

Submission to the House of Representatives Standing
Committee on the Environment and Energy

Inquiry into the Climate Change Bills 2020

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INQUIRY INTO THE CLIMATE CHANGE BILLS 2020

The Australian Academy of Technology and Engineering (ATSE)¹ is pleased to respond to the inquiry into the [Climate Change \(National Framework for Adaptation and Mitigation\) Bill 2020](#), and [Climate Change \(National Framework for Adaptation and Mitigation\) \(Consequential and Transitional Provisions\) Bill 2020](#) ('The Climate Change Bills').

The science and lived experience of climate change is becoming increasingly clear, and was brought into sharp relief by Australia's horror bushfire season of 2019-20. If the world is to avoid the worst effects of climate change, we must take urgent action to reduce carbon emissions into the atmosphere.

Mitigation responses are critical to reduce the rate of warming in the global climate system, and adaptation responses are necessary to reduce the impact of current and future climate related stresses and manage future climate change risks.

[ATSE has previously identified four key principles to drive Australia's response to climate change.](#)

These require a commitment by industry and government to:

1. Adopt long-term bipartisan policies and programs that encourage the actions and investments needed for rapid and intensive deployment of technologies and measures to mitigate greenhouse gas emissions and adapt to the impacts of climate change.
2. Inform and test mitigation and adaptation responses using leading-edge climate modelling and prediction techniques, which should be enhanced in areas where Australia has recognised leadership or unique needs.
3. Increase support for low-emissions technology research, development and demonstration, prioritising areas where Australia has recognised leadership or unique needs.
4. Support Australian participation in cooperative international programs focused on developing solutions to climate change.

ATSE comment on the Climate Change Bills

The Climate Change Bills aim to establish:

- A Net Zero emissions target by 2050, through emissions reduction plans and emissions budgets
- Risk assessments and adaptation plans
- Technology readiness assessments
- An independent advisory commission

ATSE supports the commitment in the Climate Change Bills to net zero emissions by 2050.

ATSE also supports the Bills' proposed core pillars of risk assessment, adaptation planning, and technology readiness assessments, which would be comprehensive enough to achieve the target, but only if accompanied by enabling policy, strategy, research, technology development and investment. Legislation will create certainty and is a critical element of Australia's strategy to reduce emissions, but in itself is not sufficient to achieve the nominated target.

¹ The Australian Academy of Technology and Engineering is a Learned Academy of independent, non-political experts helping Australians understand and use technology to solve complex problems. Bringing together Australia's leading thinkers in applied science, technology and engineering, ATSE provides impartial, practical and evidence-based advice on how to achieve sustainable solutions and advance prosperity.

Net zero emissions target by 2050

All Australian states and territories have now set their own net zero emissions by 2050 targets, meaning Australia essentially has a de facto national net zero by 2050 target. Australia's national agricultural industry body, the National Farmers Federation, has also already established a net zero carbon emissions target by 2050, and the major agricultural emitting industry, Meat and Livestock Australia (responsible for approximately 10% of national emissions) has a target of net zero carbon by 2030.

A national policy and national legislation to enshrine this target, as proposed in the Bills, would create certainty for investment and provide a basis for co-ordinated national action and international advocacy. Japan, South Korea, and the European Union have all committed to net zero emissions by 2050, with China recently committing to net zero by 2060.

Five-yearly emissions budgets

As a signatory to the Paris Agreement, Australia has committed to reducing emissions by between 26 per cent and 28 per cent of the emissions created in 2005. According to 2019 projections, Australia's emissions in 2030 will be 511 million tonnes, a reduction of only 16 per cent on 2005 levels, compared to a target of 26-28 per cent.²

The implementation of five-yearly emissions budgets, as proposed in the Climate Change Bills, would better position Australia to meet the 26-28 per cent targets and net zero emissions by 2050, in conjunction with an appropriate technology readiness assessment. Setting milestones will help to make these challenging targets achievable, as well as allowing an opportunity to evaluate the impact of technology.

Multi-sectoral emissions reduction plans

A multi-sectoral approach is important to ensure responsibility is shared, rather than focused on, or avoided by, any particular sector. The approach proposed in the Bills will also assist in standardising emissions inventory methodologies across sectors, which are variable at present.

A multi-sectoral approach will further enable the development of sub-sectoral targets, which will be helpful in ensuring national engagement. For example, within agriculture, the profile of emissions varies (CH₄, N₂O, CO₂) and a sub-sectoral approach would encourage the development of appropriate technologies for each of these profiles.

National risk assessments and national adaptation plans

Greenhouse gas emissions have already altered the global climate system and will continue to do so well into the future, irrespective of any mitigation efforts. The progressive warming of the atmosphere and oceans is producing changes in rainfall patterns and in the frequency and magnitude of severe weather events such as extreme heat and cold, droughts, floods and storms. Effective adaptation strategies are necessary to manage these risks and proactively identify new opportunities that may emerge from these climatic changes.

National risk assessments and national adaptation plans, as proposed in these Climate Change Bills, would lead to greater risk awareness and allow for comprehensive forward planning, to ensure more viable and adaptable future industries. It would also enable the identification of technological needs across industries. ATSE supports the implementation of routine risk assessment and adaptation plans nationally as well as by sector, to help identify climate change-driven economic challenges across all industries. As an example, most significant agricultural industries already have national adaptation

² <https://www.atse.org.au/wp-content/uploads/2020/11/Emissions-Targets-Explainer-200602v2.pdf>

plans and strategies which are supported by research, development and extension strategies. A Climate Change Research Strategy for Primary Industries was formulated in 2008 by the major research bodies in primary industries, and has been reviewed and updated at regular intervals.³

Establishment of an independent advisory commission

ATSE supports the proposal to form an independent climate change commission to monitor progress towards emissions reduction and climate resilience. An independent body to review progress towards emissions targets and identify emerging climate risks and technologies will support evidence-based decision-making.

Similar advisory commissions or committees have been very successful internationally, specifically where they report directly to the relevant Minister or the leaders of the Government. For example, in California, which has an enviable record of emissions reduction, the Californian Independent Emissions Market Advisory Committee analyses the environmental and economic performance of the state's cap-and-trade program and other relevant climate policies, then reports its findings to the California Air Resources Board and the Joint Legislative Committee on Climate Change.⁴ Some of America's leading experts have served on this committee, including Nobel Laureates.

Technology readiness assessment

ATSE strongly supports the proposed use of routine technology readiness assessments, but suggests that the integration of the measures detailed by the Bill with the Australian Government's National Technology Roadmap for Low Emissions Technologies will not constitute a sufficient technology readiness assessment. Australia is far from technology ready, as our national emissions performance demonstrates, but we have an excellent opportunity to use regular technology assessments to assess the areas of greatest need and opportunity. This should be a co-ordinated, multi-sectoral and national approach, much broader than the five areas nominated by the National Technology Roadmap.

ATSE has recently conducted three sector-wide technology readiness assessments, supported by the Australian Research Council, on the transport sector, the healthcare sector, and the waste and resource recovery sector.⁵ ATSE's methodology examines whether these sectors are ready to adapt, adopt or develop key technologies in terms of infrastructure, skills, social readiness, policy and regulatory readiness and economic feasibility. This methodology would be well-suited to routine assessments of Australia's low emissions technology readiness, and ATSE would be pleased to assist.

Routine assessment and review of emerging technologies will ensure Australia is always an early adopter of best-practice low emissions technology, and can develop appropriate solutions for our unique situation. All new and emerging energy technologies should be assessed with a focus on applicability in Australia, time frame for deployment, emissions reduction potential, and cost. The application of any available technology will also depend on community engagement and acceptance.

Australia's mitigation and adaptation efforts will be strongly enhanced by the timely adoption and further advancement of science and technology innovations, supported by government policy settings that encourage investment in technologies already available. With strong leadership from government and active participation by industry, Australia is well placed to meet the challenges of climate change. ATSE's vision is of technology-led climate resilience, in which all sectors are empowered to meet the economic and environmental challenges associated with climate change.

³ <https://crspi.com.au/>

⁴ <https://calepa.ca.gov/climate/iemac-independent-emissions-market-advisory-committee/>

⁵ <https://www.atse.org.au/research-and-policy/big-issues/helping-australia-get-technology-ready/>

The innovation required for effective climate change mitigation and adaptation efforts offers immense opportunities for the creation of social, economic and environmental benefit. Australia requires a cross-sectoral roadmap to achieve net zero carbon emissions by 2050. The Academy stands ready to play its part in the required technological revolution.

ATSE would be pleased to further assist with this inquiry as appropriate. For further information, please feel welcome to contact Alix Ziebell, Director of Policy and Government Relations, Australian Academy of Technology and Engineering on (03) 9864 0909 or alix.ziebell@atse.org.au.