Submission No 136

SUSTAINABILITY OF ENERGY SUPPLY AND RESOURCES IN NSW

Organisation: EnergyAustralia

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15 September 2019

Committee on Environment and Planning
Legislative Assembly
Parliament of NSW
Macquarie St
Sydney, NSW, 2000

Via email: environmentplanning@parliament.nsw.gov.au

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Dear Sir/Madam,

Inquiry into sustainability of energy supply and resources in NSW

We welcome the opportunity to contribute to the Legislative Assembly's inquiry into the sustainability of energy supply and resources in New South Wales (NSW).

EnergyAustralia is one of Australia's largest energy companies, providing gas and electricity to 2.5 million household and business customer accounts across Eastern Australia. EnergyAustralia controls over 5,000 MW of electricity generation capacity, including around 850 MW of renewable energy and 80 MWh of grid scale batteries across the National Electricity Market.

In NSW, we sell gas and electricity to approximately 1.4 million retail customer accounts and have approximately 2,400MW of generation within the state. Key thermal generation assets include the Mt Piper power station at Lithgow, NSW's newest and most efficient coal fired generator, and the Tallawarra gas fired power station on the shores of Lake Illawarra. We have contracted approximately 150MW of large scale solar and 450MW of wind generation within NSW to supply our customer's with renewable energy.

We also have the most advanced project in NSW to back-fill part of the firm generation supply gap that will be left by the exit of Liddell with our proposal to expand our Tallawarra gas-fired power station by an additional 280-350MW of open-cycle peaking gas generation.

This inquiry is timely. The NSW energy market is undergoing significant structural transition as new renewable energy is deployed and large coal generators retire over the coming decade. Significant investment in firm generation is required to ensure reliability standards continue to be met as Liddell retires from 2022. Equally, we believe that continued investment in small-scale distributed generation, increased rates of household battery deployment and demand-side initiatives will be a feature of the market going forward.

We recognise the transition to a cleaner, lower-carbon energy system is inevitable and is already occurring. Retirement of large coal power stations, if not managed effectively

with sufficient price signals for replacement dispatchable generation, could lead to reliability and system security issues during times of peak demand.

NSW is blessed with plentiful energy sources and strong transmission networks. To create a sustainable NSW energy system into the future, the challenge is one of planning. This submission speaks to need for the transition to be delivered in a careful, co-ordinated and cost-effective manner for the sake of customers and investors alike.

We recognise the Terms of Reference of the inquiry are very broad. Our submission focuses on key themes including the need for an orderly transition, specifically in light of the retirement of the Liddell power station, support for new generation investment, urgent need for a nationally effective energy policy, risks to NSW black coal as a fuel of the future, gas policy confusion and the future role of interconnection.

We are happy to appear before the Committee and provide supplementary detail should it be required.

For further information on any issues raised in this submission please contact Simon Davey, Government and Policy Lead, on [redacted] or at [redacted]

Yours sincerely,

[redacted]

Chris Ryan

Executive Enterprise

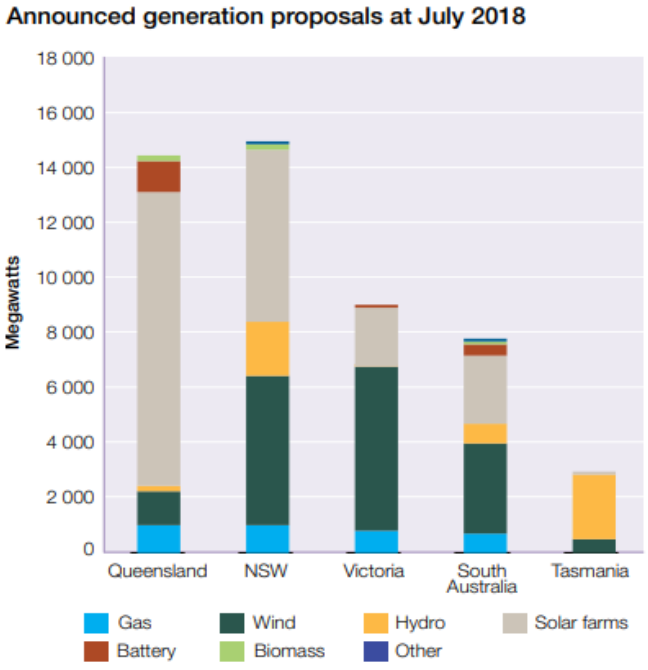
A market in transition

The National Electricity Market (NEM) was established by cooperative arrangements under the Council of Australian Governments (COAG) over 20 years ago. For a period, it was able to deliver affordable and reliable electricity to customers, however this has become more difficult.

A lack of national integrated climate change and energy policy combined with semi-regular government interventions in the market is muting the price signal needed for the private sector to invest in new generation, without the backing of government contracts.

The transition to a lower emissions future is well underway in all state jurisdictions including NSW, but this requires new investment in generation development and transmission infrastructure. It is forecast that $186 billion will be invested in new power generation, mostly renewables, across Australia over the next 30 years[1]. These are long-term investments made over many decades with typical asset lives of 40 years.

EnergyAustralia believes solar and wind energy, demand response, pumped-hydro, battery storage and intelligent energy management systems – supported by flexible gas-fired generation – will come to underpin a new, modern energy system in Australia. To this end, a wave of new generation construction projects will be required across Australia.



Source: AEMO, *Generation information*, 2 November 2018, available at: www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Planning-and-forecasting/Generation-information.

Figure 1: Generation proposals in NEM states.

[1] Bloomberg New Energy Finance energy outlook, 2019.

It is recognised that NSW has plentiful and accessible sources of energy; including coal, wind, solar, hydro and other emerging technologies. In a market where the maximum grid demand is around 14,000MW, there are currently 15,000MW of announced new generation development projects in NSW. Figure 1 shows the composition of the current generation proposals in NSW (and other NEM regions), strongly skewed to large scale wind and solar.

The discussion, therefore, is not around whether there is enough sources of energy to build the energy system of the future, it is rather what is the right mix of new investment to deliver on the key objectives: reliability, affordability and emission reduction. This topic has been explored at length and we would refer the Committee to the *Independent Review into the Future Security of the National electricity Market: Blueprint for the Future*[2] that provides a thorough summary of the challenges to balance the three objectives.

Different stakeholders, during the course of this inquiry, will have a different view on the relative importance of each of the objectives. Consumers and social service advocates primarily care about price. Governments and industry consider reliability as non-negotiable. Environmental groups and many members of the community emphasise the need to prioritise emissions reductions. With these differing perspectives, the Committee will need to rely on relevant independent information from expert market bodies including Australian Energy Market Operator (AEMO) and the Australian Energy Market Commission (AEMC) to inform their views and allow objective and dispassionate conclusions to be drawn.

However, over the past decade we have seen the failure of almost every proposed energy and climate change policy at the national level, including the recommendations of the Garnaut Report, Carbon Pollution Reduction Scheme (CPRS), the carbon tax, Direct Action, the recommendations of the Finkel Blueprint (including the Clean Energy Target (CET)) and the National Energy Guarantee (NEG).

Businesses associated with the energy sector have been subject to unprecedented policy uncertainty and its economic implications. EnergyAustralia is concerned that the extent of future policy uncertainty as it relates to the energy sector and the recent history of rapid-fire shifts in policies have introduced risks that work against investment. This is of critical relevance given the vast sums of investment needed within the sector to fund the construction of both new renewable and supporting dispatchable generation. Investors that are harmed by policy interventions or the market conditions that eventuate are unlikely to return.

EnergyAustralia believes the challenge of managing the transition to a modern energy system is one of planning; carefully considering the economic, social and engineering aspects of the choices available. A sustainable energy system that delivers reliable energy to customers at an affordable price while achieving emission reductions is achievable through private investment. It will require planning and clear long-term policy direction.

Renewables energy; its contribution and market challenges

The only piece of federal energy policy in Australia that has endured over successive

[2] *Independent Review into the Future Security of the National Electricity Market: Blueprint for the Future*. June 2017. Dr Alan Finkel AO, Chair of the Expert Panel. Commonwealth of Australia

governments is the Renewable Energy Target (RET). The RET has driven significant investment in renewable generation since its inception in 2001 with some 4,500 MW of large scale solar and wind deployed. The Clean Energy Regulator has estimated that large-scale renewable energy generation will increase from its 2018 level of 22,000 gigawatt-hours to around 40,000 gigawatt-hours in 2020.

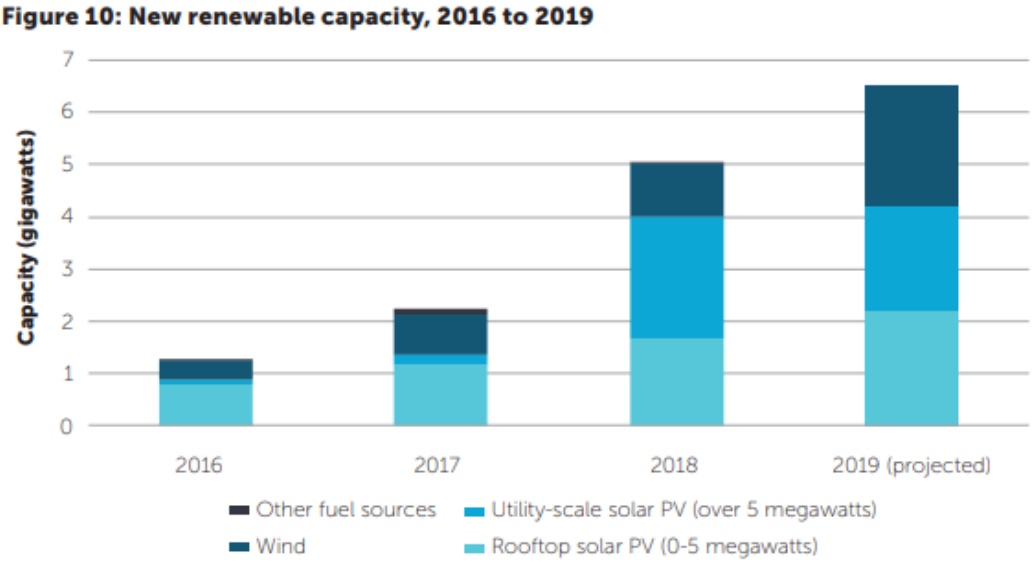


Figure 2: Renewable capacity deployed in Australia under the RET[3]

EnergyAustralia has supported the RET and continues to argue it should not be amended and allowed to end in 2030 as legislated. Investors have invested through the scheme under these parameters and it should be left unchanged.

In NSW, the successful deployment of new projects driven by the RET mean that renewables are likely to replace the energy generated from Liddell before it exits the market, but these will need to be 'firmed' with dispatchable generation.

EnergyAustralia has the most advanced project in New South Wales to back-fill part of the supply gap left by the exit of Liddell with our proposal to expand our Tallawarra gas-fired power station by an additional 280-350MW of open-cycle peaking gas generation. It is important that this project is encouraged by government and industry alike if it is to be ready in time to be part of the solution for the replacement for Liddell.

3 http://www.cleanenergyregulator.gov.au/DocumentAssets/Documents/The%20Renewable%20Energy%20Target%202018%20Administrative%20Report.pdf

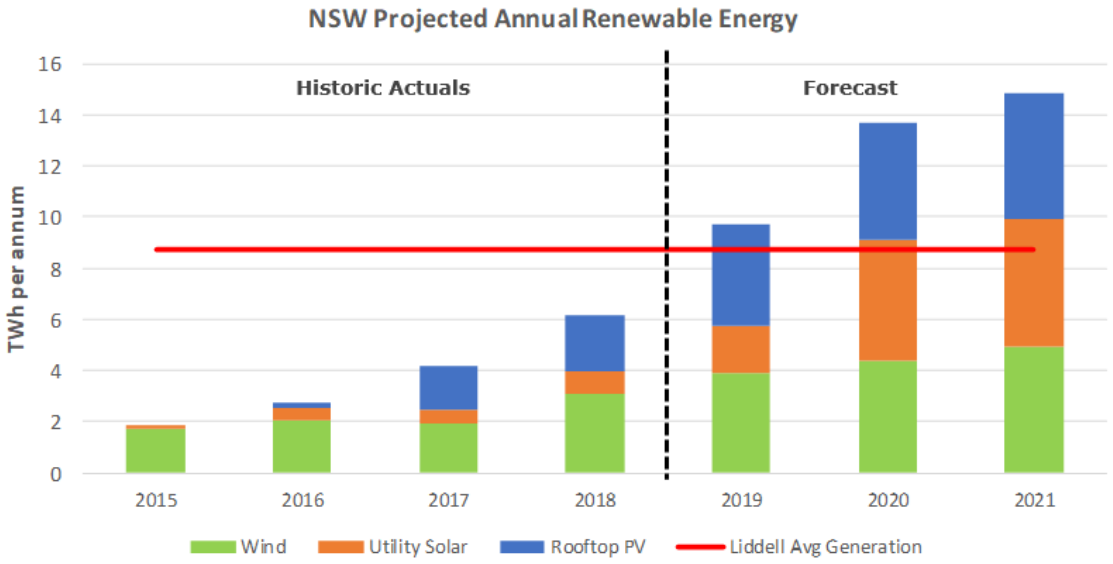


Figure 3: Projected NSW renewable energy generation[4]

EnergyAustralia does not support state-based renewable schemes and prefers action that is consistent with a national approach. We do not believe additional incentives are required to facilitate growth in intermittent renewables.

We note that NSW has not sought to introduce a separate state-based renewable target, unlike Victoria and Queensland, that operates outside of the existing RET target. The legislated Victorian Renewable Energy Target (VRET) may, without careful planning, bring significant risks to system reliability and achieving lowest cost. Achieving a 50% renewable target by 2030 in Victoria will have significant consequences for the structure of the market and risks early retirement of large dispatchable generation. Importantly, because of modest average capacity factors of renewable generators, to achieve a 50% renewable target requires significant over-build of renewable energy generation. With high renewable penetrations, storage needs to be built nationally to deliver firm energy. The cost to provide firm capacity needs to be contemplated as a component of any such renewable policy.

We urge NSW not to adopt a stand-alone, state-based renewable target. Rather we encourage NSW to seize the opportunity to get ahead of the curve and become the supplier of dispatchable of electricity to the market. This service, more than intermittent renewables, will be needed in Australia's future energy market and is underdone in other regions.

Some of the best wind resources are in SA, while some of the best solar resources are in QLD. NSW should focus on the strength it has positioned between these two states as the firming capital of Australia. In a future, where greater interconnection is built because it has proven the benefits out way the costs, these two states export their low-cost renewables to NSW to the benefit of NSW customers, NSW could be the supplier of the

[4] Rooftop PV forecasts from AEMO 2019 Integrated System Plan assumptions. Forecast utility solar and wind generation based upon EnergyAustralia market analysis of specific renewable projects

firmed generation through coal, gas, pumped hydro and other technologies.

NSW should seek to avoid the issues facing other states with high renewable penetration across is causing operational and reliability challenges to the electricity system.

One of the key challenges the market is experiencing is the intermittent but highly correlated nature of renewable generation resulting in significant supply in the middle of the day (when the sun is shining) and when it is windy. Likewise, the residual load shape that is required to be managed by a combination of dispatchable generation including hydro generation, gas, storage and interconnector inflows has changed significantly with the increase in renewable generation.

Market spot prices of zero or even negative prices are now more regularly occurring during the day across the NEM, reflecting the supply and zero or negative short run marginal cost of renewable energy. This can quickly change when coincident solar generation drops in the afternoon, with more expensive fast-start peaking gas and hydro required to supply market needs.

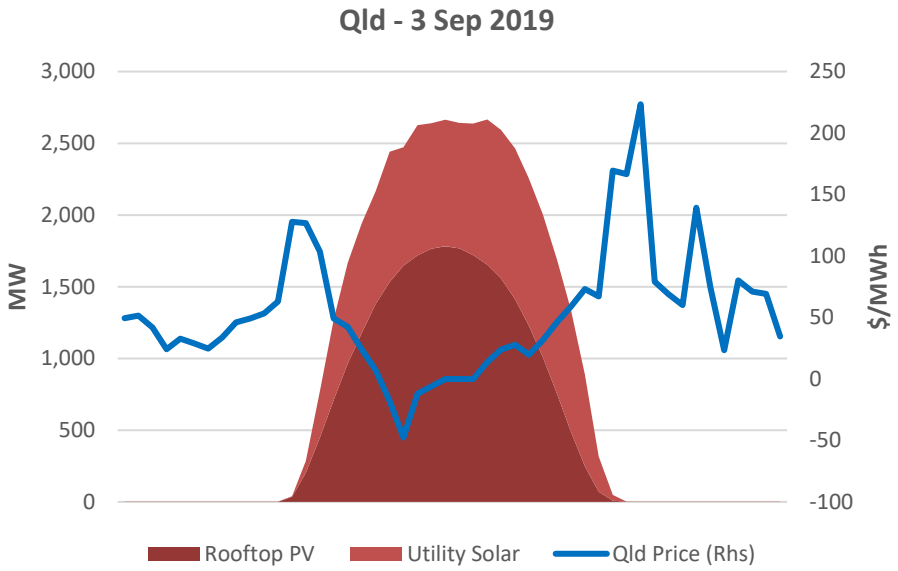


Figure 4: Typical daily profile of solar generation in QLD and the spot price outcomes.

This variability is indicative of the market providing signals for generator dispatch and future investment but creates challenges for AEMO managing the balance between intermittent and firm generation into the future. With dispatchable generation assets being forced to operate intensely for shorter periods, expensive fixed costs of the plant need to be recovered over shorter periods resulting in higher prices for this generation. Ultimately, the viability of some of these plants may be threatened.

AEMO is frequently required to direct synchronous units online (intervene in the market) during these low demand and price periods to ensure that the power system continues to be operated securely. This occurs frequently in South Australia, but in the future, it is not going to be an isolated problem as more synchronous generators exit the market. Going forward, it appears likely that there will be an increasing need for new, contestable

system security markets to support increasing penetration of intermittent generation.

The exit of Liddell and implications for the market

The Liddell power station generates 2,000MW of electricity from four 500MW coal units. It is located near Muswellbrook in the Hunter Region and was commissioned between 1971 and 1973, making it the oldest generator in NSW. It supplies around 10% of NSW's electricity.

Liddell's owner, AGL, provided advance notice of Liddell in accordance with AEMO's reporting requirements in August 2019. It confirmed that one unit will close in April 2022 and the remaining three will close in 2023.

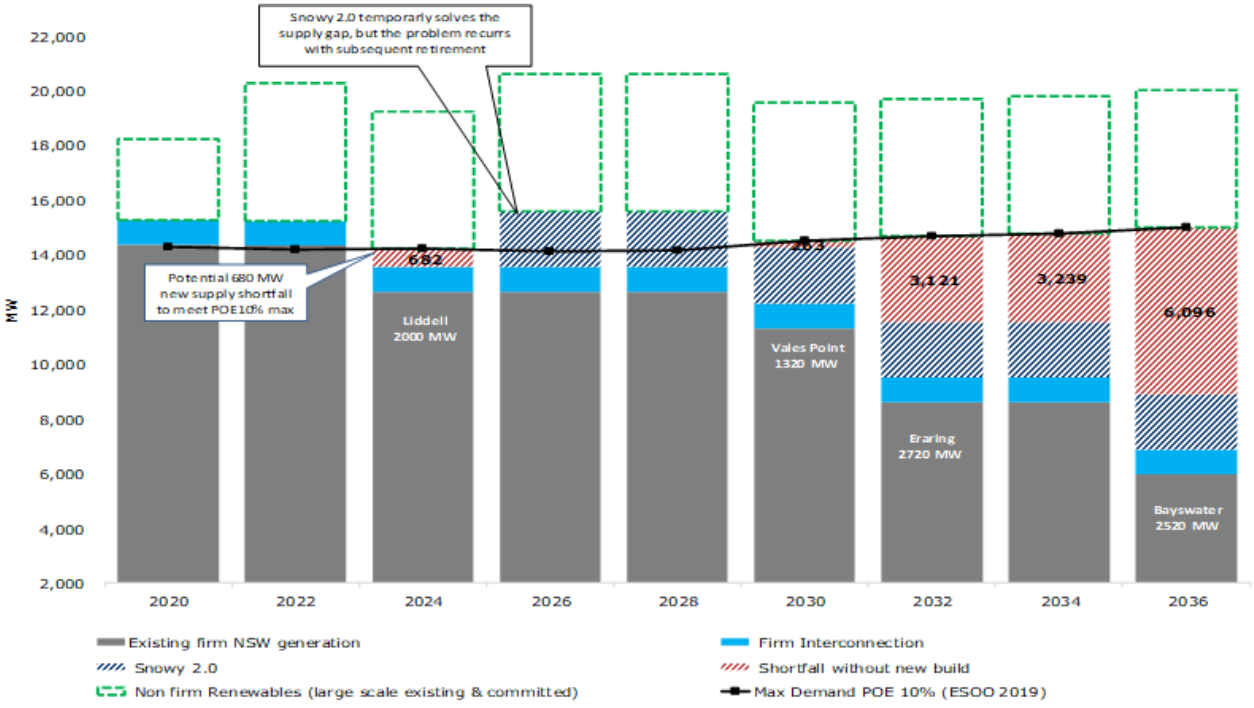


Figure 5: Firm generation to 2036 in NSW as coal plant retire.

Figure 5 above indicates the progressive retirement of coal generators to 2036 and the capacity shortfall to the maximum forecast state demand (at P50). It confirms that investment in new dispatchable generation will be required over this period, including storage to firm intermittent renewable generation.

AEMO in the latest Electricity Statement of Opportunities (ESOO) observe that even following Liddell's exit in 2023, reliability standards will not be breached and remain below the standard of 0.002% of unserved energy. We would note that this relies upon the assumption that other power stations operate reliably during this period and that Snowy 2.0 enters the market in March 2025 however its contribution is unclear as no new transmission for Snowy 2.0 is assumed. Regardless, there is concern that a Snowy 2.0 commissioning date of 2025 is ambitious notwithstanding the complications of construction in a National Park. Additionally, we have seen significant generation plant

fail for extended periods of time (Loy Yang A and Mortlake), low dam levels affecting hydro generation, transmission outages and ongoing fuel supply issues (Mt Piper).

AEMO further notes that there is a 21% risk that reliability standards will be breached. This would result in up to 770,000 NSW households being load shed during an extreme heat event (1-in-10-year event).

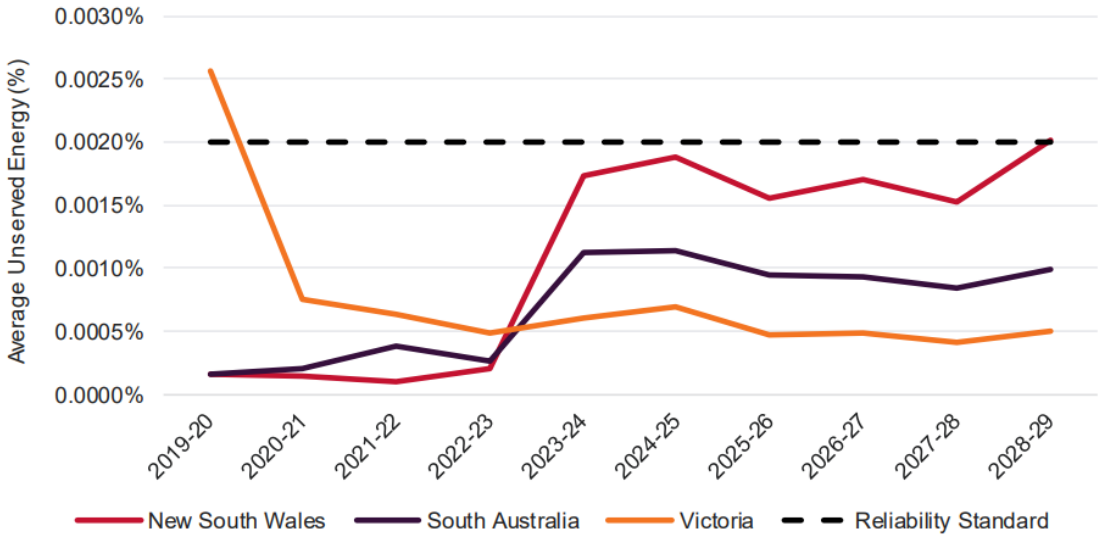


Figure 4: AEMO's forecast of reliability standard to 2028/2029[5]

Notwithstanding AEMO's view that reliability standards may not be breached following the retirement of Liddell, EnergyAustralia believes there is a strong case for new investment in firm, dispatchable generation within NSW to meet summer peak events and ensure the security and integrity of the electricity system is maintained.

Given the rapid deployment of intermittent renewables in NSW in previous years, we believe that fast-start and fast-ramping plant is best suited to the needs of the market and complements the renewables. This would naturally lend itself to open-cycle gas plant and pumped hydro.

EnergyAustralia has proposed an expansion to our Tallawarra power station to build an additional 280-350MW of open-cycle peaking gas generation to be ready when Liddell closes. The project will require approval of its planning permits to advance.

Mt Piper power station – a case study of fuel supply challenges

Mt Piper is a 1400MW coal fired power station located near Lithgow. It is NSW's youngest coal fired power station and was commissioned in 1992 and 1993, with a 50-year design life. It remains the most efficient with the lowest emissions of NSW's coal fleet. Mt Piper is critical to the NSW market, supplying around 15% of NSW's electricity.

[5] 2019 Electricity Statement of Opportunities, AEMO August 2019.

In March 2011, the then TRUenergy[6] acquired the EnergyAustralia retail business and entered into a Gentrader agreement for the output of the Wallerawang and Mt Piper power stations, but without acquiring the underlying assets. Under the Gentrader model, the day-to-day operation and maintenance remained with the state-owned generator while TRUenergy became responsible for procuring coal supply. However, the state-owned Generators remained the counterparties to existing coal supply contracts and those contract costs were passed through.

Following the 2011 NSW election, the new Government set up a Special Commission of Inquiry led by Brian Tamberlin QC who recommended the sale of the underlying generator assets. This resulted in the passage of the Electricity Generator Assets (Authorised Transactions) Act 2012 which authorised the transfer of state-owned generator assets to the private sector and established arrangements for the transfer of the assets, function and staff. TRUenergy acquired the Mt Piper and Wallerawang power stations from the State.

At the time Mt Piper was acquired, six local mines were supplying coal to the power station with secure supply contracts extending to 2029[7].

Following poor planning outcomes by planning authorities over a number of years, Mt Piper is currently supplied by coal from a single local coal mine, Springvale Colliery, with coal available until 2024.

Springvale was only approved in 2015 after a protracted planning assessment process that included standing down the Springvale workforce for 8 weeks. Following successive legal challenges and appeals to block development of the mine the NSW Government passed special legislation to allow the mine to go ahead, without which Mt Piper would have no coal to power it and 15% of the state. A condition of the 2015 consent required a water treatment plant (WTP) to be built at Mt Piper, requiring a $200M investment and is currently under construction.

More recently the Springvale mine has run into issues in its ability to provide enough coal and coal of a suitable quality for the Mt Piper power station. This is having a very material impact on the operation of Mt Piper, which is conserving coal by limiting its operations ahead of this summer.

EnergyAustralia remains concerned that current low stockpile levels combined with limited alternate supply coal delivery options may still pose a threat to NSW's electricity supply over summer in some circumstances. We believe going into summer with minimal coal reserves is risky as some peak demand scenarios require prolonged generation operation beyond which coal can be progressively delivered.

We are working closely and constructively with Centennial Coal (the owner of Springvale mine) and the NSW Government to enable deliveries of emergency supplies of coal in the short term.

In the longer term beyond 2024, another local mine, Angus Place, is required to ensure continuity of coal supply to Mt Piper as Springvale winds down in 2024 and is replaced by Angus Place. Angus Place supplied coal to Mt Piper until 2014 when it was placed in care and maintenance as its existing planning approval expired. Angus

[6] TRUenergy rebranded to EnergyAustralia in 2012.

[7] A supply agreement for 2.5Mt per annum extending to 2029 was executed by the State-owned generator prior to the sale of the power station.

Place will require approval under the state planning process and federal EPBC process.

While EnergyAustralia strongly prefers local coal supply, the risks to single mine supply experienced recently mean we need to diversify supply options to ensure long-term operational security. Therefore, EnergyAustralia is exploring the option of re-instating rail services on the Kandos section of rail line that connects Mt Piper to the mining area of the Upper Hunter Valley. This line was taken out of service in 2009, but the rail and corridor still exist. The ability to import coal would enable coal blending to minimise coal quality variability and de-risk Mt Piper's ability to contribute to NSW electricity market.

In any case, NSW planning frameworks need careful consideration as NSW is facing tangible energy security risks as a result of poor state planning processes that are unable to effectively balance the priorities of state. Further suggestions for the consideration of the Committee are provided below.

Planning processes for strategic energy infrastructure

As previously mentioned, NSW requires investment in new dispatchable generation within the wholesale market from 2022/2023 as Liddell exits. Also, as previously mentioned, one of the key ingredients for investment in long-term, capital intensive electricity generating infrastructure is policy certainty and predictability. Planning processes are the other fundamental requirement for investment. This is an area of weakness in NSW.

EnergyAustralia advocates for streamlined, transparent and fact-based planning processes and regulations that balance the interests of the environment and social factors with that of economic growth.

Unfortunately planning processes have made NSW a difficult place for investment because of the inconsistent and complex planning regulations. We have experienced, first-hand, poor planning outcomes through our involvement in the Narrabri gas project, the Coalpac mines and the Springvale expansion project. Poor planning processes in NSW are affecting NSW energy market outcomes.

NSW's planning legislation is predicated on delegated decision making to the Independent Planning Commission where there are more than 25 submissions received. In practice it provides a platform for localised or special interest groups which can overcome considerations of economic criteria, including regional NSW employment, state-wide energy security, local and state economic issues and downstream consumer price impacts.

EnergyAustralia argues that strategic energy projects, where energy security and consumer price outcomes are critical for the state of NSW, should be determined by the Minister for Planning following IPC review if warranted. It is seems extraordinary for the IPC to make decisions inextricably related to complex portfolio matters when it is the Ministers who will face public accountability for energy security and price matters.

Interconnection

EnergyAustralia agrees that there is a role for new transmission development to play in the energy transition, but customers pay for any network investment and bear the investment risk therefore it is important that any long-term network investment and its projected benefits is sufficiently scrutinised to ensure customers benefit from their investment.

While there is a focus on shortening the Regulatory Investment Test for Transmission (RIT-T) process, care should be taken to not jeopardise the rigor of the modelling and consultation process, especially given the current fast change environment we are in. The role for state governments in this is to ensure as many planning barriers are removed/streamlined to ensure that once a project passes a RIT-T it is not further delayed.

One of the key drivers for increases to electricity prices that consumers have experienced over the past decade, as determined by the regulators, ACCC and IPART, has been due to a large increase in network spending. Excessive spending on monopoly network infrastructure over this period, referred to as gold-plating the network, delivered significant returns to network businesses through regulated returns. This also resulted in a 35% increase to household electricity bills over the period 2007/8 to 2017/8 in real terms.

EnergyAustralia is concerned that without sufficient and robust benefits cases for the current pipeline of significant new transmission investment projects, we risk this occurring again.

There is currently significant focus on AEMO's Integrated System Plan (ISP), which we note still has no formal place in the NER. It is EnergyAustralia's view that the ISP's primary purpose should be to guide competitive and efficient investments, not to lock in a specific development path at a point in time. There are high levels uncertainty regarding future technology costs, regulatory frameworks and generation investment decisions.

Transmission investment is both a competitor and a compliment to new generation investments. Interconnection is often reported as the 'silver bullet' for the energy transition, but we caution that without a balanced investment in both new transmission and dispatchable generation, at best, interconnection simply kicks reliability and security problems down the road. To this end, EnergyAustralia continues to advocate for fact based, robust and realistic modelling by TNSP's and AEMO in presenting their benefits cases.

We support measures that will improve the regulatory framework for investment by streamlining processes and enhancing system-wide modelling in determining the benefits case for transmission projects. However, we have concerns about the economic efficiency of prescribing a development path for transmission that is centrally planned, such as the ISP. Investment benefits cases should not be predicated on speculative future investment build as this creates substantial financial risks for customers if these future projects are never delivered. Whatever changes are made to the ISP process in the future it should not dilute the rigour of the current RIT-T framework. Decisions on transmission investment must be proven (beyond doubt) to be in the best interest of the customer and not influenced by politics that may lead to sub-optimal outcomes for customers.

Gas policy chaos

AEMO's 2019 Gas Statement of Opportunities (GSOO) highlights that the East coast gas supply-demand balance remains tight, with gas production in southern Australia continuing to decline and supplies from Queensland and limited by pipeline capacity[8]. The ongoing ACCC Gas Inquiry continues to show the pricing challenges in obtaining supply for retailers and large C&I customers[9].

State government bans on both conventional and un-conventual onshore exploration as well as continued community opposition have exacerbated supply issues with LNG import terminals now seen as a requirement to meet increasing supply uncertainty and to navigate transportation constraints. To this end, EnergyAustralia is party to the Australia Industry Energy (AIE) proposed import terminal at Port Kembla in NSW.

Initial signs from recent reforms in the gas markets to improve transparency and utilisation of gas transport capacity are promising[10] but benefits of reforms of this size take time to be realised. Further developments such as current COAG measures to improve gas market transparency across the supply chain need to consider additional costs that may be placed on participants in meeting these. Projected benefits must outweigh additional costs.

It is EnergyAustralia's view that increasing domestic supply of gas production in southern states is key to solving both supply and pricing challenges that the east coast gas market currently faces. We caution against the notion that domestic reservation policies or price caps will solve current issues facing the industry.

Behind the meter, distributed generation, Demand side

EnergyAustralia is an energy company, whose role in society and the economy is to meet the energy needs of our customers. Our job is not just building and operating electricity generation facilities.

We believe that in the energy system of the future, the lowest cost energy will be a combination of behind the meter distributed generation, energy storage and grid energy supply. We have businesses that sell small scale solar systems and household batteries. We are exploring Virtual Power Plants (VPP's) opportunities in NSW.

Effective and downward pressure on total costs to service electricity consumers also requires elasticity and flexibility from both the supply and demand side. EnergyAustralia is a leader in the demand response space. We are the largest participant in the AEMO / ARENA demand response trial and have around 9,000 customers participating, delivering a demonstrated reduction of around 60MW during a demand event over the most recent summer.

We recognise the work the NSW Government is doing to support distributed energy through its Empowering Homes Program. We see significant opportunity to expand the program and capitalise on emerging opportunities.

An area for consideration may be the deployment of digital meters in NSW. Digital or

[8] https://www.aemo.com.au/-/media/Files/Gas/National_Planning_and_Forecasting/GSOO/2019/2019-GSOO-report.pdf

[9] https://www.accc.gov.au/publications/serial-publications/gas-inquiry-2017-2020

[10] For example, improvements to the AEMO gas bulletin board and the Capacity Trading reforms.

"smart meters" are enablers for distributed generation, battery systems, demand-side participation and virtual power plants. We observe there are some regulatory barriers for the efficient deployment of smart meters in NSW and would refer the committee to the report and recommendations of the NSW independent regulator, IPART, who issued a report in December 2018 on this topic[11].

EnergyAustralia recommends the committee ensures distributed generation and storage along with demand initiatives are incorporated in future planning and strategic policy for NSW's energy system.

Energy and emission policy: Support a national framework.

EnergyAustralia has been a long-term supporter of enduring, nationally consistent integrated energy and climate change policy development that delivers clear outcomes to consumers, the electricity system (reliability and performance) and the environment through reduced emissions. We believe a nationally consistent approach is the most efficient and lowest cost, not isolated jurisdictional targets or technology specific subsidies.

However, like most participants in the industry, we have been disappointed at successive failure to resolve important policy at a national level. We were vocal advocates of the National Energy Guarantee, and if bipartisan support were present, we would continue to support its introduction.

In the absence of a national policy, however, some states are pursuing their own policies. We believe that the Federal Government has a responsibility to coordinate these efforts so that the electricity-generation sector transitions at the lowest possible economic and societal cost. Absent this critical leadership, we will work constructively with state governments to transition to cleaner forms of energy in a way that minimises costs to households and businesses and ensures that reliability is maintained.

We have long emphasised the importance of collaboration among all levels of government, business, unions, community groups and other participants in support of a successful transition. The electricity generation sector is particularly complex, with implications for different regions and the economy more broadly, and different generation technologies are equipped to fulfil different roles. Participants in the energy sector are best placed to understand the implications and interdependencies of potential changes to the physical and financial markets. Policy levers to accelerate and strengthen the transition are required, we hope this inquiry will underscore the need for policy interventions to be made in a way that fosters collaboration and joint problem solving.

We recommend that NSW Government support the development of energy and climate change policies that can be implemented to complement or contribute to national policy frameworks to the largest extent possible to ensure efficient and effective outcomes for consumers. We would further suggest that the Australian Energy Market Commission (AEMC) has a team of experts that could provide advice to the NSW Government on this long-term policy alignment.

Regional areas likely to be impacted by the transition

Much of Australia's coal generation is concentrated in a handful of regions with lower diversity of income than is typical in our major cities. Efforts to transition away from coal

[11] Retailers' Metering Practices in NSW. Final Report. Independent Pricing and Regulatory Tribunal. 17 December 2018

to sources of electricity generation with lower emissions might be expected to impact the regional centers that have proudly powered our country for decades. These communities require coordinated and sustained support from government and industry so that impacted employees and the community are given new opportunities to prosper.

EnergyAustralia has significant operations near Lithgow in the Central West of NSW. We also have operations in Victoria's Latrobe Valley. This issue is very much in the front of our minds as we envisage the transformation of the energy industry over the coming decades.

In the Lithgow Local Government Area, the unemployment rate is 9% with youth unemployment close to 14%, amongst the highest in the state. Coal mining and electricity generation contribute around 50% of Lithgow's Gross Regional Product and makes up around 20% of total employment. Changes to these industries will have a profound impact on this local community.

EnergyAustralia acquired the Mt Piper and Wallerawang power stations from the State in 2013. Following the acquisition, EnergyAustralia undertook a review of both plants with the intent to improve productivity in the context of the then energy market.

Following this review, in January 2014, EnergyAustralia removed Wallerawang's Unit 7 from service and announced permanent closure in November 2014. On 20 November 2014 EnergyAustralia announced that both Wallerawang units would be permanently decommissioned, deconstructed and the site remediated.

Work is continuing to re-purpose the site to create new regional jobs and drive local investment. Bettergrow was selected following a comprehensive Expression of Interest process to develop plans for the Wallerawang site including a multi-modal transport hub, and eco- industrial park and its organics business. They are an experienced company having re-purposed similar mining and industrial sites across Australia.

Importantly, as a member of the local community and a significant employer in the region, EnergyAustralia is very mindful of managing changes to operations with our people in mind. There were no forced redundancies at EnergyAustralia following the closure of the Wallerawang power station as the workforce was already working across both the Wallerawang and Mt Piper power stations.

Equally important is that EnergyAustralia is planning to operate Mt Piper to 2043 and is continuing to invest in the plant to secure its long-term future. We are building the $200M water treatment plant to treat mine water and enable its re-use it in Mt Piper's cooling system. We have recently announced an $80M turbine efficiency upgrade.

If industry and government work together effectively then they can deliver new opportunities to today's workers, and future workers, in the Lithgow region. This is the challenge that needs to be solved for as NSW transitions away from coal over the coming decades.