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# Climate Council of Australia

# Submission to: 2017 review of climate change policies Discussion Paper

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## About the Climate Council

The Climate Council is an independent non-profit organisation that provides authoritative, expert advice to the Australian public on climate change.

To find out more about the Climate Council’s work, visit [www.climatecouncil.org.au](http://www.climatecouncil.org.au/)

**Executive Summary**

The Climate Council thanks the Federal Government Department of the Environment and Energy for the opportunity to provide feedback on the 2017 review of climate change policies Discussion Paper.

Australia is on the front line of climate change. With around 1°C of warming in Australia since the beginning of the 20th century, we have already witnessed significant and adverse consequences. The incidence of extreme temperatures has increased markedly over the last 50 years, and heatwaves have become hotter, are lasting longer and occur more often (CSIRO and BoM 2016). Ground-breaking scientific research that tells us how much influence climate change has on a single heatwave or heat record has shown that many of the most extreme weather events, such as Australia’s record hot year in 2013, were virtually impossible without climate change (Arblaster et al. 2014; King et al. 2014). The devastating coral bleaching on the Great Barrier Reef in 2016 was at least 175 times more likely because of climate change (King et al. 2016). The 2016/2017 summer has been described as the “Angry Summer”, highlighting the extraordinary number of weather records broken (Climate Council 2017a). This follows the long-term trend of rising global average temperature since the 1970s, increasing at a rate 170 times faster than the background rate over the past 7,000 years (Steffen et al. 2016).

Climate change (fuelled by the burning of coal, oil and gas) is influencing extreme weather events across Australia. Furthermore, projections of the escalating risks of climate change under a business-as-usual, high emissions scenario are becoming clearer and more disturbing. More extreme heat is virtually certain across the continent, and southern and eastern Australia will experience harsher fire weather. Extreme rainfall will likely become even more intense. Time in drought is projected to increase in southern Australia, with a greater frequency of severe droughts. Coastal flooding is very likely to increase as sea level rises at an increasing rate (CSIRO and BoM 2015).

Australia is the 16th largest emitter of carbon dioxide in the world, a greater contributor than 180 other countries (Global Carbon Project 2016). Australia must cut its greenhouse gas emissions much more deeply and rapidly to contribute its fair share in meeting the climate change challenge. The 2017 climate review paper summarises Australia’s goal to cut emissions by 26-28% compared to 2005 levels, by 2030. This is considerably less ambitious than the targets recommended by the Climate Change Authority (CCA) in July 2015, which determined that Australia’s post- 2020 target should include: (i) a 2025 target of a 30% reduction in its emissions below 2000 levels (or 36% reduction for 2005 base year); and (ii) further reductions within a range of 40 to 60% below 2000 levels by 2030 (or a range of approximately 45 to 65% below 2005 levels). These targets were determined considering Australia’s fair international contribution. It is important to note that the CCA’s recommendations are based on a two-thirds chance of avoiding 2°C warming. For a stronger chance, the target should be even greater emission reductions. Therefore, if the global average temperature is to stay below 2°C, then the CCA recommendations should be seen as a *bare minimum* for Australia’s contribution to global efforts to tackle climate change.

The 2017 climate review paper describes Australia’s emissions reduction policies, including the Emissions Reduction Fund. A true benchmark of the effectiveness of any climate policy is an actual reduction in greenhouse gas emissions. Unfortunately, Australia’s emissions continue to rise, particularly in the electricity sector. Clearly, then, Australia’s current emission reduction policies are insufficient.

Today, Australia’s electricity sector is the nation’s single largest source of greenhouse gas emissions - accounting for 35% (189 MtCO2¬e in 2016) of total emissions (Australian Government 2016). The electricity sector has seen the largest total growth in emissions, increasing 46% (59.5 MtCO2¬e) between 1990 and 2016 (Australian Government 2016). When emissions from extraction, processing and transporting coal, gas and diesel are added, electricity generation is clearly the dominant contributor to Australia’s emissions (Climate Council 2014). In addition, the emissions from unconventional gas in Australia are unknown due to a lack of measurements and data, and may be greater than default factors applied in Australia’s greenhouse gas accounting (Climate Council 2017b). Therefore, our emissions may be higher than what is currently accounted for.

Furthermore, Australia’s energy infrastructure is ageing, inefficient and polluting, and must be replaced over the next few decades. This affords an opportunity for Australia to decrease its emissions rapidly by embracing, promoting and accelerating a national transition to a renewable energy system. Research indicates that Australia would need to source a minimum of 50% of its power from renewable sources by 2030 to achieve emissions reductions consistent with a 2oC pathway (ClimateWorks 2014).

There are important co-benefits of a rapid transition to renewable energy. For example, the 2017 climate review document asks about the employment opportunities when reducing emissions in the electricity sector. Moving to at least 50% renewables by 2030 (50RE) would create more than 28,000 net jobs nationally (Ernst & Young and Climate Council 2016). The net effect of 50RE on jobs is positive across Australia and each individual state: every state will experience net job growth. For example, New South Wales and Queensland will have the largest net growth in jobs, estimated at around 11,000 and 6,000 respectively. Furthermore, unlike other industry transitions such as in automotive manufacturing and steel smelting, which have seen many jobs move offshore, a transition to 50RE will create jobs *in* Australia (Ernst & Young and Climate Council 2016).

The 2017 climate review document also describes emissions reduction policies in the land sector and asks the question, “What are the opportunities and challenges of reducing emissions from the land sector?”. Restoring land carbon stocks, which have been depleted through land-use change and land degradation, has many benefits for carbon uptake and for the environment and society more broadly. However, the bottom line is that, although Australia’s land sector has been a net sink for carbon (net flux of carbon from the atmosphere to the land) over the past two decades, this climate benefit has been overshadowed by our domestic fossil fuel emissions and exports. Carbon embodied in exported fossil fuels was 2.5 times greater than domestic fossil fuel emissions in 2009-2010, and the combined emissions from our domestic and exported fossil fuels were about 6.5 times greater than the net uptake by Australian landscapes over the 1990-2011 period (Haverd et al. 2013). Furthermore, much of the carbon that has been taken up by land systems is vulnerable to return to the atmosphere by natural and human changes (e.g. bushfires and land clearing for human settlement). In summary, and irrespective of the efforts to limit land clearing or optimize land or blue carbon resources as sinks, there is no substitute for actually reducing fossil fuel emissions (Climate Council 2016).

Any proposal to expand existing fossil fuel projects or open new ones, such as the development of the Carmichael coal mine, is fundamentally at odds with tackling climate change. New coal, oil and gas infrastructure risks “locking in” expanded fossil fuel use and exploration for decades into the future, and carries risks associated with emissions, electricity costs and asset stranding. Australia must urgently and rapidly reduce greenhouse gas emissions. Renewable energy and energy storage investment and implementation must increase rapidly and most of the known fossil fuel reserves must remain in the ground, in Australia and elsewhere (McGlade and Ekins 2015).

The scientific basis for urgent action is clear. The decisions we make in the next several years, particularly decisions about long-term investments in energy, transport and built infrastructure, will largely determine the severity of climate change that Australians will experience for the rest of the century and beyond. Failing to take sufficient action entails potentially catastrophic risks to our economy, environment, society and health.

This is the critical decade for action and Federal Government policies and actions must drive deep and rapid cuts to our emissions if we are to protect our way of life into the future.

**Recommendations**

**Targets and fossil fuels**

**Recommendation 1:** Based on the best available science, Australia should, as a bare minimum, increase its target and set its policies to reduce its emissions between 45 to 65% below 2005 levels by 2030.

**Recommendation 2:** Implement a systemic, economy-wide instrument that puts a price (or constraint) on greenhouse gas emissions, that is referenced directly to achieving strong emission reduction targets. There are a variety of ways to do this including market mechanisms, taxes or regulations.

**Recommendation 3:** Remove all fossil fuel subsidies and divert the funds saved to support the transition to renewable energy.

**Recommendation 4:** Do not provide policy or funding support for ANY new fossil fuel (coal, oil and gas) power plants or fossil fuel supply infrastructure. New coal, oil and gas infrastructure risks “locking in” expanded fossil fuel use and exploration for decades into the future, and carries risks associated with emissions, electricity costs and asset stranding.

**Building the energy system for the future**

**Recommendation 5**: Introduce a national transition plan for Australia’s electricity system that:

* Ramps up a diverse range of renewable energy, energy efficiency and storage technologies to enable the phase out of fossil fuelled electricity generation by 2040;
* Achievesat least50% renewables by 2030;
* Is secure and robust, particularly in light of worsening extreme weather events; and
* Reaches net zero emissions well before 2050, aiming for 2040.

Activities should include:

* Developing incentives to support greater interconnection between states by transmission lines to provide more diverse, distributed, and secure electricity supply and increase competition in the electricity market.
* Create a specific Federal Government incentive program for large-scale storage technology, for instance using a reverse auction mechanism.
* Power government infrastructure, like schools, hospitals and offices, with renewable power to support renewables growth and power bill reduction. For instance, introducing a solar loan scheme to schools where government’s install panels on schools, and schools pay back cost over time through reduced energy bills.
* Establishing a taskforce to review Australia’s workforce skills and capacities to be able to manufacture, deploy and/or maintain an electricity sector with 50% or more renewables. Where shortages or gaps exist, provide the necessary policy settings and funding to assist the workforce as Australia transitions to a zero emissions electricity sector.
* Develop incentives for a more distributed system (with power generation spread geographically rather than through large, concentrated power plants) involving a wider variety of supplies - wind, solar, biomass, hydro, and energy storage – to ensure more resilience to disruption from increasing extreme weather events due to climate change.

**Land sector policy**

**Recommendation 6:** To maintain and increase carbon storage using land systems, stop clearing of old growth and carbon-rich vegetation and protect regrowth vegetation. Other approaches to land based mitigation can also be useful. These include improved land management to enhance and protect soil carbon, development of sustainable bioenergy systems, and protection of carbon stored in coastal ecosystems (“blue carbon”).

**Recommendation 7:** Establish and maintain a ‘firewall’ between Australia’s fossil fuel emissions reduction policies and policies to increase carbon uptake on land to provide transparency around Australia’s emissions reduction efforts.

* There should be no offsetting of fossil fuel emissions by increasing land carbon.
* There should be separate reporting of fossil fuel emissions and of land carbon uptake and loss.
* Storing carbon in land can become counterproductive if policy settings allow it to delay or replace fossil fuel emission reductions.

**Transparency and data**

**Recommendation 8:** Collect and make available key data enabling the Australian community to track progress on climate change. The following data should be collected and made freely available to the community as a minimum:

* Australian Energy Market Operator (AEMO) to regularly report on the percentage of renewable electricity in production by state and territory, and nationally on a monthly basis.
* The Clean Energy Regulator to continue to collect information beyond 2020 on small and large-scale renewable energy systems. In addition, the Clean Energy Regulator to collect and report information on the uptake of energy storage systems (including batteries).
* The Australian Government to release quarterly emissions reporting on set dates, rather than as determined by the political process.
* Field measurement of baseline and fugitive emissions from the coal, gas and oil supply chains to accurately record emissions from all onshore and offshore fossil fuel infrastructure.
* Regular reporting on the emissions intensity of Australia’s transport sector, particularly the average greenhouse gas emissions per kilometre from the vehicle fleet, with comparisons to international standards and best practice. Domestic aviation emissions to be included in the reporting.
* The Australian Government to release detailed modelling to show how Australia will meet its stated emissions reduction targets for 2030 and long term targets with sufficient detail at the program or project level, and regular (quarterly) updates on progress. This should include reporting on progress against and emissions saved by key measures such as the Emissions Reduction Fund, the Renewable Energy Target, and the energy productivity target (including transport emission reduction measures).

Noting the important role for continued funding of key government funded agencies and research in collecting and interpreting this data, particularly the CSIRO, Bureau of Meteorology, and Australian universities and research institutions.

**Recommendation 9:** Continued Federal Government funding of CSIRO and other relevant institutions with a focus on research, policy and planning into all aspects of the climate change challenge, including the science of the climate system, methods to reduce emissions, and approaches for adapting to current and inevitable levels of climate disruption.

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