AEMC

Strategic Priorities for Energy Market Development

DISCUSSION PAPER

2013

Contents

We are in a period in which the energy sector in Australia is subject to almost unprecedented interest and attention. This is understandable given large rises in electricity prices in recent years and the broader impact of the changing nature of our gas sector. The increased attention reinforces the need to remain focused on the longer-term strategic priorities for the development of energy markets, in the long term interests of consumers.

John Pierce CHAIRMAN

Chairman's Foreword

I am pleased to present the AEMC's Strategic Priorities Discussion Paper for comments from stakeholders with an interest in the Australian energy sector. We are conducting our second Strategic Priorities Review to determine the future priorities given recent developments and longer term issues in the Australian stationary energy sector.

The energy sector has been significantly affected by the global financial crisis and the European sovereign debt crisis, with higher costs of capital and a much stronger Australian dollar. Competitive challenges facing the Australian manufacturing sector have contributed to lower than previously forecast demand and lower energy intensity for the economy as a whole. These factors, together with increased volatility in financial markets and the re-pricing of risk, have put upward pressure on network charges and made it more difficult to finance and re-finance merchant generators.

The response of Australian governments to climate change concerns has seen the implementation of policies that have major implications for the stationary energy sector. The carbon price[1] makes lower-emitting generators relatively more price competitive, while state-based Feed-in Tariffs (FiTs) and the Australian Government's Renewable Energy Target (RET) have seen significant growth of distributed generation, including household solar installation. The RET is placing downward pressure on wholesale electricity prices, while putting upward pressure on retail prices.

After a long period of relatively small increases in retail electricity prices, most Australian states have experienced large increases in recent years. A range of factors have contributed, but the rise in network costs has generally accounted for the largest proportion of increases in most states, followed by costs to deliver a range of environmental policy measures.

1 The Australian Government introduced a 'carbon price' on 1 July 2012 that applies to certain sectors of the economy, including stationary energy and natural gas retail. The carbon price currently requires liable entities to pay a fixed price for their greenhouse gas emissions of $23 per tonne of carbon dioxide equivalent. Further information is available at: www.cleanenergyfuture.gov.au.

The community has questioned whether the increases in network costs have been at the minimum level necessary to provide a level of reliability they seek.[2] Our recently published electricity price trends report shows that residential price increases will moderate nationally.[3] The main driver of upward pressure on retail prices in the short-term continues to be network prices, but the rate of increase of these costs is also expected to moderate.

The role of consumers in the energy sector is changing. Many consumers across Australia have taken advantage of the RET and state FiTs to install solar photovoltaic (PV) technology. The rollout in Victoria and more gradual take-up in other jurisdictions of smart meters is encouraging some electricity consumers to engage more actively in their decisions about how much and when to consume. Switching rates and engagement with retail energy markets in Australia is high in comparison to other countries and other industries, though the rate of doing so varies between jurisdictions.

The Australian Government recently published its Energy White Paper that provides their long-term strategic policy framework.[4] The NSW Government is restructuring its electricity distribution businesses[5] and has begun the process of selling the electricity generation assets it owns. The South Australian Government deregulated retail prices on 1 February 2013. The Tasmanian Government is reforming its electricity sector, which includes the introduction of full retail competition.[6] The Queensland Government has set up an Independent Panel to review the performance of the network businesses it owns[7] and recently issued a Directions Paper to inform the development of a 30-year strategy for its electricity sector.[8]

The rollout in Victoria and more gradual take-up in other jurisdictions of smart meters is encouraging some electricity consumers to engage more actively in their decisions about how much and when to consume

At the November and December 2012 meetings of the Council of Australian Governments (COAG) and the Standing Council on Energy and Resources (SCER), ministers agreed a package of work to further develop the energy sector.[9]

There is uncertainty around what the technology mix for generation will be, the impact of embedded generation on large-scale generation and transmission investment, the levels of future demand, the type of energy services consumers may buy from retailers and other providers and the structure of the industry, including the extent to which there will be further vertical integration of retailers and generators. The uncertainty increases the need for a policy framework that minimises market barriers and distortions, and allows customers and participants in competitive markets to find the most efficient outcomes. The regulated parts of the energy sector must help to enable these outcomes.

We are undertaking our second strategic priorities review in light of developments over the past two years. In our first review in 2011, we identified three strategic priorities for energy market development – a predictable regulatory and market environment for rewarding economically efficient investment; building the capability and capturing the value of flexible demand; and ensuring the regulation of transmission and distribution networks promotes timely investment and delivers efficient outcomes.

2 We discuss in Section 2 that the scale of increases has varied between states.
3 AEMC 2013, Possible future retail electricity price movements: 1 July 2012 to 30 June 2015, Electricity price trends report, 22 March 2013.
4 http://www.ret.gov.au/energy/facts/white_paper/Pages/energy_white_paper.aspx.
5 http://www.trade.nsw.gov.au/__data/assets/pdf_file/0010/428590/Electricity-network-merger-to-provide-benefits-to-nsw-households.pdf.
6 http://www.electricity.tas.gov.au/
7 http://www.dews.qld.gov.au/__data/assets/pdf_file/0019/30628/IRP-interim-report.pdf.
8 http://www.dews.qld.gov.au/__data/assets/pdf_file/0019/31096/30yr-electricity-strategy-directions-paper.pdf.
9 http://www.coag.gov.au/node/475; http://www.scer.gov.au/2012/12/14/scer-communique-3-%e2%80%93-14-december-2012/.

We have made substantial progress with many projects that contribute to these strategic priorities. We have completed a major change to the rules for electricity and gas network and access regulation.[10] We have provided a final report to the SCER for our Power of Choice review[11] and have finalised our Transmission Frameworks Review.[12] In addition, the AEMC continues to undertake a number of other reviews for SCER and to review rule changes proposed by a broad range of stakeholders. This work includes rule changes and requests for advice to support the COAG and SCER energy market reform package announced in December 2012. This package set out a broad range of recommended actions to further develop the stationary energy sector – many of which related to our existing and proposed strategic priorities.

While much has been achieved in developing policy and rule frameworks to address our existing priorities, there remain substantial implementation challenges if consumers are to see the benefits of the work undertaken to date.

When we developed our existing strategic priorities we received feedback from consumer and gas sector representatives who considered that we had not given enough priority to issues they considered most important for the future development of the energy sector. We have considered debate around these issues and heeded their feedback by reflecting their views in our proposed new strategic priorities. During the process of updating these, we considered that many of the components of the existing priorities remain appropriate, though there is scope to better reflect some factors that are likely to become more important in the future.

Our proposed *consumer priority* recognises the important role of consumers and their ability to exercise more choice in how they use energy and the types of energy services they receive

We propose to largely retain two of our existing priorities, though the focus of these priorities has evolved to reflect more recent developments. Our proposed new strategic priorities for energy market development are:

- Strengthening consumer participation while continuing to promote competitive retail markets ("*consumer priority*").
- Promoting the development of efficient gas markets ("*gas priority*").
- Market arrangements that encourage efficient investment and flexibility ("*market priority*").

Our proposed *consumer priority* recognises the important role of consumers and their ability to exercise more choice in how they use energy and the types of energy services they receive. It also recognises the importance of competitive retail markets for delivering outcomes that are in the long-term interests of consumers as we move to an energy sector that delivers services rather than just a commodity to consumers. The AEMC's Power of Choice review includes an implementation plan, which if followed can help to make substantial progress in addressing this priority. The implementation of these recommendations can help to empower consumers so that they can make choices about how to manage their electricity consumption and choose the best energy services to meet their needs.

10 http://www.aemc.gov.au/electricity/rule-changes/completed/economic-regulation-of-network-service-providers-.html.
11 http://www.aemc.gov.au/Market-Reviews/Completed/stage-3-demand-side-participation-review-facilitating-consumer-choices-and-energy-efficiency.html.
12 http://www.aemc.gov.au/market-reviews/open/transmission-frameworks-review.html.

While much consumer engagement can take place directly with retailers and other service providers, an important element of their engagement can also be through representative and advocacy groups, with the regulatory process and, in particular, via the processes that determine the charges levied by monopoly network businesses. Recent changes to the rules under which the AER makes determinations of network businesses' revenue provide a framework for better engagement with consumers.

Our proposed *gas priority* is new as compared to the priorities we identified in 2011. It recognises the growing importance of gas as a fuel source and export commodity, with the very large liquefied natural gas (LNG) developments planned on the east coast of Australia having the potential to link the east coast wholesale gas price to prices in the Asia-Pacific region, including the United States. How the gas sector develops in Australia and interacts with the electricity sector is uncertain. This is likely to depend primarily on wholesale gas and carbon prices. This will also depend on a range of regulatory functions and decisions by the Commonwealth, state and territory governments.

Our proposed *gas priority* recognises that, in the longer term, gas will grow significantly in importance in the Australian energy sector, and is likely to have a role in a transition in response to climate change policies.

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The proposed *market priority* remains largely unchanged since our 2011 review. This recognises that an attractive environment for investment will remain important if Australia's stationary energy sector is to secure the capital necessary to provide efficiently priced, safe, secure and reliable electricity. The nature of that investment is inherently uncertain, so it will be important that market arrangements facilitate investment options that best meet future requirements, without creating barriers or distortions that affect decision-making. The future focus is likely to be less about the quantity of investment, and more about putting in place policy frameworks that provide incentives to find the most efficient investment options. This process may include the mothballing or withdrawal of existing generation plant where it is efficient to do so.

We are keen to generate as much consensus as possible in relation to our strategic priorities. I therefore strongly encourage you to contribute to this consultation by attending one of our workshops and providing a written submission. The validity and influence of our priorities for the market will be greater if they take account of stakeholders' views and, as far as possible, represent a consensus among stakeholders in the energy sector. In particular we welcome comments about whether our new priorities accurately represent the key issues for the Australian stationary energy sector, over the short and longer term.

1. Introduction

In 2011, we undertook a review to develop a set of strategic priorities for energy market development. To this end the review encouraged debate and sought to develop consensus among consumers, industry and governments.

At the completion of the review in October 2011, we confirmed our strategic priorities for energy market development would be:

- A predictable regulatory and market environment which rewards efficient investment and encourages flexibility within the market.
- Building the capability and capturing the value of flexible demand.
- Ensuring the regulation of transmission and distribution networks promotes timely investment and delivers efficient outcomes.

We developed these priorities following consideration of responses to a discussion paper that we issued in April 2011. They are referred to as our 'existing priorities' throughout this paper, and have helped guide the AEMC in the development of our 2012 and 2013 work program.

We are currently conducting a second strategic priorities review to determine whether the existing priorities remain appropriate, given advances in our work program, COAG's priorities for energy market reform,[13] the work of other organisations, and in light of market developments since 2011.

This paper seeks views on how the AEMC should update our strategic priorities for energy market development and proposes three that we consider likely to be appropriate over the long term. We also set out the key projects and broader work program that will promote delivery against these priorities.

The proposed priorities are intended to provide a focus for discussions with the SCER about our future work program. However, given the inevitable uncertainties globally and in the Australian energy sector, we will need to remain flexible and adapt as the issues facing the sector change.

13 http://www.coag.gov.au/node/481.

All of the AEMC's work, including the development of these strategic priorities, is guided by the national electricity objective, the national gas objective and the national energy retail objective. Each objective incorporates the achievement of economic efficiency in the long-term interests of consumers as the basis for the advice we provide to SCER and when we make decisions about rule change requests.

Consultation

We will hold three half-day stakeholder workshops in April and May 2013 to receive feedback on the strategic priorities proposed in this discussion paper, in Brisbane, Melbourne and Sydney. We will invite some stakeholders to make short presentations at the workshops.

We will provide details of how to register for the workshops on our website shortly.

We welcome written comments on this discussion paper, which are due by **Monday 27 May 2013**.

Submissions should quote project number EMO0025 and may be lodged online at www.aemc.gov.au or by mail to:

Australian Energy Market Commission
PO Box A2449
SYDNEY SOUTH NSW 1235

All responses will be placed on the AEMC's website unless the response or a section of the response is clearly marked as confidential.

In providing submissions to the review, stakeholders are encouraged to give evidence, data and any other information (such as case studies) to support issues raised. We recognise that this material might contain information that is confidential in nature. All information will be treated in accordance with the AEMC's submissions guidelines which can be viewed at www.aemc.gov.au.

All of the AEMC's work, including the development of these strategic priorities, is guided by the national electricity objective, the national gas objective and the national energy retail objective

Structure of the discussion paper

The remainder of this discussion paper comprises five sections. Section 2 discusses the key challenges facing the Australian electricity sector. Section 3 summarises the development of the Australian natural gas sector and identifies current challenges facing it. Sections 4 to 6 set out each of the proposed new strategic priorities for energy market development.

Annex 1 summarises the work that the AEMC has undertaken to meet the three priorities we developed in 2011.

In our April 2011 discussion paper we provided an overview of the regulatory framework and institutional structure for the stationary energy sector.[14] This paper does not repeat that information, but focuses on discussing the key changes to the regulatory framework and institutional structure since 2011.

14 This is available on the AEMC's website: www.aemc.gov.au; project code 'EMO0011'.

2. Developments in the Australian electricity sector

Introduction

This section considers the issues and developments facing the electricity sector in Australia, with a focus on the NEM. We review the four challenges we identified for the electricity sector when we developed our current strategic priorities in 2011. These broadly reflect the demand and supply sides of the market, pricing outcomes and an overall consideration of the resilience of the market.

The NEM integrates five previously state-based power systems and electricity markets into a single system and market. The launch of the NEM in 1998 followed a long period of preparation that had gradually increased network interconnections and facilitated more market-based trading of electricity between states. The previous state-based electricity commissions had been relatively successful at achieving a reliable supply, but concerns had arisen about the efficiency of their decisions.

The development of the NEM was part of a broader reform in the electricity sector with Victoria and South Australia privatising many of their previously state-owned generation and network assets. Retail competition was rolled out in many NEM jurisdictions.

These NEM developments resulted from wide recognition of the benefits of competition and market-based approaches. States broadly recognised the potential to deliver reliable supply to consumers more cost effectively than when the assets were state owned and operated.

The development of the NEM and the broader reform agenda in the Australian electricity sector has created a strong foundation from which to deliver reliable supply to consumers at the lowest possible cost. When concerns are raised about current market arrangements it is worth remembering that it was concerns about the performance and cost effectiveness of the state-owned electricity commissions that led to the development of the NEM and the wider reforms. We discuss in this document where some market arrangements could be improved, but it is important when considering possible solutions to bear in mind what has been tried in the past, and why those arrangements were changed.

When the AEMC developed our current strategic priorities for energy market development we identified four challenges faced by the stationary electricity sector, which were:

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

As a way to consider the current issues and developments facing the Australian stationary energy sector we assess each of these issues in turn.

Peak demand – trends in energy consumption

Around 70 per cent of electricity is consumed by commercial and industrial users in Australia. The rest is consumed by residential users.

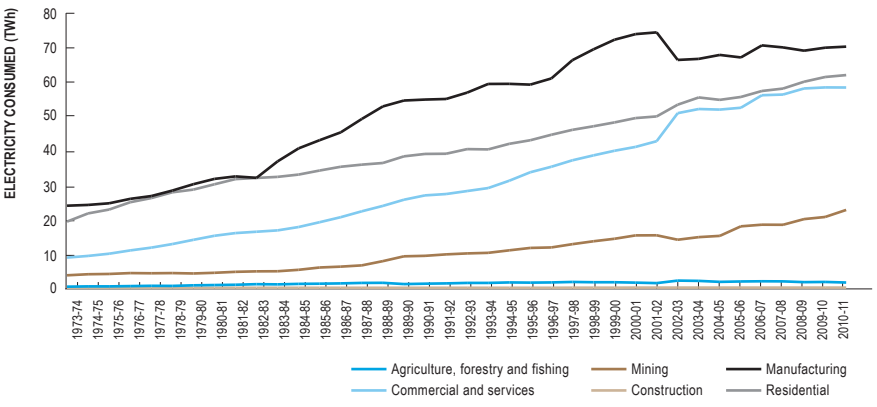
Sectoral shifts in the economy are a major driver of Australian energy consumption patterns. Key shifts include growth in the services sector and, more recently, mining, coupled with a decrease in manufacturing. Each of these sectors uses energy in different ways and, as their relative contributions to the Australian economy have changed, so too has the economy's overall energy intensity.[15]

Sectoral shifts in the economy are a major driver of Australian energy consumption patterns

Over the longer term, services have been the fastest-growing sector. Today they represent around 70 per cent of Australian gross domestic product (GDP).[16] Manufacturing has experienced a relative decline over the longer term and currently contributes around 10 per cent of GDP.[17]

These sectoral trends are reflected in the changing electricity consumption patterns of the Australian economy, which are illustrated in Figures 2.1 and 2.2. The relatively energy-intensive Australian manufacturing sector has increased the total amount of electricity it consumes over the long term. The commercial and public services sectors, while substantially less energy intensive than manufacturing, have also experienced a steady increase in total long-term consumption.

Figure 2.1 – Electricity consumption in Australia



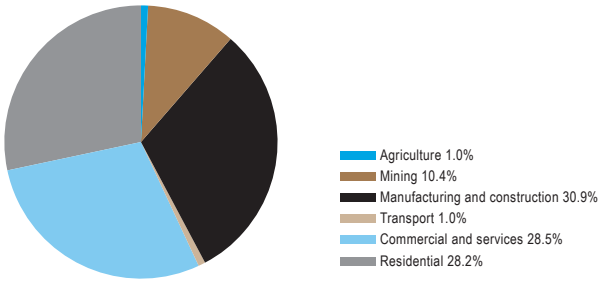
Data source: data sourced from Bureau of Resources and Energy Economics, 2012 Australian energy statistics data, Table F, Final Energy consumption in Australia. Petajoules were converted to terawatt-hours by applying a conversion factor of 0.277

15 Energy intensity is the ratio of total final energy consumption to gross value added GDP. Another indicator of energy intensity is composite energy intensity, which describes economy-wide energy intensity, by aggregating energy intensities of individual sectors. For further discussion on energy intensity measures see: Bureau of Resource and Energy Economics (BREE), Economic analysis of end-use energy intensity in Australia, May 2012; BREE, Australian Energy Statistics – Energy Update 2012 Table F, Bureau of Resource and Energy Economics, www.bree.gov.au.

16 Department of Foreign Affairs and Trade, 'The importance of services trade to Australia', viewed 20 August 2012, www.dfat.gov.au.

17 Australian Bureau of Statistics, Year Book Australia 2012, cat.no.1301.0, viewed 20 August 2012, www.abs.gov.au/ausstats.

Figure 2.2 – Australian electricity consumption by sector – 2010-2011

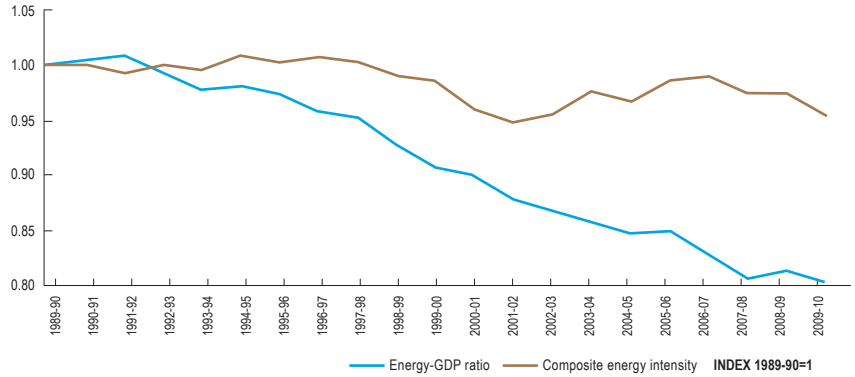


Data source: data sourced from Bureau of Resources and Energy Economics, 2012 Australian energy statistics data, Table F. Australian total final energy consumption, by sector, by fuel

While Australia's electricity consumption has steadily increased, changes in sectoral trends have resulted in a steady decrease in the energy intensity of the economy

While Australia's electricity consumption has steadily increased, the sectoral trends described above have resulted in a steady decrease in the energy intensity of the economy. This is illustrated in Figure 2.3, which shows the continuing trend of a decreasing ratio of energy used per unit of GDP in Australia relative to the energy intensity of the economy. Changes in residential consumption patterns and the energy efficiency of household appliances are also likely to have contributed to this trend.

Figure 2.3 – Trends in energy GDP ratio



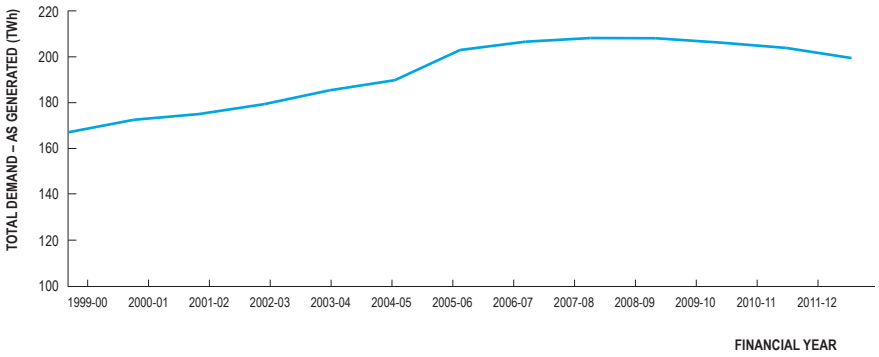
Data source: BREE, Economic analysis of end-use energy intensity in Australia Bureau of Resource and Energy Economics, Canberra, May 2012, p4

Forecasts of Australian energy consumption have changed in recent years. In 2012, the Australian Energy Market Operator (AEMO) revised its 10-year electricity consumption forecasts downwards as expected growth in total and peak demand[18] has not occurred as rapidly as previously predicted.[19] As shown in Figure 2.4, total demand in the NEM reached a peak in 2008-2009 and has reduced in recent years following a long term trend of demand growth.

18 Peak demand, sometimes expressed as maximum demand, is the largest volume of electricity demanded within a specific timeframe. Total demand, also sometimes expressed as average demand, is the total volume of electricity demanded across a specific timeframe.

19 AEMO, 29 June 2012, Inaugural energy use forecasts signal new demand and investment outlook, media release.

Figure 2.4 – NEM historic total demand



Data source: Data sourced from the AER, National Electricity Market electricity consumption. This data is 'as generated' which is measured at the generator terminals, and represents the entire output from a generator (ie includes auxiliary loads and transmission losses). The increase between 2004-05 and 2005-06 occurred following Tasmania joining the NEM in May 2015.

The different scenarios used by AEMO and the range of outcomes it is forecasting also suggest that it is becoming very challenging to forecast future demand

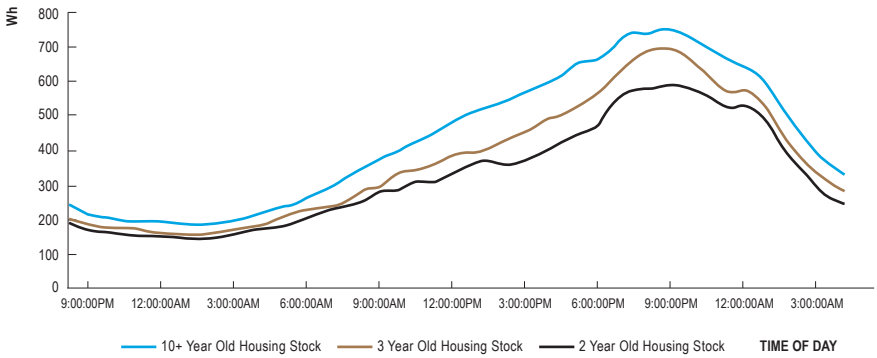
The different scenarios used by AEMO and the range of outcomes it is forecasting also suggest that it is becoming very challenging to forecast future demand. While AEMO is forecasting that demand will continue to grow in future, this will require the recent trend of declining demand to be reversed.

The potential causes of the recent decline in demand include the effects of sectoral change, global economic trends, and improved energy efficiency. AEMO suggests further that commercial and residential consumer response to rising electricity costs may be contributing to these changes.[20] In addition, AEMO considers that increased generation from small-scale, residential-level solar PV may be contributing to the decline in demand. This is because AEMO's historic demand data relates to the demand for electricity supplied by large-scale generation and do not include the demand for electricity that is supplied by small-scale embedded generation, such as rooftop solar PV.[21]

Evidence is emerging that improvements in the energy efficiency standards of new housing may be contributing to reductions in demand on a per-capita basis. Figure 2.5 reflects analysis by SP AusNet of the difference in the average usage of electricity for housing stock of different ages. It shows a materially lower consumption profile for housing built in the past two or three years compared to houses built more than 10 years ago.

20 AEMO, June 2012, *National electricity forecasting report*, p v.
21 AEMO indirectly accounts for demand met by small-scale embedded generation by reducing (offsetting) their demand forecasts in line with projected increases in embedded generation.

Figure 2.5 – An analysis of electricity consumption for housing stock of different ages



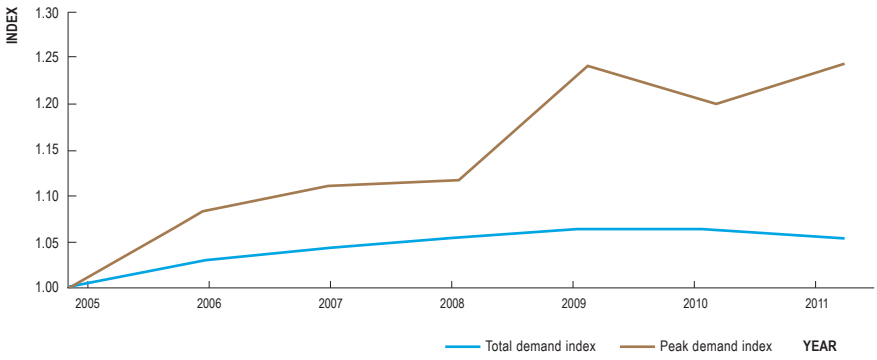
Data source: provided to the AEMC by SP AusNet

An important aspect of Australian energy consumption patterns has been the rapid growth of peak demand relative to total demand

While the age of housing stock may not be the only driver of the differences in consumption levels shown above, the evidence appears to support a view that the age of housing stock is a significant factor. SP AusNet has also analysed how gas consumption differs depending on the age of houses, and found similar results.[22]

An important aspect of Australian energy consumption patterns has been the rapid growth of peak demand relative to total demand.[23] Between 2005 and 2011, peak demand increased at a rate of approximately 1.8 per cent a year, while total demand grew at 0.5 per cent a year.[24] Figure 2.6 shows the relative growth of peak and total demand in the NEM over the previous six years.[25]

Figure 2.6 – A comparison of total demand and peak demand



Data source: Energy Networks Association, Consultation Paper submission, Economic regulation of networks Rule change. Data sourced from AEMO 2011 ESOO

Last year, AEMO published detailed forecasts to 2021-2022 which show peak demand continuing to grow at a faster rate than total demand in all states except for Queensland and New South Wales.[26]

22 This analysis is contained in SP AusNet's 2013-17 Gas Access Arrangement Review, available at: http://www.aer.gov.au/sites/default/files/SP%20AusNet%20-%20Appendix%204A%20Gas%20Demand%20Forecasting%20SP%20AusNet%202013-2017.pdf.

23 As noted earlier, peak demand is the largest volume of electricity demanded within a specific timeframe. Total demand is the total volume of electricity demanded across a specific timeframe.

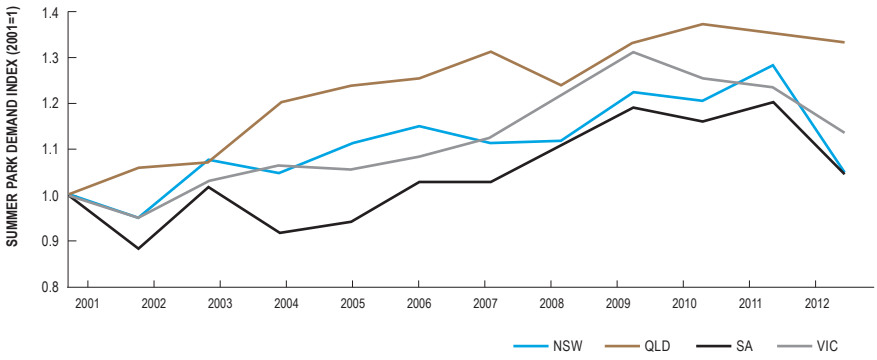
24 AEMO, 2011 Electricity Statement of Opportunities, August 2011.

25 The chart compares the growth in peak and total demand by setting the level of peak and total demand in 2005 to an index value of 1 and showing the increases in each as a change in that index value each year.

26 AEMO, National Electricity Forecasting Report, June 2012.

While the broad trend of increasing peak demand has been observed across the NEM, the pattern of peak demand growth has differed between states. As Figure 2.7 shows, peak demand has grown fastest and for longest in Queensland.

Figure 2.7 – Peak demand changes for the mainland NEM regions



Data source: provided to the AEMC by AGL

Our Power of Choice review includes a number of recommendations that would give consumers better information and incentives to make consumption decisions that reflect the value they place on consuming electricity at different times

Higher levels of peak demand relative to total demand can result in a proportion of the power system only being utilised on peak days. The Australian Government estimates that 25 per cent of retail electricity costs are derived from peak events that occur over a period of less than 40 hours per year.[27] These outcomes are similar to what occurs in other network industries (such as water or telecommunications) where capacity is built to meet periods of high demand.

Having spare or unused capacity in networks or generation should only be a concern if the value consumers place on having a reliable electricity supply at all times does not outweigh the costs of providing reliable supply. This will be best revealed by appropriate price signals so consumers can show through their consumption decisions the value they place on consuming electricity under different supply and demand conditions. Our Power of Choice review includes a number of recommendations that would give consumers better information and incentives to make consumption decisions that reflect the value they place on consuming electricity at different times.

It is important to remember that patterns of demand are cyclical. Analysing demand levels over longer periods will help us understand whether changes in the structure of our economy, consumer behaviour and other factors are leading to a long-term reduction in peak and total demand.

The level of future total and peak demand, whether falling, steady or increasing, will be a key factor in driving the level and type of investment required. Uncertainty about future demand levels is in itself a significant challenge for the sector. It makes it more difficult to get the timing of all types of investment right. Therefore, while rising peak demand is no longer the challenge it appeared to be in 2011, uncertainty about future total and peak demand levels remains an issue.

27 National Energy Saving Initiative, Issues Paper, prepared by the National Energy Savings Initiative Working Group, Department of Climate Change and Energy Efficiency and Department of Resources Energy and Tourism, December 2011, p71.

Investment

The energy sector in Australia is capital intensive. This is a feature of most energy sectors in the world, but Australia's stationary energy sector is particularly capital intensive because of the distances that gas and electricity networks cover to serve a relatively low population density. Capital-intensive industries require investors who are willing to finance investment, and they will only do that if they have a reasonable expectation their investments will deliver profits commensurate with the risks of the investment over its economic life. Confidence in energy market arrangements and how they develop over time is very important in influencing investor views about potential profitability.

Reductions in the projections for future growth in total and peak demand have reduced the expectations for future investment by network businesses[28] and the need for future investment in generation capacity. The introduction of a carbon price from 1 July 2012 has also changed the cost structure of the generation sector,[29] which can be expected in the longer term to influence decisions about the type of new generation capacity that is built when new generation capacity is required. In addition, changes to land-use planning policies have had, and will continue to have, an effect on the range of options for locating new renewable and other generation.

Confidence in energy market arrangements and how they develop over time is very important in influencing investor views about potential profitability

A significant challenge for the Australian energy sector will be attracting the most efficient investments that minimise costs for consumers. The Renewable Energy Target is expected to continue to underpin investment in renewable generation, and particularly wind generation. Australia's economy and population are projected to continue to grow strongly.[30] This would likely lead to growth in total and peak demand in the longer term, irrespective of whether per-capita demand stabilises or declines.

The form that future investment will take is arguably more uncertain than it has been for some time. As technology develops there are more options for the future, although which technologies will be the most cost effective and favoured by consumers is uncertain.[31] This uncertainty can also be magnified when coupled with policy uncertainty. A degree of uncertainty is inherent to all markets and can generally be addressed through risk management options. However, as the level of uncertainty increases, so too does the investment risk for longer term assets and the level of return required.

We discuss the nature of the investment challenges for each part of the supply chain in more detail below.

Generation

Since the start of the NEM in 1998, over 12,000 MW of new generation capacity has been built. Figure 2.8 shows the transformation in the mix of generation plant that the market has invested in since its inception. It indicates that as incentives have changed, investors have responded by shifting from investing in black coal to wind and gas.

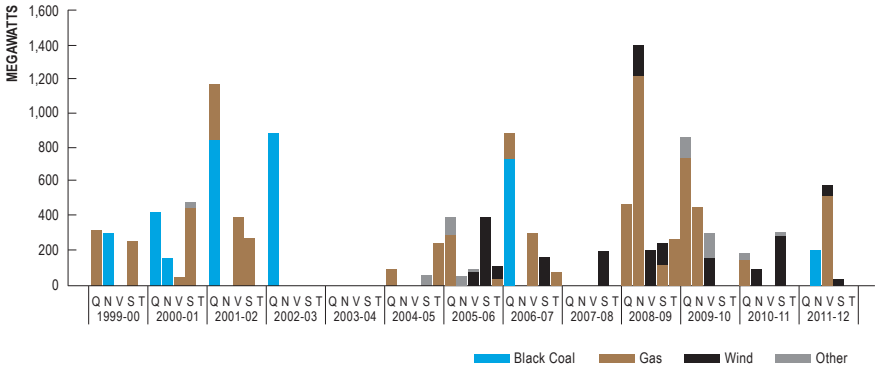
28 Transgrid (the NSW transmission network) has indicated that it expects future price rises for its transmission services to be much lower in the future. See http://www.transgrid.com.au/mediaweb/articles/Pages/TransGridannouncesrevenuefreezefor2013.aspx.

29 Generators that emit relatively larger amounts of carbon for each unit of electricity generated have become more expensive compared to lower or zero emitting generators. As a practical example, this means that gas-fired generators face lower carbon costs than coal-fired generators.

30 The ABS provides projections of Australia's population growth using a range of assumptions for key factors that affect the rate of population growth. See http://www.abs.gov.au/Ausstats/abs@.nsf/mf/3222.0.

31 For example, BREE's 2012 Australian energy technology assessments (AETA) report has estimated that by 2030 the costs of some renewable technologies such as solar PV are expected to have the lowest levelised cost of electricity of the 40 generation technologies it assessed.

Figure 2.8 – Generation investment since the start of the NEM, by state

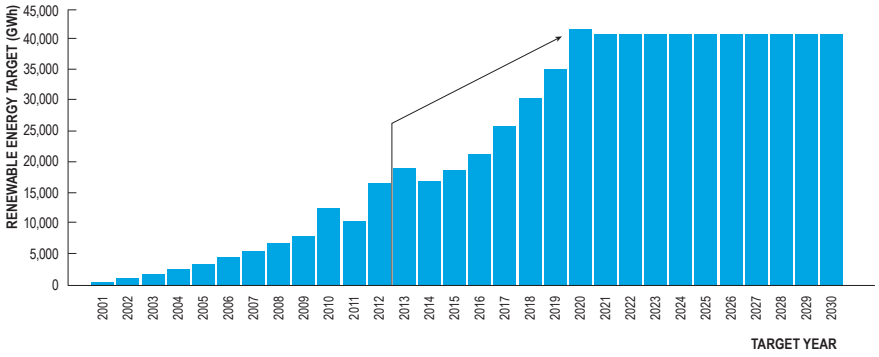


Data source: State of the Energy Market 2012, Australian Energy Regulator, p51

Meeting the RET target of 45,000 GWh of renewable energy by 2020 will require a very significant increase in the development of new renewable generation compared to recent years

Investment in generation capacity is likely to be underpinned by growth in renewable generation to meet the RET and also by the expansion of gas-fired generation in the longer term in response to the carbon price. Meeting the RET target of 45,000 GWh[32] of renewable energy by 2020 will require a very significant increase in the development of new renewable generation compared to recent years. This is illustrated in Figure 2.9, which shows the growth in renewable energy generation that will be required to meet the renewable energy gigawatt-hour target.

Figure 2.9 – Large-scale Renewable Energy Target



Data source: Climate Change Authority, Renewable Energy Target Review, Issues Paper, August 2012, p21

While many renewable projects are currently at various stages of development, it will be a significant challenge to finance and build the required number by 2020.[33]

32 The 45,000GWh is comprised of a 41,000 GWh target for the LRET and an uncapped aspiration of 4,000 GWh for the SRES. The SRES is currently forecast to lead to more than the 4,000 GWh aspiration for generation capacity.

33 Climate Change Authority discussed the range of views on whether the RET would be met by 2020 its review of the RET. See http://climatechangeauthority.gov.au/.

AEMO's 2012 National Transmission Network Development Plan (NTNDP) includes an analysis of future generation investment scenarios and the technology mix that will be required. There is considerable variation in forecast future capital expenditure for generation between the two scenarios AEMO modelled in its 2012 NTNDP, which range from $23 billion to $45 billion over the next 20 years. One outcome of this analysis was the forecast mothballing of up to 4,300 MW of coal-fired generation before 2020, primarily in the next five years. This process has begun, with recent announcements of over 2000 MW of capacity temporarily or permanently withdrawn from the market.[34]

Significant uncertainties are associated with forecasting the required future generation investment and technology mix. Factors including demand, future growth of the Australian economy, the carbon price and east coast gas prices will all have an impact on investment requirements.

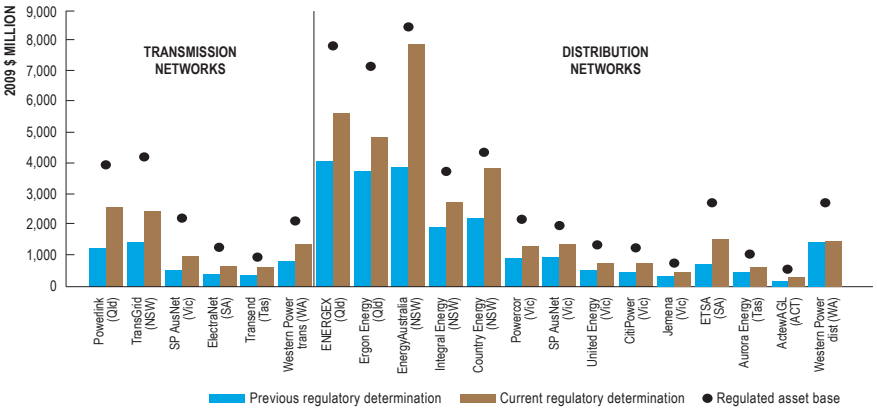
Networks

Electricity networks across Australia have increased their capital expenditure in the current regulatory period. The recent increases in network expenditure have occurred under regulatory arrangements that have recently changed or are under review. This includes changes to the national electricity rules (NER), national gas rules (NGR)[35] and the limited merits review arrangements.[36]

Significant uncertainties are associated with forecasting the required future generation investment and technology mix. Factors including demand, future growth of the Australian economy, the carbon price and east coast gas prices will all have an impact on investment requirements

These increases also reflect a number of other factors, including increases in reliability standards, replacement of ageing assets and forecast increases in total and peak demand. Figure 2.10 below shows that for every network, capital expenditure for the current regulatory period is above the allowance for the previous period.

Figure 2.10 – Increases in network capital expenditure compared to the last regulatory determination, real 2009$



Data source: AER and the WA Economic Regulatory Authority. For WA, the current regulatory determinations cover a three-year period rather than the five-year period that applies for NEM jurisdictions

34 This includes 530 MW at Northern Power Station in SA, 240 MW at Playford Power Station in SA, 700 MW at Tarong Power Station in QLD, 500 MW at Delta in NSW and 360-380 MW at Yallourn in VIC.

35 The AEMC's recent changes to network regulation rules have adjusted the framework within which the regulators – the Australian Energy Regulator (AER) and the Western Australian Economic Regulation Authority (ERA) – will manage network regulation and access arrangement decisions in the future. Further information these changes is available at: http://www.aemc.gov.au/electricity/rule-changes/completed/economic-regulation-of-network-service-providers-.html;

36 Further information is available on the changes to the limited merits review arrangements: http://www.scer.gov.au/workstreams/energy-market-reform/limited-merits-review/.

The longer-term level of network investment that will be required, particularly investment by distribution networks, is unlikely to be clear until these businesses begin to submit their regulatory proposals under new network regulation rules from late 2014. While reductions in total and peak demand forecasts might be expected to signal lower future investment requirements, it is important to recognise that investment requirements, particularly for distribution networks, are driven by localised demand changes. This could include demand changes from new housing and commercial developments, replacement of assets that have reached the end of their life or other state-based requirements, such as those arising from the Victorian Bushfires Royal Commission.

AEMO's 2012 NTNDP has revised downwards considerably its forecast of the transmission investment required over the next 20 years in the light of the lower total and peak demand forecasts. AEMO is forecasting between about $4 billion and $5.2 billion[37] of transmission investment over the next 20 years, compared to $7 billion forecast two years ago.

Until recently there has not been much focus on the structure of the prices charged by network businesses for transporting electricity over their networks. Cost reflective and efficiently set network tariffs can provide important price signals for consumers to encourage more efficient consumption decisions. This will also provide better signals at more disaggregated levels about when and what type of investment is required in networks to deliver a reliable supply.

Arguably more cost reflective and efficiently set network tariffs are even more important now given the changing use of the networks through developments such as solar PV

The structure of network tariffs also affects how the risks associated with utilisation of the network are shared between network businesses and consumers. Arguably more cost reflective and efficiently set network tariffs are even more important now given the changing use of the networks through developments such as solar PV. These changes mean that, for some consumers, the network is a means to sell surplus electricity and effectively a back-up source of electricity when the embedded generation is unavailable. Despite these developments the structure of network tariffs continues to reflect a situation where most consumers use the networks in a traditional way to source all of their electricity.

Funding

Businesses across the energy market supply chain will have to continue refinancing their existing debt. The regulated asset bases of the network businesses have grown substantially in recent years and a number of generators have high debt levels. The planned privatisation of the state-owned generators in NSW will need to attract investors to be successful.

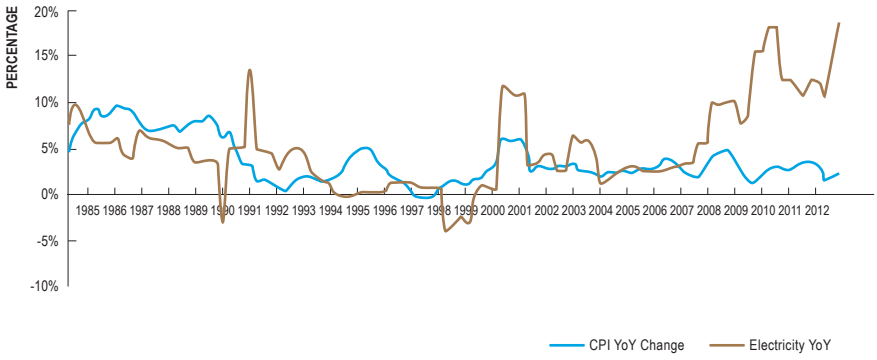
These businesses will therefore continue to require finance from Australian and international markets. The global financial crisis has led to a reappraisal by investors of risk and a general increase in the pricing of risk. In the electricity sector, this is reflected in the refinancing challenges faced by merchant generators and the concentration of new generation investments among vertically integrated generators and retailers (gentailers) — whether through building generation capacity themselves or signing a power purchase agreement to underpin financing by a merchant generator. This could have implications for competition in retail and generation markets in future. Moreover at times network businesses have found it especially challenging to refinance or secure new debt for longer tenors.

37 AEMO's forecasts show results for two different scenarios that reflect different views on key variables that are expected to affect the level of transmission investment required.

Prices

Electricity prices have increased substantially in recent years. Rising network costs, particularly in distribution networks, have been a major contributing factor. Figure 2.11 shows how changes in retail electricity prices have compared with changes in consumer price inflation (CPI) in Australia since 1985. This indicates that, in recent years, retail electricity prices have increased much faster than CPI, although analysis of the entire period since 1985 shows a more mixed picture, with significant periods in which electricity prices increased more slowly than CPI.

Figure 2.11 – A comparison of changes in retail electricity prices and CPI



Data source: provided to the AEMC by AGL

In recent years, retail electricity prices have increased much faster than CPI, although analysis of the entire period since 1985 shows a more mixed picture, with significant periods in which electricity prices increased more slowly than CPI

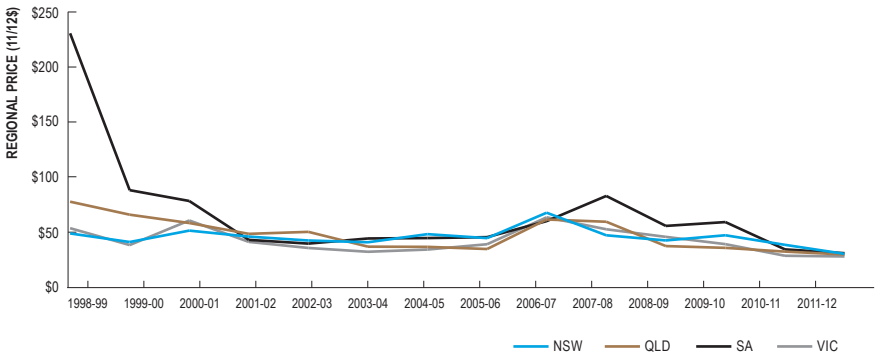
Electricity prices are made up of a number of cost components including:

- Wholesale – the costs to generate electricity and sell it into the market. This includes the impact of the carbon price as it feeds through into wholesale electricity prices;
- Transmission – the costs to transport electricity across high voltage wires from generation systems and interconnected systems;
- Distribution – the costs to transport electricity across low-voltage wires to where it will be used; and
- Retail – the costs to manage the delivery of electricity to end-users, including billing, customer service and risk management. Retail costs also include the costs of meeting the Renewable Energy Target and state based feed-in tariffs.

The proportion of each component varies by jurisdiction. It depends on the generation fuel mix, the characteristics of existing networks, the level of ongoing capital investment being undertaken by the network businesses, the level of retail competition and the nature of any relevant jurisdictional programs and policies, among other factors. In recent years wholesale spot prices have declined substantially. Prices in the past two financial years have been the lowest in real terms in the four mainland states in eastern Australia since the start of the NEM in 1998. Figure 2.12 below illustrates this downward trend.[38]

38 The overall downward trend in prices was interrupted by the effects of the drought in 2006 and 2007. Lower cost forms of generation such as hydro and coal, which rely on water, were subject to operational restrictions.

Figure 2.12 – Regional Wholesale Spot Electricity Prices, real 2011/12$



Data source: Calculated using AEMO data, inflated using the relevant Capital City CPI from the Australian Bureau of Statistics (ABS)

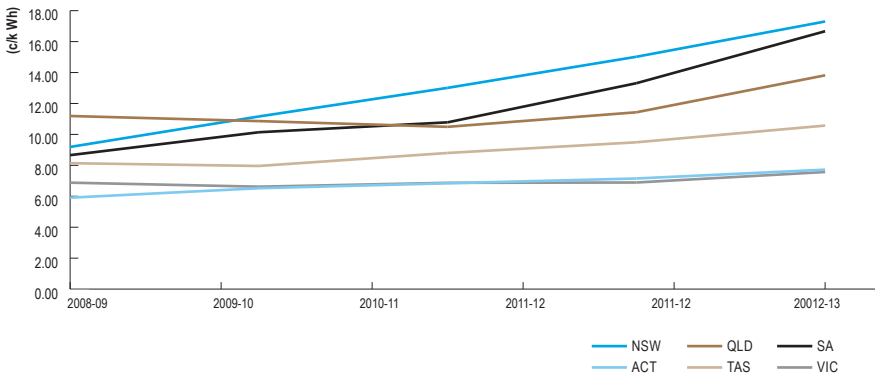
The recent reductions in the rate of peak demand growth and the new renewable capacity entering the market has meant that supply of generation has been relatively plentiful to meet demand levels, which reduced wholesale spot prices

The level of wholesale spot prices in recent years reflects supply and demand. Since 1998 we have seen a steady level of investment in new generation capacity to meet increased total and peak demand. However, the recent reductions in the rate of peak demand growth and the new renewable capacity entering the market has meant that supply of generation has been relatively plentiful to meet demand levels, which reduced wholesale spot prices.

Since the introduction of the carbon price on 1 July 2012 nominal spot prices have been higher,[39] broadly reflecting the current fixed carbon price of $23 per tonne of emissions.

Network costs are a key driver of electricity price increases. Since 2008-2009 these costs have been increasing, which is illustrated in Figure 2.13 below. The rate of increase has varied between states, with Victoria and Tasmania having a materially lower rate of increase.

Figure 2.13 – Total network charges, real 2008-2009 to 2012-2013



Data source: Calculated using published prices for transmission network service providers and distribution network service providers, deflated using the relevant Capital City CPI from the ABS

39 See http://www.aemo.com.au/Electricity/NEM-Data/Average-Price-Tables.

The AEMC, at the request of the Council of Australian Governments (COAG), publishes an annual report on future price trends for electricity. This report estimates the expected change in residential retail electricity prices for the next three years based on information provided by the AER, states and territories. It focuses, in particular, on the underlying drivers of the potential changes in price trends. The analysis is in relation to standing contract prices (regulated tariffs in all states other than Victoria, which no longer has regulated retail prices). Many customers in jurisdictions that have adopted retail competition will have taken up market offers that are more attractive than the standing contract prices.

The AEMC published our electricity price trends report in March 2013. The report states that the AEMC is expecting a moderation in residential price increases going forward, nationally. It estimates that network prices are expected to continue to drive residential price increases; however network price increases will also moderate. The report shows that residential electricity prices are estimated to have increased by 14 per cent in nominal terms from 2011-2012 to 2012-2013. From 2012-2013, the national annual average rate of increase is expected to fall to three per cent. However, projected price changes will not affect all consumers in the same way, because in some jurisdictions more than half of customers are not paying the maximum retail tariffs.

The AEMC is expecting a moderation in residential price increases going forward, nationally

Differences in the markets or regulatory arrangement for each cost component affect how changes in costs flow through to prices. Only wholesale and retail providers face competition in relation to the cost components of electricity. In contrast, the transmission and distribution network businesses are natural monopolies in their supply areas. As a result, network revenues and prices are regulated so that consumers do not pay more than is necessary to receive a reliable supply. Maximum retail prices are also regulated in all jurisdictions except South Australia and Victoria to provide a safety net until competition is sufficiently effective.

In future, other factors are likely to begin to influence the price of electricity. While the cost of policies such as the large-scale renewable energy target is passed on to consumers through retail prices, these policies are also having a dampening effect on wholesale prices in certain jurisdictions. At the same time, various state governments and jurisdictional energy regulators have introduced new approaches to calculate the energy component of regulated electricity prices. These approaches tend to focus on the current, lower wholesale market price of energy, which may put some downward pressure on regulated retail prices in those jurisdictions in the short-term. The approach to setting the wholesale cost component for retail price caps will influence incentives to invest in generation in the longer term.

Market resilience

Financial

The electricity market is characterised by significant financial inter-dependencies among participants. The market has so far proven reasonably robust. However there is concern that the current mechanisms to ensure continuity of supply when a retailer gets into financial distress may be ineffective in some circumstances. Some small retailers have failed, but those failures have been managed by existing market mechanisms, with no accompanying concerns about financial contagion. The failure of a large retailer is possible and could be caused by a wide range of factors. If it did occur, the potential consequences could be severe.

In the NEM, the hedge contracts that generators and retailers enter into to manage spot price volatility are a key potential means of transmitting contagion in this manner. If one participant's financial difficulties caused it to default on its hedge contracts, it could have significant financial impacts on all of the participants with which it has contracts.

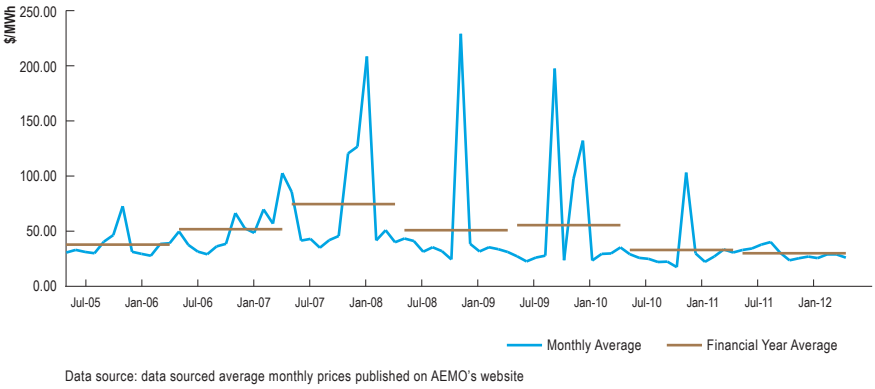
The AEMC is currently considering these issues in further detail in our review of the NEM financial market resilience. The focus of this project is primarily to protect customers in the event that a retailer gets into significant financial distress. It is also important, too, to consider more broadly the resilience of the electricity market, which also has physical aspects.

Physical

The changing nature of generation will require AEMO (as the market operator) and network service providers to understand the potential implications for their roles in a generation mix that includes more renewable and more embedded generation. South Australia has one of the highest penetrations of wind generation of any electricity market in the world. Figure 2.14 shows the volatility of South Australian wholesale electricity prices, which is at least in part driven by the intermittent nature of wind output.

The changing nature of generation will require AEMO (as the market operator) and network service providers to understand the potential implications for their roles in a generation mix that includes more renewable and more embedded generation

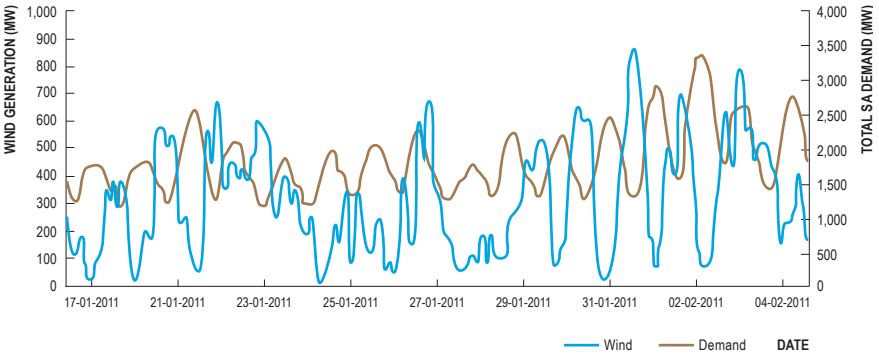
Figure 2.14 – Volatile wholesale electricity prices in South Australia



Data source: data sourced average monthly prices published on AEMO's website

In addition to the price volatility associated with high wind penetration, there can also be issues associated with the timing of supply. In South Australia, a large amount of wind generation capacity has been unavailable during periods of peak demand. A particular example of this is demonstrated in Figure 2.15.

Figure 2.15 – South Australian wind generation and total demand – late January and early February 2011



Data source: AEMO, 2011 South Australian Supply and Demand Outlook, 2011, p77

Australia's wholesale and retail energy markets are generally regarded as being among the most competitive in the world

In late January 2011, South Australia experienced high temperatures and corresponding high levels of demand. However, as demand increased, energy contributions from wind generation tended to decrease. AEMO notes this negative correlation occurred as heating and cooling of the South Australian landmass at sunrise and sunset caused local winds to blow and then drop during the day, in direct contrast to the periods of peak demand.[41]

The impacts on the technology mix of lower demand, lower wholesale prices and changes in the relative costs of different generation following the introduction of a carbon price have already become apparent. This includes the recent withdrawal of around 2000 MW of base-load generation capacity from the market, as noted earlier.

Competition

Australia's wholesale and retail energy markets are generally regarded as being among the most competitive in the world. The AER's State of the Energy Market report provides an overview of the range of competing generators and retailers across the NEM.[42] The AER's report shows that all regions with full retail competition have seen entry by new retailers to compete with incumbents. However, the range of offers available to customers varies between regions, with Victoria generally having the best range of market offers below the standing contract offer.

While there is broad evidence of well-functioning and developing competitive markets, the AER's report highlighted an issue the AEMC has raised previously, which is increasing vertical integration between generators and retailers. It appears that there are a number of factors that are affecting that trend. These include the benefits for risk management of vertical integration, significant challenges in financing merchant generation plant, limited liquidity for wholesale derivative contracts of more than one year and managing compliance with various obligations, including environmental obligations.

41 AEMO, 2011 South Australian Supply and Demand Outlook, 2011, p77.
42 http://www.aer.gov.au/node/18993

Evidence from a broad range of electricity markets around the world indicates that some level of vertical integration appears to be an efficient way of organising corporate structures, so there should be no inherent concern about some level of it in the Australian energy market. Concerns arise if vertical integration is being encouraged beyond the amount that would occur as an efficient business model for companies due to policy settings and decisions that have the effect of encouraging vertical integration. Vertical integration beyond the efficient level may be to the detriment of consumers if it reaches a point at which the lack of capacity to trade and contract for wholesale electricity undermines the ability of new entrants to compete.

Separately from vertical integration, there can also be concerns about the level of competition in a market if individual parts of the market have a very concentrated market structure (eg the retail or generation markets). Given that the wholesale spot and contract markets operate on a regional basis and retail markets continue to have strong regional characteristics, issues of industry concentration need to be considered at a regional level. It is important that policy and decision-makers on issues of industry concentration recognise the long term risks to consumers' interests of decisions that lead to high levels of industry concentration.

Concerns arise if vertical integration is being encouraged beyond the amount that would occur as an efficient business model for companies due to policy settings and decisions that have the effect of encouraging vertical integration

Summary

The same broad issues identified in 2011 continue to represent issues for the electricity sector. They are:

- uncertainty about the future level of total and peak demand;
- a continuing need for more investment to meet government environmental policies, accompanied by continuing concerns about the impact of policy uncertainty and changes in investment decisions;
- an expectation that price rises may not be as large in the future as in recent years, but increases are still expected; and
- the financial and physical resilience of the electricity market.

Australia, and the world more broadly, face a major challenge in determining how best to address climate change as a result of greenhouse gas emissions. The energy sector will have an important role to play and be significantly impacted by the way that Australia and other countries respond to the challenge.

3. Gas market overview, key issues and developments

Introduction

In our previous Strategic Priorities review, the AEMC acknowledged the recent implementation of major gas reforms, such as the Short Term Trading Market (STTM) hubs along the east coast, and our relatively new role in gas market regulation.[43] With the carbon price implemented and east coast LNG exports expected to commence from 2014, it is appropriate that we now examine more fully the emerging challenges facing the gas sector.

Due to changes underway in the eastern market (Queensland through to South Australia and Tasmania) this analysis focuses primarily on this region. To provide context for the discussion, an overview of Australia's gas market structure is followed by a brief history of recent gas market development. We then identify and discuss the key issues and developments.

The analysis below is consistent with and builds on the strategic gas market development framework set out in the Australian Government's 2012 Energy White Paper.

Resources

Natural gas is Australia's third-largest energy resource after coal and uranium. Major gas fields are located off the north-west coast, in central Australia, south-east Queensland and off the Victorian coast. At the beginning of 2011, economically demonstrated gas resources stood at around 210,000 petajoules (PJ). Total identified resources, which include sub economic and prospective resources, are estimated to be over 430,700 PJ.[44] To put these numbers in perspective, the Australian economy consumed 1,516 PJ of natural gas in 2010/11 and exported 1,086 PJ as LNG over the same period.[45]

Market structure

Australia's gas industry is made up of three economically independent regional markets – the eastern, western and northern markets, as shown in Figure 3.1.

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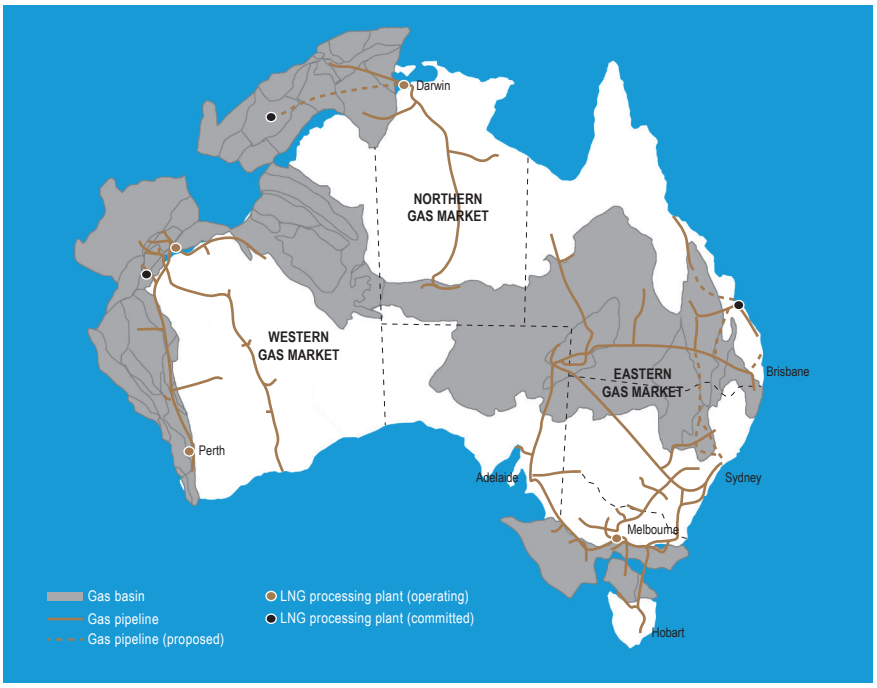
43 AEMC 2011, Strategic Priorities for Energy Market Development, 23 August 2011, Sydney, p. 35.
44 Geoscience Australia and BREE, 2012, Australian Gas Resource Assessment 2012, Canberra.
45 Stark, C., Penney, K. and Feng, A. 2012, 2012 Australian Energy Update, BREE, Canberra, August.

Figure 3.1 – Australia's gas markets



Data source: Australian Government, Energy White Paper 2012, Australia's energy transformation, p 135

The prevalence of long-term contracts and limited short-term trading means that the market is based on the negotiation and renegotiation of bilateral gas supply and pipeline transportation contracts

The eastern market encompasses Queensland through to South Australia and Tasmania, and is the largest in terms of consumption. It is also the most interconnected, with over 20,000 kilometres of transmission pipelines connecting Mt Isa and Gladstone in Queensland through Wallumbilla to Sydney, Adelaide, Melbourne and Hobart.[46]

The production costs of gas are influenced by the local characteristics of each gas field, such as whether it is located offshore or onshore, geology, distance to market, export opportunities and competition. Large distances between each market, and the degree of pipeline interconnectedness, influence supply and demand, giving rise to price differentials between and within each market.

Trade in natural gas and pipeline capacity is still predominantly based on long-term contracts, although marginal gas is now balanced and priced at STTM hubs in Adelaide, Brisbane and Sydney, and in the Victorian declared wholesale gas market (DWGM). Off-market trade also takes place further upstream where producers sell short-term gas primarily to gas-fired generators and other users.[47]

The prevalence of long-term contracts and limited short-term trading means that the market is based on the negotiation and renegotiation of bilateral gas supply and pipeline transportation contracts. As end users approach the market at different times to fulfil their needs, demand is "lumpy" and the price determined between buyers and sellers is influenced by market conditions at the time of negotiation.

46 AER 2012, State of the Energy Market 2012, p. 104.
47 EnergyQuest 2010, ESAA Domestic Gas Study Stage 3, p. 24.

A market structure built on long-term contracts has supported the gas industry's growth by providing the certainty required for significant capital investments in production and pipeline capacity. While bilateral contracts are expected to continue to play a role to manage risk and underwrite financing on new projects, opportunities for greater flexibility in the trading of gas and pipeline capacity may arise as the market continues to develop and face new challenges.

On 1 July 2008, the National Gas Law (NGL) and Rules (NGR) transferred the administration and enforcement of state-based natural gas regulatory regimes to the AEMC and AER.[48] By consolidating these roles, the NGL aims to reduce inter-jurisdictional regulatory burden on market participants and increase consistency with the electricity law.

The NGL also established the gas market bulletin board, which is designed to further market transparency by publishing daily production, demand and pipeline capacity information.[49] The Gas Statement of Opportunities (GSOO)[50] and STTM hubs were then introduced, providing increased market transparency, price discovery and trading flexibility for participants.

With construction underway on six LNG processing trains, annual eastern market gas demand is set to increase from around 675 PJ to over 2,340 PJ by 2017

Developments

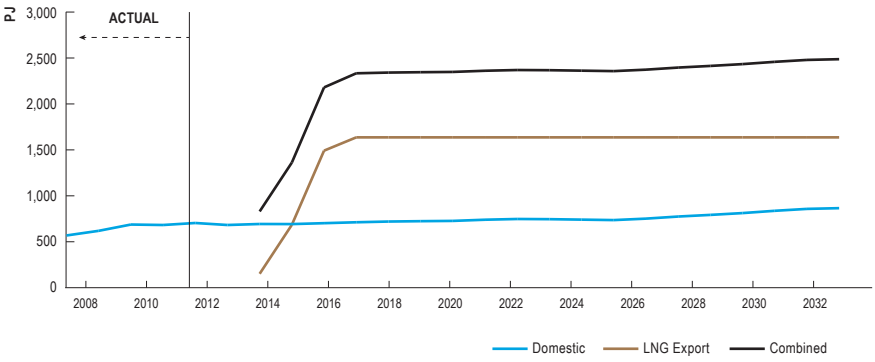
We have identified two main developments that will influence the eastern gas market over the next few years:

- a structural shift in gas supply and demand; and
- greater interdependence between the electricity and gas markets.

Structural shift in gas supply and demand

As noted in the Australian Government's Energy White Paper, "Australia's eastern gas market has entered a period of extended transition as new Coal Seam Gas (CSG) reserves and Liquified Natural Gas (LNG) developments reshape market dynamics and structure".[51] With construction underway on six LNG processing trains, annual eastern market gas demand is set to increase from around 675 PJ to over 2,340 PJ by 2017, as shown in Figure 3.2.[52] This pronounced shift in demand is likely to test the ability of producers to develop sufficient reserves in a timely manner and the trading flexibility offered through existing market mechanisms.

Figure 3.2 – Eastern market actual and forecast gas demand (PJ)



Data source: Derived from AEMO's Gas Statement of Opportunities 2012

48 Western Australia applies the NGR as a participating jurisdiction, with the Economic Regulation Authority of Western Australia acting as the economic regulator.
49 http://www.gasbb.com.au.
50 http://www.aemo.com.au/Gas/Planning/Gas-Statement-of-Opportunities.
51 Australian Government 2012, Energy White Paper, p. 140.
52 Figure 3.2 is derived from the AEMO's 2012 Gas Statement of Opportunities. Domestic demand is based on the Planning scenario. Gas demand for LNG export is based on Core Energy's decentralised world scenario produced for AEMO, which assumes the six LNG trains currently under construction are operational by 2016 and no additional trains are commissioned.

On the supply-side, it appears the key uncertainty is whether sufficient reserves can be developed in time to meet LNG export schedules and the needs of domestic users. In contrast to conventional gas fields where only a small number of wells are drilled, thousands of CSG wells are required by 2014–15 to supply gas for LNG exports. A drilling operation on this scale is unprecedented in Australia and a considerable challenge for producers. Changes in land use planning policies by State Governments and approval processes by the Australian Government may affect the availability of different supply options. In addition, some parties have begun making public calls for the Government to consider gas reservation policies, which may be generating additional uncertainty for investors.

From a demand perspective, a new market dynamic facing domestic gas users is the competing LNG export industry. As LNG proponents are also large domestic suppliers,[53] their focus is currently on developing sufficient reserves for export. This looks to be having a two-fold effect –reluctance to enter substantive gas contracts before commencement of their LNG projects,[54] and an upward pressure on gas prices.

East coast wholesale natural gas prices, which have been on average historically low by international standards, are likely to increase as new gas contracts are negotiated and existing contracts expire

East coast wholesale natural gas prices, which have been on average historically low by international standards, are likely to increase as new gas contracts are negotiated and existing contracts expire. The degree of increase will depend on local market factors, such as rises in production costs for new gas field developments, and domestic and international competition for available gas reserves. One of the key uncertainties that will affect future wholesale gas prices is the willingness of the United States to export shale gas and decisions by China and Japan on the role of nuclear power in their future energy mix, which will influence demand for gas.

In the short term, sellers may have leverage in negotiations over buyers as existing domestic contracts expire or are reopened for price negotiation concurrently with the tightening of the supply/demand balance. The expected response to this tightening is an upward pressure on gas prices, which should signal to producers to invest in bringing additional supplies of gas to market. For Australia, this may mean bringing forward investment in technologies to enable the large-scale economic development of unconventional gas resources, such as shale gas.

A response of the kind seen in the United States to rising gas prices has the potential to substantially increase the supply of gas to the Australian economy. Arguably, without gas price rises pre-2008, the United States producers would not have responded to this signal by investing in technologies that led to an immense increase in gas supply.[55] Similarly to the United States, Australia has significant shale gas resources, some of which are located close to existing infrastructure in the Cooper Basin,[56] and which have the potential to be brought to market if prices are at a level to justify risk and provide a commercial return.

While there appear to be challenges ahead with respect to the timing and development of gas reserves for domestic customers and export, projections indicate that there will be enough gas to meet all expected demand.[57] With this in mind, it may be appropriate to look at whether the gas market is approaching a level of maturity where additional flexibility is required to maximise the efficiency of exchange between participants.

53 The structure of the LNG projects is generally as a joint venture, so supply of gas to the project by producers will reflect an agreement between the producer and the LNG joint venture.
54 Queensland Government 2012, 2012 Gas Market Review Queensland.
55 IEA 2008, World Energy Outlook 2008, p. 457.
56 Geoscience Australia and ABARE 2010, Australian Energy Resource Assessment, p. 98.
57 Australian Government 2012, Energy White Paper, p. 140.

Greater interdependence between the electricity and gas markets

In response to the introduction of a carbon price, gas-fired generation, and the resulting demand for gas, was expected to increase substantially, supporting a convergence between electricity and gas markets.

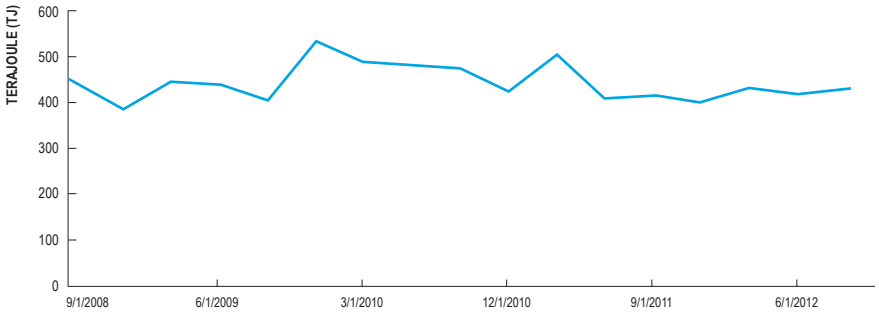
Convergence in this context means a greater correlation between short-term gas prices and the wholesale, particularly spot, electricity price, the interaction between markets in the case of an emergency event, and through trading activities of participants, such as gas-fired generators, across both markets.

Greater convergence between the electricity and gas markets is likely to drive the need for information systems that interact and allow trading across both markets, consistency in the provision of market information, financial risk management products that provide for effective hedging of both gas and electricity prices and, potentially, more flexible gas pipeline services.

AEMO's most recent forecasts suggest that subdued electricity demand in the NEM is now likely to defer new base-load generation capacity beyond this decade,[58] delaying the expected convergence between electricity and gas markets. Gas demand for gas-fired generation is shown in Figure 3.3, where the aggregate trend in the NEM has been flat over the past few years. Additionally, no new gas-fired generation projects are currently committed or under construction in the NEM.[59]

Convergence means a greater correlation between short-term gas prices and the wholesale, particularly spot, electricity price

Figure 3.3 – Average daily gas demand for electricity generation in the NEM, by quarter (TJ)



Data source: AER 2012, Performance of the energy sector

Summary

In the period to 2016 and beyond, the eastern gas market will face challenges relating to the development of a Gladstone-based LNG export industry. While this new industry will bring substantial economic benefits, existing market structures will be tested in their ability to continue to meet the needs of domestic consumers efficiently. In this context, it will be important to examine the implications of developments in the gas industry, and whether current market frameworks are able to continue to promote the efficient allocation of gas throughout the economy.

58 AEMO 2012, Electricity Statement of Opportunities, Executive Summary.
59 BREE 2012, Major electricity generation projects, November 2012.

4. Consumer priority: strengthening consumer participation while continuing to promote competitive retail markets

Introduction

Efficient markets are characterised by effective participation of both the supply and demand side. Effective participation of consumers in the NEM is therefore paramount. For this to occur, consumers need the right information and tools to make their consumption choices.

This priority contributes to addressing the issues and developments identified in Section 2.

We begin this section by focussing on efficient demand side participation (DSP) and the market arrangements to support this participation, including competitive retail markets. We then discuss COAG's plans for enhancing consumer representation.

Building the capability and capturing the value of flexible demand was identified as a priority in our previous strategic priorities review. We are proposing to largely retain this strategic priority, but we consider the priority should shift toward strengthening consumer participation more broadly in the NEM. This partly reflects the progress made on our previous priority, but also reflects the role for consumers in other areas (such as network regulation processes) and the importance of competitive retail markets to underpin stronger consumer participation.

In our previous strategic priorities review, we identified and explained several core issues of relevance to this priority, including pricing, DSP options (such as direct load control and demand side response), enabling technology (such as smart meters) and distributed generation. Since that review, other AEMC and external reviews have examined these issues in more detail and made a series of specific developmental recommendations. These are discussed later in this section.

An increasingly active demand side: opportunities for demand side participation

If consumers are able to participate effectively in the demand side of the market, they can manage their electricity consumption and, in turn, their expenditure. DSP can include actions relating to energy efficiency, peak demand shifting, changing consumption patterns and consumers generating their own electricity.

There has been some evidence of increased uptake of DSP in the NEM over recent years. However, the efficiency of the electricity market can be further improved by more active participation of the demand side. This will require changes to some aspects of how the supply side of the electricity market operates and interacts with consumers, as well as ensuring that consumers are sufficiently informed and empowered to exercise choice.

A range of benefits are likely to be associated with facilitating the uptake of efficient DSP. For example, DSP can help manage the costs of meeting peak demand. Recent research commissioned from Frontier Economics estimated that the economic cost savings of peak demand reduction could be between $4.3 billion and $11.8 billion, equating roughly to between three per cent and nine per cent of estimated total system expenditure out to 2020. For individual customers, the savings associated with reductions in peak demand ranged between $120 and $500 per year.[60]

Consumers require tools – information, education, technology and flexible pricing options – to make efficient consumption decisions

The AEMC and various other agencies have undertaken extensive reviews of the NEM to identify how best to facilitate the uptake of efficient DSP, in order to capture some of this value. Recently, the effects of electricity price increases have redoubled interest in the potential for efficient DSP to help consumers better manage their electricity consumption.

The AEMC's Power of choice review examined the potential of DSP throughout the NEM supply chain. The review included a package of integrated recommendations which were designed to:

- enable consumers to see and access the value of taking up demand side options; and
- enable the market to support consumer choice through better incentives to capture the value of DSP options and through decreasing transaction costs and information barriers.

We identified opportunities for consumers to make more informed choices about the way they use electricity. Consumers require tools – information, education, technology and flexible pricing options – to make efficient consumption decisions.

For consumers to play a more active role in making such decisions about the electricity services they require, they need access to information that will allow them to make those choices. Retailers, as the primary interface with consumers, will play an important role in providing this information. However, there is also scope for other energy service providers and aggregators to fulfil this role. Governments and regulatory bodies, too, play an important role in helping inform consumers about energy market developments and options available to them to manage their consumption.

The review also addressed the market conditions and incentives needed for network operators, retailers and other parties to maximise the potential of efficient DSP and respond to consumers' choices. The review's recommendations were designed to support coordination across the electricity supply chain, to promote uptake of efficient DSP.

60 AEMC, Power of choice – final report, Australian Energy Market Commission, Sydney, November 2012, p256.

We made a number of key recommendations in the final report of the Power of choice review, including:

- a comprehensive communication and education strategy to support implementation of the recommendations and to more broadly improve consumer understanding of energy use and its relationship to costs;
- changes to the National Electricity Rules and National Energy Retail Rules to provide consumers with improved access to their electricity consumption data;
- gradually phasing in of efficient and flexible pricing options so consumers can choose how and when they use electricity and pay accordingly;
- a review of current arrangements for consumer switching to enable consumers to more easily switch between different electricity retailers;
- policy and rule changes to promote more competition in new metering and data services technology;
- removing the option of a government-mandated roll out of smart meters in the National Electricity Law;
- modifications to the National Energy Customer Framework and the Australian Energy Regulator's guidelines for robust consumer protection;
- development of a new demand response mechanism in the NER to reward businesses and factories for changes in volume or time of consumption;
- building a framework that will provide a commercially sound and sustainable basis for making demand side part of the network planning and investment process, and improving the framework for how distribution businesses determine network tariffs; and
- establishing formal consultation when setting network tariffs.

Efficient incorporation of electric vehicles (EVs) is important, as significant costs could be imposed on the power system if a large number of EVs are charged during peak demand periods or at specific locations

The AEMC's review of energy market arrangements for electric and natural gas vehicles also made a number of recommendations that are relevant to facilitating efficient uptake and capturing the value of efficient DSP. This review examined the role of energy markets in supporting the economically efficient uptake of electric and natural gas vehicles. Efficient incorporation of electric vehicles (EVs) is important, as significant costs could be imposed on the power system if a large number of EVs are charged during peak demand periods or at specific locations.

In our final advice, we recommended that owners of EVs should face price signals that reflect the underlying cost to supply their electricity. Our key recommendations included:

- introducing cost-reflective network pricing signals to encourage efficient EV charging behaviour. Consistent with the Power of choice review, we proposed adopting consumption bands (set by jurisdictions) that define which households would be subject to flexible tariffs.
- interval metering was likely to be necessary to support these cost-reflective pricing signals.
- introducing new metering arrangements that should enable consumers to:
  - separate their EV consumption from their household consumption;
  - have multiple service providers at a connection point; and
  - install EV charging infrastructure in commercial properties.
- clarifying provisions in the National Energy Retail Law regarding the sale of electricity and suggesting that the AER review its exemptions framework for commercial EV charging.

Competitive retail markets: promoting efficient market frameworks
The most efficient market frameworks (commercial and regulatory) will involve a high degree of consistency across NEM regions and the promotion of retail competition. Such frameworks should help to make it easier for consumers, retailers, network service providers, AEMO and other parties to identify the full range of opportunities in the NEM.

The incentives and value associated with DSP are often split across different parts of the supply chain. Consistent, transparent and competitive market frameworks can facilitate the uptake of efficient DSP and help capture its full value across the supply chain.

Such frameworks also provide scope to improve the efficiency of the pricing structures of network businesses to provide more appropriate incentives for using network capacity.

Competitive retail markets
Energy retailers are the first point of contact for consumers on energy and energy-related purchases. Retailers are therefore likely to play a central role in facilitating the efficient uptake and capturing the value of DSP. They may facilitate DSP through offering various DSP services and flexible tariffs to customers, as well as providing consumers with necessary information about DSP.

Competitive retail markets with appropriate consumer protections will provide a basis for the innovation and the development of new product offerings

Retailers' contracts with consumers can offer both the means to participate in DSP, and a route by which consumers can be compensated for their DSP actions. Retailers' behaviour in facilitating DSP will be driven by commercial incentives which, in turn, are influenced by competition in the market.

There has been substantial progress to develop effectively competitive retail energy markets in Australia. Two states in the NEM (South Australia and Victoria) have deregulated their prices, and the AEMC is currently reviewing the nature of competition in NSW before making recommendations to SCER about whether prices should be deregulated.[61] Consumer participation in Australian retail energy markets is high by international standards,[62] but there appears to be scope to improve consumers understanding of the options available to them. Competitive retail markets with appropriate consumer protections will provide a basis for the innovation and the development of new product offerings.

Retailers in all jurisdictions other than Victoria and South Australia are subject to retail price regulation. In the Power of choice review, we considered how this might influence the capability or willingness of retailers to facilitate DSP. We found that retail price regulation itself should not impede the ability of retailers to offer DSP products such as flexible pricing options.[63] However, we found that retail price regulation could add compliance costs and reduce flexibility for retailers.

61 In July 2012, SCER agreed that the AEMC would commence its review of the effectiveness of retail competition in NSW. The AEMC has formally commenced work on this project and expects to provide draft advice to SCER by September 2013.
62 Though meaningful comparison of the competitiveness of retail markets across the world is difficult, indicators suggest that Australia's retail energy markets have some of the most active consumers. More than a quarter of Victorian consumers switch supplier every year, and switching rates have increased in recent years in New South Wales, where more than a fifth of consumers now switch supplier annually.
63 AEMC, *Power of choice – final report*, November 2012, p194.

Competitive markets provide retailers with greater flexibility and incentive to develop and offer a wide range of innovative products, including new DSP products. The ongoing commitment to the promotion of competition and retail price deregulation will be an important factor in driving the efficient uptake and capturing the value of efficient DSP. Appropriate consumer protections are also important in this context.

National approach to consumer protection

Greater efficiency in the retail electricity market can be promoted by adopting consistent arrangements across regions wherever possible.

The National Energy Customer Framework (NECF) is an arrangement that governs the sale and supply of electricity and natural gas to retail customers. It promotes a nationally consistent approach to consumer protections and transfers state and territory legislation to a single set of laws, regulations and rules.

The aim of the National Energy Retail Law and the National Energy Retail Rules is national consistency in the medium to long term for all stakeholders in the energy market, including:

- customers — ensuring an efficient level of consumer protection over and above the general law (e.g. the Australian Consumer Law);
- business — clarifying roles between retailers, distributors and customers; and
- governments — assuring a smooth transition from jurisdictional arrangements to a national approach.

The NECF aims to facilitate an increase in retail competition by reducing regulatory complexity and lowering barriers for energy retailers to enter into the market across participating states and territories

The NECF aims to facilitate an increase in retail competition by reducing regulatory complexity and lowering barriers for energy retailers to enter into the market across participating states and territories.[64]

Initially, the NECF does not apply in all NEM states and territories.

On 1 July 2012, Tasmania, the Australian Capital Territory and the Commonwealth became the first jurisdictions to adopt the national arrangement. South Australia adopted the NECF arrangements in February 2013. Other jurisdictions are expected to follow in accordance with their own implementation plans. This includes NSW, which aims to adopt the NECF in July 2013.

In its report to the COAG 7 December 2012 meeting, SCER said it had agreed to all NEM jurisdictions commencing the NECF as soon as practicable and no later than 1 January 2014, subject to the resolution of some jurisdictional-specific issues. Queensland is yet to finalise its position.

Enhancing consumer representation in policy and regulatory processes

Another aspect of consumer participation in energy markets involves consumer representatives or advocates in policy and regulatory processes, in particular, revenue determinations for network businesses. The Productivity Commission has proposed the establishment of a national consumer advocacy body, which has the in-principle agreement of COAG. The body would be designed to contribute to energy policy development, rule change processes and network determinations. SCER has recently established a review to advise on the development of such a body.[65]

COAG has also agreed that a consumer challenge panel should be established within the AER to represent consumers in regulatory decisions.

64 http://www.scer.gov.au/workstreams/energy-market-reform/national-energy-customer-framework/

65 John Tamblyn and John Ryan are currently undertaking this review and will report to SCER in April 2013.

We support initiatives that improve the ability for consumers' views to be represented in regulatory processes. This is not a substitute for consumers directly revealing their views by participating in competitive markets, but is important for regulatory processes that affect monopoly network businesses. The development of further means for consumers to be represented in regulatory processes should recognise and build on the existing work of the Consumer Advocacy Panel.[66]

Implementation requirements to strengthen consumer participation in electricity retail markets

As discussed above, a number of organisations and government agencies are exploring options to support more effective consumer participation in the NEM.

With respect to DSP, both the AEMC and a range of other organisations have undertaken detailed analysis of how to capture the value of flexible demand in the NEM. The AEMC has provided this analysis and a series of recommendations to the SCER.

We support initiatives that improve the ability for consumers' views to be represented in regulatory processes. This is not a substitute for consumers directly revealing their views by participating in competitive markets, but is important for regulatory processes that affect monopoly network businesses

At the most recent meeting of COAG in December 2012, these recommendations were considered and a general implementation plan was developed.[67]

This implementation plan contains specific recommendations relevant to the issues examined in this section. Key recommendations include:

- SCER is to develop and implement a package of recommendations to allow consumers to see and examine the value of their choices in the electricity market, including:
  - improved access to their own energy data; and
  - changes to encourage the market-led rollout of smart meters and other advanced metering.
- SCER is to implement a comprehensive DSP package, including:
  - phase-in of time varying network tariffs, including protections for vulnerable consumers;
  - consumer engagement and education;
  - a mechanism to allow direct demand side participation in the wholesale market;
  - mechanisms to allow consumers to sell their DSP to a third party, other than their retailer; and
  - balanced incentives for distribution businesses to pursue DSP.

The SCER implementation plan contained a number of recommendations in relation to retail price regulation. Some of these were of particular relevance to the issues described above. They include:

- SCER is to require the AEMC to take a different approach for future reviews of the effectiveness of retail competition, where the AEMC will undertake an annual review of retail completion across the NEM; and
- the AEMC is to be tasked with developing a consistent methodology for the determination of regulated retail prices, including incorporating time varying (time of use) network tariffs and with particular regard to a methodology for determining the wholesale energy cost component.

66 The purpose of the Consumer Advocacy Panel is to facilitate customer advocacy in the national electricity and national gas markets so the views of all classes of consumers can impact on decision-making for market policy and regulation. The functions and objectives of the Consumer Advocacy Panel are specified in the Australian Energy Market Commission Establishment Act 2004. See: http://www.advocacypanel.com.au/

67 Further information is available at www.coag.gov.au/node/481.

In addition, COAG has also asked SCER to develop a proposal for a national consumer advocacy body to enhance consumer representation in energy policy development, rule change processes, and network determinations. The proposal is to be presented to COAG in June 2013. COAG has also asked SCER to consult on improvements to the criteria for the Consumer Advocacy Panel grant allocation.[68]

Work program to address this priority

Previous reviews by the AEMC and other stakeholders have led to a substantial work program, which should help address many of the issues identified for this priority. Much of this work is at the implementation stage, as noted above. This includes the implementation of some of the key findings of our Power of choice review and the review of energy market arrangements for electric and natural gas vehicles.

SCER has committed to submit rule change proposals to implement many of the recommendations of the Power of choice review. These include rule changes relating to access to consumer data, metering arrangements and distribution pricing rules. SCER will also ask AEMO to explore how the recommended demand response mechanism could best be implemented.

To strengthen consumer participation, the retail market frameworks should be as nationally consistent as possible and should promote competition in the provision of services

The implementation of some key Power of choice recommendations are yet to be decided by SCER. This is likely to be progressed in the lead up to SCER's report to COAG on its implementation plan, which COAG has requested by June 2013.

Other market reviews the AEMC is undertaking that are relevant to addressing this priority are:

- **A review of retail electricity and gas market competition in New South Wales.** The AEMC will report its conclusions to SCER, including the NSW Government, in September 2013. The AEMC will advise on the effectiveness of competition, whether competition is effective enough for retail price regulation to be removed, and what further measures can improve the effectiveness of competition.
- **Electricity price trends.** The AEMC will continue to produce its annual report discussing the drivers of residential electricity prices.

SCER has indicated that it intends to ask the AEMC to review retail electricity and gas market competition across the NEM in 2014, as a development of the previous approach of reviewing competition in individual jurisdictions. COAG and SCER have also agreed to ask the AEMC to propose a common methodology for setting retail price caps and, in particular, the wholesale cost component of the price caps during 2013. Jurisdictions would be able to decide whether to adopt the new methodology.

Summary

Effective consumer participation can promote more efficient market outcomes and help consumers manage their electricity expenditures. To strengthen consumer participation, the retail market frameworks (regulatory and commercial) should be as nationally consistent as possible and should promote competition in the provision of services – including electricity supply services with flexible pricing and more innovative DSP options.

68 Ibid.

The AEMC and other organisations have made significant progress on work to address this strategic priority through the recommendations under the AEMC's Power of choice review and the energy market reform agenda agreed by COAG and SCER. This year, the AEMC will consider a number of rule change requests from SCER to implement key recommendations of the Power of choice review. SCER is also considering its position on a series of additional recommendations under this review.

We are also engaging with SCER and the AER in the development of the Consumer Challenge Panel and a national consumer advocacy body, which will consider ways to improve consumer representation in the regulation of natural network monopolies.

Retail price deregulation and the NECF have not yet been implemented in all NEM regions. We expect that our review of retail competition in NSW and future NEM-wide competition reviews will help to provide advice on the state of competition in these regions and inform jurisdictional decisions on a path towards retail deregulation.

5. Gas priority: promoting the development of efficient gas markets

Introduction

This strategic priority on which we seek views concerns whether the existing gas market frameworks are adequate to promote the efficient allocation of gas in the long term interests of consumers. This is in light of the structural changes to supply and demand currently underway in the eastern gas market. We also look at how future convergence between the electricity and gas markets is likely to drive changes allowing for greater interaction between the two markets.

This priority contributes to addressing the issues and developments identified in Section 3.

Gas markets, whether they are characterised by bilateral or spot trading, provide the mechanism through which natural gas is allocated for use within the economy. Therefore, a reliable, competitive and secure gas market is critical for the efficient allocation of gas and the maximisation of economic welfare.[69]

This section describes our proposed gas priority in more detail, outlines its key components and explains why we think it is important. It also considers whether current gas market frameworks are promoting and will continue to promote the efficient allocation of gas throughout the economy in light of the expected developments. The choice of this priority is very much a recognition that while the development of the gas sector is difficult to forecast and will be influenced by international developments, it appears likely that over the medium to long term it will become increasingly important in Australia.

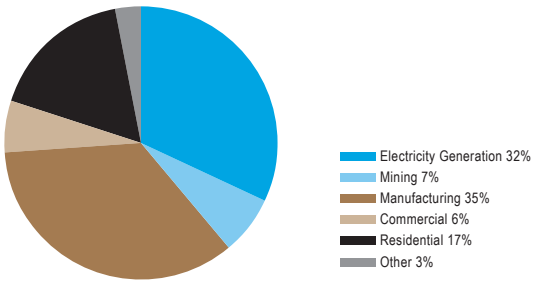
69 Known as allocative efficiency – allocating resources to consumers who value them the most.

Why is this issue important?

Natural gas is a growing contributor to the Australian economy, both domestically and as an export commodity. Gas accounted for 25 per cent of total primary energy consumption in Australia in 2010–11, growing annually by 5.6 per cent per on average over the past five years.[70] The eastern market accounted for over half of this consumption.

As shown in Figure 5.1, gas is utilised across the eastern market in the manufacturing, electricity generation, mining and residential sectors. In 2014, exports of LNG will commence from Gladstone, heralding a new era of gas use. Therefore, gas markets that promote the efficient allocation of gas throughout the economy will have positive effects across multiple industries, including the efficiency of the NEM through gas-fired generation.

Figure 5.1 – Eastern market consumption of gas by sector in 2009-10



Data source: BREE 2012, Gas Market Report

Gas accounted for 25 per cent of total primary energy consumption in Australia in 2010–11, growing annually by 5.6 per cent per on average over the past five years

Current status and issues to address

A market that promotes the efficient allocation of natural gas and pipeline capacity should have a number of key characteristics.

Information transparency includes available information on current and future demand, supply and prices for natural gas and pipeline transportation capacity. Transparent and cost-reflective price signals are an important attribute of any market as they ensure resources are allocated to those consumers who value them the most. They also provide for the timely and efficient investment in the development of gas reserves and infrastructure.

Flexibility is a relative concept. An efficient market should provide the level of sophistication and flexibility its users demand. Flexibility in the gas market could mean a long-term bilateral contract with provisions that allow annual price escalation. It could also mean a framework within which users confidently operate on a more dynamic, shorter-term basis, revisiting the market regularly for their gas needs and employing sophisticated risk management tools.

Low transaction costs relate to the ability of current and potential market participants to find partners to trade with and the costs associated with that trade. For bilateral contracts this may include search costs, legal fees and administrative and enforcement costs. For market trading, this includes costs associated with becoming a member of the exchange, developing systems that communicate with the market, employing traders and managing risk.

70 Stark, C., Penney, K. and Feng, A. 2012, 2012 Australian Energy Update, BREE, Canberra, August, p. Table 3.

As the structure of the gas market continues to evolve, so too should the mechanisms by which gas and pipeline capacity are traded. In the current changing environment, it is prudent to review the adequacy of our gas market frameworks to ensure that economic efficiency and the economic welfare of participants and the economy continue to be promoted.

Strengths of the current framework

Bilateral trading between producers, pipeline owners and end users based on long-term contracts has supported the growth of the Australian gas industry.

In an industry based on capital-intensive assets such as gas processing and pipeline infrastructure, investments tend to be supported by contracts that allocate risk to parties best able to manage it, helping to secure sufficient finance at competitive prices. In an emergent gas industry with a handful of suppliers and customers, remote production plant and pipelines had little alternative use if the buyer withdrew from the agreement after the asset had been built. This created investment risk.

Bilateral trading between producers, pipeline owners and end users based on long-term contracts has supported the growth of the Australian gas industry

Long-term contracts were implemented to decrease these risks and costs. Contracts were generally based on an agreed price that was escalated annually with inflation and periodically reviewed subject to certain market conditions. "Take or pay" provisions[71] were also included, ensuring a minimum level of revenue for the investor. In a small market, finding buyers and sellers and undertaking negotiations was relatively straightforward. This, in conjunction with the certainty provided through long-term contracts, minimised overall risks and costs for investors.

While bilateral contracts are expected to continue to remain a fixture of the industry to manage risk and underwrite financing on new projects, transaction costs may increase as the gas industry continues to develop and face new challenges – possibly incentivising changes to the current market arrangements.

Possible issues for the current framework given market developments

As outlined in Section 3, the eastern gas market is seeing two key developments: a structural shift in supply and demand, and greater interdependence between the electricity and gas markets. This section will analyse the interaction between these key challenges and existing market arrangements.

Structural shift in supply and demand

Growth in the number of producers and buyers, and enhanced pipeline interconnectedness, has contributed to a more "active" natural gas market. Gas can now be transported between major demand and production centres in the eastern market, creating more opportunities for trade. For example, since 2009 gas has flowed from the CSG fields in Queensland to supply the southern markets, and by 2015 gas will be shipped from Moomba in central Australia to southeast Queensland and onto Gladstone for export as LNG.[72]

71 This requires the buyer to pay for an agreed volume whether or not it takes the gas.
72 http://www.santos.com/Archive/NewsDetail.aspx?p=121&id=1230.

Pipelines are also becoming more flexible, with the South West Queensland Pipeline being modified to allow bidirectional flows from southeast Queensland to the southern markets, or north east to Gladstone and beyond to international markets.[73] This flexibility allows producers to redirect gas on a shorter-term basis between the regional domestic markets and the Gladstone LNG export hub in response to price signals, subject to pipeline capacity.

With the establishment of an east coast LNG industry and the concurrent expiration of existing gas contracts, sellers are likely to have some leverage over buyers during contract negotiations. This will be particularly acute if buyers are seeking long-term gas contracts, as producers are only likely to accept a price equal to the next most valuable use for the gas. In the current environment this is likely to be close to the Asia-Pacific LNG price, which is linked to oil.

A potential opportunity for buyers seeking gas and for producers to sell reserves without making long-term commitments is shorter-term trading. More flexible and transparent trading of wholesale gas, beyond the current frameworks, may enable participants to manage gas portfolios and contract obligations efficiently in the face of variable supply and demand.

More flexible and transparent trading of wholesale gas, beyond the current frameworks, may enable participants to manage gas portfolios and contract obligations efficiently in the face of variable supply and demand

Under a spot market framework, LNG exporters, who are also significant domestic gas suppliers, would have an opportunity to more freely monetise their reserves based on the spot price, without committing to long-term contracts and forfeiting the option value associated with LNG project expansions. This could take place on an exchange traded market, minimising the transaction costs related to searching for buyers, counterparty risk and contract negotiations currently faced by participants in off-market trade.

Domestic buyers, who may face difficulty in obtaining gas contracts as LNG producers withdraw from the domestic market to concentrate on their LNG projects, could potentially benefit from access to a wholesale spot market. This is because supplies of gas being offered through short-term market arrangements may not have otherwise been available due to the higher transaction costs related to seeking out and negotiating with potential sellers.

To enable more flexible trading in gas, pipeline capacity will also need to be more readily available for trading. Although most pipeline capacity is fully contracted, there is often unused capacity on any given day. This underutilised capacity could be sold or auctioned by contract right holders, increasing their revenue while maximising broader trading opportunities and pipeline flexibility.

SCER initiatives are under way to address these issues. For example, AEMO is developing a voluntary trading hub for gas at Wallumbilla, in Queensland and investigating the potential for pipeline capacity trading.[74]

Greater interdependence between the electricity and gas markets

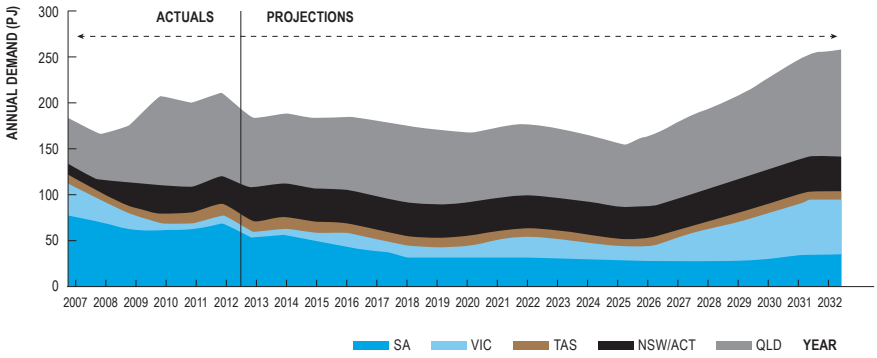
In an environment of growing electricity demand, a carbon price and relatively abundant gas resources, gas-fired generation was, until recently, expected to increase significantly, supporting closer interaction between the electricity and gas markets.

73 http://www.epicenergy.com.au/media/docs/New_Conditional_GTA_with_Santos_on_SWQP.pdf.

74 See: https://scer.govspace.gov.au/files/2012/12/Gas-Market-Development-Plan-Summary.pdf

AEMO has substantially revised its forecast gas demand for gas-fired generation in the 2012 GSOO. As illustrated in Figure 5.2 below, gas demand for generation in the eastern market now decreases out to 2025, before entering a period of growth. These results are primarily being driven by a moderation in electricity demand growth and competing investment in renewable capacity to meet the Large-Scale Renewable Energy Target.

Figure 5.2 – GSOO 2012 annual gas demand for gas-fired generation, Planning scenario



Data source: Gas Statement of Opportunities 2012, Figure 3-4

The AEMC considers it prudent to work with market participants on assessing whether the gas market arrangements are fit for purpose in the longer term, in anticipation of increased convergence in the future

With gas-fired generation now forecast to decrease in all regions out to 2025, it is unlikely that greater convergence between gas and electricity markets will take place in the short to medium term. However, the significant revision in forecasts over 12 months highlights the high degree of uncertainty in forecasting electricity demand under current market conditions.

For this reason, the AEMC considers it prudent to work with market participants on assessing whether the gas market arrangements are fit for purpose in the longer term, in anticipation of increased convergence in the future. Moreover, to the extent there is scope for further integration between the markets in the short term based on current levels of gas-fired generation and integration, this should be explored if it leads to increased efficiencies for participants.

The AEMC intends to approach this work initially through stakeholder consultation to better understand the issues, potential opportunities, benefits and costs of further integration between the electricity and gas markets over the short and medium term. It will be important to recognise the history of how the eastern gas market has evolved, as well as the strengths of the framework and the role of private sector commercial decision-makers in delivering substantial investment.

Given the market-led nature of development to date and continuing evidence of the market-led approach delivering investment, it will be important to consider carefully whether the benefits of any changes to existing arrangements are sufficient to outweigh the costs. A key area of focus is likely to be promoting effective interaction between the regulated parts of the market and the competitive parts.

Work program to address this priority

The AEMC is undertaking a number of rule changes that will help to increase the efficiency of existing gas market frameworks. These include the pipeline operator cost recovery processes; STTM deviations and the settlement surplus shortfall; and market operator service – timing and eligibility.[75]

This priority not only encompasses the gas rule changes that the AEMC is undertaking, it also relates to the wider policy development process that affects the Australian gas sector. The Australian Government's Energy White Paper provides an overarching framework for strategic gas market development, with a clear message that further changes are needed to promote more informed and flexible gas markets.[76]

During the first half of 2013, the AEMC will be undertaking a scoping study to review at a high level the existing gas market arrangements of the eastern states of Australia to understand for which issues there may be benefit in more detailed market development work. The scoping study will involve consultation with stakeholders and consider carefully how and why the gas industry has evolved the way it has. The AEMC will use the findings of the scoping study to inform discussions with SCER about potential future work to consider the efficiency of the gas market arrangements.

The current market structure of bilateral contracts was developed to minimise costs in a certain environment

AEMO is currently undertaking design and implementation work on a gas supply hub at Wallumbilla, in Queensland, which was approved by SCER at its 14 December 2012 meeting.[77] The hub will facilitate trading of wholesale gas close to production centres, upstream from the STTM. The AEMC has been invited to attend working groups through the implementation phase of this project.

Summary

The eastern gas market is experiencing a structural shift in supply and demand following the establishment of the east coast LNG export industry. Like all structural changes across the economy, it will involve a period of adjustment for market participants. LNG proponents, who are also major gas suppliers, are facing a period of uncertainty with respect to the timing of the development of reserves. Likewise, large domestic users are dealing with the uncertainty of long-term contracts expiring and the difficulty in negotiating new agreements.

The current market structure of bilateral contracts was developed to minimise costs in a certain environment. It would be unwise to accept that these same mechanisms will continue to deliver efficient outcomes in changed circumstances. As the structure of the gas market evolves, so too should the mechanisms by which gas and pipeline capacity are traded. In the current changing environment, it is important to review and debate the adequacy of our gas market frameworks to ensure they continue to efficiently meet the needs of consumers.

75 Open gas rule changes are located here: http://www.aemc.gov.au/Gas/Rule-changes/Open.html.
76 Australian Government 2012, Energy White Paper, p. 141.
77 http://www.scer.gov.au.

6. Market priority: market arrangements that encourage efficient investment and flexibility

Introduction

We propose to broadly retain this strategic priority from the current list, reflecting the importance of market arrangements that promote efficient future investment decisions. Because future investment requirements are relatively uncertain, it is important that market arrangements are flexible enough to facilitate investments that can be adapted in line with changing policies and market expectations.

This priority contributes to addressing the issues and developments identified in Sections 2 and 3.

The policy and regulatory environment

Attracting finance to the Australian energy sector at competitive rates requires a policy environment that investors understand and that is relatively stable, with transparent and well understood processes for any policy changes. In this regard, the Australian energy sector has some advantages.

The market's institutional structure – and in particular the separation of roles between the AEMC and the AER – is unusual compared to other countries. Investors generally appreciate the value of these separate roles in promoting a transparent and predictable regulatory regime.[78] Australia also has a wholesale electricity market that is relatively well understood, transparent and operated reliably by AEMO. Australia's retail energy markets are seen as being among the most competitive in the world.[79]

These strong market and institutional foundations were put in place over many years. While the process of microeconomic reform of the Australian energy sector has provided a good overall environment for investment, a number of policy developments and uncertainties in recent years risk affecting the confidence of investors.

78 The state's role in making energy policy is less unusual as, for example, much utility regulation in the US occurs at the state level.

79 VaasaETT's comparison of switching rates across a range of retail energy markets in the world has consistently shown a number of the Australian retail energy markets to have among the highest rates of switching by customers. See http://www.vaasaett.com/2012/06/world-energy-retail-market-rankings-2012-launched/ for more information.

Achieving governments' environmental policies

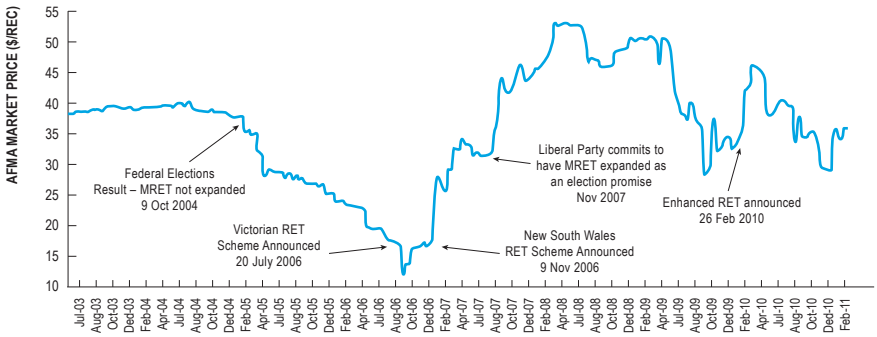
The response of Australian governments at all levels to concerns about climate change has, until recently, been characterised by a range of different and often poorly coordinated policy initiatives. An Australian Government review of climate change programs led by Mr Roger Wilkens AO in 2008 identified over 200 programs across all levels of government and the review characterised many of them as 'ad hoc or badly targeted'.[80]

Uncoordinated policy measures can have unintended policy consequences, with material impacts on the electricity market. For example, incentives were provided for small-scale renewable generation, and in particular solar PV, at federal and state levels. The combination of the RET and state Feed-in-Tariffs led to an oversupply of renewable energy certificates and also resulted in electricity consumers paying a high cost relative to the greenhouse gas emissions reductions arising from these policies.

It is important that policymakers consider the impacts that changes in policy can have on investment – both immediate and longer term

Policies have also been characterised by design changes, some of them fundamental. These include the splitting of the Renewable Energy Target (RET) into two parts in 2011 – the Large-scale Renewable Energy Target (LRET) and the Small-scale Renewable Energy Scheme (SRES).[81] Some policy changes are obviously necessary in order to adapt to external market changes or respond to lessons learned through implementation. However, it is important that policymakers consider the impacts that changes in policy can have on investment – both immediate and longer term. For example, Figure 6.1 shows how the spot price of Renewable Energy Certificates has changed over time prior to the target split. It indicates that some price changes may have been significantly influenced by changes in the policy design of the RET.[82]

Figure 6.1: Renewable Energy Certificate price trends



Data source: Investor Reference Group report, April 2011, A report to the Commonwealth Minister for Resources and Energy, p 89

80 Roger Wilkens AO, Strategic Review of Australian Government Climate Change Programs, Final Report, 31 July 2008, p1, available at: http://www.finance.gov.au/publications/strategic-reviews/docs/Climate-Report.pdf.

81 Chapter 1 of the Climate Change Authority's Discussion Paper for its review of the RET includes a history of the evolution of the RET. See http://climatechangeauthority.gov.au/sites/climatechangeauthority.gov.au/files/DiscussionPaper-RET-Review-20121031.pdf

82 Data is provided to February 2011 where the RET was subsequently split into two schemes with two different certificate types – large-scale generation certificates (LGCs) and small-scale technology certificates (STCs).

The Climate Change Authority (CCA) finished a review of the RET at the end of 2012.[83] Among its main recommendations was that the current target for the LRET of 41,000 GWh of renewable generation in 2020 should be retained. When the target was set it was intended to represent 20 per cent of forecast demand in 2020. Demand forecasts are now lower than when the target was set, so recent forecasts would mean that 41,000 GWh of renewable generation would represent about 26 per cent of demand. The Australian Government announced its response to the review on 21 March 2013.[84] The Government accepted the majority of the CCA's recommendations, including maintaining the 41,000 GWh LRET target. The potential impact of policy changes highlights the importance of rigorous, consultative and transparent processes in conceiving and implementing new policies. This not only promotes the development of better policies that require fewer changes from the outset, but helps to provide confidence for the market that investment decisions are unlikely to be eroded by an unforeseen change in policy.

The implementation of the carbon price from 1 July 2012 has the potential to encourage a reduction in duplicative policies. The New South Wales Government ended the G-gas scheme when the carbon price was introduced. A number of state governments have significantly reduced their level of support for small-scale renewable energy through Feed-in-Tariffs. While these decisions were partly made due to the much higher-than-expected take-up of small-scale renewable generation, they have also coincided with the introduction of the carbon price. The carbon price works with the existing wholesale electricity market to change the cost structure of generators and can establish a new merit order depending on the relative emissions intensities of generators[85]. This is in contrast to policies that support particular forms of generation with revenue streams that are outside of the wholesale electricity market and can have distortive impacts. A number of generating units are currently mothballed due to their owners not considering it is commercially viable to operate them given the current and expected future level of wholesale electricity prices.

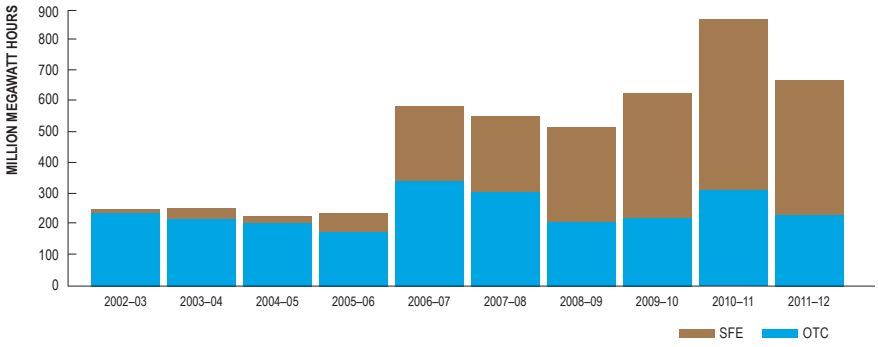
Even with a reduction in duplicative policies, a range of other uncertainties related to the carbon price still need to be addressed to promote investor confidence

Even with a reduction in duplicative policies, a range of other uncertainties related to the carbon price still need to be addressed to promote investor confidence. The decision of the Commonwealth Government to integrate the Australian carbon price with the European Emissions Trading Scheme from the start of the floating price period in July 2015 provides a longer-term policy framework and should in due course allow Australian carbon emitters to trade their permits in a more liquid market.[86]

Despite the introduction of a carbon price, it remains the case that there is relatively limited trading of wholesale electricity contracts beyond a one- to two-year forward period. Figure 6.2 shows the volume of trading on the Sydney Futures Exchange and over the counter (OTC) derivative markets over the past 10 years. Largely on the back of uncertainty around a carbon price, OTC electricity derivatives turnover fell 28 per cent and market based futures and options contracts were down 20 per cent in the past year.[87]

83 http://climatechangeauthority.gov.au/sites/climatechangeauthority.gov.au/files/20121210%20Renewable%20Energy%20Target%20Review_MASTER.pdf
84 Further detail is available at: http://www.climatechange.gov.au/en/media/whats-new/government-response-to-climate-change-authoritys-2012-review-of-ret-scheme.aspx
85 The impact of the carbon price on the merit order depends on the price level, where a low carbon price is less likely to have a material impact on the merit order.
86 http://www.climatechange.gov.au/en/media/whats-new/linking-ets.aspx.
87 AFMA 2012, Australian Financial Markets Report 2012, p50.

Figure 6.2 – Trading volumes for derivative wholesale electricity contracts



Data source: Australian Financial Markets Report, 2012, AFMA, p 50

The continuation of electricity retail price regulation, particularly in relation to how retail price caps are set, has the potential to undermine the willingness of investors in retail businesses and generation capacity

As the introduction of a carbon price is not a bipartisan policy, investors also need to consider the impact of a potential change of government that results from a change in policies.

Retail markets

It is not just government policies to address environmental issues that can affect investor sentiment. The continuation of electricity retail price regulation, particularly in relation to how retail price caps are set, has the potential to undermine the willingness of investors in retail businesses and generation capacity. Over the past year, four of the five states and territories in the NEM that set electricity retail price caps have changed, or signalled an intention to change, the way they set the wholesale electricity component of the retail price cap.[88] This means there is now limited commonality in how regulators are setting the wholesale price component of retail prices. Irrespective of the merits of any particular approach to setting retail price caps, regular changes and variations in approaches between regulators are not conducive to promoting entry and competition in retail markets. Furthermore, policy relating to setting retail price caps is an important driver of incentives to invest in new generation capacity.

Investors in generation capacity need to be able to maintain confidence in the regulatory and policy environment over a long period, because this impacts the prices retailers are willing to pay for power. Such confidence does not preclude changes in the regulatory and policy environment, but the changes should be transparent and based on well-understood objectives. If they are not, there is a risk that confidence in investing in generation capacity will be undermined.

88 The regulators in Queensland (QCA) and South Australia (ESCOSA) have adopted or signalled an intention to adopt an approach based on forecasting future prevailing wholesale market prices, having both previously used approaches that incorporated consideration of the long run marginal cost (LRMC) of generation capacity. After ESCOSA's proposals the South Australian Government made a subsequent decision to remove retail price regulation in South Australia. The regulator in NSW (IPART) has been instructed by the NSW Government to move from an approach based on the higher of LRMC or market prices to an approach that uses 75 per cent LRMC and 25 per cent market prices. The Tasmanian regulator (OTTER) has changed its approach to estimating LRMC. Only the ACT regulator (ICRC) has not changed its approach in recent years; it does not use LRMC.

Generators, particularly the baseload variety, generally seek a retail customer base or contracts for their generation capacity with retailers to underpin investment. If retail price caps are set at a level below which investment in generation capacity is profitable, generators will be cautious about investing. Their retail customers will either not provide sufficient revenue to support the investment, or other retailers will be unwilling to enter into a contract at a price that makes the investment profitable. In recent months, retailers and generators in a number of states have expressed concerns about the impact of changes to the way retail price caps are set.

Networks

The AER and ERA are now undertaking a program of work to implement the AEMC's recent network regulation rule changes.[89] Primarily this involves developing a series of guidelines about the methodologies that the regulators will adopt to implement various aspects of the new rules, such as how the rate of return will be estimated, and how incentives for efficient capital investment will be structured. All determinations and access arrangement decisions after May 2014 will be made using these new rules.

A significant focus of network businesses, regulators and other stakeholders will likely be to ensure that changes to regulatory arrangements work effectively

The AEMC has also recently made rule changes to put in place a national framework for electricity distribution network planning and expansion. These rules cover the assessment that should be undertaken to determine whether large new augmentations of a distribution network should proceed, the information that should be included in Annual Planning Reports by each distribution network, and how distribution networks should better identify demand side projects that could be more efficient options than network investment to meet future requirements.

These two significant regulatory changes affecting network businesses illustrate that in the next few years a significant focus of network businesses, regulators and other stakeholders will likely be to ensure that changes to regulatory arrangements work effectively. Although we do not propose any specific strategic priority in relation to these important projects, we recognise that their successful implementation is vital for ensuring that consumers are confident that they are receiving value for money from network businesses.

The interaction of transmission and generation investment presents a challenge for policy-makers and regulators in all electricity markets. Policy-makers and regulators seek to develop arrangements that minimise total system costs by promoting efficient coordination of investments made by generators operating in a competitive market, as well as monopoly network providers. Other countries have adopted a range of approaches to address this challenge. The AEMC is publishing its final report in April 2013 for the Transmission Frameworks Review, which addresses whether enhancements can be made to current arrangements in Australia. Given the uncertainty about future levels and patterns of generation investment, it is particularly important that arrangements are flexible enough to deal efficiently with a range of possible scenarios for future generation capacity.

89 This is briefly discussed in section 2 of this document and further information is available at: http://www.aemc.gov.au/electricity/rule-changes/completed/economic-regulation-of-network-service-providers-.html

Continuing to develop a predictable regulatory and market environment

It is important to recognise that decision-making and investment in the energy sector will always occur in an environment in which there is some uncertainty. Market outcomes are a function of decisions by many individuals and companies, which will always be susceptible to errors in forecasting. Good policy and regulatory arrangements can also involve change, particularly where arrangements are changed in response to knowledge gained from what has worked well in the past and what has worked less well. We can also learn much from how other countries operate their policy and regulatory arrangements.

If policy and regulatory arrangements do not evolve they may cease to be effective and lose their legitimacy with the community. This can ultimately lead to policy and regulatory changes that are more significant than they might otherwise have been if the change had been evolutionary.

Change will always be a feature of energy markets and policy and regulatory arrangements, but it is important that the manner in which change is effected is transparent, based on clear objectives and relatively predictable.

Change will always be a feature of energy markets and policy and regulatory arrangements, but it is important that the manner in which change is effected is transparent, based on clear objectives and relatively predictable

The Limited Merits Review panel noted that the National Electricity and Gas Objectives that guide the regulatory decisions in the NEM are best-practice objectives when compared to other countries. In particular, the objectives have a clear focus on the interests of consumers.[90]

The requirement for amendments to the National Electricity Law and National Gas Law to be passed in all the affected state parliaments make a transparent process mandatory, as the Law needs to be largely agreed by all affected governments before being put before the parliaments. The rule change process administered by the AEMC is highly transparent and consultative. The reviews that the AEMC carries out for the SCER are also managed in a transparent and consultative way, and any changes that arise from the reviews are then invariably subject to a further process of consultation through the statutory requirements to make rule changes.

The new rules for network regulation reinforce and strengthen the requirements for the AER to adopt a highly consultative regulatory process.

AEMO also operates a range of working groups and undertakes extensive consultation before changing its procedures. These procedures set out various provisions that affect the operation of the electricity and some gas markets.

Extensive and transparent policy-making processes exist within the stationary energy sector. A significant challenge is to ensure that policy development that occurs outside of these policy processes adequately considers the impact on the energy sector. At a minimum, policy-makers need to engage in meaningful consultation with market organisations, participants and consumers during the development of policies. This has benefits that flow in both directions – helping inform policy development to reduce the risk of unintended policy consequences and providing greater information to the market, well in advance of policy implementation.

90 https://scer.govspace.gov.au/files/2012/10/Review-of-the-Limited-Merits-Review-Stage-Two-Report.pdf.

Work program to address this priority

The AEMC is undertaking a number of projects that will help to provide market arrangements to promote efficient investment. These reviews are:

- **NEM financial market resilience.** The AEMC is reviewing the effectiveness of arrangements to deal with retailers who get into financial difficulties. It is considering whether changes are required to provide more confidence that, if large and medium-size retailers get into financial difficulties, there will be no contagion effect that spreads to other retailers. The AEMC will be making recommendations to SCER during 2013 about changes that may be needed.[91]
- **National frameworks for transmission and distribution reliability.** This review will develop national frameworks for expressing, setting, delivering and governing transmission and distribution reliability in the NEM. It is due to be finalised in late 2013. A more efficient and transparent approach to setting reliability levels will promote efficient investment in networks, because the need to meet reliability standards is a key determinant of network investment. Moreover a consistent way of expressing reliability levels will improve the ability of the AER to benchmark performance and determine efficient levels of network expenditure across the NEM.
- **Transmission frameworks review.** The AEMC made recommendations to SCER in March 2013 in a final report for this review. The recommendations will cover generator access to the wholesale spot market, transmission planning and investment arrangements, and arrangements for connecting to the transmission network.

Transparent and objective policy, rule making and regulatory processes can help to promote confidence among investors

The rule changes that the AEMC is assessing that are relevant to this priority are in relation to potential generator market power in the NEM, negative offers from scheduled network service providers, connecting embedded generators, network service provider expenditure objectives and changes to cost allocation method.[92]

Generally, this strategic priority is about the wider policy development process that affects the Australian stationary energy sector. The Australian Government's Energy White Paper provides an overarching framework to guide the transformation of Australia's energy and energy resource sectors.[93] In addition, state governments have a range of processes and initiatives in place to develop or change their policy frameworks. For example the Queensland Government has set up an independent panel to review the performance of its network businesses and is undertaking a broader review of its electricity sector to develop a 30-year strategy. The Tasmanian Parliament is currently considering legislation to implement changes to its energy sector. The AEMC will continue to participate and contribute to these policy processes as appropriate.

There will continue to be significant work for the AER and ERA to implement the changes to the network regulation rules made by the AEMC. SCER is also considering the conclusions of the Limited Merits Review Panel and expects to make decisions about any changes to the Merits Review regime in 2013.

91 http://www.aemc.gov.au/Media/docs/Options-paper-b9ee83ff-ac84-4a2f-83b8-7761e03cfe3f-0.pdf.
92 Information about electricity rule change proposals currently being considered by the Commission can be found at http://www.aemc.gov.au/Electricity/Rule-changes/Open.html.
93 Available at www.ret.gov.au.

The AEMC participates in a number of other processes that affect the investment environment for the Australian stationary energy sector. The AEMC Chairman is a member of the Energy Security Council.[94] The AEMC also responds to and participates in consultations and policy development processes undertaken by a range of governments and other organisations. The AEMC considers that its market development responsibilities are best fulfilled by participating in such processes, where policies have the potential to have a significant impact on the stationary energy sector.

Summary

The NEM has in place an institutional and policy framework that has supported a consistent pipeline of investment to maintain a reliable and secure energy supply. Since the start of the NEM in 1998, over 12,000 MW of new investment in generation capacity has been delivered in addition to significant investment in increased network capacity. However, the nature of the investment that is required is changing. It appears likely that there will be a greater role for embedded generation and investments in new products and services to allow consumers greater control over their consumption decisions. Significant investment will also be needed to meet the RET, and the introduction of a carbon price should provide incentives over time for investment in lower emitting generation capacity. In addition, it will be necessary to attract capital to refinance existing debt to fund the generation and network assets that have already been built.

Likewise it will be important to build on the institutional, regulatory and market framework in Australia to attract the capital necessary to fund future investment. In particular, transparent and objective policy, rule making and regulatory processes can help to promote confidence among investors. The AEMC will continue to undertake projects that help to promote a market and regulatory environment that is conducive to efficient and timely investment.

94 The Energy Security Council (ESC) advises the Commonwealth Treasurer on applications for loans from high emitting generators who are unable to refinance commercially. It also has some other advisory responsibilities relating to maintaining energy security. The Charter of the ESC is available at http://www.energysecuritycouncil.gov.au/content/Content.aspx?doc=charter.htm.

Annex 1 – Addressing the existing priorities

In 2011, we set out the work we were undertaking to address each of our current strategic priorities. In this section we review the progress of those projects and identify others that have been established in the intervening period. We have not discussed all the rule changes and reviews that the AEMC has undertaken since 2011. The AEMC's Annual Report presented to the South Australian Parliament and then published on our website includes a review of the AEMC's work each year.

A predictable regulatory and market environment for rewarding economically efficient investment

We identified three reviews that we were undertaking that would contribute to addressing this priority:

- New South Wales review of competition that was expected to start in 2012 – Following the privatisation of the New South Wales retail businesses, the New South Wales Government decided to postpone the review. We are currently engaged in this review, with a final report to be provided to SCER in September 2013.
- Electricity price trends – This is an annual report we produce at the request of COAG. The report was published in March 2013.
- Review of arrangements for compensation following an administered market price cap or market floor price – We published a draft report for this review in November 2012[95].

In December 2011 we completed a review of the Renewable Energy Target (RET).[96] This considered the impact of the RET on prices, reliability of supply and emissions levels. We also subsequently made a submission to the Clean Energy Authority's review of the RET, which concluded in December 2012.

We have also subsequently commenced a review into NEM financial market resilience. This review is initially focused on considering options to improve the operation of the retailer of last resort (RoLR) arrangements in the NEM. These arrangements seek to preserve continuity of supply for customers in the event that a retailer gets into financial distress. We have recently published an Options Paper seeking views on a range of options to strengthen the arrangements.[97]

95 http://www.aemc.gov.au/Market-Reviews/Open/review-of-arrangements-for-compensation-following-an-administered-price-market-price-cap-or-market-floor-price.html
96 http://www.aemc.gov.au/Market-Reviews/Completed/impact-of-the-enhanced-renewable-energy-target-on-energy-markets.html
97 http://www.aemc.gov.au/Market-Reviews/Open/nem-financial-market-resilience.html

We identified four rule changes that we were considering that would contribute to addressing this priority. Three of these rule changes relating to gas markets have been completed.[98] We made a draft determination for the Potential Generator Market Power in the NEM rule change proposal raised by the Major Energy Users.[99] We expect to make a final determination on this rule change by April 2013.

In addition to the reviews and rule changes undertaken by the AEMC, we have participated in a number of other projects and forums that have contributed to addressing this priority. The AEMC was a member of the Investment Reference Group that provided a report to the Commonwealth Minister for Resources and Energy.[100] The AEMC Chairman is a member of the Energy Security Council, which advises the Commonwealth Treasurer on whether to provide refinancing assistance to highly emitting generators and on other aspects of energy security.[101]

Building the capability and capturing the value of flexible demand

In December 2012, the AEMC completed the Power of choice review that provides comprehensive advice to SCER to address this priority.[102] The Power of choice review is complemented by the electric vehicles review, also recently been completed.[103] COAG has asked SCER to implement a package of reforms based on the recommendations of the Power of choice review. This will include SCER submitting a series of rule change requests to the AEMC this year. COAG has asked SCER to report back on its progress in June 2013.

The AEMC has completed three rule changes that were identified in August 2011 as contributing to addressing this priority.[104] A rule change is currently being considered in relation to the connection arrangements for embedded generators.[105] We expect to make a draft determination in the first half of 2013.

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

The AEMC identified two market reviews that it was undertaking to help to address this strategic priority:

- The Transmission frameworks review is due to provide a final report to SCER in the first half of 2013. We published a second interim report in August 2012 that sought views on proposals to change the arrangements for generators to access the wholesale spot market, planning for transmission investments and the arrangements for connecting to the transmission network.[106]

98 These rule changes were Application and Operation of Administered Price Periods, Various Hedge Instruments in the Declared Wholesale Gas Market and the STTM Brisbane Hub.
99 http://www.aemc.gov.au/Electricity/Rule-changes/Open/potential-generator-market-power-in-the-nem.html.
100 http://www.ret.gov.au/energy/documents/energy-security/irg-report.pdf.
101 http://www.energysecuritycouncil.gov.au/content/Content.aspx?doc=charter.htm.
102 http://www.aemc.gov.au/Market-Reviews/Completed/stage-3-demand-side-participation-review-facilitating-consumer-choices-and-energy-efficiency.html.
103 http://www.aemc.gov.au/News/Whats-New/looking-ahead-to-lower-cost-ways-to-support-electric-vehicles.html.
104 These rule changes were Efficiency Benefit Sharing Scheme (EBSS) and Demand Management, Inclusion of Embedded Generators into Demand Management and Network Support Payments and Avoided TUoS for Embedded Generators.
105 This rule change request was made by ClimateWorks Australia, the Property Council and Seed Advisory.
106 http://www.aemc.gov.au/Market-Reviews/Open/transmission-frameworks-review.html.

- We have completed the New South Wales workstream of the review of distribution reliability outcomes and standards.[107] We issued a draft report for consultation for the national workstream of the review and have subsequently rolled this review into a new project at the request of SCER. The new project is a review of the national framework for distribution reliability and it has two workstreams – a 'transmission workstream' and a 'distribution workstream'. It is due to be finalised by the end of 2013.

Shortly after confirming our strategic priorities in August 2011, we received rule change requests from the AER and from the Energy Users Rule Change Committee to change the rules for regulating monopoly energy networks. We have recently made the final determination for the rule change proposals.[108] We have also provided further advice, at SCER's request, to support the implementation of the new rules. The AER and ERA are working to implement the new rules, which will apply to all determinations and access arrangements from May 2014.

We have also made a rule change to implement a national distribution network planning and expansion framework.[109] This change request was made by the Ministerial Council on Energy following a previous review by the AEMC. The change will take effect during 2013 as distribution network businesses in each jurisdiction develop Annual Planning Reports under the new rules.

When we identified this strategic priority in August 2011 we highlighted three rule change proposals that we were considering and which could contribute to addressing the priority. We have subsequently made final determinations for these proposals.[110]

107 http://www.aemc.gov.au/Market-Reviews/Completed/review-of-distribution-reliability-outcomes-and-standards.html
108 http://www.aemc.gov.au/electricity/rule-changes/completed/economic-regulation-of-network-service-providers-.html
109 http://www.aemc.gov.au/electricity/rule-changes/completed/distribution-network-planning-and-expansion-framework.html
110 These were Total Factor Productivity for Distribution Network Regulation, Definition of Temporary Over-Voltage and Inter-regional Transmission Use of System Charging.

Notes:

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