

Submission to Australian foreign policy 2017

Harley Wright¹, 23 Feb 2017

I provide the following comments and suggestions for consideration and inclusion in the forthcoming foreign policy paper. These relate to the threats and opportunities arising from anthropogenic global warming ie, climate change.

Four categories are discussed:

1. **Climate stress** as an accelerant of social friction, wars and migration
2. **Low Island States particularly in the Pacific** – need adaptation measures and assistance as potential climate migrants
3. **Trade wars** likely between countries with strong carbon constraints and those that don't
4. **Litigation potential**
 - against companies selling carbon products or activities emitting greenhouse gases or
 - against governments or responsible individuals
 - for insufficient action on carbon abatement or
 - action destroying carbon constraint measures or
 - damages from serious climate events.

1 Climate Stress

Climate stress is well recognised by military organisations in the USA and Australia as being an 'accelerant' of social friction, eg “*Climate Security: Building National Security*” at footnote² The current war in Syria is said to be strongly exacerbated by an unprecedented drought causing significant social conflict. Millions of refugees have fled. With increasing climate change including rising sea levels displacing people (e.g. Pakistan and low island states), droughts, e.g. Syria and other arid countries, and flooding and hurricane damage in wet climatic zones [eg, Philippines, Fiji, island states]

Australia could have a role in providing Adaptation Measures to vulnerable countries. Such assistance might be provided under the Green Climate Fund.

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² <http://www.americansecurityproject.org/climate-security/>

Australia's planning for response to emergencies and crises would need to consider potential events and the appropriate means to assist. Events could range from major hurricane events, major flooding, or support or evacuation. We have such capabilities at present but **planning needs to consider the larger scale and demands likely in the future.**

2 Low island states, Pacific region

Low Island states, particularly in the Pacific, are obvious candidates for Australian support. This would include adaptation measures mentioned above and support for low-carbon energy, provision of alternative freshwater supplies rendered salty by rising seas and development to cope with likely climate threats; storms and flooding

3 Trade wars

Regrettably, the spread of trade wars to the Australian economy has been greatly increased by President Trump's opposition to free trade and desire to impose tariffs on imports to the USA. Trade wars are likely adverse for Australia with trade being a significant part of our economy.

Apart from the Trump factor, there is the prospect of countries with strong carbon abatement policies applying **Border Adjustment** measures to high-carbon imports from countries that don't have strong carbon abatement. This has been proposed in the EU to deal with this issue – eg, a country reducing carbon at some cost to its economy, imposes a BAM on high-carbon imports from those countries with insignificant carbon abatement measures. As the US position is proposed to be unfavourable to carbon abatement there is a strong risk of other countries, with strong carbon abatement, applying Border Adjustment Measures to imports from the USA. Trade wars are an obvious outcome.

Australian exports might be similarly affected given the currently inadequate measures in place to meet our low commitments at Paris. This should motivate Australia to implement a credible policy able to meet most abatement scenarios. We did have such a policy with the Clean Energy Acts. A direct price on carbon is the acknowledged measure that is fair and efficient and the reintroduction of a price on carbon would demonstrate a credible carbon policy once again.

4 Potential litigation

There are examples of this already. The Dutch government was taken to court for inadequate efforts at carbon abatement. The court ordered the government to do more. In the US, lawyers representing a group of children have taken legal action

against former President Obama for insufficient action on climate change; Juliana v US. There are legal actions with Exxon regarding its role in distorting evidence about global warming.

This issue of liability is not widely considered or discussed but I think it is likely to grow and stay with us as climate damages increase. The potential costs could be huge. Hence I provide a lot of detail which is unfortunately complex being an interplay of science, economics, environmental impacts and ethics. This is necessary to show **that the Government's current position is demonstrably and quantitatively inadequate and contestable** by those motivated, if they could find standing.

Beyond the possible direct costs there is a question of how we wish to be seen in the world. At present, our hard stance with asylum seekers held overseas in limbo gives us a poor image, which will hopefully be resolved within years. But our climate stance is already viewed as inadequate and selfish – and is certain to worsen on our current trajectory.

Our position and its history is all recorded for the lawyers who wish to make use of it. I detail below Australia's inadequate position to ensure DFAT is mindful of the solid science and equity which says our current position is inadequate – and leaves us open to future, substantial challenges because of this.

The previous Labor government instituted the Clean Energy Acts which provided for an initial carbon tax transitioning to an emissions trading scheme. This policy ran for two years before Mr Abbott repealed key parts of it. The Clean Energy Acts had the ability to restrain Australia's carbon emissions to any required target. It was a credible policy to meet requirements under the UNFCCC. We first signed on to the UNFCCC 25 years ago with *"the ultimate objective . . . stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system"*. We have made little progress.

Mr Abbott's arguments for revoking this policy were populist and not supported by credible carbon abatement analysis or arguments. The cost of Labor's existing policy was costed by Treasury at 0.05% of GNI/year for a 25% reduction by 2020 but this small cost was not debated during the 2013 election and Mr Joyce's absurd hyperbole of \$100 roast dinner was the closest to a quantitative argument! It is not hard to imagine lawyers making a case against those who worked to destroy a credible carbon abatement policy designed to meet our international commitments.

Beyond the actions above, another basis for others seeking compensation from Australia could be our **very high carbon emissions, both in the past and continuing, with currently inadequate policies.**

Inadequacy of Australia's methodology and reduction targets

The Climate Change Authority (CCA) In its 2014 review recommended an emissions reduction trajectory with three targets:

1. a **2020 target of 19% below 2000 levels**
(compared with the current Government's 5% target);
2. a **2025 target of 30 per cent below 2000 levels**
(or 36 per cent below 2005 levels); and
3. a **2030 target range of 40-60% below 2000 levels**
(at the lower end a 45%reduction below 2005 levels,

However, the Government's current targets are:

- a **5% target by 2020**
- a **reduction of 26 to 28% below 2005 levels by 2030**

The basis for these targets is unclear and appears arbitrary. They are well short of the previous targets recommended by the CCA.

The CCA position is well explained in the minority report by Clive Hamilton and David Karoly, published 5 Sep 2017 at footnote³. This clearly shows how **there had been a responsible and quantitatively well-presented case for Australia's former carbon abatement goals.** I quote:

"2. Australia's carbon budget

1. The basis of our disagreement . . . is the . . . failure to recognise the importance of the constraint put on all future emission reduction targets and policies by Australia's carbon budget. The final report of the Special Review [on Australia's Climate Goals and Policies, Aug 2016 [*Toolkit Report*]] should, but does not, address the relationship between its recommendations, the global carbon budget consistent with the Paris Agreement, and Australia's carbon budget consistent with a fair and equitable national contribution to the global budget. This is all the more regrettable because the requirement to do so is embedded in the Special Review's terms of reference and was analysed in the First Report of this Special Review released in April 2015 and confirmed in July 2015. In effect, the First Report of the Special Review has been ignored in formulating the recommendations of the Third Report.

The three targets (1, 2, 3 above) were based on a sound and fundamental methodology starting with an IPCC global carbon budget required to limit warming to +2°C with 67% confidence. They were based on the equity principle of modified Contraction and Convergence.

³ <http://www.climatecouncil.org.au/uploads/e11e0f33fae92ca7cc3239b91e0eb2ab.pdf>

Hamilton and Karoly note in their minority report:

“3. In its 2014 review the Authority recommended an Australian emissions budget of 10.1 Gt CO₂-e for the period 2013-2050.

4. There are two reasons why the budget of 10.1 Gt CO₂-e (over 2013-2050) should now be revised downwards:

- some of that budget has been used since 2013; and
- in Paris last year Australia committed itself to join global efforts not only to hold the global average temperature ‘well below 2°C’ but also to pursue efforts ‘to limit the temperature increase to 1.5°C above pre-industrial levels.’”

So a responsible and quantitatively well-presented case for Australia’s carbon abatement goals should now be more ambitious than the three targets 1, 2 & 3 above, formerly recommended by the earlier CCA report.

The Government’s current abatement targets are clearly inadequate .

How does our inequitable carbon target relate to potential liabilities?
I mentioned earlier some current litigation over inadequate carbon abatement.

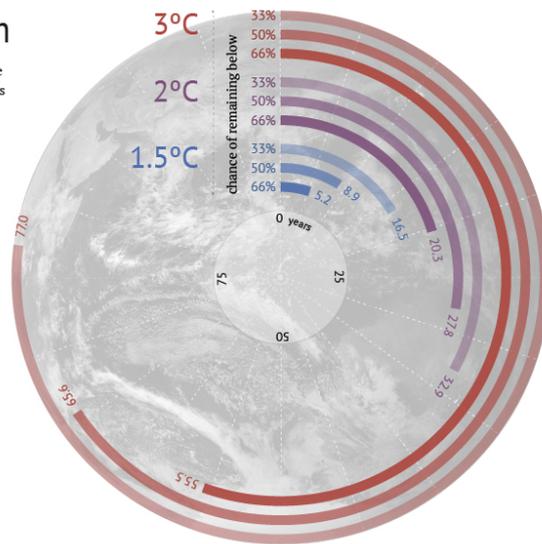
Potential loss of trade in emissions permits could be a more tangible basis for claims against Australia’s inadequate targets

The global **Carbon Budget** is the core parameter defining the size of the carbon emission problem to be tackled under the UNFCCC. This budget is the amount of cumulative, global emissions to a future date that gives a future temperature rise at the chosen confidence level.

The IPCC has estimated global carbon emissions budgets, which are shown in the figure below. The number of years at the current emissions rate to reach three temperatures – is shown at different confidence levels for not exceeding the set temperature. The earlier CCA targets used on of these.

Carbon Countdown

How many years of current emissions would use up the IPCC's carbon budgets for different levels of warming?



CarbonBrief
CLEAR ON CLIMATE

Photo credit: NASA Goddard Space Flight Center
Stopwatch icon: T-Kot/Shutterstock.com

Graphic from website at footnote⁴

To have a modest chance of limiting the temperature increase to 2°C this graphic shows **the world has 20.3 years** at the current emission rate - a rate which is still increasing despite curtailment efforts. This is the darkest, inner purple arc.

So what is Australia's fair share of the global carbon budget? The BASIC countries (Brazil, South Africa, India & China) argue that **the budget should be shared on an equal per capita basis** - footnote⁵. This has an arguable feel of equity and is a useful starting point for a perspective of our problem.

Australia's emission rate of around 21 t CO₂/person/year is about 3 times the global average emission rate of ~7 t CO₂/person/year; ie, we are emitting at 3 times the global average at present. So if emission 'permits' were issued equally to all people, Australians would consume (relinquish) all its permits in 7 years (viz, 1/3* 20.3 years). How on earth can Australia achieve the necessary reductions? It is unrealistic to think that we could if we emit only our per capita share.

Rather than sharing the carbon budget immediately as above, we saw how the Climate Change Authority (CCA) took a modified approach based on Contraction and Convergence. This provides a gentler reduction for developed countries but would likely be contested by developing countries as they get less income from selling permits.

⁴ <https://www.carbonbrief.org/analysis-only-five-years-left-before-one-point-five-c-budget-is-blown>

⁵ <http://gdrights.org/wp-content/uploads/2011/12/EASD-final.pdf>

Emissions trading: high-carbon countries trade permits with low-carbon ones – this avoids the arbitrary funding of, and competition over grants from, the Green Climate Fund.

Emissions trading means high carbon countries like Australia and Canada could buy permits from low-carbon countries like India and Indonesia. High-carbon countries would have to pay large sums for these entitlements. This would provide income from the sale of permits to the low-carbon countries selling their excess permits. It would greatly assist development in low-carbon countries. It could avoid the arbitrary discussions about appropriate levels of aid support to developing countries – indeed it could obviate the need for the Green Climate Fund and arbitrary contributions.

Emissions trading was a mainstream concept in 1997 when the Kyoto Protocol was negotiated. Developing countries did not join Kyoto then, as the mooted talk of trade in emissions permits was not in practice and they wished to watch and assess carbon trading amongst developed countries. After 1997, the EC ran a major carbon trading scheme but it was not a good example as it lacked coverage of emissions and too many permits were issued. The focus on trading waned. However, the BASIC countries continue to look at the issue of “how to share the carbon budget”. Moreover, in negotiations for COP15, Copenhagen, Contraction and Convergence was a strong option, which was ultimately rejected because of the proposed ‘convergence date’ of 2050 that would give little trade benefit to developing countries. Developing countries shunned this disadvantageous, narrow proposal.

Similarly, developed countries have an understandable concern about the costs of emissions trading, whether with an immediate per capita allocation or Contraction and Convergence with a future date at which country’s historic levels eventually converge

Winners and losers in global trade in emissions permits

I have estimated the trade value of emissions permits, issued equally to all people in the first year but traded between countries. My illustrative model, “Value of trade in emissions permits” [attached] shows that global trade would total \$170 billion/year at an average price of \$25/t CO₂. This amount is not much more than the arbitrary amount of \$100 billion first proposed by Hilary Clinton at Copenhagen for support to low-carbon, developing countries. Australia’s cost of purchased permits is estimated at 0.23% of GDP, say ~\$3 billion – substantial, but arguably politically bearable [revenue from the \$25/t CO₂ carbon tax was over \$7 billion a year]. Low-carbon countries like India and Pakistan would do handsomely, earning an estimated 6.9% and 11.5% of their country’s GDP, respectively. This immediate, per-capita allocation of permits would surely be seen as fair and acceptable by

developing countries. It would raise considerable angst in developed countries yet it would pay large sums to developing countries facilitating development and adaptation measures and absolve responsibility for climate impacts.

Emissions trading has the great advantage of avoiding the arbitrary aspect of aid grants – look how Australia recently dropped ~\$4 billion/y, regrettably, from its overseas aid!

This trading scenario is a potential basis for legal challenges in the future against developed countries, especially Australia – for exceeding its equitable share of the global carbon budget and not buying excess emissions quotas from low-carbon countries under a quota and trading regime – or making an equivalent payment.

Yes, the legal basis for challenging past and current behaviour could be questionable but the prospect of enormous gains would be a strong incentive to launch action. Governments should be mindful of such risks.

Politician's statements such as "she's talking through her hat" and "they are too concerned about the water lapping at their feet" reflect disdain for this serious issue and Mr Abbott's boast to world leaders at the G20 in Brisbane that he had got rid of the carbon tax seemed similarly image-damaging to the international audience . Further evidence of low environmental stewardship, was evidenced by Peta Credlin recently, "We made it [carbon pricing] a fight about the hip pocket and not about the environment. That was brutal, retail politics . . .".

CONCLUSIONS

This commentary suggests a variety of measures for consideration in our Foreign Policy:

- Strong and credible policies on carbon abatement to do our fair share, avoid adverse perceptions and avoid future litigation
- Increase assistance to Pacific neighbours, especially developing countries, with low carbon technology and climate adaptation measures
- Upgrade our emergency response capabilities to enable response to larger and more intense climate induced disasters
- Promote international carbon abatement based on Contraction and Convergence which has been supported by Prof Garnaut and the Climate Change Authority. This would provide large payments to developing countries and obviate the subjective and arbitrary arrangements for providing funds to, and obtaining funds from, the Green Climate Fund. It would be a strong signal of support to the developing world and would strongly support the UN's Global Goals. Payments from high-carbon countries for carbon entitlements could be considered a contribution to foreign aid.
- A credible Australian carbon policy would avoid the threat of carbon tariffs on our exports to other countries, that exist with current policies. A credible, international carbon policy, such as Contraction and Convergence, could formalise the application of Border Adjustment Measures to be applied to those high-carbon countries we trade with who do not have credible carbon abatement.

Dr Harley Wright *Striving to avoid dangerous climate change*

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Attachment: Value of trade in emissions permits [pages 10, 11]



ATTACHMENT

Value of trade in emissions permits**

Income from sale of, or cost to buy, emissions permits is expressed as a percentage of each country's GDP at a **carbon price of \$25/t CO₂** and **5.8% reduction in global emissions** in first year, 2011. Other key assumptions – below

Country ↓	Emissions % of world total [CDIAC CO ₂]	Income from sale of excess permits @ \$25/t CO ₂	Cost to buy permits @ \$25/t CO ₂
Units→	%	% of GDP	% of GDP
 China	24.6%		1.10%
 United States	16.4%		0.30%
 India	6.2%	6.9%	
 Russia	5.0%		0.90%
 Japan	3.4%		0.16%
 Germany	2.3%		0.2% .18
 Iran	1.7%		1.11%
 South Korea	1.7%		0.44%
 Canada	1.5%		0.3% .26
 Saudi Arabia	1.5%		0.9% .86
 United Kingdom	1.5%		0.2% .17
 Indonesia	1.4%	2.9%	
 Mexico	1.4%	0.4%	
 South Africa	1.3%		1.0% .98
 Brazil	1.3%	0.7%	
 Italy	1.2%		0.2% .16
 Australia	1.1%		0.23%
 France	1.1%		0.11%
 Poland	0.9%		0.52%
 Pakistan	0.5%	11.5%	
World: Sales revenue = Purchase cost =	76.0%	\$million 171,573	\$million 171,573

Key assumptions in model sums;

- **Mixed time frames explained:** Reliable CO₂ data was only available for 2010 [when first calculated] and is the base year, with reductions occurring in 2011. The annual year on year reduction of 5.8% was determined using 2015 as the base year, as the sums were being presented to the UNFCCC's Durban Platform for Enhanced Action, for completion, end 2015. The rate calculation is described below. The data above are calculated for 2011, the first year of a 5.8% reduction from 2010.
- The aggregate world CO₂ 'covered' emissions [Note 1] (and entitlements) are 5.8% less in 2011 than the 2010 base data available. The basis for a 5.8% yr on yr contraction rate is needed to meet the Meinshausen global budget of 1000 Gt CO₂ from 2000 to 2050 - explained in Note 2.
- 2010 is the base year as I could only find complete data for 2010 when sums were done early 2012 – and felt when \$ values are being estimated best to have as few debatable variables as possible. I could have used extrapolated data for 2015-16 which are the starting years for the Sydney Bridge model.
- Equal per capita emissions entitlements start in 2011 (this is immediate convergence, under contraction and convergence, and would be resisted by the North).

- In 2011, low-carbon countries (the South) are assumed to maintain the same emissions as in 2010 (for simplicity). The low-carbon countries sell all their 2011 *entitlements* above their 2011 emissions, as assumed by the model.
- High-carbon countries (the North) buy all the available 'excess' entitlements from the South.
- With these assumptions, I take the North's total carbon emissions as is its per capita *entitlement allowances* [equal to the 2010 world average, reduced by a 5.8%/year contraction] plus purchases of *excess permits* from the South. The North's 2011 emissions allowances (entitlements + purchases) are calculated to total 6.6% less than its 2010 emissions, hence each high-carbon country reduces uniformly to meet this restraint. At this point the carbon price of \$25/t CO₂, assumed in the sums, could be tested!

Notes

1 Covered emissions

Sydney Bridge model [10 May 2012, at footnote⁶] page 14 shows different measures of CO₂. CDIAC CO₂ data is the most basic and reliably measured – and likely basis for entitlements in early years. Total CO₂ equivalent is greater by around 50%, but the extra greenhouse gas emissions (further CO₂ plus other GHGs) are more expensive and less reliable to measure – so fuller coverage comes later.

2 Annual rate of contraction of CO₂ emissions – calculated from start 2015 to end 2050?

1. Assume a total **global budget of 1000 Gt CO₂ from 2000 to 2050** (Meinshausen et al, 2009)
2. the 'Sydney Bridge' model has global emission reductions starting from end of 2015 baseline with first emission contraction in 2016. I need to determine the target CO₂ budget from 2016 through 2050 and the initial emissions rate in base year 2015 – to estimate the annual decrease in emissions over this period.
3. CDIAC data for "Record High 2010 ..." see html copy [HW file], gives an estimated aggregate emission from 2000 to 2015 of 464 Gt CO₂. Hence **aggregate emissions** available to emit from 2016 (starting year for proposed framework), is 1000 - 460 [round] = **540 Gt CO₂**.
4. CDIAC extrapolation gives **2015 annual emissions = 10.0 Gt C/y = 36.7 Gt CO₂/y. This is the starting point for reductions through to 2050.**
5. **Starting with 36.6 Gt CO₂ emissions in 2015 and limiting aggregate emissions to 1000 Gt CO₂ requires a constant 5.8% year on year rate of contraction.** This was found numerically [spreadsheet] and is negligently different from the algebraically determined exponential rate. [The year on year method seems more amenable managerially to measurement and verification].

**** Nb: These are unverified, preliminary estimates for illustrative purposes. They are based on some real data and hypothetical but possible conditions.**

⁶ http://www.gci.org.uk/Harley_Wright_2.html
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