

A long, straight gravel road stretches from the foreground into the distance, vanishing at the horizon. The road is flanked by a flat, arid landscape with sparse, dry vegetation. The sky is filled with scattered, light-colored clouds, and the overall tone is a mix of earthy browns and blues.

The Climate Institute

Australia's Post-2020 Emission Challenge:
Our role in the international cycle of growing ambition

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Policy Brief

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Michael Hall, Creative Fellow
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Summary

Much of the recent climate policy debate in Australia has been framed around our 2020 emissions reduction and renewable energy goals. While these goals remain a credibility test of Australia's climate action, they are insufficient for stable economic policy, and are being overtaken by international policy developments and investment realities.

It is becoming clear that the United Nations Framework Convention on Climate Change (UNFCCC) meeting in Paris in December 2015 will likely conclude with a post-2020 framework of increasing emissions reduction commitments. Countries are likely to attach their new post-2020 commitments to the international agreement made at this time. It won't be perfect and neither action nor ambition will end there. Country contributions will be continually reviewed and scrutinised. The new framework will likely also enshrine an ongoing cycle which includes countries increasing their emissions reductions contributions over time.

Major emitters such as the United States and China have stated that they will advance indicative post-2020 targets by early 2015. Europe has already indicated a 2030 target of at least 40 per cent below 1990 levels. Australia is yet to state when it will advance our contribution. At the September UN Climate Summit in New York, the Australian government merely stated that it would "consider its post 2020 target as part of the review we will conduct in 2015 on Australia's international targets and settings", in light of the action of other major trading partners.

Much of the international discussion in the next year will focus on the extent to which new post 2020 emission reduction targets align with the internationally agreed goal of avoiding a 2°C increase in global temperature above pre-industrial

levels. The International Monetary Fund, World Bank, OECD, and the latest IPCC report note the need for decarbonisation of the global economy in the second half of the century.

As a country very exposed to climate change, it is in Australia's national interest for short-term collective action to be consistent with this long-term objective. Warming above this level would have severe impacts on the natural systems on which we depend, significantly increase risks to health from more extreme climate events, and exceed the adaptive capacity of many key economic sectors. Other countries are assessing their national interest in developing their contributions; in many cases this extends beyond just focusing on the impact of policy on particular emission intensive sectors. For example, China is clearly considering co-benefits of action to reduce emissions such as the health and economic benefits of reducing local air pollution.

Before the next major UN climate negotiations in Lima this December, the Australian government should announce an independent, transparent domestic process to define our initial post-2020 target offer. In line with other major emitters, this offer should be made in early 2015.

To achieve the sustained emissions reductions consistent with its national interest, Australia needs its climate policies to be based on a sound foundation of evidence rather than a political agenda or particular business interests. The independent Climate Change Authority has previously recommended that Australia reduce emissions by 40-60 per cent below 2000 levels in 2030, which suggests 30-40 per cent reductions in 2025.

Australia's initial post-2020 target offer should deliver clarity in three key areas:

1. **Is the target consistent with avoiding 2°C warming?** The international community, including Australia, has agreed to a global collective goal to limit global warming to less than 2°C above pre-industrial levels. Our commitments need to be clearly articulated as a fair contribution towards this global effort. This should include long-term signals for the decarbonisation of the national economy.
2. **Is the target internationally transparent?** Countries have a tendency to define commitments in terms that suit their own interests. Clarity of information on the nature of the target is important to build trust, ensure third parties can verify national claims, and allow for the collective efforts of all countries to be assessed against the task of avoiding 2°C.
3. **Does the target balance long-term objectives with short-term commitments?** In selecting its targets and longer-term goals, Australia needs to balance short-term accountability, the flexibility to respond to scientific and technical change, and longer-term boundaries that allow investment decisions to be made in expectation of reasonable policy stability. This can be achieved through basing targets on a 2013-2050 emission limit, or carbon budget, that makes a fair contribution to the 2°C goal.

The Climate Institute has calculated that, to keep within a carbon budget that gives a high chance of avoiding 2°C, Australia should:

- **Make a minimum and clear economy-wide commitment to limit emissions to around 40 per cent below 2000 levels by 2025:** This is broadly consistent with the emission pathway previously recommended by the Climate Change Authority that was based on a carbon budget that gives a likely chance of avoiding 2°C.
- **Lay out an indicative emission pathway to 2035:** To help businesses make stable investment decisions, the government should define a broad emission trajectory to 2035 of 65-75 per cent reductions on 2000 levels.

- **Make a clear commitment to a date when Australia's economy will be decarbonised:** Beyond providing long-term direction to climate policy and investment decisions, decarbonisation goals –the point at which the economy achieves zero net emissions - are gaining support as a way of better communicating the ultimate objectives of climate policy. Australia's decarbonisation goal should be to achieve a net zero-emissions economy between 2040 and 2050. This goal should be backed by information on the domestic policies and targets Australia will implement to meet these goals. (For example, Australia included its Renewable Energy Target as part of its bipartisan backed commitments under the Majuro Declaration for Climate Leadership.)

Discussion around Australia's post-2020 emission targets is an opportunity to look beyond short-term politics and examine the ultimate objectives of our national climate change policy. At its heart, this conversation needs to define what is in Australia's long-term national interest of a climate resilient society, and economy prospering in a decarbonising global economy. By just focusing on 2020, the recent political debate has ignored growing scientific and international realities. These include the effects of climate change itself, but also developments in clean energy technologies and overseas emission reduction efforts.

A potentially greater risk is that the government defines Australia's emission targets based on a narrow set of sectorial interests and not the national interest. Addressing any real or imagined competitiveness concerns raised by trade exposed industries is best addressed through the formulation of domestic policy not the weakening of national targets. Other countries have been successful in setting ambitious national emission targets and managing perceived competitiveness issues through well designed domestic policy. There is no reason Australia cannot do the same.

Finally, for policy to remain stable and effective it needs to be relevant not just for the next five years, but for the next 50 years. Failure to deliver this risks institutionalising investment uncertainty, and a much more rapid – and therefore more disruptive - decarbonisation at a later date.

Introduction

It is in Australia's national interest to avoid a 2°C increase in global temperature above pre-industrial levels. Given that we are likely to be more adversely impacted by climate change than other comparable countries (Table 1), Australia has a strong interest in achieving deeper and more rapid reductions in global emissions. Other countries are increasingly recognising the national interest benefits in reducing emissions: lower air pollution health costs, energy security, the economic opportunities in alternative technologies, and the benefits to national security from lower climate change damages.

However, current projections suggest that the actions countries have taken to date would limit warming to around 4°C by 2100.¹ Global warming of this magnitude is projected to produce the following consequences in Australia: significant loss of species, 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 Australian food demand, and major risks to human life from extreme climate events (Table 1).

Under the UNFCCC's Cancun Agreements² and Durban Platform for Enhanced Ambition³, Australia made undertakings to help avoid a 2°C increase in global temperature and to raise short-term emission reduction ambitions. The global collective goal to avoid 2°C has bipartisan political support.

For Australia to encourage other countries to follow through on these commitments requires a credible demonstration of our own willingness to do the same.

Australia is also one of the most carbon intensive advanced economies.⁴ Global action to limit emissions will impact on some of our exports (for

example, coal and gas). Global advances in renewable energy technology are already driving the domestic uptake of new industries while at the same time eroding the revenues of our domestic coal-fired electricity generators.

These trends are now unavoidable and it is in our interest to position our economy for this transition, and take advantage of the economic opportunities it offers.

Looking beyond 2020

Much of the recent climate policy debate in Australia has been framed around our 2020 emissions reductions and renewable energy goals. There is bipartisan support for Australia to reduce emissions unilaterally by 5 per cent on 2000 levels by 2020 and by up to 25 per cent depending on certain agreed conditions.⁵ This commitment to reduce emissions by up to 25 per cent remains enshrined in international agreements including the Kyoto Protocol.⁶ The new government has not sought to alter these commitments above 5 per cent in international agreements such as the Kyoto Protocol.

The independent Climate Change Authority, upon consideration of those conditions, has recommended that Australia should increase its minimum 2020 target to an effective 19 per cent reduction.⁷ This target is the minimum necessary to

put our commitment on a path consistent with limiting global warming to less than 2°C; to make our contribution equivalent to that of other comparable major emitters; and to avoid unnecessary economic disruption from having to accelerate emissions reductions at a later date.

While our 2020 commitments remain a central benchmark against which to assess Australia’s climate change action, international attention is also now focusing on what countries will do after 2020.

It is increasingly clear that a key outcome of the United National Framework Convention on Climate Change (UNFCCC) meeting in Paris in December 2015 will be a post-2020 framework of increasing emission reduction contributions. Countries are expected to attach their post-2020 emission commitments to the 2015 agreement.

These commitments are termed “nationally determined contributions” (NDCs); this paper will hereafter refer to NDCs as “post-2020 targets” (see box: Nationally Determined Contributions).

However, countries will be expected to continue to increase their ambition over time, and their contributions will be continually reviewed and scrutinised internationally.

Countries have already agreed that those able to do so will advance their intended post-2020 targets by April 2015.¹⁰ The EU has announced its initial offer of “at least” a 40 per cent reduction in emissions on 1990 levels by 2030. Other major emitters such as the United States and China have stated they will advance new post 2020 targets even earlier. Table 2 outlines the current status of countries’ preparations for their post-2020 contributions.

Table 1. The projected impacts on Australia of 2°C and 4°C mean temperature rise.^{8,9}

	Natural systems	Water	Coastal	Agriculture	Health	Infrastructure	International security
2 degree world	Significant loss of species, adaptive capacity exceeded	Significant water shortages. Significant adaptation required to ensure that reliable supplies are maintained in major cities. Natural coping capacity exceeded	Loss of some coast developments due to coastal erosion and storm surges (in absence of sea walls)	Reduced 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 threatened by coastal flooding
4 degree world (current pathway)	Massive loss of species (e.g. complete loss of coral reef, wet tropics and alpine ecosystems)	Dangerous water shortages (up to 5 times more frequent droughts in south and west), adaptive capacity exceeded	Massive consequence for coastlines (e.g. 250,000 properties at risk with \$63 billion replacement value), deglaciation of Greenland and long-term commitment to multi-metre sea level rise	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 health 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

Nationally determined contributions (NDCs)

In this paper, the phrase “post-2020 target” is used as short-hand for Australia’s “nationally determined contribution” (the technical term used within the UNFCCC negotiations). The first step in this process is for countries to advance “intended NDCs” well ahead of the Paris meeting at the end of next year.¹¹

What does an intended NDC comprise?

- **Intended:** The target a country puts forward before Paris is their initial negotiating position rather than the final commitment they will take on under the post-2020 framework. These targets will be subject to international scrutiny and political pressure in advance of Paris, and before they are finally attached to the new agreement. This is the explicit intention of the United States and others who have pushed for the early communication of possible contributions to improve comparability, encourage ambition, and ensure that when final NDCs are attached to the post-2020 framework all countries clearly understand what they mean.

- **Nationally determined:** Countries have the flexibility to choose how they define the terms of their target. Countries have been asked to start work on developing their targets in 2014. To date the Australian government has not announced a process for determining its post-2020 target.

- **Contribution:** This word is designed to avoid pre-judging the legal nature of post-2020 commitments or the scope of the contribution (to allow it, for example, to include commitments to help vulnerable developing countries adapt to the growing impacts of climate change).

The legal nature of a country’s international commitment is less important than the action it takes domestically to meet its commitment. For example, Australia has agreed a legally binding emission reduction commitment under the Kyoto Protocol covering the period from 2013-2020. The US, on the other hand, has a voluntary international commitment to 2020 under the Copenhagen Accord and Cancun Agreements. The US target is more ambitious than Australia’s, and the US is implementing more stringent domestic policies to achieve it.¹²

Table 2. Status of national processes to define post-2020 emission reduction targets. National 2050 targets are included as they are likely to provide reference points for countries' post-2020 emission goals. Information current as of September 2014.

	Current post-2020 targets	Headline domestic policies	National post-2020 processes	Indicative timeline for advancing post-2020 target ahead of Paris
Comparable economies to Australia				
Canada	<i>(No target beyond current 2020 target)</i>	<ul style="list-style-type: none"> Regulations on new and existing power stations, and emission standards for vehicles Regional carbon pricing and state-based renewable energy targets 	No public process yet announced	Unclear
EU	80-95 per cent reductions on 1990 by 2050	<ul style="list-style-type: none"> EU wide emissions trading and national carbon taxes Regulations to limit emissions from transport Renewable energy and energy efficiency goals 	In final stages of development	At least 40% reductions on 1990 levels by 2030
Japan	80 per cent reductions on 1990 by 2050	<ul style="list-style-type: none"> Renewable energy targets and incentives Energy efficiency standards for vehicles and appliances Carbon tax, regional emissions trading and international carbon offset scheme 	No public process yet announced	Uncertain, but possible Q1 or Q2 2015
New Zealand	50 per cent reductions on 1990 by 2050	<ul style="list-style-type: none"> Emissions trading scheme 	In development	Likely Q1 or Q2 2015
Norway	100 per cent reductions on 1990 levels (carbon neutrality)	<ul style="list-style-type: none"> Carbon tax and part of EU emissions trading Regulations on new power stations and emission standards for vehicles 	In development	Likely Q1 2015
USA	83 per cent reductions on 2005 by 2050	<ul style="list-style-type: none"> Regulations to limit emissions from transport, power sector and other major emission sources Regional carbon pricing and state-based renewable energy targets 	In development - Interagency working group established	Likely Q1 2015
Emerging economies				
Brazil	<i>(No target beyond current 2020 target)</i>	<ul style="list-style-type: none"> Deforestation reduction policies Renewable energy targets Regional emissions trading schemes under development 	In development	Unclear
China	<i>(No target beyond current 2020 target. The Government has signalled with will seek to peak national emissions as soon as possible.)</i>	<ul style="list-style-type: none"> Regional emissions trading (national from around 2016) Regulations on new and existing power stations, and emission standards for vehicles Energy and renewable energy targets Afforestation targets 	In development - National Development and Reform Commission lead agency	Likely Q1 2015 (or soon after)
India	<i>(No target beyond current 2020 target)</i>	<ul style="list-style-type: none"> Renewable energy targets Levy on coal imports to fund renewable energy Energy efficiency targets and trading scheme on industrial sectors 	No public process yet announced	Unclear
Indonesia	<i>(No target beyond current 2020 target)</i>	<ul style="list-style-type: none"> Deforestation reduction policies Renewable energy targets 	Preparations are underway	Unclear
Mexico	50 per cent reductions on 2000 levels by 2050	<ul style="list-style-type: none"> Renewable energy targets Carbon tax (emissions trading under development) Emission standards for vehicles 	Longer-term targets established in domestic legislation	Likely 2015
South Africa	Peak emissions from 2025, plateau for 10 years, and decline thereafter	<ul style="list-style-type: none"> Renewable energy targets Carbon tax (from 2016) Emission standards for new power stations 	In development – Domestic climate change white paper process	Unclear
South Korea	<i>(No target beyond current 2020 target)</i>	<ul style="list-style-type: none"> Renewable energy targets Emissions trading (from 2015) Emission standards for vehicles 	In development	Possible Q3 2015

A Cycle of Growing Ambition

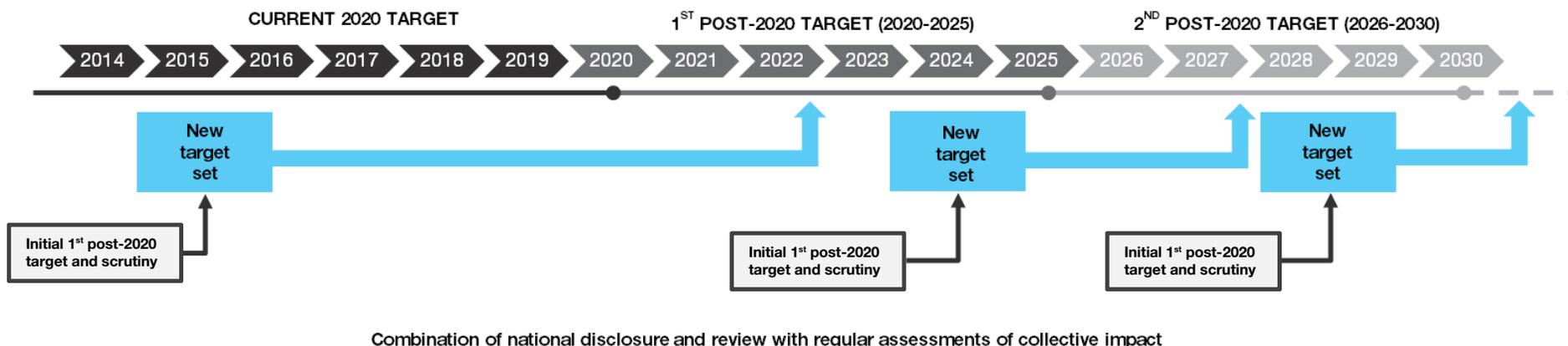
It is important to appreciate the emerging view international of how the new international framework will encourage ambition through time.

A recent discussion paper from the chairs of the UNFCCC process proposed a post-2020 framework based ever-increasing ambition, biennial reporting of emissions and domestic actions, and regular assessments of collected efforts against global goals. Figure 1 is an illustrative scenario that reflects the broad trajectory of the current discussions.

It illustrates a few key points:

1. **Emissions reductions will get stronger through time:** Except in exceptional circumstances, each new commitment period contribution will be expected to be stronger than the previous one.
2. **Reviews of the scientific evidence will be more aligned with international decision-making:** The scientific reviews, within the UNFCCC and under the Intergovernmental Panel on Climate Change (IPCC), of collective global action and progress will contribute to ongoing pressure to increase ambition through time.
3. **Transparency around countries' emissions and actions underpins progress:** The transparency of national actions builds trust, enhances accountability, allows for the sharing of best practice, and helps encourage more ambitious action.¹³ Disclosure requirements are likely to focus not only on reported emissions but also on the policies that countries are implementing to achieve their contributions.

Figure 1. An indicative international process to set targets in the post-2020 framework. Note that countries would be expected to advance their targets well before the targets are finally attached to the international framework. This is to enhance transparency and ensure international peer pressure can be applied to increase ambition.



Biennial cycle of reporting emissions, policies and projections + technical review + international assessment of national emissions and policies

National targets and policies will face ongoing scrutiny under international transparency arrangements. Intergovernmental Panel on Climate Change reports may also be aligned to feed into regular reviews of collective actions against collective global goals (e.g. avoiding 2°C)

IPCC report

Periodic review collective action against global goal

IPCC report

Periodic review collective action against global goal

High Level Framework for Australia's Post-2020 Target

The Australian government has stated it will review our international emissions targets in 2015, but has not stated when it will advance a new post-2020 target.¹⁴ The Government has asked the Climate Change Authority to undertake a Special Review of Australia's post-2020 targets and deliver a draft report by June 30, 2015.

To achieve the sustained and credible emissions reductions consistent with its national interest, Australia needs its climate policies to be based on a sound foundation of evidence rather than a political agenda or particular business interests.

Australia's track record of highly politicised approaches to climate policy has produced policies that have often been inefficient and continually readjusted, which in turn has resulted in significant business uncertainty, higher costs associated with investments and inadequate emissions reductions.

In advance of the next major UN climate summit in Lima in December, the government should announce an independent and transparent domestic process to define our initial post-2020 target. This work can be supported by the Special Review of the Climate Change Authority.

Other considerations for Australia's post-2020 target

Australia's existing obligations under the Kyoto Protocol define the broad parameters of the nation's post-2020 target. It is assumed Australia will not backslide on these benchmarks. They include:

- **Economy-wide:** Like other advanced economies there is an expectation that Australia's post-2020 target will cover the entire economy. This is important from the point of view of the environmental integrity of any target, but also because it allows the government to manage risks of emission increases in one part of the economy by reducing emissions in another.
- **Carbon budget based:** Since the development of the Kyoto Protocol, Australia has argued for targets that give countries some flexibility in meeting goals while at the same time maintaining their environmental integrity. Our current commitments under the Kyoto Protocol do this by placing a limit on emissions over a specified period of time (e.g. 2013-2020 under our current target). These types of target allow countries to better manage their emissions by allowing unexpectedly high emissions in one year to be offset by lower emissions in another.
- **Unconditional:** Australia's initial offer to be advanced before Paris may in part be dependent on certain assumptions around accounting rules that are yet to be fully agreed. However, when attached to the new post-2020 agreement Australia's final minimum post-2020 target will be expected to be unconditional on the actions of other countries. If targets are conditional this will erode confidence among countries that others will act and reduce the ambition that they are prepared to take to reduce emissions.

In line with international expectations¹⁵, the target should fulfil two key requirements:

1. **Is it consistent with avoiding dangerous climate change (the objective of the UNFCCC)?** Since the agreement of the UNFCCC the international community, including Australia, have clarified the global collective goal to be to limit global warming to less than 2°C above pre-industrial levels.¹⁶ This is currently under international review with a focus on the global goal being strengthened to 1.5°C.

2. **Is the information provided clear enough for other countries to understand what is actually being committed to?** Countries have a tendency to communicate information in terms that suit their own interests. Clarity of information is important to build trust between countries, ensure third parties can verify country claims, and allow for the collective effort of all countries to be aggregated to define whether proposed targets are consistent with avoiding 2°C.

The economic impacts of climate policy

In discussions around Australia's post-2020 targets it is inevitable that the economic impacts of proposed targets will emerge in the public conversation. Australia has a long history of using economic modelling to assess the economic impacts of efforts to reduce emissions. The central conclusion of all of this analysis is that significant emissions reductions by Australia can be achieved with ongoing economic growth.

Figure 2 shows projections of domestic economic growth and emission reductions under various emission reduction scenarios calculated since 2006. Table 3 summarises the 2025 and 2050 outcomes for the various modelling approaches. Each of these assumes varying levels of international global effort. An important caveat here is that these modelling exercises assume the governments sets clear long-term investment signals for the economy and business to respond too. Delay in credible and stable policy will increase the risk of high economic costs, and disruptive impacts on high emission sectors through the stranding of emission intensive assets.

Figure 2. Increasing Australian GDP while reducing emissions. Australian economic modelling results published since 2006. The range of modelled emission reductions is also illustrated. See Table 3 for data source

Assessing benefits as well as costs

None of these analyses account for the benefits of reducing climate change damages. Applying very conservative estimates of the benefits of reducing emissions, such as those used by the United States government¹⁷ and the International Monetary Fund¹⁸, indicates that substantial emission reductions would deliver multi-trillion dollar health, environmental and economic benefits over the long term (conservatively NPV \$1-3.5 trillion).

That said, it is essential to recognise that these estimates only account for some climate damages, and they exclude impacts that are difficult to quantify. For example, they do not include damages associated with increased severity of bushfire weather, agricultural losses through drought and extreme weather events, the loss of the Great Barrier Reef, or the regional or global disruption of traded commodities, all of which are material to Australian prosperity (see Table 1).

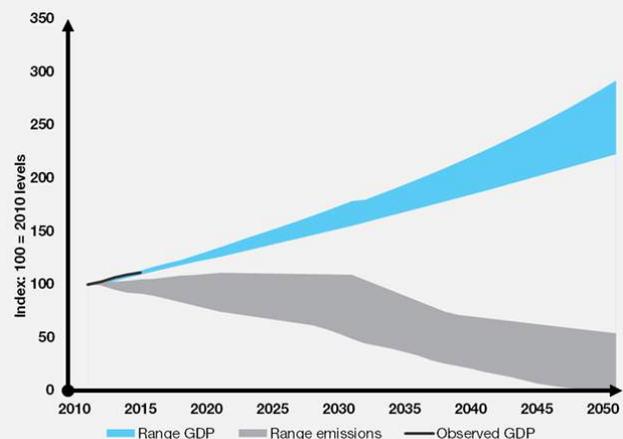


Table 3. Summary of 2025 and 2050 economic modelling on the impacts of carbon policy.

	Indexed % change in GDP (on 2010 levels)		Indexed % change in emissions (on 2010 levels)		Notes
	2025	2050	2025	2050	
ABARE 2006*	46	122	10	-50	Domestic action and carbon dioxide emissions only. Assumes Australia undertakes significantly more action than other nations. Note ABARE undertook other scenarios but this one is the most extreme.
Allens Consulting 2006†	48	132	-20	-63	Domestic action only.
The Climate Institute 2007§	59 to 62	186 to 192	-9 to -18	-46 to -100	Different scenarios assume Australia leads, follows or free rides on global action. International permit trade allowed based on global estimates of carbon prices consistent with 450 ppm-e global emission scenarios.
Treasury 2008‡	48 to 53	137 to 147	-9 to -19	-57 to -73	International permit trade allowed based on global estimates of carbon prices consistent with 450 and 550 ppm-e global emission scenarios.
Treasury 2011#	57 to 58	170 to 171	-21 to -37	-81	International permit trade allowed based on global estimates of carbon prices consistent with 450 and 550 ppm-e global emission scenarios.
Climate Change Authority 2014**	62 to 64	N/A	-18 to -35	-80	International permit trade allowed based on global estimates of carbon prices consistent with 450 and 550 ppm-e global emission scenarios. CCA do not present results post 2030.
ClimateWorks, ANU, CSIRO 2014††	53	154	-32	-100	Domestic action only. Consistent with a domestic carbon budget in line a 67 per cent chance of avoiding 2°C.

* H. Ahammad, A. Matysek, B. Fisher, et al. (2006), *Economic Impact of Climate Change Policy: The Role of Technology and Economic Instruments*, ABARE Research Report 06.7, Canberra.

† Allen Consulting Group (2006), *Deep Cuts in Greenhouse Gas Emissions, Economic, Social and Environmental Impacts for Australia*, Allen Consulting Group, Melbourne.

§ S. Hatfield-Dodds, E. Jackson, P. Adams, et al. (2007), *Leader, follower or free rider? The economic impacts of different Australian emission targets*, The Climate Institute, Sydney.

‡ Treasury (2008), *Australia's Low Pollution Future: The Economics of Climate Change Mitigation*, Government of Australia, Canberra.

Treasury (2011), *Strong growth low pollution: modelling a carbon price*, Government of Australia, Canberra.

** Climate Change Authority (2014a), *op cit*.

†† A. Denis, F. Jotzo, S. Ferraro, et al. (2014), *Pathways to deep decarbonisation in 2050, How Australia can prosper in a low carbon world*, ClimateWorks, Melbourne.

An Australian Commitment Consistent with Avoiding 2°C

As outlined above, a key test of Australia's post-2020 emission target will be whether it is consistent with the global goal of limiting temperature increase to less than 2°C above pre-industrial levels.

Three pieces of information are required to determine whether Australia's post-2020 contribution is consistent with avoiding a 2°C increase in temperature:

1. Judgements as to Australia's fair share of global action;
2. Time frames based on which targets are defined; and
3. Magnitude of any proposed targets.

Judgements of Australia's fair share

Australia currently makes no reference to the 2°C goal in the parameters it will consider when reviewing our international targets in 2015. However, in justifying its target to the international community, Australia will need to make a convincing case for the fairness of its contribution to avoiding dangerous climate change. Pulling our own weight—and being seen to do so—is fundamental to Australia's influence in international negotiations, and to our national interest in increasing the ambition of other countries' efforts to reduce emissions.

Assessing targets against the 2°C goal also helps avoid the dynamic that has plagued the advancement of targets to date. With no reference to a collective goal, countries will continue to justify their targets based solely on the metrics that suit them. For example, Australia continues to explain its minimum 5 per cent emission reduction target by 2020 on the basis that it represents significant

effort, since the projected expansion of our domestic coal and gas industries is likely to result in significant

increases in emissions. By other metrics, such as emissions per capita, Australia's 5 per cent target is noticeably weaker than other comparable countries. For example, based on an assessment of a range of criteria, the Climate Change Authority concluded, "Australia's 5 per cent target is weaker than that of many comparable countries".¹⁹

Defining a fair carbon budget for Australia

To operationalise and define a fair contribution to limiting climate change, The Climate Institute²⁰ and the Climate Change Authority²¹ calculated national carbon budgets to 2050. These carbon budgets define the total amount of emissions to the atmosphere based on different approaches to defining equitable contributions to avoiding certain levels of climate change. They are also used to guide shorter-term emission targets and pathways (Figure 3).

Across most methods of allocating the global carbon budget across countries, analysis indicates that if Australia is to fairly contribute to the 2°C goal total emissions need to be limited to around 8-11 billion tonnes between 2013-2050 (Figure 4). On current emission levels these carbon budgets would be exhausted by 2030-2035.

(If the government decided it was acceptable avoid 3°C increase in global temperature Australia carbon budget would be around 13-17 billion tonnes. This carbon budget would be exhausted by around 2040 on current emission levels and need to immediately fall to zero at this time.)

Figure 3. The Climate Change Authority's approach to carbon budgets and emission targets. The Climate Change Authority's defined national carbon budget is used to guide both the setting of short-term emission targets (e.g. 19 per cent reduction by 2020 in this case) and longer-term emission pathways (40-60 per cent reductions by 2030 in figure). The upper bound 2030 emission pathway of 40 per cent reductions is not consistent with a likely chance of avoiding 2°C. This is more consistent with the government seeking to avoid a 3°C increase in global temperature.

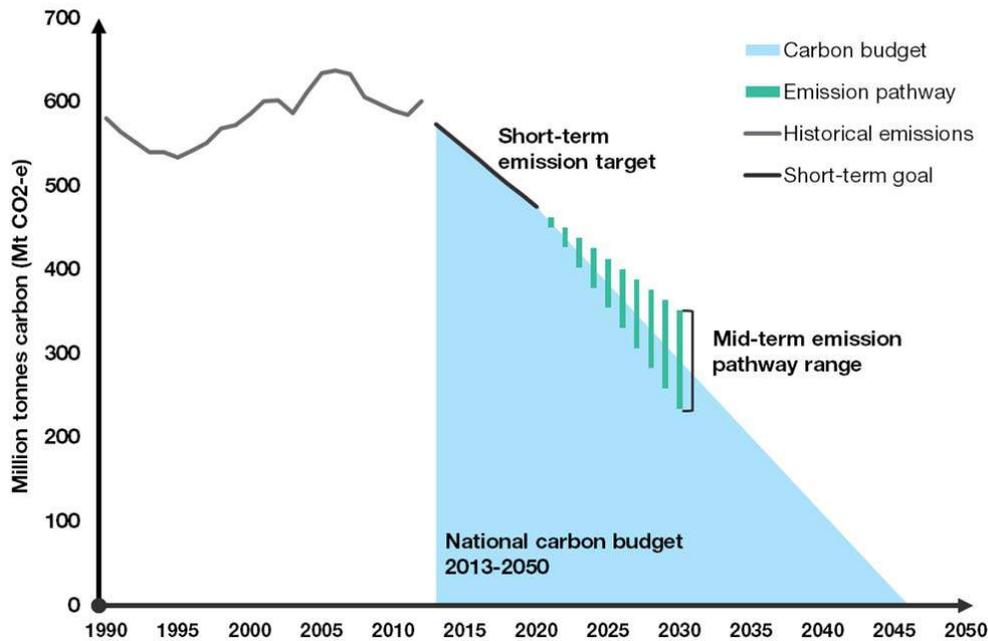
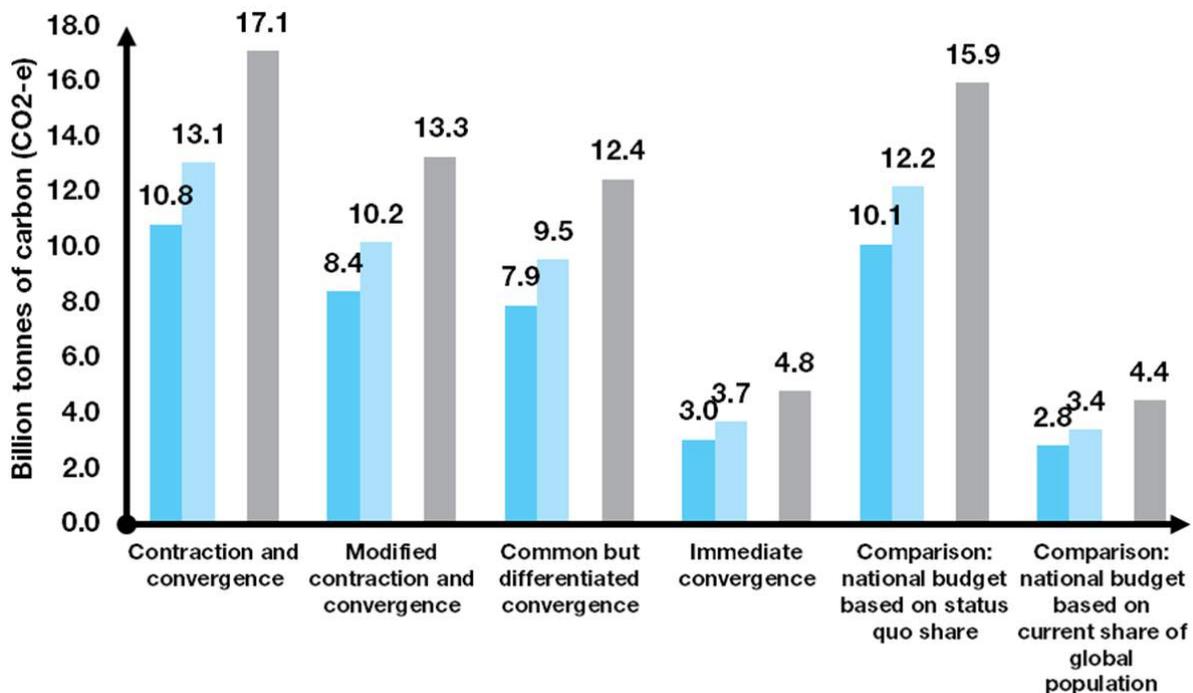


Figure 4. Australia 2013-2050 carbon budgets under different allocation approaches and climate change probabilities.²²



■ 75% chance of avoiding 2 degree C ■ 67% chance of avoiding 2 degree C ■ 67% chance of avoiding 3 degree C

Using time frames and deadlines in defining a target

A coordinated set of targets for Australia can balance short-term accountability, the flexibility to respond to scientific and technical change, and provide longer-term boundaries that allow investment decisions to be made in expectation of reasonable policy stability.

These types of coordinated goals enable short-term actions to be consistent with longer-term considerations, in particular, the national interest in avoiding 2°C. For Australia's post-2020 target a similar approach should be undertaken. Based on a defined 2013-2050 carbon budget consistent with 2°C, the government should advance:

- **A clear minimum commitment to limit emissions over the period 2020-2025.**
- **An indicative emission pathway to 2035:** To provide an indicative forward pathway on which business can factor into investment decisions the government should define a broad emission trajectory to 2035.
- **A clear commitment to a date when Australia economy will be decarbonised:** Beyond providing long-term direction to climate policy and investment decisions, decarbonisation goals – that is the point which the economy proposed zero net emissions -

are gaining support as a way of better communicating the ultimate objectives of climate policy.²³

Decarbonisation goals should be backed by information on the domestic policies and targets Australia will implement to meet these goals. For example, Australia included its Renewable Energy Target as part of its commitments under the Majuro Declaration for Climate Leadership.²⁴

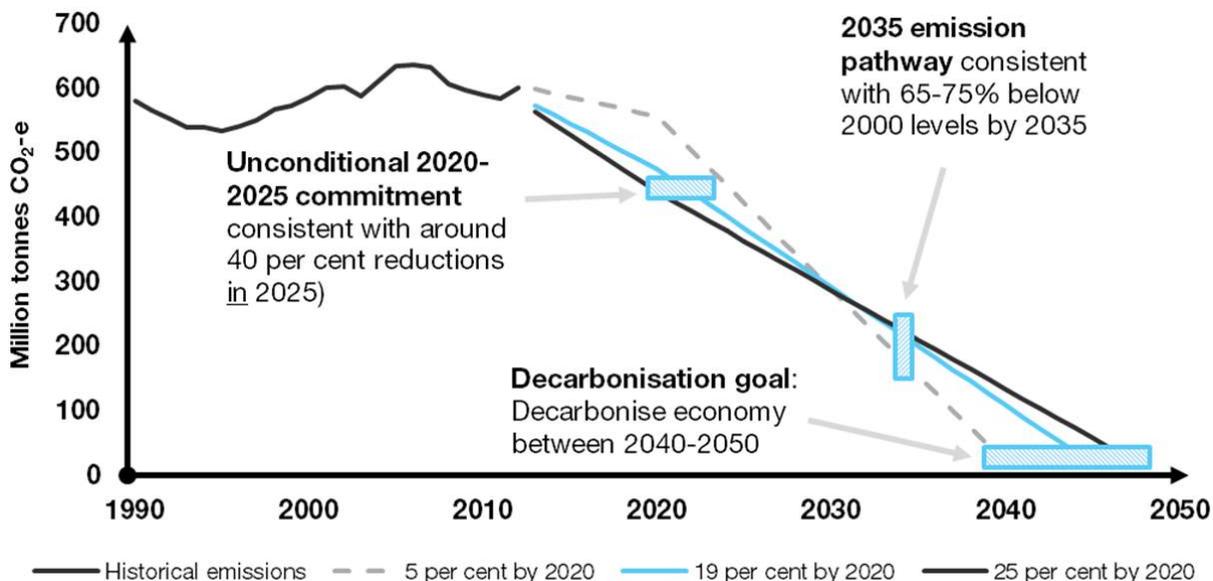
Magnitude of the proposed target

Figure 5 illustrates these coordinated goals and defines the magnitude of reductions based on fair contribution to avoiding a 2°C increase in global temperature. It indicates the scale of emissions reductions goals for Australia should be:²⁵

1. Minimum 2020-2025 commitment consistent with 40 per cent emissions reductions on 2000 levels in 2025
2. An emission pathway consistent with 65-75 per cent below 2000 levels by 2035
3. A goal to decarbonise the economy between 2040-2050

The independent Climate Change Authority has previously recommended that Australia reduce emissions by 40-60 per cent below 2000 levels in 2030, which suggests 30-40 per cent reductions in 2025.²⁶

Figure 5. A coordinated set of emission reduction goals for Australia.



Conclusion

Discussion around Australia's post-2020 emission targets is an opportunity to lift our head above short-term politics and examine the ultimate objective of our national climate change policy. At its heart this conversation needs to define what is in Australia's long-term national interest.

A clear examination of the risks of climate change to our nation highlights that Australia's interest lies squarely in supporting a robust and ambitious international response to climate change. The alternative is a high stakes gamble that other countries, will not increasingly recognising their national interest in pollution and climate action, and their actions will not impact on Australia.

Australia will need to play its fair part in collective action to ensure our economy is prepared for the inevitable and ongoing ratcheting up action through time. This would allow us to maximise the economic opportunities of action through growth in new, clean, innovative and productive industries, while at the same time reducing our economy's dependence on emission-intensive exports like coal. The latter is particularly important as our export markets themselves move away from polluting energy production to address health, energy security and climate change concerns.

Playing our fair part in global action also allows us to advance our national interests in the international process. Obstructionist or limited action weakens our ability to influence the majority of nations that see global action on climate change as in their own national interests.

Clearing defining our national actions and targets in line with avoiding a 2°C increase in global temperature would align with a considered risk management approach to ongoing climate change action.

Some business groups have suggested accepting 3°C (or even 4°C) of global warming in defining our national climate response. If the government were to decide to calibrate its target to a likely chance of avoiding 3°C increase in global temperature, then it would seek to limit emissions to around 30 per cent by 2025 and around 80 per cent reduction by 2050. This illustrates that even if we are prepared to accept large scale impacts of climate change on Australia, then ongoing and sustained emissions reductions are required. There is no free lunch.

Both major parties accept the international goal of working to avoid 2°C warming, but neither has yet admitted that this requires the longer term decarbonisation of the economy. By just focusing on 2020, our recent the political debate has ignored growing scientific and international realities.

This deficit could be addressed with a clear focus on the national interest in avoiding 2°C and advancing a range of targets consistent with this goal as we head into the UNFCCC's Paris meeting next year. Failure to deliver this risks institutionalising uncertainty as the policy will need to reviewed again and again while climate impacts continue to hit home, international targets are strengthen through time, and the world continues to accelerate low carbon investment. Stable and effective policy needs to be developed not for the next five years, but for the next 50 years.

Endnotes

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²⁴ On 5 September 2013, the Leaders of the Pacific Islands Forum adopted the Majuro Declaration for Climate Leadership: <http://www.majurodeclaration.org/>

²⁵ Assuming a straight-line pathway from credible 2020 targets of 19-25 per cent emissions reductions Australia's post-2020 target would be around 40 per cent below 2000 levels in 2025, or 30 per cent below 2000 levels over the period 2021-2025. Global studies indicate that to give a likely chance of avoiding a 2°C temperature increase, as a fair contribution, Australia and other advanced economies should reduce emissions by around 40-50 per cent on 2000 levels by 2025 (data from N. Höhne, M. den Elzen, D. Escalante (2013), 'Regional GHG reduction targets based on effort sharing: a comparison of studies', *Climate Policy*, <http://dx.doi.org/10.1080/14693062.2014.849452>). This is broadly consistent with the emissions pathway recommended by the Climate Change Authority (Climate Change Authority (2014a), *op cit.*) based on a carbon budget with around a 67 per cent chance of avoiding 2°C. Aligning emission reductions with a carbon budget with 75 per cent of avoiding 2°C would require moving to the more ambitious end of the ranges for 2035 and an earlier decarbonisation goal.

²⁶ Climate Change Authority (2014b), *op cit.*