NSW Government
Net Zero Commission

Submitted via contact@netzerocommission.nsw.gov.au

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NSW Net Zero Commission

The Australian Energy Council ('AEC') welcomes the opportunity to make a submission to the New South Wales Net Zero Commission's ('Commission') 2025 Consultation Paper.

The AEC is the peak industry body for electricity and downstream natural gas businesses operating in the competitive wholesale and retail energy markets. AEC members generate and sell energy to over 10 million homes and businesses and are major investors in renewable energy generation. The AEC supports reaching net-zero by 2050 as well as a 55 per cent emissions reduction target by 2035 and is committed to delivering the energy transition for the benefit of consumers.

The recent updates to the NSW's emissions projections data show the state is currently expected to fall short on its interim emissions targets. The Minister for Energy, Penny Sharpe, has subsequently announced the policy intention to develop a new Net Zero Plan for NSW which will include sector-by-sector approaches to decarbonisation.[1]

It is presumed that the NSW Net Zero Commission will play a meaningful role in advising the realisation of that Plan, with its 2024 Annual Report already laying out a sector-by-sector analysis based on the Climate Change Authority's Sector Pathways Review.

Going forward, the Commission's annual reports should serve as a de-facto review of the progress of each sector to the interim targets and Net Zero Plan, providing policy recommendations where necessary.

Policy pathway to 50 percent emissions reduction target by 2030 is tight

The NSW Net Zero Emissions Dashboard currently puts NSW on track to reach a 46 percent emissions reductions by 2030, 4 per cent short of the Government's target. Achievement of these reductions is driven predominantly by the delivery of the NSW Electricity Infrastructure Roadmap ('Roadmap').

Placing heavy reliance on the electricity sector to reduce emissions reflects its high emissions footprint and the commercial availability of renewable technologies, but it is not without some risk. This risk stems mostly from the reality of the electricity sector as an essential service which means coal-fired generation cannot be shut down until there is sufficient renewable capacity to replace it.

Right now, the NSW emissions projections are assuming a substantial decline in emissions between 2029 and 2030 (more than the overall reductions achieved from 2021 to 2029), which is largely driven by the electricity sector. Notably electricity sector emissions are then expected to rise again, albeit slightly, after 2030.

[1] NSW Government, 'NSW Government only 4% off 2030 emissions target with New Net Zero Plan to come', 26 June 2025.

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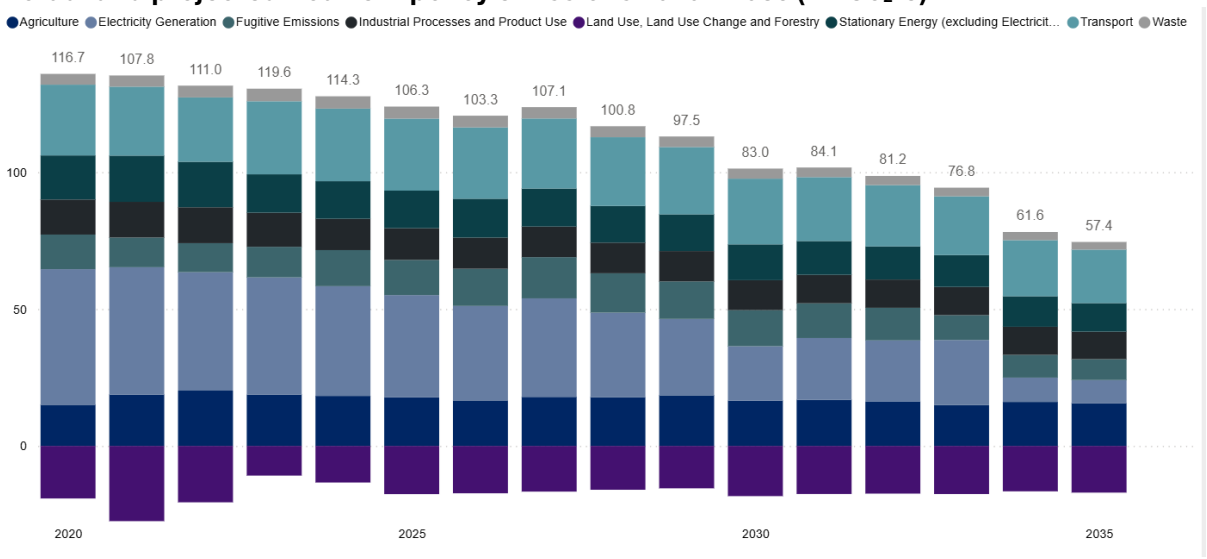
Actual and projected – current policy emissions 2020 – 2035 (Mt Co_2-e)



Source: NSW Net Zero Emissions Dashboard

Although the electricity sector understands its role in leading economy-wide decarbonisation, there are presently major barriers to accelerated renewable and storage deployment, a view that has been echoed by independent agencies like the Climate Change Authority.[2]

These barriers mostly exist on the supply-side and include:

- Supply-chain limitations on the complex equipment required to build and connect largescale renewables.
- Skill shortages, particularly with respect to electrical networks.
- Land-use resistance to the buildout of renewable generation and network infrastructure.
- Long and delayed approval and permit processes, complicated by tension between climate and environmental/biodiversity objectives.
- Even after receiving approval, longer than expected build times for connection assets, stabilisation equipment (e.g. synchronous condensers), long-distance transmission and pumped-hydro storage.
- Slow progress in developing the necessary tools to understand the complex phenomena resulting from deep penetration of inverter-based resources on a large electrical grid.
- Cost-push inflation continuing to impact the availability of renewable technologies.
- Ongoing regulatory and policy uncertainty relating to the rollout of renewable generation, transmission and firming infrastructure.

Together these challenges make it probable there will be some slippage in the delivery of the Roadmap's renewable generation and storage targets, which in turn would mean interim emissions reduction targets are not met.

[2] For example, "this task [renewable deployment] faces challenges including limited scale of private investment so far, rising costs, supply chain disruptions and long approval times. Some community opposition, policy uncertainty, and physical limitations such as restricted transmission connections and inadequate roads make the task harder. Workforce shortages are another challenge", p99.

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The AEC considers this to be an area where the Commission can provide important analytical value as it seems this risk of slippage is not properly acknowledged. For example, there is such a large emissions reduction in 2029 because the modelling assumes "there is enough variable renewable energy generation build to bring forward the retirement of 2 NSW coal units in 2029, ahead of their announced closure dates of 2033, due to the Roadmap targets and the Capacity Investment Scheme".[3] This assumption currently stands in tension with what AEMO has forecasted in its most recent 2024 Electricity Statement of Opportunities, which is that Vales Point and Bayswater power stations are needed for reliability beyond 2029.

To that end, the AEC recommends to the Commission that it:

1. Set standard metrics and benchmarks for analysing sectoral decarbonisation

While the NSW Net Zero Emissions Dashboard is a helpful reference point for understanding the realisation of existing policies, it is not designed to track their progress.[4]

It would be desirable, and would act as research when formulating advice, for the Commission to lay out some key benchmarks or checkpoints across each sector to measure policy progress.

In the electricity sector, this would include things like:

- Major point-in-time checkpoints for emissions reduction (e.g. the closure of Eraring power station), and the emissions impact of delays.
- Current year-on-year buildout of renewable generation, storage, and Consumer Energy Resources and comparing it to what is needed to meet climate/Electricity Roadmap targets.
- Expected timing of deployment of firming generation and major infrastructure projects (e.g. HumeLink and Snowy 2.0), and the emissions impact of delays.

While most of this information is publicly available, it is often not spelled out in emissions projections, which makes it difficult to know what major variables are being relied on.

Furthermore, future annual reports could be improved by using up-to-date emissions data. The current approach of using the National Greenhouse Accounts Inventory has a two-year time lag which affects the accuracy and timeliness of policy advice. It is also not practical going forward as stakeholders and the community will not accept waiting until the end of 2032 to know if the Government met its 2030 targets.

Notwithstanding the above, the AEC notes that even with the time constraints the Commission faced, the 2024 Annual Report is quite robust in its analysis and the language used is helpfully direct in describing the progress and challenges of decarbonnisation in NSW.

2. Monitor the impacts of the NSW Electricity Roadmap on energy affordability

The energy transition is requiring significant investment in mass renewables, storage, firming and transmission infrastructure in a very short period of time. The scale of this investment is

[3] NSW DCCEEW, 'NSW greenhouse gas emissions projections 2024: methods paper', p35, https://www.environment.nsw.gov.au/sites/default/files/2025-06/nsw-greenhouse-gas-emissions-projections-2024-250104_0.pdf.

[4] The Commission has said so in its 2024 Annual Report, noting the projections reflect the "most optimistic assumptions".

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currently being driven mostly by public policy (shaped around meeting climate and renewable targets) rather than efficient economic signals provided through the market.

These costs are flowing into electricity bills as wholesale prices become more volatile and retailers recover the costs of new network infrastructure and government underwriting policies. Recent academic research suggests that the NSW Electricity Infrastructure Roadmap is leading to higher energy bills for consumers, and this is not being communicated transparently.

While it is an uncomfortable message, the reality of the energy transition as bumpy and expensive is going to continue and needs to be communicated honestly to maintain public confidence.

On that note, the delivery of the NSW Roadmap must be done with consideration of its position within the National Electricity Market ('NEM'). The NEM's interconnectivity has allowed the build-out of renewable resources to be localised to areas that best maximise their value, enabling a lower cost build for all electricity customers.

State-based policies with fixed technology targets detract from this advantage by limiting the ability of renewable resources to be deployed where they can operate most efficiently and cheaply for customers, increasing the costs of the transition.

3. Consider what policy incentives are needed to spur action in other sectors

For the electricity sector, it is mostly a question of when, not if, the supply-side constraints on renewable, storage, and transmission deployment will resolve to allow for the safe retirement of NSW's coal fleet. Even under a slow transition scenario, it is still expected that the electricity sector will have substantially reduced its emissions by the mid-2030s.

The transition pathways for other sectors, however, is less clear and may require additional policy support or direction:

- While emissions from the built environment sector are the smallest across all sectors (representing 7.7 per cent), there is a commercial pathway for decarbonisation via electrification. The rollout of the Federal Government's Cheaper Home Batteries Program should help, alongside the NSW Government's Consumer Energy Resources strategy. However, noting that some councils throughout NSW are getting involved in gas substitution planning, it would be helpful to have a consistent state-led strategy to residential electrification. It does not need to be as ambitious or urgent in terms of delivery as other jurisdictions given the much smaller emissions contribution.
- Decarbonisation projections for the resources and heavy industry sector seem to rest largely on the commercialisation of green hydrogen which is facing headwinds. The Commission should consider what alternative or complementary technologies there are to spur decarbonisation in these sectors, including the use of other renewable fuels like biomethane, and the commercial development and deployment of emerging carbon dioxide removal (CDR) technologies, such as Direct Air Capture (DAC) and Bioenergy with Carbon Capture and Storage (BECCS).

4. Adopt an educational role to inform the community about what is going on

Building on the first recommendation, the Commission could provide an important value add by mapping through the different policies and processes (federal, state, and even local) impacting decarbonisation across New South Wales. The purpose of this is twofold:

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- First, it would serve as an education piece to inform the community and stakeholders (including government and industry) about the growing number of policies, projects, and institutions that exist to drive decarbonisation.
- Second, it will assist the Commission to identify where policy gaps or duplication exist and then develop appropriate measures accordingly.

The AEC and its members would welcome the opportunity to further engage with the NSW Net Zero Commission and look forward to the next stage of consultation.

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Yours sincerely,

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