



**EnergyAustralia**

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### **EnergyAustralia Submission to the Energy White Paper Issues Paper**

The Australian Government's Energy White Paper is being developed at an important time for Australia's energy markets. Distributed generation, competing fuel demands and policy interventions are all challenging existing structures and regulatory frameworks. The Energy White Paper should be ambitious in exploring these issues, encourage policy leadership for the long-term and provide the energy sector with a clear direction for the future. EnergyAustralia welcomes the opportunity to make a submission on the Government's Issues Paper.

#### *National Electricity Market*

The National Electricity Market (NEM) recently celebrated 15 years since its creation. While recognised by some as a successful microeconomic reform<sup>1</sup>, experience has demonstrated it is a market subject to serious government interventions that has struggled to deliver long-run marginal cost to investors over time. While customers have benefited in the short-term from unsustainably low wholesale prices, there are likely to be longer-term consequences.

Regular policy interventions by successive Governments (Federal and State/Territory) have pushed the NEM to breaking point. As a plethora of green schemes added to the cost of retail electricity so too did the cost of building and maintaining distribution networks. Unsurprisingly, as a result of these policies driving up electricity prices, electricity demand began to fall.

However, in the context of falling grid demand, the policy response was to continue to force in more supply via the Renewable Energy Target (RET). Supply that has a zero short-run marginal cost which suppresses wholesale electricity prices and makes the cost of the renewable subsidy required (that is,

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<sup>1</sup> Australian Energy Market Commission, *The National Electricity Market: A Case Study in Successful Microeconomic Reform*, December 2013

the RET) much more expensive for all retail customers. EnergyAustralia considers the best solution for growing renewable generation is through effective design of the electricity market rather than bolting on markets which will ultimately fail as they distort the existing mechanisms.

With falling demand and increasing supply, a 'perfect market' (with seamless, costless entry and exit) would respond. And the NEM has in parts. However, to exit the NEM costs hundreds of millions of dollars in redundancies and mine rehabilitation costs.

Sustained inadequate returns within the generation sector is testing confidence in the current market design and could threaten the reliability of the sector as the industry seeks to reduce costs in search of much needed returns. This will only come at the detriment of consumers in the longer term.

The oversupplied market of recent times has meant reliability has rarely been threatened. Victoria and South Australia have recently experienced some of the hottest consecutive days on record with reliability only a potential issue on one of those days. However, this is not a reason for policy makers to be complacent. Where generators are unable to achieve appropriate commercial returns, investment in non-essential activities will not be undertaken and this could threaten generation capacity at times when it is needed most. For the market to be sustainable and in the long-term interests of consumers, the NEM requires serious reform.

#### *Gas Market Reform*

Australia's east coast gas market has undergone significant transformation over the past 20 years, since the need for change was envisaged in 1991, however many of the original goals, such as transparency and liquidity, remain elusive. Competition in retail markets for gas has emerged and short-term balancing markets have been delivered. However, increased price and volume uncertainty and the continued dominance of long-term contracts have increased the risks of operating in the domestic market. The tools for managing these risks have failed to develop and inefficiencies remain. Historically the ramifications of low levels of transparency and non-existent liquidity were minimal while the size of the east coast gas market was small and prices were low. However, as the size of the market triples due to the emergence of an LNG industry in Gladstone and the domestic market dynamics change, the consequences will be greater and more broadly felt.

Supporting continued exploration and development of gas resources and promoting greater transparency and liquidity in the gas market will ensure that an adequate level of competitively priced gas can be delivered on the east coast of Australia. While the east coast gas sector has faced multiple reviews over the past 18 months, the challenge for the Energy White Paper and the Eastern Australian gas Supply Strategy is to establish a clear pathway to providing greater direction and certainty in how the long term policy goals can be met.

#### *Fuel Availability*

Availability of fuel resources (including coal, natural gas and renewables) remains critical for a secure, stable and efficient wholesale energy market in Australia, now and into the future. The energy industry is facing increased cost, uncertainty and risk to the development of new projects due to inconsistent,

complex and duplicated planning processes and regulations across State and Commonwealth jurisdictions. In most cases these additional costs are avoidable and provide limited, if any, material environmental or social benefits. EnergyAustralia supports streamlined, transparent and fact based planning processes and regulations that balance the interests of the environmental and social factors with that of economic growth.

#### *Network Regulation*

Network tariff and regulatory reform are both critical and urgent to ensure the productivity of the energy sector can improve and price pressures on customers are kept in check. Network costs make up over half of a customer's energy bill in most regions other than Victoria and the ACT. Regulatory reform is necessary to ensure only the most efficient costs are passed through via network charges, including consideration of mechanisms that ensure consumers don't pay for past overinvestment in the network. Further, traditional network charging structures have been challenged by the uptake of air conditioning and more recently the increased installation of solar PV, whilst metering infrastructure has limited the ability for improved pricing structures to be delivered. These issues will require Government consideration to protect consumer interests and maintain investment in the energy sector. Governments will need to establish frameworks that encourage the rollout of smart meters in a competitive framework which avoid the challenges experienced in the past.

#### *The Long Term Outlook for Energy Policy*

Many of the challenges outlined in the paper will shape Australia's long-term energy outlook. They highlight the need for urgent reform to ensure a sustainable energy sector, which is able to capitalise on Australia's rich resource reserves and deliver energy domestically at least cost. It also appears that many of the challenges facing the energy sector are interrelated, and consequently policy considerations in one area should be critically assessed to avoid unintended consequences elsewhere. A crucial consideration for the Energy White Paper is the continued global and domestic climate and renewables policy debate.

To ensure energy provides a least cost input into other sectors of the economy, it is critical that policy mechanisms supporting emissions abatement are environmentally effective, least cost and, importantly, help to reduce the long term uncertainty that the industry continues to face. The cost of any unnecessarily expensive emission reduction outcomes will ultimately be borne by energy consumers in the form of declining energy affordability at the mass-market level and deteriorating international competitiveness at the industrial level.

The Renewable Energy Target (RET) was designed to support the growth of the domestic renewables industry through its role in meeting demand growth in the sector. In pursuit of this objective the current RET policy framework established a hardwired target to deliver 20 per cent of Australia's electricity supply from renewable sources by 2020. The design of the current scheme is inflexible, unsustainable and unlikely to be delivered.

If the Government wants to retain community support for renewable energy, the RET needs to be reformed. Under the current scheme when we don't achieve the target, customers will start paying a tax

whilst no further renewable energy will be delivered. Failure of the current RET policy framework represents a material risk to investors in both thermal and renewable electricity generation and is likely to impose significant and unnecessary costs on energy customers in the process. The best outcome for industry and customers is a recalibrated target that continues to transition away from subsidy-driven investment toward a long-term sustainable market-based solution. Depending on the reform pathway adopted by the Government, consideration should also be given to ensuring that existing investments are protected from any policy change.

### **The Role of Government**

The energy sector is facing significant upheaval as it experiences a supply transformation whilst the traditional role for energy providers also changes as customers become self producers. Growing distributed generation and the expected increase in energy storage and electric vehicles will test existing structures and could threaten the sustainability of the current market design. Governments' role in the energy sector is to ensure energy market structures remain sustainable and support what is likely to be a complex transition.

The Australian energy industry has been in a constant state of change since energy market reforms were introduced in the early 90's. In the long term, continued uncertainty will discourage investment in capital-intensive generation, which risks less efficient outcomes and higher costs for customers. However in the short term, it remains important that the policy settings are focused on sustainable outcomes to ensure the transformation of the energy sector is smooth.

Governments (and market agencies) should regularly evaluate the performance and impact of policy against the National Electricity Objective and National Gas Objective and ensure there is flexibility to account for changes in market conditions. EnergyAustralia recommends that SCER provide the AEMC with an explicit mandate to review and reduce ineffective, duplicative, inefficient obligations and rules.

The Energy White Paper should also seek to establish principles upon which energy, climate, environmental and renewable policies interact. These principles should establish that no further increases in the RET are delivered without mechanisms that will support exit of existing generation and contribute to rebalancing the generation mix in the NEM. Further, given the importance of the Australian Government's focus on ensuring that Australia fosters its comparative advantage in affordable energy, the Energy White Paper should explore the impact of significant climate, environmental and renewable policies might have on future energy prices with a view to minimising unintended future price pressures.

### *Support for New Technologies*

Governments should play a key role in supporting new technology. Using existing resources in more efficient and innovative ways and finding new ways to generate, deliver and manage energy will be important to maintain Australia's low cost competitive advantage and create jobs and investment. Government can assist to progress new technologies through research and development, and funding to support demonstrations. Technology support programs should be clearly defined, transparent and focused on assisting industry to overcome demonstration or commercialisation challenges.

In contrast, Governments should remove themselves from established markets by privatising energy assets and ending target-based energy efficiency schemes where the private sector is well placed to deliver efficient outcomes.

Finally the Governments should maintain a focus on reducing regulatory burden and improving workforce productivity in the energy sector. The Energy White Paper should explore the increasing regulatory burden on businesses and give the Australian Energy Market Commission a mandate to reduce this burden without diminishing consumer protections. Governments, in cooperation with industry and the educational sector, should build links between education and skills development to help the energy sector catch up to other sectors and enhance competition for skills. The Australian Government also has a role to play to ensure a balanced workplace relations frameworks exists without energy businesses being unreasonably restricted from adapting in a dynamic environment.

Further information on these issues is contained in the attached submission.

If you wish to discuss this submission further, please contact me on (03) 8628 1496 or [clare.savage@energyaustralia.com.au](mailto:clare.savage@energyaustralia.com.au).

Regards

**Clare Savage**

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## **Introduction**

EnergyAustralia is one of Australia's largest energy companies, supplying gas and electricity to over 2.7 million household and business customer accounts who consumed more than 31 TWh of electricity and 75 PJ of gas during 2012. We own and operate a multi-billion dollar portfolio of energy generation and storage facilities across Australia including coal, gas and wind assets; controlling the largest privately owned generation fleet in Australia. Our generation portfolio of 5,662MW spans the National Electricity Market (NEM) with facilities in New South Wales, Victoria and South Australia generating over 26TWh during 2013, supplying approximately 15 per cent of the energy consumed in the NEM. EnergyAustralia supports its current and future portfolio requirements through its mining operations at Yallourn, ownership of the 22 PJ Iona gas storage facility, a variety of stakes in upstream coal and gas developments and a range of short and long term fuel contracts.

Energy plays a key role in the economy and the consequences of inefficient and ineffective policy will filter through to every sector. The energy sector alone makes up 6 per cent of gross value added to the Australian economy and employs over 1.1 million people<sup>2</sup>. Energy is also a key input in many parts of the economy such as the manufacturing, construction and mining sectors but it also an important cost to many other businesses often overlooked in the energy policy debate. EnergyAustralia supplies a diverse and important range of customers in key sectors that underpin the Australian economy including transport, retail and hospitality businesses, as well as health, education and government.

According to the International Energy Agency's World Energy Outlook for 2013<sup>3</sup> global energy demand is expected to increase by over 42 per cent by 2035, largely driven by continued growth in China, India and South East Asia. This presents both a potential challenge, in terms of higher fuel costs, and an opportunity in terms of potential export growth for the Australian economy. The Energy White Paper needs to recognise the importance of supporting investment in exploration and production of resources to take advantage of this global growth, whilst efficient markets domestically should also ensure that the cost of the resources supporting Australia's domestic energy production remain globally competitive.

This submission discusses the full chain of value creation in the energy sector and highlights the current energy market challenges and considers them in a global context. It also looks to future issues that require Government policy consideration and action to ensure the ongoing competitiveness of the energy sector. With competitively priced energy for consumers and energy market sustainability as key objectives, EnergyAustralia makes a series of recommendations for the Government to consider as part of the Energy White Paper process. The submission includes Australian and international case studies as supporting evidence.

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<sup>2</sup> Bureau of Resources and Energy Economics, *Energy in Australia*, May 2013, p.3

<sup>3</sup> World Energy Outlook 2013, © OECD/IEA, 2013

## **Energy Market Challenges**

The National Electricity Market (NEM) recently celebrated 15 years since its creation. While recognised by some as a successful microeconomic reform<sup>4</sup>, experience has demonstrated that it is a market subject to serious government interventions that struggles to deliver long-run marginal cost to investors over time. While customers have benefited in the short-term from unsustainably low wholesale prices, there is likely to be longer-term consequences.

Over the last couple of decades, the NEM has been characterised by large, capital intensive baseload power stations with very low fuel costs coupled with smaller and relatively less capital intensive gas-fired power stations with higher fuel costs that have been used for intermediate and peaking capacity. The NEM was designed to deliver least-cost generation to customers by encouraging all generators to bid at their short-run marginal cost (essentially their fuel cost) in most periods of most days of the year. However, this type of market also enables short periods of what some describe as “transient market power” to enable all generators to recover their very high fixed costs. These high priced periods are usually in response to a tight supply/demand balance and the need to bring on more expensive forms of generation – particularly peaking plants that may only run a handful of times each year.

So why isn't it working? What has changed? The market has always been a boom-bust market. Periods of high prices encourage lumpy large-scale investment that, once built, immediately creates oversupply and crushes prices for everyone. These types of markets where average cost curves are well to the right of marginal cost curves are generally also characterised by two part pricing. But this is not the case in the NEM – it relies only on marginal cost pricing which makes the recovery of average costs very difficult.

Government interventions in the market have never allowed it to reach its planned potential. At every turn Governments (Federal and State/Territory) have intervened to deliver an outcome different to that which the market would have delivered. Examples include caps on prices, reserve trader mechanisms, energy efficiency schemes and feed-in-tariffs. Confirmation that Governments do not believe generators should earn long-run marginal cost came when State based retail regulators in Queensland, South Australia and New South Wales no longer allowed this level of return in the final retail tariff.

As a plethora of green schemes added to the cost of retail electricity so too did the cost of networks. Unlike the generation sector, the return of long-run marginal cost to networks is enshrined in legislation (and many of the other issues with network regulation are outlined below).

Unsurprisingly, rising electricity costs saw a strong decline in demand from the Commercial & Industrial segment including the closure of the Kurri Kurri aluminium smelter and Bluescope Steel in NSW. It also saw a sharp decline in mass market consumption. Rising electricity costs and subsidies for roof-top solar PV saw demand for these systems grow substantially. Mandated energy efficiency measures, such as the banning of incandescent light bulbs, also had a substantial impact on demand.

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<sup>4</sup> Australian Energy Market Commission, *The National Electricity Market: A Case Study in Successful Microeconomic Reform*, December 2013

However, in the context of falling grid demand, the policy response has been to continue to force in more grid based supply via the RET; ie. supply that has a zero short run marginal cost. Renewables, by their very nature, suppress wholesale electricity prices in an energy-only market and make the cost of the renewable subsidy required (that is, the Renewable Energy Target) much more expensive for retail customers. This overall trend increases the likelihood that subsidies will need to remain to ensure continued investment occurs.

The introduction of the carbon price gave brown coal, black coal and gas approximately the same short run marginal cost. This means that when less capital intensive gas plants are setting price there is less opportunity for the more capital intensive coal-fired assets to recover their fixed costs.

Using analysis of publicly available data, around 50% of all generators lost money last year. That is, not only did they not make their long run marginal cost, they lost cash. In this scenario basic economics would dictate that businesses losing money will exit the market. However, in the NEM large baseload coal plants, which face hundreds of millions of dollars in redundancy and mine rehabilitation costs, simply hope another business will exit first. This situation prevents the transition occurring in an optimal manner.

The most rational course of action for some base load generators in this situation may be to hang in there and reduce costs, and this is what many generators in the NEM appear to be doing. Instead of the graceful exit of a few large scale coal generators to transition our industry to a new lower emission energy system, there will be a lower level of investment right across large sections of the market reducing the overall reliability of the system and potentially threatening future supply.

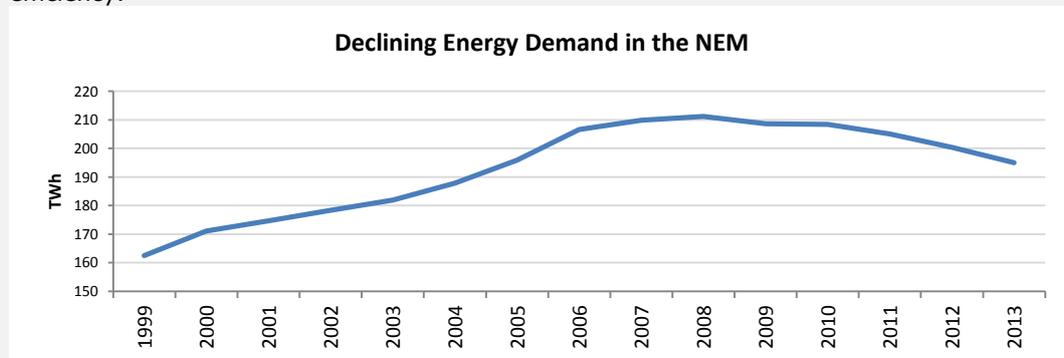
Sustained inadequate returns within the generation sector is testing confidence in the current market design and could threaten the reliability of the sector as the industry seeks to reduce costs in search of much needed returns. This will only come at the detriment of consumers in the longer term.

While it is evident that day to day reductions in plant maintenance across the generation fleet will reduce the reliability of the grid, it is also worth noting the challenge in transitioning the existing thermal fleet to what is required to meet today's demand. This challenge was noted in a 2011 report from the Massachusetts Institute of Technology "*Designing a flexible thermal plant and operating it flexibly require a number of redesigns and operating practices that all decrease the efficiency of the system. Furthermore, continuously cycling thermal generators will increase maintenance costs and decrease equipment reliability and life.*"<sup>65</sup> The implication being that given forecast demand, the design of the NEM and the limited confidence in adequate exit from the market, many thermal generators across the NEM will also become less reliable as they are forced to operate differently.

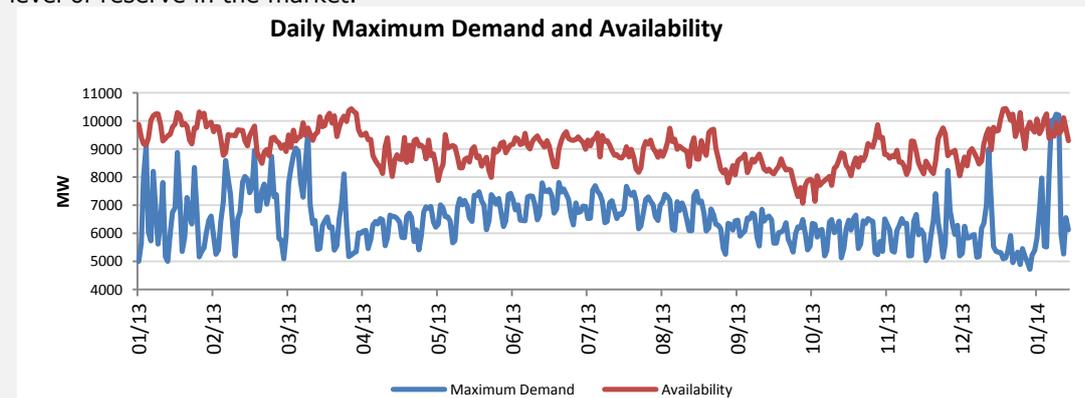
In the last few years, consumers have benefited from a well maintained but oversupplied market which has supported reliability at sub-economic cost. However, there is no room for policy complacency. Near record peak demand in South Australia and Victoria this year has confirmed this. For the market to be sustainable and in the long-term interests of consumers, the NEM requires serious reform.

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Electricity consumption in the NEM has reduced by just over 16 TWh between 2008 and 2013 and forecast demand in the NEM for 2020 has dropped by 40 TWh since 2011. The reduction is attributed to a number of factors including subdued economic growth, weaker demand from the manufacturing and industrial sectors, higher retail prices encouraging households to use less electricity, increased installation of solar photovoltaic (PV) systems, home insulation and lighting efficiency.



In Victoria over 60% of the installed generation is baseload, and for much of the year available generation exceeds the maximum demand of the day by over 2,500 MW or 37%. For a handful of time (on hot days) all of the installed supply is actually required to ensure there is an adequate level of reserve in the market.



Since the start of the NEM, despite much focus on the potential volatility of spot prices, wholesale prices have remained relatively flat in nominal terms and declined in real terms (other than in 2007 when drought conditions restricted energy supplies across the market).



Despite the clear need for all of the existing generation in Victoria, as demonstrated during the summer in 2014, the economic reward and signal for generation to invest to support reliability and the longer term do not exist. Consequently the system is at great risk of becoming increasingly unreliable whilst pricing remains unsustainable.

**Box 1 – Trends in the NEM**

The Energy White Paper needs to consider policy solutions that will assist the electricity sector to tackle the barriers to exit which limit the response to oversupply. Further, any policy solution should also explore the opportunities to transition towards a plant mix better suited to the electricity sector envisaged for the future. In the longer-term, the market needs to be re-designed to better reflect the changes that are occurring and the likelihood of continued Government intervention.

The right market design should be able to cater for any challenges the future may bring. This is not a problem solely faced by the NEM, much of the global energy industry is exploring sustainable market design that will support future investments while also ensuring these markets deliver secure and reliable power at least cost. (The box below discusses experiences internationally)

### **The United Kingdom**

In the United Kingdom electricity market reforms were introduced in late 2012 in response to the challenges of EU environmental standards, impending plant closures, declining reserve margins and the concerns about attracting investors to meet the expected £110 billion of investment needed over the next decade.

The UK Government's approach has radically overlaid a range of mechanisms on top of the existing market frameworks to encourage investment in low carbon sources of generation (Contract for Differences(CfD)) and to support new and existing generators for the capacity they provide (Capacity Market). The CfD market is intended to stimulate investment in low carbon energy generation by providing long-term price certainty. The Capacity Market is designed to ensure security of supply by correcting market failures and providing a predictable revenue stream to all providers of capacity, including the existing thermal plant.

### **Germany**

In December 2013, as a part of a new coalition agreement, the German Government agreed to continue with its policy of 'Energiewende'. However it has modified its policy position from earlier forms in response to the challenges of renewable integration, the impairment and decline in gas fired generation due to high gas prices and the planned closure of all nuclear plants. The new position recognises the need to transition gradually whilst supporting existing non-renewables in meeting the broader flexibility and reserve requirements.

### **Texas**

In 2011, Texas experienced a prolonged heatwave that tested the ability to meet demand, and forced the grid operator to cut power to some users. Following this event the Public Utilities Commission has been working on potential reforms, which include options for capacity markets, to promote the development of new generation and encourage demand side response.

### **California**

In 2008, California committed to a goal of supplying 33 per cent of electricity demand from renewable sources by 2020. In addition Federal clean water regulations, limiting the use of ocean water for cooling, are expected to result in the retirement of more than 12,000 MW of conventional generation. The combination of these factors has highlighted the challenge in meeting demand for electricity reliably due to the intermittency of wind and solar. This has led to the Californian system operator consulting and developing mechanisms to ensure that flexible capacity requirements are forecast and the role they play is valued within the market framework.

## **Box 2 - Global Energy Market Reform Challenges**

The Energy White Paper should explore these challenges and map out a pathway to ensure Australia heeds the lessons from global experiences and delivers a sustainable long term solution, for current and future investors.

Without reform of the current electricity market design, regulatory and policy interventions by Governments will continue to be disjointed, and industry and consumer investment decisions will risk being made without the proper economic signals. In the long run this will ultimately lead to lower productivity, higher energy costs and a reduction in the global competitiveness of the Australian energy industry.

### *Gas Market Reform*

Australia's east coast gas market has undergone significant transformation over the past 20 years, since the need for change was envisaged in 1991, however many of the original goals, such as transparency and liquidity, remain elusive. Competition in retail markets for gas has emerged and short-term balancing markets have been delivered. However, increased price and volume uncertainty and the continued dominance of long-term contracts have increased the risks of operating in the domestic market. The tools for managing these risks have failed to develop and inefficiencies remain. Historically the ramifications of low levels of transparency and non-existent liquidity were minimal while the size of the east coast gas market was small and prices were low. However, as the size of the market triples due to the emergence of an LNG industry in Gladstone and the domestic market dynamics change, the consequences will be greater and more broadly felt.

Supporting continued exploration and development of gas resources and promoting greater transparency and liquidity in the gas market will ensure that an adequate level of competitively priced gas can be delivered on the east coast of Australia. The Victorian Gas Market Taskforce recommended that the Productivity Commission be tasked with such a review<sup>6</sup>. While the east coast gas sector has faced multiple reviews over the past 18 months. The challenge for the Energy White Paper and the Eastern Australian Domestic Gas Market Study is to establish a clear pathway to providing greater direction and certainty in how the long term policy goals can be met.

Gas exploration and development currently suffers from a lack of consistent, evidence-based regulatory frameworks across the east coast. This inconsistency, coupled with frequent political interventions, has seriously undermined investment, particularly in New South Wales and Victoria where exclusion zones and fracking bans have been imposed. Exploration and development is best enabled by greater consistency across jurisdictions and increased efficiency in regulatory processes.

Based on the lessons from global gas market development, achieving greater long-term transparency and liquidity in the east coast gas market means that the role of long-term contracts in transportation and gas must diminish and the framework for transmission access and investment needs to be conducive to achieving this goal. To create an efficient gas market on the east coast EnergyAustralia recommends the following actions:

- The Commonwealth Government request that the Productivity Commission conduct a high level coordinated review of market design, gas market competition, the direction and structure of the

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<sup>6</sup> Victorian Gas Market Taskforce, *Final Report and Recommendations*, October 2013

existing trading and related financial markets, and the suitability of carriage models for pipeline regulation.

- The Standing Council on Energy lead the development of a consistent framework, which all jurisdictions adopt entirely, that adequately balances the economic need to develop new gas resources with community concerns about gas exploration and production which avoids unnecessary duplication and is delivered through efficient best practice regulation.

Further discussion on Gas Market Reform is presented in our submission to the Eastern Australian Domestic Gas Market Study.

#### *Fuel Resource Development*

Availability of fuel resources (including coal, natural gas and renewables) remains critical for a secure, stable and efficient wholesale energy market in Australia, now and into the future. The energy industry is facing increased cost, uncertainty and risk to the development of new projects due to inconsistent, complex and duplicated planning processes and regulations across State and Commonwealth jurisdictions. Consumers will ultimately pay for increased project delivery costs, including the price of development risk. In most cases these additional costs are avoidable and provide limited, if any, material environmental or social benefits. EnergyAustralia is currently experiencing these issues with plans to expand coal mines in NSW to supply our power stations, permitting wind projects in South Australia (see Stony Gap example below) and in approvals for the Narrabri Gas Project, of which we are a joint venture partner with Santos.

EnergyAustralia supports streamlined, transparent and fact based planning processes and regulations that balance the interests of the environmental and social factors with that of economic growth. Of immediate concern to us, are inconsistencies between the Commonwealth (EPBC Act) and the States in terms of the requirements and classifications for ecological assessments, resulting in delayed and uncertain approval processes for projects.

#### **Planning – The Stony Gap Experience**

EnergyAustralia is developing the \$300M Stony Gap wind project in the mid-north of South Australia. A fully compliant planning application was submitted to the Regional Council of Goyder and assessed by an independent expert planning consultant. Council recommended approval in June 2012; however the independent Development Assessment Panel (DAP) refused the application in August 2012.

Subsequently and following appeal to the Environmental Resources Development (ERD) Court of SA in December 2012, EnergyAustralia and the Council reached agreement on the acceptability of the proposal by reducing the number of turbines from 41 to 35. However, the ERD court allowed two nearby residents to join the proceedings in January 2013.

These proceedings with the residents are continuing with a further directions hearing scheduled in February 2014. Still no date for the hearing has been set. It has been approximately 18 months from the adverse decision by the DAP, recognising the original proposal complied with the planning requirements and an agreement was reached with the consent authority following significant reduction to the proposal. This delay has been costly, provides significant uncertainty to our business and demonstrates the need for streamlined, transparent and fact-based planning processes.

#### **Box 3 – Planning Challenges**

### *Network Regulation*

Network tariff and regulatory reform are both critical and urgent to ensure the productivity of the energy sector can improve and price pressures on customers are kept in check. Network costs make up over half of a customer's energy bill in most regions other than Victoria and the ACT. Regulatory reform is necessary to ensure only the most efficient costs are passed through via network charges. Further, traditional network charging structures have been challenged by the uptake of air conditioning and more recently the increased installation of solar PV. Both issues will require Government consideration to protect consumer interests and maintain investment in the energy sector.

The Productivity Commission's review of the Electricity Network Regulatory Framework<sup>7</sup> undertaken in 2013 was highly critical of regulatory incentive regimes, reliability standards and the failure to deliver cost reflective pricing, and provides a useful pointer for reform.

Further, the Grattan Institute notes "*The amount consumers are charged for using Australia's regulated power networks reflects the cost of previous investments*" and to avoid a spiralling of network costs in the future, "*a better alternative would involve writing down the value of network assets*". The Energy White Paper needs to explore policy solutions that could remove the costs of unnecessary network investments, particularly where the investment is a result of governance arrangements that allowed the over forecasting of their own demand. Removal of the unnecessary network costs would help to improve the efficiency of the overall electricity market as consumers avoid carrying the cost of overinvestment.

Incentive regulation issues have largely been considered as part of the Standing Council on Energy and Resources (SCER) reform agenda and the Australia Energy Regulator's 'Better Regulation' Program. Improvements to the Limited Merits Review process for network distribution determinations are a useful example of this. SCER should continue with its reform agenda to ensure transparency in network expenditure, drive further efficiencies in network regulation and ensure proper scrutiny is in place.

The Energy White Paper process should drive the reform agenda to be expanded to include a review of reliability standards to develop a nationally consistent approach, explore incentives for State governments to privatise State-owned network assets and ensure that independent demand forecasting process for all distribution networks are implemented to reduce the risk borne by consumers of inaccurate forecasts (see Transgrid example).

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<sup>7</sup> Productivity Commission, *Electricity Network Regulatory Frameworks*, 26 June 2013

### **Stroud / Taree Transmission Line Proposal - Transgrid**

In January 2011 Transgrid – the NSW Government-owned owner, operator and manager of the NSW high voltage network – announced its intention to build a 330kV transmission from Stroud to Taree.

In its 2006 Annual Planning Report Transgrid first identified potential network constraints in the Lower Mid North Coast region. These constraints were identified using Transgrid's network and forecasting provided by the local distributor, Essential Energy. The proposed solution to constraints – the 330kV line – was submitted and approved by the Australian Energy Regulator (AER) as part of Transgrid's 2009-2014 Regulatory Determination.

At the time of the building proposal there was much debate regarding the accuracy of peak demand forecasts. TransGrid based its original proposal for this augmentation on forecasts predicated on significant growth. This growth did not eventuate, however it appears Transgrid did not account for this in continuing with the Stroud/Taree line.

Local opposition to the proposal questioning the forecasts gained national prominence and led to a review by the NSW Government in May 2013 by engineer Robert Rollinson. The Rollinson Report found that forecast demand for electricity in the mid-north coast region is such that the current electricity transmission infrastructure has sufficient capacity to provide an adequate electricity supply for the period out to at least the 2030s and that a new transmission line development to serve the study area is not warranted for the foreseeable future.

Further, the Rollinson Report also recommended that institutional arrangements and National Market Rules be reviewed further in light of the composition and nature of the current of the National Electricity Market to address such issues as:

- Reliability criteria in the National Market States and their implications for network development;
- Market rules, responsibility and payment for non-network options;
- The formal role of the Regulatory Investment Tests for Transmission and Distribution; and
- Adequacy of Community Consultation Requirements.

During the period in which the Rollinson Report was undertaken Transgrid acknowledged a revised peak demand forecast, deferred the proposed development, suspended property negotiations for an easement for the development and initiated actions for a revised community engagement process.

### **Box 4 – Incentives in Transmission Regulation**

#### *Network Tariffs*

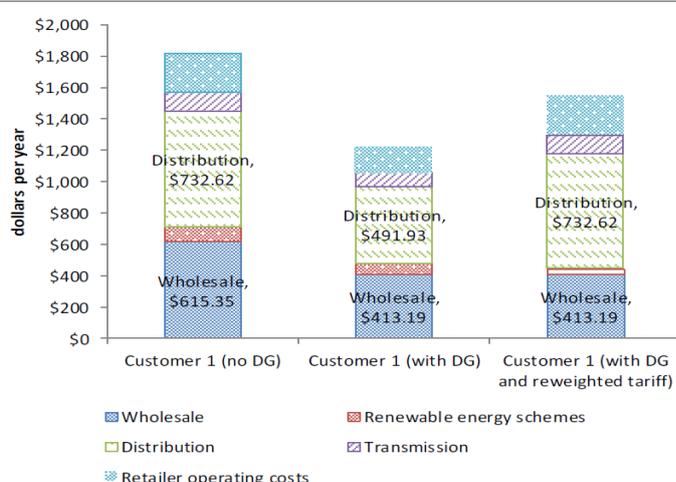
In its review of electricity network pricing the Grattan Institute found that ... “[s]ince 2006 the average household has reduced power use by more than seven per cent ... [but] in that period the average household power bill has risen more than 85 per cent: from \$890 to \$1660 a year”.<sup>8</sup> Network charges comprise about half the average power bill and it is widely accepted that the current network-pricing model has not provided the right incentives for ‘least cost’ usage and provision of network infrastructure services. This is a result of typically flat, volume-based network pricing structures, which in some cases is further distorted by the recovery of solar feed-in-tariffs and metering infrastructure incapable of signalling ‘when’ customers’ energy consumption occurs. This has driven underlying cross subsidies throughout the customer base between ‘peaky’ and flatter profiled energy users, unnecessary investment in the network and underutilisation of existing infrastructure.

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<sup>8</sup> Grattan Institute, Shock to the System – Dealing with falling electricity demand, December 2013.

In recent years Australia has experienced rapid growth in the use of distributed generation systems (typically solar PV between 1kW and 10MW in size). AEMO estimate that total installed capacity in February 2012 was 1450MW and that installed capacity is forecast to reach 5100MW by 2020 (and almost 12GW by 2031). Current network pricing structures have contributed to the uptake of solar PV (in addition to overly generous government capital subsidies and feed-in tariffs until recently). ACIL<sup>9</sup> analysis has demonstrated that a substantial portion of the benefit of installing solar PV derives from avoided network charges. The chart below from the report illustrates the distortion which arises because the reduction in network charges (before tariff reweighting) is not linked to the impact of solar PV on peak demand and network costs.

Figure 7 **Impact of a DG system on customer bill with reweighted tariffs**



Source: Distributed Generation – prepared for the esaa, April 2013, ACIL Tasman, 2013

The Productivity Commission concluded that "... the take up of rooftop photovoltaic units has, to date, produced minimal, if any, network savings, as existing time-invariant tariffs do not encourage householders to orient units to the west to maximise generation in periods of peak demand late in the summer afternoon ... [and] ... effective use of distributed generation to produce network savings needs to ensure that take-up is maximised in those parts of the system subject to the greatest constraints, which has not yet happened."

Governments should promote reforms to network regulation and encourage cost reflective pricing to send the appropriate price signals to energy users about their impact on the network. This may take the form of Time-of-Use pricing, Critical Peak Pricing or Capacity Charges. Reforms should be supported by the roll out of interval meters in a competitive environment.

EnergyAustralia supports the position put forward in the Issue Paper that the transition to cost-reflective pricing should be fair and efficient. Retailers should be able to pass-through network charges in a competitive environment to suit customer needs. This approach should be supported by national minimum consultation standards between distributors and retailers. Whilst the overall benefit of cost

<sup>9</sup> ACIL Tasman, Distributed Generation – prepared for the esaa, April 2013, p.31

reflective pricing will flow to all customers via lower network charges, some customers will face higher bills. Government concessional arrangements are the most appropriate mechanism to support those who are unable to respond to price signals (e.g. pensioners, unemployed).

### *Consumer Experience*

Energy has become a commodity of growing focus for consumers as retail prices have increased to accommodate increasing network and resource costs. This focus has led to more regulatory controls by Government on industry participants at a time when less regulation is needed to enhance opportunities for consumer engagement. Price regulation is an unnecessary relic of a lack of retail contestability, a barrier to market entry and an impediment to product innovation. All State and Territory governments should be encouraged to commit to deregulation paths to encourage long term investment in retail markets. Further, States that have not introduced the National Energy Customer Framework should be encouraged to do so in order to achieve the efficiencies of national consistency.

As identified in the Issues Paper, approximately one third of small energy users have some sort of smart meter. Smart meters enable retailers to innovate with tariff options and other services enabled by the near real time delivery of data. The Federal Government's *Smart Grid Smart City* trial, in which EnergyAustralia is the retail partner, has provided a useful insight into customer behaviours and the possible innovation enabled by smart meters. For example, demand reduction during 13 dynamic pricing events held over the trial period range from 7.8 per cent to 37 per cent. This reduction varied depending on the incentive, with customers more likely to respond to a price signal at the time of an event than to a rebate for participating.

Governments should create a framework that encourages a contestable and competitive rollout of smart meters to allow market forces to achieve a suitable balance between service offering and cost of supply. Retailers are well placed to develop retail products to utilise the key functions of a smart meter that provide benefits to customers through greater visibility, flexibility and control of electricity usage. Changes to regulated arrangements, including unbundling of metering charges at reasonable levels and minimising exit fees from legacy technology, will also ensure the most competitive outcomes.

Over the last decade Governments have created energy efficiency schemes to reduce energy consumption and empower customers to make better decisions. These efforts have seen a competitive market for energy efficiency services develop. However, the time for subsidised, target-based schemes has passed. EnergyAustralia considers that the market for retail energy and the related market for energy efficiency services are competitive, vibrant and stimulated by growing consumer awareness of, and rapid advances in, energy efficiency technologies. **The market failure relevant to energy efficiency investment decisions are primarily information-based and directly targeted by existing regulations such as appliance standards & labels, building standards & ratings and energy efficiency grant programs. These programs should continue to enable customers to make the informed decisions about their energy use.**

### *Creating Skills Pathways*

Australia's energy sector is currently experiencing a skills paradox. It faces an aging demographic in traditional professions such as engineering and trades, but a compelling need for new skills which we have to compete globally for such as digital, technology and IT expertise. Available talent pools in these areas are currently low in Australia. The regional or remote location of traditional generation sites also poses an additional challenge to the energy sector.

To encourage regeneration in the energy sector skills base we need to build compelling career propositions for males and females, particularly for 'Gen Ys' and 'Digital Natives', who are looking for a values based and purposeful career. The energy sector of today differs from that of the past so this could translate to careers in renewables, environmental management, sustainability or digital transformation.

Support for longer term skills needs in the energy sector requires a coordinated approach to learning through schools, universities and the VET sector. Additional courses, places and curriculum to business degrees and diplomas are needed to build capability and talent pools. Skills pathways, much like the retail and financial services sectors, need to be built to allow for post secondary accreditation and transferability – particularly for customer service roles and trades roles. In the meantime, 457 visas and sponsorship programs should be encouraged to meet skills shortages.

The Commonwealth should take a leading role in working with State and Territory Governments, educational institutions and industry to build links between education and skills development to help the energy sector catch up to other sectors and enhance competition for skills. This action is necessary to ensure the energy sector can continue to underpin Australia's economy.

There are also legacy industrial relations challenges in the energy sector that can inhibit the overall productivity of the sector. The imposition of pattern bargaining within regions coupled with the ever looming threat of industrial action can undermine productivity. The Government should consider measures to ensure that businesses are not unreasonably challenged in transforming the work environment in this ever changing and dynamic industry; without change the viability of many parts of the traditional energy sector may be further threatened as customers change the way they access energy.

### **The Long Term Outlook for Energy Policy**

Many of the challenges outlined above will shape Australia's long-term energy outlook. They highlight the need for urgent reform to ensure a sustainable energy sector, which is able to capitalise on Australia's rich resource reserves and deliver energy domestically at least cost. It also becomes apparent that many of the challenges facing the energy sector are interrelated, and consequently policy considerations in one area should be critically assessed to avoid unintended consequences elsewhere. A crucial consideration for the Energy White Paper is the continued global and domestic climate and renewables policy debate.

### *Regulation of emissions in the United States*

The generation sector will play an important role in providing 21% of US emissions savings through banning the construction of sub critical coal fired power plants and via regulation of emissions from existing plants.

Observations of the US plans have highlighted that the development of new coal fired power plants is unlikely given the abundance of low cost shale gas. With regard to limiting emissions on existing power plants, debate has surrounded the time it will take to implement and the likelihood of extended legal discussions delaying implementation.

In 2010, before the carbon pollution standards were even considered, the Brattle Group found that under emerging environmental regulations and continued low electricity prices in the United States, approximately 20% of the US coal fleet could retire, potentially increasing the reliability risks of the system and increasing electricity prices. (The Brattle Group, *Potential Coal Plant Retirements Under Emerging Environmental Regulations*, December 2010)

In June 2013 the United States President released his Climate Action Plan which requires the Environmental Protection Agency (EPA) to establish carbon pollution standards for new and existing power plants. The design of emissions standards for existing plants, which are due in 2015, will be a blunt regulatory instrument that may lead to rapid closures and upward pressure on electricity prices.

### **Box 5 – Regulation of emissions in the United States**

To ensure energy provides a least cost input into other sectors of the economy, it is critical the national 5 per cent emission reduction target is achieved via a set of policy mechanisms that are environmentally effective, least cost and, importantly, help to reduce the long term uncertainty that the industry continues to face. It is also important to highlight any additional cost of unnecessarily expensive emission reduction outcomes will ultimately be borne by energy consumers in the form of declining energy affordability at the mass-market level and deteriorating international competitiveness at the industrial level.

The Renewable Energy Target (RET) was designed to support the growth of the domestic renewables industry through its role in meeting demand growth in the sector. Further, it would also decrease carbon emissions growth from the energy sector while longer term abatement mechanisms were implemented. In pursuit of this objective the current RET policy framework established a hardwired target to deliver 20 per cent of Australia's electricity supply from renewable sources by 2020 that is inflexible to actual dynamics of underlying energy demand. As consequence, and based on recent forecasts for total electricity demand in 2020, the RET is tracking to a proportion somewhere between 25 and 30 per cent. These proportions are not achievable in the timeframes required, given the level of community engagement that is necessary and, as discussed earlier, is not sustainable given the fundamental design of the wholesale electricity market.

Failure of the current RET policy framework represents a material risk to investors in both thermal and renewable electricity generation and is likely to impose significant and unnecessary costs on energy customers in the process. The continued pursuit of targets that are not achievable will risk the cost of renewable energy certificates reaching penalty without delivering any additional renewable energy projects. This will ultimately threaten long-term prospects for the renewable energy industry in Australia as community support for the scheme falters.

## The Role of Government

The energy sector is facing significant upheaval as it experiences a supply transformation whilst the traditional role for energy providers also changes as customers become self producers. Growing distributed generation and the expected increase in energy storage and electric vehicles will test existing structures and could threaten the sustainability of the current market design. **Governments' role in the energy sector is to ensure energy market structures remain sustainable and support what is likely to be a complex transition.**

The Australian energy industry has been in a constant state of change since energy market reforms were introduced in the early 90's. In the long term, continued uncertainty will discourage investment in capital-intensive generation, which risks less efficient outcomes and higher costs for customers. However in the short term, it remains important that the policy settings are focused on sustainable outcomes to ensure that the transformation of the energy sector is smooth.

**Governments (and market agencies) should regularly evaluate the performance and impact of policy against the National Electricity Objective and National Gas Objective and ensure there is flexibility to account for changes in market conditions.** This principle is particularly important when there are other secondary objectives that the Government wants to achieve from the energy sector, such as de-carbonising the generation sector over time. **Government policy should undergo rigorous cost/benefit analysis to assess whether it is in the long term interest of consumers and not impose unnecessary costs on industry or act as a barrier to investment.**

Governments should also maintain a focus on reducing regulatory red tape in the energy sector. The plethora of regulatory obligations – created by Commonwealth and State Government, regulators and market bodies – impose a significant burden on businesses. This is a financial impost that is often passed onto customers through higher prices. **Examples include ASIC derivative transaction rules contained in the Corporations Act 2001 and State energy efficiency schemes.**

**EnergyAustralia recommends that SCER provide the AEMC with an explicit mandate to review and reduce ineffective, duplicative, inefficient obligations and rules. Further, the NEL and NGL should be amended to require the AEMC to test all new and amended rules against an objective of no net increase in regulatory burden.** EnergyAustralia considers that giving the AEMC this focus will improve the overall efficiency of the sector without reducing consumer and market protections.

**The Energy White Paper should seek to establish principles upon which energy, climate, environmental and renewable policies interact.** These principles should establish that no further increases in the RET are delivered **without mechanisms that will support exit of existing generation and contribute to rebalancing the generation mix in the NEM.** Further, given the importance of the Australian Government's focus on ensuring that Australia fosters its comparative advantage in affordable energy, the Energy White Paper should explore the impact of significant climate, environmental and renewable policies might have on future energy prices with a view to minimising unintended future price pressures.

### *Support for New Technologies*

Governments should play a key role in supporting new technology. Innovation in the energy sector is vital as we face the challenges to decarbonise, develop new industries and maintain energy security. Using existing resources in more efficient and innovative ways and finding new ways to generate, deliver and manage energy will be important to maintain Australia's low cost competitive advantage and create jobs and investment.

Government can assist to progress new technologies through research and development, and funding to support demonstrations. Assistance should be confined to areas where there are defined 'spillover' benefits or competitive disadvantage for a single business making the entire investment. Funding should be sustained at an adequate level on an ongoing basis to help develop and retain expertise in Australia and assist relevant technologies progress towards commercial readiness. Technology support programs should be clearly defined, transparent and focused on assisting industry to overcome demonstration or commercialisation challenges. Government should also be commercially-minded in its funding approach to give projects the best possible opportunity to succeed. This approach should be complemented by good governance and robust accountability.

### *Asset Privatisation*

Governments that retain ownership of energy assets should sell these assets in the long term to maximise their efficiency and remove conflicts of interest in policy making and in the short term close unprofitable operations.

Government construction and ownership of generators and transmission and distribution networks made sense in the past where Government investment was necessary to fund large infrastructure projects. However, since the establishment of the NEM the majority of assets are built, owned and managed by private businesses. The ability of private enterprise to develop expertise and run infrastructure more efficiently is one of the major reasons some State Governments have sold off energy assets. This is consistent with other sectors where Government has recognised that the private sector is better equipped to deliver infrastructure and services.

Governments also face a policy tension where they continue to own assets which may influence decision making such as continuing to operate unprofitable generation to the detriment of the broader market. The NEM has developed as a robust market with significant private investment and Government policy has the ability to significantly shape how investment is made. Government ownership presents a potential unnecessary distraction to a robust policy development process, which does not apply where assets are privatised.

**The Council of Australian Governments should play a leading role in identifying public assets that would be improved through privatisation. Examples in the energy sector include Snowy Hydro (and its retail arm Red Energy), Queensland generation, transmission and distribution assets and NSW transmission and distribution networks.**