



Investor Group on
Climate Change

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Re: Response to the Climate Change Authority's Caps & Targets Review Issues Paper

Background

IGCC thanks the CCA for the opportunity to submit to this review and recognises the important contribution the CCA is making to deliberations about Australia's low carbon transition.

The IGCC represents Australian institutional investors with approximately \$1tr of funds under management and other members of the investment community. IGCC members are invested across the Australian economy and are part owners of most of Australia's large companies. Members also hold substantial direct investments in infrastructure and property assets in Australia and around the world. As managers of retirement savings and pooled investments we are concerned with the long-term impacts of climate change on the global and Australian economies and future investment returns.

Summary

As a nation with among the highest emissions-to-GDP ratio in the world, Australia's future economic competitiveness in a carbon-constrained world is closely tied to reductions in carbon intensity. To preserve our competitiveness and to make a fair contribution to global efforts, Australia is likely to require deep emissions reductions in the period to 2050. To that end, Australia should set national reduction targets that reflect our fair share of the global effort required under the 'contraction and convergence' approach to limit global temperature increases to two degrees.

We have analysed the extent of emissions reductions necessary for major emitting economies using a contraction and convergence approach and assuming a minus 80% 2050 target for Australia, with the goal of limiting global emissions to 2050 consistent with a 50% probability of limiting warming to two degrees¹. Our analysis shows that Australia has a greater relative abatement task than any country featured in the review, including both developed and emerging industrialised economies.

Despite the global gap between enacted emission reduction policies and policies that would deliver a high probability of limiting global warming to two degrees, it would appear that many developed and emerging economies are on track to adopt more stringent policies over time, potentially keeping that target within reach.

While there is a risk that global emissions will lead to more than two degrees of warming, even allowing for three or four degrees of warming as a basis for target setting would still require deeper emission reductions by Australia than other nations by 2050.

¹ For a higher probability of limiting warming to two degrees or less, a 2050 target for emissions reductions deeper than minus 80% would likely be necessary for Australia.

Australia's current 2020 target of minus 5% below 2000 levels by 2020 places Australia short of the range of relative effort by other major emitters. To inform national budget and target setting beyond 2020, we propose:

- Setting an indicative emissions reduction trajectory from 2013 to 2050 consistent with Australia's share of global effort under the contraction and convergence approach, assuming a global carbon budget that allows a 50% chance of limiting warming to two degrees.
- Further indicative emissions reduction trajectories that reflect Australia's share of abatement for global emissions scenarios that have higher probabilities of limiting warming to two degrees as presented in the CCA's discussion paper.
- Periodic reviews of these trajectories based on the latest climate science, better understanding of the impact of global warming and realised levels of national ambition.

Further in relation to national targets the CCA should:

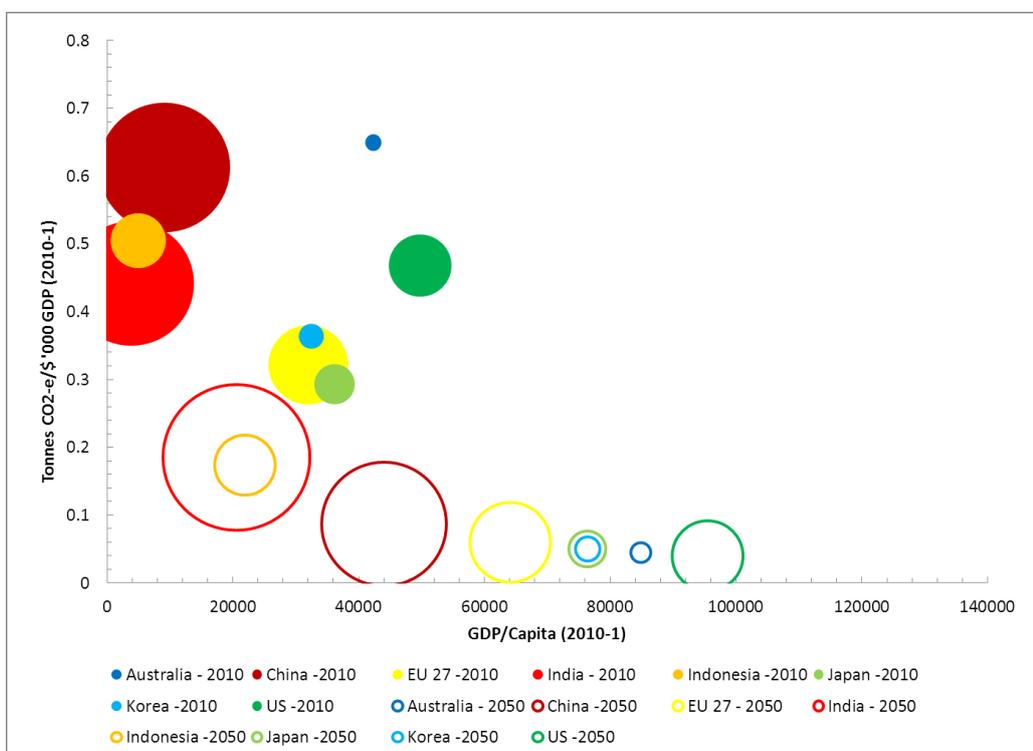
- Recommend a 2020 national target that reduces the gap between Australia's relative abatement task and those of other nations considered in the review. This is likely to require reductions of between 5% and 15% below 2000 levels by 2020.
- Recommend 2030 and later targets once further progress in emissions reductions by other nations can be assessed.
- Discuss the role of global carbon markets and international trade in offsets in meeting Australia's emission reduction goals.

1. Illustrative analysis of Australia's abatement task

The IGCC compared Australia's abatement task with that of other countries by considering (1) the greenhouse gas intensity of the economy in tonnes CO₂-e/\$000 GDP, (2) each nation's capacity to pay for abatement expressed in GDP per capita terms and (3) each country's share of the global carbon budget expressed by total population².

The figure below summarises this illustrative analysis for eight key emitters today³⁴ and in 2050⁵, assuming global emissions in 2050 are capped at today's levels (36 gigatonnes) and that global emissions are distributed on an equal per capita basis (consistent with the contraction and convergence model).

While we recognise that contraction and convergence is one of a number of potential approaches to sharing global emissions and that emissions of 36 gigatonnes in 2050 would represent at best⁶ only a 50% probability of limiting global warming to two degrees, the figure below provides a useful way of comparing the economic challenges facing the major emitting countries.



As shown in the figure above, the current emission intensity of the Australian economy is higher than any other country considered.

² Country population figures based on data from World Banks' Population Estimates, <http://datatopics.worldbank.org/hnp/popestimates>, Sourced 30th May, 2013

³ Information based on data provided in Table 3 in Climate Change Authority "Caps and Targets Review – Issues Paper", April 2013

⁴ The bubble size in the graph is proportional to the country population

⁵ Growth estimates out 2050 are from "World in 2050 - The BRICs and beyond: prospects, challenges and opportunities" PwC, January 2013

⁶ Assuming global emissions remain flat to 2050 at 36 gigatonnes/year, cumulative emissions would be approximately 1440 gigatonnes. The likely increase in global emissions above 2010 levels and post-2050 emissions mean this assumption of 36 gigatonnes in 2050 optimistically results in a 50% probability of remaining within two degree limit.

The table below summarises the 2050 emission reductions required from a 2005 baseline for each of the countries in the sample.

Country	Reduction in absolute emissions	Reduction in emissions per capita	Reduction in emissions per \$ GDP
Australia	81%	86%	95%
China	38%	32%	85%
EU 27	63%	63%	82%
India	-208%	-124%	70%
Indonesia	-84%	-53%	71%
Japan	70%	64%	79%
Korea	70%	68%	85%
US	79%	84%	93%

The table indicates that the allocated emissions for India and Indonesia would increase by 2050, but all other countries would require significant reductions in emission intensity and in absolute reductions for all the developed countries, including Australia. Under this scenario, Australia's 2050 emissions would be broadly consistent with the government's announced 2050 reduction target of 80%.

While it is difficult to assess some countries' progress, it would appear that China, Japan, EU-27, India and possibly Indonesia are on a trajectory to potentially meet the 2050 targets. However, all these countries still have significant reductions and will face further structural economic changes to reach the 2050 targets considered in the scenario.

In this context, the 2020 targets proposed for Australia, and potentially the Republic of Korea and the United States would appear, at best, to be relying on significant reductions after 2020 or are not on a path consistent with meeting the 2050 scenario given above.

Given that Australia lags all other major emitters in terms of its emissions-to-GDP ratio and requires the greatest relative reductions, a risk-reducing approach would see the gap between Australia's abatement task and others nations reduced by 2020.

2. Economic impact of higher 2020 target

One consideration for investors is the potential economic impact of higher emission reduction targets on companies and the Australian economy.

A likely scenario in relation to carbon prices, is that Australian demand for permits in the international market will be not be large enough to effect international prices. If as a result of Australia's demand or international permit supply dynamics, international emission permit prices are effectively independent of the Australia's emission reduction target, then Australia's domestic greenhouse gas emissions will also be independent of Australia's emission reduction target.

If Australia's 2020 emission reduction target was increased, the direct cost to Australian business requiring permits would not necessarily change.

What does change under this scenario is that the number of permits available to be auctioned or distributed by the Australian Government will decrease and the proportion of imported permits will increase.

This will have flow-on effects to the Australian government budget in the form of reduced revenues, although the revenue impact of moving from a minus 5% target to a minus 15% target is relatively minor compared to moving from the current fixed carbon price to an international price, on current forward prices. The impact on Australia's balance of payments as a result of the increase in importation of permits is expected to be minimal.

Under this scenario, an increase in Australia's emission reduction target from minus 5 to minus 15% would not have a significant impact on the Australian economy but would start the structural change needed to reach a 2050 target. If international permit prices were to increase as a result of greater Australian demand for permits, the distribution for the structural adjustment would move from the government to be shared with emitters and the broader economy.

3. Assumptions about Australia's share of global reductions

The assumptions in our analysis present a relatively optimistic assessment of Australia's abatement task. The two key assumptions are: (1) the world is committed to limiting the increase in global temperatures to two degrees and (2) the move to a contraction and convergence model for distribution of global emissions will occur by at least 2050.

In relation to (1), we assume that global emissions after 2050 drop to near zero, so that total cumulative emissions were less than 1679 gigatonnes, the quantum identified to give a 50% probability in limiting global temperature increase to less than two degrees. This is unlikely to occur in practice because of the likelihood of a 'non-zero emissions floor'⁷. If warming is to be limited to less than two degrees, Australia's proportionate share is likely to require deeper cuts than -80% by 2050. Our analysis should therefore be considered an optimistic assessment of Australia's abatement task, as it may understate Australia's required reduction by 2050.

If global temperatures were to increase by more than two degrees there is likely to be significant costs as a result of the physical impacts of climate change on the world and especially the Australian society and economy.

In relation to (2) we believe that compared to the other models proposed for sharing emissions reductions between countries in the CCA Issues Paper, the contraction and convergence model allows a more favourable emission reduction path for Australia.

The other models outlined in Table 4 of the CCA Issues Paper tend to provide a greater focus on cumulative emissions to date and/or ability to pay (eg emissions above a welfare threshold), which would require greater emission reductions from Australia by 2050. The analysis presented here therefore reflects a 'best case' for Australia assuming the world commits to two degrees of warming or less.

Others have argued that Australia, being a resource rich country providing necessary raw materials to fuel the economic growth of developing countries, should be considered differently

⁷ Huntingford, et al., 2012 highlighted that "The presence of a non-zero emissions floor significantly reduces the emissions in both 2020 and 2050 compatible with limiting warming to 2 °C with at least 50% probability. Considering the A1B-1% scenario and only post-emission peak reduction rates of up to 5% yr⁻¹, the presence of an emission floor of 6 GtCO₂e yr⁻¹ reduces the maximum allowable 2020 emissions from around 54 GtCO₂e yr⁻¹ to around 47 GtCO₂e yr⁻¹, and corresponding 2050 emissions from 20 GtCO₂e yr⁻¹ to around 15 GtCO₂e yr⁻¹. [Environmental Research Letters; Volume 7; Number 1](#). 2012. "The link between a global 2 °C warming threshold and emissions in years 2020, 2050 and beyond" Chris Huntingford, Jason A Lowe, Laila K Gohar, Niel H A Bowerman, Myles R Allen, Sarah C B Raper and Stephen M Smith.

from other (developed) countries. Even assuming this argument is accepted in international climate change negotiations, the changes to the Australian economy and the emissions reductions required by 2050 are still significant. For example, if it were accepted that Australia's per capita emissions could be double that of other countries in 2050, a 60% reduction in Australia's emissions would still be required by 2050. Even this scenario would lead to a conclusion that a higher reduction 2020 would help facilitate the economic changes required to meet the revised 2050 target of minus 60%.

4. Domestic versus international abatement

Our analysis provides some broader insights into the shape of the trajectory for Australia and the type of policies that Australia may need to implement to meet a minus 80%, 2050 target.

It would appear that all major economies will have to achieve both significant emission reductions and substantial structural changes to meet the 2050 targets identified above. If the global market for carbon continues to develop, it can be expected that the global carbon price will increase rapidly as the marginal cost of abatement rises with more ambitious national targets. The consequence is likely to be either importing of abatement at high prices or expensive abatement in Australia. Despite this possibility, the prospect of a high carbon prices later is not enough to stop investment in emissions-intensive assets that may later be stranded when carbon prices rise. If carbon prices do not rise in the near term, policy changes may be required.

To enable the Australian economy to more smoothly adjust to the increasing cost of emission abatement, Australia's emission reduction trajectory should not 'back-load' the effort. Reducing emissions earlier will facilitate a smoother transition, especially if during this earlier time Australia has access to relatively cheap abatement from overseas.

5. Relationship of caps and carbon pricing

Investors will invest in low-carbon assets where they are reasonably confident that the policy framework that supports low-carbon investment will be in place for the life of the investment, and the level of the support will be high enough to make the investment profitable. Fundamentally, the key considerations for low-carbon investments are the current level of the carbon price and its expected future level.

Under Australia's current carbon policy, the level of Australia's emissions cap is unlikely to affect the carbon price that companies face, because Australia is likely to be a price-taker in the global carbon market. In that context, Australia's caps and targets do not directly affect the profitability of low-carbon investments.

Indirectly, however, Australia's caps and targets affect the long-term credibility and longevity of the emissions trading scheme. The approach to target setting described in this submission would support both the long-term credibility of Australia's emissions trading scheme and appropriate global action to limit warming to two degrees.

6. Implications for emission reduction policies

The analysis above highlights the significant structural economic change facing the Australian economy if warming is to be limited to two degrees.

While a carbon price is an effective and necessary policy instrument to achieve emission reductions, the scale of the economic changes required suggest that other policies may be needed, especially if short to medium term carbon prices are not a sufficient signal to influence change in areas which have a long-term bearing on energy demands and greenhouse gas emissions. Such areas include investment in long-lived assets such as property and electricity generation, transport infrastructure and urban design and planning or areas where non-price barriers exist. Without appropriate complementary policies, Australia risks locking in emissions or energy demand, making the task of reducing emissions (or the reliance on importation) by 2050 more difficult.

It is beyond the scope of this paper to discuss in detail, but the IGCC believes there may be a need to consider additional policy instruments to achieve the structural changes needed to meet long-term emission reductions targets if carbon prices remain relatively low over the medium term. It remains our view that national emissions reduction targets delivered through an emissions trading scheme are preferable to direct regulations to achieve emissions reductions.

IGCC would be pleased to engage in the CCA's future deliberations on Australia's emissions caps and targets.

Yours faithfully,

A handwritten signature in black ink, appearing to read 'Nathan Fabian', is written over a light grey rectangular background.

Nathan Fabian
Chief Executive
Investor Group on Climate Change