



Melbourne, Friday 28 November 2025

**Subject: Inquiry into the Environment Protection Reform Bill 2025 and six related bills**

Dear Committee,

The environmental reform law is an excellent opportunity for us to shape the Australia we want, thereby contributing to National Priorities—**transition to a net zero future, support healthy and thriving communities, build a secure and resilient nation**—and connecting national purpose with local delivery.

Conclusive evidence has demonstrated that even the smallest levels of [CO<sub>2</sub> emissions matter](#) in reducing the impacts of climate change.

To achieve a sustainable future, it is imperative that Australia's environmental laws:

### **1. Include the context of climate change and climate variability.**

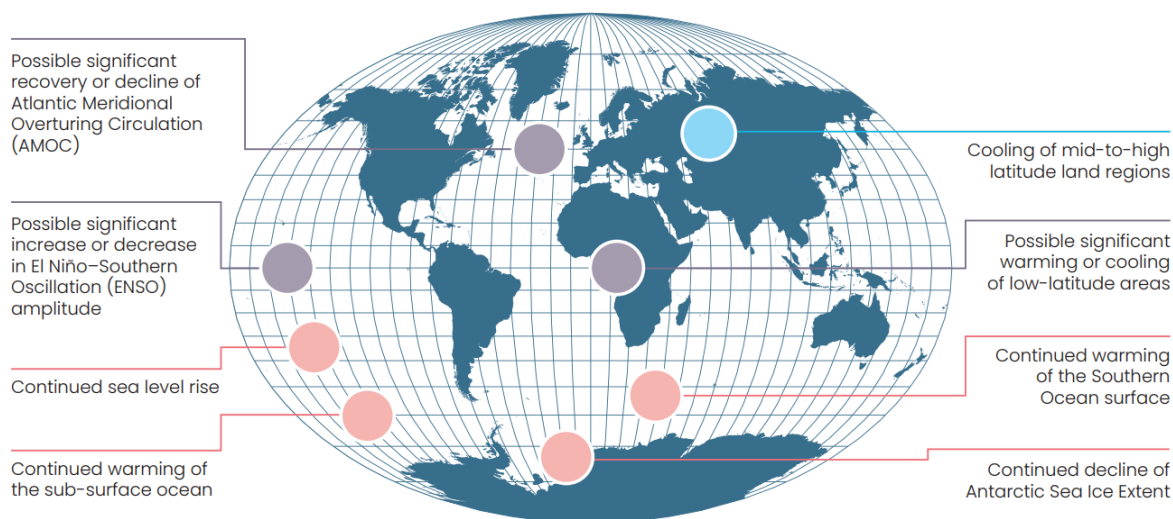
The weather is a source of joy and distress. Most of the time, weather is a resource that gives us water, allows crops to grow, produces electricity and lets us enjoy the beach. However, weather can also be hazardous, causing risks to communities and assets. These risks and resources can occur in the context of climate variability—year-to-year fluctuations in our atmosphere and oceans. However, with atmospheric carbon dioxide concentrations and global temperatures at record levels, human-caused climate change is altering our weather resources and changing the likelihood of hazardous and high-impact weather events.

The [state of the climate](#) reports that several crucial changes to the Earth system could be triggered at higher levels of warming, potentially starting irreversible and [catastrophic chain reactions](#). [Australia has already warmed over 1.5°C](#), with global average temperatures approaching the 1.5°C [threshold of dangerous climate change](#) set by the Paris Accord. Despite the many locked-in, potentially irreversible impacts to which we have already committed due to global warming, many of these changes are likely to be incrementally worse if we delay halting our emissions. Every fraction of warming we manage to prevent will avert a worse climate catastrophe.

Post-net zero, the global average temperature should stabilise and start to cool, however Australia may continue to warm and some climate impacts will continue to worsen (see the figure below). Delay in getting to net zero means worse climate consequences for generations to come.



## Examples of projected changes under net zero emissions



*Note: Even continued trends under net zero emissions are weaker than trends projected under continuing high emissions*

### 2. Include lessons from past harm to avoid future losses and damage.

Scientific projections made more than a decade ago showed increased climate-driven fire risk that would be detectable by 2020, which [eventuated in the Black Summer Bushfires](#). These mega bushfires were unprecedented in both Australian and global contexts, in terms of scale, intensity and impacts. Over 46 million acres burnt across Southeast Queensland, New South Wales, the Australian Capital Territory and Victoria; 5900 buildings including homes destroyed; over \$100 billion in damage and economic costs; lost human, and animal lives, Gondwana Rainforests and other flora species. Besides these losses, damages to Australians included hospitalisations, post-traumatic stress disorder and depression.

Scientific assessments warn that human-caused climate change is very likely to increase the risk of fires, including extreme fires, in Australia. Alongside climate change, other high-impact weather events, such as heatwaves, which are responsible for more deaths than any other weather-related hazard, are likely to increase and extreme rainfall events are also likely to increase, which can lead to flooding.

The cost of inaction is significant as the risk of high-impact weather events increases with every increment of global warming. These costs can be minimised by reducing greenhouse gas emissions, in line with Australia's Climate Change Act and international commitments to the Paris Accord.

The transition away from fossil fuels can be supported by high-value exports of critical energy metals, as described in [CSIRO's critical minerals roadmap](#). A critical energy mineral industry can fill the revenue gap left by reduced coal, oil and gas mining exports.

### 3. Remove legal ambiguity.

A prosperous long-term vision for Australia and protecting the Australian lifestyle can be underpinned by policy certainties that demonstrate the government's commitment to national priorities and ambitions, including reaching a target of net zero as soon as possible. The lack of detail about Ministerial powers in the legislation reduces accountability and undermines environmental and social values.

We can transition to a net zero future by:

- Cutting emissions: By reducing our dependence on fossil fuel energy, [seeking to better understand the availability and consistency of our weather resources](#), and preserving forests and land and seascapes that act as natural carbon sinks
- Removing carbon dioxide from the atmosphere: With technologies, [which are at scoping stages](#), and enhanced natural carbon sinks.

We note that sequestration technologies are unlikely to be upscaled sufficiently over the next decade to significantly offset carbon dioxide emissions. Evidence shows that cutting emissions is the most effective way to reach net zero.

The environmental legal framework can be strengthened by taking measures that enable ministers to operate with confidence, drawing on the latest scientific advances, and avoiding inconsistencies with national priorities.

#### 3.1. Require decision-makers to consider climate impacts to ensure projects don't worsen global warming.

A tangible, science-based approach to assess a project's emissions can be applied to decide *a priori* whether it aligns with our national climate targets and policies—reaching net zero, adapting to and building resilience against risk—and can proceed.

Project proponents can improve climate risk reporting. Work by 21st Century Weather researchers demonstrates that project proposals can robustly assess the impact of their future CO<sub>2</sub> emissions. [The case study](#) showed that a single mining project can emit over 876 million tonnes of CO<sub>2</sub>, expose over 516,000 people to unprecedented heat, and cause 16 million additional corals in the Great Barrier Reef to be lost in mass bleaching events. Independent assessments can support accurate estimates of anticipated emissions from project proposals.

The legislated approval of projects can depend on their positive contribution to Australia's climate targets, policies, and international commitments.

#### 3.2. Measure what matters: Emissions.

We need a shared and documented understanding of risks to assess our adaptation needs. The legislation can mandate disclosure of all emissions (Scope 1 - direct; Scope 2 - indirect; and Scope 3 - burned in Australia or overseas). Scope 3 emissions are typically the most significant source of pollution from fossil fuel projects.

The balance of emissions and removals significantly influences the extent of long-term warming. No matter where it is released in the atmosphere, climate pollution harms Australians and our environment.

### **3.3. Measure what matters: Carbon offsets**

The mitigation hierarchy, which states that offsets are a last resort after actions to avoid, mitigate and repair impacts, can be mandated to ensure that it is adequately applied.

Australia's land-carbon flux is volatile from year-to-year and is susceptible to catastrophic events. For example, the [carbon dioxide emissions from the megafires](#) during the Black Summer in NSW in December 2019 alone accounted for around 64% of Australia's annual average emissions (2001-2018). Climate extremes, like droughts and heatwaves, [can also trigger reversals](#) in the land's ability to take up carbon. These climatic factors must be considered when assessing the contribution of carbon uptake projects to Australia's net zero ambitions in order to estimate net emissions accurately.

We are happy to discuss any subject raised in this submission.

Associate Professor Ailie Gallant  
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On behalf of the ARC Centre of Excellence for the Weather of the 21st Century

The ARC Centre of Excellence for the Weather of the 21st Century is a consortium of world-leading climate and weather researchers based across five Australian universities, together with major domestic and international partner organisations, including the Bureau of Meteorology and CSIRO.

21st Century Weather aims to address these challenges by answering a vital question:  
**How will Australia's weather transform as our climate changes?**

We will advance our understanding of atmospheric circulation and weather systems, and develop ultra-high-resolution climate models to enhance our understanding of Australia's weather and climate.

The foundational knowledge we create will enable policymakers, industry and communities to make better decisions, harness weather resources and help us prepare for high-impact weather.