

Climate Change Authority
Australian Government

Submitted via email: consultation@climatechangeauthority.gov.au

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2024 Issues Paper: Targets, Pathways, and Progress

The Australian Energy Council ('AEC') welcomes the opportunity to make a submission to the Climate Change Authority's ('CCA') consultation on the *2024 Issues Paper: Targets, Pathways and Progress* ('Issues Paper').

The Australian Energy Council 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.

Setting Australia's 2035 NDC Target

In December 2021, at the time of the Glasgow Conference of the Parties, the AEC announced its support for an economy-wide emissions reduction target of at least 55 per cent by 2035 on 2005 levels.¹ This target was determined primarily as a progress milestone, roughly halfway in time between then and the overarching goal of net-zero by 2050 that the AEC had [backed](#) for some time,² and would add some stretch to the linear progress of the Federal Government's current 43 per cent target by 2030.³

When announcing the target, the AEC [published](#) a series of research papers that examined the decarbonisation opportunities and challenges across Australia's economy to assist policymakers in pursuing future ambition.⁴ It is clear that reaching the range of 65 to 75 per cent emissions reduction by 2035 on 2005 levels, as proposed in the Issues Paper, will require a major uplift to the speed of decarbonisation across all sectors. It is highly important then that:

- The target is economy-wide and incentivises emissions reduction across all sectors at least cost.
- Decarbonisation policies are designed to provide market-based signals and allocate abatement efficiently to reduce emissions at least cost to consumers.
- All sector transition pathways are properly integrated with each other, and cross-impacts are planned for well in advance.
- The target is backed by supportive policies and incentives to drive the transition and is achievable when looked at through the lens of "what would need to happen" in each sector. To the extent there is a gap between the aspiration of a target and the baseline transition of a key sector, additional policies may be required to close this gap.

¹ Australian Energy Council, 'Australian Energy Council Backs Economy-Wide 55% Emissions Cut by 2035', December 2021.

² Australian Energy Council, 'Australian Energy Councils Backs Net Zero Emissions by 2050', June 2020.

³ The Federal Government is currently on track for about a 50 per cent emissions reduction by 2035 under a baseline scenario, or 53 per cent under the "with additional measures" scenario, as per the [Emissions Projections 2023](#), p20-21.

⁴ Australian Energy Council, 'Australia's Energy Future: 55 by 35 (8 individual papers)', April 2022.

Current pace of decarbonisation

The Federal Government currently has three core policies to drive abatement, which are tailored towards meeting the Federal Government’s 43 per cent interim target.

- Capacity Investment Scheme (targeted at electricity emissions)
- Safeguard Mechanism Reforms (targeted at stationary energy and industrial emissions)
- New Vehicle Efficiency Standard (targeted at transport emissions)

Their projected impacts are shown in the table below.

Figure 1: Emissions projections by sector (excluding LULUCF) under “with additional measures” scenario (MtCO₂-e)

Sector	2005 Emissions	2030 Emissions	Difference (+/-)
Electricity	197	60	- 137
Stationary energy	82	96	+ 14
Transport	82	94	+ 12
Fugitives	43	46	+ 3
Agriculture	86	80	- 6
Industrial	30	25	- 5
Waste	16	13	- 3
Total	535	415	- 120

Source: Federal Government’s [Emissions Projections 2023](#), p20-21.

The main takeaway here is that electricity is expected to play such an oversized role in contributing to Australia’s 2030 emissions target that it must cover inaction across all other sectors. This scenario rests on the assumption that Australia’s electricity sector reaches 82 per cent renewable energy by 2030, in line with the Federal Government’s target.

The emissions implications in this scenario for Australia’s 2035 target are twofold: firstly, abatement in the electricity sector is almost certainly no longer the cheapest and most efficient option, and secondly, even if the electricity sector transitioned to zero emissions by 2035, Australia could not aim for beyond 60 per cent emissions reduction without action from other sectors. Driving further abatement then, especially in the upper bound of 75 per cent, will largely depend on the ability of sectors other than electricity to decarbonise.

When recommending its target, the CCA should provide some scenario planning about what each sector will need to look like for that target to be reached. This should include dependencies between sectors and realistic timeframes to support least cost abatement. Absent this, the AEC is concerned that each sector’s decarbonisation pathway may become disconnected, with the emissions reduction impact less efficient and more costly than it otherwise could be.

Such scenario planning can also help inform the CCA’s advice to the *Net Zero Plan*, which will likely need to consider in some capacity what Australia’s 2035 ambitions will be.

Sectoral Pathway Review

The CCA has been tasked with reviewing and providing advice on the sectoral pathways by 1 August. While the provision of independent advice is welcome, it would be better for stakeholders if there were greater visibility over how this advice will feed into the Federal Government's *Net Zero Plan*. The window between submitting the advice (1 August) and publication of the *Net Zero Plan* (before the end of this year) is tight and might limit the type of recommendations the CCA can make.

As far as the electricity sector goes, the AEC has given some suggestions below about what must be resolved so the Government can reach its highest level of ambition.

Current trajectory to 82 per cent renewables

The ability of Australia to set an ambitious but achievable 2035 target will depend on the existing 2030 target of 43 per cent emissions reductions being met. As seen in Figure 1, the Federal Government is relying on Australia being 82 per cent renewable electricity by 2030 for this to happen.

Whether Australia is on track to meet this target will need to be tested because, as the CCA observed in its 2023 Annual Progress Report, any undershooting will have a material impact on the pace of Australia's emissions trajectory: "every percentage point we fall short of achieving 82 per cent renewables equates to roughly 2 Mt CO_{2-e} that needs to be reduced elsewhere in the economy".⁵

Some of the obstacles to reaching 82 per cent include:

- Ongoing supply chain constraints that have increased the capital costs of renewable technology. Onshore wind, for example, saw its costs increase by 35 per cent in 2022-23 and then a further 8 per cent in 2023-24.⁶
- While the technology costs of large-scale solar PV have stabilised, the proliferation and success of rooftop solar is challenging the economics of investment in large-scale solar projects. This [cannibalisation](#) is expected to continue as more customers install rooftop solar to gain control over their electricity usage and reduce their electricity bill.
- Transmission projects face ever growing social licence scrutiny that is not necessarily resolvable through financial incentives alone. Increasing costs and delays are also becoming apparent with transmission projects.
- The time it takes for a renewable project to receive approval is getting longer, resulting in less projects being approved each year and well below the annual capacity required to reach 82 per cent.⁷
- How to maintain the ongoing provision of essential system services for secure operation of the power system is not clear. As synchronous generation retires from the power system, a solution for the ongoing provision of market-based essential system services will need to be developed before thermal plant can retire.
- Poor policy cohesion between the Federal and State Governments and their respective plans for the electricity transition.

⁵ Climate Change Authority, '2023 Annual Progress Report', October 2023, p6.

⁶ CSIRO, 'GenCost 2023-24: Consultation Draft', December 2023, p45.

⁷ Rystad Energy, 'Independent Response to ACCC Question', August 2023.

Setting up market signals beyond 2030

Both major policy drivers of renewable energy – the Capacity Investment Scheme and Renewable Energy Target – are set to wind down by 2030. There are currently no market signals beyond this although the Federal Government has committed sometime this year to undertaking a post-2030 market design review.

The other important policy piece is the Renewable Electricity Guarantee of Origin ('REGO') scheme, which is a proposed green certification scheme to replace LGCs under the RET in 2030. There has been no movement on the REGO since October 2023, which seems to put the planned 1 January 2025 commencement date in doubt.

The swift rollout of the REGO is important to allow renewable and storage projects, both now and post-2030, to capitalise on the growing voluntary demand for verifiable renewable generation. This is especially important if the Federal Government is to realise its renewable superpower ambitions because certain projects (e.g. green hydrogen exports) require green certification to meet the demands of international markets.

Role of gas-powered generation

It is broadly accepted that renewable generation firmed by storage and backed-up by gas-powered generation is the lowest cost way to run a future lower emissions electricity system.⁸ AEMO's Draft 2024 Integrated System Plan forecasts a need for 16 GW of flexible gas by 2050 in the NEM to provide firm schedulable capacity for a high variable renewable generation grid.⁹ The Federal Government's [Future Gas Strategy](#) also forecasts that gas-powered generation will increase its demand after 2033.¹⁰

Clear investment signals for gas-powered generation can accelerate near to medium-term emissions reductions by displacing, and allowing for, a more orderly closure of coal-fired power stations. Moreover, its firming capabilities are one part of the puzzle for enabling more renewables to come online over time.

Long duration storage

Long duration storage (from eight hours to multiple days) is not currently part of the federal policy landscape presumably because it is a) not within the 2030 time window and b) not a form of renewable generation even though storage capacity is integral to a workable high variable renewable grid.

The absence of policy support is problematic because deep storage is not something that can be built straight away. The technology has very long build times, high capital expenditure, and decent prospects of delay (as Snowy 2.0 is currently experiencing), which combined make it a difficult proposition for private capital to invest in alone. These factors mean that policy signals for investment must be put in place now or in the very near future, for such projects to be up and running in the next decade when there is higher renewables penetration.

Like gas-powered generation, storage capacity is necessary to support a high renewables grid, which is the starting assumption behind any ambitious 2035 target.

⁸ AEMO, 'Draft 2024 Integrated System Plan', December 2023, p18.

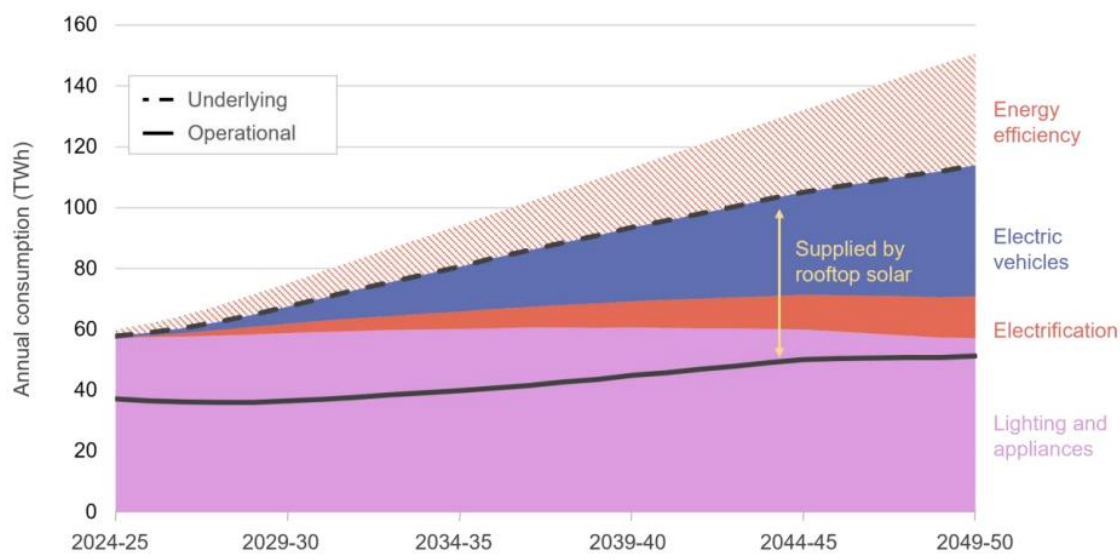
⁹ AEMO, 'Draft 2024 Integrated System Plan', December 2023, p19.

¹⁰ Australian Government, 'Future Gas Strategy', May 2024, p38-39.

Coordination of electrification

The Federal Government’s Safeguard Mechanism reforms and New Vehicle Efficiency Standard have so far only set scaling compliance obligations up until 2030. Post-2030 obligations will need to be more aggressive to drive the abatement needed to reach net-zero by 2050 or any ambitious 2035 target. This should see a significant uptake of electrification, especially in transport, with AEMO currently forecasting that underlying residential consumption will increase 31 per cent over the next decade, from approximately 57 TWh in 2022-23 to 75 TWh in 2032-33.¹¹ The graph below shows the projected growth in residential electricity consumption up until 2050.

Figure 2: Residential electricity consumption, NEM (TWh, 2024-25 to 2049-50, Step Change)



Source: AEMO Draft 2024 [Integrated System Plan](#), p26-27.

Meeting this increased consumption will require building more renewable generation and the orchestration of Consumer Energy Resources technologies, especially rooftop solar. But this is not as simple as rolling out enough rooftop solar to meet demand and then ‘plugging customers in’. There are various regulatory and technical reforms that will need to happen well in advance to manage issues (e.g. maximum and minimum demand, voltage limits) to maintain system security and reliability.

This coordination aspect of how each sector plan integrates with one another is currently missing from the stakeholder consultations and is an area where the CCA can provide valuable advice.

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Yours sincerely,

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¹¹ AEMO, ‘2023 Electricity Statement of Opportunities’, August 2023, p31.