

**Submission
No 169**

SUSTAINABILITY OF ENERGY SUPPLY AND RESOURCES IN NSW

Organisation: Impact Investment Group

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Impact Investment Group submission to the NSW Legislative Assembly Committee on Environment and Planning's Inquiry into the sustainability of energy supply and resources in NSW

About IIG and Our Interest in this Inquiry

Impact Investment Group (IIG) is a leading Australian impact investment funds manager with more than \$680 million in assets under management.

We have funded and manage six solar farms across Australia, one of which is currently under construction, and a wind farm.

With our community of co-investors we have also funded green buildings and the start-up years of mission-driven businesses. IIG is committed to financing projects that deliver benefits to the environment, to our investors and to the people who live and work where we invest. We measure the impacts of our investments to ensure our outcomes meet our aspirations.

We believe that helping to transform crucial economic systems is a valuable path to meaningful environmental and social impact. A 100% renewable, affordable, reliable and clean energy system is a key component of this transition: the NSW Government and the people of NSW stand to reap many rewards if the policy settings are right.

Executive Summary:

IIG recommends that NSW energy policy should utilise market-based incentives to reduce emissions and support an orderly transition to clean energy, preferably linked with other like-minded states.

The NSW energy system design and its transition should be guided by these underlying principles;

- Fast, effective emissions reduction
- Affordability
- Reliability
- Protection of public health
- Equitable treatment of effected communities

IIG recommends these actions;

- Set emissions reduction targets that are ambitious and staged.
- Use a market-based mechanism, with legislation setting the incentives for the necessary emissions reduction and energy system transition.
- Support vulnerable coal-exposed communities during the resultant exit from coal.
- In the absence of coherent energy policy at the Federal level, make State-based policy.

IIG strongly recommends avoiding a reverse auction mechanism. Reverse auction schemes may have been appropriate mechanisms in immature investment markets, however in the current environment, a government running a reverse auction runs a high risk of becoming the sole buyer of new electricity generation. This analysis is supported by AEMO's submission to the Victorian Renewable Energy Auction Scheme Consultation.

Further detail on these points can be found below, and we are available to provide background or in-person evidence.

The design of the system should be guided by underlying principles:

Fast, effective emissions reduction is critical – especially in the decade ahead – if we are to achieve Australia's commitments under the global Paris Agreement to limit the dangerous impacts of climate change and maintain our economic prosperity. Not meeting our international obligations under the treaty has more than just diplomatic impacts for Australia – it puts the health of our environment¹, our economy² and our people³ at grave risk.

Low pollution technology must be prioritised if climate change is to be mitigated: there is no room for a 'technology-neutral energy system' (often proposed by the fossil-fuel industry) unless there are strict emissions thresholds applied equally across the system.

To meet this goal, a marked transition in investment in energy infrastructure is required. Average annual investment in low pollution energy technologies and energy efficiency need to be upscaled by roughly a factor of six (range of factor of 4 to 10) by 2050 compared to 2015, overtaking fossil investments globally by around 2025⁴.

Affordability must also be a guiding principle of energy system design. Solar and wind energy are now the lowest cost form of new generation and are playing an important role in reducing electricity bills. The Australian Energy Market Commission (AEMC) found electricity prices will generally be stable or falling over the next two years due to the influx of new renewable energy supplies that will drive wholesale costs down. The AEMC forecasts that by mid-2020, the average consumer will pay about \$28 less than today, as the national average annual power bill falls from \$1367 to \$1338. Over the next two years the volume of new wind and solar capacity will drive the typical wholesale component cost down by \$55 - offsetting small increases in other parts of the supply chain, with network costs flat and the environmental cost component up by \$4. From FY19 to FY21 NSW prices are estimated to fall despite a small rise in environmental and transmission network costs.⁵

However stability and consistency of policy is a key contributing factor to keeping the costs of the transition as low as possible. Without such consistency, investors require considerable risk premiums to allocate capital to new investment.

¹ <https://www.environment.gov.au/climate-change/climate-science-data/climate-science/impacts>

² <https://aicd.companydirectors.com.au/membership/company-director-magazine/2019-back-editions/may/climate-risk>

³ <https://www1.racgp.org.au/ajgp/2018/july/climate-change-and-the-public-health>

⁴ https://www.ipcc.ch/site/assets/uploads/sites/2/2019/05/SR15_Chapter2_Low_Res.pdf

⁵ <https://www.datocms-assets.com/6959/1545274459-2018-residential-electricity-price-trends-final-report.PDF>

Reliability of the energy system is crucial. As coal infrastructure ages, governments must plan the staged transition away from coal and into low-pollution technologies such as wind and solar, supported by pumped hydro storage and dispatchable battery-power embedded across the grid. The latest forecast report by the Australian Energy Market Operator (AEMO) highlights the risks to reliability in states where the exit of ageing coal plants is not planned and suitable replacements in place. To absorb the impact of deteriorating performance of aging plants AEMO recommends a focus on the fast-tracked delivery of ‘no regrets’ transmission infrastructure that can deliver important reliability and resilience benefits. Once the transmission infrastructure is in place, AEMO’s analysis forecasts that new dispatchable supply of only 215 MW is required to ensure New South Wales only has a one-in-10 year risk of a significant involuntary load shed event in the summer 2023-24, following the full closure of Liddell Power Station. AEMO has advised it will work with industry and governments to identify the attributes and location of dispatchable resources that will address this risk and available mechanisms to assure the necessary investment. Without this intervention, NSW is at risk of failing to meet its current and future reliability obligations.⁶ The Gannawarra battery, a 25 megawatt (MW)/50 megawatt-hour (MWh) lithium-ion battery co-located with the 60 MW(DC) solar farm in north western Victoria is already playing a role in reducing the reliability risks of the grid during summer peaks⁷. NSW may consider what policy it can set to incentivise similar investment in the State.

Better public health is also a key benefit of a transition to low-polluting technologies. Polluting fuels such as coal and gas come at a huge health cost to our communities: both directly and indirectly.

As an example of the current health damage to local communities in NSW, a report by the Climate and Health Alliance found the health impacts in the Hunter Valley from coal operations are significant. A relevant excerpt from the executive summary of the report *Coal and health in the Hunter: Lessons from one valley for the world*⁸ details the estimated annual health damages impacting on the towns of Singleton and Muswellbrook.

This report estimates the annual costs of associated health damages from the five coal fired power station in the Hunter Valley at around \$600 million per annum. For the towns of Singleton and Muswellbrook, the burden of health damages is estimated at \$47 million in Singleton and \$18.3 million in Muswellbrook each year from exposure to fine particles (PM2.5) emitted from coal mines and coal fired power stations into the air. These particles travel deep into the lungs and pass into the blood stream, posing a risk of stroke and heart attacks.

And finally, energy system design throughout this transition must be managed in a way that leaves no community behind. It must prepare and plan for the end of coal in communities

⁶ https://www.aemo.com.au/-/media/Files/Electricity/NEM/Planning_and_Forecasting/NEM_ESOO/2019/2019-Electricity-Statement-of-Opportunities.pdf p.5

⁷ <https://reneweconomy.com.au/teslas-and-victorias-second-big-battery-completed-at-gannawarra-solar-farm-46361/>

⁸ https://d3n8a8pro7vhm.cloudfront.net/caha/legacy_url/53/Climate-and-Health-Alliance_Report_Layout_PRINTv2.pdf?1439938112

such as the Hunter Valley in support of a *just transition* to a more sustainable, low pollution economy.

To ensure NSW can reap the benefits of this transition, IIG recommends the following policy actions:

1. Set staged, ambitious emissions reduction targets to provide a sound market signal

The NSW Government has set an aspirational emissions reduction target of net zero emissions by 2050. However, many investors will not respond to a signal which is decades out, and accordingly we support a staged approach to emissions reduction, such as that currently being set in Victoria.

2. Legislate a market-based mechanism

Most economists prefer an emissions tax or cap and trade scheme as the most efficient and effective mechanism for reducing emissions⁹. Many studies since Professor Ross Garnaut's 2008 Climate Change Review, show that a market-based mechanism, such as an emissions trading scheme or cap and trade scheme, is the most effective and efficient to reduce emissions and drive the energy transformation¹⁰. The effectiveness of a carbon price was also demonstrated when the Gillard Government, enacted one from mid-2012 to mid-2014. In a short time it was able to drive down Australia's power sector emissions by almost 11%, at an annual rate of 5.36% (compared to the average of 2.5% annual decline in the three years immediately preceding the implementation of carbon pricing) with a modest (6 -10%) impost on power bills (In New South Wales average annual power bills more than doubled between 2007-08 and 2013-14, soaring from A\$1013 to A\$2073, with A\$580 (or more than half) of that rise due to increased costs for the network of poles and wires. In comparison, the carbon tax added A\$172¹¹).

In 2014 Professor Garnaut predicted that Australia's emissions reduction targets would not be achieved without a market-based mechanism such as a carbon price: on current evidence, his predictions were correct¹². Repealing the carbon price also cost the federal government billions of dollars in lost tax revenue¹³.

In late 2016, then Premier of South Australia Jay Weatherill proposed a state-led emissions trading scheme as an efficient solution to emissions reduction in the absence of a national scheme¹⁴. Studies of state-based schemes in the US show they are effective in achieving a rapid reduction in emissions, are cost-effective and do not harm economic growth¹⁵. A state-led scheme may be the only option in the absence of any national endorsement for an emissions obligation to be included as part of the National Energy Guarantee, supported by former NSW Minister for Energy Don Harwin. Current energy Minister Matt Kean has also

⁹ <https://theconversation.com/finkels-clean-energy-target-plan-better-than-nothing-economists-poll-82066>

¹⁰ Garnaut Climate Change Review 2008

<https://webarchive.nla.gov.au/awa/20190509030705/http://www.garnautreview.org.au/index.html>

¹¹ <https://theconversation.com/carbon-tax-axed-how-it-affects-you-australia-and-our-emissions-28895>

¹² <https://theconversation.com/ross-garnaut-qanda-there-is-no-doubt-australia-is-out-of-step-29099>

¹³ <https://www.afr.com/politics/7-6bn-a-year-budget-cost-to-chop-carbon-tax-20140215-ixsf6>

¹⁴ <https://www.abc.net.au/news/2016-12-08/sa-premier-calls-for-state-emissions-trading-scheme/8102398>

¹⁵ <https://theconversation.com/state-cap-and-trade-systems-offer-evidence-that-carbon-pricing-can-work-101428>

expressed his support for a state-based solution to emissions reduction¹⁶.

The Finkel Review's terms of reference explicitly precluded it from advising on economy-wide emissions reduction policy, and implicitly required it also to reject emission reduction policies such as an emissions tax or cap and trade scheme. The absence of such policies from the Finkel Review's recommendations should therefore not be interpreted as a valid argument against them.

A market-based mechanism also eliminates the need for the government to spend money on a costly - and potentially market-distorting - reverse auction scheme. This is addressed in more detail in section 6 below.

3. Support the staged exit from coal in regions such as the Hunter Valley

The NSW Government has a critical role to play in managing the impacts of the energy transition on individuals, households and communities.

In its submission to the NSW Government's 2017 inquiry into electricity supply, demand and prices, the NSW Minerals Council argued: "If (ambitious energy targets) similar policies were implemented in NSW there is the potential for serious economic and social dislocation in regions such as the Hunter Valley." We maintain the opposite is true: if ambitious energy targets are not implemented in NSW, there is the potential for serious economic and social dislocation in regions such as the Hunter Valley.

Current NSW Energy Minister Matt Kean is right to highlight that "This revolution done well will not only underpin the next generation of Australian prosperity but will see us export our technologies and services to the rest of the world."¹⁷

4. Recognise the role and potential influence of state-based energy policy

Constitutionally, energy policy in Australia is a matter for state governments. State governments therefore have the constitutional scope to act both independently and in consort to achieve clean energy related goals^{18,19}. As with the development and implementation of the National Electricity Market over the past two decades, a consensus reached through the Council of Australian Governments (COAG), supported by harmonised legislation in each state, provides an ideal setting for investors.

National policy coherence provides the best outcome for investors and governments as it is almost always more efficient. However, we have seen over the past decade, consensus on energy policy has proved politically vexed and many states have been forced to go it alone in order to achieve the policy objectives.

¹⁶ <https://www.smh.com.au/politics/federal/nsw-warns-of-going-it-alone-on-energy-as-industry-moans-federal-gap-20190730-p52c32.html>

¹⁷ <https://energy.nsw.gov.au/ceda-speech-7619-hon-matt-kean-0>

¹⁸ <https://www.abc.net.au/news/2018-12-19/morrison-climate-policy-out-of-touch-says-nsw-energy-minister/10633474>

¹⁹ <https://theconversation.com/what-role-for-the-states-on-climate-and-energy-policy-nsw-enters-the-fray-69039>

While suitably ambitious, nationally consistent, legislation under federal government leadership may be ideal, it hardly seems realistic at present.

5. Support the communities effected by the transition away from coal-fired power

The government must play a role in managing a just transition away from coal-fired power. Companies are under no obligation to consider the impact of their power station closures on the local communities in which they operate. As we have seen with the example of Hazelwood, strong policies are required to support the transition of workers and communities affected by the social and economic impacts of power infrastructure being more dispersed.

There are significant employment opportunities for skilled and unskilled workers in the transition to clean energy, whether developing, building or operating renewable energy assets. In 2018 the renewable energy industry delivered 3,800MW of new clean power generation capacity, while creating 2,320 jobs²⁰. Whilst there many job opportunities in the transition, they are not always in the same locations or utilising identical skills. Accordingly the state government can play an important role in skills development and transitional support for small business and communities.

6. Avoid a reverse auction policy

Recommendation 12 of the NSW Government's 2017 inquiry into the electricity supply, demand and prices suggested the Government should "*explore taking a 'reverse auction' approach to leveraging new investment in renewable energy and storage.*"²¹

It is the strong recommendation of IIG that the NSW Government does not go down the path of establishing a reverse auction scheme like those set in ACT, Victoria and South Australia.

Reverse auctions may be a viable policy for kickstarting an immature industry, but are not appropriate for mature markets. They risk sending inconsistent and negative investment signals, leaving the government as the sole buyer of new electricity generation.

The NEM is designed to signal for new investment through transparent pricing mechanisms based on fundamental supply and demand. Reverse auctions undermine that structure.

They artificially depress prices in the short term and force new generation into the market that is blind to the spot price. This means incumbent generators, including renewable generators, are unable to compete and can shut down or go into bankruptcy. Meanwhile, the announcement of future offers of long-term, low risk purchase agreements dis-incentivises investment in higher risk/return options, such as short-term purchase agreements, or spot market revenue strategies.

²⁰ <https://assets.cleanenergycouncil.org.au/documents/resources/reports/clean-energy-australia/clean-energy-australia-report-2019.pdf>

²¹ <https://www.parliament.nsw.gov.au/lcdocs/inquiries/2457/Electricity%20Supply,%20Demand%20and%20Prices%20in%20New%20South%20Wales%20-%20Final%20report.pdf> p.xiv

In this scenario, a government attempting to manage a wide scale transition of an energy system from old technology to new, will become the sole funder of new generation capacity. This is an inappropriate role for state budgets.

Another argument against relying on reverse auctions to achieve wide-scale transition is that they have tended to be slower than original estimates. Both Victoria and Queensland's reverse auction schemes were delivered significantly late.

As further evidence of the inadvisability of reserve auctions, AEMO, in its submission to the Victorian Renewable Energy Auction Scheme Consultation, advised that it does not support the transition to clean energy via reverse auctions²².

We would welcome the opportunity to discuss with the committee this analysis and the background to it.

Yours,

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²² https://www.aemo.com.au/-/media/Files/Electricity/NEM/Security_and_Reliability/Reports/2016/AEMO-submission-to-VRET-consultation-310816.pdf