

What should the Intergenerational Report 2015 say about climate change?

March 2015

Summary

The purpose of the Intergenerational Report is to assess the sustainability of current government policies over a long-term timeframe (40 years). Treasurer Joe Hockey agreed in December 2013 that all future Intergenerational Reports would include a dedicated section on the environment and climate change, “and the effect of these policies and their impact on the Australian economy and Commonwealth Budget”.¹

No long-term analysis of federal policy can credibly ignore climate change, given that its effects are already being felt, and will worsen over coming decades.

Climate change will have a material impact on Australia’s fiscal sustainability, economic growth, and standard of living. For example, Australia’s ability to take advantage of growing markets for agricultural produce is dependent on keeping climate change to a minimum and investing significantly in adaptation.

Leading global financial institutions and businesses recognise that achieving economic decarbonisation, or net zero* emissions, is pivotal to achieving the internationally agreed goal to avoid 2°C warming above pre-industrial levels (‘2°C goal’).

The Intergenerational Report should contain:

1. Projections of Australian emissions to 2055 under legislated policy and policies in development.
2. A carbon budget and emission pathway to net zero emissions consistent with a fair Australian contribution to the global 2°C goal.
3. A range of estimates of the social cost of carbon, developed through a transparent and scientifically rigorous consultative process, in order to define the benefits of emission reduction policies.
4. Estimates of the impacts and costs to Australia of climate change scenarios including:
 - achievement of the global 2°C goal
 - the most likely climate change implied by the current trajectory of global emissions (warming of 4°C or more)
 - less likely but catastrophic climate change (e.g. severe impacts with 5 per cent probability).

5. Evaluation of risks of financial system contagion from asset stranding and climate-related impacts, particularly regarding core assets such as superannuation and housing.

Climate change in the Intergenerational Report

Both major political parties have agreed that it is in Australia’s national interest to achieve the internationally agreed goal of avoiding warming of 2°C. To contribute to this, federal climate policies should drive a significant reorientation of the Australian economy from a high- to a low-carbon (and eventually net zero-carbon) basis. The OECD, World Bank and latest IPCC report have warned that avoiding irreversible and severe climate change impacts will require the global economy to be decarbonised before the end of the century.³⁻⁵ This requires energy systems, particularly electricity, to decarbonise well before then.⁵⁻⁶

Fiscal considerations of climate change include the Commonwealth’s role as insurer-of-last-resort against intensifying extreme weather events, funding of large-scale adaptation to growing climate impacts in key sectors, management of the international and domestic transition to a zero-emission economy, and revenue implications of declining demand for high-carbon exports such as thermal coal.

The fiscal impacts of policies that rely on publicly funded emissions reductions should also be considered. The fiscal impact to the budget from repealing revenue from the carbon price is estimated at \$18 billion by 2020. Establishing the taxpayer-funded Emission Reduction Fund (ERF) costs at least another \$2.5 billion, with higher costs expected if the ERF is to achieve Australia’s minimum emission target of 5 per cent below 2000 levels by 2020 (see Figure 1, next page).⁷ With Australia’s post-2020 emission target to be decided this year, the long-term budgetary implications of the government’s climate policies need to be made transparent.

Intergenerational Reports should disclose how current climate policies will affect Australia out to 2055. At the moment this is complicated by uncertainty around the government’s climate and energy policy framework. But the Intergenerational Report should, at a minimum, contain:

* Achieving net zero emissions requires any emissions to be fully offset. This may be done through use of carbon sinks and trading.

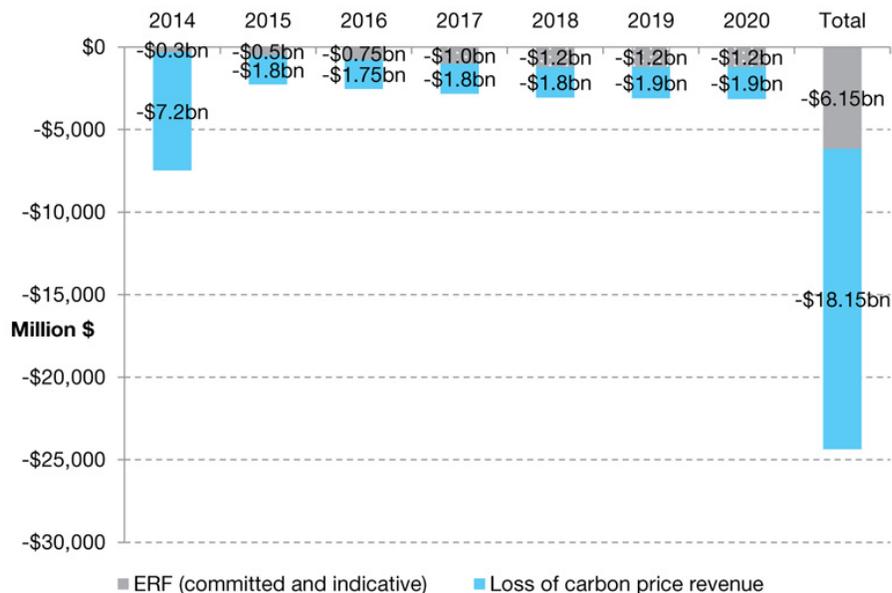


Figure 1. Impact of the carbon price repeal and Emission Reduction Fund on the Commonwealth Budget. Loss of carbon price revenue is based on forward market contracts for EU carbon permits for the period from 2015.

1. Projections of Australian emissions to 2055, under legislated policy and policies in development; and

2. A carbon budget and emission pathway to net zero emissions consistent with a fair Australian contribution to the global goal of avoiding 2°C.

The Climate Institute estimates that a fair emission pathway for Australia requires a 40 per cent decline in emissions by 2025, and net zero emissions by 2050. This is based on a national carbon budget of no more than 8.4 billion tonnes of greenhouse gases to be emitted from 2013 to 2050.⁸ The gap between projected emissions and the 2°C goal indicates the emission reduction task that Australia’s economy and society will face in the future.

3. A range of estimates of the social cost of carbon, developed through a transparent and scientifically rigorous consultative process, in order to define the benefits of emission reduction policies.

The social cost of carbon is a calculation of the economic damage caused by each additional tonne of emissions. It signals what society should be willing to pay now to avoid future damages caused by rising emissions. The United States estimates the nation’s social cost of carbon in 2015 at US\$39 (A\$50) per tonne.⁹

Policies set by the Australian government may have significant emission impacts. For example, transport infrastructure funding can lock in emission-intensive activity for decades. To avoid such lock-in, policy design and evaluation should explicitly account for the costs of carbon pollution and the benefits of emission reduction resulting from the policy.

This can be done either through use of the social cost of carbon or of the “carbon value” derived from achievement of a 2°C-consistent long-term emission goal.

Incorporating one of these methods into policy appraisal avoids implicitly assigning a zero value to emission reductions, removing a significant distortion common in Australian policy analysis.

4. Estimates of the impacts and costs to Australia of climate change scenarios including:

- + Achievement of the global 2°C goal;
- + The most likely climate change implied by the current trajectory of global emissions (warming of 4°C or more); and
- + Less likely but catastrophic climate change (e.g. severe impacts with 5 per cent probability).

To date, government responses to emerging climate risks have been fragmented and tended rely on historical data that is decreasing irrelevant and unreliable. There is an urgent need to identify and address gaps in adaptation policy and practice to minimise the impacts of warming that is already occurring.

The most recent projections from CSIRO warn of impacts that include longer and more severe droughts, increased fire weather and faster sea level rise. Average Australian temperatures will rise by up to 5°C if global greenhouse emissions are not significantly constrained.¹⁰

Assessing climate risks for different emission pathways is particularly important for policy and planning decisions with long time horizons. These include investments in major infrastructure assets, emergency services, and the defence force.

Intergenerational Reports can support climate risk management by identifying and reporting on the climate risks of probable and plausible scenarios. This could build on past work that examined the sectoral impacts of alternative climate futures¹¹ and similar work by the World Bank¹² and Intergovernmental Panel on Climate Change.

5. Evaluation of risks of financial system contagion from asset stranding and climate-related impacts, particularly regarding core assets such as superannuation and housing.

“Stranded assets” are assets rendered prematurely uneconomic due to major changes in market, policy or

physical conditions. High-carbon assets (eg. coal mining infrastructure) are vulnerable to substantial devaluation in a world moving to limit emissions, while assets exposed to potential climate impacts (eg. coastal property) could be devalued due to damage or loss of insurance cover.

Many Australians' superannuation and property are exposed to one or more of these risks. The linkages between these assets and the broader financial system also present wider systemic risks to economic activity. Currently these risks are not transparent to governments, regulators, companies or individuals.

Overseas regulators and central banks are beginning to look at these risks. The Bank of England has just released a discussion paper examining risks to the financial system from climate change, climate policy or rapid developments in alternative technology.¹³ Regulators in the US and China have set guidelines and reporting requirements and are considering making them mandatory.¹⁴ Australia's Reserve Bank and its other financial regulators have been largely silent, while ASX guidelines on sustainability expected to come into force on 1 July will only require voluntary compliance and do not specify climate risk.

ENDNOTES

¹ Letter from Treasurer Joe Hockey to Christine Milne, Leader of The Greens.

<http://resources.news.com.au/files/2013/12/04/1226775/309859-aus-news-file-hockey-letter.pdf>

² OECD, 2013. *Climate and Carbon: Aligning prices and policies*. OECD Environment policy paper 1. DOI: [10.1787/23097841](https://doi.org/10.1787/23097841)

³ Jim Yong Kim, 2014. "Sending a Signal from Paris: Transforming the Economy to Achieve Zero Net Emissions." Speech by World Bank Group President Jim Yong Kim, 8 December 2014, Washington, DC.

<http://www.worldbank.org/en/news/speech/2014/12/08/transforming-the-economy-to-achieve-zero-net-emissions>

⁴ Intergovernmental Panel on Climate Change, 2014. *Climate Change 2014: Synthesis Report*. Fifth Assessment Report.

<http://www.ipcc.ch/report/ar5/>

⁵ International Energy Agency, 2014. *Energy Technology Perspectives 2014*. IEA, Paris.

⁶ Intergovernmental Panel on Climate Change, 2014. Fifth Assessment Report.

⁷ The Climate Institute, 2014. *Fiscal impact of Emission Reduction Fund and carbon laws repeal*. Policy brief.

http://climateinstitute.org.au/verve/_resources/PolicyBrief_ERFCarbon_Revenue_loss_BudgetImpact.pdf

⁸ Carbon budget based on a 75 per cent chance of avoiding 2°C. The Climate Change Authority has recommended a national carbon budget of 10 billion tonnes CO₂-e between 2013 and 2050, based on a 67 per cent chance of avoiding 2°C. The Climate Institute, 2015. *Australia's Post-2020 Emission Challenge: Our role in the international cycle of growing ambition*.

<http://www.climateinstitute.org.au/articles/publications/australias-post-2020-emissions-challenge.html/section/478>

⁹ Interagency Working Group on Social Cost of Carbon, 2013. *Technical Update of the Social Cost of Carbon for Regulatory Impact Analysis*. United States Government.

<http://www.whitehouse.gov/sites/default/files/omb/assets/inforeg/technical-update-social-cost-of-carbon-for-regulator-impact-analysis.pdf>

¹⁰ CSIRO, 2015. *Climate Change in Australia. Projections for NRM Regions: Technical Report*.

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¹¹ G. Pearman, 2009, *Risk in Australia under alternative emissions futures*, Report prepared by Graeme Pearman Consulting Pty Ltd for the Australian Government Department of Treasury:

http://archive.treasury.gov.au/lowpollutionfuture/consultants_report/downloads/Risk_in_Australia_under_alternative_emissions_futures.pdf

¹² World Bank, 2012. *Turn down the heat, Why a 4°C warmer world must be avoided*, A report for the World Bank by the Potsdam Institute for Climate Impact Research and Climate Analytics. <https://openknowledge.worldbank.org/handle/10986/11860>

¹³ Bank of England, 2015. *One Bank Research Agenda*. Discussion paper.

<http://www.bankofengland.co.uk/research/Documents/onebank/discussion.pdf>

¹⁴ United Nations Environment Program, 2014. *Aligning the Financial System with Sustainable Development: Insights from Practice*.

http://www.unep.org/inquiry/Portals/50215/Documents/Inquiry_Summary2_Insights_v3.pdf