

Submission
No 45

INQUIRY INTO CLIMATE CHANGE (NET ZERO FUTURE) BILL 2023

Organisation: Climate Energy Finance

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CLIMATE ENERGY FINANCE

Inquiry into the NSW Climate Change (Net Zero Future) Bill 2023

Submission to the Legislative Council Portfolio Committee No.7 – Planning and Environment

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Tim Buckley, Director, [Climate Energy Finance](#)

About Climate Energy Finance

[Climate Energy Finance](#) (CEF) is an Australian based, Australian funded think tank established at the start of 2022 that works pro-bono in the public interest on mobilising capital at the scale needed to accelerate decarbonisation and the energy transition consistent with the climate science.

We conduct research and analyses on global financial issues related to the global energy transition from fossil fuels to clean energy, as well as the implications for the Australian economy, with a key focus on the threats and opportunities for Australian investments, regional employment and value-added exports. Beyond Australia, CEF's geographic focus is the greater Asian region as the priority destination for Australian exports, particularly India and China. CEF also examines convergence of technology trends in power, transport, mining and industry in accelerating decarbonisation.

CEF is independent, non-partisan, works with partners in the corporate and finance sector, NGOs, government, and progressive social and climate movement organisations in Australia, and is philanthropically funded.

About the Author

Tim Buckley

Tim Buckley, CEF's founder and director, has 35 years of financial market experience covering the Australian, Asian and global equity markets from both a buy and sell side perspective. Before founding CEF as a public interest thinktank in 2022, Tim founded the Australia and Asian arms of IEEFA in 2013 and worked as the Australasian Director on the global energy transition for eight years till the start of 2022. Over the last decade Tim has published over 100 reports and opeds on the clean energy transition in relation to Australia, Asia and globally.

Prior to this, Tim was a top-rated Equity Research Analyst and has covered many sectors of the Australian economy over 2 decades, including spending two years as Head of Equity Research in Singapore at Deutsche Bank covering Asian markets in 1996-1998. Tim was a Managing Director, Head of Equity Research at Citigroup for 17 years till 2008, then spent two years as Head of Institutional Equities at Shaw & Partners and subsequently in 2010-2013 was co-Managing Director of Arkx Investment Management P/L, a global listed clean energy investment start-up that was jointly owned by management and Westpac Banking Group.

Tim started his career as a lecturer in Finance and Market Regulation at the University of Technology, Sydney before moving to Macquarie Group in 1988 to work in equity research. Tim has a Bachelor of Business majoring in Accounting and Finance from UTS Sydney (1985-87), has received the US SEC Series 7 (General Securities Representative Qualification Examination) and Series 24 (General Securities Principal Qualification Examination) qualifications.

Executive Summary

We partially support the proposed Climate Bill, but recommend it be strengthened to better align with the climate science, the clear and growing cost of inadequate action and the once-in-a-century opportunities of rapid decarbonisation for investment, jobs and cost of living.

I make this submission on behalf of Climate Energy Finance (CEF) in relation to the [Climate Change \(Net Zero Future\) Bill 2023](#). This is an Act to establish guiding principles for action to address climate change; to set 2030 and 2050 targets for the reduction in net greenhouse gas emissions in New South Wales (NSW); to set an objective for NSW to be more resilient to a changing climate; and to establish the Net Zero Commission to monitor, review and report on progress towards the 2030 and 2050 50% reduction and net zero targets respectively.

CEF views this proposed Act as a positive step in the right direction to develop guiding principles about the critical need to act on climate change as early as possible to minimise the cost and adverse impacts of climate change. CEF agrees with the framing to address climate change in a fiscally responsible way to promote sustainable economic growth and consider the economic risks of delaying action to address climate change consistent with the principles of 14 ecologically sustainable development described in the Protection of the Environment Administration Act 1991.

CEF applauds the proposed establishment of the Net Zero Commission as a NSW government agency independent of the Minister with its own experienced, appropriately skilled commissioners, to monitor and review, and to provide advice and recommendations to the Minister on progress towards the 2030 and 2050 targets, and to inform and educate the Government of NSW so we get a whole-of-government approach. We agree with the Net Zero Commission's role to recommend emissions budgets for NSW and align with the wider Commonwealth commitments.

CEF agrees with the clear need to legislate targets for reducing greenhouse gas (GHG) emissions and urgently developing and implementing strategies, policies and programs to address climate change. This provides business, finance and our communities a clear sign of the direction of travel, and should be ratcheted-up over time, consistent with the underlying principles of the Paris Agreement.

However, we note the Paris Agreement was adopted at the UN Climate Change Conference (COP21) back in 2015. NSW has failed to deliver policies, targets or investment signals in any way aligned with the climate science or this agreement in the subsequent 8 years, an irreplaceable loss of time to build momentum.

CEF views this proposed Act as insufficient, and strongly urges the NSW Government to raise its ambition to belatedly provide better alignment with the path dictated by the climate science, and the growing evidence that extreme weather events globally are becoming more extreme and more frequent with each passing month and year.

We urge the NSW Government to consider an accelerated 2035 interim target of at least a 75% emissions reduction. Whilst still not aligned with the climate science that suggests net zero emissions (NZE) for NSW, Australia and the developed world economy by around 2038, so as to provide time for

the developing world to deliver on net zero by 2050 under the Common But Differentiated Responsibilities, at least this would flag that NSW is committed to an acceleration of ambition after the wholly inadequate efforts over the last decade.

As [Zali Steggall, OAM MP](#) articulates: “Across the world, governments and businesses are racing to net zero and accelerating the transition to clean technologies by establishing strong targets and policies that drive investment. Australia needs a strong 2035 target – a floor of 75 by 35 – to stay in the race.” Australia’s leading state needs to at least match this Federal proposal to better align with the climate science. The rising economic, environmental, biodiversity and intergenerational equity costs of inaction are clear.

NSW also needs to urgently reduce methane emissions, and embed climate change and climate risk-informed planning considerations as key to decision-making across all areas of government.

CEF also notes that this Climate Change (Net Zero Future) Bill 2023 proposal does nothing to implement the International Energy Agency (IEA)’s repeated recommendation that we stop approving new fossil fuel projects with immediate effect.¹ While the NSW Government notes that consenting authorities are already required under our planning systems to consider climate and intergenerational equity, and there is a separate inquiry underway currently to consider improvements, CEF notes the NSW continues to approve new fossil fuel projects that the world cannot afford.

Strong, ambitious legislated targets are also the necessary policy architecture to underpin the transformation of the state’s electricity system and to facilitate economy-wide decarbonisation, with the huge benefits and opportunities that flow from this for investment, jobs and the regions. Targets, if adequate and legislated, are a key investment signal to leverage private capital into renewable energy. For example, when it introduced its updated [Net Zero Implementation Plan with its 70% by 2035 target](#), the previous government said it [anticipated that the economic impacts of the Plan](#) and related policies will attract more than \$39 billion in private investment and support more than 13,000 jobs by 2035, mostly in regional NSW. This also suggests there should be bi-partisan support for including a more ambitious 2035 target in this proposed Act.

The current draft bill and targets need to be strengthened if NSW is to credibly contribute to limiting warming to 1.5 degrees, and to provide the policy certainty and ambition needed to drive NSW’ transition to a thriving, prosperous clean energy-powered net-zero economy. The employment, investment and export opportunities are huge, but this is a global technology and investment ‘race to the top’, and NSW, like Australia is already well behind. A clear government-legislated policy and target framework is key to setting the leadership direction for communities, workers, corporates and finance to galvanise and pull together in the right direction, guided by the imperative to ensure a liveable planet, and aligned with the climate science.

¹ International Energy Agency, [Net Zero Roadmap: A Global Pathway to Keep the 1.5 °C Goal in Reach, 2023 Update](#), September 2023

Section 1: NSW needs to Align with the Climate Science, which calls for NZE well before 2050

The emissions reduction targets established by the NSW Climate Change (Net Zero Future) Bill need to be based on science and a fair contribution to the Paris agreement goal of limiting warming to 1.5°C. To do this, they must exceed the Commonwealth target of 43% by 2030, which, notwithstanding its framing by Federal Climate and Energy Minister Chris Bowen as a “[floor, not a ceiling](#)”, is not science-aligned. There is the opportunity here for NSW to lead.

We note that while targeting NZE by 2050 is a necessary and good start, the climate science and ‘Common but Differentiated Responsibilities’ of the [Paris Agreement](#) says that NSW, like Australia, needs to deliver NZE by around 2038 to align with our global responsibilities, including our massive historic emissions legacy.

According to a new analysis by [Climate Resource](#), to stay on track to keep global heating of 1.5°C within reach, Australia’s 2035 target would need to see a cut of 90% on 2005 levels by 2035.

The targets proposed in the Bill are not science-based or aligned targets. Other jurisdictions like Victoria, which commits to [cutting emissions 75-80% by 2035 and achieving net zero by 2045](#), have stronger targets. [Tasmania](#) has set a NZE target of 2030. There is a growing consensus, including, for example, from the eminent scientists at the Climate Council of Australia, that a [minimum of 75% emissions reduction by 2030](#) is needed, with net zero emissions by 2035.

A relatively modest 2030 target of 50% emissions reduction and long-term target of NZE by 2050 need to be enhanced with a medium term 2035 target aligned with the climate science. Sharp declines must be front-loaded over the next critical ~10 years if we are to limit cumulative emissions over the period 2023-2050.

The Bill should at a minimum retain the previous government’s 2035 target of 70% emissions reduction. This suggests there is the potential for cross-party support in the NSW parliament for a 2035 emissions reduction target at least this strong. If left in place and reviewed by the NSW Net Zero Commission, this target facilitates the ratcheting up of ambition to allow a potential move down the track to earlier emissions reduction to net zero.

We note there are industrial and financial leaders looking to better align with the planetary boundaries of the climate science. The Glasgow Finance Alliance for Net Zero (GFANZ) of over 650 globally significant financial institutions across 50 countries aligning with the climate science and 1.5°C from pre-industrial levels, and strongly advocates for a credible 2035 interim target and requires a whole of economy transition.² While a growing list of Australian companies have committed to Net Zero by 2050,³ we note the need for more ambitious targets, and the key role of government to provide the leadership, framework and policy to enable corporates and financial intuitions to accelerate their ambition.

² The Glasgow Finance Alliance for Net Zero (GFANZ), [Accelerating the transition to a net-zero global economy](#)

³ Renew Economy, [Only half of Australia’s biggest companies have net-zero emissions plans](#), 5 December 2022

Some corporate leaders on climate targets include the following:

- December 2020 saw Atlassian commit to a set a goal to reach 100% renewable power across all operations by 2025, which was achieved in 2020, five years ahead of schedule. Atlassian also committed to align its goals with a 1.5°C trajectory as part of their commitment to the Business Ambition for 1.5°C campaign and a Scope 1-2 – Absolute Emissions Reduction of 50% by 2025, reflecting the most ambitious objectives of the Paris Agreement.⁴
- In December 2020 Macquarie Asset Management, with Assets under Management of \$864bn, committed to a Net Zero by 2040 target.⁵
- Fortescue Metals has committed to Net Zero by 2030 (Scope 1&2) and by 2040 for Scope 3.⁶
- Lend Lease has targets validated by the Science Based Target initiative as aligned with a 1.5°C trajectory, Scope 1 and 2 net zero by 2025, and Scope 1-3 Absolute Zero by 2040, with no offsets.⁷
- Ampol, Metcash, NIB, Ramsay Health Care, Reece Limited, Seven Group and Brambles have a net zero by 2040 target for scope 1 and 2, while ComputerShare has a net zero by 2042 target.⁸
- The largest group in India, Reliance Industries, in FY2021 set a target to achieve Net Carbon Zero by 2035, stating "the Company considers the Net Carbon Zero target as its moral responsibility to protect the earth from the rising impact of climate change."⁹

Further to this, a mechanism needs to be added to review and ratchet-up and bring forward the 2050 emissions target, as well as a schedule for setting much stronger interim targets for five year intervals beyond 2030.

A key mandate of the proposed Net Zero Commission should be to review the 2030 and 2050 targets upon its establishment as part of its evaluation of carbon budgets, and to complete these reviews at regular prescribed intervals so that ambition can be ratcheted up. The Victorian Climate Change Act requires the Government to set targets for each five-year period, and a similar approach could be taken in NSW (see [Victorian Climate Act 2017](#)).

It is imperative that the NSW Government make clear the sector pathways required to deliver on these legislated targets. The NSW Electricity Roadmap is the obvious priority given the opportunities to drive delivery of lower cost new zero emissions firming renewable energy solutions, both infill utility scale projects and much faster to install distributed energy resources.

The NSW Climate and Energy Action Plan is centred around the benefits of the sustained shift to renewable energy, firming by demand response management tools, pumped hydro storage (including

⁴ Atlassian, [Atlassian sets ambitious goals to combat the climate crisis and reach a net-zero future](#), 1 December 2020

⁵ Macquarie Asset Management, [Navigating to Net Zero](#)

⁶ Fortescue Metals, [Real Zero terrestrial emissions \(scope 1 and 2\) across our iron ore operations by 2030](#)

⁷ Lend Lease, [Our climate mission is clear](#)

⁸ Climate Works, Net Zero Momentum Tracker, [Climateworks Centre's Net Zero Momentum Tracker provides greater visibility of corporate Australia's progress towards a 1.5°C goal](#).

⁹ Reliance Industries, [Bridging Sustainability and Growth](#)

the Federal Government's Snowy Hydro's Snowy 2.0), EV-to-grid charging and utility scale batteries. The energy sector is undergoing a major transformation. Renewable energy in our electricity supply mix is continuing to grow and plays a critical role in reducing emissions. NSW now has 16,100MW of renewable energy generation capacity (including 4.8GW of hydro), which is 60% of total installed capacity in our state. The NSW Government's Electricity Infrastructure Roadmap makes REZs central to the plan to transform the NSW electricity system into one that is cheap, clean and reliable. This sector transformation is essential to credible progress toward achievement of climate targets.

Climate Energy Finance further notes that the schedule of proposed closures of ailing, unreliable, end of life coal power stations in the state must be maintained if NSW is to achieve its climate targets. To delay the projected 2025 closure of Australia's biggest coal power station, Eraring – which risks pushing back other coal power closure dates such as Vales Point (earmarked for 2028/29) – would fatally compromise NSW Government climate policy. It would also undermine the Federal Government's 82% by 2030 renewable energy target and therefore its legislated 43% emissions reduction target.

Our recent report, [The Lights will Stay On: NSW Electricity Plan 2023-2030](#), models that NSW can ensure coal plant closures on time and put downward pressure on prices by incentivising continued installation at the current run-rate of 1.2 gigawatts (GW) pa of rooftop solar, and front-end loading at least 1.2GW annually of utility scale wind and solar to 2030.

As NSW accelerates renewable energy (RE) deployments at speed and scale to replace supply, this will permanently moderate fossil fuel price hyper-inflation, drive decarbonisation of industry, and create jobs, alongside its emissions reduction benefits.

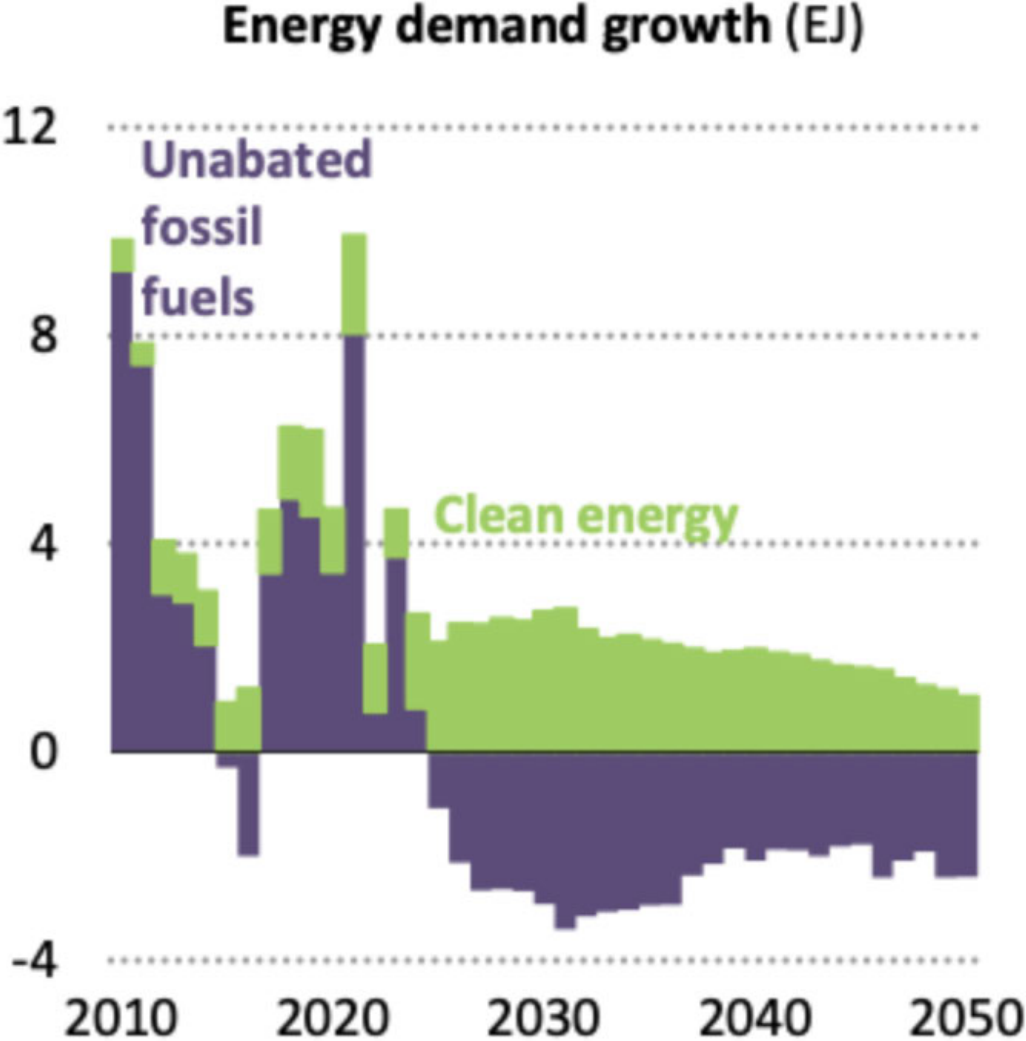
To drive the rapid decarbonisation of the electricity system described above, and complement its climate targets, the Government should adopt a formal NSW renewable energy target of at least 70% by 2030 (including rooftop solar) – a figure which would directionally begin to align with the appropriately ambitious Federal goal of 82% by 2030.

Better integration of the Bill across NSW legislation and regulation is also required. The efficacy of the Bill in achieving its intended aims should be enhanced by embedding it and the Commission's mandate into state laws and regulatory processes. For example, the Bill should provide that consideration of climate change be a core feature of all government decision making, and include the requirement that climate impacts are considered in all government policymaking. The Victorian Climate Change Act (Part 3), which embeds climate considerations into seven other Acts, could be used as a model for this feature. Further, the NSW Planning Act should be amended to refer to the climate targets in this Bill.

The Commission's mandate should extend to provision of advice to the Independent Planning Commission and the Department of Planning on state-significant developments that produce greenhouse gas emissions impacting the state's carbon budget and therefore its ability to meet the legislated climate targets.

As the [International Energy Agency](#) stated in 2021 and reiterated in 2023, there can be no new coal and gas if the world is to keep warming to 1.5 degrees above pre-industrial levels. New coal expansions are incompatible with science-aligned climate targets, and for the legislation to have the desired effect there must be immediate action to rule these out. This must be complemented by action to put NSW on a pathway to switch away from gas, and not approve any more new proposals. The IEA forecasts global fossil fuel use must decline by 30% by 2030 for the world to align with the climate science and a 1.5°C trajectory.¹⁰

Figure 1.1: IEA Energy Demand Growth in China under the STEPS (EJ)



Source: IEA World Energy Outlook 2023, 24 October 2023

¹⁰ Australian Financial Review, [Demand for fossil fuels will peak by 2030: global energy body](#), 24 October 2023

There are [multiple proposed coal mine expansions in NSW](#). One of those projects, the Hunter Valley Operations Coal expansion, is the biggest proposed in NSW since the Paris Agreement. Approvals of these are inconsistent with the long-term 2050 net zero target, let alone the nearer-term more ambitious targets that are required to address the mounting climate crisis.

To prepare for a just and inevitable transition, we need to have clear policy frameworks aligned with the climate science. Critically for NSW, the IEA World Energy Outlook 2023 forecasts Australian coal exports will decline by 85% by 2050.¹¹ For NSW's #1 export by a country mile, this terminal trajectory in just over 3 decades is too critical to ignore, and more mines will only make the task harder.

But the IEA has proven to be exceptionally conservative for the last decade, underestimating the exponential rise of solar every year. Rather than modelling an alignment with the climate science, the IEA puts in a caveat of critical importance to NSW as to the potential for - in CEF's view - inevitable likelihood that the IEA's timeframe is over-estimating coal's longevity by at least a decade:¹²

“if the world added over 800GW of new solar PV pa by 2030. The implications would be particularly strong for China, reducing coal-fired generation by a further 20% by 2030 compared with the STEPS. Without assuming any additional retirements, the average annual capacity factor for coal-fired power plants would fall to 30% in 2030, from over 50% today.”

There should be a moratorium on approvals of expansion proposals until the Commission is established, and the Commission's mandate should be amended so that it is required to provide advice on our state's total carbon budget as a result of all new emissions intensive developments such as fossil fuel projects. Policies that promote expansion of coal mining, like the 'Strategic Statement on Coal' introduced by former Deputy Premier John Barilaro, should be scrapped, and the NSW Government needs to start the process of developing its promised roadmap to gas decarbonisation.

Further, the Bill should enable the NSW Government to set sectoral targets for methane gas emissions, and for the Commission to provide advice on those targets. The [IEA has confirmed](#) that “targeted actions to tackle methane emissions from fossil fuel production and use are essential to limit the risk of crossing irreversible climate tipping points”, and recommends a target to cut energy sector methane emissions (particularly coal-mine methane emissions) by 75% by 2030.

A recent report by [Professor Ian Lowe](#), supported by CEF, identified the scale of the methane problem in greenhouse gas emissions. It found that direct methane from fossil fuel facilities make up ~70% of total GHGs covered under the federal Safeguard Mechanism (SGM) when the global warming impact is calculated over 20 years, noting that majority of direct greenhouse emissions from coal mining operations are “fugitive” methane gas, not carbon dioxide. Methane is 85 times more potent than CO2 in the short term. This underlines the fact that a credible climate policy and its suite of supporting legislation must address methane, for example by requiring facilities to mandatorily avoid methane emissions and adhere to world's best practice in data collection with real time monitoring, reporting and verification at every site.

¹¹ Australian Financial Review, [Demand for fossil fuels will peak by 2030: global energy body](#), 24 October 2023

¹² IEA [World Energy Outlook 2023](#), page 20, 24 October 2023

The government sector should also play a key role in emissions reduction and meeting mandated government targets. The Net Zero Commission should be required to audit government agencies and departments to identify opportunities to reduce emissions. For example by requiring the Forestry Corporation of NSW to cease native forest logging and instead shift to sustainable plantation-based operations, or recommending the Department of Education accelerate the Smart Energy Schools program to install solar panels on all NSW public schools.

Complementing this, and to help ensure compliance, each department should be required to report annually its emissions reduction efforts and their alignment with statewide targets.

Finally, we recommend that NSW emulate its federal counterpart and mandate annual reporting on progress towards climate targets to NSW parliament by the Climate and Energy Minister.

Section 2: The Energy Transition Opportunities for Australia are Enormous

While the costs of not acting on the climate science are enormous and rapidly rising (see Section 5), Climate Energy Finance is more excited to examine the growing investment, technology, employment and net export opportunities of decarbonising our economy, mining, energy and export sectors – including for NSW.

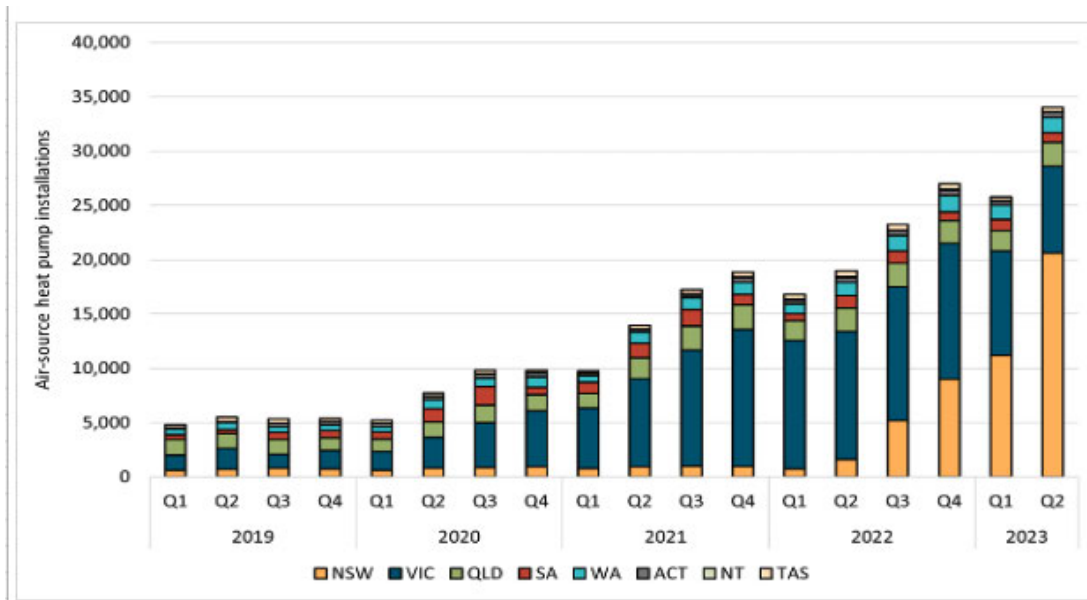
CEF's [The Lights Will Stay On](#) report details the huge investment and employment opportunities of acting on the science and driving an accelerated investment and capacity building in deploying new grid transmission and firmed renewable energy – utility scale and distributed – across NSW.

Given the rapidly approaching end of life of NSW's coal fired power plant fleet, there is an urgent need for our state to prioritise investment in necessary replacement. The NSW Government EnergyCo's [850MW/1680MWh Waratah Battery](#) at Newcastle is one of the largest battery energy storage systems (BESS) under construction in the world. NSW has led the policy development of Renewable Energy Zones and as a result, NSW has over 18GW of wind projects alone in the approvals process and almost 10GW of major solar project proposals in train, sufficient to deliver on the 1.2GW pa of new utility scale capacity NSW needs.

As [AEMO CEO Daniel Westerman has observed](#), there is no shortage of capital to support our energy transition, nor any shortage of new energy project proposals, with over 200GW of renewables and 40GW of storage in the pipeline nationally as at October 2023, an investment pipeline of over \$250bn. CEF identified the pipeline of NSW project proposals in the [Appendix](#) of The Lights will Stay on.

Households are also rapidly adopting Dr Saul Griffith's Electrify Everything recommendations, led by ground heat pumps – Figure 2.1.

Figure 2.1 The Rapid Uptake in Ground Heat Pumps is being lead now by NSW



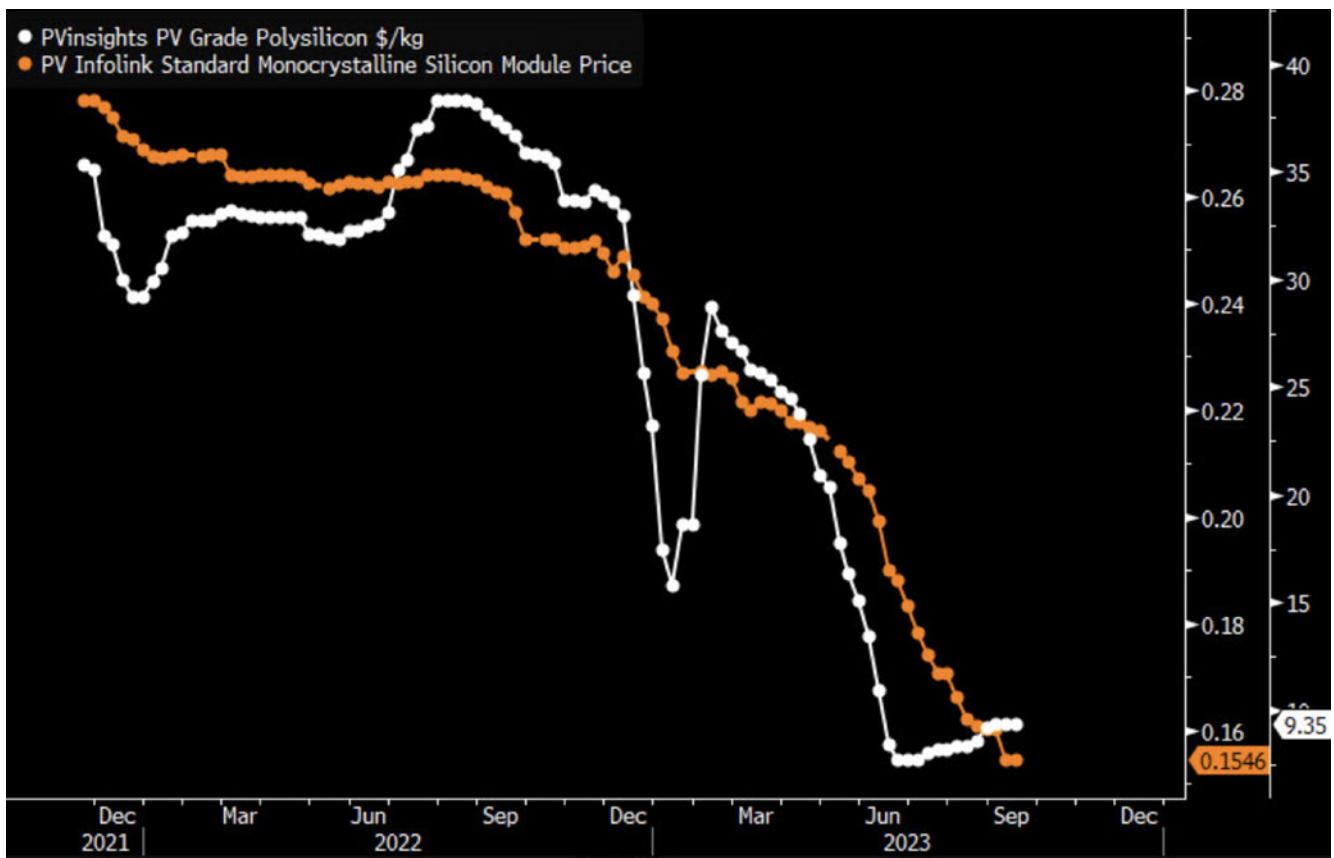
Source: Clean Energy Regulator, [2QCY2023](#)

Distributed Energy Resources (DER) are booming. NSW households and small enterprises have over 5.3GW of rooftop solar installed. In 2023, NSW is installing 80-100MW more capacity each and every month.

We also note that after two years of cost of living crisis spurred in large part by the hyperinflation of fossil fuel commodity prices, there is relief on the horizon for NSW energy users. With 3QCY2023 wholesale electricity prices down 70% year-on-year to \$89/MWh versus \$241MWh in 3QCY2022,¹³ CEF expects the Default Market Offer for NSW consumers to decline from 1 July 2024, after two years of >20% pa hyper inflation.

The rapid collapse in polysilicon (-75% year on year (yoy)) and solar module (-40% yoy) export prices from China in 2023 augurs well for ongoing deflation in energy prices in NSW, like Australia as electrification and decarbonisation of the grid accelerates – Figure 2.2.

Figure 2.2 Solar Module Prices has dropped 40% yoy in 2023



Source: Bloomberg New Energy Finance, 19 September 2023

¹³ OpenNEM

Climate Energy Finance has evaluated the enormous export, investment and employment opportunities for Australia from a strong policy response to the US Inflation Reduction Act,¹⁴ aka Climate Bill. This landmark policy and funding initiative has injected some ~\$800bn of public capital investment into decarbonisation in the US, massively accelerating its energy transition, and attracting a huge influx of private domestic and foreign capital, including into cleantech supply chains such as critical minerals processing and battery manufacturing.

In Australia, while the majority of critical minerals development is occurring in Western Australia, if NSW can legislate an ambitious climate policy framework, this is likely to accelerate investment into projects in NSW as well.

One example of this is the ASX-listed [Australian Strategic Minerals](#) (ASM)'s potential investment of A\$1.7bn in the Dubbo Project, which aims to develop the Toongi Deposit, a polymetallic resource that contains light and heavy rare earths, zirconium, niobium and hafnium with reserves to support an initial project life of 20 years, with potential for a significantly longer 50 year mine life.

ASM intends to develop the Dubbo Project to leverage a decarbonised electricity grid to power a new value-added critical minerals refinery to produce metal oxides in the form of chemicals, powders and metals at its Dubbo site. This project alone would support 1000 local jobs during construction and 270 ongoing local jobs over the next 2-5 decades.¹⁵

The US IRA has catalysed an overdue and much needed “global race to the top” to build out the supply chains and manufacturing capacity underpinning global decarbonisation, with investments likely to reach [US\\$5-7 trillion annually](#) for the next 2-3 decades as the world aligns with the climate science.

Absent a clear and ambitious government climate and clean energy transformation policy framework with an accelerated approvals program to enable a rapid response to the challenge of decarbonisation, NSW risks missing out on these enormous new investment, employment and export opportunities.

¹⁴ Climate energy Finance, [An Australian Response to the US IRA](#), 11 September 2023

¹⁵ Australian Strategic Minerals, [Investor presentation](#), 8 August 2023

Section 3: The Federal Government Policy Objectives

August 2022 saw the Federal Government pass the Climate Change Act 2022,¹⁶ a landmark Bill that legislates the nation's commitment to reduce greenhouse gas emissions 43% below 2005 levels by 2030, and achieve net zero by 2050.

The Act sets out Australia's greenhouse gas emissions reduction targets, requiring annual climate change statements, conferring advisory functions on the Climate Change Authority, and requiring ten key Statutory Authorities including the AEMO, Export Finance Australia (EFA), the Northern Australia Infrastructure Facility (NAIF), the Clean Energy Finance Corporation (CEFC), the Australian Renewable Energy Agency (ARENA) and the CSIRO et al to formally take the climate science into central consideration in all decisions. The Act also updates the Climate Change Authority legislation to reference the purposes of the Paris Agreement in the principles it considers when providing advice.

Minister for Climate Change and Energy Chris Bowen said: "Current issues confronting Australian and global energy markets highlights why this long-term commitment is so important. This Bill confirms our commitment to ambitious but realistic targets supported by Australia's states and territories, business, industry, unions, environmental and community groups. It provides a platform for collaboration to drive down emissions while ensuring reliable energy supplies. The Bill makes it clear that 43% is our minimum commitment and does not prevent our collective efforts delivering even stronger reductions over the coming decade."¹⁷

As noted above, while the 43% target was a breakthrough in the context of the abject failures of the lost decade of climate policy under the LNP, it does not go far enough.

On decarbonisation policy, the Federal Government has made developing Australia's critical minerals export capacity a key strategic priority, including value-adding our resources by powering refining onshore using our low cost, zero emissions renewable energy – a key global competitive advantage.¹⁸ Building out our firmed renewable energy infrastructure at scale and speed is a key challenge to help deliver on this strategy. In January 2023 BloombergNEF defined this as a US\$10 trillion investment opportunity.¹⁹

¹⁶ Australian Government Federal Register of Legislation, [Climate Change Act 2022](#), 14 September 2022

¹⁷ Australian Government, [Climate Change Bill 2022](#), 28 July 2022

¹⁸ Australian Government, [Critical Minerals Strategy 2023: discussion paper](#), 2 December 2022

¹⁹ BloombergNEF, [Transition Metals Become \\$10 Trillion Opportunity as Demand Rises and Supply Continues to Lag](#), 18 January 2023

Section 4: The climate science is clear, and has been for decades

The science is clear, the direction needed for the Australian economy is set, and it is imperative that we accelerate the deployment of investment capital to decarbonisation at an unprecedented scale and speed. For NSW, embodying credible and ambitious climate policy in an Act of Parliament will provide the investment signal and certainty required, the target needs to rapidly ratchet-up from the proposed 50% emissions reduction by 2030 and deliver net zero well before 2050 to align with the science.

The climate science has been clear and well documented for over 40 years.²⁰

It is now somewhat ironic that one of the largest funders of climate science denialism, ExxonMobil, clearly modelled in precise details the permanent and catastrophic consequences of climate change over 40 years ago, in 1977.²¹ As Exxon's leading climate scientists testified in US Congress, the science was clear, and the company then chose to embark on a multi-decade campaign to promote misinformation, denialism and delay.²²

In June 1988, NASA lead scientist James Hansen told a US congressional hearing that the planet was already warming,²³ and went on to devote much of his career to trying to combat the climate denialism funded by the likes of ExxonMobil.

Climate Energy Finance is a public interest thinktank focussed on the financial aspects of the global energy transition – we are not climate scientists. But we accept the overwhelming scientific evidence, and have testified to NSW, Queensland and Federal Court hearings and government inquiries alongside climate scientists such as the late Professor Will Steffen, Inaugural Director of the ANU Climate Change Institute.²⁴ Accordingly, we gear our policy recommendations to the domestic and global imperative of the climate science.

The Climate Change Authority's first annual progress report to the Federal Government of November 2022 concludes: "These new legislated targets and the many commitments made by Australian companies and government entities at all levels show that the debate has moved on from 'why' and 'at what rate' should we transition to a low carbon economy to 'how' should we do it."²⁵

²⁰ Inside Climate News, [Exxon: The road not taken](#), accessed 22 January 2023

²¹ Scientific American, [Exxon Knew about Climate Change almost 40 years ago](#), 26 October 2015

²² The Guardian, [Exxon sowed doubt about climate crisis, House Democrats hear in testimony](#), 24 October 2019

²³ New York Times, [Global Warming Has Begun, Expert Tells Senate](#), 24 June 1988

²⁴ Australian National University, [Professor Will Steffen](#), accessed 22 January 2023

²⁵ Climate Change Authority, [First annual progress report](#), November 2022

Section 5: Cost of failing to act on the climate science is already significant, and will escalate rapidly

The cost of continued delay to act in alignment with the climate science, which dictates deep cuts in emissions to 2030, will be catastrophic for NSW, Australia, and the world.

January 2023 saw the Federal Treasurer Jim Chalmers warn that the economic pressure from natural disasters will continue through 2023 after modelling showed severe flooding across the country in 2021/22 alone cost the economy \$5bn. This estimate does not include the cost of government support, including the \$3.5bn spent on disaster recovery payments. The Treasury estimate also excludes the private cost to households or businesses faced with rebuilding.²⁶

Separate analysis from the [National Emergency Management Agency](#) found more than two-thirds of Australians lived in a local government area that was subject to a natural disaster declaration at some point in 2022. Major floods affected parts of NSW, Queensland, Victoria, Tasmania, South Australia and the Northern Territory last year, killing more than two dozen people. Flooding continues to affect communities in parts of SA and WA. 2023 has seen Australia hit with 29 declared disasters across the country to-date, affecting 107 local government areas.

NSW taxpayers and communities wear the massive and growing cost of all these more frequent and more extreme weather events.

October 2023 saw NSW Minister for Emergency Services Jihad Dib commit that bushfire impacted communities, landowners, farmers, and primary producers will be supported in their clean-up and recovery. “The NSW Government is committed to seeing communities get back on their feet as quickly as possible, which is why we’ve worked swiftly to make sure directly impacted people can access ... funding and start their recovery.”²⁷ “We remain dedicated to NSW communities in the face of hazards and will be there long before a disaster strikes and long after the disaster has passed.”

A separate report from global reinsurance firm Munich Re found Australia’s floods caused \$US8.1bn of losses, making them the fourth most costly natural disaster around the world in 2022.

September 2022 saw the Insurance Council of Australia release estimates showing that extreme weather events over the past 12 months cost every Australian household an average of \$1,532, and that this figure is expected to jump to more than \$2,500 a year by 2050.²⁸

A January 2021 Climate Council report estimated that the collective cost of climate change in Australia within two decades will reach \$100 billion annually.²⁹ A March 2022 report by the Climate Council, “[The Lost Years: Counting the costs of climate inaction in Australia](#)” assessed the LNP Federal Government’s climate performance over the past eight years in detail and finds there’s been a complete and catastrophic failure to act on the climate crisis. And in stark warning for this coming

²⁶ Sydney Morning Herald, [Floods cost economy \\$5 billion last year](#), 12 January 2023

²⁷ National Emergency Management Agency, [Disaster assistance following severe bushfires across NSW](#), 23 October 2023

²⁸ Insurance Council of Australia, [New research shows every Australian pays for extreme weather](#), 8 September 2022

²⁹ Investor Daily, [Climate change forecast to cost Australia \\$100bn annually](#), 27 January 2021

summer, it found our country is woefully unprepared for what's coming, with the conditions that drove the 2019-20 bushfire disaster likely to be "average" by 2040.

The Actuaries Institute in September 2023 reported³⁰ that home insurance premiums rose 28% to \$1,894 in the last year, with the highest risk properties, such as those in flood-prone areas, up by 50%.

The proportion of "affordability stressed" households rose from 10% to 12%, spending on average a crippling 8.8 weeks of their income on home insurance. 1.24 million Australian households are facing home insurance affordability stress. Flood risk plays a significant role in the current pressure on home insurance affordability. For 171,000 households across Australia, riverine flood risk contributes more than half of their home insurance premiums. If they were fully insured, the total flood premium for these households would be \$1.5bn per annum, or \$8,800 on average per household.

This is the size of the current problem, and it is only growing with every year of inaction on climate policy, or targets that are not aligned with the science, and that fail to rise to the challenge and opportunity we confront.

³⁰ Actuaries Institute, [Home Insurance Affordability Update and Funding for Flood Costs](#), September 2023

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