



ENGINEERS
AUSTRALIA

**CCA – Targets,
Pathways & Progress
Submission**

Climate Change Authority – Targets, Pathways & Progress Engineers Australia Submission 2024

Engineers Australia
11 National Circuit, Barton ACT 2600
Tel: [+61 2 6270 6555](tel:+61262706555)
Email: policy@engineersaustralia.org.au
engineersaustralia.org.au

Contents

Introduction.....	2
About Engineers Australia.....	2
Contact.....	2
Issues Paper Response	3
Current versus future cost	3
Australia’s Comparative Advantage	4
Carbon Policy Instruments.....	4

Introduction

Engineers Australia welcomes the opportunity to make a submission in response to the Climate Change Authority's (CCA) 2024 Issues Paper, Targets, Pathways and Progress. Engineers Australia supports the role of the CCA in providing strategic advice regarding the direction and approach in setting Australia's 2035 Emissions Reduction Target, and the sectoral pathways required to reach that target.

Engineers Australia is also formally accredited as an observer to the business of the United Nations Framework Convention on Climate Change (UNFCCC), United Nations Environment Assembly (UNEA) and United Nations Environment Programme (UNEP).

Engineers Australia is the peak body for the engineering profession in Australia. We are a professional association with over 120,000 individual members, constituted by Royal Charter to advance the science and practice of engineering for the benefit of the community. Our members represent every discipline of engineering and work across all sectors of the economy impacting the lives of Australians every day.

Engineering is concerned with the management of risk and the application of science across numerous disciplines. It is the translation of how science is applied to physical constraints that enable fit for purpose solutions and trusted but ever evolving design parameters to emerge over time.

Engineers Australia recognises the scale and urgency of the challenges presented by climate change, the disruptions it causes, and the pivotal role of engineering in enabling a socially just transition to a sustainable society.

About Engineers Australia

As Australia's national body for engineering, we are the voice and champion of our 120,000-plus members. We provide them with the resources, connections, and growth they need to do ethical, competent and high-value work in our communities.

A mission-based, not-for-profit professional association, Engineers Australia is constituted by Royal Charter to advance the science and practice of engineering for the benefit of the community. We back today's problem-solvers, so they can shape a better tomorrow.

This submission builds upon the feedback provided to the CCA in an earlier submission on [Setting, tracking and achieving Australia's Emissions Reduction Targets](#) (June, 2023). Engineers Australia recognises that many of the issues and concepts raised in our 2023 submission are being further developed in the current Targets, Pathways and Progress Issues Paper consultation.

Contact

To discuss the points raised in this submission further, please contact policy@engineersaustralia.org.au

Issues Paper Response

In crafting a response to the questions outlined in the Issues Paper, Engineers Australia sees three main areas of interest that require further analysis and enactment. These include:

- Current versus future cost;
- Australia's comparative advantage; and
- Carbon policy instruments.

The sum of these issues provides a solid foundation for addressing both domestic and international carbon emissions reduction, while fostering Australia's export potential as a means of offsetting domestic transition costs.

Current versus future cost

The quantum of current international Nationally Determined Contributions, as outlined in the IP6 Assessment Report, state it is likely that global temperatures will exceed 1.5°C in the 21st century as mitigation pathways that rely on keeping temperatures to the 1.5°C limit assume immediate action this decade. Given the disparity in scope and specificity across countries to achieve net zero by 2050, it is likely global temperatures will reach a median 2.8°C by the end of the century¹. The implementation gap between deep emissions reduction taken this decade compared with emissions reduction taken in the future will have substantial effects on global average temperature increases over time.

It is widely understood that the effects of atmospheric temperature increases will impact the intensity and frequency of weather events including droughts and sea level rise. Our ability to adapt to these scenarios requires factoring climate risks into engineering design considerations coupled with a range of economic, environmental, and social mitigation measures. All of which imply some sort of impacted cost, in varying forms.

In responding to the ambition and achievability of emissions reduction targets, the economic, environmental, and social costs must be balanced within a framework that evaluates impacts now versus future impacts. For example:

- The economic/project cost of designing and engineering infrastructure to be adaptable versus the cost of infrastructure failure (or inadequacy) in the future under different climatic conditions.
- The costs associated with environmental protection and nature conservation versus the cost of ecosystem damage and habitat loss and the impacts on biodiversity in the future.
- The social and community impacts such as forced abandonment from extreme weather events or rising sea levels versus the cost of mitigation and repair in the future. Also, the impacts of insurability come into question here.

Engineers Australia's Climate Change Position Statement outlines a philosophy of 'what can be done, should be done', where projected future costs are evaluated and compared with cost estimations incurred now. This will enable a more informed discussion around resource allocation for adaptation frameworks & standards as well as enhanced risk evaluations as a basis for determining appropriate mitigation measures. In principle, however, Engineers Australia supports setting Australian emissions reduction targets that require action to enable a future where 1.5°C is still possible.

¹ IPCC, 2023: Summary for Policymakers. In: Climate Change 2023: Synthesis Report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, H. Lee and J. Romero (eds.)]. IPCC, Geneva, Switzerland, pp. 1-34, doi: 10.59327/IPCC/AR6-9789291691647.001. (A.4.3)

Australia's Comparative Advantage

Australia's current economic model relies heavily upon the extraction and export of natural resources and has an enviable comparative advantage in this regard. It makes sense to continue to leverage this advantage through critical minerals and renewable energy synergies.

Specifically, value adding extraction and export supply chains through making 'green metals' is the next logical step in developing Australia's alternative to fossil fuel exports. Importantly, this has the dual benefit of not only affirming Australia's economic prosperity through establishing a profitable revenue stream, but it has also been said that it could offset global emissions by as much as 6-9 per cent². In the context of Australia's current contribution to global emissions of around one per cent, this is a substantial and profound opportunity.

The challenge for Australia will be to demonstrate it can rapidly decarbonise while providing simultaneous global emissions reduction potential via exports. It is a risk however that failure to accomplish effective and rapid emissions reduction domestically may undermine the legitimacy of its green export markets.

Carbon Policy Instruments

In order for Australia to reduce emissions domestically, it needs clear and robust emissions reduction policy signals as a basis for ongoing private investment and rapid decarbonisation. A highly effective policy response would see the introduction of:

- A carbon levy on fossil fuel use and imports.
- A Carbon Border Adjustment Mechanism (CBAM) to address carbon leakage.

Fiscal policy instruments are not the only responses available, and it is intended that demand side policies are developed in conjunction, particularly regarding electricity use across sectors, however a carbon levy and CBAM would underpin a rapid and effective policy landscape enabling Australia to aspire to and reach its green superpower goal.

Proceeds from a carbon levy and CBAM could be used to:

- Improve the practice of engineering to factor climate change adaption and circular economy principles (materials & waste efficiencies).
- Stimulate applied science and decarbonising technology developments through R&D and industry commercialisation projects aimed at hard-to-abate facilities and sectors.
- Undertake comprehensive regional planning and research that engages local governments and communities as part of renewable energy generation and transmission projects.
- Help ensure Australia's workforce is ready and able to support the energy transition.
- Help establish green metals export markets.
- Co-fund renewable energy projects to increase the percentage of renewable generation in Australia's energy portfolio.
- Compensate communities that rely on fossil fuel extraction and export and low-income earners.
- Establish electrification across domestic, commercial, and industrial sectors.
- Substantiate carbon & nature accounting processes in practice.
- Ensure the NEM adapts to Variable Renewable Energy sources through suitable stabilisation and backup measures.

² Quoted from Rod Simms at the Climate and Energy Forum, CEDA event, Brisbane May 2024.