UAFG and the benchmarks.

Footnote to go in here from 12.2.1

Table 12-1: Multinet's current UAFG benchmarks

	Year Ending 31 December				
	2008	2009	2010	2011	2012
Class A	0.3%	0.3%	0.3%	0.3%	0.3%
Class B	3.2%	3.2%	3.2%	3.1%	3.1%
Non PTS	2.0%	2.0%	2.0%	2.0%	2.0%

The table below details Multinet's actual UAFG since 2006. The table clearly shows that Multinet has been unable to meet the UAFG benchmark in the current access arrangement period (shown in Table 12.1).

Table 12-2: Multinet's actual UAFG

	Year Ending 31 December				
	2006	2007	2008	2009	2010
Class A	0.3%	0.3%	0.3%	0.3%	0.3%
Class B	3.8%	4.2%	3.9%	4.1%	4.4%
Non PTS	n/a	n/a	n/a	n/a	n/a

Under its current access arrangement, Multinet has faced strong incentives to minimise UAFG. Notwithstanding these incentives, the company has been unable to meet the UAFG benchmarks set by the ESC. The material difference between the benchmark and actual UAFG for Class B strongly suggests that the ESC's benchmarks were not set appropriately. In addition, the actual UAFG performance illustrates the variability of the measure over time and the absence of a downward trend, despite the replacement of cast iron pipes. The data therefore confirms the views already expressed that UAFG is a simple measure that conceals a number of complex factors that vary over time.

In this context, it is noted that during the current Access Arrangement Period, the Bas Gas Station located near Lang Lang and operated by Origin Gas was commissioned. From 2010, it has been operating at full capacity and injecting gas into the Longford line. This effectively changed the overall quality of gas entering Multinet's system. Gas obtained from Bas Gas is of an inferior quality to gas provided by Longford, and has changed the overall heating value of the gas when compared to earlier years. Multinet's analysis shows that this has contributed up to 0.4% of the increase in UAFG since 2006. Acknowledgment of the UAFG issue relating to the quality of gas from Bas Gas is recognised by AEMO – refer to AEMO Gas Market Issue IN031/09.

12.4 Multinet's proposed UAFG Benchmark

Based on the information set out above, Multinet considers it is neither possible nor appropriate to adjust UAFG benchmarks for the expected future impacts of cast-iron pipe replacement. Multinet's actual UAFG has not declined since 2003, even though the company has replaced approximately 800 km of low pressure pipe since 2003. This fact, coupled with the information set out in the previous sections demonstrates that there is no empirical evidence to establish a link between the replacement of cast-iron pipes and a decline in actual UAFG. In the circumstances,

Multinet regards the actual UAFG data for 2010 to be the most appropriate benchmark for the forthcoming Access Arrangement Period. In particular, Multinet has faced financial incentives to reduce UAFG, and therefore the most recent actual data provides an efficient benchmark for the forthcoming Access Arrangement Period. For the reasons set out above, Multinet is not proposing to adjust the UAFG benchmark to reflect its proposed pipeworks program for the forthcoming period.

The table below sets out Multinet's forecast for UAFG for the 2013 to 2017 Access Arrangement Period.

Table 12-3: Multinet's proposed UAFG benchmarks

	Year Ending 31 December				
	2013	2014	2015	2016	2017
Class A	0.3%	0.3%	0.3%	0.3%	0.3%
Class B	4.4%	4.4%	4.4%	4.4%	4.4%
Non- PTS	3.0%	3.0%	3.0%	3.0%	3.0%

As already noted, Multinet has proposed a benchmark consistent with 2010 actual UAFG rather than a historical average. During the current Access Arrangement Period the Bas Gas Station located near Lang Lang and operated by Origin Gas was commissioned. As of 2010 it was operating at full capacity and injecting gas into the Longford line. This effectively changed the overall quality of gas. Gas obtained from Bas Gas is of an inferior quality to gas provided by Longford, and has changed the overall heating value of the gas when compared to earlier years. Multinet's analysis shows that this has contributed up to 0.4% of the increase in UAFG since 2006. Acknowledgment of the UAFG issue relating to the quality of gas from Bas Gas is recognised by AEMO – refer to AEMO Gas Market Issue IN031/09.

13. Energy, demand and customer number forecasts

13.1 Rules requirements and chapter structure

This chapter presents Multinet's forecasts of energy, demand and customer numbers for the forthcoming access arrangement period. These forecasts have two roles in the revenue and tariff setting process:

- As a driver for Multinet's expenditure forecasts for the forthcoming Access Arrangement Period, as explained in chapters 4 and 5; and
- In determining the required increase in tariff charges to enable Multinet to recover the total revenue requirements that were presented in chapter 10.
  (1) Information in the nature of a forecast or estimate must be supported by a statement of the basis of the forecast or estimate.
  (2) A forecast or estimate:
    a. must be arrived at on a reasonable basis
    b. must represent the best forecast or estimate possible in the circumstances

Multinet's forecasts presented in this chapter and in the accompanying attachments and RIN template comply with the requirements of Rule 74. The remainder of this chapter is structured as follows:

- Section 13.2 provides a brief overview of Multinet's gas demand, consumption and customer numbers for the current Access Arrangement Period.
- Section 13.3 describes Multinet's forecasting methodology for the forthcoming period.
- Section 13.4 provides information on the Federal and State Government policy initiatives that will affect Multinet's gas demand and consumption in the forthcoming Access Arrangement Period; and
- Section 13.5 presents Multinet's forecasts of energy, demand and customer numbers for the forthcoming access arrangement period.

13.2 Demand and consumption for current access arrangement

Rule 72(1)(iii) requires Multinet to provide the following information in this AAI:

> *"Usage of the pipeline over the earlier access arrangement period showing:*
>
> *(A) for a distribution pipeline, minimum, maximum and average demand*
>
> *(B) for a distribution pipeline, customer numbers in total and by tariff class."*

Multinet has provided this information in the RIN templates, which forms part of this AAI. To provide useful background information to the forecasts presented in this chapter, the tables below compare Multinet's actual gas consumption and customer numbers with the forecasts determined by ESC in the 2008 GAAR. In each case, the 2012 actual data is the latest estimate, based on the most recent available data.

Table 13-1: Comparison of actual and benchmark Tariff V residential load (TJs) 2008-12

Year Ending 31 December					
Category	2008	2009	2010	2011	2012
Actual	40,602	39,280	41,028	39,566	39,318
Benchmark	39,016	39,172	39,381	39,614	39,756

Year Ending 31 December					
Category	**2008**	**2009**	**2010**	**2011**	**2012**
Variance	**(1,586)**	**(108)**	**(1,647)**	**48**	**438**

Table 13-2: Comparison of actual and benchmark Tariff V commercial load (GJs) 2008-12

Year Ending 31 December					
Category	**2008**	**2009**	**2010**	**2011**	**2012**
Actual	5,873	5,484	5,662	5,536	5,602
Benchmark	5,359	5,368	5,383	5,436	5,487
Variance	**(514)**	**(116)**	**(279)**	**(100)**	**(115)**

Table 13-3: Comparison of actual and benchmark Tariff D (MHQs) 2008-12

Year Ending 31 December					
Category	**2008**	**2009**	**2010**	**2011**	**2012**
Actual	3,558	3,532	3,494	3,556	3,498
Benchmark	3,786	3,754	3,719	3,703	3,738
Variance	**228**	**222**	**225**	**147**	**240**

Table 13-4: Comparison of customer numbers 2008-12 benchmark

Year Ending 31 December					
Category	**2008**	**2009**	**2010**	**2011**	**2012**
Actual	657,063	663,330	668,373	673,795	679,430
Benchmark	658,671	666,297	675,043	683,076	689,337
Variance	**1,913**	**3,302**	**7,054**	**9,679**	**10,310**

13.3 Methodology and factors affecting Multinet's forecasts

Multinet engaged the National Institute of Economic and Industry Research (NIEIR) to assist in preparing Multinet's forecasts for the forthcoming access arrangement period. NIEIR's association with Multinet dates back to 1999 when Multinet was privatised. NIEIR therefore has a good understanding of Multinet's business, and the factors that drive customer numbers and domestic and commercial gas usage.

NIEIR is also engaged by AEMO to prepare State-wide forecasts of gas consumption. The approach adopted by NIEIR for Multinet essentially replicates the approach adopted in preparing the AEMO 2011 forecast, and the

forecasts can be reconciled to AEMO's forecasts for Victoria. NIEIR is therefore exceptionally well-placed to advise Multinet on the appropriate customer and usage forecasts for the forthcoming Access Arrangement Period.

NIEIR's methodology recognises the key drivers for future gas consumption and the growth in the customer base, including:

- Economic growth and new housing activity
- The effect of trend warming in winter temperatures on gas demand
- Differences in average consumption for new and existing gas customers, which reflects the characteristics of new dwellings, which are predominantly apartments or higher density, infill housing with lower average levels of gas usage
- The impact of more efficient appliances, including: storage water heaters with instantaneous heaters or solar heaters; appliance stock efficiency improvements; and reverse cycle air conditioning replacing gas heating
- Federal and State Government initiatives – including the introduction of a carbon tax; 6-star housing; solar hot water incentives; and energy efficiency measures – which are all designed to lower energy usage, including gas. These measures are discussed in further detail in section 13.4.

NIEIR's forecasting methodology for Tariff D gas consumption is based on econometric modeling. The forecasting approach for Tariff D disaggregates the customer base according to the Australian and New Zealand Standard Industrial Classification (ANZSIC) sector as presented in the table below. The sectoral approach recognises the importance of examining sectoral growth rates to provide an accurate forecast of industrial and commercial gas consumption.

Table 13-5: Reconciliation of customer class categories with ANZSIC classifications

Customer class category	ANZSIC
Residential[1]	
Commercial	Electricity, gas, water and sewerage Construction Wholesale and retail trade Transport and storage, communication services Finance, property, business services Public administration and defence and community services Accommodation, cafes, restaurants and recreation, personal and other services
Industrial	Agriculture, forestry, fishing, hunting Mining Food, beverages, tobacco manufacturing Textiles, clothing and footwear manufacturing Wood, wood products manufacturing, paper products manufacturing Chemicals, petroleum, coal manufacturing Non-metallic minerals manufacturing Basic and fabricated metal products manufacturing Transport and other machinery and equipment manufacturing Miscellaneous manufacturing

Notes: ANZSIC refers to Australian and New Zealand Standard Industrial Classification.

1. The farm class which excludes residential farm is included in the industrial sector.

NIEIR's Tariff D gas consumption forecasts are also informed by NIEIR's survey of almost 200 Victorian major gas customers in relation to their recent and expected future gas usage. The survey results have been summarised in Attachment A1 of AEMO's Gas Statement of Opportunities 2011. In addition to survey information, NIEIR also takes account of publicly available information regarding plant closures and other announcements regarding the Victorian manufacturing sector. In particular:

- In 2008, South Pacific Tyres ceased manufacturing at Somerton; and
- Hunstman Chemicals closed its West Footscray styrene plant in late 2009, and closed its polystyrene and expandable polystyrene plants in early 2010.

These closures coincided with a scaling back of production at a number of other manufacturing operations across the state in the wake of the Global Financial Crisis. For example, Alcoa announced reduced production at its Portland Aluminium operations in April 2009. While production levels for some plants have since recovered, at many sites production remains at reduced levels.

Looking forward, further closures have been foreshadowed, including:

- The planned closure of the Amcor paper mill in Alphington;
- The planned closure of Austral Brick (formerly Nubrik) plants at Craigieburn and Summerhill;
- Closure of BlueScope Steel's Western Port Hot Strip Mill;
- Closure of CSR's Viridian glass plant at Dandenong and Ingleburn;
- Closure of Coca-Cola Amatil's SPC Ardmona food processing plant at Mooroopna; and
- Closure of Heinz's food processing plant at Girgarre.

In light of these likely closure and economic conditions more broadly, NIEIR estimates that Multinet's Tariff D natural gas consumption for industrial customers will fall by 3.7 per cent per annum during the forthcoming Access Arrangement Period.

For Tariff V customers, NIEIR employs an end-use modelling approach to forecast gas consumption. Average gas usage for new and existing customers is modelled separately. This allows the major policy changes such as the 6-Star Standard for new homes and changes to Minimum Energy Performance Standards (MEPS) to be directly modelled. The modelling incorporated detailed information from Multinet's residential customer accounts.

Temperature is the primary contributor to variations in Tariff V gas demand, while wind and sunshine also appear to be important explanatory variables, particularly during cold weather events. AEMO maintains a composite weather measures – called the Effective Degree Days Index, which combines a number of weather metrics into a single summary indicator. This index was developed by the Victorian Gas and Fuel Corporation in the late 1970s and has been extensively used by gas market participants to gauge the impact of weather on gas demand in the Victorian gas market.

Over recent decades, the annual number of Effective Degree Days has been trending downwards; on average, the rate of decline has been around 7.7 Effective Degree Days per annum. The declining trend is consistent with well-documented global and urban warming effects impacting Victoria's climate. The trend is more pronounced than the assumption adopted by the ESC in the 2008 GAAR of a 6 Effective Degree Days.

Multinet asked CSIRO to update of its previous report on "Projected changes in temperature and heating degree-days for Melbourne and Victoria, 2006-2012", which was submitted to ESC during the 2008 GAAR. In its updated

report[37], CSIRO examined trend changes in Effective Degree Days, using the method described in the previous report by Suppiah and Whetton (2007). In this updated report, CSIRO confirmed its findings in relation to trend reductions in Effective Degree Days. A copy of CSIRO's report is provided at Appendix C-2 to this AAI.

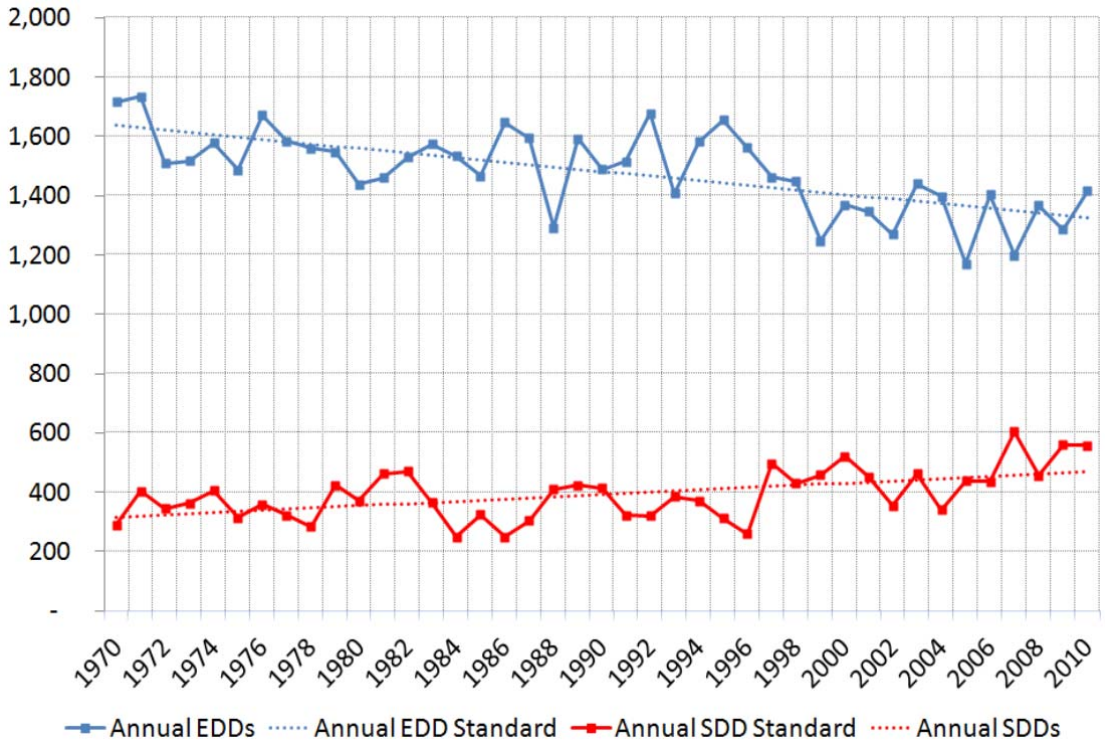
A long-term trend arguably provides a more representative measure of normal-year weather conditions. On this basis, if weather conditions were "normal" in 2010 one would have expected the annual number of Effective Degree Days to be around 1,327. However, the actual number of Effective Degree Days in 2010 was 1,415, indicating that weather conditions in 2010 were 'colder than normal' and that the level of annual gas demand in 2010 has been inflated by the cold weather conditions.

It is important to note that the Effective Degree Day index has been designed primarily to measure the weather conditions experienced during the non-summer months. It does not reflect weather conditions in the summer months; typically daily readings of the index during the summer months are zero. However, extremely hot (or conversely usual cool) summer can also affect the level of gas demand; for instance, the need for water heating is reduced by hot weather conditions, with consumers more likely to have a cooler-than-normal showers on a hot summer day.

In contrast with the Effective Degree Days Index, the annual number of Summer Degree Days has steadily trended upwards over recent decades. On average, the rate of increase has been around 9 per annum. The trend increase in Summer Degree Days also has the effect of depressing gas demand in the summer months, and therefore adds to the total downward impact of weather on gas demand.

[37] Projected changes in temperature and heating degree-days for Melbourne, 2012-2017,R. Suppiah and P. H. Whetton, CSIRO, Marine and Atmospheric Research, PMB No. 1, Aspendale, Vic. 3195

Figure 13-1: Historical trends in Effective Degree Days (EDDs) and Summer Degree Days (SDDs)



NIEIR's modelling of Tariff V gas consumption has taken into account the long-terms trends in Effective Degree Days and Summer Degree Days, as shown in the figure above.

13.4 Federal and State Government policy initiatives

The Clean Energy Act 2011 has the effect of introducing the carbon price on 1 July 2012. It shows a commitment to moving towards a lower carbon economy, which includes changes to the way we use gas. There are a number of complementary energy and greenhouse gas abatement policies which will affect Victoria's future gas usage. National and State government initiatives such as subsidies and rebates are driving changes in gas demand in both residential and commercial sectors.

A summary of the relevant Federal and State Government policy initiatives are provided in the table below:

Table 13-6: Key policy impacts on Multinet's gas demand

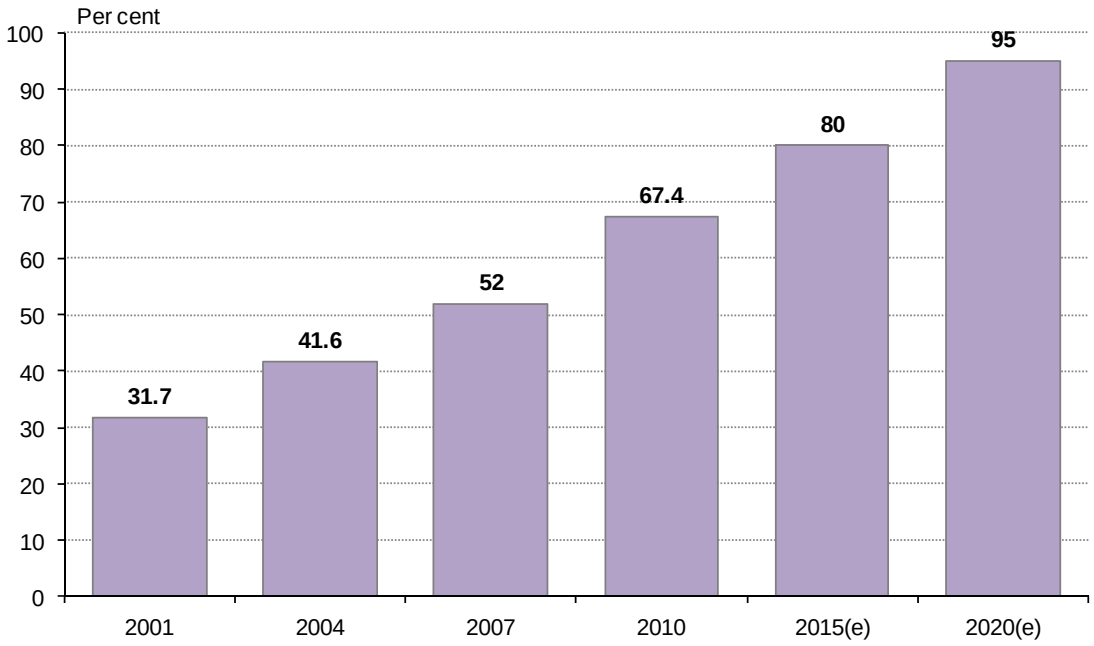
Jurisdiction	Measure	Description of impact
National		
Greenhouse Response (2012-14)	Carbon tax.	Via impact on price and price elasticity of demand by sector.
Renewable Energy Target (RET)	Targeted renewable energy production through certificate scheme – hot water eligible.	Significant impact via switch to gas boosted solar hot water in Victoria.
Energy Efficiency Opportunities Act (2006)	Targeted at large energy users.	Large energy user's efficiency measures by site.
Energy Efficiency Programs	MEPS for hot water heaters.	Calculated assuming asset lives and dwelling stocks by State/region.
	Energy labelling for gas space heaters and cookers.	Possible future standards or MEPS.
National Strategy on Energy Efficiency (2009)	All gas appliances across all sectors. National standards.	Impact uncertain and difficult to quantify.
Mandatory Disclosure (Energy Efficiency Performance Act 2010)	Residential and commercial energy performance when sold or leased (existing buildings).	Impact on space heating.
Ministerial Council on Energy (2010-12)	Phase-out of electric resistance hot water.	Victoria addressing through Solar HW rebate program.
Federal Insulation Program 2009-2010	Insulation subsidy for existing uninsulated dwellings.	Program abandoned early 2010.
Renewable Energy Bonus Scheme	Solar hot water rebate.	Funding curtailed following Queensland floods.
State		
5 and 6 Star Building Standards	Building standards for new dwellings.	Significant savings in gas space heating in Victoria.
Victorian Energy Efficiency Target (VEET) Phase Two	Retailers required to meet targets mainly through energy efficiency measures.	Small impact on natural gas. Main impact on electricity through lighting (CFLs).

Jurisdiction	Measure	Description of impact
Other State-based programs, including incentive and rebate programs	Cash rebates for installing solar hot water.	Usually small programs but with some impacts on gas use.
Victorian Climate Change White Paper, July 2010	Various measures (uncertain following change of Government).	Awaiting announcement of new measures/policies.

It is worth noting that a number of the Federal and State Government policy initiatives will have a cumulative impact on gas demand as increased penetration of more efficient appliance and improvements in housing stock continue to drive annual reductions in average domestic gas consumption.

For example, low flow shower heads reduce water use per shower and therefore the amount of hot water and gas use in dwellings with gas hot water. The water companies have had a very successful marketing campaign to reduce average water consumption (i.e. Target 155). A key platform to this strategy was the free or subsidised exchange programs. Figure 13-2 shows the penetration rate of low flow showers.

Figure 13-2: Penetration of water efficient shower heads in Victoria



As the penetration of low flow shower heads increases, the downward pressure on gas consumption will continue. A similar observation applies in relation to the penetration of solar hot water systems. NIEIR maintains a database on appliance sales by postcode that has been used to forecast gas sales. This database is supported by ABS data on gas consumption by appliance.

Potentially more pronounced impacts on gas consumption are likely to arise from new building standards. From 1 May 2011 all new residences in Victoria (Class 1 and 2), renovations and extensions are required to comply with the 6-star standard, as required by the Building Code of Australia (BCA).

The 5-star building standard was introduced in Victoria in July 2005. From 1 July 2005 all new Class 1 and Class 2 dwellings were required to achieve a house energy rating of 5-stars. New Class 1 buildings were also required to have either:

- a rainwater tank connected to all sanitary flushing systems
- a solar hot water system.

In May 2008 the 5-star standard was extended to alterations and additions, therefore affecting the existing stock of Victorian dwellings. The new standard for renovations and alterations does not require a solar hot water system or rainwater tank for sanitary flushing systems.

The 6-star standard introduced in 2011 relates to the new homes building envelope (roof, walls, floors and windows), although some efficiency standards are required for lighting.

Victorian gas distributors supplied NIEIR with average usage data for residences (Class 1 and 2) built to the 5-star building standard. Average usage for new customers in Victoria is around 46 PJ per year per customer. The theoretical savings from 6-star homes are 24 per cent compared to 5-star homes, implying usage of around 35 PJ per year for new homes from 2011-12. However, the theoretical reductions associated with the 5-star standard do not appear to have been realised.

Many new residences may not meet the theoretical standards required. The main problem is that there are no physical testing requirements. Non-compliance with the Building Standards is most likely to be associated with improper insulation installation and poor air sealing. Accordingly, NIEIR has discounted the 24 per cent saving associated with moving from 5-star to 6-star dwellings by 50 per cent.

Gas usage is also impacted by many other trends, such as technological improvements, which are enabling uses of co-generation and tri-generation in commercial and multi-apartment residential buildings, technology is also assisting with appliance efficiency which is another key component of gas use reduction.

In summary, Victorian average gas use per year per residential customer has been dropping historically and is forecast to continue to decline. Changes in water heating and space heating by households are particularly pertinent to the declining average gas use. Further details of Multinet's forecast demand

13.5 Multinet's forecasts of gas volumes and customer numbers

Forecast gas volumes for the forthcoming access arrangement period are provided in Table 13-3.

Figure 13-3: Annual forecast of gas volumes to 2017 (GJs)

Category	Year Ending 31 December				
	2013	2014	2015	2016	2017
Tariff V – residential (GJs)	39,074	38,753	38,592	38,519	38,446
Tariff V – commercial (GJs)	5,564	5,515	5,487	5,472	5,457
Tariff L (GJs)	192	235	276	317	359
Total energy (GJs)	44,830	44,503	44,354	44,308	44,262
Tariff D and L (MHQs)	**3,546**	**3,509**	**3,482**	**3,466**	**3,451**

13.6 Summary of forecasts for the forthcoming regulatory period

Forecast customer growth for the forthcoming access arrangement period is provided in Table 13-7.

Table 13-7: Multinet's forecast customer numbers 2013 - 2017

Category	Year Ending 31 December				
	2013	2014	2015	2016	2017
Opening	679,027	684,660	690,201	695,786	701,063
Plus new connections	8,797	8,809	8,768	8,439	8,323
Less abolishment's	3,164	3,269	3,182	3,162	3,200
Closing balance	**684,660**	**690,201**	**695,786**	**701,063**	**706,187**

14. Tariffs

14.1 Introduction

This chapter presents an explanation of Multinet's reference tariff proposals.

Rule 72(1)(j) requires the access arrangement information to describe the proposed approach to the setting of tariffs including

> *"(i) the suggested basis of reference tariffs, including the method used to allocate costs and a demonstration of the relationship between costs and tariffs; and*
>
> *(ii) a description of any pricing principles employed but not otherwise disclosed under this rule."*
>
> Rule 93 sets out provisions relating to the allocation of total revenue and costs between reference and other services. Rule 94 sets out the following requirements relating to tariffs for distribution pipelines:
>
> *"(1) For the purpose of determining reference tariffs, customers for reference services provided by means of a distribution pipeline must be divided into tariff classes.*
>
> *(2) A tariff class must be constituted with regard to:*
>
> *(a) the need to group customers for reference services together on an economically efficient basis; and*
>
> *(b) the need to avoid unnecessary transaction costs.*
>
> *(3) For each tariff class, the revenue expected to be recovered should lie on or between:*
>
> *(a) an upper bound representing the stand alone cost of providing the reference service to customers who belong to that class; and*
>
> *(b) a lower bound representing the avoidable cost of not providing the reference service to those customers.*
>
> *(4) A tariff, and if it consists of 2 or more charging parameters, each charging parameter for a tariff class:*
>
> *(a) must take into account the long run marginal cost for the reference service or, in the case of a charging parameter, for the element of the service to which the charging parameter relates;*
>
> *(b) must be determined having regard to:*
>
> *(i) transaction costs associated with the tariff or each charging parameter; and*
>
> *(ii) whether customers belonging to the relevant tariff class are able or likely to respond to price signals.*
>
> *(5) If, however, as a result of the operation of subrule (4), the service provider may not recover the expected revenue, the tariffs must be adjusted to ensure recovery of expected revenue with minimum distortion to efficient patterns of consumption.*
>
> *(6) The AER's discretion under this rule is limited."*

The remainder of this chapter is structured as follows:

- Section 14.2 describes Multinet's overarching principles that guide tariff setting;
- Section 14.3 provides details of Multinet's tariff setting methodology;
- Sections 14.4 to 14.6 and provides details of Multinet's Tariffs V, D and L
- Section 14.7presents information on long run marginal costs;
- Section 14.8 comments briefly on the price signals provided by Tariffs V and D ; and
- Sections 14.9 presents Multinet's charging arrangements for Ancillary Reference Services.

14.2 Tariff principles

Multinet's Reference Tariff Policy in Part B of the Access Arrangement sets out its Reference Tariffs. Reference Services will be provided:

- In accordance with the relevant Regulatory Instruments
- On reasonable Terms and Conditions as set out in Part C of the Access Arrangement.

In the broadest terms, the following principles are taken into account in establishing tariffs and in determining any annual rebalancing:

- **Regulatory compliance.** Distribution tariffs must satisfy all regulatory and legislative requirements relating to tariff design, cost allocation and annual price changes.
- **Market equity.** Pricing should apply to all retailers in a neutral manner and not impede the viability of full retail contestability.
- **Cost reflectivity.** Tariffs should be cost reflective while also recognising the practical limitations of setting network tariffs, including cost allocation methodologies and constraints in tariff rebalancing.
- **Behavioural elasticity.** Tariffs should consider customers' responsiveness to price signals. Understanding how customers may react to price changes is a key input to any decision to introduce a new tariff or to rebalance existing tariffs.
- **Practicality.** It is important that tariff arrangements are not unduly complex from either the perspective of customers or Multinet.
- **Environmental.** Within the limitations of the scope and context of gas distribution pricing, Multinet will exploit opportunities to improve network utilisation and accommodate emerging energy technologies, particularly in respect of greenhouse gas emission reduction.

It is evident that tension arises in attempting to satisfy each of these principles to the maximum possible extent. For example, the principles of cost reflectivity and practicality could be regarded as presenting a trade-off between accuracy or purity on the one hand, and simplicity on the other. Nonetheless, Multinet regards the above principles as useful in describing the matters that guide Multinet's tariff design and annual price adjustments.

14.3 Methodology for setting reference tariffs

14.3.1 Avoidable and stand-alone costs

Rule 94(3) requires that for each tariff class, the revenue expected to be recovered should lie on or between an upper bound, representing the stand alone cost of providing the reference service, and a lower bound, representing the avoidable cost of not providing the reference service, to those customers. This is commonly known as the 'efficient pricing band'. In addition to rule 94(3), clause 12.4 of the RIN also requires Multinet to provide this information for each tariff class.

Multinet notes that there are a number of methodologies that can be utilised to estimate the stand alone cost of servicing a customer, or group of customers. These broadly include:

- A 'bottom up' build of stand-alone costs, via the construction of a modern day equivalent, optimised, asset base in support of the delivery of services to each customer or group of customers; and
- A 'top-down' approach, which involves allocating each existing asset / asset type to a customer or group of customers, based on an appropriate cost allocation methodology.

Multinet considers that there are a number of practical and theoretical issues that need to be considered in determining which approach should be used to calculate the stand alone cost for each group of customers. In particular, the adoption of an average stand alone cost to serve a group of customers – which effectively underpins both of the aforementioned approaches – may not capture what could be termed 'outlier' (non-average) customers,

for example those that are particularly close to the transmission network, or have particularly large usage (and therefore, economies of scale in their servicing). It is also worth noting that the most likely substitute for existing (residential) customers is not a network solution, but rather a bottled gas solution.

As a result, Multinet has adopted an approach that focuses on the potential for individual customers within a broader customer class to by-pass Multinet's network, as well as assessing the potential for an entire customer class to bypass its network. Multinet considers this is a practical and robust application of the underlying economic principles that underpin the Rules. In particular, it focuses attention on the ability of particular customers within a tariff class to bypass the network.

Multinet has a cost of supply model that allocates the costs of supplying customers for each reference tariff via appropriate methodologies to establish the upper and lower limits by Tariff V residential, Tariff V non-residential, Tariff L and Tariff D. The upper costs are the stand-alone costs to by-pass the network. These costs were calculated using the Optimised Replacement System Costs of the network multiplied by the current WACC, and adding depreciation and consumption weighted share of O&M. These costs were then apportioned by volume of each customer class to obtain an average $/GJ. The lower cost is the marginal or avoidable cost of supply. The lower costs were calculated using consumption weighted share of O&M and apportioning by volume for each customer class to obtain an average $/GJ.

The results of Multinet's analysis indicates that for all customer classes, the standalone cost far exceeds the revenue that is generated from that tariff class, given the application of Multinet's proposed tariffs. Further, for tariff D customers, this situation stands for all reasonable distances away from the transmission network, and all reasonable usage ranges. Further, the average revenue that is generated from each customer class exceeds the avoidable cost of supply in all cases.

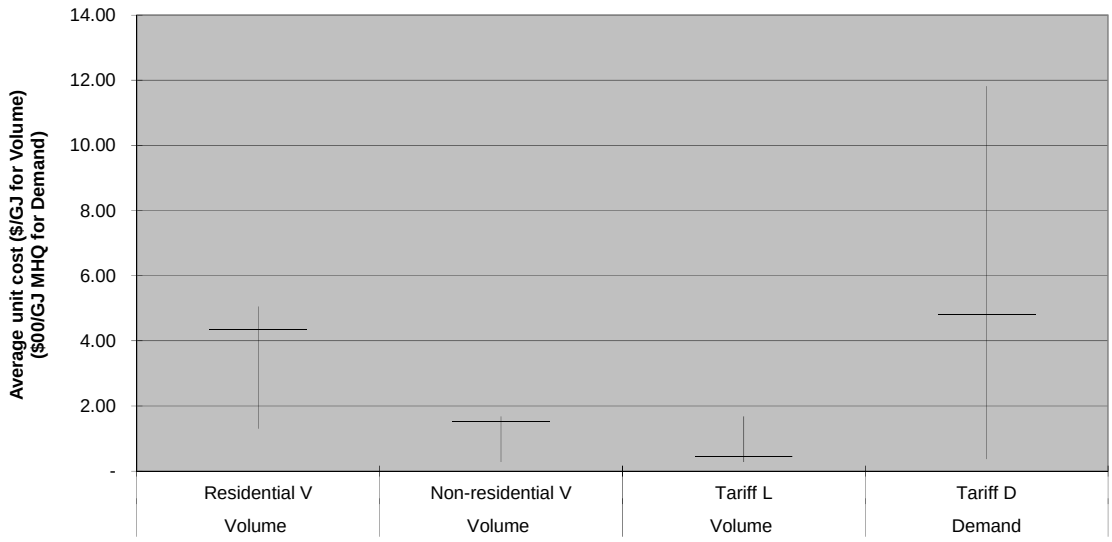
In relation to the avoidable cost assessment, Multinet has calculated the short run marginal cost of supplying each tariff class and multiplied this amount by the estimated usage for that customer/customer class.

Multinet's assessment of the standalone and avoidable costs, compared to average revenue, for Tariff V Residential, Tariff V Non-residential, Tariff L and Tariff D is detailed below.

Table 14-1: Proposed Average Tariffs for 2013 versus Upper and Lower Cost Limits

Type	Tariff	Units	Upper Bound "Stand-alone Cost"	Lower Bound "Avoidable Cost"	2012 Av DUoS
Volume	**Residential V**	**$/GJ**	**5.06**	**1.31**	**4.35**
Volume	**Non-residential V**	**$/GJ**	**1.69**	**0.28**	**1.53**
Volume	**Tariff L**	**$/GJ**	**1.69**	**0.28**	**0.46**
Demand	**Tariff D**	**$00/MHQ**	**11.82**	**0.37**	**4.82**

Figure 14-1: Average Tariffs versus Upper and Lower Cost Limits



14.3.2 Cost differences between zones

Multinet has three zones for the purposes of pricing:

- Metropolitan
- Yarra Valley
- South Gippsland.

Both Yarra Valley and South Gippsland are new networks and have been connected with the assistance of capital subsidies received from Regional Development Victoria. Despite receiving subsidies, both of these networks require additional revenue to recover the projected shortfall of revenue compared to costs.

Both the Yarra Valley and South Gippsland pricing zones are based on Metropolitan tariffs, with an additional amount included to reflect the recovery of additional costs (mainly capital). Pricing structures will be reviewed on an annual basis to determine if actual load in these areas differs from the projected load and prices adjusted accordingly.

14.4 Tariff V

Tariff V applies to customers using less than 10,000 GJ a year and less than 10 GJ MHQ. Within Tariff V there are two classifications: Residential and Non-Residential. Any new customer eligible for Tariff V is assigned their appropriate residential or non-residential classification by their retailer.

Tariff V contains a fixed and variable charge. The fixed charge recovers unavoidable network infrastructure costs such as service connection, standard meters, and systems for billing and collection. The variable peak, shoulder and off peak charges recover all other costs associated with the Distribution use of System.

Tariff V customers are charged a fixed daily charge and a price per GJ which decreases with increased usage. There are currently five usage blocks for Residential and Non-Residential Customers as shown in the tables below.

Table 14-2:Tariff V Residential usage blocks

	Consumption Range (GJ/day)
Usage Block 1	0 - 0.05
Usage Block 2	>0.05 - 0.1
Usage Block 3	>0.1 - 0.15
Usage Block 4	>0.15 - 0.25
Usage Block 5	>0.25

Table 14-3: Tariff V Non Residential usage blocks

	Consumption Range (GJ/day)
Usage Block 1	0 - 0.25
Usage Block 2	>0.25 - 1.0
Usage Block 3	>1.0 - 1.5
Usage Block 4	>1.5 - 5.0
Usage Block 5	>5.0

Both Residential and Non Residential Tariff V customers, have seasonal usage charges ($/GJ) for the following periods:

- Off Peak Summer Period (November-April inclusive)
- May Shoulder period (May)
- Peak Winter period (Jun-September inclusive.)
- October Shoulder period (October).

14.5 Tariff D

Tariff D applies to customers using greater than 10,000 GJ a year or more than 10 GJ MHQ. Customers are charged based on their Maximum Hourly Quantity (MHQ) measured in Giga Joules (GJ) per hour. The MHQ unit rates are stepped as follows:

- 0-50MHQ (GJ/Hr)
- >50MQH (GJ/Hr).

A detailed explanation of how Tariff D MHQ bills are calculated is shown opposite.

Distribution Demand Charge = (Estimated Annual Charge – Charges to Date) / Remaining Bill Periods, where the Estimated Annual Charge is:

For billing periods between January and September:

If Actual Annual MHQ>Forecast Annual MHQ then:

- Estimate Annual Charge = Actual Annual MHQ * Rate
- Estimate Annual Charge = Forecast Annual MHQ * Rate

For billing periods between October and December:

If the Maximum Annual MHQ for the last 9 months is less than the Forecast Annual MHQ then:

- Forecast Annual MHQ = Maximum Annual MHQ * Rate; or
- Estimated Annual Charge = Forecast Annual MHQ * Rate

Note:

A minimum MHQ of 1.15GJ applies to the Estimated Annual Charge. If the MHQ (either the Actual Annual MHQ or the Forecast Annual MHQ) used for the Estimated Annual Charge is less than 1.15MJ then 1.15MJ will be used to calculate the charge.

Charges to Date is the sum of the Distribution Demand Charges that have been charged in the current year.

Remaining Billing Periods is set using the table below:

Table 14-4: Remaining Billing Periods

Billing Period	Remaining Billing Period
January	12
February	11
March	10
April	9
May	8
June	7
July	6
August	5
September	4
October	3
November	2
December	1

If there is a change in the retailer for a service point, then the distribution charges for the entire month are charged to the new retailer.

Where the relevant Distribution Supply Point is assigned to Haulage Reference Tariff Non-residential Tariff D, this Non-Residential Haulage Reference Service is for allowing the injection, conveyance and withdrawal of Gas at a Tariff D Distribution Supply Point. This Tariff does not include the provision and maintenance of connection assets forming a Tariff D Distribution Supply Point.

Connection of a Tariff D Distribution Supply Point is to be provided as a non-Reference Service and the costs of these works and related operations and maintenance are not recovered through the Non-Residential Tariff D Reference Tariff. For these services, a fair and reasonable charge is to be levied.

14.6 Tariff L

Tariff L is open to customers who consume more than 1TJ per annum or less than 10TJ per annum and have an MHQ demand of less than 10 GJ per hour.

The tariff structure of Tariff L is a mixture of the Tariff V and D tariff structures. Tariff L has no fixed charge, however it contains seasonal stepped usage charges and two demand charges. There are currently two usage blocks for Tariff L customers, as shown in the table below.

Table 14-5: Tariff L usage blocks

	Consumption Range (GJ/day)
Usage Block 1	0 - 5
Usage Block 2	>5

Like Tariff V, Tariff L also contains seasonal usage charges ($/GJ) for the following periods:

- Off Peak Summer Period (November-April inc.)
- May Shoulder period (May)
- Peak Winter period (Jun -September inc.)
- October Shoulder period (October)

Tariff L also contains two Demand Charges as follows:

- A Rolling 12 month Maximum MHQ charge which is a daily charge based on the highest demand (MHQ) delivered over 12 months to the end of the billing period
- A Peak MHQ Demand Charge which is based on the highest demand (MHQ) delivered in any billing period during the hours 6am to 10am weekdays over the four peak months June to September.

14.7 Long run marginal costs

Rule 94(4) requires that charging parameters take into account the long run marginal cost for the reference service or, in the case of a charging parameter, for the element of the service to which the charging parameter relates.

Multinet notes that the long-run marginal cost for a network service can be calculated in a number of different ways. The methodology that Multinet has utilised is known as the Average Incremental Cost (AIC) approach. This approach is commonly used in distribution networks, as it is well suited to situations where there is fairly consistent profile of investment over time to service growth in demand.

The AIC approach to determining the LRMC utilises calculates the growth related capital and operating expenditure in present value terms and divides this amount by the present value of the projected growth in demand.

Multinet has adopted four key assumptions to derive its LRMC:

- Only the 'capital costs' that are attributable to growth are included in the LRMC calculation. Put another way, if the broader customer base were to respond to a particular price signal, and that response did not lead to a reduction in a particular cost item, then that cost item should not be included in the LRMC calculation that is used to set variable prices for that tariff class.
- The estimated incremental operating costs incurred by Multinet to deliver an extra gigajoule of gas to an end customer has also been included in the LRMC calculation;
- The split between peak and off peak LRMC is based on the extent to which the relevant cost in the model is driven by 'average consumption' or 'peak' consumption. In Multinet's case, it has assumed that all shared network reinforcement related capital expenditure is required to alleviate capacity constraints during peak periods, hence, capital costs have been allocated to this LRMC chargeable parameters, hence the peak period exhibits a higher LRMC than the off-peak period; and
- Relevant capital costs are split between commercial and residential customer classes based on their proportionate contribution to the increase in MHQ, whilst capital expenditure specifically related to Tariff D customers has been identified by Multinet's engineers, and it is this which underpins its Tariff D LRMC.

The results of the LRMC analysis are contained in the table below.

Table 14-6: LRMC analysis results

Tariff Class[1]	LRMC – Peak[2]
Tariff V - Residential	$4.48 per GJ
Tariff V - Commercial	$2.60 per GJ
Tariff D	$0.58 per GJ or $2474 per GJ/hr

[1] The LRMC calculation has not been completed for the Yarra Valley and South Gippsland regions, nor Tariff L customers, as these are considered immaterial, given the number of customers supplied in those areas and under Tariff L.

2. The LRMC cost of peak usage includes all capex related costs that are ascribed to growth in demand, as well as the estimated SRMC of supply. The LRMC for off peak usage has no capex related costs attributed to it, and thus is estimated by reference to the SRMC. This is estimated to be $0.38 per GJ for residential customers, and $0.07 for commercial and industrial customers.

Notwithstanding the above, it is noted that the above calculations are sensitive to the assumptions that are made around a number of different variables. As such, and consistent with the Rule 94 (4)(a), these should only be used as a guide when assessing price levels and structures.

The results of Multinet's analysis indicates that for all customer classes, the standalone cost far exceeds the revenue that is generated from that tariff class, given the application of Multinet's proposed tariffs. Further, for tariff D customers, this situation stands for all reasonable distances away from the transmission network, and all reasonable usage ranges. Further, the average revenue that is generated from each customer class exceeds the avoidable cost of supply in all cases.

14.8 Response to price signals

Rule 94 (4)(b) of the NGR requires that a tariff, if it consists of two or more charging parameters, Multinet must have regard to how customers are able to or likely to respond to price signals. Multinet is not proposing any change to its tariff structure over the forthcoming Access Arrangement Period and believes that tariffs are presently structured so as to allow end-use customer to respond to price signals.

Section 10.4 provides details of indicative changes in charges for typical customers in 2013, given Multinet's expenditure and total revenue requirements for the forthcoming Access Arrangement Period. The remainder of this section comments briefly on the price signalling properties of the current tariff design.

14.8.1 Residential and commercial tariffs

Tariff V is structured on a declining block structure. Therefore customers obtain on average a cheaper cost for additional gas usage. Multinet considers that this price signal is appropriate for Tariff V customers where the marginal costs of supplying additional units is materially lower than the average costs, and increased network utilisation is to be encouraged.

14.8.2 Demand tariffs

Tariff D and Tariff L have been designed so that customers are able to respond to price signals. Tariff D has also been designed on a declining block structure based on MHQs. These are reset every year based on prior year actual data. Customers are provided with a price signal to manage their consumption within the nominated MHQs. This enables Multinet to manage the risk of any network capacity constraints.

Tariff L also provides a seasonal component to the charging arrangements, which encourages customers to increase load in off-peak or shoulder periods. This price signalling appropriately reflects the lower levels of network utilisation during those periods.

14.9 Ancillary Reference Services

Multinet's current ancillary reference services are provided in Part B of the Access Arrangements. Multinet proposes to retain the current ancillary reference service and add a new ancillary service for new connections (refer section 11.2.5).

Indicative prices for ancillary services are provided in the table below.

Table 14-7: Indicative prices for ancillary reference services (real 2012)

Service	Year Ending 31 December				
	2013	2014	2015	2016	2017
Special meter reading					
Volume	129,996	129,996	129,996	129,996	129,996
Price	$6.01	$6.01	$6.01	$6.01	$6.01
Total revenue ($m)	0.8	0.8	0.8	0.8	0.8
Meter Investigation					

Service	Year Ending 31 December				
	2013	2014	2015	2016	2017
Volume	161	162	163	164	165
Price	$133.64	$133.64	$133.64	$133.64	$133.64
Total revenue ($m)	0.0	0.0	0.0	0.0	0.0
Meter Disconnection					
Volume	5,286	5,863	5,900	5,937	5,974
Price	$46.81	$46.81	$46.81	$46.81	$46.81
Total revenue ($m)	0.3	0.3	0.3	0.3	0.3
Meter removal					
Volume	2,924	2,961	2,980	2,999	3,018
Price	$55.93	$55.93	$55.93	$55.93	$55.93
Total revenue ($m)	0.2	0.2	0.2	0.2	0.2
Reconnection					
Volume	3,502	3,524	3,546	3,568	3,590
Price	$39.46	$39.46	$39.46	$39.46	$39.46
Total revenue ($m)	0.1	0.1	0.1	0.1	0.1
Total revenue ($m)	**1.4**	**1.4**	**1.4**	**1.4**	**1.4**

15. Reference tariff variation mechanisms

15.1 Introduction

This chapter describes and explains Multinet's proposed price control arrangements (referred to in the National Gas Rules as "reference tariff variation mechanisms").

Rule 92 states:

(1) A full access arrangement must include a mechanism (a reference tariff variation mechanism) for variation of a reference tariff over the course of an access arrangement period.

(2) The reference tariff variation mechanism must be designed to equalise (in terms of present values):

(a) forecast revenue from reference services over the access arrangement period; and

(b) the portion of total revenue allocated to reference services for the access arrangement period."

Rule 72(1)(k) requires the access arrangement information to include an explanation of the service provider's rationale for any proposed reference tariff variation mechanism.

Rule 97(1) states that a reference tariff variation mechanism may provide for variation of a reference tariff:

(a) in accordance with a schedule of fixed tariffs; or
(b) in accordance with a formula set out in the access arrangement; or
(c) as a result of a cost pass through for a defined event (such as a cost pass through for a particular tax); or
(d) by the combined operation of two or more or the above.

Rule 97(2) sets out the different forms of price control mechanisms that may be adopted.

Rule 97(3) sets out a number of matters to which the AER must have regard matters in deciding whether a particular reference tariff variation mechanism is appropriate to a particular access arrangement.

Rule 97(4) requires a reference tariff variation mechanism to provide the AER with adequate oversight or powers of approval over variation of the reference tariff.

In view of these requirements, the remainder of this chapter is structured as follows:

- Section 15.2 provides details of Multinet's proposed tariff variation mechanism for Haulage Reference Services
- Section 15.3 provides details of Multinet's proposed tariff variation mechanism for Ancillary Services
- Section 15.4 describes the tariff variation process
- Section 15.5 details Multinet's proposals for cost pass through events
- Section 15.6 addresses the issue of materiality thresholds.

15.2 Tariff Variation Mechanism - Haulage Reference Services

Multinet proposes to maintain the current tariff basket annual tariff variation mechanism in the form of a weighted average price cap formula. The formula is included in Part B of the Access Arrangement and reproduced below.

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

where the Service Provider has n Haulage Reference Tariff categories, each category having up to m Haulage Reference Tariff Components and where:

p_t^{ij} is for each Haulage Reference Service the proposed Haulage Reference Tariff for Haulage Reference Tariff component *j* of Haulage Reference Tariff *i* in Calendar Year *t*;

p_{t-1}^{ij} is for each Haulage Reference Service the Haulage Reference Tariff being charged for Haulage Reference Tariff Component j of Haulage Reference Tariff *i* in Calendar Year *t-1*;

q_{t-2}^{ij} is for each Haulage Reference Service the Quantity of Haulage Reference Tariff Component *j* of Haulage Reference Tariff *i* that was sold in Calendar Year *t-2*;

CPI_t is the CPI for Calendar Year *t*, as defined in the Glossary;

X_t is 14.7%

L_t is the Licence Fee Factor for Calendar Year *t*.

A_t is the approved pass through amount for Calendar Year *t*.

The Licence Fee Factor, L_t, is unchanged from the definition in the current Access Arrangement. However, the pass through cost term, A_t, has been amended to comprise both the approved pass through amounts and a carbon tax amount.

In addition to the tariff control formula, Multinet is proposing a rebalancing control formula. Multinet is proposing an increased rebalancing constraint of 5% (increased from 2% currently). This is required in order to protect the company from declining average volumes and provide Multinet with additional flexibility to respond to changing usage patterns. Multinet's proposed level of rebalancing is substantially lower than the 10% allowed by the AER for Jemena Gas Networks.

15.3 Ancillary Services

Multinet is proposing to retain the current tariff variation for Ancillary Services which is the application of CPI on an annual basis. The formula is provided below:

$$(1+CPI_t)$$

15.4 Carbon Pollution Reduction Scheme

On 14 February 2012 Multinet lodged a pass through application for the impost of the carbon tax. At the time of writing it is not clear how the AER will treat this application. Therefore for the sake of certainty Multinet is proposing to include a pass through event that ensures that all costs associated with the carbon pricing mechanism are passed through. Multinet has no control over the tax rates, carbon price or ability to manage its liability and has

extremely limited ability to reduce the carbon pricing mechanism costs, therefore it is appropriate to consider this as a pass through event.

Multinet proposes that this pass through event operate in a similar manner to pass through of jurisdictional scheme amounts in electricity. Multinet would therefore be financially neutral in relation to the impact of the carbon pricing mechanism. Multinet is already incentivised in the economic framework to reduce unaccounted for gas and should not be penalised using multiple methods for imperfect measurement and variable gas supply conditions (temperature, pressure, heating value etc) and other factors which are beyond Multinet's control.

Multinet proposes that this pass through event operate across the current access period (2008-2012) and the period (2013-2018). This would allow any variation in the costs of the event or the amount recovered to be trued up in the first few years of the next access period. This approach caters for any significant changes which may occur to the scheme or pricing as a result of changes of government or policy approach.

At the time of writing this submission Multinet is calculating carbon emissions and liability based on NGERS Method 1 which is based on gas sales volumes and a fixed portion of a Victorian unaccounted for gas converted to tonnes CO2e. Whilst a number of the variables in this equation are fixed, weather impacts and customer growth rates will impact the accuracy of forecasting of gas sales.

The Clean Energy Package offers both a fixed price for the period 1 July 2012 to 30 June 2015 followed by flexible pricing years. Initially the fixed price is $23/tonne rising to $24.15 for 2013/2014 and $25.40 for 2014/2015. During this period Multinet is able to but unlimited carbon units at the fixed price.

From 1 July 2015 a price floor and cap model will operate. Carbon liability could be met by purchasing carbon units from the Clean Energy Regulator, surrendering international units or via other products which are expected to emerge. The Clean Energy Regulator has yet to formally commence under the Clean Energy Act, the arrangements for auction design and use of international permits etc are still being developed and undergoing consultation processes. In addition the development, consultation and implementation of regulations which impact gas networks referred to in the Revised Explanatory Memorandum have yet to commence. Multinet is not in a position to forecast the outcome of these processes and make any well informed decisions on how to progress at this stage. It should be noted that Multinet is aiming to purchase carbon units for compliance and at this stage is not in a position to actively hedge or trade, nor is this considered a core skill of a network service provider.

Given the emerging regulations and market design in relation to carbon pricing, Multinet is not able to accurately forecast costs in this submission and considers that there is also a small risk that the scheme could be substantially changed or unwound by a change in Government. On this basis, Multinet considers that it should be left financially neutral through a cost pass through mechanism and considers that this pass through operate as part of annual tariff variations in the tariff control formulas in a similar manner to the management of jurisdictional feed in tariff scheme recovery in electricity. This would also operate in a symmetrical manner where any changes in the scheme would flow through to retailers and customers.

The Carbon Pricing Mechanism is a cost impost or tax on the business. Multinet considers that it should be not be subject to the risk of evolving regulations and future carbon price risk or potential changes in the scheme. Multinet proposes that a mechanism is incorporated in the tariff formula that allows for the forecast and true up of actual costs to ensure that Multinet is financially neutral to the carbon pricing mechanism and end use customers do not pay more than what is necessary. Multinet proposes that under/over recovery be trued up in future years, including if the scheme were unwound or change, or where Multinet proposes or the AER decides to unwind this arrangement in the following access arrangement period in 2018-2022.

Multinet considers that the carbon tax amount payable by Multinet should be recovered directly from customers through the tariff variation mechanism for haulage reference services, rather than as a pass though amount. The approach presented in the revisions to the Access Arrangement enables Multinet to forecast a carbon tax amount at the commencement of each year. An adjustment will be made in the subsequent year(s) to ensure that Multinet only recovers the actual costs of the carbon tax, taking into account the time value of money. The carbon pollution reduction scheme is discussed in further detail below.

15.5 Tariff variation process

The tariff variation process is provided in section 4 of Part B of the Access Arrangement. Multinet will provide at least 35 business days for all tariff variations which is consistent with the current Access Arrangements and Rule 97(4) of the NGR.

15.6 Cost pass through arrangements

The regulatory framework recognises that a distribution business cannot accurately forecast costs that depend on particular uncertain events occurring. The regulatory principle of allowing pass through events is that it is better to provide arrangements for cost recovery if these uncertain events arise, rather than providing the distributors with a forecast amount in its total revenue requirement.

Multinet also notes that the application of the weighted average cost of capital (WACC) to the regulatory asset base does not compensate for non-systematic risks. Even if adjustments were made to the WACC to compensate for the risks of pass through events, the high level of uncertainty regarding the actual costs of uncertain events means that this form of compensation is unlikely to prove satisfactory to customers or Multinet. It is therefore better to deal with the costs of uncertain events as they arise.

Multinet proposes the following pass through events in Part A of the Access Arrangement:

- Change in Taxes Event
- Financial Failure of a Retailer Event
- A Declared Retailer of Last Resort Event
- Force Majeure Event
- Insurer Credit Risk Event
- Insurance Cap Event
- Regulatory Change Event
- Service Standard Change Event.

15.6.1 Change in tax

Multinet's current Access Arrangement includes a Change of Taxes Event, Multinet is proposing a continuation of this event in the 2013-2018 period.

The Change in Taxes Event includes a variation, withdrawal or introduction of a Relevant Tax or a change in the way it is calculated that has an impact on the costs to Multinet of providing Reference Services. Relevant Taxes include any royalty, duty, levy, fee or charge imposed by an Authority in respect of the management and operation of the Distribution System or any costs associated with changes in service standards where Multinet has been directed to make such a change by legislation or regulatory arrangements. The Authority imposing the new or changed fees described above includes government or regulatory departments, statutory corporations, ministers or other authorities.

The costs associated with the Changes in Tax are made by an Authority, legislative or regulatory process which is outside of the control of Multinet. Multinet is not in a position to accurately forecast these costs and the impacts on the network and demand arising from State or Federal Governments or regulatory bodies.

Multinet's defined pass through event is:

Change in Taxes Event means a variation, or withdrawal or introduction of a Relevant Tax, or a change in the way or rate at which a Relevant Tax is calculated, which has a material impact on the costs to the Service Provider of providing the Reference Services or which has a direct and material impact on the revenue received (after payment of Relevant Taxes) by the Service Provider from providing the Reference Services.

15.6.2 Financial Failure of a Retailer Event

Multinet proposes that financial failure of a Network User should be nominated as a defined pass through event. Multinet anticipates that the pass through would apply to the difference between the unpaid revenue experienced by Multinet and the value of compensation able to be provided by the retailer's credit support arrangements.

Multinet envisages that the losses which it would experience in the event of financial failure by a retailer will be comprised of the following components:

- Unpaid revenue for which Multinet is entitled to for the provision of Reference Services, and
- excluding any amount recoverable from credit support provided by the failed User or reasonably estimated amounts expected on the wind up of the failed User.

Multinet submits that the financial failure of a retailer qualifies for categorisation as a specific nominated pass through event on the basis that:

- The event is both clearly identified and uncontrollable. A prudent service provider cannot, through its actions, reasonably prevent or substantially mitigate the event.
- The occurrence of the event is uncertain, the timing and/or cost impact of the event cannot be readily forecast by Multinet at the time of submitting its revised Access Arrangement.
- No pre-existing insurance policies against the event are in place.
- Self-insurance against the event is infeasible because the potential loss to Multinet, if a large retailer were to fail, is catastrophic.
- The passing through of the costs associated with the event would not undermine the incentive arrangements within the regulatory regime.

Multinet's defined pass through event is:

Financial Failure of a Retailer Event means the occurrence of an event whereby a User is subject to an Insolvency Event, and as a consequence the Service Provider does not receive revenue which it was otherwise entitled to for the provision of References Services.

15.6.3 A Declared Retailer of Last Resort Event

Multinet proposes that the occurrence of a ROLR event of the type contemplated by the GIA, Division 6, Part 3 or by the NERL, Part 6 is a pass through event. This occurs where the existing retailer is unable to continue to supply gas to customers and the retailer's customers are transferred to another retailer(s) who have been designated by the AER to supply those customers. As a result of this retailer of last resort event, Multinet will need to provide services in accordance with the AER ROLR plans, the Gas Retail Market Procedures (Victoria) and the Gas Interface Protocol. The costs incurred by Multinet may be materially higher to provide Reference Services given the tight turn-around times and higher volumes of transaction requirements.

The AER or AEMO may trigger a ROLR event which imposes costs on Multinet to comply with the regulatory and market processes.

Multinet submits that a Declared Retailer of Last Resort Event continues to qualify as a defined cost pass through event in the next access period. The occurrence of the event, timing and the size of the failed retailer is outside of Multinet's control and hence the administrative cost impact is not known.

Multinet's defined pass through event is:

Declared Retailer of Last Resort Event means the occurrence of an event (of the type contemplated in Division 6, Part 3 of the GIA or Part 6 of the National Energy Retail Law) whereby an existing User for Customers is unable to continue to supply gas and Customers of that User are transferred to, as applicable, the relevant supplier of last resort (as that term is used in the GIA) or the relevant designated RoLR (as that term is used in the National Energy Retail Law), and as a result the Service Provider incurs materially higher or lower costs in providing Reference Services than it would have incurred but for that event.

15.6.4 Force Majeure

A force majeure event could conceivably occur during the next regulatory period. The types of extreme and unpredictable event which Multinet would categorise as force majeure include earthquakes, fires, floods, storms other major weather disturbances, natural disasters, pandemics or plagues, acts of nature, civil disturbances, terrorism, riots and rebellions. The list is not meant to be exhaustive or all-encompassing however Multinet believes that any of the above types of force majeure incidents could occur and affect the costs associated with the delivery of network services.

These events by their nature are rare and the timing and cost impact cannot be foreshadowed. For an event of such magnitude it is also likely that Emergency Management Protocols in the market, including government intervention.

Multinet believes that the AER should give its approval of force majeure as a specific nominated pass through event on the grounds that:

- Multinet is unable to exercise control over force majeure events or acts of nature;
- it is not included in another category of pass through event;
- it is not covered under Multinet's self-insurance allowance; and
- it results in material increases in the costs incurred by Multinet in providing haulage reference services.

Multinet submits that such events are rare and have the potential to be catastrophic to business continuity. Furthermore the costs of insuring or including in forecasts such events would be prohibitive and would not be consistent with the pricing principles in the NGL.

Multinet considers that this event is consistent with the natural disaster event approved by the AER in the Victorian Electricity Price Review Final decision and the SA Gas Access Arrangement Final decision and also the terrorism change event approved by the AER in the SA Gas Access Arrangement Final decision. In addition, a Force Majeure change event is already part of Multinet's existing access arrangements. Multinet's proposed changes to this pass through event reflect changes in the regulatory framework.

Multinet's defined pass through event is:

Force Majeure Event means an event beyond the reasonable control of a person which causes a delay in performance, or non-performance, by that person of an obligation and includes without limitation:

a) an Emergency

b) a Participant force majeure event or system force majeure event as defined in the NGR

c) an event consisting of, or analogous to, the issue of a direction under section 106 or section 107 of the Gas Safety Act 1997 (Victoria)

d) an event consisting of, or analogous to, an act of nature, governmental intervention or act of war, neither anticipated nor controllable by the Service Provider.

15.6.5 Insurer Credit Risk Event

Multinet operates its business with a prudent level of insurance with its nominated insurers. However, if Multinet's insurers became insolvent, there could be a potential cost impact on Multinet. Multinet considers that this risk is uncontrollable and that Multinet is not in a position to take prudent and efficient actions to mitigate such a risk.

Multinet's defined pass through event is:

Insurer Credit Risk Events means an event where the insolvency of the nominated insurers of Multinet occurs, as a result of which Multinet:

(a) incurs materially higher or lower costs for insurance premiums than those allowed for in the access arrangement

(b) in respect of a claim for a risk that would have been insured by Multinet's insurers, is subject to a materially higher or lower claim limit or a materially higher or lower deductible than would have applied under that policy

(c) incurs additional costs associated with self funding an insurance claim, which would have otherwise been covered by the insolvent insurer.

15.6.6 Insurance Cap Event

Multinet considers that the probability of a significant insurance event which materially exceeds the limit of Multinet's insurance cover is low. However should such an event occur, it could have a material impact on the cost of providing Haulage Reference services.

Multinet's defined pass through event is:

Insurance Cap Event means an event that would be covered by an insurance policy but for the amount that materially exceeds the policy limit, and as a result Multinet must bear the amount of that excess loss. For the purposes of this Cost Pass-through Event, the relevant policy limit is the greater of the actual limit from time to time and the limit under Multinet's insurance cover at the time of making this access arrangement. This event excludes all costs incurred beyond an insurance cap that are due to Multinet's negligence, fault, or lack of care. This also excludes all liability arising from the Multinet's unlawful conduct, and excludes all liability and damages arising from actions or conduct expected or intended by Multinet.

15.6.7 Regulatory Change Event

Multinet is not in a position to foresee all regulatory changes. At the time of writing this submission a number of very significant policies are to be implemented on 1 July 2012, yet a number of underlying rules and regulations are yet to be developed which allow Multinet to understand all of its obligations in order to develop adequate forecasts.

Energy Efficiency Opportunity, Clean Energy Act, National Energy Retail Law, Victorian Energy Regulations are just a few of the policy reforms which are being implemented or commenced for implementation this year. Changes in Multinet's obligations in the next access period can include requirements mandated by a regulatory authority, act of parliament, market operator or government requirement.

Changes in obligations in this area could include, amendments in any part of the regulatory framework, including:

- Lifting of the National Measurement Act exemption for gas metering and the introduction of new metering/metrology arrangements
- Changes in gas market obligations in relation to transaction of procedure harmonisation.

Where the detail of the obligations and timing of any possible impact is unclear, Multinet cannot accurately forecast the costs.

Multinet's defined pass through event is:

Regulatory Change Event means a change in a regulatory obligation or requirement that:

(a) falls within no other category of Cost Pass Through Event

(b) occurs during the course of an access arrangement period

(c) affects the manner in which Multinet provides Reference Services (as the case requires)

(d) materially increases or materially decreases the costs of providing those Reference Services.

15.6.8 Service Standard Event

During the forthcoming Access Arrangement Period there is potential that a legislative or administrative act could vary the distribution services provided by Multinet by imposing new or varied standards in the provision of these services. A service standard change could result in both increased or decreased costs to Multinet in providing distribution services. This is a foreseeable event given the level of change in the industry, is not able to be accurately forecast and is outside of Multinet's control.

Multinet's defined pass through event is:

Service Standard Event mean a legislative or administrative act or decision that:

(a) has the effect of:

(i) varying, during the course of an access arrangement period, the manner in which the Service Provider is required to provide a Reference Service

(ii) imposing, removing or varying, during the course of an access arrangement period, minimum service standards applicable to Reference Services

(iii) altering, during the course of an access arrangement period, the nature or scope of the prescribed reference services, provided by the Service Provider

(b) materially increases or materially decreases the costs of providing Haulage Reference Services.

15.7 Materiality thresholds

15.7.1 Materiality thresholds for pass through events

In the previous section Multinet has proposed a number of cost pass through events;

- Change in Taxes Event
- Financial Failure of a Retailer Event
- A Declared Retailer of Last Resort Event
- Force Majeure Event
- Insurer Credit Risk Event
- Insurance Cap Event
- Regulatory Change Event
- Service Standard Change Event.

The first four defined cost pass through events are included in Multinet's current access arrangements and are not subject to any specific materiality threshold. Multinet considers that it is appropriate that this arrangement continues moving forward.

Multinet note that rule 97(3) requires the AER to have regard to efficient tariff structures and the possible effects of the reference tariff variation mechanism on the administrative costs of the AER, Multinet and Users. Multinet considers that the materiality threshold for the defined pass through events above should recognise the cost of developing and reviewing a pass through submission. Multinet submits a materiality threshold of $100k per event is appropriate for all pass through events above.

15.7.2 Materiality Threshold for Carbon Pricing Mechanism

Multinet proposes that costs associated with the carbon pricing mechanism be recoverable as part of a reference tariff formula mechanism. This proposal allows for forecast and true up of costs to ensure that Multinet is left financially neutral and users and end use customers pay no more than is required. Multinet proposes that a mechanism consistent with electricity jurisdictional scheme feed in tariff recovery be adopted, this results in no materiality threshold.

Multinet considers that this arrangement would provide adequate oversight to the AER, be simple, transparent and auditable. This approach would provide for simple recovery and transparency of the actual costs in Multinet's audited regulatory accounts which are submitted to the AER each year.

This proposal provides an efficient tariff structure and some consistency between clean energy schemes across electricity and gas tariff structures. It also adopts an approach that has already been approved by the AER for the premium feed in tariff arrangements and approved by the AER recently for the transitional feed in tariff arrangements.

In view of experience in the electricity industry, the administrative cost of such an approach is known to the AER and most Users and is expected to be complimentary to the carbon tax variation in the reference tariffs during the last 6 months of this period.

16. Efficiency incentive mechanisms

16.1 Introduction

This chapter describes and explains Multinet's proposed efficiency incentive mechanisms.

Rule 98 provides that an access arrangement may include (and the AER may require it to include) one or more incentive mechanisms to encourage efficiency in the provision of services. Under rule 98 an incentive mechanism must be consistent with the revenue and pricing principles.

Rule 72(1)(l) states that the access arrangement information for a full access arrangement proposal must set out the service provider's rationale for any proposed incentive mechanism.

For the forthcoming access arrangement period, Multinet proposes that the following incentive arrangements and mechanisms will apply:

- The reference tariff variation mechanisms described in chapter 15 will give effect to a tariff basket form of price control. These arrangements expose Multinet to within-period efficiency gains and losses relative to the expenditure allowances applied in setting the price control, thereby providing incentives for efficient expenditure.
- The efficiency incentive mechanisms set out in clause 6.4 of Part B of Multinet's current access arrangement will continue to apply. This mechanism rewards efficiency improvements in relation to operating and capital expenditure by allowing Multinet to retain the saving for five years, irrespective of the year in which the saving is achieved.

The remainder of this chapter is structured as follows:

- Section 16.2 sets out the efficiency incentive mechanism that will apply to operating expenditure, and explains the rationale for the mechanism.
- Section 16.3 sets out the efficiency incentive mechanism that will apply to capital expenditure, and explains the rationale for the mechanism.

16.2 Efficiency incentive mechanism for operating expenditure

The existing efficiency carryover mechanisms (ECMs) were the subject of consultation at the time of the last Gas Access Arrangement Review. During that review, the rationale for the incentive mechanisms was set out by the regulator (the ESC) as follows[38]:

> *"The ECM was designed to enable distributors to have a continuing incentive to make efficiency gains throughout the regulatory period and to reduce the incentive to defer the pursuit of efficiency gains that might otherwise exist immediately before a regulatory review."*

As noted in section 2, Multinet's strong efficiency performance relative to its national and international peers indicates that the company has responded positively to the operating expenditure incentive mechanism.

Under the ECM, a "carryover" amount is calculated, which results in Multinet retaining the reward associated with an efficiency improving initiative for five full years after the year in which the gain was achieved, regardless of the timing of the next access arrangement review.

[38] Essential Services Commission, May 2006, *Gas Access Arrangement Review 2008-2012: Consultation Paper No. 1*, p.86.

For operating expenditure, the additional reward (penalty) associated with initiatives undertaken in a particular year would reflect the reduction (increase) in the level of recurrent operating expenditure in excess of the assumed productivity gain (as reflected in expenditure forecasts) over that year. Therefore the annual efficiency gain (or loss) in Calendar Year *i* would be calculated as:

$$\text{Efficiency Gain} = \text{Underspending}_i - \text{Underspending}_{i-1}$$

where:

$$\text{Underspending}_i = \text{Operating expenditure}_i^{\text{Forecast}} - \text{Operating expenditure}_i^{\text{Actual}}$$

By encouraging efficiency improvements in the manner described by the ESC in the above quotation, the operating expenditure ECM is consistent with the revenue and pricing principles set out in section 24(3) of the NGL. Specifically, the operating expenditure ECM provides effective incentives to promote economic efficiency with respect to the efficient provision of pipeline services.

16.3 Efficiency incentive mechanism for capital expenditure

The rationale for a capital expenditure ECM is similar to that set out above in relation to the operating expenditure ECM. However, in designing an ECM for capital expenditure it is necessary to consider whether it is appropriate to provide a capital incentive, given the potential for it to reward inefficient deferral of expenditure rather than genuine efficiency gains

This matter was examined by the ESC during the course of the 2008 Gas Access Arrangement Review. The ESC chose to retain an incentive for capital expenditure on the basis that[39]:

"• the widespread capital expenditure deferrals observed in the electricity industry do not appear to have occurred in the gas industry […]

• the nature of capital expenditure in the gas industry and the Commission's ability to monitor units and unit rates better than in the electricity industry provides the Commission with the ability to adjust benchmarks to reflect the actual amount of capital works undertaken

• removing capital expenditure from the ECM may create an imbalance in the regime's incentives."

Multinet concurs with the view that removing capital expenditure from the ECM is likely to distort incentives under the regime. The company considers that a capital incentive should be retained in the next access arrangement period as it encourages an efficient mix of capital and recurrent expenditure. Moreover, the ECM for capital expenditure provides a continuous level of incentive *within* the regulatory period for capital investment, removing the incentive to inefficiently defer capital investment within the regulatory period. This incentive is consistent with the revenue and pricing principles set out in section 34(3) of the NGL. In particular, it encourages:

- Efficient investment in, or in connection with, a pipeline with which the Multinet provides reference services
- Efficient provision of pipeline services.

For capital expenditure, the additional reward (penalty) associated with initiatives undertaken in a particular year would reflect the reduction (increase) in financing costs resulting from the difference between the actual and benchmark assumption for capital expenditure in that year. The financing savings would be calculated as the pre-tax regulatory WACC multiplied by the capital expenditure saving. Therefore, efficiency gains (or losses) in any year *i* would reflect the difference between the actual expenditure and the original forecast (benchmark) expenditure level, as follows:

[39] Essential Services Commission, March 2008, *Gas Access Arrangement Review 2008-2012: Final Decision*, p.584.

Efficiency Gain$_i$ = WACC * (Capital expenditure$_i^{Forecast}$ – Capital expenditure$_i^{Actual}$)

where:

WACC is the pre-tax WACC applying to Multinet.

17. Access Arrangement revisions and other matters

17.1 Introduction

This Chapter provides an explanation of the access arrangement revisions that Multinet proposes will apply from 1 January 2012. It also provides information on other matters relating to Multinet's access arrangement proposal, as required under various provisions of the NGR.

The chapter is structured as follows:

- Section 17.2 sets out the review submission date and revision commencement date
- Section 17.3 outlines the substantive changes proposed by Multinet to apply to Part A (Principal Arrangements) of its current access arrangement
- Section 17.4.outlines the substantive changes proposed by Multinet to apply to Part B (Reference Tariff Policy) of its the current access arrangement
- Section 17.5 explains the substantive changes proposed by Multinet to apply to Part C (Terms and Conditions) of its current access arrangement
- Section 17.6 outlines Multinet's proposed Fixed Principles to apply from 1 January 2013.
- Section 17.7 sets out Multinet proposed KPIs
- Section 17.8 addresses queuing requirements
- Section 17.9 addresses capacity trading requirements

17.2 Review submission date and revision commencement date

Multinet proposes that the duration of the forthcoming access arrangement period will be five years.

The review submission date is 31 March 2017. This is consistent with the timing of revisions provided for under Multinet's current access arrangement. Multinet's experience is that this review submission date provides sufficient time for the consideration of the proposed revisions. It also enables the review submission to include more up-to-date information than would be the case if the review submission date were to be set, say, 12 months prior to the commencement of the next access arrangement period. Multinet therefore considers that its proposed review submission date meets the requirements of rule 50.

The revision commencement date will be 1 January 2018.

In accordance with the requirements of rule 49(1)(i)(b) Multinet's access arrangement does not contain an expiry date.

17.3 Part A – Principal Arrangements

The table below provides a summary of the substantive changes proposed by Multinet from the current Access Arrangements.

Table 17-1: Summary of changes to Part A of the Access Arrangement: Principal Arrangement

Clause	Description	Effect of Clause	Reason for Amendment/ No Amendment/Comments
1	Introduction		
1.1	Purpose of this document	Describes how proposed revisions to AA are submitted under the NGR and that the AA is the terms and conditions of access.	Update references from Access Code to NGR
1.2	Composition of Access Arrangement	Meets the requirements of rule 48(1)(a) and (b) by describing the pipeline and noting a website and states that the AA has 3 parts (A,B & C).	Update references from Access Code to NGR
1.3	Effective Date	State the effective date of AA s and new AA.	Update for new period, minor drafting changes and references from Access Code to NGR
2	Definitions and Interpretation	Describe definitions and interpretations. Links to NGL and NGR definitions.	Update references from Access Code to NGL and NGR. Delete provision for a transition to a national regime.
3.	Contact Details	Contact details of responsible officer.	Update based on current responsibility.
4.	Prior Contractual Rights	Provides for the ongoing treatment of protected contractual rights.	Update references from Access Code to NGL and drafting changes for completeness.
5.	Elements set out in Section 3 of the Access Code	Details the requirements of the NGR.	Update references from Access Code to NGR.
5.1.1	Services Policy	Details the services offered – namely the Haulage Reference Services and Ancillary Services	Amendments to cater for the new connections framework in proposed Part12A of the NGR, including the introduction of a Tariff V Complex Connection (being other than a basic connection for a Tariff V Customer) as a non-Reference Service. Insert new sub clause 5.1.4 to cater for the introduction of Part 12A of the NGR and to provide that the default position under the access arrangement and that framework is that connection charges will be payable by retailers. Insert new sub clause 5.1.5 provide a link between distribution charges under the Access Arrangement and the distribution service charges referred to in proposed part 21 of the NGR. Propose rule 505 requires the distribution service charges under the NGR to be calculated in accordance

Clause	Description	Effect of Clause	Reason for Amendment/ No Amendment/Comments
			with an access arrangement.
5.2	Reference Tariffs and Reference Tariff Policy		Records that there are no queuing requirement
5.2.1	Reference Tariffs	This clause links with Part B and the various tariff formulas in that section.	Consequential change of dates to align with proposed AA period commencement
5.2.2	Reference tariff variation mechanism - Haulage Reference Tariff Control Formula	This clause links with Part B and the various tariff formulas in that section.	Clarification that Ancillary Reference Tariffs are included in the Reference Tariff Control Formulas.
5.2.3	Reference tariff variation mechanism - Processing Changes to Reference Tariffs	This clause links with Part B and the various tariff formulas in that section.	No amendment required
5.2.4	Calculation of Charges for Haulage Reference Tariffs	This clause links with Part B and the various tariff formulas in that section.	No amendment required
5.2.5	Reference Tariff Policy	This clause links with Part B and the various tariff formulas in that section.	Updated terminology to be consistent with Gas Rules.
5.2.6	Fixed Principles	This clause links with Part B and states that there are fixed principles in that section.	No amendment required. There have been amendments to the Fixed Principles in Part B.
5.2.7	Reference tariff variation mechanism – Relevant Pass Through Event	This clause links with Part B and states that there is a pass through mechanism	No amendment required
5.3	Terms and Conditions	This clause links with Part C and states that there are terms and conditions	Makes express that the terms and conditions apply to a retailer
5.4	Capacity trading requirements and change of receipt or delivery points	States that the system is market carriage	Updated to provide a change of receipt or delivery point in accordance with the NGR
5.5	Extensions and Expansions requirements		
5.5.1	Coverage	All extensions to the network will form part of the AA unless for over 5,000 customers or where regulatory approval for extensions to less than 5,000 customers.	Updated terminology as a consequence of the NGR

Clause	Description	Effect of Clause	Reason for Amendment/ No Amendment/Comments
5.5.2	Effect of Extension on Reference Tariffs	All new connections that meet the tests for conforming capital expenditure will be charged based on reference tariffs at the time of connection. New connections that do not meet the tests for conforming capital expenditure will be charged as a capital contribution, a surcharge or the non-conforming capital expenditure included in a Speculative Capital Expenditure Account or a combination of these.	Updated references to NGR Updated terminology as a consequence of the NGR
5.5.3	Un-reticulated Townships	Provides for a regulatory process and regime to apply to extensions to previously un-reticulated towns and where the extension is not included in the Reference Tariffs	Updated references to NGR Updated terminology as a consequence of the NGR
5.6	Review and Expiry of Access Arrangement	States when the AA ends and the date the company must submit revisions for the next AA.	Update dates consistent with proposed new period
Schedule 1	Ancillary Reference Services	Lists these Pipeline Services	These services are provided at the regulated Ancillary Reference Tariff to a larger class of customers than Residential; the services are provided to all Tariff V Customers.
Schedule 2	Arrangements Glossary – Definitions and Interpretation		
	Access Act		Updated reference to National Gas (Victoria) Act 2008
	Access Arrangement		Updated reference to NGR
	Actual Meter Reading		Updated reference to Retail Market Procedures (Victoria)
	Access Code		Removed, replaced by NGR
	AEMO		Insert new definition
	AER		Insert new definition
	Ancillary Reference Services		Minor drafting changes
	Authority		Updated reference to AEMO, added government and corporation.
	B2B Hub		Updated reference to AEMO

Clause	Description	Effect of Clause	Reason for Amendment/ No Amendment/Comments
	Bank Bill Rate		Minor drafting change to improve clarity
	Change in Taxes Event		Minor drafting change to improve clarity
	Charges		Removed requirement to pay FRC Fees, no longer relevant Removed reference to Connection Charges arising from the proposed introduction of Part 12A of the NGR and the inclusion of all connections that are not basic connections (including a Tariff V Complex Connection) as non-Reference Services. Include specific reference to capital contributions and surcharges consistent with the Extensions and Expansions requirements.
	Confidential Information		Minor drafting change to improve clarity
	Connection		Updated as a consequence of Part 12A of the NGR
	Connection Alteration		Updated as a consequence of Part 12A of the NGR
	Connection Request		Updated as a consequence of Part 12A of the NGR
	Connection Service		Updated as a consequence of Part 12A of the NGR
	Customer		Updated as a consequence of NECF to include a customer and a prospective customer
	Customer MHQ		Minor drafting change to improve clarity
	Default Rate		Updated reference to NGR and to cater for possible gap in the NGR

Clause	Description	Effect of Clause	Reason for Amendment/ No Amendment/Comments
	Declared Retailer of Last Resort Event		Updated as a consequence of NECF
	Deemed Contract		Updated as a consequence of NECF to reflect the deemed standard connection contract and the deemed AER approved standard connection contract
	Disconnection		Updated as a consequence of NECF
	Disconnection Request		Updated as a consequence of NECF
	Distribution Licence		Updated as a consequence of NECF
	Distribution Demand Tariff Component		Updated reference and minor drafting amendment.
	Distribution Fixed Tariff Component		Updated reference and minor drafting amendment.
	Distribution Services		Removed requirement to pay FRC Fees, no longer relevant Updated as a consequence of the proposed introduction of Part 12A of the NGR and the inclusion of all connections that are not basic connections (including a Tariff V Complex Connection) as non-Reference Services.
	Distribution Volume Tariff Component		Updated reference and minor drafting amendment.
	Economic Feasibility Test		Updated reference and terminology to be consistent with the NGR
	Emergency		Updated reference and terminology to be consistent with the NGR and gas emergency protocols
	Energisation		Inserted definition for energisation as a consequence of NECF
	Energy Retail Code		Removed, no longer used.

Clause	Description	Effect of Clause	Reason for Amendment/ No Amendment/Comments
	ESC Act		Removed, no longer used.
	ESC		Inserted new definition
	Estimated Meter Reading		Updated reference to Retail Market Procedures (Victoria)
	Expansion		Inserted new definition to cater for possible loss of Distribution System Code
	Fifth Access Arrangement Period		Inserted for use in the Fixed Principles
	Force Majeure Event		Updated reference to cater for possible loss of Distribution System Code and to reflect NGR
	Fourth Access Arrangement Period		Consequential change of dates to align with proposed AA period
	FRC		Removed definition, no longer used
	FRO		Updated reference to Retail Market Procedures (Victoria)
	Gas		Inserted new definition to cater for possible loss of Distribution System Code
	Gas Day		Updated reference to NGR
	Gas Installation		Inserted new definition to cater for possible loss of Distribution System Code
	Gas Installer		Inserted new definition to cater for possible loss of Distribution System Code
	Gas Interface Protocol		Updated reference to Retail Market Procedures (Victoria)
	Gas Leaks and Emergencies		Updated clause reference for consistency

Clause	Description	Effect of Clause	Reason for Amendment/ No Amendment/Comments
	Gas Leaks and Emergencies Calls Protocol		Updated reference to the industry consultative committee that reviews and endorses this protocol
	GIA		Minor drafting amendment
	Haulage Reference Tariff – Non-residential D		Updated reference and minor drafting amendment.
	Haulage Reference Tariff – Non-residential L		Updated reference and minor drafting amendment.
	Haulage Reference Tariff – Non-residential V		Updated reference and minor drafting amendment.
	Haulage Reference Tariff – Non-residential V Gippsland Towns		Updated reference and minor drafting amendment.
	Haulage Reference Tariff – Non-residential V Yarra Valley Towns		Updated reference and minor drafting amendment.
	Haulage Reference Tariff – Residential V		Updated reference and minor drafting amendment.
	Haulage Reference Tariff – Residential V Gippsland Towns		Updated reference and minor drafting amendment.
	Haulage Reference Tariff – Residential V Yarra Valley Towns		Updated reference and minor drafting amendment.
	Heating Value		Amended not to refer to old Regulations but to Retail Market Procedures (Victoria)
	Incremental Reference Service		New definition to cater for NGR related amendments to Extensions and Expansions requirements
	Incremental User		New definition to cater for NGR related amendments to Extensions and Expansions requirements
	Inquiry		Removed, no longer used.
	Insolvency Event		Amended to remove overlap with

Clause	Description	Effect of Clause	Reason for Amendment/ No Amendment/Comments
			"retailer insolvency event" in rule 531
	Insurance Cap Event		New pass though event
	Insurer Credit Risk Event		New pass though event
	Licence Fee		Minor drafting amendment
	Main		Updated to cater for possible loss of Distribution System Code
	Meter		Updated to cater for possible loss of Distribution System Code
	National Energy Retail Law		Inserted new definition as a consequence of NECF
	National Energy Retail Rules		Inserted new definition as a consequence of NECF
	National Gas Law		Inserted new definition as a consequence of National Gas (Victoria) Law
	National Gas Rules		Inserted new definition as a consequence of National Gas (Victoria) Law
	Net Financing Cost		Updated reference to NGR
	Non- Reference Service Charge		Updated reference to NGR
	Non-Residential Haulage Reference Service		Minor drafting amendment.
	Ombudsman		Updated to cater for loss of Retail Licence
	Reconciliation Amount		Removed, no longer required as the Retail Market Procedures (Victoria) and underlying procedures cater for the calculation of the reconciliation amount
	Reconnect		Updated reference to NECF

Clause	Description	Effect of Clause	Reason for Amendment/ No Amendment/Comments
	Reference Service		Minor drafting amendment.
	Reference Tariff		Updated reference.
	Reference Tariff Policy		Updated to cater for NGR not using the term "Reference Tariff Policy"
	Regulator		Updated as a consequence of NECF to cater for AER as the economic and compliance regulator and possibly the ESC as the NECF gap instrument/licence regulator
	Regulatory Change Event		New pass through event
	Regulatory Instrument		Updated references as a consequence of NECF and the new access regime under the Gas Rules
	Regulatory Year		Removed, no longer used.
	Related Body Corporate		Removed, no longer used.
	Relevant Pass Through Event		Updated to include new pass though events.
	Relevant Tax		Remove redundant event
	Residential Haulage Reference Service		Minor drafting amendment.
	Retailer		Updated references as a consequence of NECF
	Retail Contract		Updated references as a consequence of NECF
	Retail Market Procedures (Victoria)		Updated reference as a consequence of Gas Rules
	Retail Licence		Updated references as a consequence of NECF
	Retail Services		Corrected reference
	ROLR Event		Inserted new definition as a consequence of NECF

Clause	Description	Effect of Clause	Reason for Amendment/ No Amendment/Comments
	Service Pipe		Inserted new definition.
	Services Policy		Updated reference.
	Service Standard Event		New pass though event
	Specifications		Updated reference
	Substituted Meter Reading		Updated reference to Retail Market Procedures (Victoria)
	Tariff Control Formula		Corrected reference.
	Tariff D Distribution Supply Point		Corrected reference
	Tariff D Connection Charge		Removed, no longer used.
	Tariff L Distribution Supply Point		Corrected reference
	Tariff L Connection Charge		Removed, no longer used.
	Tariff V Complex Connection		Inserted new definition as a consequence of NECF
	Tariff V Distribution Supply Point		Corrected reference
	Terms and Conditions		Corrected reference.
	Third Access Arrangement Period		Amended dates for the third access arrangement period
	Transmission System		Updated to cater for possible loss of Distribution System Code
	Turn On		Removed, no longer required
	Unaccounted for Gas		Updated to cater for possible loss of Distribution System Code and to cater for South Gippsland.
	VENCorp		Removed, replaced by AEMO
	VENCorp Meter register		Removed, no longer required
	X		Removed, no longer used.

Multinet has provided a tracked changed version of Part A of the current Access Arrangement compared to the proposed Part A for the forthcoming Access Arrangement Period.

17.4 Part B – Reference Tariff Policy

The table below provides a summary of the substantive changes proposed by Multinet from the current Access Arrangements.

Table 17-2: Summary of changes to Part B of the access arrangement: Reference Tariff and Reference Tariff Policy

Clause	Description	Effect of Clause	Reason for Amendment/ No Amendment/Comments
All	Part B	Describes Reference Tariffs and Reference Tariff Policy	Increase all Date/Year references by 5 years to be consistent with the new regulatory period, and increase all Access Arrangement Period references by one. Use of the term "Reference Tariff Policy" has been retained, despite it not appearing in the NGR, as a useful descriptor of a group of reference tariff related matters.
1	HAULAGE REFERENCE TARIFFS		
1.1	Haulage Reference Tariffs		
(a)	Haulage Reference Tariffs for 2013	Describes Haulage reference tariffs for the first year of the period, 2013.	Change 2008 to 2013. Deleted reference to July 2008 start data to align with January 2013 start date
(b)	Introduction of new Haulage Reference Tariffs	Provides for new tariffs to be introduced	No change
(c)	No Meter	Any supply point that does not have meter is assigned to tariff V	No change
(d)	Distribution Area	Links the tariffs to our distribution area	No change
1.2	Application of Haulage Reference Tariffs		
(a)	Assigned Haulage Reference Tariffs	If User is charged a particular tariff then deemed to be assigned to that Haulage Reference Tariff	No change

Clause	Description	Effect of Clause	Reason for Amendment/ No Amendment/Comments
(b)	Haulage Reference Tariffs for existing Distribution Supply Points	Until reassigned, User is deemed to be on the same haulage tariff as you were on the last year of the previous period.	Change dates
(c)	Haulage Reference Service Provided at a Distribution Supply Point	Description of Residential Haulage Reference Service and Non-Residential Haulage Reference Service.	No change
1.3	Assignment of new Haulage Reference Tariffs and new Haulage Reference Tariff Components		
(a)	Change in volume of Gas consumed	Circumstances allowing for reassignment of tariffs	No change
(b)	Change in demand or Connection Characteristics	Multinet can change reference tariffs based on changes in demand or connection characteristics	No change
(c)	Factors to be considered by the Service Provider	Provides criteria by which customers can be assessed for assigning of tariffs. Added a reference to initial assignment which appeared to be an omission	No change
(d)	Notification of proposed reassignment of Haulage Reference Tariff	Need to advise users if changing reference tariffs	Change dates
(e)	Terms and Conditions for new and changed Distribution Supply Points	When changing tariffs or a new User, Multinet needs to advise the User of T&Cs and tariff	No change
(f)	Notification by User regarding a different Haulage Reference Tariff	If User does not want reassignment they need to show reason.	No change
(g)	Time period for reassignment	Provides for time period for the introduction of new tariffs or tariff components	No change
(h)	Assignment to Haulage Reference Tariff D or Haulage Reference Tariff L	Once a DSP is assigned to Tariff D or L it must remain so assigned for at least one year	No change

Clause	Description	Effect of Clause	Reason for Amendment/ No Amendment/Comments
(i)	Additional information required for new Haulage Reference Tariffs and new Haulage Reference Tariff Components	Provide estimates on quantities of gas that would have been consumed by customers whom it is proposed will be reassigned to a new tariff or tariff component	No change
(j)	Switching rates	Provide estimates on quantities of gas relevant to tariffs where the switching rate of customers who are forecast to be reassigned to a new tariff is greater than zero	No change
(k)	Details of estimates	Provision of the basis of estimates of quantities of gas	No change
(l)	Resubmission of estimates	Regulators may seek the resubmission of estimates	No change
(m)	Timing of Information	The time taken to satisfy the Regulator's request for resubmitted estimates does not count in the time for consideration by the Regulator of a proposed reassignment	No change
1.4	Withdrawal of Haulage Reference Tariffs		
(a)	Withdrawal of Haulage Reference Tariffs	Time period for reassignment after a withdrawal of tariffs or tariff components	No change
(b)	Notification of withdrawal of Haulage Reference Tariff	Notification of withdrawal of tariffs or tariff components	No change
(c)	Additional information to be provided to Regulator	Prior to the withdrawal of tariffs, certain historical consumption information to be provided to the Regulator	No change
2.	ANCILLARY REFERENCE TARIFFS		
2.1	Existing Ancillary Reference Tariffs	Describes ancillary reference tariffs for the first year of the period, 2013 by reference to schedule of ancillary services	Change 2008 to 2013. Deleted reference to July 2008 start data to align with January 2013 start date

Clause	Description	Effect of Clause	Reason for Amendment/ No Amendment/Comments
2.2	Adjustments to Ancillary Reference Tariffs	Provides the reference tariff variation mechanism for ancillary reference tariffs is a formula based on CPI adjustments	No change
3.	HAULAGE REFERENCE TARIFF CONTROL FORMULA		Change dates
3.1	The Tariff Control Formulae	Provides the reference tariff variation mechanism for haulage reference tariff is a tariff basket price control and links to haulage reference tariff control formulas in appendix 1	No change
3.2	New Haulage Reference Tariff	Provides for how the haulage reference tariff control formulas are to apply given new haulage reference tariffs	Removed reference to formula as a result of the start date taking effect 1 January rather than 1 July.
3.3	Withdrawal of Haulage Reference Tariffs	Provides for how the haulage reference tariff control formulas are to apply given withdrawn haulage reference tariffs	Removed reference to formula as a result of the start date taking effect 1 January rather than 1 July.
3.4	Haulage Reference Tariff Information	Provides for how the haulage reference tariff control formulas are to apply where the switching rate of customers who are forecast to be reassigned to a new tariff is greater than zero	Removed reference to formula as a result of the start date taking effect 1 January rather than 1 July.
3.5	Rebalancing controls on Haulage Reference Tariffs	Provide limits on rebalancing of tariffs which are over and above the numerical rebalancing controls	No Change.
3.6	Rebalancing Controls for new and withdrawn Haulage Reference Tariffs	Provides for how the haulage rebalancing control formulas are to apply given new or withdrawn haulage reference tariffs	No change
4.	APPROVAL OF ANNUAL AND WITHIN YEAR VARIATIONS TO HAULAGE REFERENCE TARIFFS AND NEW HAULAGE REFERENCE TARIFFS		
4.1	Submission to the Regulator	Timing required for annual tariff submission	No change.

Clause	Description	Effect of Clause	Reason for Amendment/ No Amendment/Comments
4.2	Assessment by the Regulator	Regulator needs to assess submission	No change.
4.3	Information Required from the Service Provider	Information requirements re annual tariff submission	No change
4.4	Default Haulage Reference Tariffs for new Calendar Year t	Defines left had side of tariff control formula should the DB not submit a tariff proposal for the year.	No change
4.5	Annual Tariff Report	Requirement to publish annual tariff report	No change.
5.	CALCULATION OF CHARGES FOR HAULAGE REFERENCE TARIFFS		
5.1	Distribution Fixed Tariff Components	How fixed charges are charged	No change
5.2	Distribution Volume Tariff Components	How volume charges are charged. Apportions the bill reading into pricing seasons	No change
5.3	Distribution Demand Tariff Components	How demand charges are charged. Lays out method of calculating two types of demand	No change
5.4	Un metered Haulage Reference Tariff Components	Assigns a fixed charge to all un metered points	No change
6.	REFERENCE TARIFF POLICY		Changes to update to the NGR. No change of substance.
6.1	CPI-X Price Path	Provides the underpinning basis of the reference tariff variation mechanism (a formula) under rule 97 of the NGR	Changes to update to the NGR. No change of substance.
6.2	Non-conforming Capital Expenditure	Provides for the undertaking of Non-conforming Capital Expenditure	Changes to update to the NGR. No change of substance.
6.3	Speculative Capital Expenditure Account	Provides for a Speculative Capital Expenditure Account	Changes to update to the NGR. No change of substance.
6.4	Incentive mechanism	Describes incentive mechanism	Changes to update to the NGR No change of substance.

Clause	Description	Effect of Clause	Reason for Amendment/ No Amendment/Comments
(a)	General principles	Describes incentive mechanism	Changes to update to the NGR and update references to the next access arrangement period. No change of substance.
(b)	The mechanism for carrying over efficiency gains	Describes incentive mechanism	Changes to update to the NGR and update references to the next access arrangement period. No change of substance.
7.	FIXED PRINCIPLES		
7.1	General	Link to NGR requirements	Changes to update to the NGR No change of substance
7.2	Adoption of Fixed Principles	Describes the fixed principles	Changes to update to the NGR, including the deletion of matters now dealt with in the NGR. No other change of substance
8.	RELEVANT PASS-THROUGH EVENT		
8.1	Relevant Pass-Through Event	A process for a reference tariff variation mechanism by way of a cost pass through for defined events in accordance with rule 97(1).	No change
8.2	Obligations of the Regulator	Regulator's obligations to decide certain matters related to the defined event	No change
8.3	Powers of the Regulator where a Change in Taxes Event occurs	Regulators powers to initiate a pass through amount, including a negative amount	No change
8.4	Factors which the Regulator must consider	Factors the Regulator must consider in relation to a pass through amount and its application	No change.
8.5	When the Service Provider applies a Pass Through Amount	Administrative process for application of pass through	No change
8.6	Pass Through Amount not included in price control calculations	A pass through of costs is not relevant to setting haulage reference tariffs	No change
Schedule 1	INITIAL HAULAGE REFERENCE TARIFFS V, L & D	Defines methodology for determining most applicable reference tariff	This section of the AA provides criteria for the determination of the tariff that will be assigned to a Distribution Supply Point.

Clause	Description	Effect of Clause	Reason for Amendment/ No Amendment/Comments
	Haulage Reference Tariff Residential V	Describes some applicability criteria and structure of individual tariffs	Tariffs updated to 2012
	Haulage Reference Tariff Non-Residential V	Describes some applicability criteria and structure of individual tariffs	Tariffs updated to 2012
	Haulage Reference Tariff Non-Residential L	Describes some applicability criteria and structure of individual tariffs	Tariffs updated to 2012
	Haulage Reference Tariff Non-Residential D	Describes some applicability criteria and structure of individual tariffs	Tariffs updated to 2012
	Haulage Reference Tariff Yarra Valley Residential V	Describes some applicability criteria and structure of individual tariffs	Tariffs updated to 2012
	Haulage Reference Tariff Yarra Valley Non-Residential V	Describes some applicability criteria and structure of individual tariffs	Tariffs updated to 2012
	Haulage Reference Tariff Gippsland Towns Residential V	Describes some applicability criteria and structure of individual tariffs	Tariffs updated to 2012
	Haulage Reference Tariff Gippsland Towns Non-Residential V	Describes some applicability criteria and structure of individual tariffs	Tariffs updated to 2012
Schedule 2	INITIAL ANCILLARY REFERENCE TARIFFS	Lists Ancillary Reference tariffs and initial tariff rates	Tariffs updated to 2012.
Schedule 3	YARRA VALLEY AND GIPPSLAND TOWNS AREA	Lists postcodes for Yarra Valley and Gippsland Towns areas	No change
PART B	APPENDIX 1 – TARIFF CONTROL FORMULA		
Formula 1	Tariff Control Formula 2013 (previously 2008 & 2011-12)	Tariff Formulas	Changes dates. Included a pass through term Updated x factors
Formula 2	Tariff Control Formula 2014 to 2017 (previously 2004)	Tariff Formulas	Changes dates. Included a pass through term. Updated x factors
Formula 3	Tariff Control Formula – 2005	Tariff Formulas	Deleted
Formula 3 (previously 4)	License Fee Factor	Allows for recovery of License fee through the tariff basket equation.	Updated for dates, x factors and new pass through term

Clause	Description	Effect of Clause	Reason for Amendment/ No Amendment/Comments
Formula 4 (previously 5)	Adjustment Factor A	Tariff Formulas	Deleted original formula in relation to the OIC true up and replaced with new pass through formula
Formula 6	Correction Factor F		Change dates, x factor and formula to include new pas through factor
PART B	APPENDIX 2 – REBALANCING CONTROL FORMULA	Rebalancing Control Formula	
Schedule 4	Content of annual tariff report	Describes the requirements for the provision of information for annual tariffs reports	No change

Multinet has provided a tracked changed version of Part B of the current Access Arrangement compared to the proposed Part B for the forthcoming Access Arrangement Period.

17.5 Part C – Terms and Conditions

This table sets out an outline of the reasoning for the changes Multinet proposes be made to Part C of the Access Arrangement – the terms and conditions.

The proposed changes divide into the following categories:

(a) changes related to the introduction of the NECF – this is the vast majority of the changes;

(b) updates to other changes to legislation since the previous access arrangement review (for example changing references from VENCorp to AEMO);

(c) changes to bring the Victorian Access Arrangement into line with those in other States, based on Multinet's review of access arrangement recently approved by the AER – see for example the changes to clauses 4.7 and 4.8 and new clause 13.8;

(d) substantive corrections to certain parts of the terms – see for example the changes to clause 17, 19.2 and clause 19.8;

(e) minor drafting corrections.

In terms of the NECF, while it is anticipated that the NECF will commence in Victoria at the same time as this revised access arrangement commences operation, as this is not 100% certain, the approach Multinet has taken is to preserve the operation of various pre NECF clauses but provide they cease to apply once the NECF (or the relevant part thereof) commences operation in Victoria. See for example the approach taken to clauses 9.7 and 9.8. However if it becomes certain during the course of the access arrangement review that relevant NECF provisions will definitely operate from the time the revised access arrangement takes effect, then Multinet would be willing to update the terms to delete the provisions made redundant by the NECF (and indeed agrees this is the desirable course).

Table 17-3: Summary of changes to Part C of the Access Arrangement: Terms and Conditions

Clause	Description	Effect of Clause	Reason for Amendment/ No Amendment/Comments
1	Definitions and Interpretations	The effect of this section is to define jargon and specific words pertinent to the gas industry and how to interpret phrases used in the agreement	
1.1	Definitions	Describes jargon and specific industry wording commonly used	No amendment required
1.2	Interpretation	Describes how to interpret the agreement and certain phrases	Clause 1.2(a)(14) is to reflect the new NECF arrangements. The amendments to clause 1.2(d) and (e) correct an error in the existing terms. The existing terms provided acts or omissions are not to be done on non-Business Days. However, as operationally the gas industry is a 24/7 industry, there are some things that do need to be done on non-Business days – for example taking action in response to the presence of off-specification gas. The insertion of "unless a contrary intention appears" reflects this.
2.	Compliance with Regulatory Instruments	The effect of this section is to define which regulatory documents and rules must be complied with and how that compliance will occur.	
2.1	Regulatory Instruments to take precedence	Notes the documents that must be complied with by all parties	Clarification in relation to precedence. New clause 2.1(b) makes clear that simply because the Agreement contains greater detail on a matter than does the Regulatory Instruments, this does not make the Agreement inconsistent with those Regulatory Instruments. For example, rules 94(1) & (2) of the National Energy Retail Rules contain general provisions regarding provision of information and co-operation between retailers and distributors. Clause 2.1(b) makes clear that where the Agreement contains specific provisions requiring provision of information/co-operation the mere provision of additional detail does not make the provisions inconsistent with the

Clause	Description	Effect of Clause	Reason for Amendment/ No Amendment/Comments
			National Energy Retail Rules.
2.2	Parties must comply with Regulatory Instruments	Notes that all parties must comply with the regulations as described	No amendment required
2.3	Parties must co-operate	Notes that all parties must work together to comply with the regulations	No amendment required
2.4	Preservation of rights	Notes rights of the parties in regard to compliance	No amendment required
2.5	Waiver of Compliance	Notes conditions where a party may be excused from compliance	No amendment required
2.6	Regulatory Relief	Notes conditions when a party may seek relief from the relevant regulatory authority	No amendment required
3.	Customer Relationship	The effect of this section is to describe the relationship between the distributor, retailer and customer and how each party should interact with each other	Updated to reflect the NECF structure and to make more certain the test for when services are provided directly to the Customer and when they are provided to the User. The new clause makes clear distribution services are provided to the User in respect of each Customer of the User except if and to the extent that Customer has contracted directly with the Service Provider to obtain a service and agreed to pay the Service Provider directly for that service.
4.	Distribution Services	The effect of this section is to describe what distribution services are, and how and when those services will or will not be provided to the retailer and customer.	
4.1	Provision of Distribution Services	Notes what conditions need to be met by a retailer for provision of services to be approved	Clause 4.1(a) in the existing Access Arrangement Terms provides that the provision of services is subject to provision of a bank guarantee under clause 7.8. However when Chapter 21 of the NGR comes into effect clause 7.8 will fall away and Division 4 of Part 21 will regulate the provision of security. Clause 4.1 has therefore been updated to refer to Division 4 of Part 21. Clause 4.1(c) has been introduced because of the NECF and makes

Clause	Description	Effect of Clause	Reason for Amendment/ No Amendment/Comments
			clear that the amounts payable under the Agreement are distribution service charges for the purposes of Part 21 of the NGR.
4.2	Deemed request for Distribution Services	Notes that it is to be assumed that services are requested for a customer of a retailer when they are the FRO	No amendment required
4.3	Cessation of provision of Distribution Services	Describes why and how services may be withdrawn by the distributor	Updated to refer to AEMO. Otherwise minor drafting correction (commas).
4.4	Entitlement to refuse Service	Describes what events may allow the distributor to withdraw services	Clause 4.4(a) – this is a minor correction. The use of "Supply" seemed superfluous and has been deleted. Clause 4.4(b) reflects the fact that under the NECF the Distributor will have a contract directly with the Customer and rights directly against the Customer. It makes clear that the Distributor is not liable to the User if it suspends provision of services in respect of a Customer because of that Customer's breach of its obligations to the Distributor. The amendments to clause 4.4(c) deal more comprehensively with how the Service Provider may deal with off-specification gas if it enters the distribution system and makes clear that the Service Provider may interrupt or curtail services, flare or release gas or take whatever steps are required to restore gas in the distribution system to the requisite specification. These rights apply irrespective of which User delivered the off-specification gas into the distribution system because whoever delivered the gas the Service Provider must take steps to restore the integrity of the distribution system. Clause 4.4(d) is amended to reflect the enactment of the NECF, specifically the fact that once Part 21 of the NGR comes into effect invoicing disputes will be dealt with in accordance with Division 3 of

Clause	Description	Effect of Clause	Reason for Amendment/ No Amendment/Comments
			that Part.
4.5	Suspension for retailer of last resort	Describes effect of distributor obligations under "retailer of last resort" situations	It is submitted that the existing clause 4.5 does not deal adequately with retailer of last resort events and the clause has been revised to more effectively deal with such matters. The clause has also required revision to reflect the introduction of the NECF. Clause 4.5(a) provides that if another retailer is appointed RoLR in respect of the User's Customers, then the Service Provider may suspend the provision of services to the User during such period. Clause 4.5(a) has largely the same content as the previous version of clause 4.5. Clause 4.5(b) deals with what happens where a User has been subject to a RoLR event (i.e. has been the defaulting retailer) and when the Service Provider is required to recommence the provision of services to them. The clause provides services will not recommence until the User has paid all amounts previously accrued due but unpaid, provided credit support and otherwise satisfied the Service Provider (acting reasonably) of its ability to comply with the Agreement. It is not appropriate that the Service Provider be required to commence services to a User who has been the subject of a RoLR event unless that User satisfies the Service Provider of its ability to comply with the Agreement. Further, the tests minimise the risk to the market of a second RoLR event in respect of the User. Clause 4.5(c) provides that if the User commences to act as a RoLR in respect of Customers, then the terms of the Agreement will apply to the provision of distribution services to those Customers. This reflects the intent of the regulatory regime and is an omission from the current access arrangement terms

Clause	Description	Effect of Clause	Reason for Amendment/ No Amendment/Comments
			which it is submitted should be addressed. Clause 4.5(d) clarifies that the reference to a User acting as a RoLR is a reference to acting once a specific RoLR event has occurred.
4.6	Conditions of supply	Describes the conditions under which supply will be carried out	No amendment required apart from a minor correction in clause 4.6(f).
4.7	The User's obligations / Capacity Management	Describes the retailers responsibilities in regard to capacity management	Clause 4.7(c) makes clear that in addition to complying with the Specification, gas must not contain any material deleterious to the distribution system. This change makes clause 4.7(c) consistent with clause 4.4(c) which refers to the requirement gas both meet the Specification and not contain material deleterious to the distribution system. The second change to clause 4.7(c) is to require the User to indemnify the Service Provider if the User delivers off-specification gas into the distribution system. This is consistent with the regimes in the Jemena Access Arrangement for New South Wales Distribution Network (clause 10.1(e)); the APT Allgas Access Arrangement for Queensland (clause 6.2 and 14.5); the WA Gas Networks Access Arrangement for the Mid-West and South-West Gas Distribution System (clause 5.8(b)); the Envestra Access Arrangement for the South Australian Gas Distribution Network (clause 12.1 and 31.1) and the Envestra Access Arrangement for its Queensland Gas Distribution Network (clause 12.1 and 31.1). The change therefore brings the Multinet Access Arrangement into line with the Access Arrangements applying in every other mainland state capital city. It is submitted that, as has been accepted in the remaining mainland States, the risk of off-specification gas should fall upon the User. The User is responsible

Clause	Description	Effect of Clause	Reason for Amendment/ No Amendment/Comments
			for sourcing gas – the Service Provider has no control over the specifications of gas and no means to protect itself if off-specification gas is injected into the distribution system.
4.8	Title to Gas	Confirms the retailers title to gas and indemnifies the distributor	This clause has been amended to make clearer what the clause is aimed at. The intent of the clause is to ensure that the User has good and unencumbered title to the gas such that the Service Provider is entitled to deal with it. To only state that the User has title is not sufficient as a party may well retain title to gas but have granted security or other interests in the gas such that the Service Provider is not in fact entitled to deal with it The revised, more exact, wording of the clause is consistent with the wording used in the Envestra Queensland Gas Access Arrangement (clause 16.1); the Envestra South Australian Gas Access Arrangement (clause 16.1); the APT Allgas Energy Queensland Gas Access Arrangement (clause 7.1(a)) and the Jemena Access Arrangement for its New South Wales Gas Distribution Networks (clause 9.1). The change is also consistent with the WAGN Access Arrangement (clause 6.1) which provides for the Service Provider to be indemnified where anyone claims an interest in the gas supplied by the User. As the change proposed is consistent with the wording approved in the access arrangement for each other mainland state capital city, it is submitted this change should be approved.
4.9	Custody and Control of GAS	Describes obligations of retailer and distributor in regard to control of gas	No amendment required
4.10	Unaccounted for GAS	Describes the responsibilities of the retailer and distributor in regard to UAFG	This clause has been updated to reflect the fact that payments for UAFG are now dealt with by the

Clause	Description	Effect of Clause	Reason for Amendment/ No Amendment/Comments
			National Gas Rules and UAFG Procedures under those Rules rather than pursuant to the Distribution System Code.
5.	Connection	The effect of this section is to describe the process by which the User will request a New Connection (Turn On only) and the timeframes around that process	There are two small changes to clause 5 which reflect the requirements of the NECF. In clause 5(a) the term "Energisation" replaces "Turn On" to reflect the requirements of the NECF terminology. Clause 5(b) acknowledges that the User is entitled to more than one business day to provide a Connection Request to the Service Provider where this is permitted by regulatory instruments.
6.	Disconnection and Interruption of Customer	The effect of this section is to describe the process and timeframes in relation to disconnection or curtailment of gas supply. The request to be made by the retailer or customer. This section also describes the process of reconnection or restoration of that supply	

Clause	Description	Effect of Clause	Reason for Amendment/ No Amendment/Comments
6.1	Disconnection and Curtailment	Notes the conditions where a distributor may curtail or disconnect gas supply to a customer	Clause 6.1(a) has been amended principally to reflect the requirements of the NECF. The NECF instruments are now referred to in clause 6.1(a)(4). Clause 6.1(a)(6) has been inserted, reflecting the fact that as there will now be a direct contract between the Service Provider and a Customer, the Service Provider may disconnect or interrupt or curtail the provision of services in accordance with that contract. Clause 6.1(a)(5) has been inserted to make clear that the Service Provider may interrupt/curtail services or disconnect where required by a Government Agency. Clause 6.1(b) has been amended to clarify the drafting of that clause and to make clear that when making its decisions the Service Provider is to make them on the basis of relevant circumstances "known to the Service Provider". The Service Provider cannot make decisions on the basis of circumstances not known to it and the revised wording of clause 6.1(b) reflects this.
6.2	Disconnection at the request of the User	Notes the conditions where a retailer may request disconnection of a customer	Clause 6.2(a) has been amended in response to the introduction of the NECF (in particular Part 6 of the National Energy Retail Rules). The clause provides that the User must not make a disconnection request where the making of that request is contrary to the requirements of the National Energy Retail Rules. Clause 6.2(b) provides disconnection requests will be actioned within the time required by the NECF, or, if no time is prescribed, then the time frames in clause 6.2(b)(1) and (2) will apply (which are the timeframes from the current access arrangement). The change to clause 6.2(d) is a typographical correction. Clause 6.2(e) provides 6.2(c) and

Clause	Description	Effect of Clause	Reason for Amendment/ No Amendment/Comments
			(d) will cease to apply once section 105 of the National Energy Retail Rules commences operation as once that section commences operation their subject matter will be exclusively regulated by that section. Clause 6.2(f) makes clear the Service Provider is not required to action a disconnection request where a regulatory instrument allows or requires it not to action that request. Two changes have been made to clause 6.2(g). The first is to make it subject to applicable regulatory instruments (meaning the Service Provider cannot refuse to disconnect where such refusal would contravene those regulatory instruments). Secondly a further ground to refuse disconnection has been added being where the Service Provider's personnel trying to implement the disconnection are threatened or cannot obtain safe access to the premises (for example due to dogs). In practice these types of safety issue are the main reason that difficulties arise in implementing disconnection requests. The remaining changes to clause 6.2 are consequential changes flowing from the above substantive changes.
6.3	Disconnection at the request of a Customer	Notes the conditions where a customer may request disconnection	The change to clause 6.3(a) reflects a revised reference to legislation reflecting the introduction of the NECF. Clause 6.3(b) deals with an issue the Service Provider anticipates may arise in the new regime where customers may directly contact the Service Provider. As the Service Provider will not, unlike the retailers, have comprehensive details relating to a customer, in certain cases it may not be possible for the Service Provider to confirm the identity of a person

Clause	Description	Effect of Clause	Reason for Amendment/ No Amendment/Comments
			making a disconnection request. In such circumstance the more prudent course is for the Service Provider to not action the disconnection request. In such cases the Service Provider's likely approach will be to refer the customer to the User, in the expectation the User will be better placed to identify the customer and then submit the disconnection request. Clause 6.3(d) provides Part 6 of the National Energy Retail Rules prevails over the preceding requirements of clause 6.3.
6.4	Reconnection or restoration of Supply	Notes conditions applying to reconnection of supply	Reflecting the fact that in the new NECF regime the Service Provider will have a direct contract with the Customer clause 6.4(b) permits the Service Provider to refuse to reconnect where permitted by that contract. New clause 6.4(d) sets out the time at which reconnections will be undertaken. Paragraphs (1) to (3) set out current practice however these paragraphs are subject to the standards which may be prescribed by regulatory instruments from time to time.
6.5	Assistance	The effect is to ensure that the retailer knows it must assist the distributor in regard to disconnections etc.	No amendment required
7.	Payment and Invoicing for Services	The effect of this section is to describe the processes around invoicing by the distributor to the retailer and the timeframes for that process.	
7.1	Charges	Describes obligation of the retailer to pay charges invoiced to them	Clause 7.1(b) has been introduced in response to the NECF framework and to reflect the potential for some customers to pay amounts directly to the Service Provider. The clause provides the User is not required to pay a charge for such period that the Customer has agreed to pay that charge directly

Clause	Description	Effect of Clause	Reason for Amendment/ No Amendment/Comments
			to the Service Provider.
7.2	Retail Service Charges	Describes the obligation of the distributor to pay for services provided by the retailer to the distributor	Clause 7.2(d) has been changed to 10 Business Days to be consistent with the definition of due date for payment in Part 21 of the National Gas Rules and so that the payment periods for the Service Provider and the User are the same. The change to clause 7.2(f) is a drafting correction.
7.3	GST	Describes specifically how GST is to be applied to payments and any associated adjustments	No amendment required.
7.4	Distribution Services – Invoicing, Payment and Interest	Describes the frequency of invoicing and how a distributor may charge interest if invoices are not paid within the agreed timeframes	Consistent with the National Gas Rules (specifically rule 506(1)) clause 7.4(a) now provides that invoices will be issued monthly. Clause 7.4(f) provides that clause 7.4(d) and 7.4(e) will cease to apply once Division 2 of Part 21 of the National Gas Rules commences operation, as once that Division commences operation it will regulate the subject matter dealt with by clause 7.4(d) and 7.4(e). Clause 7.4(g) sets out how the Service Provider will address the circumstance where metering data is not available as at the time an invoice is required to be prepared. This is anticipated to be an issue as the National Gas Rules (rule 506(1)) requires a statement of charges to be issued by the 10th business day following the end of a retail billing period. However, scheduled meter reads occur between the 1st and the 8th of a month and AEMO data does not become available until the 18th of a month. It is intended to address this either by billing on an estimated basis or by not including amounts in respect of a specific customer for a period in an invoice until such time as the data for that customer becomes available. Clause 7.4(g) reflects this

Clause	Description	Effect of Clause	Reason for Amendment/ No Amendment/Comments
			structure. Clause 7.4(j) deals with adjustments between actual and estimated reads. The change made is to make clear any adjustment is subject to the requirements of relevant Regulatory Instruments. Clause 7.7(k) deals with the period for payment of invoices. This period has been changed to 10 business days from the date of issue of the invoice, consistent with the definition of due date for payment in the National Gas Rules. Clause 7.7(n) provides clause 7.7(m) will not apply where the National Gas Rules regulate the payment of interest. However as Rule 511 of the National Gas Rules refers to a default rate but no default rate is specified in the Rules, clause 7.7(n) seeks to address this error in the Rules by prescribing the rate which is to be used as the default rate.
7.5	Adjustment of Invoices	Describes how and when adjustments can be made to invoices	Clause 7.5(a) emphasises the remainder of clause 7.5 is subject to what is set out in relevant regulatory instruments. Clause 7.5(b) – the reference to "revenue protection invoice" for cases of meter tampering or theft of Gas has been inserted to reflect current practice. The sub-paragraphs of clause 7.5(b) have been updated to reflect other potential causes of errors or omissions. Clause 7.5(e) provides clause 7.5(d) will cease to apply once Division 3 of Part 21 of the National Gas Rules commences operation as from this point in time that Division will comprehensively regulate when adjustments to invoices are not able to be made.

Clause	Description	Effect of Clause	Reason for Amendment/ No Amendment/Comments
7.6	GSL Payments	Describes the principles around payment of Guaranteed Service level payments	Clause 7.6(d) has been deleted as the requirement to give notice after a payment has been made is administratively onerous. Further communications in respect of GSL payments will from the commencement of the NECF be regulated by rule 84(2) of the National Energy Retail Rules.
7.7	Disputed Invoices	Describes the process of handling disputed invoices from both the distributor and retailer perspective	Depending on the amount of an invoice which is in dispute, once a dispute is resolved it may be more practical to give effect to resolution of the dispute through adjustment to a subsequent invoice rather than a specific adjustment payment within 3 business days. The change to clause 7.7(e) makes clear that the parties have the option to agree to resolve the dispute this way if they agree this is more efficient. Clause 7.7(i) makes clear Division 3 of Part 21 of the National Gas Rules and other relevant Regulatory Instruments prevail over the earlier provisions of clause 7.7. Clause 7.7(j) obliges the parties to use their best endeavours to seek to resolve a dispute during the 10 business day period referred to in rule 510(d) of the National Gas Rules (ie before the dispute is referred to a formal dispute resolution process). The intent is to encourage the parties to resolve the dispute so as to avoid the need for activation of the formal dispute resolution processes.

Clause	Description	Effect of Clause	Reason for Amendment/ No Amendment/Comments
7.8	Credit Support – Bank Guarantee	Describes the conditions around when a distributor may request credit support and what instruments are valid for credit support	Clause 7.8(l) provides that the security provisions do not apply for such period that the provision of credit support is regulated by Division 4 of Part 21 of the National Gas Rules. As the provision of appropriate credit support is critical to the Service Provider's ability to manage its own cash flow risk, clause 7.8(l) makes clear that if the credit support provisions of the National Gas Rules cease to apply (i.e. are repealed) the Service Provider may require credit support in accordance with clause 7.8. Clause 7.8(m) deals with transition between the provision of credit support under clause 7.8 and provision of credit support under the National Gas Rules. This matter is not dealt with by the National Gas Rules. Otherwise minor updates and drafting corrections have been made to clause 7.8.
8.	Information Exchange	Describes how and what information should be communicated between retailer and distributor and also how changes in information should be communicated	
8.1	Compliance with privacy laws	Describes how all parties should comply with privacy laws	No amendment required
8.2	Provision of information	Describes how information should be provided	No amendment required
8.3	Use of information	Describes how information can be used	No amendment required
8.4	Gas Interface Protocol	Notes that the GIP applies but can be varied	No amendment required
8.5	Changes in information	Describes when changes need to be advised to all parties	No amendment required
8.6	Accuracy of information	Notes that any information provided to any party should be accurate	No amendment required

Clause	Description	Effect of Clause	Reason for Amendment/ No Amendment/Comments
9.	Communications regarding Customers and System Data	The effect of the clause is to set out communication methods between the retailer and distributor	
9.1	Answering Calls	Describes obligations of retailer and distributor in regard to answering customer calls of different classes	Clause 9.1 sets out the currently employed protocols in Victoria for management of customer enquiries. As Multinet understands it this regime will continue to apply under the NECF. However new clause 9.1(a) makes clear that the remaining provisions of clause 9.1 do not require a party to take an action inconsistent with the National Energy Retail Rules. Clause 9.1(j) has been inserted to clarify that the User is responsible for notifying customers of interruptions which are attributable to the User or matters independent of the distribution system. Clause 9.1(k) has been amended to correct an inconsistency in the clause which we assume has arisen due to a drafting error in previous reviews.
9.2	Provision of information concerning Class A Inquiries, Class B Inquiries and Class C Inquiries	Describes obligations of distributor and retailer.	The National Energy Retail Rules will regulate the exchange of information between retailers and distributors relating to customers. Clause 9.2 has been amended to make clear that the obligations to exchange information referred to in it are those obligations referred to in relevant regulatory instruments – specifically the changes to clause 9.2(a) and (d). Clauses 9.1(d) and 9.1(i) have also been changed to reflect this. Clause 9.2(c) has been added to allow information to be made available via a website (to the extent permitted by relevant regulatory instruments). The use of a website is the quickest and most cost efficient method of making the information available.
9.3	Provision of information for planned Interruptions and Disconnections	Notes the obligations of the distributor to advise of planned interruptions to supply	Clause 9.3(e) provides clause 9.3 will cease to apply once Division 3 of Part 5 of the National Energy Retail Rules commences operation, as from this point in time

Clause	Description	Effect of Clause	Reason for Amendment/ No Amendment/Comments
			its subject matter will be comprehensively regulated by that Division.
9.4	Customer Details	Notes the obligations of the retailer to supply certain customer details in respect of a premise to the distributor and timeframes around this activity	Clause 9.4 has been updated to be consistent with the gas interface protocol applying in Victoria. Minor drafting corrections have also been made.
9.5	New Distribution Supply Points	Describes information that should be supplied by the retailer to the distributor in regard to new supply points	Clause 9.5 has been updated to be consistent with the gas interface protocol applying in Victoria. Minor drafting corrections have also been made.
9.6	Acceptance by the Service Provider	Notes the obligations of the distributor to respond to information provided by the retailer	No amendment required.
9.7	Enquiries or Complaints relating to the User	Notes the obligations of the distributor to respond to complaints from the retailer or customer	Clause 9.7(c) provides that clause 9.7 will cease to apply once Rule 101 of the National Energy Retail Rules commences operation.
9.8	Enquiries or Complaints relating to the Service Provider	Notes the obligations of the distributor to respond to any complaints against it	Clause 9.8(c) provides that clause 9.8 will cease to apply once Rule 102 of the National Energy Retail Rules commences operation.
9.9	Ombudsman complaints	Describes the obligations of all parties in regard to EWOV	No amendment required.
9.10	Assignment of the Changes in Reference Tariffs	Notes that any changes in tariffs must be communicated with retailers and customers and the obligations of distributors and retailers in that process	No amendment required.
9.11	Theft of gas	Notes that theft of gas must be notified by any party to all parties detecting this occurrence	No amendment required.
9.12	Information for Customers	Describes the obligations of the retailer and distributor in responding to requests by customers for information of various types	No amendment required.
10.	Force Majeure	This section is a Standard critical event response description	
10.1	Suspension of Obligations	Notes that during a critical event all obligations are suspended	No amendment required.

Clause	Description	Effect of Clause	Reason for Amendment/ No Amendment/Comments
10.2	Mitigation of Force Majeure Event	Notes that all parties must take steps to mitigate the risks of critical events	No amendment required,
10.3	Notice	Notes obligations of all parties in advising of a critical event	Clause 10.3(a) contains a minor, self-explanatory amendment. Clause 10.3(b) provides that where a notice relating to the force majeure event is required to be issued under relevant Regulatory Instruments a separate notice is not required to be issued under clause 10.3(a). This is to ensure efficiency. It also allows the Service Provider, in the circumstances of a force majeure event, to focus on resolution of the event rather than unnecessary duplication of notices.
11.	Enforcement of the Service Provider's Rights against Customers	This section describes all the areas involved where a distributor can enforce disconnection of a customer	
11.1	Restriction on the Service Provider's enforcement rights	Notes the obligations of the distributor to advise the retailer that it is exercising its rights against a customer	No amendment required.
11.2	Consultation prior to Disconnection	Notes obligations of the distributor and retailer to consult with the customer prior to disconnection	Clause 11.2(c) has been amended to also provide that the Service Provider may disconnect a Distribution Supply Point where required by direction or order of an Authority.
11.3	The Service Provider to Indemnify the User	Notes that the distributor indemnifies the retailers against claims by a customer when it exercises its rights to disconnect	No amendment required.
11.4	The User to notify Customer and the Service Provider	Notes the obligation of the retailer to advise the customer of their obligations	No amendment required.
11.5	Limitation of the User's Obligations	Notes that the retailer is not obligated to take on any responsibility of the distributor	No amendment required.
12.	Term and Termination	This section notes the term of the agreement, and situations and processes in regard to termination of the agreement	

Clause	Description	Effect of Clause	Reason for Amendment/ No Amendment/Comments
12.1	Term	Notes the term of the agreement	No amendment required.
12.2	Termination for default or insolvency of the User	Notes the situations where the distributor may terminate the agreement due to retailer insolvency	Clause 12.2(a) has been amended to refer to payments/credit support not being made/provided within the timeframe required by relevant Regulatory Instruments to reflect the fact that under the NECF the National Gas Rules will regulate payment and provision of credit support. Clause 12.3(d) has been added to allow the Service Provider to immediately proceed to clause 12.3 if a User is subject to a RoLR event (noting that clause 12.3 still gives the User 7 days to remedy the default). If a User is subject to a RoLR event then the default needs to be remedied quickly or the Agreement terminated. It is inappropriate that the Service Provider be required to continue to deal with a User who is unlikely to be able to meet their contractual obligations due to their RoLR status.
12.3	Notice of termination	Notes that any termination must be advised to the retailer in writing	No amendment required.
12.4	Termination for jeopardising for the safety of the Distribution System	Notes the situation where the distributor can terminate the agreement due to safety issues and how that must be communicated to the retailer	No amendment required (apart from a minor typographical correction).
12.5	Termination where no Customers	Notes that the distributor may terminate where the retailer has no customers	No amendment required.
12.6	Termination by the Service Provider	Notes that the distributor may terminate the agreement if its obligation to provide services ceases	No amendment required.
12.7	Consequences of Termination	Notes the result of termination of the agreement	The substantive change to clause 12.7 is to provide clauses 7.1 to 7.7 survive expiration or termination of the Agreement. Each of these clauses relates to invoicing and charging and should survive termination so as to deal with charges accrued up to the

Clause	Description	Effect of Clause	Reason for Amendment/ No Amendment/Comments
			date of termination.
12.8	Remedies for Default	Notes any actions the retailer can take if the agreement is terminated	No amendment required.
12.9	Preservation of rights	Notes retailers rights that are preserved on termination	Minor drafting correction made.
12.10	Distribution Services after termination	Notes that the distributor may still provide services to a customer even if the agreement is terminated	No amendment required.
13.	Liabilities and Indemnities	This section is a standard generic legal section that covers and describes all indemnities and warranties for all parties	
13.1	No Warranties	As above	Reference to the Trade Practices Act updated to refer to the Competition and Consumer Act.
13.2	Liability for supply	As above	In part, clause 13.2 has been reworded as the existing structure of the clause seemed somewhat clumsy. Clause 13.2(a) – the reference to "who is party to the Deemed Contract" has been added to the beginning of this clause to reflect its use at the end of the clause. Clause 13.2(b)(1) and (2) have been updated to refer to the guarantees in the Australian Consumer Law (which now refers to consumer guarantees, as compared to the Trade Practices Act which referred to implied warranties) and to warranties implied by State legislation. This requires consequential changes to clause 13.2(b)(3) and (4). New clause 13.2(c) is substantively the same as the previous lead-in words to clause 13.2 but with the reference to section 316 of the National Energy Retail Law, and any other limitations which may from time to time apply pursuant to relevant Regulatory Instruments, added.

Clause	Description	Effect of Clause	Reason for Amendment/ No Amendment/Comments
13.3	Non-operation of limitations of liability	As above	No amendment required.
13.4	Insurance	As above	No amendment required.
13.5	Indemnity by the User	As above	Under rule 508 of the National Gas Rules the Service Provider is not permitted to recover distribution service charges from a retailer if the retailer cannot recover them from the customer. However if the reason the Service Provider cannot recover these charges is due to the act or omission of the User (for example failure to make sure its own bills to the customer are correct) then it is unfair that the Service Provider suffer a loss of its charges revenue. The Service Provider has done nothing wrong but has lost the opportunity to collect charges due to the act or omission of the User. Clause 13.5(c) requires the User to indemnify the Service Provider in such circumstances.
13.6	Exemption of liability	As above	Clause 13.6(b) has been added to provide that a party is not liable to the other party for forms of consequential loss, including losses of profit and revenue, liability to third parties (other than Customers) and additional expenses under upstream contracts. It is important to note that new clause 13.6(b) does not limit the liability of the Service Provider to the User for any liability the User incurs to a Customer, which matter is made clear by the express words of the clause. Nor does it limit the liability of the User to the Service Provider for any liability the Service Provider incurs to a Customer. Exclusions of infrastructure owner liability for consequential losses is standard in Australian contracts

Clause	Description	Effect of Clause	Reason for Amendment/ No Amendment/Comments
			and the current Victorian access arrangement is out of kilter with industry practice in not dealing with this issue. In this respect Multinet notes clause 28.5(a) of the Jemena Access Arrangement for the New South Wales Distribution Network. However, consistent with the Jemena Access Arrangement, the carve-out of liability for consequential loss is subject to certain exceptions. Firstly, and consistently with clause 13.2 and also the National Energy Retail Law, it does not limit liability for customer claims (clause 13.6(b)(6)). Secondly, it does not limit the scope of any indemnity in the Agreement, as the indemnities set out the circumstances in which it is considered most economically efficient and equitable that risk be allocated to a particular party (clause 13.6(b)(7)). This is consistent with clause 28.6(a)(vi) of the Jemena Access Arrangement. Thirdly, the statements in clause 13.6(b) that one party is not liable for the other party's loss of revenue should not cut across the User's obligation to pay charges for the services to the Service Provider (clause 13.6(b)(8)). Finally, and consistently with the Jemena Access Arrangement (clause 28.6(a)(iii)), the obligation to deliver gas at the correct pressure should not be subject to the consequential loss exclusion. This is because the Service Provider has no control over the pressure at which gas is delivered into the network and no means to manage the risk of the User's failure to ensure gas is delivered at the appropriate pressure.

Clause	Description	Effect of Clause	Reason for Amendment/ No Amendment/Comments
13.7	Preservation of statutory provisions	As above	Clause 13.7(c) has been added to refer to other limitations on liability which may be included in relevant Regulatory Instruments from time to time, including section 316 of the National Energy Retail Law.
13.8	Australian Consumer Law	Regulates any liability the Service Provider has to the User under the Australian Consumer Law	Clause 13.8 has been added to regulate the Australian Consumer Law liability of the Service Provider to the User. It is important to note that this clause only regulates the Service Provider's liability under the Australian Consumer Law to the User. It does not limit the Service Provider's liability to the User for liability the User incurs to the Customer under the Australian Consumer Law. This is dealt with in clause 13.2. The inclusion of a clause limiting a Service Provider's liability to the User under the Australian Consumer Law (or former provisions under the Trade Practices Act) to the extent permitted by the relevant statutory provisions is included in the Jemena NSW Gas Access Arrangement (clause 28.3); the Envestra South Australian Gas Access Arrangement (clause 28); the Envestra Queensland Gas Access Arrangement (clause 28) and the APT Allgas Energy Queensland Gas Access Arrangement (clause 14.4). Given this, it is submitted that the inclusion of an equivalent clause in Victoria is entirely appropriate.
13.9	Third Party Claims and Demands	As above	Minor drafting corrections have been made.
13.9	No Admissions	As above	No amendment required.

Clause	Description	Effect of Clause	Reason for Amendment/ No Amendment/Comments
14.	Dispute Resolution	This section has the effect of describing the dispute handling process between distributor and retailer	
14.1	Disputes	Describes what a dispute is	Clause 14.1 has been amended to reflect the fact resolution of some disputes will be regulated by relevant Regulatory Instruments – specifically the National Gas Rules.
14.2	Notice of Disputes	Notes the communication that should take place in regard to a dispute	No amendment required.
14.3	Referral to chief Executive Officers or nominees	Notes the escalation points of a dispute	No amendment required.
14.4	Mediation	Notes actions to take in regard to mediation if a dispute is not resolved after escalation	Minor drafting correction (deletion of comma).
14.5	Arbitration	Notes actions to take if mediation is not successful	No amendment required.
14.6	Summary or urgent relief	Notes rights of any party to seek relief during dispute resolution	No amendment required.
14.7	Customer Disputes	Notes actions in regard to customer disputes	No amendment required.
14.8	Obligations Continuing	Notes that notwithstanding any dispute certain obligations must still be met	No amendment required.
15.	Representations and Warranties	This section is a standard generic legal section that covers and describes all representations and warranties for all parties	
15.1	The User's representations and warranties	As above	Clause 15.1(a) has been updated to refer to Retailer Authorisations under the National Energy Retail Law.
15.2	The Service Provider's representations and warranties	As above	No amendment required.
15.3	Other representations and warranties	As above	No amendment required.
15.4	No reliance	As above	The reference to clause 6.2(i) in this clause did not make sense and has been deleted. The clause deals with representations prior to

Clause	Description	Effect of Clause	Reason for Amendment/ No Amendment/Comments
			entry into the Agreement and clause 6.2(i) does not deal with such representations. It deals with representations post execution of the Agreement relating to disconnections.
16.	Notices	The effect of this section is to note how, when and to whom notices should sent between retailer and distributor	
16.1	Method of Giving Notices	Notes how a notice should be sent to a party	No amendment required.
16.2	Time of receipt of notice	Notes timing of notices	No amendment required.
16.3	Time of receipt of Invoices	Notes how an invoice is deemed to have been sent and received	No amendment required.
16.4	Confirmation of electronic delivery	Notes that if a notice is sent electronically it must also be sent another way	The use of "simultaneously" in clause 16.4 was incorrect as it is not possible to actually send a notice simultaneously by post, facsimile or hand delivery where it has been sent by email. "Simultaneously" has been replaced by "as soon as reasonably practicable" so that the clause reflects what can be achieved in practice.
17.	Confidentiality	This section is a standard generic legal section that covers and describes all issues in regard to confidentiality	Clause 16.5(a) inserts a mechanism for the parties to change their addresses for notices. Clause 16.5(b) relates to new clause 19.2(c) which is explained below.
17.1	General Obligation	As above	Clause 17.1 has been amended to better reflect the circumstances in which parties may need to disclose confidential information. Reference to disclosure to insurers has been added (as a party will not be able to arrange insurance if it cannot disclose information relating to the agreement). Other changes are adding references to financiers to assist parties raise finance, making the stock exchange exception clearer (as the relevant ASX requirement may in fact apply to a party's parent rather than the party itself) and provision

Clause	Description	Effect of Clause	Reason for Amendment/ No Amendment/Comments
			for disclosure to potential assignees has been added.
17.2	Representatives to keep information confidential	As above	Consistent with the change to clause 17.1, a reference to financiers and insurers has been added.
17.3	Conditions on disclosure	As above	No amendment required.
17.4	Notice to other Party	As above	Clauses 17.4(a) and (b) are impractical and have been deleted. Parties will not be contacting each other each time their employees need to discuss confidential information with other employees and contractors. The key obligation is in clause 17.2 which requires each party to ensure its employees and contractors use confidential information as required by clause 17.
18.	Law and Jurisdiction	This section confirms the jurisdiction under which this agreement is enforced	
18.1	Governing Law	As above	No amendment required.
18.2	Submission to Jurisdiction	As above	No amendment required.
19.	General	This section is a standard generic legal section that covers and describes general items otherwise not covered in other parts of the agreement	
19.1	Waiver	Describes general conditions in regard to waivers	No amendment required.
19.2	Amendment	Describes general conditions in regard to amendments to this agreement	The Service Provider has encountered difficulties with Users who refuse to update their haulage agreements to reflect updates to the access arrangement terms. This is, inequitable as the Users get the benefit of the current reference tariffs but those tariffs are for the services set out in the current access arrangement. That is the current reference tariffs and the current access arrangement terms go together.

Clause	Description	Effect of Clause	Reason for Amendment/ No Amendment/Comments
			Clause 19.2(c) has therefore been added to provide that the terms of a User's haulage agreement (where it is based on the reference service terms) automatically update as the AER approves changes to the access arrangement terms and conditions.
19.3	Attorneys	Points out the obligations of any attorneys signing the agreement	No amendment required.
19.4	Severability	Describes general conditions in regard to severing the agreement	No amendment required.
19.5	Counterparts	Describes general conditions in regard to execution of the agreement in parts	No amendment required.
19.6	Further Assurance	Describes general conditions in regard to assurances made by the parties entering into the agreement	No amendment required.
19.7	Entire Agreement	Notes that this is the entire agreement	No amendment required.
19.8	Assignment	Describes general conditions in regard to any party assigning any part of the agreement to others	Clause 19.8 has been amended to refer to assignment of rights and novation of obligations. These are the legally correct terms. Clause 19.8(a) has also been amended to make clear consents to assignments/novations are not to be given on unreasonable conditions. Clause 19.8(c) makes clear that where a party is entitled to assign rights/novate obligations (e.g. consent to the assignment/novation has been given) then the other party must execute the documentation reasonably required to effect the assignment/novation. Clause 19.8(b) has been amended to clarify the Service Provider's assignment/novation rights include partial assignment to distributors who acquire part of the Service Provider's interest in the existing system: for example if the Service Provider transfers 50% of its total interest in the distribution system to a person such that the distribution system is then held jointly by the Service Provider and

Clause	Description	Effect of Clause	Reason for Amendment/ No Amendment/Comments
			the new distributor.
19.9	Remedies Cumulative	Describes general conditions in regard to rights and resolutions in regard to this agreement	No amendment required.
19.10	Review of Agreement	Notes that there may be amendments to the agreement during the course of the agreement and these could occur due to changes in regulatory rules or law	No amendment required.
19.11	No Agency or Partnership	Notes that the agreement does not mean that either party is in partnership with the other by executing the agreement	No amendment required.
19.12	Restriction on authority	Notes that neither party must make guarantees or represent the other party in any way	No amendment required.
19.13	Costs	Notes that any cost to execute the agreement is to be borne by the parties signing the agreement	No amendment required.
19.14	Schedules	Notes that any appendixes and schedules are part of the agreement	
Schedule 1	Approved Form of Unconditional Undertaking	A template of generic wording approved by Multinet for a Bank Guarantee	No amendment required.
Schedule 2	Services other than Reference Services	Notes any other services not defined as "reference services"	No amendment required.
	Tariff D Connection Tariff L Connection	Services for large customers	Amendment required to include Tariff V Complex Connection. Amendment to clarify that on site meter and gas installation test is other than for a Tariff V customer.
Schedule 3	Matters to be notified to Customer from User	Notes items that should be advised to a customer by a retailer as standard.	Minor drafting correction (capitalisation)

Multinet has provided a tracked changed version of Part C of the current Access Arrangement compared to the proposed Part C for the forthcoming Access Arrangement Period.

17.6 Fixed principles

Multinet's existing Access Arrangement contains fixed principles which were approved by the ESC during the 2008 GAAR in accordance with the National Gas Code. Some of these fixed principles expire at the end of the current

access arrangement period, while others have become redundant following the clarification of certain aspects of the regulatory regime with the introduction of the National Gas Rules.

In the interests of providing ongoing regulatory certainty, Multinet proposes to retain the following fixed principle which is set out in clause 7.2(6) of its existing access arrangement:

To the extent that the application of clause 6.4 results in a positive efficiency carryover at the end of the Third Access Arrangement Period, the reward earned in the Third Access Arrangement Period is to be added to the Total Revenue and carried forward into the Fourth Access Arrangement Period, until it has been retained by the Service Provider for a period of a full five years, in accordance with clause 6.4. This Fixed Principle will apply until the end of the Fourth Access Arrangement Period.

The retention of this fixed principle (to apply until the end of the forthcoming Access Arrangement Period) accords with the provisions governing fixed principles, as set out in Rule 99. Moreover, this fixed principle provides assurance to Multinet that incentive payments earned in accordance with the efficiency incentive mechanism are recognised in the next access arrangement determination. By providing this certainty, the fixed principle will ensure the integrity of the incentive properties of the incentive mechanism and promote the achievement of the National Gas Objective.

17.7 Queuing requirements

Rule 103(1)(a) states that an access arrangement must contain queuing requirements if the access arrangement is for a distribution pipeline and the AER notifies the service provider that the access arrangement must contain queuing requirements. Rules 103(3) and 103(5) set out the queuing requirements.

The AER has not notified Multinet that the access arrangement must contain a queuing requirement, therefore one has not been proposed.

17.8 Capacity trading requirements

Rule 48(1)(f) requires a full access arrangement to set out the capacity trading requirements. Rule 105 specifies the circumstances under which capacity trading requirements must provide for transfer of capacity. Under the Market Rules, the Victorian Market has transportation rights which come in the form of authorised MDQ (Maximum Daily Quantity). In Victoria:

- AEMO and the transmission pipeline owner have entered into agreements relating to the capacity of the transmission system.
- At the commencement of the market, AEMO allocated the initial transmission pipeline capacity to individual large (tariff D) customers in the form of authorised MDQ and the balance collectively to the small customer load (tariff V – residential and small to medium sized commercial/industrial customers).
- Market Participants and/or tariff D customers may trade authorised MDQ.
- Distribution networks do not grant a right to capacity in any section of the network, hence the issue of transferring capacity on the distribution network does not arise.

In accordance with the Market Rules and Rule 105(1) of the National Gas Rules, Multinet does not provide for the transfer of capacity on its distribution pipeline.

18. Appendices

Ref	Title	Status
A-1	CEO Statutory Declaration	Public
A-2	Regulatory Information Notice	Commercial In Confidence
A-3	RIN Checklist	Public
A-4	NGR Checklist	Public
B-1	Post Tax Revenue Model	Public
B-2	Forecast opex by source	Commercial In Confidence
C-1	NIEIR Energy Report	Public
C-2	CSIRO Climate Report	Public
C-3	SKM Material Escalators	Public
C-4	Deloitte – Conforming IT Capital Expenditure	Public
C-5	Marchment Hill International Benchmarking	Public
C-6	Economic Insights – Benchmarking the Victorian Businesses	Public
C-7	Economic Insights – TFP	Public
C-8	Zincarra – Review of Lilydale pipeline	Commercial in Confidence
C-9	BIS – Real Cost Escalators	Public
C-10	Geoff Nunn labour report No. 1	Commercial in Confidence
C-11	Geoff Nunn labour report No. 2	Commercial in Confidence

Ref	Title	Status
C-12	Geoff Nunn labour report No. 3	Commercial in Confidence
C-13	KPMG Operating Expenditure Forecasts	Public
C-14	ATK Internal benchmarking	Commercial In Confidence
C-15	GHD – Review of Network AMP	Public
C-16	GHD – Review of historic expenditure	Public
C-17	GHD – Review of Operating and maintenance forecasts	Public
D-1	Network AMP	Commercial In Confidence
D-2	SCADA	Commercial In Confidence
D-3	Supply Regulators	Commercial In Confidence
D-4	Above Ground Supply Regulator	Commercial In Confidence
D-5	Small Meter	Commercial In Confidence
D-6	Large Diameter Cast Iron Mains	Commercial In Confidence
D-7	Distribution Mains	Commercial In Confidence
D-8	Corrosion Protection	Commercial In Confidence
D-9	Distribution Valves	Commercial In Confidence
D-10	Distribution Services	Commercial In Confidence
D-11	Transmission Pipelines	Commercial In Confidence
D-12	Enclosures	Commercial In Confidence
D-13	Large Meters	Commercial In Confidence

Ref	Title	Status
D-14	Gas Heaters	Commercial In Confidence
D-15	Large Consumer Regulators	Commercial In Confidence
D-16	Capital Growth	Commercial In Confidence
E-1	IT AMP	Commercial In Confidence
F-1	Jemena OSA	Commercial In Confidence
F-2	Amending Deed	Commercial In Confidence
F-3	IT Delivery Agreement	Commercial In Confidence
F-4	EPG Agreement	Commercial In Confidence
G-1	Network Probity Report	Commercial In Confidence
G-1.1	Network EOI	Public
G-1.2	Network RFP	Public
G-1.3	Network TCE Agreement	Commercial In Confidence
G-1.4	Signed MOU	Commercial In Confidence
G-1.5	Board Approval	Commercial In Confidence
G-1.6	Board Attachment	Commercial In Confidence
G-2	CMS Probity Report	Commercial In Confidence

Ref	Title	Status
G-2.1	CMS EOI	Public
G-2.2	Board Approval	Commercial In Confidence
G-3	IT Probity Report	Commercial In Confidence
G-3.1	IT EOI	Public
G-3.2	Board Approval	Commercial In Confidence
H-1	Market Risk Premium Issue	Public
H-2	CEG – Internal consistency in risk free rate and MRP	Public
H-3	NERA – Prevailing conditions and the MRP	Public
H-4	NERA – Black CAPM	Public
H-5	SFG – Review of NERA's switching regime	Public
H-6	SFG – MRP – Response to selected issues	Public
H-7	Capital Research – Forward estimate of the MRP	Public
H-8	PWC – Estimating the DRP	Public
H-9	CEG – Estimating the DRP	Public