

Submission to Senate Environment and Communications
Legislation Committee

ATSE SUBMISSION ON CLIMATE CHANGE BILL (2022) AND THE CLIMATE CHANGE (CONSEQUENTIAL AMENDMENTS) BILL 2022

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The Australian Academy of Technological Sciences and Engineering (ATSE) 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.

ATSE welcomes the opportunity to respond to the Environment and Communications Legislation Committee's inquiry into the Climate Change Bill 2022 and the Climate Change (Consequential Amendments) Bill 2022. We make the following recommendations to strengthen and implement the legislation:

Recommendation 1: Develop, fund, and implement a comprehensive plan for emissions reductions to net zero, centred on increasing the share of renewable energy and investment in the workforce.

Recommendation 2: Increase dedicated funding for renewable energy generation, storage, and transmission in future Federal Budgets.

Recommendation 3: As part of the emissions reduction plan, the Australian Government should support high-emitting sectors to make greenhouse gas emissions reductions through a technology-led approach.

Recommendation 4: The Australian Government should create and fund a greenhouse gas accounting framework to measure and annually audit emissions.

Recommendation 5: Engage the Australian Securities & Investments Commission (ASIC) to strengthen and standardise climate-related disclosures for publicly listed, large proprietary, and foreign-controlled proprietary companies and embed this into the objectives and functions of ASIC and the Corporations Act.

Recommendation 6: The Australian Government should create and fund a service for small private companies and registered charities to calculate greenhouse gas emissions arising from their operations and identify ways to reduce emissions.

Recommendation 7: Ensure that the implementation plan requires state and territory governments to publicly report on progress towards national targets to net zero, as part of the annual statement to Parliament.

Recommendation 8: Strengthen the requirement in the legislation for publication of information regarding targets and progress, including by specifying a timeframe for the publication of written advice from the Climate Change Authority to the Minister.

ATSE supports a plan for Australia to reach net zero emissions

ATSE supports codifying Australia's 2030 (43%) and 2050 (net zero) targets for greenhouse gas emissions reductions into law as a floor. This step will embed these targets into objectives and functions of relevant Commonwealth agencies and require annual public reporting on progress towards these targets. ATSE also welcomes the intended reinstated review and advisory powers of the

Climate Change Authority. This legislation represents Australia's ambitions to be a leader in reducing greenhouse gas emissions.

As expressed in ATSE's 2021 position statement, '[Australia's technology-led transition to net zero emissions](#)', emissions must be reduced rapidly to limit global temperature rises, with stronger action to deploy low-carbon technologies to make deep cuts to emissions by 2030.

The next step for implementing this legislation is to develop a clear, economy-wide plan and to institute actions that will rapidly reduce greenhouse gas emissions and increase the share of renewable energy sources. This requires a divergence from Australia's limited actions to mitigate climate change to date. The current approach outlined in the annual [Low Emissions Technology Statements](#) – which relies on assumed future technologies that reduce emissions – cannot be relied upon to reach either target as the rapid development and deployment of future technologies such as green hydrogen and Carbon Capture and Storage (CCS) is highly speculative. Investment in mature renewable energy technology and modernising industry will be critical to reach the legislated emissions reduction targets. The comprehensive net zero plan should also include domestic technology investment and skills investment to ensure Australia becomes a renewable energy powerhouse and a technology exporter.

Reaching reductions targets requires investment in renewable energy and a supported workforce

Australia needs rapid uptake of mature low-emissions energy generation technologies to make immediate deep cuts to greenhouse gas emissions and reach at least the 43% target by 2030. Solar and wind power, as part of a critical energy mix, are well-placed for deployment on a larger scale, providing the soundest pathway to ratcheting up the 43% target. Investment is also required in energy storage (e.g. batteries and pumped hydro) and transmissions upgrades, including a decentralised grid, to increase efficiency and a secure, resilient electricity supply. This would provide the infrastructure to enable electrification of transport and heating, transitioning away from high-emissions energy sources. Further information about the critical technology mix is available in the ATSE [explainer on the state of low emissions technology in Australia](#).

The expansion and further development of renewable energy will require a skilled workforce. As part of transition planning, displaced workers – especially in regional areas – should be supported to upskill and retrain for the renewables industry.

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Recommendation 2: Increase dedicated funding for renewable energy generation, storage, and transmission in future Federal Budgets.

Incentivising high-emitting industries to reduce emissions through accountability and support for technology development

The Australian Government will need to define and fund an ambitious research agenda and a bold policy framework that incentivises industry in developing new, low-emission, technologies to achieve Australia's legislated targets. The comprehensive net zero implementation plan must incorporate a pathway to reduce all emissions from all sectors and specifically address ways to decarbonise high-emitting sectors. These sectors include energy production, ground transport, aviation, agriculture (including methane emissions), manufacturing, and buildings (construction, operation, and maintenance).

There is a near-term opportunity by 2025 to reduce emissions from ground transport (passenger and commercial vehicles) through a framework of infrastructure (such as the planned National Electric Vehicle Charging Network) and incentives. This could be modelled on the Australian Capital Territory's [Zero Emissions Vehicles Strategy](#) which moves towards an emissions-based registration fee framework.

Commercial and domestic building heating transitions will also need to be considered as part of the strategy, with Government support for building owners to electrify heating systems. The Victorian Government has begun taking action with the [Home Heating and Cooling Upgrades Program](#), which provides rebates to lower-income households to replace heating systems (including gas) with reverse-cycle air conditioning. As part of the comprehensive net zero plan, the Australian Government should develop a national scheme to reduce building emissions from heating.

As a first step, a greenhouse gas accounting framework is required to quantify reductions in some sectors, notably in building and construction. In new building construction, whole-of-life measurement of greenhouse gas emissions that are generated through both embodied emissions and operations will provide the necessary visibility of emissions sources, and better identify opportunities for making significant reductions. Embodied emissions include those that are generated through manufacture, transport, and installation of building materials. For example, this framework could be applied to all new construction projects. This approach, applied across industries, will also be critical for the development and standardisation of greenhouse gas emissions accounting, which should be embedded in company governance.

Some sectors have made meaningful gains in developing emission reduction technologies, such as agriculture, though further technology-driven reductions are needed. However, sectors with hard to reduce emissions like construction, manufacturing, and transport will need a mosaic of technologies to achieve the needed climate goals. Support from the Australian Government to develop these transformative technologies will be essential to reach legislated low-emissions targets on time.

Recommendation 3: As part of the emissions reduction plan, the Australian Government should support high-emitting sectors to make greenhouse gas emissions reductions through a technology-led approach.

Recommendation 4: The Australian Government should create and fund a greenhouse gas accounting framework to measure and annually audit emissions.

Recommendation 5: Engage the Australian Securities & Investments Commission (ASIC) to strengthen and standardise climate-related disclosures for publicly listed, large proprietary, and foreign-controlled proprietary companies and embed this into the objectives and functions of ASIC and the Corporations Act.

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Engaging State and Territory Governments in the national plan to net zero

The state and territory governments will be involved in all aspects of reaching emissions reduction targets. This includes through developing clean energy generation, distribution, and storage at scale, and supporting industries through the impacts of lowering emissions. State and territory governments have already set their own emissions reduction targets, as shown in Table 1, which could be acknowledged in the implementation plan developed by the Australian Government.

Table 1: State and territory government emissions reduction targets.

State	Net zero target	Interim target
Tasmania	2030 (achieved)	Not applicable
Victoria	2050	45 – 50% reduction (compared to 2005 levels) by 2030
New South Wales	2050	35% reduction (compared to 2005 levels) by 2030
Australian Capital Territory	2045	50 – 60% reduction (compared to 1990 levels) by 2025
Queensland	2050	30% reduction (compared to 2005 levels) by 2030
Northern Territory	2050	To be determined
South Australia	2050	50% reduction (compared to 2005 levels) by 2030
Western Australia	2050	None

It is critical that the Australian Government involves state and territory governments in planning, implementation, workforce transition, and public reporting on emissions reduction. This could include supporting or standardising state-based schemes such as electric vehicle taxes. At a minimum, state and territory governments should feed into the annual reporting requirements outlined in the legislation.

Recommendation 7: Ensure that the implementation plan requires state and territory governments to publicly report on progress towards national targets to net zero, as part of the annual statement to Parliament.

Improving public oversight of climate action

In addition to the required annual statement to Parliament, all information regarding targets and progress should be made public in a timely manner. This should include, but not be limited to, advice provided to the Minister by the Climate Change Authority. The draft legislation requires only that written advice from the Climate Change Authority to the Minister must be published (without specifying a timeframe). Strengthening the requirement to publish advice within a reasonable timeframe would not only improve public accountability, but also provide industry, policy professionals, and public interest groups with up-to-date information to inform their work.

Recommendation 8: Strengthen the requirement in the legislation for publication of information regarding targets and progress, including by specifying a timeframe for the publication of written advice from the Climate Change Authority to the Minister.