Strategic Priorities for Energy Market Development

2011

AEMC

Contents

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ABOUT THE AEMC
The Council of Australian Governments, through its Ministerial Council on Energy (MCE), established the Australian Energy Market Commission (AEMC) in July 2005. The AEMC has two principal functions. We make and amend the national electricity and gas rules, and we conduct independent reviews of the energy markets.

I am pleased to present the AEMC's Strategic Priorities for Energy Market Development. This paper considers the major challenges and areas of strategic focus for Australia's stationary energy sector and it includes the views and concerns of a broad group of community, industry and government policy representatives.

John Pierce CHAIRMAN

The Australian stationary energy sector is currently going through a period where significant challenges must be addressed. To date, the energy market frameworks have delivered a safe, secure and reliable supply of energy to consumers. To ensure that the frameworks continue to deliver these outcomes, it is necessary to assess the challenges they face, and to develop new priorities and strategies to address these challenges.

To deliver this assessment, the Australian Energy Market Commission (AEMC) developed the Strategic Priorities Discussion Paper, which we published in April 2011. The intention of publishing the discussion paper was to promote discussion and help build consensus around the key priorities of a market framework design which will continue to deliver reliable and secure energy services. We received a large number of submissions from a range of stakeholders including consumer and environmental advocacy groups, generators, energy consultants, academics, network service providers, retailers, large energy users and governments.

Your comments have informed the commission's considerations and the development of this final priorities paper. We value your ideas and submissions. Thankyou. Now we will act on what you have told us.

These priorities will form the basis of our market advisory role in the year ahead and will be reviewed on a periodic basis. This will enable us to regularly update COAG's Standing Council on Energy and Resources on your views of the opportunities, risks and challenges facing the energy sector.

John Pierce
CHAIRMAN

Summary

Over the last decade there have been major changes in the Australian energy markets. The reform program that created the National Electricity Market (NEM), and subsequently the emerging national gas market, has delivered substantial benefits to customers. These benefits have included more competition, continued strong investment and reliable supply.

Nevertheless, the stationary energy sector faces major new challenges.[1] The Australian Government has announced the introduction of a carbon emissions price from July 2012. This is intended to provide incentives for greater use and development of lower carbon emitting generation. Consumers have experienced substantial price increases in recent years following significant increases in transmission and distribution network costs and the introduction of subsidy schemes for technologies that provide environmental benefits but which are funded via higher prices.[2] This has raised concerns about whether network businesses are offering value for money and whether the current environmental schemes are delivering benefits efficiently.

Significant levels of new generation investment will be required to maintain reliability of supply and to meet the objectives of climate change policies, including a price on carbon emissions and the expanded Renewable Energy Target. Additionally, forecast increases in peak demand are likely to require new investment in generation capacity, demand side options and associated investments in networks. However, since the global financial crisis (GFC) investors have become more sensitive to country/sector exposure and regulatory risk. The continued reduction of state government financing of additional generation capacity means that the importance of privately financed generation capacity is only likely to grow.

1 The AEMC notes that the term stationary energy can refer to a relatively wide range of industries and activities, some of which are currently beyond the scope of this paper. Accordingly, for the purposes of this paper, the commission has used this term to mean those aspects of the electricity and gas markets where the AEMC has a clear statutory rule making, advice or market development role.

2 Regulated retail prices increased by up to 21.7% in New South Wales in 2009-2010; by 15.5% in Queensland; by 12-19% in Victoria; and by 5.6% in South Australia. AER, State of the Energy Market 2010, pp.101-103.

Given these challenges, it is important that as policy makers, industry and consumers discuss the issues facing the stationary energy sector, there is an attempt to develop consensus around the priorities for market development and the actions necessary to continue to deliver affordable, reliable, and secure energy for the whole community. It is important that issues are addressed in a timely manner, and within an overall set of priorities. The strategic priorities set out in this report are designed to be a structured way of thinking about what are the most important issues for energy consumers and industry stakeholders, and the most important pieces of work for the Australian Energy Market Commission (AEMC).

Developing our strategic priorities

In April, the AEMC released a discussion paper and held a public forum to develop a set of key priorities for the development of the stationary energy sector.

Over 40 submissions were received from generators, network service providers, retailers, large energy users and small consumers, government, energy consultants, service providers and environmental advocacy groups.[3] While a variety of views were expressed, and a number of additional and alternative priorities were suggested by stakeholders, we consider that a broad consensus has been reached on the strategic priorities we have identified. The final priorities are:

Productivity improvements would be expected to be a feature of industries characterised by sound regulatory arrangements and a competitive market structure.

Strategic Priority One – A predictable regulatory and market environment for rewarding economically efficient investment: This priority recognises that delivering the expected large amount of investment in generation capacity in the future requires a policy and market environment that provides sufficient certainty to *underpin investment in long term assets* and a competitive market structure.

Strategic Priority Two – Building the capability and capturing the value of flexible demand: This priority recognises that one of the potential responses to forecast increases in peak demand and effects of increased intermittent generation is facilitating the expansion of *customer choices* so that consumers can use energy when its value to them is greater than the efficient cost of supply.

Strategic Priority Three – Ensuring the regulation of *transmission and distribution networks* promotes timely investment and efficient outcomes: This priority complements the focus on generation and the competitive sectors of the industry. The arrangements for investment decisions as well as funding and pricing for the use of networks contributes to the objective of minimising overall system costs to consumers. This can only be achieved if the relationship between regulated and competitive sectors are understood and taken into account.

The strategic priorities are focused on the economic efficiency of energy markets. Productivity improvements would be expected to be a feature of industries characterised by sound regulatory arrangements and a competitive market structure. This is critical to achieving value for money for consumers over the long term, and on-going reliable supply contributing to, and in some cases underpinning, future economic prosperity.

While there was broad consensus supporting these strategic priorities, some additional issues were raised in response to the consultation. In particular, a significant proportion of respondents considered that more emphasis was required on the emerging challenges in the east coast

3 A list of stakeholders who made a submission to the discussion paper is included in appendix 1. Submissions can be viewed at: http://www.aemc.gov.au/Market-Reviews/Open/AEMC-Strategic-Priorities-Discussion-Paper.html

The development and updating of the AEMC's strategic priorities will be an on-going exercise, with periodic updating based on consultation with stakeholders.

gas market. Stakeholders believed that the implications of the likely linkage between east coast gas prices and international gas prices for the Australian electricity market was not well understood by policy makers. There was also a concern that arrangements to address security of supply and emergencies in the gas and electricity markets were not well co-ordinated. Over the coming months the AEMC will be engaging further with stakeholders and undertaking research and analysis to consider the scope for more detailed work on these issues. However, we are keen to avoid duplication with existing planned work, including AEMO's reviews of the Short Term Trading Market (STTM).

It was also clear from responses to our discussion paper that some consumer representatives believed that the challenges and strategic priorities did not address some of the key issues for consumers. This included whether all consumers were benefiting from retail competition and whether retail price caps should remain in place.

The AEMC is progressing a number of work programs which will involve consideration of these issues. In 2012, the AEMC will recommence its reviews of retail price regulation in New South Wales, which involves consideration of the effectiveness of retail competition. The National Energy Consumer Framework (NECF) will also commence in July 2012, and the AEMC will be tasked with administering the National Electricity and Gas Retail Rules. We consider that both of these work programs will directly address some of the issues raised by small consumer representatives.

However, in the lead up to the implementation of the NECF, it will be particularly important for the AEMC to engage regularly with consumer representatives. We are also working with consumer representatives to develop a longer term approach to regular engagement.

Delivering our strategic priorities

Several submissions wanted a better understanding of the time period that the AEMC is considering for the strategic priorities and the delivery of the projects to address the priorities.[4] We consider that robust frameworks are required in the short term to address each of the priorities, so that medium to long term decision making is well informed. The projects delivering the strategic priorities will be completed within the next 18 months to two years. It will take longer for the impacts of changes to market and regulatory arrangements to address the priorities to be fully effective.

The strategic priorities focus on the projects being undertaken by the AEMC, but they extend to the entire domestic stationary energy sector. In particular, the first strategic priority recognises that the delivery of effective market outcomes for energy customers depends on a range of other policy settings and market developments for which the AEMC is not directly responsible.

It is our intention that the development and updating of strategic priorities should be an on-going exercise, with periodic updating as required, through a consultative process with stakeholders. This will also allow us to regularly update COAG's Standing Council on Energy and Resources on our view of the strategic priorities for the stationary energy sector and our work.

The table below shows the links between the AEMC work program and the strategic priorities.

4 TRUenergy, p2.

AEMC Work Program 2011-2012

Consultation period | Indicative timeframes for new reviews

	JUL 11	AUG 11	SEPT 11	OCT 11	NOV 11	DEC 11	JAN 12	FEB 12	MAR 12	APR 12	MAY 12	JUN 12	JUL 12	AUG 12	SEPT 12	OCT 12	NOV 12	DEC 12
Strategic priority 1: Environment for efficient investment																		
Market Reviews									NSW Review of Competition									
	Retail Electricity Price Movements 2011																	
	Review of arrangements for Compensation Following an Administered Price Cap or Market Floor Price																	
Rule changes	Application and Operation of Administered Price Periods																	
	Potential Generator Market Power in the NEM																	
	STTM Brisbane Hub																	
Strategic priority 2: Capturing the potential for demand side response																		
Market Reviews	Stage 3 Demand Side Participation Review – Power of Choice																	
Rule changes	Efficiency Benefit Sharing Scheme & Demand Management																	
	Inclusion of Embedded Generation Research into Demand Management																	
	Network Support Payments & Avoided TUoS for Embedded Generators																	
Strategic priority 3: Networks																		
Market Reviews	Transmission Frameworks Review																	
		Review of National and NSW Distribution Reliability Standards																
Rule changes	Inter-regional Transmission Charging																	
	Definition of Temporary Over-Voltage																	
	Total Factor Productivity for Distribution Network Regulation																	
		Chapter 6 and 6A Rule changes on Economic Regulation of Networks																

1. Introduction

The AEMC launched its first Strategic Priorities Discussion Paper on 1 April 2011. We received over 40 responses to our consultation and over 100 stakeholders attended the public forum to discuss the paper. Stakeholders broadly welcomed the discussion paper and the opportunity to debate and consider the strategic priorities for the AEMC's work and the Australian energy sector more generally.

This paper builds on the discussion paper, and in particular, focuses on the comments received from stakeholders in response to the discussion paper. *We do not repeat the analysis and discussion set out in the discussion paper, so this document should be read in conjunction with the discussion paper, modified in response to the many thoughtful submissions received.* This paper confirms our strategic priorities and the work program to help address those priorities. The commission will be discussing the strategic priorities and work program with the Standing Council on Energy and Resources.

The commission views the development of strategic priorities as an on-going exercise. We intend to review the priorities on a periodic basis and provide stakeholders with an opportunity to contribute to the review process. Our expectation is that the priorities will evolve gradually over time.

The development of these strategic priorities is intended to provide a forum where current issues can be discussed and developed by the AEMC and a wide range of stakeholders. However, the development of the stationary energy sector will primarily be directed by government energy policy. Accordingly, the commission hopes that the strategic priorities will act as a forum for the discussion and development of ideas, and that they will also be of some use to government in informing the development of effective energy policy.

A lot of the comments from stakeholders in response to our strategic priorities discussion paper can provide useful input to a number of other reviews and rule changes that the AEMC is considering. We will ensure that such material is considered within the relevant review or rule change.

The remainder of this document is set out in the following sections:

- Section 2 briefly outlines the four key challenges identified for the Australian stationary energy sector and discusses the comments of stakeholders on these challenges.
- Sections 3 to 5 discuss each of the strategic priorities in turn, including discussion of the main comments from respondents.
- Section 6 discusses some of the issues raised by respondents that did not directly fall within one of the strategic priorities.

Appendix 1 includes a detailed response to many of the issues raised by stakeholders in response to the discussion paper.

This report includes extracts from and/or summaries of material contained in stakeholder submissions. This material is included for the purposes of informing discussion among stakeholders on the matters discussed in this report and does not represent the views of the AEMC or any individual commissioner of the AEMC. Unless expressly stated, the AEMC has not verified the accuracy or completeness of information contained in stakeholder submissions, including any such information referenced in this paper.

2. The challenges

The strategic priorities have been designed to respond to the key challenges currently facing the Australian stationary energy sector:

- **rising peak demand;**
- **the investment challenge;**
- **rising prices; and**
- **market resilience.**

We did not receive many comments on the challenges that were set out in the discussion paper and those stakeholders who commented broadly agreed with the AEMC's assessment of these key challenges.

Rising peak demand

Since 2005-2006, peak demand in the NEM has grown, on average, by 1.8% a year and is forecast to grow by a further 2.6% a year through to 2021.[5] This compares to growth of 0.5% a year in energy demand since 2005-2006, and forecast energy demand growth of 2.3% a year to 2020.[6] The growth in peak demand will feed through into the need for more investment in generation, demand side options and expanded network capacity.[7]

Since these key challenges were identified, forecasts of peak demand growth in some regions of the NEM have been revised. For example, TransGrid has advised that its 2011 10% Probability of Exceedence (POE)

5 There are several measures of peak demand currently used by AEMO. Summer and winter peak demand levels are calculated separately, to reflect different patterns of energy consumption between the seasons. Included for each season are sensitivities that reflect the different probabilities that various levels of peak demand will be met or exceeded: these are referred to as 10%, 50% and 90% probability of exceedence (POE), meaning that a given level of demand (in MW) is likely to be met or exceeded 1, 5, or 9 times out of ten. Finally, AEMO models peak demand in accordance with various scenarios reflecting low, medium and high levels of economic growth. For the purposes of this report, "peak demand" generally refers to summer peak demand with a 10% POE, occurring under a medium economic growth scenario.

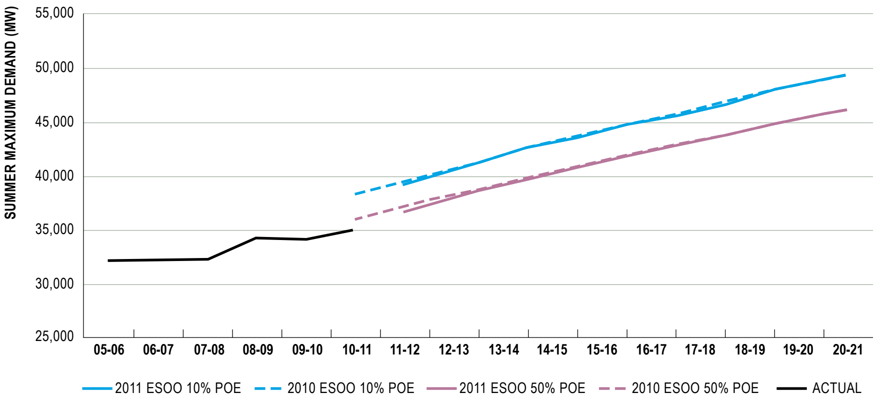
6 These figures are sourced from AEMO's 2011 Electricity Statement of Opportunities. http://www.aemo.com.au/planning/0410-0070.pdf

7 Some submissions questioned AEMO's peak demand forecasts. Delta submitted that peak demand forecasts have historically been too conservative, in part due to incentives in the network regulatory frameworks to overstate peak demand. Macquarie Generation noted that energy efficiency and the high take up of solar PV has reduced growth in peak demand, and noted that overall growth in NSW has been negative. Delta pp 3-4; Macquarie Generation pp 3-4. These figures used in this report were taken from AEMO's ESOO for 2011 and relate to the medium economic growth scenario used by AEMO.

peak demand forecast for NSW summer 2011-2012 is 2.1% lower than its 2010 forecast, while the 2011 summer 2019-2020 peak demand forecast is 3.5% lower than the 2010 forecast for the same time period.[8]

However, NEM-wide, the difference between the 2010 and 2011 peak demand forecasts are relatively small. This is shown in Figure 1 below.

Figure 1 – Comparison of NEM-wide medium growth summer maximum demand projections between the 2010 and 2011 Electricity Statement of Opportunities



Source: AEMO, 2011 Electricity Statement of Opportunities p 3-12.

In addition to meeting demand growth, substantial investment will be required to replace ageing network assets, for replacing the existing generation stock with lower emissions generation, and to deliver technologies that facilitate efficient demand side response.

AEMO has advised that across the NEM, the change in average annual peak demand growth out to 2019-2020 between the 2010 and 2011 ESOO is only -0.01%.[9] The forecast NEM-wide average annual peak demand growth rate across the NEM remains 2.6%.

Investment challenge

AEMO submitted that between $4 and $9 billion in investment is required for augmentation of the shared transmission network across the NEM. This transmission is required to support investment of between $35 and $120 billion in development of new generation assets to meet demand over the next 20 years.[10] Investment will also be required to meet the objectives of climate change policies including the RET and carbon pricing schemes. Some submissions considered that this challenge presumes a supply side response to the rising demand issue.[11] Peak demand should of course be addressed by the most cost-effective combination of supply side augmentation and demand side responses. However, it is worth noting that efficient demand side response will also require investment, including on the customer's side of the meter.

In addition to meeting demand growth, substantial investment will also be required to replace ageing network assets, for replacing the existing generation stock with lower emissions generation, and to deliver technologies that facilitate efficient demand side response. In any case, irrespective of the type of investment required, all of these trends support the assertion that the stationary energy sector will need to attract significant funding in coming years, including for refinancing. While the amount of capital available is increasing again since the GFC, debt providers require projects to have greater equity and all investors have become more sensitive to country/sector exposure and regulatory risk. These sensitivities are reflected in risk pricing.

8 TransGrid, 2011 Annual Planning Report, p 39.

9 AEMO, 2011 Electricity Statement of Opportunities, p 3-7.

10 Based on AEMO's scenario modelling. AEMO, p 2.

11 Total Environment Centre, p 5.

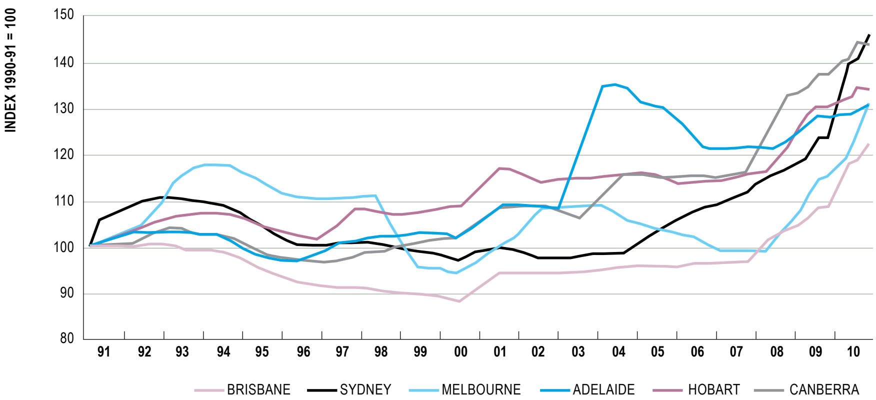
Rising prices

While the magnitude differs between states, retail energy prices have risen by up to 40% in Australia over the last three to four years. Increases in network costs have been the main driver of these increases. More investment has been required to meet peak demand growth, to replace ageing assets and to meet increased state-determined reliability standards against a background of a higher cost of capital since the GFC.[12]

Continued network investments together with a price on carbon emissions and the existing measures to address climate change (such as the expanded Renewable Energy Target (RET) and solar feed-in-tariffs), will put upward pressure on retail prices. There are also risks that wholesale gas prices will rise in the coming years if gas prices on the east coast become linked to export prices following the development of new Liquefied Natural Gas (LNG) terminals. If wholesale gas and black coal are influenced by export prices as existing contracts end, this will affect the relative prices of these two fuels and hence electricity prices. Figure 2 below is sourced from the Australian Energy Regulator's *2010 State of the Energy Market* and shows the extent to which retail prices have increased over the last 20 years. The level of price increase has been particularly significant since 2007, but prior to that price increases had generally been quite limited, and in some capital cities, such as Brisbane, prices had fallen in real terms.

The stationary energy sector is undergoing a fundamental period of change that is likely to test its physical and financial resilience to a greater extent than has been the case historically.

Figure 2 – Retail price index (inflation adjusted) Australian capital cities



Source: AER, 2010 State of the Energy Market, p.104.

Market resilience

While the NEM has proven very resilient since its introduction, the stationary energy sector is undergoing a fundamental period of change that is likely to test its physical and financial resilience to a greater extent than has been the case historically. The expanded Renewable Energy Target (RET), and a carbon emissions price, are expected to drive more wind generation and gas plant. The expected changes in generation mix over the coming years and possible increased spot price volatility[13] may have impacts on the resilience of the market to financial outcomes.

More volatile spot prices will change the financial risk management strategies for generators and retailers. It will be important that there is

12 AEMC 2010 , Future Possible Retail Electricity Price Movements: 1 July 2010 to 30 June 2013, Final Report, 30 November 2010 , Sydney, pp 5-9, http://www.aemc.gov.au/Media/docs/CoAG%20Retail%20Pricing%20Final%20Report%20-%20Publication%20Version%2010%20June%202011-5fa4f4b8-8098-420c-a014-fa70808bb2e4-1.PDF.

13 The high level of wind generation in South Australia (20% of capacity) has led to periods of quite volatile spot prices. For example, there were a significant number of trading intervals with negative prices on 3 and 4 October 2010.

sufficient transparency to understand the financial inter-dependencies of market participants both for exchange trading, and in Over the Counter (OTC) markets, so that business and systemic market risks are well understood by market participants and policy makers.

Several stakeholders considered it is prudent to consider what mechanisms are in place to limit the extent of disruption and systematic risk to markets as a whole if individual market participants become commercially distressed. This includes considerations of potential contagion impacts associated with base-load generators experiencing financial shocks, and processes to co-ordinate the overall transition to a new base load generation profile.[14]

We have set out in Figure 3 a summary of how the challenges we have identified feed through into the strategic priorities set out in the next three sections.

Several stakeholders said it is prudent to consider what mechanisms are in place to limit the extent of disruption and systematic risk to markets as a whole if individual market participants become commercially distressed.

Figure 3 – Relationship between the key challenges and the strategic priorities

<table>
<tr><th>KEY CHALLENGES</th><th colspan="3">STRATEGIC PRIORITIES</th></tr>
<tr><th></th><th>Environment for Investment</th><th>Facilitating Demand Side Participation</th><th>Efficient Use and Investment in Networks</th></tr>
<tr><td>Rising Peak Demand
Peak demand is forecast to grow by 2.6 per year until 2020</td><td>Providing an environment for investment in generation and the demand side in response to demand is necessary for reliability and security of supply.</td><td>Demand reductions can be an alternative option to infrastructure development at various points in the supply chain.</td><td rowspan="2">The network will need to be able to connect significant new generation in an effective way to ensure reliability and security of supply, and to ensure that the most efficient forms of generation can deliver their electricity to the market.</td></tr>
<tr><td>Investment challenge
Up to $130 bn of investment is required for generation and network investment</td><td rowspan="3">A more certain and consistent investment environment can reduce the risk of new investment, broadening the sources of capital and lowering the cost of the investment.

Where there is certainty around carbon pricing and emissions trajectories, investment will favour plant that has the lowest long term costs. This could result in lower and less volatile spot prices in the long term and therefore help keep retail prices lower.

Participants are also more likely to enter into long term contracts as the value of the contracts become more readily agreed as confidence in the market increases. These factors have the potential to lower the barriers to entry for new market participants, helping to reduce price pressures for consumers.</td><td></td></tr>
<tr><td>Rising Prices
Retail energy prices have risen by up to 40% in Australia over the last 3-4 years. Network investment, a price on carbon and other measures to address climate change will further increase prices</td><td rowspan="2">To the extent that customers can reduce their consumption, they can offset higher prices – particularly as a price on carbon is introduced.

The curtailment of peak demand may limit the network augmentations required, therefore lowering networks' investment requirements and limiting retail price increases.

Demand reduction can help lower wholesale prices and mitigate price volatility at peak times as a competitor to high cost peaking generation.</td><td rowspan="2">A robust framework requires that the monopoly networks have the right incentives to interact effectively with the competitive generation and retail market to ensure the minimisation of total system costs.

Network investment accounts for around 50 per cent of the price paid by consumers, and increased network capital expenditure has been the single largest component of price increases in recent years. Ensuring that the economic regulatory framework delivers efficient investment may help to limit retail price increases.</td></tr>
<tr><td>Market Resilience
The RET and a carbon price are expected to drive wind generation and gas plant, increasing spot price volatility and changing financial risk strategies. This may mean that there is greater risk of financial contagion.</td></tr>
</table>

14 Victorian Department Primary Industries (DPI), p 2; Gallaugher & Associates, p 4.

Other issues raised by stakeholders

Some submissions considered that climate change should be included in our key challenges.[15] Our discussion paper stated that responding to climate change was a particularly significant challenge because around 80% of our electricity generation is coal fired. We consider that our key challenges specifically recognise, and to some extent are underpinned by, the impact that climate change will have on the NEM:

- 'Market resilience' specifically recognises the expected changes in generation mix driven by climate change policies over the coming years and the possible consequences on the market.
- 'The investment challenge' recognises that significant levels of new investment will be required to meet the objectives of climate change policies. In particular, 20 per cent of electricity is targeted to be produced from renewable energy sources by 2020.
- 'Rising prices' emphasises that the transition to a low emissions intensity stationary energy sector must occur in an environment where customers are already facing significant expenditure increases. It is important that any potential increase in spot price volatility is well managed by market participants, and that governments ensure that additional measures to address climate change minimise distortions to the achievement of economic efficiency.

Well designed measures to address climate change can use incentives within the competitive wholesale and retail gas and electricity markets to promote investment and operational decisions that help minimise costs for customers.

It is also important to recognise that the AEMC is not directly responsible for addressing climate change or developing climate change policies, but does have a role in advising governments on the impact of such climate change policies on the NEM and gas markets.

Some submissions considered that the transition to a less greenhouse intensive energy sector should be included on the list of priorities.[16] While social and environmental objectives have a direct bearing on Australia's energy market, these issues are in the jurisdiction of policy makers. The scope of the AEMC's work is limited to pursuing economic efficiency in electricity and gas markets for a given policy framework. The first strategic priority emphasises the importance of government defining these policy settings to create a stable investment environment.

Well designed measures to address climate change can use the incentives within the competitive wholesale and retail gas and electricity markets to promote investment and operational decisions by market participants that minimise costs for customers. The AEMC completed a comprehensive review on the impacts of climate change policies on energy markets in 2009. This review identified a number of areas where the current market frameworks could be strengthened. For example, it found climate change policies will fundamentally change the utilisation of transmission networks over time, both between and within regions of the NEM. The AEMC's Transmission Frameworks Review (TFR) is assessing potential changes to current approaches that could improve the efficiency of the transmission system.

Some submissions also called for a review into the ability of customers to absorb price increases and affordability issues.[17] As explained in more detail in each of the chapters, the strategic priorities are designed to promote efficiency in the energy market to ensure that prices are set in a sustainable and efficient manner in the long term. The AEMC is also reporting annually on the trends in electricity price increases so that the key drivers of the price increases are well understood.

15 Origin Energy Limited (Origin), p 2.

16 Vestas, pp 2-4; OPEC, p 4,8; Victorian Department of Primary Industries (DPI), p 1; Total Environment Centre, p 2.

17 Major Energy Users (MEU), p 32; Energy and Water Ombudsman NSW (EWON), p 2.

Strategic priority one

A predictable regulatory and market environment for rewarding economically efficient investment

Why is this important?
We are facing an unprecedented requirement for new generation investment and potential plant retirements. A stable and predictable investment environment will have a large impact on the prices consumers pay.

What are the issues?
Attracting sufficient funding for new investment will continue to be a challenge following the Global Financial Crisis. Uncertainty surrounding the longer term regime for pricing carbon emissions may also deter or delay investment.

How are we addressing this priority?
We are informing governments about the implications of policy settings on the energy sector, and undertaking projects such as retail competition reviews to identify opportunities to reduce regulatory uncertainty.

Introduction
Energy supply is highly capital intensive and involves long-lived assets. This means that investors will be reluctant to invest without reasonable predictability of future revenues. The regulatory and market environments need to be conducive to allowing companies to make the best commercial decisions possible to ensure timely and efficient investment. We note that the transmission framework, which is addressed under the third priority, is also important in delivering efficient investment in the generation sector.

The overwhelming majority of stakeholders supported this strategic priority, particularly given the recent environment of uncertainty with regard to climate change policy. Within this priority, many stakeholders were concerned about issues that they perceived to be barriers to investment, including increasing vertical integration, on-going retail price regulation, and whether there are sufficient market incentives to deliver the investment in the generation and retail sectors.[18]

In this section we discuss why this priority is important, its impact on customers, and then a number of the issues raised by stakeholders responding to our consultation.

Why is this priority important?
Significant investment in low emissions intensity generation capacity will be required to meet the Australian Government's climate change policies within the next 10 years. In particular, 20% of Australia's generation is proposed to be met by renewable energy sources by

18 TRUenergy, p 2; National Generators Forum (NGF), p 3; Energy Supply Association of Australia (esaa), p 3; AGL, pp 2-3; Alinta pp 2-4; DPI, p 4; Ergon Energy, p 3; Energy Networks Association, p 2; SP AusNet, p 2.

2020 to meet the Renewable Energy Target (RET). In addition to this, peak demand is forecast to increase by 2.6% per year until 2021, which is likely to require new investment in generation capacity and associated investments in networks.

Creating an environment for efficient investment is also crucial at this time given the limited number of market participants who are able to access cost effective finance following the GFC. Where there are high levels of commercial and regulatory uncertainty in a market, investors will allocate their capital in lower risk markets. The declining role of state governments in financing additional generation capacity means that the importance of privately financed generation capacity is only likely to grow. The scale of investment means that it is important to ensure that there are no artificial or unnecessary barriers to the availability of funding.

Some submissions considered that this priority demonstrates an inherent preference of the AEMC for a supply side response to increasing demand, rather than implementing measures to manage demand.[19] The AEMC considers that *both* supply side and demand side responses have a role in meeting the peak demand challenge – our second strategic priority focuses on the potential to harness demand side response where it is the most cost effective option. In any case, development of an effective demand side is likely to require capital expenditure by industry and customers. Accordingly, the importance of attracting further funding to the stationary energy sector remains pertinent.

In the face of policy uncertainty, choosing between various options becomes extremely difficult and the rational response of investors is to delay final investment decisions.

Even with a greater demand side response from customers, Australia is likely to require additional investment in generation. It is important to note that almost three-quarters of demand for electricity comes from the business sector. As electricity is an input into many products and services (i.e. electricity is a "derived demand"), as long as the demand for those products and services continues to grow, the demand for electricity from business, industrial and commercial sectors is also likely to grow.[20]

How does this priority benefit customers?

Efficient investment occurs where investors make optimal timing, locational and sizing decisions when developing projects. Efficient investment is likely to result in the development of the lowest possible cost generation necessary to meet demand. Furthermore, such investment is likely to keep retail prices as low as is sustainably possible, while ensuring reliability and security of supply. Policy certainty in general, as well as in regard to climate change, allows investors to acquire the information needed to evaluate the impact of such policies on their investment options. In the face of policy uncertainty, choosing between various options becomes extremely difficult and the rational response of investors is to delay final investment decisions.

A more certain investment environment can reduce the risk of new investment and therefore the return sought by investors. Participants are also more likely to enter into long term contracts as the value of the contracts become more readily agreed when confidence in the market increases. These factors have the potential to lower the barriers to entry for new market participants. Policy certainty facilitates an effectively functioning competitive market, helping to reduce price pressures and increase choices and product variety for customers.

19 Total Environment Centre, p 5.

20 Historically Australia's relatively low energy prices compared to other countries has provided an incentive for energy intensive industries such as aluminium to locate in Australia.

Features of an environment that promotes efficient investment
We need to recognise and build on the features of the current regime that promote economically efficient investment. These include:

- *A predictable regulatory environment.* The processes for regulatory change that might impact on investment returns should be transparent, objective and well understood.
- *Price discovery through spot and contract markets, which signal how resources should be allocated in the short and long term to deliver efficient investment.*
  - Allowing the market price to clear implies very high prices will occur at times of scarcity to signal the value of new capacity.
  - The value of different types of contracts provides additional information on what types of investment are most economic. For example, a "cap" contract is insurance against very high prices and therefore signals the value of "peaking" capacity.
- *An ability to calibrate risks facing the investment and in some cases to hedge those risks.*
  - As with the ability to discover price and contract values, decisions related to the timing and type of investment are informed by the level of risk in that market.
  - Where these risks are clear and discoverable by all parties (and where there are natural counterparties on either side of the relevant risk), participants can seek to enter into contracts or other arrangements to hedge their particular risk exposure.

The Transmission Frameworks Review is considering ways in which the incentives and risks faced by the regulated businesses might be better aligned with those of participants operating in the competitive generation sector.

With regard to the first of these limbs, creating a predictable environment, some submissions questioned the degree of predictability required to encourage investment. Some stakeholders considered that a highly predictable environment in the network sector has inefficiently reduced the level of risk faced by network service providers, resulting in overinvestment and high costs for end users. They stated that incentives should not be so overwhelming that investment occurs where it is not needed, and emphasised the importance of effective risk allocation rather than predictability.[21]

In the competitive sectors of the electricity industry, the potential impact on profits if businesses fail to manage their risks provides the incentive for participants to make efficient investment decisions.

As opposed to the risk constraints faced by participants in the competitive sector, network businesses are subject to the discipline and constraints of the economic regulatory regime administered by the AER. Economic regulation is intended to place similar constraints on regulated businesses as they would face if subject to competition. However, the effectiveness of these constraints is dependent on the design of the current regulatory frameworks, and the ability of the regulator to enforce them. The AER is currently undertaking an internal review of the network economic regulatory regime following the completion of the first full round of network determinations. This will provide the basis for proposing changes to the National Electricity and Gas Rules to the AEMC.

The Transmission Frameworks Review (TFR) is also considering ways in which the incentives and risks faced by the regulated businesses might be better aligned with those of participants operating in the competitive generation sector. The overall intention of such alignment will be to promote efficient operation, use and investment in both the competitive and regulated sectors of the market to minimise total system costs faced by consumers.

21 MEU, p 22; Wesfarmers, p 5.

The Energy Users Association of Australia (EUAA) stated that sound energy policy should allow for some flexibility. The EUAA stated that the rules should be sufficiently flexible that they can be changed as new challenges arise, rather than being fixed in order to maintain a status quo.[22] The AEMC agrees that it may be necessary from time to time to change the rules to ensure that they remain fit for purpose. However, frequent regulatory and policy 'tinkering' in ways that lack transparency and predictability is likely to increase the perceived risk associated with the investment and can deter efficient investment and funding sources. For example, in the renewable energy sector, a history of unpredictable changes to the Renewable Energy Target policy parameters (and related jurisdictional policies) has raised the perception of policy uncertainty and lowered the extent of long term power purchase agreements in the market. There has also been a preference by energy retailers (buyers of Renewable Energy Certificates (RECs)) for spot/short term contracting as a response to perceived policy uncertainty. The AEMC considers that it is important to consider all the impacts of regulatory change on market function, and to seek to minimise the extent of these impacts wherever possible.

Stakeholders agreed that carbon emissions price policy is the most significant area of uncertainty for investors because it has the potential to significantly change the profitability of different generation technologies.

Possible challenges for investors

Barriers to investment can arise through the National Electricity Rules and National Gas Rules, or in wider policy settings, e.g. uncertainty about whether and at what level a carbon emissions price will be set. Our discussion paper raised a number of specific regulatory and market features that are impacting on the delivery of economically efficient investment:

- Uncertainty about Government policy settings;
- The implications for the contract market of changing industry structure; and
- Limitations on the availability of finance since the GFC.[23]

Submissions to the discussion paper also suggested issues that may need to be addressed:

- Ongoing retail price regulation; and
- Incentives for base load generation investment and measures to co-ordinate the transition to a new base load generation profile.

We discuss each of these inter-related concerns in turn.

Uncertainty about government policy settings

Stakeholders agreed that carbon emissions price policy is the most significant area of uncertainty for investors.[24] The pricing of externalities into investment decisions can be an important component of helping to ensure that investments are economically efficient. However, a lack of clarity about the future pricing of externalities can also act as a deterrent to economically efficient investment. This is because it has the potential to significantly change the profitability of different generation technologies.

Changes to policy settings that appear to be quite small, or doubt over limited aspects of policy settings, can manifest themselves in significant uncertainty, particularly if they are perceived as indicating a general inclination on the part of policy makers to tinker with policy settings or delay decisions. TRUenergy submitted that this uncertainty is placing upward pressure on risk premiums for both debt and equity providers.[25]

22 Energy Users Association, p 1.

23 It can be argued that the availability of finance before the GFC may have reflected an under pricing of risk, so it would be expected that better pricing of risk since the GFC would increase the cost and reduce the availability of finance.

24 TRUenergy, p 2; National Generators Forum (NGF), p 3; Energy Supply Association of Australia (esaa), p 3; AGL, pp 2-3; Alinta pp 2-4; DPI, p 4; Ergon Energy, p 3; Energy Networks Association, p 2; SP AusNet, p 2

25 TRUenergy, pp 3-4.

The increasing vertical integration of retail and generation activities – gentailing – is likely to reflect efficient risk management decisions by these businesses, but if its scale is very significant it has the potential to reduce liquidity in the contract market.

The Australian Government has now announced plans for legislation to introduce a carbon emissions price. However, the detailed implementation of the policy and its longer term stability will be important factors for investors to have sufficient confidence to invest.

Earlier this year the AEMC was asked to participate in the Investment Reference Group by the Federal Minister for Resources and Energy, along with investors and operators of electricity generation assets, energy market bodies, project financiers and state government participants. This group reported on the impact of carbon policy uncertainty on energy sector investments, and the potential consequences for energy security, reliability, and electricity prices.

In June we presented our advice to the Ministerial Council on Energy (MCE) on the updated Garnaut Paper.[26] This document was prepared in response to the Garnaut Climate Change Review Update Paper 8, *Transforming the Electricity Sector*, for the COAG Standing Council on Energy and Resources. This advice discussed security and reliability issues and transmission issues raised by the update paper and set out the range of projects already being undertaken by the AEMC and the Australian Energy Regulator that will address many of the issues raised by the update paper.

The Australian Government is proposing the formation of the Energy Security Council (ESC), and has requested that the AEMC participate in this body. The ESC will provide advice to government on possible support measures to address energy security risks.[27]

Changing industry structure

Apart from for some large industrial consumers, retailers generally supply customers at a price agreed in advance (rather than the spot wholesale price), which means that the retailer bears the risk of wholesale market price volatility. Retailers can manage this risk either by owning their own generation (self-supply) or through contracts with generators.

The increasing vertical integration of retail and generation activities (i.e. 'gentailing') is likely to reflect efficient risk management decisions by these businesses, but if its scale is very significant it also has the potential to reduce liquidity in the contract market.[28] The result can be a lack of contracting options for new entrant independent generators and independent retailers, which can manifest in providers of capital being concerned that the risks of investing are too high relative to potential rewards. This will make it more difficult for new entrant independent generators and retailers to enter the market.

We consider it is important to seek to ensure that regulatory and policy settings encourage a broad range of business models and financing options into the energy sector. Such policy settings will help to ensure that capital markets drive the development of an industry structure that represents the most efficient way to serve customers and manage risk.

26 http://www.aemc.gov.au/News/Whats-New/AEMC-consideration-of-the-Garnaut-Update-Paper-of-29-March-2011.html

27 http://www.ret.gov.au/Department/Documents/clean-energy-future/GENERATORS-FACTSHEET.pdf

28 From around the time of the GFC there has been a significant move to trading electricity futures through the Sydney Futures Exchange rather than the OTC market, which appears to be due to increased concerns about counter-party risk. TRUenergy submitted that the recent liquidity issues are being driven by carbon price uncertainty and the inability to value contracts, rather than vertical integration. It also noted that vertical integration is not a perfect hedge due to the different durations and geographies of the generation assets and the retail liabilities. TRUenergy, p 3.

TRUenergy submitted that the barriers to entry arising from reduced liquidity in the contract market may subside as base load prices increase to a level commensurate with the cost of new build as demand increases, and carbon emissions policy becomes more certain.[29] The Business Council of Australia suggested that the AEMC monitor the risk that vertical integration excludes new generators from entering the market and limits the options for independent retailers to manage their risks.[30]

The AEMC is responsible for reviewing the level of competition in the retail market for each NEM jurisdiction. The AEMC will recommence its reviews of retail competition in 2012.

Limitations on the availability of finance since the GFC

Facilitating a broad range of sources of finance may help increase the number of participants able to invest in the market. AEMO submitted that as a result of its recent review of the settlement and prudential arrangements used in the NEM and the administered gas markets, it intends to progress a number of market rule changes to improve the use of capital to support spot market operations.[31]

The AEMC is also processing a rule change on the Various Hedge Instruments in the Declared Wholesale Gas Market. This rule change has the potential to improve the management of financial risks related to the buying and selling of wholesale natural gas.

In 2012 the AEMC will continue its reviews of retail competition. The reviews inform our recommendations on whether retail price regulation should be removed for each jurisdiction. State governments decide whether to accept AEMC recommendations with regard to continued price regulation.

Retail price regulation

Many stakeholders argued that regulated retail prices present a risk to retailers that price caps will be set at a level that undermines the potential of retailers to manage their wholesale market risks and make economic profits in the long term. Some stakeholders considered that there is increased risk that price caps will not accurately reflect retailers' costs due to the number of new developments in the markets, including smart meters, renewables, and carbon pricing. For example, Origin Energy Limited (Origin) submitted that the retail price allowance in Queensland did not account for the costs associated with the first six months of the Small Scale Renewable Energy Scheme (SRES).[32]

A number of stakeholders agreed that removing retail price regulation will help to encourage market entry and promote investment in the retail sector. By removing the risks associated with price caps, retailers should have more confidence to contract on a longer term basis with generators, which should improve liquidity in contract markets.[33]

As noted above, in 2012 the AEMC will recommence its reviews of retail competition. The reviews inform our recommendation on whether retail price regulation should be removed for each jurisdiction. It is for state governments to decide whether to accept AEMC recommendations with regard to continued price regulation.

The AEMC notes that retail price regulation is approached in various ways by different jurisdictions. In particular, there is some variance in the way the wholesale energy cost component (WEC) of regulated prices is calculated. While states such as South Australia and NSW utilise the long run marginal cost (LRMC) of new generation to inform their considerations of the WEC, the ACT utilises market costs only. Queensland is currently reviewing its approach to calculating WEC

29 TRUenergy, p 4.

30 Business Council of Australia, p 5.

31 AEMO, p 2.

32 Origin, p 3.

33 Energy Retailer Association, p 1; AGL, p 1; TRU, p 3-4; Exigency, p 1; NGF, p 4; Origin, p 3; Business Council of Australia, p 6-7.

and has included consideration of moving toward a solely market cost approach. These jurisdictional differences and changes in regulatory approach may create significant uncertainties for participants.

Accordingly, even if retail price regulation is retained by the States, the AEMC considers that it is important that retail price caps are set in a way that promotes the further development of competition as this will promote price, service and investment outcomes that are in the best interests of customers.

Incentives for base load generation investment and measures to co-ordinate the transition to a new base load generation profile

Some stakeholders stated that the NEM lacks appropriate investment incentives to support merchant investment in base load generation. Delta submitted that conservative forecasts have created a situation of oversupply, suppressing spot price outcomes to levels which are too low to encourage new base load investment. However, TRUenergy argued that as demand starts to meet the excess-base load, one would expect spot prices to increase to a level commensurate with the cost of new build.[34]

To date investment has occurred in a timely manner in the National Electricity Market to meet changes in demand. Subject to the impact of future policy uncertainty, we consider the market framework is robust enough to provide future incentives for investment.

Several stakeholders suggested that it is timely to review whether additional incentives, such as capacity payments, may be necessary to encourage some types of generation, for example, new base load or low carbon intensity generation.[35] However, Origin submitted that the energy only market design has facilitated sufficient generation to date. It stated that any contemplation of alternative market structures can only be justified if there is clear evidence that the current market is broken beyond repair and that the benefits of adopting an alternative framework is outweighed by the costs of doing so.[36]

We do not consider that there is currently evidence to suggest that consideration of capacity payments or other substantial changes to the market means of exchange are required to facilitate sufficient investment. To date investment has occurred in a timely manner in the NEM to meet changes in demand, and subject to the impact of future policy uncertainty, we consider the NEM framework is robust to provide future incentives for investment.

The Victorian Department of Primary Industries (DPI) submitted that better information around the timing of the exit of large scale base-load generators would assist investors assess new investment opportunities.[37] Our discussion paper noted that AEMO is responsible for publishing the Electricity and Gas Statements of Opportunities (ESOO and GSOO), which provide information to market participants to inform investment decisions, and policy makers to inform their decisions. These documents consider investment projects at various stages of development alongside forecasts of future demand growth, to indicate whether investment appears likely to be sufficient to meet future demand, and if not, by what date additional investment is required. Nevertheless, the commission notes that investors will utilise their own criteria and sources of information when making investment and operational decisions; these criteria and information are likely to have as significant an influence on decisions as either the ESOO or GSOO.

34 TRUenergy, p 4.

35 Office of Energy Tasmania, p 7; Extingency, p 1; esaa, p 8; Alinta, p 4.

36 Origin, p 2.

37 DPI, p 2.

We will continue to monitor wider market developments, and provide advice as requested by the Standing Council on Energy and Resources to help make sure that the investment environment is as predictable as possible.

What is the AEMC doing in relation to this strategic priority?
We will continue to monitor wider market developments, and provide advice as requested to help ensure that the environment for investment is as predictable as possible. This will help minimise the costs of the new investment in generation capacity, including by attracting as wide a range of sources of capital as possible.

Levels of investment certainty over the coming years will be affected by perceptions of government approach to policy development, such as when, how and at what level to put a price on carbon emissions. It is important to recognise that certainty about policy settings will come not only from the introduction of these policies, but the extent to which the policy settings are expected to endure for a significant period of time. Certainty is also dependent upon confidence that significant changes to the stationary energy sector will be implemented in a way that minimises disturbances and allows for a manageable transition.

Relevant AEMC work program
Market reviews

- **New South Wales Review of Competition (starting in 2012).** The AEMC reviews competition in the state and territory retail energy markets to consider any measures that are needed to further promote the development of retail competition, and whether price caps can be removed.
- **Retail Price Movements.** The MCE has asked the AEMC to report on the trends in residential electricity prices over coming years so that the key drivers of the price increases are well understood.
- **Review of Arrangements for Compensation Following an Administered Market Price Cap or Market Floor Price.** This review will ensure that specific aspects of the market frameworks which provide investment signals and manage the risks to market participants caused by periods of high wholesale market prices are robust and effective in delivering efficient market outcomes.

Relevant rule changes

- **Potential Generator Market Power in the NEM.** The rule change request seeks to constrain the perceived exercise of market power by generators in the National Electricity Market (NEM). The proponent considers that during periods of high demand when the system is operating normally, some large generators do not face effective competition and have the ability and incentive to use market power to increase the wholesale electricity spot price.
- **Application and Operation of Administered Price Periods.** This rule change request is intended to address a perceived ambiguity in the application and operation of Administered Price Periods (APPs) triggered by high ancillary service prices, and thereby improve clarity and certainty in terms of how the APP provisions operate.
- **Various Hedge Instruments in the Declared Wholesale Gas Market.** This rule change is intended to improve the management of financial risks related to the buying and selling of wholesale natural gas.
- **STTM Brisbane Hub.** The objective of this rule change is to reduce implementation and operational costs for the Brisbane Short Term Trading Market in natural gas.

4 Strategic priority two

Building the capability and capturing the value of flexible demand

Why is this important?

Cost effective demand side participation in the electricity market can help reduce the need for more generation and network investment. This can help reduce the price that consumers pay for energy.

What are the issues?

For demand side participation to be effectively utilised, customers need to have sufficient information about possible opportunities to offer demand side participation, and confidence that the regulatory and commercial frameworks are robust.

How are we addressing this priority?

The AEMC's Power of Choice review will examine what system wide changes may be required to take advantage of cost effective demand side participation. A number of rule changes are also being progressed which relate to effective demand side participation.

Introduction

The second priority relates to how consumers participate in the markets, including through energy conservation, the take up of energy efficiency technologies, and offering demand reduction into the market as an alternative to hedge cover provided by peaking generation.

For these opportunities to be realised there needs to be a clear commercial and regulatory framework that is consistent across a number of policy objectives, and levers through which interested parties can contract. This is because the disaggregated nature of the NEM means the incentives for peak demand management are split between different parts of the supply chain. For example, it will be important for retailers, Network Service Providers (NSPs) and AEMO to work together and discuss commercial opportunities to take advantage of the functionality of smart meters. In addition, market participants will have a significant role in identifying and explaining the available opportunities to their customers.[38]

Most stakeholders agreed that there is potential for greater use of demand side measures in the NEM. Pricing issues, and incentives and impediments to greater uptake of these measures were key areas of discussion at our stakeholder forum. While some stakeholders considered that the current NEM frameworks are sufficient to support demand side participation, they agreed that a better understanding of the needs of end-users with regard to demand side management could enhance the capability of capturing flexible demand.[39]

38 Jemena, p 3.

39 Alinta, p 5; Jemena, p 3.

Significant and active demand side participation in the NEM appears to be a relatively recent phenomenon. There is limited experience in the NEM to draw on when trying to understand the market implications of an increasingly active demand side. For example, some stakeholders have advised that it is not yet clear how incentives on different parts of the supply chain will align if significant levels of demand side participation were to occur.[40] Similarly, the value, extent and location of benefits that may emerge through active demand side are also not yet fully understood.[41]

Given the emerging nature of this strategic priority, it is important to avoid simplifying assumptions when considering its likely market impact. While there are likely to be benefits, these must be considered carefully in the context of overall system costs and efficiencies.

In this section we discuss why this priority is important, its impact on customers, and then a number of the issues raised by stakeholders responding to our consultation.

It is difficult to store electricity and energy supply infrastructure is built to meet the level of demand at peak times. Demand reductions can, in some cases, be an alternative to infrastructure development. Consideration of how best to facilitate further development of cost effective demand side participation.

Why is this important

As it is difficult to store significant quantities of electricity, energy supply infrastructure is designed to meet the level of demand at peak times.[42] As set out in our key challenges, peak demand is forecast to grow faster than energy demand over coming years (2.6% compared to 2.3%). Demand reductions can, in some cases, be an alternative option to infrastructure development at various points in the supply chain. It can also mitigate price volatility at peak times as a competitor to peaking generation.

The benefits from more flexible demand may be higher when there is a greater level of intermittency in supply because it can mitigate price volatility and the need for conventional generation to operate when intermittent generation does not operate.[43] Consideration of how best to facilitate further development of cost effective approaches now is therefore timely.

There is limited quantitative evidence about the extent to which there is a strong capability within our gas or electricity markets for capturing the value of flexible demand, particularly for residential and small business customers, but there is some evidence that the capability is limited.[44] However the roll-out of technology which remotely monitors and facilitates the control of consumption across a much wider range of customers – potentially all customers – changes the landscape for demand response. The potential value from being able to monitor and control individual loads in real time runs right through the supply chain with:

- Customers (or agents acting on their behalf) able to manage their consumption more actively – including by being able to trade off lower energy costs against the potential impacts of accepting limitations on consumption at particular times;

40 Energy Response have highlighted that the extent to which retailers have incentives to promote demand management may be related to any vertically integration with a generation business that profits from high demand/high cost periods. Energy Response, p 5.

41 For example, IPART has recently advised that the value of distribution embedded PV installations may vary depending on their location: IPART, Solar Feed in Tariffs – Setting a fair and reasonable value for electricity generated by small scale solar PV units in NSW, p 39.

42 Gas can be stored economically, in pipelines ('linepack') and in purpose-built storage facilities. This changes the nature and potential value of flexible demand – but does not detract from the main point that cost effective flexible demand, if harnessed, can have a significant positive impact on the reliability and efficiency of market outcomes.

43 Augrid, p 22.

44 Estimates of demand curtailment in the NEM range from 0.5% to 3.5% of total demand. This compares to around 12% of demand management in the Western Australian Wholesale Market (WEM). Global-Roam Pty Ltd, p 7; Ausgrid, p 11; Energy Response, p 6.

- Retailers able to offer more sophisticated energy services and to more accurately differentiate between customer groups with different cost and value profiles;
- Retailers or aggregating agents able to sell demand response in the wholesale market as an alternative to hedge cover provided by peaking generation – hence providing a potentially highly significant new tool for managing price volatility if the demand response is verifiable and available when required;
- Network businesses able to use load monitoring and control as an alternative to network investment, and as a means of increasing the efficiency with which they operate their networks more generally; and
- The system operator able to use demand response as a means of maintaining system balance in addition to fast response generation.

How does this priority benefit consumers?
This strategic priority has the potential to mitigate the impact of rising prices for consumers. It will allow consumers to manage their consumption more actively by being able to trade off lower costs against the potential impacts of accepting limitations on consumption at particular times. To the extent that consumers can reduce their consumption, they can offset higher prices, particularly as a price on carbon emissions is introduced.

Consumers can manage their consumption more actively if they are able to trade off lower costs against the potential impacts of accepting limits on consumption at particular times.

Demand side options have the potential to curtail the growth in peak demand, and therefore limit the network augmentations required and improve the load factor of the networks. Reducing the amount of network investment required to meet peak demand can lower the networks' revenue requirements and therefore limit retail price increases.

Limiting peak demand can also help lower wholesale prices, as the generation required to meet peak demand generally sets higher wholesale prices in order to provide a return to the owners of such generation. For example, AGL submitted that charging customers more cost reflective pricing for peak pricing events ("dynamic pricing") could achieve an 8.2 percentage point flattening of the residential load, equating to a reduction in unit costs of $32/MWh or $1.6 bn per annum across the NEM.[45]

Features of an environment capable of capturing the value of cost effective flexible demand
An environment capable of capturing the value of cost effective flexible demand needs to be:

- **Technically feasible** – enabling consumption adjustments to be measured, and potentially controlled remotely in real time.[46]
- **Contractually feasible** – enabling transactions to occur around the value of flexible demand between the 'owners' of the flexibility (generally, but perhaps not exclusively, the consumer) and the parties for whom the flexible demand has commercial value. Aggregators (which may often be retailers) are likely to have an important role in allowing smaller industrial customers to offer demand side flexibility.
- **Competitive (cost effective)** – ensuring that flexible demand is used and rewarded appropriately for the benefits it provides. The variation in spot and contract prices will provide the key signals about the price at which flexible demand would be cost effective.

45 Dynamic pricing is a pricing mechanism used for super peak events. Upon notification customers are charged a peak price that is several times higher than the usual price. AGL, p 3.

46 Business Council of Australia, p 6.

Realising cost effective demand side management will also require an understanding of what customers need to take advantage of the opportunities to provide demand side flexibility.[47]

We discuss in turn a number of the issues raised by stakeholders responding to our consultation. Many of the responses provide useful information that can be an input to our review, Power of Choice – Giving Consumers Options in the Way They Use Electricity.

Smart meters

Smart meters have the potential to significantly help to capture the value of demand side response as they have the technical capability to accurately and verifiably measure consumption for specific periods of time. This can allow:

- Customers to be charged more cost reflective prices according to the time at which they consume electricity; and
- Remote controlling/curtailing of consumption, provided appropriate communications functionality is provided.

Stakeholders want consumers to be able to make informed choices about how much electricity they use at different times. These choices should efficiently reflect the value they obtain from using electricity services. Demand side participation is a broad term used by the market to describe measures like electricity conservation, peak demand shifting, fuel switching, utilisation of distributed generation and energy efficiency.

Given the installation and maintenance costs of rolling out smart meters to all customers, smart meters are currently installed for a relatively small number of customers (although these tend to be the largest energy consumers who may have the most to gain financially from offering flexibility of demand). However, the costs of enabling more active response should become more competitive as the costs of system augmentation and carbon emissions increase.[48] DPI noted that the Victorian Government has commissioned an independent cost-benefit analysis to determine whether, and under what circumstances, the Victorian smart meter program can deliver customers value for money.[49]

It is also important to be cautious about proposals which are intended to favour one particular type of technology. Incentives provided by well functioning competitive markets should allow those technologies that provide the greatest value to emerge and develop. Origin submitted that smart meters and associated infrastructure should be deployed on a contestable basis to lower costs, and to ensure that the selected communication technologies meets market needs and preferences.[50]

Given the potential for a lot of personal information to be generated about customers' use of energy and lifestyle choices, appropriate protections are required to ensure that customers' privacy is respected and data is securely stored. Extingency submitted that the rules relating to customers' rights to real time data are currently dispersed between a range of Commonwealth and jurisdictional instruments.[51]

Pricing

Pricing options have the potential to reduce the growth of peak demand as they provide customers with signals about the cost of consumption at particular times. This means that some customers will face significantly higher bills unless they change their consumption patterns to consume a higher proportion of their usage in shoulder and off-peak periods. Ausgrid submitted that the average reduction of peak demand for customers on time of use tariffs is 4%.

47 Alinta p 5; Jemena, p 3.

48 AEMO, p 3.

49 DPI, p 5.

50 Origin, p 4.

51 Extingency, p 2.

To date, residential customers have responded to overall retail price signals, including through purchasing more energy efficient appliances, rather than perceiving and responding to shorter term spot price signals. This is understandable given historically relatively low electricity prices, with bills generally representing a small proportion of businesses' operating costs or the household budget. Further, most customers remain on two-part (peak and off-peak) tariffs that do not closely reflect the pattern of spot prices or actual very high or very low spot prices. The high fixed component of the bill also means that it can be difficult for customers to perceive and realise savings by reducing their consumption.[52]

To date, residential customers have responded to overall retail price signals, including through purchasing more energy efficient appliances, rather than perceiving and responding to shorter term spot price signals.

Direct load control and selling demand side response into the wholesale market

As mentioned previously, technology may create scope for network businesses or aggregators to control load to curtail demand and therefore reduce or defer the need for network investment. There is also potential to sell load reduction products into the wholesale market as hedge contracts in direct competition with generators. TRUenergy and Alinta submitted that the current wholesale market arrangements are appropriate in taking a competitively neutral approach to load reductions.[53]

However, we consider that the commercial and regulatory framework to enable interested parties to contract around the value of flexible demand is under-developed. For example, issues around the 'property right' to control loads are not yet resolved.[54] Unless there is more clarity around these issues, some submissions queried whether cost effective demand side participation is limited to large customers, because the demand capability of other customers by itself is likely to be too unreliable and too small to be of value to buyers of demand side response.[55]

There are also significant concerns around the contestability of services, and other competition protections. Several stakeholders submitted that in order to avoid monopoly distribution network service providers (DNSPs) from using regulated income to fund business development activities, only contestable businesses should provide demand side services.[56]

Incentives for market participants to offer demand side responses

A number of stakeholders considered that retailers may not have strong interests in promoting flexible demand side contracting because many of them also own peaking generation plants. This means that a fall in demand can undermine the profitability of their generation assets.[57]

Energy Response submitted that the risk of retail churn means that it is not cost effective for retailers to invest in demand side response that is restricted to specific premises.[58] Energy Response submitted that effective demand side participation requires the separation of the retail function and demand response, as this would allow a competitive market to develop for response services independent of the retail market. Furthermore, Energy Response suggested that demand response programmes are unlikely to be attractive to vertically integrated retailers,

52 TasCOSS, p 2.

53 TRUenergy, p 4; Alinta, p 5.

54 UED and Multinet submitted that the distributor should logically be in charge of direct load control to ensure consistency with network safety and stability. UED and Multinet, p 3.

55 DPI, p 4; Energy Response, p 3.

56 SPAusNet, p 3; AGL, p 3.

57 Energy Response, p 5; Australian Paper, p 7; DPI, p 4.

58 Energy Response, p 5.

as significant reductions in demand (particularly peak demand) would reduce the profitability of the generator arm of the business. It was suggested that unless this structural issue was addressed, demand management programs would be difficult to promote.

Stakeholders submitted that networks are also reluctant to invest in demand side participation (DSP). The structure of the distribution regulatory regime and uncertainty about costs allocated to demand side initiatives means that networks tend to favour network augmentation solutions.[59] In particular, DNSPs are able to earn a return on new investment, while the incentives to defer capital through DSP are limited to the short term. Ausgrid noted that DSNPs have a track record of being able to deliver supply side solutions – technology is known and reliable and network augmentation aligns with the technical skills of their staff.[60] They considered that new explicit incentive mechanisms are required for DNSPs.[61]

The AEMC is currently working on a rule change to amend the Efficiency Benefit Sharing Scheme (EBSS) framework, to require the AER to consider the scheme's effect on transmission network service providers (TNSPs) incentives to undertake non-network alternative expenditure. Currently, the EBSS may create a disincentive for transmission network service providers (TNSPs) to consider efficient non-network alternatives, as this may lead to reduced financial rewards or even penalties if the DSP related expenditure results in its outturn operating expenditure being more than the forecast approved by the AER.

Stakeholders submitted that networks are reluctant to invest in demand side participation. The AEMC's demand side participation review, Power of Choice, will identify barriers to effective demand side participation in the market and make recommendations for their removal.

Distributed generation

The increasing focus on climate change policies and various government schemes such as feed-in tariffs and rebates for photovoltaic solar energy are likely to increase the take up of embedded generation as a substitute for electricity sourced from the main network. Several submissions called for a uniform national approach to embedded generation, particularly in relation to the application of technical standards.[62]

Some submissions noted that networks are not generally designed for large export capability, and therefore technical upgrades will be required to maintain the integrity and safety of the grid.[63] SPAusNet submitted that it will have to adapt its operations to manage greater complexity and the impact of greater distributed energy on the network. SPAusNet also submitted that the recovery of those costs is an emerging issue.

The AEMC is currently working on a rule change to expand the Demand Management Incentive Scheme (DMIS) for DNSPs to improve incentives for innovation in connection of embedded generators as a non-network alternative to manage expected demand.

What is the AEMC doing in relation to this strategic priority?

The AEMC's demand side participation review – The Power of Choice – will pro-actively identify and make recommendations for the removal of barriers to effective demand side participation. This includes examining whether market conditions will facilitate the offering of energy services products. Such services may involve moving from supplying energy as

59 Ausgrid, p 13; Energy Response p 4; Wesfarmers, p 5.

60 Ausgrid, p 13.

61 Ausgrid noted that the D factor available to NSW DNSPs as an incentive for demand side solutions is overly complex and fails to promote broad-based longer term demand management. UED submitted that the Demand Management Innovation Scheme Allowance (DMIS) is too low, and that consistent standards should be applied to the assessment of Demand Management projects.

62 Origin, p 4.

63 ENA, p 2; Endeavour Energy, p 1; SPAusNet, p 4.

a commodity to offering a range of energy services tailored to particular customers' preferences. We want to ensure that customers have the information necessary to make informed decisions about whether to offer demand side flexibility. This is an issue for the market rules and the wider supply chain. It will then be for consumers, retailers and other market participants to determine the forms of demand side participation and technologies to introduce based on their cost effectiveness.

Relevant AEMC work program
Market reviews

- **Power of Choice – Giving Consumers Options in the Way They Use Electricity.** This purpose of this review is to identify market and regulatory arrangements that would enable the participation of both supply and demand side options in achieving an economically efficient demand/supply balance in the electricity market.

Relevant rule changes

- **Efficiency Benefit Sharing Scheme (EBSS) and Demand Management.** This rule change seeks to address the potential disincentives for Transmission Network Service Providers to consider demand side participation instead of building network infrastructure.[64]
- **Inclusion of Embedded Generation into Demand Management.** This proposed rule will expand the Demand Management Incentive Scheme for DNSPs to improve incentives for innovation in connection of embedded generators as a non-network alternative to manage expected demand.
- **Network Support Payments and Avoided TUoS for Embedded Generators.** This rule change seeks to clarify the arrangements for avoided TUoS payments for embedded generators to ensure that embedded generators are not over compensated, and therefore consumers overcharged, for the service they provide.

We want to ensure that customers have the information necessary to make informed decisions about whether to offer demand side flexibility. This is an issue for the market rules and the wider supply chain.

64 The EBSS is an incentive mechanism through which businesses can earn additional revenue or be penalised depending on whether the business beats or exceeds targets for its operating expenditure approved by the AER in each year of the regulatory control period. The EBSS can potentially create a disincentive for a TNSP to consider efficient non-network alternatives as it may lead to reduced financial rewards or even penalties if the DSP related expenditure results in its outturn operating expenditure being more than the forecast approved by the AER.

Strategic priority three

Ensuring the regulation of transmission and distribution networks promotes timely investment and delivers efficient outcomes

Why is this important?

Significant levels of new generation and network investment will be required to meet forecast increases in peak demand and respond to climate change policies. Ensuring that networks can continue to deliver energy in the most efficient way possible will minimise cost impacts for consumers.

What are the issues?

It is important to ensure that the framework for planning, operating and connecting to networks remains effective. We also need to ensure that investment in networks continues to deliver the most efficient outcomes possible.

How are we addressing this priority?

We are undertaking a major review of the transmission framework to assess whether current arrangements could be improved to allow more efficient use and development of the network. We are also considering changes to the National Electricity Rules which govern how network businesses are regulated.

Introduction

The third priority is ensuring that the regulatory framework for networks makes the most efficient use of existing networks and delivers timely and efficient investment in new network infrastructure. A robust framework requires that the monopoly network service providers have the right incentives to interact effectively with the competitive generation and retail markets to ensure the minimisation of total system costs.

Since the discussion paper, we have shifted the focus of this priority from transmission network providers, to both transmission and distribution network providers. This is in response to a large number of submissions expressing concern at the significant increases to network providers' regulated revenue allowances since the adoption of the national regulatory framework in 2006.[65] Ensuring efficient investment in monopoly network activities requires a regulatory environment that ensures that customers receive value for money, and that networks are able to finance the required least cost investments.

Most stakeholders considered that the transmission or distribution networks or both should be an immediate priority. In general, submissions from generators strongly supported our work to ensure the efficient operation of the transmission framework, while consumer groups and large customer organisations stressed the importance of reviewing the distribution network regulation frameworks due to the recent contribution of distribution costs to recent retail price increases. On the other hand, DNSPs generally considered that the current regulatory

65 TasCOSS, p 3; NGF, p 3; DPI p 3; Energy Users Association, p 3; MEU, p 3.

frameworks for distribution are effectively delivering the required investment and improved customer reliability in accordance with economic principles, and therefore they do not consider that distribution networks should be considered as a key priority.

In this section we discuss why this priority is important, its impact on customers, and then a number of the issues raised by stakeholders responding to our consultation.

Why is this priority important?
The electricity transmission network provides the infrastructure that links the different regions of the NEM and allows electricity to be taken from all major power stations to very large customers and distribution networks, before being distributed to final consumers. Reliable and cost effective transmission and distribution services are crucial to the efficient operation of the electricity market.

Expectations of future load growth are likely to drive significant investment in large scale power stations that will need to be connected to the network in a timely and cost effective way.

Networks must be capable of delivering a reliable and secure electricity service in the face of all new demands placed upon them. It is timely to focus on the economic regulation of networks before the next regulatory cycle which starts in New South Wales in 2013-2014.

Networks must also be capable of delivering a reliable and secure service in the face of all new demands placed upon them. For example, federal and state government environmental policies are likely to drive investment in renewable generation, potentially in locations remote from the existing network. Increases in such new generation types will present new challenges for network service providers (NSPs) in operating and designing networks, and for AEMO in managing the power system.

It is also timely to focus on the economic regulation of networks before the next regulatory cycle which commences in NSW in 2013-2014 to ensure that it delivers value for money, while continuing to allow networks to finance the required investments.

How will consumers benefit from this priority?
If the frameworks promote over-investment in transmission, consumers face higher costs without receiving a commensurate benefit in return. On the other hand, under-investment in transmission can lead to an unreliable supply and reduce effective competition between generators. This would mean that the most efficient forms of generation could be unable to deliver their electricity to the market, increasing the wholesale cost of electricity.

Customers will also pay too much for network augmentation if the transmission framework does not send efficient signals to connecting generators which minimise total system costs. For example, generators need to be able to make efficient decisions when comparing a less technically efficient wind farm located close to the shared network, and a highly technically efficient farm remote from the shared network which requires a large network extension for connection.[66]

As mentioned previously, ensuring that the economic regulatory framework delivers efficient investment may also help to limit price increases to the community, both as users of electricity and consumers of final products. Network investment accounts for around 50 per cent of the price paid by consumers, and increased capital expenditure related to network asset replacement and expansion has been the single largest component of price increases in recent years.[67]

66 MEU, p 26.

67 Capital expenditure increases the revenue return allowed through depreciation of new capex, as well as by increasing the regulatory asset base on which the return is calculated.

The energy delivered by networks is an essential input into most sectors of the Australian economy. The productivity of these sectors is therefore intrinsically linked to the productivity of the network businesses themselves, including the extent to which the services delivered by the network businesses are those most desired by their customers. Given this link, it is important that network businesses are actively encouraged to develop business models which deliver desired network outcomes, rather than one which simply builds, owns and operates a mandated stock of assets.

Possible challenges for the current transmission framework

Congestion

There are incentives in the current framework on TNSPs to ensure their networks are reliable and available for use by market participants.[68] However, it has been argued that these incentives could be designed to better reflect the market impact (on spot and contract prices) of network outages at particular times or locations. This would help to ensure that the capacity in the existing network is used as efficiently as possible with the costs faced by those parties that value using the network the most.

The energy delivered by networks is an essential input into most sectors of Australia's economy. The productivity of these sectors is therefore intrinsically linked to the productivity of the network businesses themselves.

DPI submitted that there is the potential for transmission congestion to increase in Australia if network augmentations fail to keep up with the increasing demand for network services as generation arises in new locations.[69] Network congestion affects revenues, prices in the market, and the ability to sell forward contracts.[70] It may impede electricity generators from delivering their desired output to the NEM, and may mean that the lowest price generation is not accommodated by the network.

It is important to note that it may be efficient to allow some network congestion to remain over relatively long periods. New investment in the transmission network is only justified if the cost of building out the congestion outweighs reasonable expectations of the on-going costs of congestion. The recently enhanced Regulatory Investment Test for Transmission (RIT-T) is intended to provide a framework to assess whether investments by TNSPs are likely to deliver sufficient consumer benefits that outweigh the costs of developing them. It also provides a framework within which alternatives to network enhancements, such as demand side flexibility, can be considered. As the enhanced RIT-T has only just come into effect it is too early to fully evaluate how effective it will prove to be in practice, but the AEMC will continue to observe how it operates.[71]

68 The Service Target Performance Incentive Scheme is mandated under clause 6A.7.4 of the rules. This scheme is designed to provide incentives for TNSPs to provide greater reliability at times when users place greatest value on the reliability of the transmission system, and to improve and maintain the reliability of those elements of the transmission system that are most important to determining spot prices. Further detail of the scheme can be found on the AER's website: www.aer.gov.au.

69 DPI, p 6.

70 The cost of network congestion as measured by the AER has risen over the last 6 years from $36 million in 2003 to $189 million in 2007-2008 and $83 million in 2008-2009, with approximately 50% of this cost attributable to network outages. This compares with total turnover in the NEM of approximately $9,400 million in 2008-2009.

71 Powerlink submitted that can be a trade off between timely connections and ensuring cost effectiveness. It stated that the RIT-T process imposes an addition 9 to 15 months on the development timeframe before an investment approval can be obtained. This can compromise the timely connection of new load, and also the ability of the TNSP in meeting the forecast future demands to ensure that customers receive reliable electricity supply. Therefore it noted the importance of ensuring that regulatory timeframes are able to deliver the required outcomes. Powerlink p 1-2.

Charging

There is a close link between the nature of the service provided by transmission and the issue of how generators and load customers should be charged for this. The AEMC is currently developing a uniform national inter-regional transmission charging regime and methodology in response to a rule change proposal from the MCE to introduce a new charge to more efficiently allocate the costs of utilisation of transmission assets to consumers. It will seek to recognise the benefits that customers gain from using the transmission network in neighbouring regions to transmit the power from one region of the NEM to another. It is intended that the inter-regional transmission charging mechanism will apply from 1 July 2013.

Connections

Some stakeholders submitted that the network connection framework does not always support efficient and timely connections. In particular, concerns were raised around the negotiation process for generators and load customers securing connections, and variations between jurisdictions with regard to connections.[72] Infigen stated that the framework provides incentives to network operators to connect new generator plants at higher costs than are necessary, because the additional investment is added to the NSPs regulated asset base on which a return is earned.

Energy networks demonstrate features of a natural monopoly, which means that competition is not present to provide an effective discipline on company behaviour. Regulation is intended to remove the risk that networks are under-provided and over-priced.

Several stakeholders called for the publication of planning data which provides an assessment of the ability of the transmission and distribution network to connect generation capacity.[73] Infratil Energy Australia submitted that the assessment of a site's unconstrained electricity transmission capacity at the proposed point of connection is increasingly the single longest lead-time task in determining power site feasibility, as much of the existing spare capacity in the transmission networks has been utilised. It also submitted that this is the most expensive task.

Economic regulation of networks

Energy networks demonstrate features of a 'natural monopoly', which means that competition is not present to provide an effective discipline on company behaviour. Regulation is intended to remove the risk to consumers that networks are under-provided and over-priced.

There is a national framework for the economic regulation of networks, under a common set of rules overseen by an independent rule-maker (the AEMC) and regulator (the AER). These rules are intended to promote alignment between prices charged by network businesses and the efficient level of costs that would be incurred if these businesses were subject to competitive discipline.

However, given significant increases to recent retail prices following the network revenue determinations, many submissions are concerned that the current rules are not effective in constraining excessive costs.[74] Submissions noted the inflexibility of the current rules and the "unusually high burden of proof on the regulator" in assessing the revenue proposals of the NSPs.[75]

Macquarie Generation and the National Generators Forum (NGF) submitted that there is inadequate discipline on the TNSPs to accurately forecast the level of demand required which underpin their investment

72 TRUenergy, p 4; Extingency, p 2; DPI, p 6.

73 Extingency, pp 1-2; Infratil Energy Australia, pp 1-2.

74 DPI, p 1; TasCOSS, p 3; NGF, p 3; MEU, p 19.

75 National Generator's Forum, p 3; Energy Users Association, p 3.

decisions. It stated that the planning process is subject to systematic overstating of peak demand. By subsequently spending less than allowed, the TNSPs are able to retain unspent revenues for the remainder of the 5 year period, and earn a rate of return on the budgeted capital program, even if it is unspent.[76]

The methodology for setting the weighted average cost of capital (WACC) was also criticised by some stakeholders. Many submissions considered that the WACC is too high given the low risk profile of network businesses with a regulated return. More specifically, stakeholders had a number of concerns with the debt risk premium of a BBB+ corporate bond with a 10-year maturity rate, given that the benchmark has to be inferred, and that Australian NSPs raise capital on the international bond markets or through Australian banks.[77]

Higher jurisdictional reliability standards are another reason for rising distribution costs. Some submissions considered that more rigorous economic assessment is required by governments when determining these planning standards.[78]

Higher jurisdictional reliability standards are another reason for rising distribution costs. Some submissions considered that more rigorous economic assessment is required by governments when determining these planning standards.

Stakeholders also expressed concern at the asymmetry and selectivity of the appeals process. That is, the NSPs can contest particular areas for review, without opening the entire determination to a merits review.[79] However, Jemena submitted that a network business faces the real prospect of an adverse outcome from lodging a merits review as interveners can raise additional review matters to the potential disadvantage of the business.[80] Australian Paper called for the formation of an appeal fund whereby consumers with a genuine concern can access funds to mount an appeal.[81] Endeavour Energy noted that appropriate checks and balances on the application of regulatory discretion are important in achieving a best practice regulatory framework.[82]

Given the increasing revenue allowances, some submissions questioned whether the current rules are being used as a vehicle for governments to impose additional indirect taxation on electricity consumers.[83] Wesfarmers submitted that by 2014, government owned distribution businesses will recover twice as much revenue per connection and have a regulatory asset base (RAB) which is three times as large as privately owned distribution businesses. Wesfarmers also submitted that the AER is one of a small number of regulators that are not actively considering the use of advanced benchmarking techniques in analysing the efficiency of NSPs. It considered that this is likely to be a significant factor limiting its ability to constrain inefficient expenditure by distributors.[84]

The AEMC recently assessed the merits of having the option of using productivity benchmarks more systematically as a means of imposing additional discipline on network businesses. We found that before the implementation of Total Factor Productivity (TFP) based network regulation could be considered, more consistent and robust data on network business' inputs and outputs needs to be collected and reported to the regulator. Therefore the AEMC has proposed initial rules

76 Macquarie Generation, pp 3-4.

77 Australian Paper, pp 4-5; MEU, p 18.

78 Wesfarmers, p 6; MEU, p 26; NGF, p 3.

79 Macquarie Generation p 3, 5; Australia Paper, p 9; Wesfarmers, pp 2-4,6; NGF, p 3; Energy Users Association, p 4.

80 Jemena, p 15.

81 Australian Paper, p 9.

82 Endeavour Energy, p 3.

83 MEU, p 29.

84 Wesfarmers, p 3; Energy Users Association, p 3.

which will facilitate data collection and the assessment of whether the necessary conditions for introducing TFP are met.

While many submissions argued for specific rule changes, or a review of the framework, a number of submissions argued that changes to the regulatory framework would detract from regulatory certainty, which would increase the risk to investors and therefore drive up the costs of capital (and therefore retail prices). Some submissions noted the current rules are working effectively in delivering transparency, accountability and economic integrity, as well as improved customer reliability.[85]

The performance of regulated network businesses is also driven by the incentives and oversight provided by their shareholders. While regulation is important in promoting efficient outcomes, shareholders' approach will also have a significant impact on whether the business delivers desired services in the most efficient manner possible.

The AEMC is undertaking its Transmission Frameworks Review, which will consider whether the current services and framework for transmission are sufficiently robust to meet the challenges of the future.

What is the AEMC doing in relation to this strategic priority?
The AEMC is undertaking its Transmission Frameworks Review, which will consider whether the current services and framework for transmission are sufficiently robust to meet the challenges of the future. This includes considering what services transmission provide, the need for additional price signals and the opportunities for more flexible transmission services. This review will consider whether there is evidence that the current approaches have significant shortcomings, and whether potential changes to the current approaches could improve the efficiency of the transmission network.

With regard to economic regulation of networks, the AER is undertaking an internal review of the regime following the completion of the first full round of network determinations. This will provide the basis for proposing rule changes to the AEMC.

The AEMC has also recently commenced a review of distribution reliability standards, which is one of the key determinants of the level of network investment that is required over a regulatory period. We will be reviewing approaches for achieving distribution reliability outcomes with a view to ensuring that there is an effective balance between maintaining reliability of supply and efficient pricing outcomes of customers. If we are of the view that there would be merit in a nationally consistent approach to setting distribution reliability standards and outcomes, we will recommend a best practice approach. We will also provide a framework and information for the New South Wales (NSW) Government to ensure that distribution networks deliver a level of reliability that most effectively balances the costs of incremental investment and ongoing maintenance with the benefits of reliability. This will allow the NSW Government to decide whether the existing distribution license conditions for distribution reliability standards should be amended.

Relevant AEMC work program
Market reviews
- **Transmission Frameworks Review.** The AEMC is undertaking a review of frameworks for electricity transmission to consider whether the current services and framework are sufficiently robust to meet the challenges of the future.
- **Review of distribution reliability outcomes and standards:** This review has two distinct work streams. A national review of distribution reliability frameworks will review the different approaches to

85 Ergon Energy, p 2; Energy Networks Association, p 2; SP AusNET, p 2; Endeavour Energy, pp 2,4; Jemena, p 3; Grid Australia, pp 3-4.

determining distribution reliability outcomes across the NEM and consider whether there is merit in developing a nationally consistent framework for expressing, delivering and reporting on reliability outcomes. A separate work stream will review NSW distribution reliability standards and outcomes to provide a framework and information to allow the NSW Government to decide whether to amend the existing NSW licence conditions relating to distribution reliability to ensure that the costs of achieving reliability reflect the community's willingness to pay.

Relevant rule changes

- **Inter-regional TUoS**. The AEMC is currently developing a uniform national inter-regional transmission charging regime and methodology that is intended to more efficiently allocate the costs of utilisation of transmission assets to consumers.
- **Total Factor Productivity for Distribution Network Regulation.** This proposed rule change seeks to allow the use of total factor productivity (TFP) methodology as an alternative economic regulation methodology to be applied by the Australian Energy Regulator (AER) for determinations for distribution network service providers. The commission will use the conclusions of its wider review of TFP to inform this rule change.
- **Definition of Temporary Over-Voltage.** This rule change request is designed to reduce the incidence of premature binding on transmission lines, and therefore increase the levels of unconstrained electricity supply.

The AEMC has recently commenced a review of distribution reliability standards, which is one of the key determinants of the level of network investment that is required over a regulatory period.

6 Issues for future consideration

The gas market and its interaction with the NEM
There have been a number of important developments in the gas markets in recent years, including the commencement of the STTM hubs in Adelaide and Sydney in September 2009, with the Brisbane hub scheduled to open in 2011. Given this, and the fact that the AEMC has only recently been given responsibilities in relation to the gas market, we stated in our discussion paper that we consider this is primarily a period for monitoring the operation of the STTM, and understanding how the market develops (including after the Brisbane hub opens), rather than undertaking substantial market development work.

Our discussion paper also noted that while the AEMC's three strategic priorities are primarily focused on the electricity market, addressing investment uncertainties under strategic priority one will have benefits for the gas market as well, particularly with regard to investment in gas-fired generation plants. Our work on removing barriers to demand side participation in the National Electricity Market may also have applications in the gas market.

However, several stakeholders considered that substantial further development of the gas market is required as the growth in gas fired generation increases convergence between the gas and electricity markets.[86] As more electricity is generated by gas-fired plants, particularly under a carbon reduction target, the NEM will become more vulnerable in times of gas supply shortages or outages. In particular, Delta noted the lack of independent oversight of gas system security to manage supplies when gas supply issues arise (responsibility remains largely with the pipeline operators). It also submitted that because gas producers are not bound by the STTM, there is no ability for the market operator to direct gas producers at times of supply shortages or system events.[87]

The Energy Supply Association of Australia (esaa) submitted that the options for long term gas supply contracts are currently limited, since major production fields due to come on stream are already fully contracted, or, in the case of LNG proponents, the producers are unlikely to sign major long-term gas contracts while they have significant uncertainty about off-take agreements and the productivity of their fields.

86 Delta, pp 4-5; NGF, p 4; AEMO, p 1; DPI, p 6; TRUenergy, p 4; NGF, p 4; esaa, pp 6-7; Grid Australia, p 2; Energy Response, p 6; Grid Australia, p 2.

87 Delta, p 4.

This may inhibit the development of gas-fired generation plant.[88] DPI considered that it will be important to facilitate the development of liquid and transparent gas markets in the future to enable parties, including electricity generators, to effectively manage their gas contracting and trading risks.[89]

TRUenergy suggested that the AEMC should further consider how the impact of increasing gas demand for electricity generation can be met through investment and operation of the gas transmission framework.[90] Several stakeholders also noted that the increasing demand for gas for electricity generation, in combination with the development of the LNG exports industry in Queensland, has the potential to place considerable pressure on gas prices in the near future. If wholesale gas and black coal are influenced by export prices as existing contracts end, this will also affect the relative prices of these two fuels and hence electricity prices in Australia. Therefore several stakeholders submitted that there may be a case for reviewing whether there are ways to improve the competiveness of gas supply to ease price pressures.[91] DPI suggested that this could include reviewing issues such as congestion and access to transmission capacity and information transparency.[92]

We will be researching and analysing policy issues raised by respondents with regard to the gas sector in the eastern states, including interactions with the electricity market, and co-ordination of emergency and security of supply arrangements.

Delta also expressed some concerns about some of the existing STTM arrangements. The National Gas Rules (NGR) include provisions for AEMO to review a range of aspects of the STTM over the next few years to ensure that lessons from its actual operation are learnt. We understand that AEMO and market participants are considering rule changes intended to address existing concerns with the operation of the STTM. We are also considering a number of other rule change proposals affecting the gas markets.

We will be researching and analysing further the policy issues raised by respondents with regard to the gas sector in the eastern states, including interactions with the electricity market, and co-ordination of emergency and security of supply arrangements. Following this work, we will have a discussion with the Standing Council on Energy and Resources to consider whether it would be helpful to undertake a review to further analyse the issues and develop advice on measures to address any issues that are identified.

Increasing vertical integration of the generation and retail sectors

Chapter 2 noted that competitive businesses are increasingly moving towards a "gentailer" business structure, comprising of both retailing and generation arms. This may reflect efficient wholesale price and volume risk management decisions by these retailers, however it may also limit contracting options for stand-alone businesses. d-cyphaTrade submitted that this can have a multiplier effect as financial intermediaries also reduce their traded volumes because lower financial market liquidity increases their trading risks.

Several submissions are concerned that this is creating a barrier to new entry, and market concentration is increasing as a result.[93] If a sufficiently liquid hedge market does not exist, new entrants faced with the risk of $12,500/MWh pool costs in the absence of a hedge are unlikely to commit to retailing in the region in significant scale. This is particularly the case where gentailers are able to use their generation capacity to set high pool

88 esaa, p 7.

89 DPI, p 6.

90 TRUenergy, p 4.

91 Grid Australia, pp 1-2; Delta, p 4; Australian Paper, p 9.

92 DPI, p 7; Office of Energy Tasmania, p 4.

93 MEU, pp 30-31.

prices. The withdrawal of hedge contract availability also impairs price transparency within regional financial markets, undermining investment signals. This can give incumbent gentailers a significant information advantage.

d-cyphaTrade submitted that in the longer term, vertical integration can increase the risk of financial contagion during extreme price events. Where a gentailer relying on its generation capacity as a hedge experiences a generator outage, it is less capable of attaining a replacement hedge in the contract market at an efficient price to cover its short retailer position due to poor liquidity. Its plant failure may also trigger spot price spikes further reducing its ability to manage its physical market risk.[94]

The AEMC considers it is important that regulatory and policy settings encourage a range of business models to compete in the energy market, and that competition will help determine the most efficient business models. We consider that our first strategic priority will help encourage investment from new participants in the generation and retail sectors, as certainty is increased, regardless of the business models adopted.

The AEMC considers it is important that regulatory and policy settings encourage a range of business models to compete in the energy market.

We will also recommence our role monitoring competition in the retail sector on a jurisdictional basis in 2012.

94 dcyphaTrade, p 2.

Appendix 1: Stakeholders who made submissions and summary of submissions

AEMO	Global Roam
AGL	Grid Australia
Alinta Energy	Hydro Tasmania
APIA	Infigen Energy
Ausgrid	Infratil Energy Australia
Australian Paper	Jemena
Australian Power and Gas	Macquarie Generation
Business Council of Australia	Major Energy Users
Consumer Action Law Centre	National Generators Forum
Copper Development Centre Australia Limited	Office of Energy Tasmania
d-cyphaTrade	Origin Energy
Delta	Powerlink Queensland
Department of Primary Industries	SP AusNet
Endeavour Energy	st.kitts.associates
Energy and Water Ombudsman NSW	TasCOSS
Energy Efficiency Council	Total Environment Centre
Energy Networks Association	TRUenergy
Energy Response	United Energy Distribution and Multinet Gas
Energy Supply Association of Australia	Vestas Australian Wind Technology
Energy Users Association of Australia	Wesfarmers
Exigency Management	Gallaugher and Associates
ERAA	
Ergon Energy	

DESCRIPTION OF ISSUE	AEMC RESPONSE	STAKEHOLDER AND SUBMISSION PAGE NUMBER
Key Challenges		
Peak demand forecasts have historically been too conservative, in part due to incentives in the network regulatory frameworks to overstate peak demand. Energy efficiency and the high take up of solar PV has reduced growth in peak demand, and noted that overall growth in NSW has been negative.	We are considering this issue as part of the Transmission Frameworks Review planning workstream. We recognise that robust forecasts of future peak and energy demand are important inputs to investment decisions.	Delta pp 3-4 Macquarie Generation pp 3-4
Climate change should be included in our list of key challenges.	It is not the AEMC's role directly to address climate change or ensure that policies to address climate change are delivered. Our first strategic priority focuses on ensuring that the policy settings to address climate change do not unnecessarily adversely impact on energy markets.	Origin, pp 2-3 NGF, p 2
Strategic Priority 1		
This priority demonstrates an inherent preference of the AEMC for a supply side response to increasing demand, rather than implementing measures to manage demand.	Peak demand should be addressed by the most cost-effective combination of supply side augmentation and demand side responses. However, even with a greater demand side response from customers, it is likely that peak demand in Australia will continue to grow. Almost three-quarters of demand for electricity comes from the business sector - because electricity is an input into many products and services (i.e. electricity is a "derived demand"), as long as the demand for those products and services continues to grow, the demand for electricity from business, industrial and commercial sectors, is likely to remain high. In addition to the investment required to meet new demand, a significant degree of investment will be required to replace aging network assets, and low emissions intensity generation capacity will be required to meet the government's climate change policies. In particular, the Renewable Energy Target (RET) is for 20% of Australia's generation needs to be met by renewable energy sources by 2020.	Total Environment Centre, p 5
A highly predictable environment in the network sector has resulted in overinvestment and high costs, therefore incentives should not be so overwhelming that investment occurs whether it is needed or not. Effective risk allocation is paramount.	Unlike the regulated sectors of the electricity industry, the potential impact on profits if businesses fail to manage spot price volatility effectively provides a key discipline on market participants. Effective competition at the retail level reinforces this incentive.	MEU, p 22 Wesfarmers, p 5 Energy Users Association, p 1
Sound energy policy should allow for some flexibility.	From time to time it will be necessary to change market rules to ensure that they remain fit for purpose. However, frequent regulatory 'tinkering' in a manner that lacks transparency and predictability is likely to increase the perceived risk associated with the investment and can deter efficient investment.	Energy Users Association, p 1

DESCRIPTION OF ISSUE	AEMC RESPONSE	STAKEHOLDER AND SUBMISSION PAGE NUMBER
Carbon price policy is the most significant area of uncertainty for investors. The uncertainty is resulting in: • upward pressure on risk premiums for both debt and equity providers; • delayed/cancelling of investments; and • diminished ability of Australia in meeting its emissions targets. Market predictability could be enhanced if the following issues are resolved: • The approach to renewable programs. Stakeholders submitted that the wide range of ad hoc and high-cost abatement initiatives require rationalisation and the adoption of a national approach to avoid the boom-bust cycles that have characterised such schemes. • The treatment of a carbon price should be treated in the regulatory frameworks for electricity and gas (pass-through).[95] • Commitment to structural adjustment assistance to privately owned coal generators.	The Australian Government has set out its carbon emissions price proposals. The AEMC contributed to the Investment Reference Group report that identified a range of factors that needed to be in place to provide sufficient policy certainty within the carbon price package to facilitate efficient future investment.	TRUenergy, p 3 NGF pp 2-3 AGL, pp 2-3 Alinta pp 2-4 DPI, p 4 Ergon Energy, p 3 Energy Networks Association, p 2 SP AusNet, p 2 AEMO, p 2 esaa, p 2 Hydro Tasmania, pp 2-3 APIA, p 3
Vertical integration is excluding new generators from entering the market and limiting the options for independent retailers to manage their risks.	The AEMC recognises that a certain amount of vertical integration is likely to be an efficient response to risk management. However, we are concerned that if the electricity sector is characterised by high amounts of vertical integration it will undermine the financial contract market and act as a barrier to entry by new generators and retailers. The AEMC will recommence monitoring the level of competition in the retail market for each NEM jurisdiction in 2012.	Business Council of Australia, p 5 Delta, p 2 d-cyphaTrade, pp 3-4 Australian Paper, p 5 Infigen, p 1 MEU, p 3, 11, 31 Hydro Tasmania, pp 2-3 Gallauger & Associates, p 3
Changes to the prudential framework could remove competitive advantages for vertically integrated participants, which would allow for more investment by independent participants. For example, credit support offset arrangements should be expanded for independent participants to include futures offset arrangements. The existing arrangements permitting reallocation swaps are not a viable option due to their cost, and the limited number of generators within each region offering reallocation swaps (due to many of them being vertically integrated).	We have recently received a rule change proposal from AEMO to set a new prudential standard for the NEM.	d-cyphaTrade, pp 3-4 Australian Power and Gas, pp 2-3
Regulated retail prices present a risk to retailers that price caps will be set at a level that undermine the potential of retailers to make economic profits in the long term. Removing retail price regulation will help to encourage market entry and promote investment in the retail sector.	The AEMC will recommence its reviews of retail competition in 2012 which will inform our recommendations on whether retail price regulation should be removed for each jurisdiction.	Energy Retailer Association, p 1 AGL, p 1 TRUenergy, p 3 Exigency, p 1 NGF, p 4 Business Council of Australia, p 7 Origin, p 3
Competition, with the removal of price regulation as the ultimate goal, is not necessarily the most efficient approach in Tasmania, given the small size of its market.	There is an ongoing review of the way forward for the Tasmanian energy sector that will be able to consider these types of issues. The AEMC will recommence monitoring the level of competition in the retail market for each NEM jurisdiction in 2012.	TasCOSS, pp 1-2

95 APIA, p 3

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The NEM lacks appropriate investment incentives to support merchant investment in base load generation. Capacity payments may be effective in encouraging some types of generation, for example, new base load or low carbon intensity generation.	We do not believe that the evidence to date supports a view that the NEM lacks incentives for base-load investment and that capacity payments are required to promote such investment. Investment to date in the NEM has been delivered in sufficient time to meet future demand.	Delta, p 2 Office of Energy Tasmania, p 7 Alinta, p 3 Extingency, p 1 OPEC, p 7
Strategic Priority 2		
Smart meters and associated infrastructure should be deployed on a contestable basis to lower costs, and to ensure that the selected communication technologies meets market needs and preferences.	The AEMC agrees that the competitive market should allow the technologies which provide the greatest value to emerge and develop.	Origin, p 4
A uniform national regime for smart distribution grid development and operation, including controllable demand.	The AEMC will consider these issues in the Power of Choice review that has recently commenced.	AGL, p 3
The high fixed component of the bill means that it can be difficult for customers to perceive and realise savings by reducing their consumption. The high fixed costs charged by network operators can also limit the savings to large users that shed load and commence self generation.	We agree that it is important to be confident that the structure of tariffs, particularly network tariffs given the lack of competitive alternatives, reflect an appropriate allocation of costs. This issue will be considered in the recently commenced Power of Choice review. We also agree that it is important that customers have the information to understand how their consumption decisions affect their final bills, and retailers have an important role to play in this regard.	TasCOSS, p 2 MEU, p 24
Time dependent tariffs should take account of the load profile of the customer - tariffs should reflect the degree to which the load is flat and predictable.	This is primarily an issue for discussion between customers and retailers, but the structure of network tariffs, which may influence such discussions, will be considered as part of the recently commenced Power of Choice review.	MEU, p 25 Australian Paper, p 7
The high costs of operating in the spot market can reduce the potential for smaller electricity users to benefit from managing their electricity purchases.	The Power of Choice review can consider options to reduce the transaction costs of participate in the spot market, but given the nature of the risks inherent in operating in the market it is always likely that smaller electricity customers may not find that the benefits outweigh the risks of operating in the spot market. Retailers and aggregators can play a role in helping smaller electricity customers to manage their demand.	MEU, p 25
Cost effective DSP may be limited to large customers because the demand capability of other customers by itself is likely to be too unreliable and too small to be of value to buyers of demand side response.	Development of the commercial and regulatory framework may enable transactions to occur around the value of flexible demand between the 'owners' of the flexibility (generally, but perhaps not exclusively, the consumer) and the parties for whom the flexible demand has commercial value. Aggregators (which may often be retailers) are likely to have an important role in allowing smaller industrial customers to offer demand side flexibility.	DPI, p 4 Energy Response, p 3
Only contestable business should provide demand side services so that DNSPs are not able to use regulated income to fund business development activities.	It is important that the commercial incentives are in place to encourage network businesses to take advantage of cost effective demand side services. Where they are providing services in a competitive market then they would be expected to compete on an equal basis with other companies.	SPAusNet, p 3 AGL, p 3
Retailers are not likely to promote flexible demand because it is more cost effective to manage demand through operating their peaking generation plants. It is not cost effective for retailers to invest in the demand side response potential of a particular premise due to the risk of customer churn. Depending on the generation capacity and profile of the retailer, the demand response may not offer the same value to all retailers. Effective DSP requires the separation of the retail function and demand response.	Within a competitive retail market we would expect retailers to have incentives to look at the most cost effective options to manage their demand requirements. The Power of Choice review will consider the issues associated with customer churn and the provision of energy services.	Energy Response, p 5 Australian Paper, p 7 DPI, p 4

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The structure of the distribution regulatory regime and uncertainty about costs allocated to demand side initiatives means that networks tend to invest in network augmentation solutions over demand management solutions. In particular: • DNSPs are able to earn a return on new investment, while the incentives to defer capital are limited to the short term. • Network businesses operate under a planning standard that encourages over building of the network. • The network pricing structure means that the revenue requirements relies on forecast demand being met. • DSNPs have a track record of being able to deliver supply side solutions, and the technology is known and reliable. Network augmentation tends to align with the technical skills of the staff. • The D factor available to NSW DNSPs as an incentive for demand side solutions is overly complex and fails to promote broad-based longer term demand management. • The Demand Management Innovation Scheme Allowance (DMIS) is too low.	The AEMC is currently working on a rule change to amend the Efficiency Benefit Sharing Scheme (EBSS)[96] framework to require the AER to consider the scheme's effect on TNSPs' incentive to undertake non-network alternative expenditure component of the rule change request. At the present, the EBSS can potentially create a disincentive for a TNSP to consider efficient non-network alternatives as it may lead to reduced financial rewards or even penalties if the DSP related expenditure results in its outturn operating expenditure being more than the forecast approved by the AER.	Ausgrid, pp 13-14 Energy Response p 4 Wesfarmers, p 5 UED, pp 10-12 Alinta, p 6
There are current procedural impediments to third party service providers of DSP accessing meter data.	This is an issue to be considered in the Power of Choice review.	Energy Response, p 7
Embedded generation requires a uniform national approach, particularly in relation to the application of technical standards. Distributed generators can be subject to significant hidden connection costs which need to be disclosed upfront so that they can account for the full costs of their investment.	This issue will be considered in the Power of Choice review. We understand that the MCE is undertaking work to develop greater standardisation between connection approaches across States.	Origin, p 4
Networks are not generally designed for large export capability, therefore technical upgrades will be required to maintain the integrity and safety of the grid. The recovery of these costs is an emerging issue.	The need for this type of expenditure would be assessed within the economic regulation framework for network businesses.	ENA, p 2. Endeavour Energy, p 1 SPAusNet, p 4
A national approach to energy efficiency will reduce transaction costs incurred by participants.	The relative effectiveness of state based energy efficiency schemes will be assessed within the Power of Choice review.	AGL, p 3

96 The EBSS is an incentive mechanism through which businesses can earn additional revenue or be penalised depending on whether the business meets or exceeds targets for its operating expenditure approved by the AER in each year of the regulatory control period.

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Strategic Priority 3		
There is potential for transmission congestion to increase in Australia if network augmentations fail to keep up with the increasing demand for network as generation arises in new locations. Consideration could be given to exploring an access rights framework that would enable generators to purchase rights to manage congestion risk in the short term, and in the long term, signal their demand for transmission capacity, informing the planning process. The framework could signal the costs of congestion to connecting generators by requiring that they fund all or part of the network upgrades that may be necessary to meet demand.	Congestion is one of the issues being considered as part of our Transmission Frameworks Review.	DPI, p 6 APIA, p 2 MEU, p 26 AGL, p 4
The RIT-T process imposes an additional nine to 15 months on the development timeframe before an investment approval can be obtained. This can compromise the timely connection of new load, and also the ability of the TNSP in meeting the forecast future demands to ensure that customers receive reliable electricity supply.	We acknowledge that there can be a trade off between timely connections and ensuring cost effectiveness. The RIT-T provides a framework to assess whether investments are likely to deliver sufficient benefits to outweigh the costs of developing them. If the frameworks promote over-investment in transmission, consumers face higher costs without receiving a commensurate benefit in return. These issues are being considered within the Transmission Frameworks Review.	Powerlink p 1-2
The transmission framework does not always support efficient and expeditious connections: • The framework provides incentives to network operators to connect new generator plants at higher costs than are necessary, because the additional investment is added to the NSPs regulated asset base on which a return is earned. • Locational signals for new generation connections should be strengthened to allow participants to make more economically efficient decisions. This would drive investment decisions that better accounted for total system costs. • There are variations between jurisdictions with regard to connections.	Connections are one of the issues being considered as part of our Transmission Frameworks Review.	Infigen, p 2 TRUenergy, p 4 Extingency, p 2 Victorian Department of Primary Industries, p 6 MEU, p 26
The transmission planning process should be harmonised across the NEM, and a national approach to planning should be adopted. The assessment of a site's unconstrained electricity transmission capacity at the proposed point of connection is increasingly the single longest lead-time and most expensive task in determining power site feasibility. Therefore a planning tool would substantially contribute to ensuring that the capacity in the existing networks is used as efficiently as possible. This could include real-time network utilisation performance and quality of supply at the distribution transformer and zone substation level so that the sponsors of new generation can proactively pursue market-based solutions.	Planning is one of the issues being considered as part of our Transmission Frameworks Review.	DPI, p 6 Extingency, p 1 Infratil Energy Australia, pp 1-2
MLFs are becoming variable and unpredictable, and may be subject to significant deterioration if new generation plant connects near by. Unstable MLFs over time can have a significant impact on the viability of a number of generation projects and increase risk premiums around generation development. Improvements could be made to methodologies for providing MLF stability.	AEMO is responsible for setting the MLF methodology within the provisions of the rules. It is open to market participants to propose rule changes if they believe an alternative approach would better meet the National Electricity Objective.	Vestas, p 2 TRUenergy, p 4

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The current National Electricity Rules are not effective in constraining excessive costs. Issues include: • inflexibility of rules • the "unusually high burden of proof on the regulator" in assessing the revenue proposals of the NSPs • inadequate discipline on the TNSPs to accurately forecast the level of demand required which underpin their investment decisions - allows the TNSPs to obtain higher revenue requirements. By subsequently spending less than allowed, the TNSPs are able to retain unspent revenues for the remainder of the 5 year period, and earn a rate of return on the budgeted capital program, even if it is unspent.[97] • the WACC is too high given the low risk profile of network businesses with a regulated return. Methodology concerns – debt risk premium of a BBB+ corporate bond with a 10-year maturity rate has to be inferred, and Australian NSPs raise capital on the international bond markets or through Australian Banks. • the network determinations are being used as a vehicle for governments to impose additional indirect taxation on electricity consumers.	The AER is undertaking an internal review of the regime following the completion of the first full round of network determinations. The AEMC will process any rule changes that come out of this process.	DPI, p 1 TasCOSS, p 3 National Generator's Forum, p 3 Energy Users Association, pp 3-4 MEU, pp 18-19 Australian Paper, pp 4-5 MEU, p 18 Wesfarmers, p 6 Macquarie Generation pp 3,5 Wesfarmers, pp 2-4,6
Benchmarking techniques should be applied to test for efficiency of the NSPs proposals.	We recently assessed the merits of having the option of using productivity benchmarks more systematically as a means of imposing additional discipline on network businesses. We found that before the implementation of Total Factor Productivity (TFP) based network regulation could be considered, more consistent and robust data on network business' inputs and outputs needs to be collected and reported to the regulator. Therefore we proposed initial rules which will facilitate data collection and the assessment of whether the necessary conditions for introducing TFP are met. Once sufficient robust data is collected, the AER could then assess if the conditions required for introducing a TFP-based methodology are met. The AER would also need to consider the merits of offering it as an alternative to the building blocks approach at that time.	Wesfarmers, p 3 Energy Users Association, p 3
Asymmetry and selectivity of the appeals process allows NSPs to contest particular areas for review, without opening the entire determination to a merits review. An appeal fund should be created for consumers with a genuine concern.	The AEMC has no jurisdiction over the merits review process as it is prescribed in the National Electricity Law and National Gas Law.	Australian Paper, p 9
More rigorous economic assessment is required for reliability standards.	We have been asked to conduct a review on the framework for setting distribution reliability standards. The AEMC has previously reviewed the approach to setting transmission reliability standards and our recommendations remain with the MCE for consideration.	Wesfarmers, p 6 MEU, p 26 NGF, p 3
Changes to the regulatory framework would detract from regulatory certainty, which would increase the risk to investors and therefore drive up the costs of capital (and therefore retail prices). The current rules are working effectively in delivering transparency, accountability and economic integrity, as well as improved customer reliability.	When we receive rule change proposals from the AER, and any other stakeholders, we will consider whether they better meet the National Electricity Objectives and National Gas Objectives, including considering the impact on investment incentives.	Ergon Energy, p 2 Energy Networks Association, p 2 SP AusNet, p 2 Endeavour Energy, pp 2,4 Jemena, p 3 Grid Australia, pp 3-4

97 Macquarie Generation, pp 3-4.

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Alternative Priorities		
Gas Markets As more electricity is generated by gas-fired plants, particularly under a carbon reduction target, the NEM will become more vulnerable in times of gas supply shortages or outages. In particular, there is no independent oversight of gas system security to manage supplies when gas supply issues arise (responsibility remains largely with the pipeline operators). The development of gas-fired generation plants may be inhibited by a lack of access to long term supply contracts. It will also be important to facilitate the development of liquid and transparent gas markets in the future to enable parties, including electricity generators, to effectively manage their gas contracting and trading risks. There are concerns whether there is sufficient investment in gas transmission to meet increasing gas demand. The competitiveness of gas supply will be important to ease price pressures as increasing gas demand and export prices increase the price of wholesale gas. This includes congestion and access to transmission capacity and information transparency.	The AEMC will start undertaking preliminary work on the gas market to prepare for next year's strategic priorities paper.	DPI, p 6 Delta, pp 4-5 TRUenergy, p 4 NGF, p 4 AEMO, p 1 esaa, pp 6-7 Grid Australia, p 2 Energy Response, p 6 Grid Australia, p 2
Ensuring that the market structure facilitates competition Vertical integration of generators and retailers are creating a barrier to new entry and increasing market concentration.	We do not consider that vertical integration in itself is a barrier to new entry, as some vertical integration is likely to be an efficient risk management response by retailers and generators. However, we would be concerned if the level of vertical integration started to have a significant impact on the level of financial contracting and market liquidity, thereby creating barriers to entry. It is important that regulatory and policy decisions do not undermine incentives for a range of business models to be developed.	Vestas, p 2 Energy Users, p 11-12
The transition to a less greenhouse intensive energy sector	Environmental objectives are in the jurisdiction of policy makers, rather than the AEMC. The scope of the AEMC's work is limited to pursuing economic efficiency in energy markets for a given policy framework. Our first strategic priority emphasises the importance of governments defining these policy settings to create a stable investment environment. The AEMC completed a comprehensive review on the impacts of climate change policies on energy markets in 2009. This review identified a number of areas where the current market framework could be strengthened, and we (are currently processing/have recently competed processing) some of the resulting rule changes. The Australian Government's approach to addressing climate change has remained broadly the same since our review was conducted. Therefore, we do not consider that this issue is an immediate priority for the AEMC. However, as the energy sector adjusts after the introduction of a carbon price, it may again be worthwhile reviewing the impacts on economic efficiency and the ongoing development of competition in generation and retail markets.	Vestas, p 2 OPEC, pp 4,8 DPI, p 1 Total Environment Centre, p 2
The ability of customers to absorb price increases and affordability issues	Each of our strategic priorities promote efficiency in the energy market to ensure that prices are as low as possible over the long term. The AEMC is also reporting on trends in residential electricity prices over coming years so that the key drivers of the price increases are well understood.	

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