



CELEBRATING
OUR CENTENARY

Practical action to meet the Paris Agreement

Response to the Climate Change Authority
Consultation Paper

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Introduction

Engineers Australia thanks the Climate Change Authority (CCA) for the opportunity to provide input to updated advice to government on the policy responses needed to meet Australia's emissions reduction commitments under the Paris Agreement. We note the CCA's task focuses on mitigation (not adaptation strategies).

About engineers and Engineers Australia

Engineers' capacity

Engineers Australia is a professional association – with around 100,000 individual members – constituted by Royal Charter to advance the science and practice of engineering for the benefit of the community. It has a strong interest in ensuring the policy settings for responding to climate change are appropriately ambitious and fit for purpose. Engineers can make their strongest contribution when policy settings enable coordinated, concerted and directed action – that is, when all parties are all rowing in the same direction.

Engineers Australia's response is guided by our Charter, and the Code of Ethics which states that engineers strive to serve the community ahead of sectional or personal interests. To help members, we produce a wide range of materials including a 2014 climate change policy to support them in the discipline and practice of the engineering profession as it relates to climate change issues. A similar sustainability policy is also available.

Engineers are evidence-based professionals and uniquely placed to provide solutions. Engineers shape, design and deliver the innovations that will underpin and enable emission reductions by industry, government and the broader community. Engineers are also the custodians of risk for almost all infrastructure. For structures like dams, bridges or major buildings engineers calculate chances of catastrophic failure less than 1 in 10,000.

Engineers Australia is happy to offer the CCA access to its networks of engineering expertise as it develops its advice to government. Engineers add value across the value chain and have a strong analytic basis for managing risk and delivering efficiencies.

Engineers Australia position on Australia's Paris Agreement commitments

Engineers Australia accepts the science on climate change and the need for a proactive response. Climate change affects people, economies and industries across the globe.

Our view is that the calculations used to define the carbon budget to meet the Paris objectives are too optimistic. The Intergovernmental Panel on Climate Change (IPCC) uses 50% to 66% chance as the norm. Carbon budgets, and emissions reductions, should be based on a much higher confidence level of reaching the Paris Agreement goals.

For confidence levels in the order of 90%, the carbon budget to keep temperature rises below 2 degrees Celsius is already exhausted. At 90% this is a 1 in 10 chance of failure, three orders of magnitude greater than normal engineering design.

Measures to enable the transition to a low carbon future

Engineers Australia's view is that the existing advice from the CCA is fundamentally sound. It makes good sense to use broad based policies to drive change within each sector (through price or regulatory compliance measures). The CCA has largely picked mechanisms that can collectively achieve the level of emissions abatement needed for Australia to meet its 2030 obligations.

Our overall assessment is that there is little scope for the CCA to radically reconfigure its advice to government on overarching policy settings, though there is value in updating recommendations. The key sticking point is not good advice, but implementation.

The lack of any emissions intensity scheme or a low emissions target in the electricity-generation sector is a key limitation. Unfortunately, it is not the only one. We are also yet to see updated low emissions standards for light vehicles, for example. Such standards have been 'under development' since 2015. If implemented they would deliver significant cost and emissions savings.

Engineers Australia observes that even if there was a strong policy response there are also real barriers to converting policy signals into practical action. These need to be accounted for in any CCA advice.

Engineers Australia would like to see the CCA focus on developing policy advice that directly supports and enables businesses, governments, communities and individuals to deliver abatement. The supporting stocktake on industry actions¹ is the most encouraging part of the CCA analysis. It shows that action is happening on the ground. Industry and the community are leading proactive initiatives and responding to risks signaled through non-policy channels.

The CCA analysis of industry action is limited by being descriptive only. It catalogues what industry is doing. It does not discuss the impediments to broader uptake or ways to encourage and support further innovation.

Accordingly, Engineers Australia recommends that the CCA focus on building implementation plans to help individuals and firms in each sector respond quickly and efficiently to this challenge. These plans would:

- set out the micro-economic barriers to effective action in each sector
- create strategies and actions to ensure a coordinated response across government
- set timeframes for implementation, and
- have clear performance indicators and evaluation methods that are designed early.

This planning should be viewed as a complement to any updated advice, not a substitute. Empowering micro-economic innovation and response is a prerequisite for achieving our commitments under the Paris Agreement.

Below we set out opportunities to strengthen sector specific policy proposals but focus on the actions required to deliver practical outcomes.

Updating the CCA advice

Energy and Energy Efficiency

The energy sector accounts for the most emissions and has significant capacity to reduce them. This is an area that should continue to be prioritised. It is regrettably an area of significant contention, and limited progress. Engineers Australia supports the introduction of a market-based mechanism that provides strong price signals to curb emissions. We acknowledge the importance of the reforms being implemented in response to the Finkel review into the electricity sector and encourage action to provide greater overarching policy certainty and direction.

¹ Climate Change Authority, *Draft Paper: Industry Action on Climate Change Mitigation in Australia*, July 2019

Energy efficiency is a complementary measure. It reduces the need for electricity generation and therefore an important part of the solution. Significant work is needed now to limit the embodied and 'enabled' emissions through planned energy efficiency improvement.

Energy efficiency uptake is largely guided by a series of small-scale regulatory decisions which shape the operating environment, especially for the construction of new buildings and energy efficiency decision making in existing buildings. The National Energy Productivity Plan provides a strong platform for shaping this operating environment but requires much stronger resourcing and political attention to achieve its ambitions.

Agriculture

Implementing mitigation policies in the agriculture sector have proven particularly challenging around the world, due to the limited availability of low-cost agricultural mitigation technologies. This factor should influence the CCA assessment of sectoral contributions.

Transport

The mobility decisions of people will increasingly be affected by technology advances in the transport sector, especially the development of electric vehicles. This momentum suggests the lines between public and private transportation will become more permeable as the result of lower prices, better information and increased vehicle autonomy.

We are clearly not at this point but need to enable the emergence of integrated mobility platforms that are low carbon by design. The catalyst for this is the shift to, and adoption of, electric vehicles. Accordingly, Engineers Australia suggests that the immediate focus of policy advice should be on facilitating electric vehicle adoption in Australia. To be coherent this advice must consider:

- providing better information to the public on electric vehicles so potential users can make informed decisions
- development of policies and regulations to support/encourage the increased pace of EV uptake
- the development of adequate charging infrastructure across Australia
- the management of the impact of vehicle charging on the electricity grid
- the development of a new economic model for road use funding
- end-of-life recycling of EVs and EV batteries, and
- the societal impacts of EVs including "Mobility-as-a-Service" and how this will affect our cities.

Creating sectoral implementation plans

Supporting our recommendation above that the CCA build sectoral implementation plans, we recommend that each address the key factors that will contribute to a strong micro-economic response. Key factors include the following.

Assisting business and industry to innovate

Emissions abatement is not core business for most enterprises. They do not all have the relevant knowledge, skills or access to risk managed technology solutions to make effective decisions. There is a critical role for government in providing support to:

- Develop decision making capability: provide decision support to build the business case, project design and delivery of emissions reduction initiatives. The mining sector, for example, is a prime candidate for renewable deployment given the high cost of diesel supply to remote locations. The Australian Renewable Energy Agency has recognised this and has since 2012 actively supported the deployment of remote community and mining renewable integration projects. Despite Australia being a world leader in this area, uptake by mining companies has been slow.
- De-risk technology solutions: emissions reduction technology continues to evolve. Rapid adoption requires significant de-risking and standardisation of product offerings. Engineers are well positioned to support this process but require hands on experience to refine solutions and build a skilled workforce.

Infrastructure planning that is systematic and forward looking

Infrastructure is designed to enable population growth and economic productivity. The pipeline of projects is growing. Infrastructure Australia notes that record spending on infrastructure is the new norm. Good infrastructure planning, delivery and maintenance will reduce emissions. Without it the combined effect of construction, embodied energy and resulting enabled emissions will be a major drag on Australia's emissions reduction efforts.

Engineers Australia advocates for long term integrated infrastructure planning, increased funding and greater transparency of procurement, implementation and post project evaluation practices.

Targeted focus upon disaster risk management, resilience and sustainability in infrastructure planning and development will be crucial in mitigating the effects of climate change, embracing innovation and identifying resilience measures and opportunities to address the issues facing our generation and generations to come.

Certainty through energy security policy

Energy security underpins all the policy proposals recommended by the CCA. The ability of business, governments and individuals to respond to the proposed policy signals relies on confidence in the continuing availability of energy inputs at affordable prices.

Engineers Australia advocates for a broad view of energy security as a strategic asset for Australia, rather than as a product of supply side market resilience. Our view is that the current approach to energy security is too narrowly focused on the ability of supply chains to respond to price shocks, particularly for liquid fuels.

Understanding the response by various stakeholders is as critical as the ability to 'recover' from a supply event. Analysis facilitated by Engineers Australia suggests that a prolonged supply shortage would lead to significant upheaval that is likely to affect long term confidence in the ability of energy to underpin Australia's prosperity.

Engineers Australia has developed a set of policy recommendations to ensure energy security is addressed comprehensively². We would be happy to engage with the CCA to provide relevant insights.

Building industries of the future

We need to actively diversify Australia's energy offerings and transition to a position as a net exporter and user of low-emissions energy sources. This will be driven by innovation and facilitation by government. The Finkel report, *Hydrogen for Australia's Future*, provides a blueprint for the practical and considered innovation planning that is needed to support Australia's abatement activities to 2030 and beyond. Similar approaches need to be adopted in a range of areas including industrial energy efficiency and productivity.

² Yates, A. and Greet, N. *Energy Security for Australia: Crafting a Comprehensive Energy Security Policy*, 2014, Engineers Australia

