

Why avoiding 2 degrees of global warming matters for Australians

April 2015

Key points

- + Global warming puts weather systems on steroids. Australia, already a land of extreme weather, is very vulnerable. CSIRO says Australia is already experiencing climate impacts at 0.9°C warming above pre-industrial levels. It is in Australia's national interest to avoid further warming.
- + Over 190 countries have committed to limit global warming to 2°C (or lower). Australia, with bipartisan support, is among those who committed to this goal.
- + Yet the central policy scenario being used by recent government documents such as the Energy White Paper would lead to around 4°C global warming. This level of warming would see significant detrimental impacts, including severe damage to coastal infrastructure and settlements, strain on the capacity to meet food demand due to agricultural impacts and loss of the Great Barrier Reef.
- + The scenario assumes little or no new policies to further clean up and decarbonise energy systems over the next 25 years. Relying on this scenario is a gamble that other countries won't continue to act on air pollution, clean energy and climate change.
- + Avoiding warming of 2°C requires global emissions to fall to net zero and below. We need to be removing carbon as well as reducing it.

Australia's national interest

Global warming puts weather systems on steroids. Australia, a land of extreme weather, is very vulnerable. CSIRO says that Australia is already experiencing climate impacts.¹ It says Australia has suffered 0.9°C warming and business as usual would mean over 5°C.

Given that we are likely to be more adversely impacted by climate change than other countries (see table below), Australia has a strong interest in achieving deeper and rapid reductions in global emissions.

Under the UNFCCC's Cancun Agreements² and Durban Platform for Enhanced Ambition,³ Australia made undertakings to help avoid a 2°C increase in global temperature and to raise the ambition on short-term emissions reductions.

The urgency behind this is real, and confirmed by the most recent projections by the International Energy Agency, which said in its "New Policies Scenario" that actions countries have taken to date would only limit warming to around 4°C by 2100.⁴

In Australia, the need to avoid 2°C was recognised in the Intergenerational Report and by some government comments. However the Energy White Paper relied upon the New Policies scenario and its 4°C implication.

The table below shows global warming of this magnitude is projected to produce the following consequences in Australia: dangerous water shortages, severe damage to coastal infrastructure and settlements, large areas of agricultural land taken out of production, strains on the capacity to meet food demand, major risks to human life from extreme climate events and significant loss of species (including the Great Barrier Reef).

The government has since confirmed its continued support for the international goal of avoiding 2°C warming⁵. Its initial post 2020 targets will be a key test of its climate credibility.

Net Zero and below

To limit warming to less than 2°C, global emissions from the burning of fossil fuels will need to be net zero by around 2050.⁶

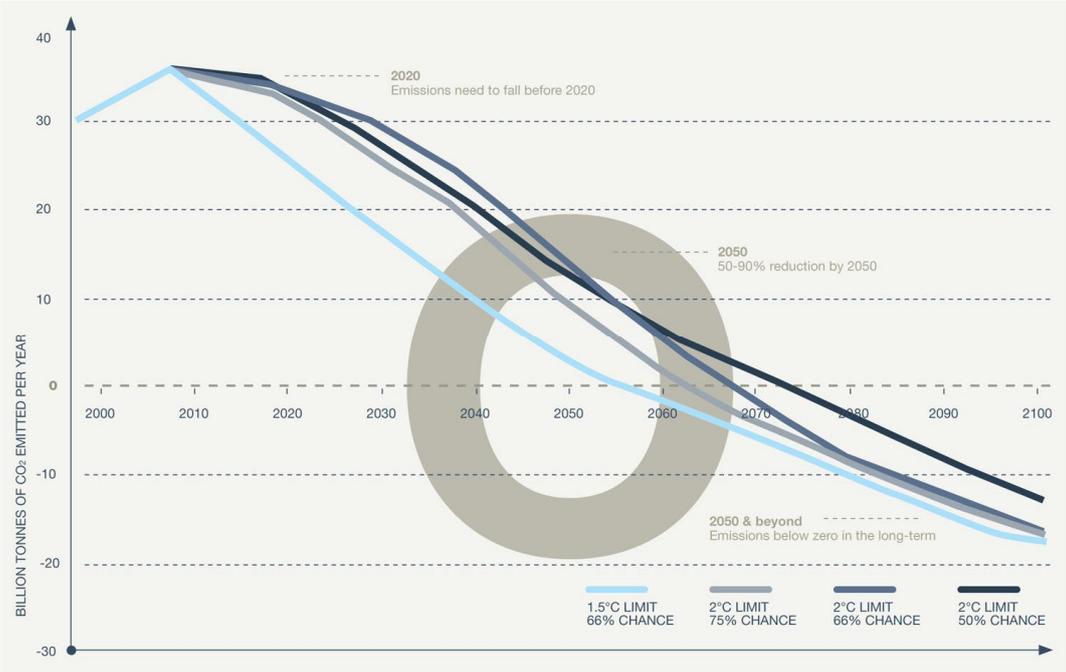
The need for full decarbonisation and zero emissions is recognised and widely supported by conservative institutions such as the G7, IPCC, World Bank, OECD and others.

The majority of emissions pathways that avoid 2°C also require pollution levels to move below zero in the latter half of the century⁷. We need to be removing carbon as well as reducing it.

Avoiding 2°C is in Australia's interest



	Natural Systems	Coastal	Water	Agriculture	Health	Infrastructure	International Security
2°C	Significant loss of species. Adaptive capacity exceeded.	Loss of some coast developments due to increased coastal erosion and storm surges where sea defences are absent.	Significant water shortages. Significant adaptation required to ensure that reliable supplies are maintained in major cities. Natural coping capacity exceeded.	Reduced agricultural production.	Increase extreme events such as heatwaves and bushfires. Changes maybe within the coping capacity of public health services with additional expenditures.	Coping capacity adequate with investment.	Increased demand for humanitarian aid and disaster response. Tens of millions people threatened by coastal flooding.
4°C	Massive loss of species. Complete loss of coral reefs, wet tropics and alpine ecosystems.	Massive consequence for coastlines. 250,000 properties at risk with \$63 billion replacement value. Deglaciation of Greenland and long-term commitment to multi-metre sea level rise.	Dangerous water shortages. Up to five times more frequent droughts in south and west. Adaptive capacity exceeded.	Large areas of land abandoned. Ability to meet Australian food demand stretched. Adaptive capacity in serious doubt.	Major risks to human life (e.g. thousands of additional heat deaths annually). Adaptive capacity in serious doubt.	Serious exposure to impacts, adaptive capacity in serious doubt.	Trade and monetary systems disrupted impeding development. Increased aid needed as social order breaks down in some regions. Hundreds of millions threatened by coastal flooding.



ENDNOTES

¹ CSIRO and Bureau of Meteorology (2015), *Climate Change in Australia Information for Australia's Natural Resource Management Regions: Technical Report*, CSIRO and Bureau of Meteorology, Australia.

² UNFCCC (2010), *The Cancun Agreements: Outcome of the work of the Ad Hoc Working Group on Long-term Cooperative Action under the Convention*, Decision 1/CP.16, FCCC/CP/2010/7/Add.1.

³ UNFCCC (2011), *Establishment of an Ad Hoc Working Group on the Durban Platform for Enhanced Action*, Decision 1/CP.17, FCCC/CP/2011/9/Add.1.

⁴ International Energy Agency (2014), *World Energy Outlook*, IEA, Paris.

⁵ Conroy, J (2015), "Hunt confirms commitment to 2-degree goal", *Business Spectator*, April 15, 2015, <http://www.businessspectator.com.au/news/2015/4/15/policy-politics/hunt-confirms-commitment-2-degree-goal>

⁶ IPCC (2015), *Intergenerational Report 2015*, Government of Australia, Canberra. See also Climate Analytics http://climateanalytics.org/files/infosheet_timetables_for_zero_emissions_and_2050_emissions_reductions_20150211_final.pdf

⁷ See for example Potsdam (2011) *The RCP greenhouse gas concentrations and their extensions from 1765 to 2300* and UNEP (2012) *Emissions Gap Report 2012*. See also TCI's *Below Zero: Carbon Removal and the Climate Challenge* http://climateinstitute.org.au/verve/_resources/BelowZero_March2014.pdf