

Chair  
 Inquiry into Sustainability of Energy Supply and Resources in NSW  
 Committee on Environment and Planning  
 NSW Legislative Assembly  
 Parliament House  
 6 Macquarie St  
 SYDNEY NSW 2000

13<sup>th</sup> September 2019

Submitted online to: <https://www.parliament.nsw.gov.au/committees/inquiries/Pages/inquiry-details.aspx?pk=2542#tab-submissions>

Dear Sir,

### Inquiry into Sustainability of Energy Supply and Resources in NSW

The Australian Energy Council (the “**Energy Council**”) welcomes the opportunity to make a submission in response to the *Inquiry into Sustainability of Energy Supply and Resources in NSW*.

The Energy Council is the industry body representing 21 electricity and downstream natural gas businesses operating in the competitive wholesale and retail energy markets. These businesses collectively generate the overwhelming majority of electricity in Australia, sell gas and electricity to over ten million homes and businesses, and are major investors in renewable energy generation.

#### Introduction

The Energy Council supports the Inquiry and understands the concerns that led to its creation. In progressing its work, it is important the Inquiry relies only upon credible, scientific data on the conditions in the NSW electricity industry, and is not swayed by excessively pessimistic views on reliability portrayed in the media and elsewhere.

Importantly, the Inquiry must recognise that 100% reliability is impossible in any power system, and that the appropriate approach is to target a small but finite level of customer interruption which equates to the optimum point which balances the cost of additional supply against the cost of customer inconvenience. The existing reliability standard (for generation and inter-regional transmission assets) of 99.998% demand supplied over time has been shown many times to be close to this optimum,<sup>1</sup> and the amount of interruption implied by this standard (10.5 minutes per year per customer) is dwarfed by other causes of interruption, as shown in the following graph.

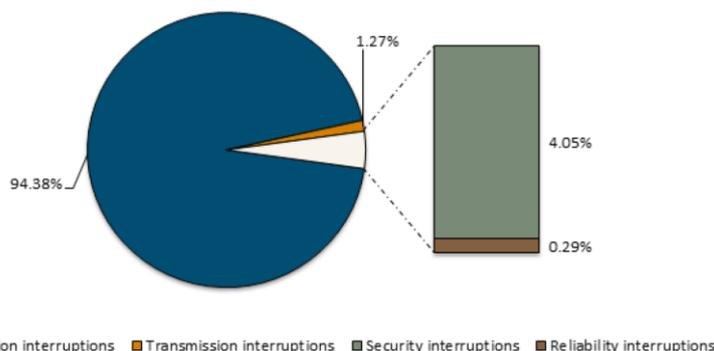


Figure 1: Sources of Supply Interruptions in the NEM from 2007/08 to 2017/18  
 Source: Reliability Panel<sup>2</sup>

<sup>1</sup> See, for example: Australian Energy Market Commission Reliability Panel, *Reliability Standard and Settings Review 2018 Final Report*, 30<sup>th</sup> April 2018

<sup>2</sup> Australian Energy Market Commission Reliability Panel, *Definition of Unserved Energy – Final Report*, 1<sup>st</sup> August, 2019, p.51, Figure A.1

## Discussion

New South Wales is blessed with energy. It has almost 15,000MW of scheduled generation and 2,900MW of semi-scheduled and non-scheduled generation,<sup>3</sup> to meet a forecast summer maximum operational demand of approximately 13,000MW.<sup>4</sup> In addition, NSW has significant interconnections to other states, with further interconnection in the form of Project EnergyConnect (also known as “RiverLink”) likely to be completed in 2024,<sup>5</sup> resulting in import capabilities of approximately 2,800MW.<sup>6</sup>

However aging thermal generation is expected to retire over coming years, commencing with the Liddell Power Station over 2022 and 2023, resulting in 1,680MW leaving the NSW power system. Despite the closure of Liddell, the Electricity Statement of Opportunities forecasts that even without additional investment, the reliability standard will be met in the years after the closure.

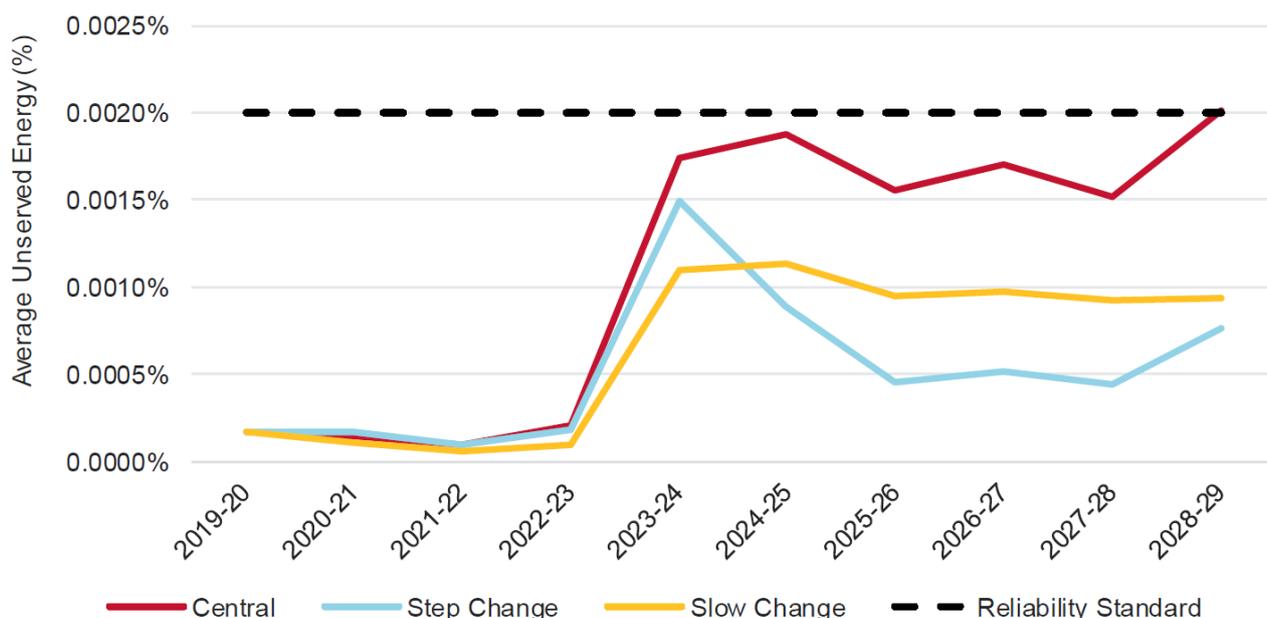


Figure 2: Forecast USE Outcomes, New South Wales

Source: AEMO<sup>7</sup>

Note that this outlook does not include some investments, particularly in transmission, that do not reach AEMO’s standard of “committed project” but seem almost certain to go ahead, such as EnergyConnect, the Queensland-NSW Interconnector (QNI) upgrade and an incremental upgrade to the Victoria-NSW Interconnector.

The introduction of the three year notice rule and AEMO’s associated closure registry<sup>8</sup> provide some comfort that no further NSW closures are likely until very late in the 2020s.

In addition, renewable energy penetration is expected to increase, as shown in the next graph, as costs of renewable technologies continue to decline.

<sup>3</sup> Australian Energy Market Operator, NEM Registration and Exemption List, available at <https://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Participant-information/Current-participants/Current-registration-and-exemption-lists>

<sup>4</sup> Australian Energy Market Operator, 2019 Electricity Statement of Opportunities – A Report for the National Electricity Market, August 2019, Table 4, p.62, 50% PoE case

<sup>5</sup> ElectraNet, SA Energy Transformation RIT-T – Project Assessment Conclusions Report, 13<sup>th</sup> February 2019

<sup>6</sup> Australian Energy Market Operator, Interconnector Capabilities for the National Electricity Market, 3<sup>rd</sup> November 2017

<sup>7</sup> Australian Energy Market Operator (2019), p.111, Figure 53

<sup>8</sup> Available at <https://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Planning-and-forecasting/Generation-information>

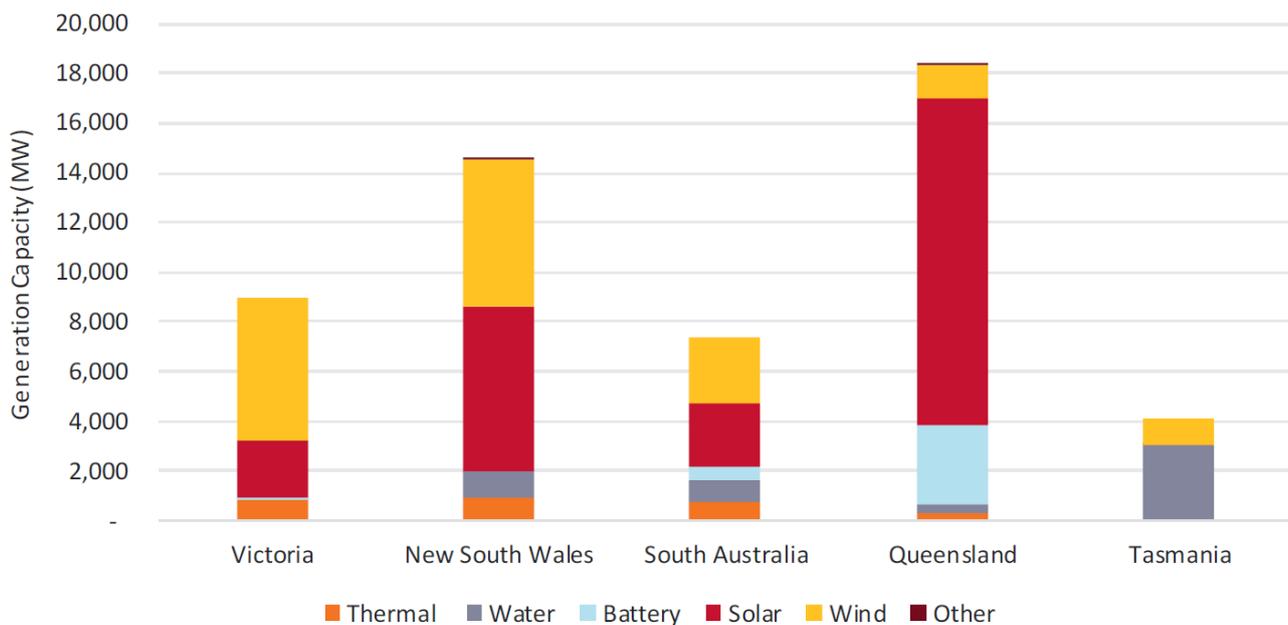


Figure 3: Proposed projects by type of generation and NEM region, beyond those already committed  
Source: AEMO<sup>9</sup>

Offsetting the increased renewable energy generation will be increased demand due to changes in technology (e.g. a move from internal combustion engine-powered vehicles to electric vehicles) and overall increased usage from population growth.

The supply-demand balance will therefore continue to evolve, with increased demand initiating a market response to build more generation until it becomes uneconomic to do so, at which point new generation build will cease, until such time as demand catches up.

Overlaid with the dynamic of the supply-demand balance is the introduction of more small-scale variable renewable energy generation, supported by subsidy schemes such as the renewable energy target, and domestic consumers who value self-generation ahead of their personal costs of capital. This will continue to affect the generation mix in NSW, and it will be important for this energy transition to be appropriately supported during the change. While variable renewable energy generation has its place in the supply chain due to its very low marginal cost of operation and its currently declining capital costs, it has variable output, and therefore it is important to have sufficient generation to support the unserved energy standard of 0.002%.<sup>10</sup> Depending on the period necessary to support unavailable variable renewable energy, this could be seconds, minutes, hours or days, and there are suitable conventional technologies available to meet these needs, including batteries, hydropower and gas-fired generation.

NSW currently has 2,500MW of hydro (soon to be expanded by the Snowy 2.0 project)<sup>11</sup> and 2,000MW of gas-fired generation.<sup>12</sup>

Unfortunately the majority of NSW's gas supplies come from interstate, along the Moomba-Sydney Pipeline or the Eastern Gas Pipeline, and this may be a limiting factor in the development of further gas-fired generation. The Energy Council therefore encourages government to facilitate natural gas development in a responsible and environmentally appropriate manner.

This facilitation by government is important for energy supplies to develop in the most efficient way possible, and needs to be married to long-term policy certainty to foster business investment. Policy uncertainty and government intervention are sure-fired means by which investor confidence is damaged, and business investment diverted to other locales and industries. The investment environment is also inadvertently harmed when government seeks to allocate subsidies or otherwise distorts the market by preferring a particular project.

<sup>9</sup> Australian Energy Market Operator (2019), Figure 28, p.70

<sup>10</sup> Unserved energy is a measure of the supply interruptions consumers experience from generation and interconnection adequacy.

<sup>11</sup> <https://www.snowyhydro.com.au/our-scheme/snowy20/>

<sup>12</sup> Australian Energy Market Operator, NEM Registration and Exemption List

Accordingly the Energy Council believes that government is at its best when it creates a broad investment-friendly policy environment without engaging in the specifics of that investment.

#### Retailer Reliability Obligation

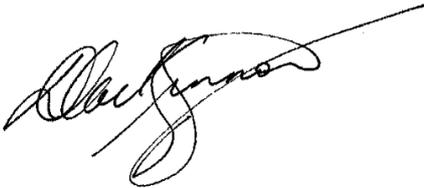
Further comfort about NSW's supply situation is provided by the Retailer Reliability Obligation, which has now been legislated,<sup>13</sup> and can be triggered by annual and *ad hoc* assessments by AEMO. This mechanism was developed by the Energy Security Board, Australian Energy Regulator and AEMO, in conjunction with industry, to provide additional incentives for dispatchable capacity in order to meet the reliability standard. State-based derogations which diverge from the original, considered design will undermine the market and create dangerous unintended consequences.

#### **Conclusion**

In conclusion, the Energy Council believes that NSW has sufficient energy supplies available to facilitate the energy transition currently in train, however Government has a role in facilitating new investment, particularly in gas-fired generation to support variable renewable energy. Having said that, the Government must be careful not to intervene in the market and compromise market efficiencies.

Any questions about this submission should be addressed to the writer, by e-mail to [Duncan.MacKinnon@energycouncil.com.au](mailto:Duncan.MacKinnon@energycouncil.com.au) or by telephone on (03) 9205 3103.

Yours faithfully,



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Wholesale Policy Manager  
Australian Energy Council

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<sup>13</sup> National Electricity (South Australia) (Retailer Reliability Obligation) Amendment Act 2019