climate extremes
ARC centre of excellence

Submission to Senate Environment and Communications Legislation Committee

Environment Protection and Biodiversity Conservation Amendment (Climate Trigger) Bill 2022

October 2022

ARC Centre of Excellence for Climate Extremes

The **Australian Research Council (ARC) Centre of Excellence for Climate Extremes** is Australia's leading climate science centre consisting of five partner universities - The University of New South Wales, Monash University, The Australian National University, The University of Melbourne and The University of Tasmania as well as multiple national and international partner organisations. Its research focuses on understanding the underlying processes of climate extremes to reduce Australia's economic, social and environmental vulnerability.

Introduction

Climate extremes already affect many facets of Australian society including human health, soil and water, agriculture, infrastructure, energy security, financial security and our natural environment, posing significant risks to the Australian and global economy.

Australia's climate is warming slightly faster than the global average temperature and the first two decades of the 21st century were both warmer than any decade in the 20th century. Australia's climate has warmed by 1.44 ± 0.24°C over 1910–2019.

The number of days over 50°C has doubled since the 1980s worldwide, imposing real threats to human health. The 2021-22 summer was record breaking in Perth, with 11 days over 40°C, exceeding the previous record of 7 summer days over 40°C in 2015-16. Australia's hottest ever temperature of 50.7 °C was recorded on the 13th of January 2022 in the coastal town of Onslow in Western Australia. Heatwave conditions are expected to worsen as the climate warms[1].

Every additional fraction of a degree of warming increases the risk of extreme weather events

In our oceans, marine heatwaves pose a significant risk to ecosystems and fisheries[2,3]. Rainfall variability is expected to increase with more frequent swings from extreme droughts to flooding rains[4]. Rainfall intensity is increasing; however, this is combined with long-term rainfall declines in some regions which will further intensify droughts[5], challenging water resources and bushfire management in some parts of the country. In addition, the intensity, frequency and duration of bushfires is increasing[6].

Environment Protection and Biodiversity Conservation Amendment (Climate Trigger) Bill 2022

Australia has recently signalled support for urgent climate action through the passing of the Climate Change Bill 2022 and Climate Change (Consequential) Amendments Bill 2022. This is a positive first step in establishing Australia's commitment to combating climate change and associated climate extremes. It is therefore appropriate to continue to update existing legislation to factor in climate change impacts. The proposed amendments to the Environment Protection and Biodiversity Conservation Act (EPBC) 1999 through the Environment Protection and Biodiversity Conservation Amendment (Climate Trigger) Bill 2022 begins a process to update existing legislation to match Australia's climate action ambition.

The ARC Centre of Excellence for Climate Extremes welcomes the opportunity to make a submission in relation to the Environment Protection and Biodiversity Conservation Amendment (Climate Trigger) Bill 2022.

We support the Bill's intent to make amendments to introduce a climate trigger to assess emissions-intensive activities as a matter of environmental significance. This will ensure that going forward, new project developments are assessed on the amount of emissions they will produce in any one year. The proposed amendments would require the Minister to consider the level of emissions associated with new project developments and assess if these emissions are consistent with Australia's nationally legislated

targets to reduce Australia's emissions by 43% by 2030, and to reach net zero by 2050. For the first time, emissions intensive activities, which cause climate change, would become a matter of national environmental significance under the EPBC Act. Emissions reductions will be a meaningful part of the decision-making process for project approval.

The proposed amendments demonstrate the Australian government's commitment to emissions reduction targets supporting the government's own newly legislated Climate Change Bill 2022 and Climate Change (Consequential) Amendments Bill 2022 as well as contributing to the imperative to reach net zero emissions by 2050. This submission will comment on two aspects of the legislation: the emissions of greenhouse gases and the global carbon budget.

Emissions of greenhouse gases

The link between greenhouse gas emissions and global warming is unequivocal. The Earth's climate is warming, primarily due to the increase in carbon dioxide (CO_2) emitted into the atmosphere by human-driven activities including mainly the burning of fossil fuels (coal, oil, and natural gas) but including land use and land cover change.

It is certain that human influence has already warmed the atmosphere, ocean and land by 1.1°C above pre-industrial levels[7]. Australian surface temperatures will continue to rise until at least 2050 under all emission scenarios and further increases in climate extremes are inevitable[8]. The last report by the Intergovernmental Panel on Climate Change[9] underlined the urgent need for emissions reductions to limit warming to below 2°C in order to avoid dangerous climate change, as stated in the ambition of the Paris Agreement.

The impacts from climate extremes are likely to increase with the warming that is already locked in

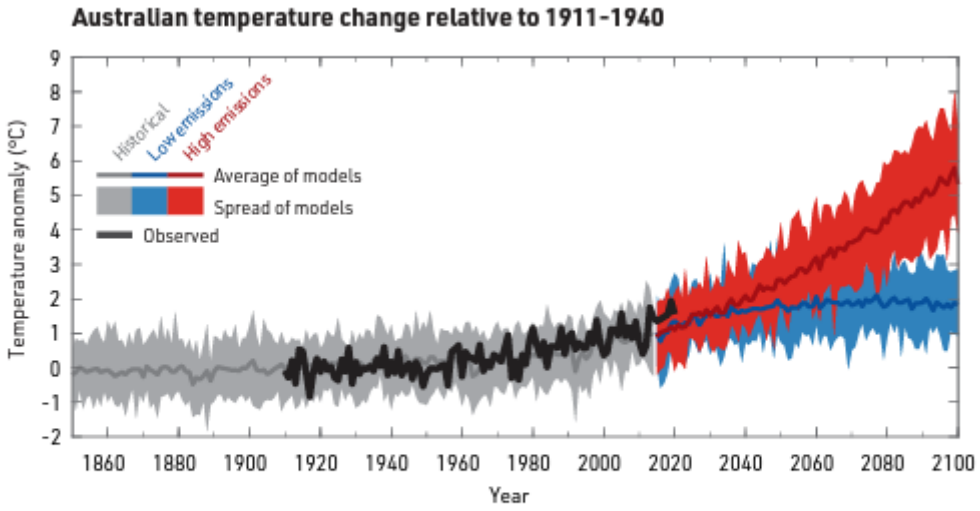

Figure 1 - Australian mean annual temperature changes 1850-2100 from climate model simulations (models that are thought to simulate warming above or below that expected based on multiple lines of evidence have been removed - see "Climate models" box). The observations are sourced from the Australian Bureau of Meteorology (ACORN-SAT v2).

Figure 1

The amount of global warming depends on the amount of future global greenhouse gas emissions and the ability to deploy rapid and sustained actions to reduce atmospheric carbon dioxide.

Figure 1 demonstrates this dependency for Australia. Future changes to Australia's climate depend on the cumulative total of greenhouse gases emitted over time. The more we emit now, the worse climate change will be in the future.

Even under a very low emissions scenario (assuming global reductions in emissions from the 2020s reaching net zero emissions by 2050, and negative emissions thereafter) there is now less than a 50% chance of limiting warming to 1.5°C. However, if a very low emission future is achieved, global temperatures could drop back to below 1.5°C by the end of the century (i.e., the warming is probably reversible).

Every tenth of a degree increases the risk to Australian communities, and therefore every opportunity to drive emissions down must be taken.

Global Carbon Budget

There is a finite amount of the carbon budget beyond which the warming will exceed 1.5C. The IPCC has stated that from 2020, the world has only 500 billion tonnes of carbon dioxide left in the global carbon budget to emit to have a 50% likelihood of limiting global warming to 1.5 C. At current global emission rates, this will be exhausted within 11 years[10].

Any increase in emissions from new project developments will delay reaching this goal and hinder the Australian government's target on emissions reductions. It will add to the burden of future generations and compromise the government's net zero by 2050 ambition.

Every tonne of emissions is harming us

Australia's emissions reduction target is 43% emissions reduction below 2005 levels (approximately 610.6 million tonnes of carbon dioxide equivalent[11]). Although Australia's emissions have fallen, based on Australia's emissions reported under the United Nations Framework Convention on Climate Change (UNFCCC), our emissions for 2020 were 488 Mt of carbon dioxide equivalent, which is equivalent to a decrease of about 20%. There is still a long way to go in a very short time.

Legislation to improve our chances to meet national and international targets on emissions reduction is urgently needed. The Australian government's National Climate Resilience and Adaptation Strategy recognises that adaptation is a shared responsibility. As such there is an explicit need for all potential project developers to consider, mitigate and report on how their carbon emissions will be calculated and what the impact will be on the remaining carbon budget.

It is imperative that strong reductions in greenhouse gas emissions are enacted to limit the effects of future climate change and climate extremes. A Climate Trigger is a valuable mechanism to help this be achieved.

Submitted to:
Committee Secretary
Senate Standing Committees on Environment and Communications
PO Box 6100, Parliament House, Canberra. ACT. 2600.

For further information on this submission, please contact:
clex@unsw.edu.au

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